

# **Globalization, Employment, and Economic Development: A Briefing Paper**

Gary Gereffi (Duke University)  
Timothy J. Sturgeon (Industrial Performance Center, MIT)

*Sloan Workshop Series in Industry Studies  
Rockport, Massachusetts, June 14-16, 2004*

## **The Great Global Job Shift**

A cover story in the February 3, 2003 issue of *Business Week* highlighted the impact of global outsourcing over the past several decades on the quality and quantity of jobs in both developed and developing countries (Engardio, Bernstein, and Kripalani, 2003). The first wave of global outsourcing began in the 1960s and 1970s with the exodus of production jobs in shoes, clothing, cheap electronics, and toys. After that, routine service work, like credit-card receipt processing, airline reservations, and the writing of basic software code began to move offshore. Today, the computerization of work, the Internet, and high-speed private data networks have allowed a wide range of “knowledge work” to become more footloose.

Global outsourcing reveals many of the key features of contemporary globalization: it deals with international competitiveness in a way that underscores the growing interdependence of developed and developing countries; a huge part of the debate centers around jobs, wages, and skills in different parts of the world; and there is a useful focus on how the chain of activities is organized across firms and country boundaries, and where in the chain value and employment is created. There are enormous political as well as economic stakes in how global outsourcing plays itself out in the coming years, particularly as well-endowed and strategically positioned economies increase their participation in global value chains. Countries like India, China, the Philippines, Mexico, Russia, parts of Eastern Europe, and South Africa are loaded with college graduates who speak Western languages and can handle outsourced information-technology work. India is particularly well positioned in this regard.

The extent of global outsourcing is impressive. In 2001, about 90% of all consumer electronics sold in the United States were produced offshore, as were 80-85% of footwear, toys, luggage and handbags, watches, clocks, games, and television sets, 70% of bicycles, 60% of computers, and 57% of apparel (USITC, 2002). The vast majority of these imports came from developing countries, which accounted for 55-60% of the knitted fabrics and undergarments exported in the world, nearly 50% of transistors and semiconductors, and 36% of computers (UNCTAD, 2002: 57). Most of these figures have risen sharply in the past decade.

The rise of global outsourcing has triggered waves of consternation in advanced economies about job loss and the degradation of capabilities that could spell the disappearance of entire national industries. Many have dismissed these concerns, arguing instead that global

outsourcing should be embraced as a mechanism for economies to shift out of low-value activities and old industries, freeing up capital and human resources for higher-value activities and the development of newer industries and cutting-edge products (*The Economist*, 2004a; 2004b). But clearly such assurances are of little comfort to those whose economic survival has been placed in jeopardy by direct competition with firms and workers with low wages and increasingly high skills.

Global outsourcing has also triggered a debate about the benefits and costs of globalization for developing countries. Some claim that it has been extremely beneficial, but others argue that global outsourcing has led only to “immiserizing” growth and a “race to the bottom,” as developing countries compete with one another to offer transnational companies the lowest operating costs (Kaplinsky, 2000; 2001). The emergence of China and, to a lesser extent, India, as important nodes of activity — or hubs — in global value chains has expanded the global labor force so significantly that globalization is likely to bid down the living standards not only for unskilled work and primary products, but increasingly for skilled work and industrial products as well.

Despite popular notions to the contrary, global outsourcing has not meant a wholesale transfer of economic activity out of developed economies and into developing ones. A large and important set of activities have remained rooted, at least so far, in advanced economies, even as they have become tightly linked to activities located elsewhere. The cumulative effect is that cross-border linkages between economies and firms have grown more elaborate. Firms are less likely to simply make products and export them; they increasingly participate in highly complex cross-border arrangements that involve a dizzying array of partners, customers, and suppliers. Global outsourcing has given rise to a new and important set of economic structures in the world economy that we refer to as “global value chains” (Gereffi and Kaplinsky, 2001; Gereffi, Humphrey, and Sturgeon, forthcoming).

The spread of global value chains has created a new level of fluidity in the international economy that appears to be having a profound impact on the quantity and quality of jobs generated throughout the world. The acceleration of outsourcing in the 1990s signaled the “deverticalization” of the modern corporation, as defined in the 1970s by Alfred Chandler (1977). Instead of continually growing in size and scope, the trend was for greater specialization and focus on “core competencies” (Prahalad and Hamel, 1990). This process created new interdependencies between lead firms and suppliers as each value chain actor learned how to quickly and effectively combine distinct and complementary sets of capabilities with other actors in the chain.

In the increasingly globalized economy of the late twentieth century, it became logical to complement outsourcing with offshoring – that is, the practice of moving discrete value chain activities to places with lower operating costs, specialized capabilities, large markets, or all three. For advanced industrial economies like those in North America and Europe, offshore manufacturing platforms offered low-cost and increasingly high-quality alternatives to making goods at home. While offshore assembly was initially done by the subsidiaries of multinational firms, growing capabilities in the supply base led to the emergence of both an independent set of developing country suppliers in places like Taiwan (Hamilton, Feenstra, and Petrovic, 2004) and

a cadre of huge “global suppliers” headquartered in developed countries with extensive worldwide operations (Sturgeon, 2002; Sturgeon and Florida, 2004; Sturgeon and Lester, 2004).

The difficulty is that the bounds of global outsourcing are unknown – what began as simple assembly work in the 1960s and 1970s has rapidly spread up and down the value chain into a wide range of goods and services. Virtually all consumer products sold by developed country retailers today are made entirely or to a significant extent in offshore factories located in developing countries. Even products that require precision manufacturing, like hard disk drives and many kinds of semiconductors, are becoming “high-tech commodities” made in capital-intensive facilities in Southeast Asia and elsewhere (McKendrick, Doner, and Haggard, 2000). Certain kinds of software programming and hardware design can now be done more cheaply in places like India, Taiwan, South Korea, and the Philippines than in the United States, Europe, or Japan, and a growing array of knowledge-intensive business services, such as engineering, design, accounting, legal and medical advice, financial analysis, and business consulting, are now beginning to move offshore as well (Engardio, Bernstein, and Kripalani, 2003). The implications of these shifts for the future of white-collar and skilled factory work have become an explosive political issue in developed economies, even as developing country governments pin their hopes on global outsourcing as a key driver for economic development.

## **Workshop Themes**

The rapid advance of globalization has led many industry researchers to common ground. In the Sloan Industry Centers, research on the competitiveness of U.S. industries naturally followed American firms abroad as they set up elaborate and tightly integrated global-scale operations, sometimes through direct ownership, sometimes through trade, and increasingly through various forms of outsourcing and alliances that provide a greater or lesser degree of control without ownership. For researchers involved with the Global Value Chains Initiative, the starting point was often the prospects for industrial upgrading in developing countries, but like the Sloan Industry Centers, attention has now shifted toward global-scale trade, production, distribution, and service networks. Because of this convergence of interests and research, it seems an opportune moment to bring these two research networks together, in roughly equal numbers in this workshop, to see if we can hammer out a common view of the trends, opportunities, and challenges that sum up contemporary globalization.

This workshop will focus on five central questions related to global outsourcing:

- What are the dynamics of job creation and job loss during the last 5-10 years in the United States and overseas, both in the aggregate and in particular industries? (*Number of jobs*)
- Which countries and regions have been the primary beneficiaries and losers in these global job shifts? (*Location of jobs*)
- What are the mechanisms through which job creation and loss in advanced industrial and developing economies are linked through global value chains? (*Sticky versus footloose jobs*)

- What do we know about the distribution of jobs in relatively high-value activities and low-value activities in global value chains? (*Quality of jobs*)
- What is the evidence for industrial upgrading (or downgrading) based on the availability and distribution of jobs in global value chains? (*Jobs and development*)

To provide a bit of context for our discussion of these questions, this briefing paper will review some of the main findings regarding globalization and jobs in a diverse range of empirical studies on manufacturing, service, and agricultural industries. These studies are quite varied in their methodology and the degree to which they focus on employment. Our intent is to create a baseline from which to evaluate the extent of our knowledge and the gaps therein. We also look at diverse findings generated by cross-sectoral studies of globalization’s impact on jobs using public data sets. The last section of the paper outlines some of the big questions that we hope the workshop will address, and suggests how this larger vision might shape future research on the nature of employment and jobs in the global economy.

### **Starting Point: Outsourcing, Offshoring, and Global Outsourcing**

Global outsourcing has been gathering pace since the 1980s. This process combines two quite distinct phenomena: outsourcing and offshoring. “Outsourcing” is a standard aspect of all businesses, which frequently and continually need to make the decision to “make or buy” specific inputs and services (Williamson, 1975, 1985). While companies regularly decide whether they wish to produce goods and services “in house” or buy them from outside vendors, the trend in recent years has shifted in the direction of “buy.” Major manufacturers such as the “Big Two” American automakers, General Motors and Ford, have spun off their huge internal parts divisions as independent suppliers, and many businesses have outsourced a wide range of services, such as accounts receivable, insurance, and logistics, to specialized firms. In industries like electronics, manufacturing itself has become a service.

“Offshoring” refers to the decision to move the supply of goods and services from domestic to overseas locations.<sup>1</sup> These activities may be carried out in facilities owned in whole or in part by the parent firm, by transnational suppliers, or by local suppliers. The geographic shift of industries is certainly not a new phenomenon. In the early twentieth century in the United States, many industries that were established in New England, such as textiles, apparel, footwear and furniture, began to move to the U.S. South in search of abundant natural resources and cheaper labor, frequently in “right to work” states that made it difficult to establish labor unions. The same forces behind the impetus to shift production to low-cost regions within the United States eventually led U.S. manufacturers to cross national borders to places like Mexico, Japan, and Singapore, and eventually to most of East Asia. Another major driver of industry relocation have been trade rules, which either tilted the balance for market access in favor of local production or reduced tariffs in outward processing trade (or production sharing) to the point where manufacturing offshore for the home market became highly attractive.

---

<sup>1</sup> There is some controversy about the inclusion of regional production arrangements — sometimes called “nearshoring” — in the offshoring category.

The search for capabilities also weighs heavily in the location decisions of firms. As the capabilities of both global and local suppliers matured in the 1980s and 1990s, lead firms in the United States, Europe, and to a lesser extent Japan, began to move more extensively toward an international contracting model that utilized the capabilities of suppliers, contractors, and intermediaries to implement their offshoring strategies (Gereffi, 1994; Dedrick and Kraemer, 1998). This trend leads us to the term “offshore outsourcing,” or perhaps better, “global outsourcing.”<sup>2</sup>

## **The Expansion of the Global Supply Base in Asia**

Today China has established a critical mass of infrastructure and factory capacity that makes it the world’s most important global outsourcing platform for manufacturing. It has an unparalleled mix of economies of scale, industrial diversification, and domestically funded infrastructure, buttressed by the world’s largest inflows of foreign direct investment (FDI). Together these make China’s export-oriented factories a critical link in global value chains. But China is not alone. There are low-cost, high-quality offshore manufacturing platforms in many parts of Asia, as well as Mexico, South America, and Eastern and Central Europe. These far-flung locations are coming to be better integrated and more connected with one another on a daily basis, which is critical to the emergence of a global supply base.

Between 1980 and 1998, Singapore doubled the share of manufactures in its total exports from 43% to 86%. During the same time period, Thailand tripled the share of manufactures in its export total from 25% to 74%, Malaysia quadrupled its manufactured export ratio from 19% to 79%, and Indonesia had the most dramatic gains, with manufactures soaring from 2% of exports in 1980 to 45% in 1998.<sup>3</sup> Mexico is the only non-Asian economy with a transformation of similar magnitude, its manufactured exports growing from just 10% of total exports in 1980 to an astonishing 85% by the end of the 1990s (Dicken, 2003: 48).

China’s economic growth, averaging 8% a year since 1978, has not only made it into a global Goliath, but it has also become the major engine for intraregional trade in developing Asia. According to the Asian Development Bank (2004): “(China) is the world’s biggest consumer of copper, tin, zinc, platinum, steel, and iron ore; second biggest of aluminum and lead; third largest of nickel; and fourth largest of gold. It is now the world’s second-largest oil consumer [after the United States], and accounted for 35% of the global rise in oil demand in 2003.” China’s large trade surplus with the United States is closely linked to its widening trade deficit with East and Southeast Asia. China has become the single largest export market for Japan and the East Asian newly industrializing economies, and it accounted for nearly 80% of Japan’s increase in exports in 2003. China’s demand for intermediate components from its East and Southeast Asian regional trading partners, which supplied China with over half of its total

---

<sup>2</sup> See Hira (2004) for a more detailed discussion of corporate strategies and practices related to offshore outsourcing.

<sup>3</sup> South Korea, Taiwan and Hong Kong were early movers in the export game, and nearly 90% of their exports were already manufactured products in 1980; their manufactured export totals were in the 90-95% range two decades later. China’s manufactured exports represented nearly half (48%) of its export total in 1980, although this proportion still rose substantially to 87% by 1998 (Dicken 2003: 48).

imports in 2003, has grown sharply, thereby fueling the precipitous rise of China's exports of final goods to non-Asian industrial economies.<sup>4</sup>

Participants in Asia's regional production chain have pushed each other to move from low value-added sectors to high value-added sectors in the past decade by "vertical specialization" in global value chains. China has established a strong comparative advantage in the downstream stages of production, largely as a result of massive inflows of FDI and its abundant supplies of low-cost labor. Meanwhile, Japan and the newly industrializing economies of Hong Kong, South Korea, Taiwan, and Singapore supply China with high technology and relatively high value-added inputs and finished products, and Southeast Asian economies (Indonesia, Malaysia, Philippines, and Thailand) export significant quantities of primary products to China (Asian Development Bank, 2004).

Industrial development in China has been facilitated by liberal policies set in Beijing, as well as the huge investments in infrastructure by city and provincial governments competing to capture a greater share of FDI flowing into the country. But it has also been driven by the investments of foreign firms from Europe, Japan, and the United States, as well as investments by "overseas Chinese" companies, especially those from Taiwan and Hong Kong. Clearly, the pace of industrialization and export growth in China has not been set by Chinese companies alone, but in large measure by the activities of foreign lead firms and their largest suppliers.

These investments have driven the most dramatic wave of industrial development the world has ever seen, and the industrial capacity that has been put in place, because of its recent vintage, is in many cases leading edge. This has generated a productivity boom in China that has, ironically, led to declining manufacturing employment even as industrial output has soared (Rawsky, 2003). Without FDI, and in particular the capital equipment and skills brought to China by foreign firms, China's development over the past ten years would have looked very different. At the same time, the strategies of many of the world's largest and most important companies now appear to be inextricably integrated with the capabilities that exist on the ground in China.

Global outsourcing is also emerging up and down the value chain in the once-sacrosanct services sector. The offshore provision of services began with low-value-added activities, such as back office transactions and call centers, and it now includes activities more closely associated with knowledge work, such as software programming, engineering, design, accounting, legal and medical advice, and a broad array of other professional services. India has moved center stage in offshore services outsourcing, particularly in the information technology (IT) area. The computerization of work has made it easier to connect to the capabilities that exist in countries like China, Ireland, Australia, Canada, and the Philippines, and it is accelerating the trend toward offshore outsourcing of services.

Offshore outsourcing in India's IT sector is considered by many as another globalization success story. In 2002 India's IT service providers were the dominant offshore vendors, delivering an estimated \$10 billion in IT services (Karamouzis, 2003). India employs about

---

<sup>4</sup> For example, China produces 50% of the world's cameras, and 30% of its air conditioners and television sets (Asian Development Bank, 2004).

650,000 professionals in IT services, and this figure is expected to more than triple in the next five years (Roach, 2003: 6). The significance of India as an offshore site for IT services is perhaps best represented by General Electric's "70-70-70" outsourcing rule of thumb: according to a *BusinessWorld* article published in March 2000, General Electric publicly stated the goals of outsourcing 70% of GE's work, moving 70% of this outsourcing offshore, and locating 70% of these IT jobs in India. Thus, about one-third of GE's IT work will be done in India.

While General Electric is a global pacesetter in India, lots of other big companies are moving in the same direction. The top five U.S. employers in India are: General Electric with 17,800 workers, which is about 5.6% of its global workforce of 315,000 people; Hewlett-Packard, 11,000 employees in India; IBM, 6,000 employees; American Express, 4,000 employees; and Dell, 3,800 employees (Pink, 2004: 13). While U.S. firms have created as many as 100,000 IT jobs in India, a strong nucleus of domestic IT service providers there has emerged to handle this demand, including: Tata Consultancy Services – 23,400 employees and over \$1 billion in revenues (as of March 2003); Wipro Technologies (19,800 employees and \$690 million in revenues); Infosys Technologies (15,500 workers, over \$750 million in revenues); and companies like Satyam Computer Services and HCL Technologies, with close to 10,000 employees each and \$460 million and over \$330 million in revenues, respectively (Karamouzis, 2003).<sup>5</sup>

From a global value chain perspective, many of the software and other IT jobs in India involve routine work on mainframe computers using relatively standardized or outmoded technology. However, the cost differentials make additional IT outsourcing in India highly probable. In the United States, gross domestic product per capita in 2003 was just over \$35,000 and the typical salary for a programmer is \$70,000; in India, GDP per capita is \$480, and a typical programmer earns \$8,000 per year (Pink, 2004: 13). Thus, an Indian programmer makes only one-ninth the salary of his or her U.S. counterpart, but in the domestic setting the Indian programmer is earning more than 16 times the minimum wage, while the average U.S. programmer earns only twice the minimum wage.

While IT outsourcing is a globalization success story for India, it has become a highly politicized issue in the United States. According to Vivek Paul, vice-chairman of Wipro Technologies: "If three million jobs have been lost in the United States, and 100,000 created in India, every one of those three million thinks, 'That's my job'" (Waldman, 2004). Unemployment in India is at its highest level in decades: officially pegged at 7%, many economists believe the actual level is over 20%. According to commentators in both the United States and India, IT outsourcing reveals not only the asymmetries of globalization, but also the incredibly high stakes for developing and developed countries alike.

### **From Cluster to Hub: the Merrimack Valley of Northeast Massachusetts**

The discussion so far has emphasized the planetary-scale patterns of industrial development, but the places where these global value chains touch down and emanate from are profoundly affected by the trends toward tighter integration and consolidation that have been

---

<sup>5</sup> By March 2004, Infosys Technologies and Wipro reportedly both topped \$1 billion in revenues for the first time (Rai, 2004).

documented in many industry studies. The core notion here is the transformation of places that have concentrations of economic activity in more or less self-contained “clusters” (Porter, 1998) to globally connected “hubs.” This change is more than semantic; hubs are open to the full force of the global economy, both positive and negative, in ways that clusters are not. Hubs learn faster and more broadly, but experience the turmoil of globalization more acutely than places that are less well connected to global value chains. As a result, many of the firms and institutions in locales that are making the transition to hub status have been thrown into crisis. The search has begun for mechanisms that will allow firms and institutions in hubs to adapt to conditions of constant and unpredictable change.

The Merrimack Valley of Northeast Massachusetts, with its long history of manufacturing, economic growth and decline, and industrial succession, is an excellent place to examine the details of the transition from cluster to hub. We will spend the morning of the second day of the workshop discussing this case. The textile mills of Lowell, established at the end of the eighteenth century, signaled the rise of industrial-scale manufacturing in the United States. The textile industry in Massachusetts grew on the Merrimack River because it was one of the few on the state’s east coast large enough to provide reliable waterpower for mills. The great Depression hit these communities very hard, as it did many others, but the shift to steam and electric power also worked to untether the industry from the river, and thus these industries never recovered in the Merrimack Valley, but instead re-emerged in the U.S. South after the Second World War, where labor was more abundant, less costly, and not organized by trade unions.

By the late 1960s the Merrimack Valley was receiving investment in defense industries, with Raytheon providing the cluster’s anchor. In the early 1980s the mini-computer industry began to grow rapidly, adding to an existing base in electronics centered on a Western Electric (then ATT) telephone equipment-manufacturing complex in North Andover, where employment peaked at 10,000 around 1970. Mini-computer firms such as Wang, Digital Equipment Corporation, and Prime Computer all established major facilities in the Merrimack Valley. The next crisis came with the personal computer, which began to supplant the mini-computer as the low-cost alternative to mainframe computers for small business applications as the 1980s wore on. Eventually, the mini-computer industry disappeared entirely. Out of the wreckage of the mini-computer sector came the most recent phase of the Merrimack Valley’s industrial succession, the communications infrastructure equipment industry, which built upon the long-established presence of ATT (then Lucent) in North Andover. With the Internet-fueled boom in the communications industry, and the shift from digital to optical networking technology, employment in electronics grew strongly. Employment at the Lucent works rebounded to 5,600 in 2000, and this under conditions of severe labor shortage caused by rising demand and a lack of available skills in optoelectronics (Lazonick, Fiddy, and Quimby, 2002; Quimby, 2003).

It was boom time again for manufacturing in the Merrimack Valley, but this boom was different. It entailed not just a scaling up of production, employment, and training in response to increased demand and technological change, but a shift to contract manufacturing and temporary employment as well. Global electronics contract manufacturers established or scaled up existing plants in the Merrimack Valley and surrounding communities in the 1990s to serve the burgeoning communications industry. Contract manufacturers are typically very heavy users of temporary employment agencies, which they use to fill gaps and test potential new permanent employees during good times and for “shock absorption” during bad times. This was the

situation in mid-2001 when the Internet bubble burst and virtually all orders for communications gear ceased, leaving those companies in the region serving this market – lead firms and contractors alike – with huge amounts of excess capacity and inventory.

Employment at the Lucent facilities dropped from its post-1970s peak of 5,600 in 2000 to less than 3,000 in 2002. But Lucent workers were used to this sort of volatility. Many had worked at the North Andover plant for more than 20 years, and the pattern of lay-off and rehire, with pension programs and union seniority remaining intact, was familiar. It may have been an exceptionally severe cycle, but it was a cycle nonetheless. However, this time the boom had been accompanied by rampant outsourcing by Lucent and an unraveling of direct employment relationships and union representation. When and if Lucent recovers, large-scale in-house manufacturing will not resume in the Merrimack Valley because it has been outsourced and the complex sold to a local developer (Lazonick, Fiddy, and Quimby, 2002; Quimby, 2003).

A clue to what is likely to occur when the communications infrastructure industry eventually rebounds can be found at Cisco's Salem, New Hampshire facility, where there has been some hiring during the downturn. The circuit board assembly and systems integration floors inside the plant are now owned and operated by the global contract manufacturer Celestica. Only 150 of the personnel at the complex are directly employed by Cisco. On the Celestica shop floor, the vast majority of workers are hired by the temporary employment agency, Adecco, and they are working under 6- to 18-month contracts tied to the manufacture of specific products. What was previously highly immobile, less-skilled technical labor is now readily available, not through immigration, which would keep the production in the area, but instead in the far-flung network of plants owned and operated by global contract manufacturers, such as Solectron and Celestica. The global footprint of these contract manufacturers, which includes dozens of facilities in western and eastern Europe, Mexico, South America, and East Asia, enables contractors to spirit work away at a moment's notice. The manufacturing economy of the Merrimack Valley has been transformed, unalterably it seems, from a locally connected, cluster-based economy to a globally connected, hub-based economy subject to the decisions of firms that have what is approaching total geographic flexibility.

### **Global Outsourcing and Jobs in Diverse Sectors**

The processes of outsourcing and offshoring leading to the formation of global value chains have been very rapid and widespread. As a result, studies of globalization in specific industries are largely aimed at describing the organizational and geographic changes that have occurred over the past 15 to 20 years. Very little work has been done to systematically estimate the impact of globalization on jobs in these industries. Where attempts have been made, the lack of coherent cross-national data in anything beyond trade and investment — especially employment and wages — has made the task extremely difficult. Even in countries where employment and wage data are easily available, such as the United States, isolating the effects of globalization from other forces of change has proved to be daunting, and many scholars of specific industries lack the methodological skills and proclivity to make such estimations.

For example, in their 1999 study of globalization and jobs in the motor vehicle industry for the Alfred P. Sloan Foundation, Timothy Sturgeon and Richard Florida state: “the impact of

globalization on jobs is difficult to tease apart from the effects of technological change, organizational change, and secular demographic shifts toward younger workers with more education.” However, they go on to speculate that:

“...the aggregate effects of globalization [in the US motor vehicle industry] — due to counterbalancing trends — have been rather small, at least so far. In fact, for the United States, automotive sector employment, after dropping from its pre-crisis peak of one million in 1977, actually grew between 1987 and 1996 from 867,000 to 946,000 jobs, an increase of 9 percent. This growth occurred even in the face of a loss (largely through attrition) of 59,000 jobs at Big Three [General Motors, Ford, and Chrysler] body and final assembly facilities in the United States. Over this period, globalization both contributed to these job losses, as the Big Three increased exports from assembly plants in Mexico and Canada, and mitigated them to some degree, as the Japanese-owned assembly plants added some 30,000 new jobs to the United States automotive sector” (Sturgeon and Florida, 2000, p. 74).

For most global value chain research, however, simply keeping up with the sweeping changes in organization and location is difficult enough, not to mention considering their implications for the competitiveness of firms and national economies. Dolan and Humphrey (2000; forthcoming) and Reardon and Berdegúe (2002) document dramatic and very recent changes in the structure of global value chains in horticulture and food retailing, where supermarkets have imposed more stringent controls over their suppliers. Consolidation has increased at the level of the farm, exporters, importers, and distribution. Developing country producers have been forced to meet developed country standards, not just for export, but also for local sales as supermarkets take commanding shares of retail food sales. While current research has not yet provided a systematic assessment of the impact of these changes on agricultural and food processing jobs, it seems obvious that the impact on small holders, who cannot possibly make the needed investments, is extremely negative because they are being excluded from the chain, not just for export but for local markets as well. Shifting employment dynamics in agriculture represent a critical research challenge, especially because a very large proportion of workers in developing economies are still employed in agriculture.

In rare instances, it has been possible for industry researchers to measure the impact of globalization on the quantity and quality of jobs with some precision. For example, researchers from the Sloan Information Storage Industry Center have been able to document the shift of jobs in the U.S. hard disk drive industry to Southeast Asia over a 20-year period beginning in the late 1970s. Eventually 80% of the jobs shifted to Singapore and other countries in Southeast Asia. Nevertheless, hard disk drive design remained rooted in the United States, and since design jobs pay much more than the production jobs, nearly 80% of the wage bill was paid to workers in United States (McKendrick, Doner, and Haggard, 2000). Still, this level of precision was only possible because the hard disk drive industry in the United States is small and young enough for researchers to track the birth, death, and employment levels of all firms in the industry from the dawn of the industry. Notwithstanding the great effort that was required to generate such detailed results, this kind of comprehensive analysis is impossible for larger and older industries such as motor vehicles and apparel, and large and fragmented industries such as software and services. Other methods must be found.

## Trade Rules and Global Consolidation

International trade rules have had an enormous influence on the creation and distribution of jobs in developing economies. One of the best examples is the Multifiber Arrangement (MFA), which since the early 1970s until 1995 opened up the markets of the United States, Canada, and most European countries to exports by a wide range of developing economies by placing quantitative limits (or quotas) on imports for a variety of textile and apparel products. As a result of these quotas, the North American and European textile and apparel markets received imports from 50 to 60 different developing economies (Gereffi and Memodovic, 2003).

However, in 1995 the World Trade Organization (WTO) issued an Agreement on Textiles and Clothing that mandated a 10-year phase out period for all MFA quotas.<sup>6</sup> There is great consternation among developing economies that this change in the MFA trade rules will contribute mightily to global consolidation in one of the world's most diversified export industries by allowing China in particular, along with other major suppliers like India, Indonesia, Pakistan, and Vietnam, to dominate production for the U.S. and European apparel markets. In the words of a definitive study by the U.S. International Trade Commission on the impact of quota elimination in 2005: "China is expected to become the 'supplier of choice' for most U.S. importers (the large apparel companies and retailers) because of its ability to make almost any type of textile and apparel product at any quality level at a competitive price" (USITC, 2004: xi).

Such an outcome would exact a heavy toll on many of the poorest countries given the heavy reliance of a number of small exporting nations on textile and apparel exports. In 2000, for example, apparel represented nearly 80% of Bangladesh's total exports; and the dependence on apparel exports was also exceptionally high for Mauritius (63%), the Dominican Republic and Sri Lanka (around 50%), Tunisia (nearly 40%), Morocco (33%), and Pakistan, Hungary, and Romania (close to 25%) (Gereffi and Memodovic, 2003: 27). In terms of job loss, the predictions for MFA phase out are extremely dire. In Bangladesh, about 30% to 40% of garment factories are expected to close when the MFA expires, displacing at least 400,000 to 500,000 mostly female workers, while in Sri Lanka about 60% of garment factories are expected to shut down (Kahn, 2003: 10). The International Textile, Garment and Leather Workers' Federation, which is lobbying for the continuation of quotas on dominant suppliers after 2004, estimates that both Bangladesh and Indonesia could lose up to one-million jobs with the phase out of the MFA (*Women's Wear Daily*, 2003).

The global economy is increasingly concentrated at the top and fragmented at the bottom, both in terms of countries and firms.<sup>7</sup> Given this consolidation, profits are driven down at the base of global value chains because of intense competition, leaving little money for reinvestment, innovation, or wage increases. The real opportunities to move up value chains in

---

<sup>6</sup> Under specified cases of market disruption, the U.S. market access agreement with China regarding its entry into the World Trade Organization allows the United States to apply selective safeguards (or quotas) on imports of Chinese textiles and apparel for four additional years beyond the termination of textile and apparel quotas for WTO members – that is, from Jan. 1, 2005 through Dec. 31, 2008. However, the agreement also states that no safeguards established during this four-year period will remain in effect beyond one year, without reapplication, unless both countries agree.

<sup>7</sup> See Milberg (2003) for an interesting theoretical and empirical analysis in support of the ideas in this paragraph.

the global economy appear to reside in a very small number of developing countries, and within the largest of these economies (like China and India), in particular sub-national regions. This is why there is considerable concern and skepticism about the current prospects for “spreading the gains” from globalization.

### **Global Buyers and Global Suppliers: The Employment Implications of the New Global Supply Base**

A powerful trend in the most recent phase of global outsourcing, in both manufacturing and in services, is the shift of activities to an increasingly competent set of suppliers, contract manufacturers, and intermediaries – in other words, a deepening of the “outsourcing” facet of globalization. When work is “handed off” to independent suppliers, several things happen. First, the supplier can gain economies of scale and scope by pooling its resources across a broad customer base. Second, the existence of highly competent independent suppliers lowers the barriers to globalization for firms, including small and medium-sized firms, which have not yet shifted any activities offshore. Third, the separation of routine and labor-intensive functions from non-routine, skill-intensive functions, and the passing of the former to independent firms, eases the introduction of two-tier wage and benefit structures.

The emergence of a global supply base lowers the costs of and barriers to globalization, and so encourages more firms to adopt global outsourcing strategies. When smaller, less competent firms move in this direction, markets are created for a broader array of functions to be outsourced, and this drives suppliers to bundle additional functions and increase their range of competence. This bundling and packaging of functions by suppliers lowers barriers further, and a cycle of supplier upgrading and increased outsourcing is set in motion. Sturgeon and Lee (2004) have referred to this process as “industry co-evolution.” Clearly, the role of lead firms in driving this process forward has been critical, especially when we consider the increased involvement of huge retailers like Wal-Mart and Costco in pushing their suppliers to lower costs and increase quality by consolidating production in low-wage locations such as China. Taking the role of buyers seriously places the development of East Asia and Mexico in a new light, and leads us to notions such as “supplier-oriented industrial upgrading” (Sturgeon and Lester, 2004) that supports “demand-driven development” (Hamilton, Feenstra, and Petrovic, 2004) in response to the needs of increasingly powerful “global buyers” (Gereffi, 1994; Kaplinsky, 2004).

In terms of employment effects, these points provide few answers, but usefully identify the process of global outsourcing as a historical one that may accelerate rapidly after long periods of experimentation and supply-base upgrading by pioneering firms. Once an offshore supply base comes into being and then reaches a critical level of competence and scale, barriers to entry fall (for buyers and other lead firms, but not for suppliers) and global outsourcing can really take off. We have seen such surges in global outsourcing in manufacturing industries, sometimes referred to as an “outsourcing tear,” and the feeling among many observers seems to be that we are on the brink of such an event in the realm of services.

The measurement of globalization’s impact on service sector employment, as in manufacturing, is clearly a vexing issue. As Dossani and Kenney put it, “How significant service offshoring will be for developed country employment patterns is difficult to calculate” (2004, p.

1). Like manufacturing, the globalization of services started with multinational firms in fields like accounting and consulting setting up offices in offshore locations to access new markets, followed by the movement of centralized labor-intensive functions, often referred to in services as “back-office” work (such as call centers and bill processing) to places with pools of educated, low-cost labor.

At a broader level, the fragmentation and delocalization of value chains, exemplified by global outsourcing, has caused the interests of companies and the national economies in which they are based to diverge (Reich, 1991). The growing power of multinational corporations, Ron Blackwell argues, is increasingly uncontested by workers and unregulated by governments, allowing the world’s largest firms to “pursue profit with no regard for the wider social or environmental impact of their activities” (Blackwell, 1997: 97). The emergence of a broad and deep global supply base has accelerated this divergence of interests because it makes it easier for firms from advanced economies, not just giant multinationals, but small and medium-sized firms as well, to move some of their activities offshore.

In the 1950s, when national economies were more self-contained, Charlie Wilson’s famous claim that “what’s good for GM is good for the country” had some resonance.<sup>8</sup> When offshore investment is market-seeking, it tends to be either beneficial or neutral with regard to domestic employment. Offshore activities, if successful, have the potential to add management and product development jobs at home, generate cash that might be used for domestic investment, and increase the domestic production of materials and parts bound for offshore final assembly plants. Cost-cutting can also be a motivation to move activities offshore when operating cost differentials are great enough to offset transport and tariff costs.<sup>9</sup> In terms of employment at home, the key difference between offshore investments that are market-seeking, on one hand, and those that are cost-cutting or capability seeking, on the other, is that the goods and services produced offshore for local markets do not directly displace jobs at home unless they are undercutting established or potential exports. When activities are moved offshore to cut costs or tap capabilities and the market remains at home, domestic employment is almost certainly displaced. Now that a global supply base has emerged in many industries, even small and medium-sized companies with no offshore investments of their own can play the global outsourcing game.

Clearly global-scale integration and coordination is needed in the labor movement to match the same trends in the global economy, but it is also clear that devising and implementing strategies to address labor issues in specific industries requires understanding who the actors in global value chains are and what governs the relationships between them. As revealed by the success stories of trade union-initiated actions against poor working conditions in the California strawberry industry and at the factories of sewing contractors for the Gap in the Caribbean and Central America (Blackwell, 1997), as well as by the U.S. government’s successful enforcement of minimum wage standards in the Los Angeles garment industry (Weil, 2004), finding the leverage points for effective action requires detailed knowledge of how value chains function.

---

<sup>8</sup> Charlie Wilson was former president of General Motors when he made this remark to the Senate Armed Services Committee. He later became Secretary of Defence under President Eisenhower.

<sup>9</sup> The practice of moving labor-intensive activities to places with low labor costs has a long history, stretching back at least as far as Fairchild Semiconductor’s establishment of its first offshore assembly plant in Malaysia in 1961.

For developing countries, the implications of the new global supply base are a hotly debated topic. One view is that the functional and geographic fragmentation of value chains can serve to lock developing countries into low-value activities because these activities can remain physically distant from higher-value activities in the chain. Another view is that it is not so easy to distinguish high- from low-value activities, and that there has been a great deal of upgrading in all kinds of value chain functions, not least because of the requirements for tight coordination, high quality, and extremely disciplined and technology-intensive supply-chain management methods that make global value chains tick. Furthermore, the immense concentration of “low-value” activities that have been pooled to gain economies of scale has given a great deal of leverage to these huge new global factories and global back offices, and the countries that contain them. The real worry, in this view, is for the places that continue to be entirely excluded from participation in global value chains.

### **Statistical Studies of Globalization’s Impact on Jobs in Advanced and Developing Countries**

The complexity of the relationship between globalization and employment is daunting when we try to determine its impact for a large numbers of industries and countries, and over the span of several decades. However, important methodological breakthroughs have been made by economists who have carried out longitudinal and cross-sectoral studies using high quality data sets that allow us to assess in a more rigorous manner the impact of global outsourcing on workers in the United States.

Kletzer (2004) reviews a series of statistical studies that provide a rich portrait of “trade-displaced” workers in the United States between 1979 and 1999. The dramatic increase of U.S. imports has led to what is called “trade-related job loss” in policy circles. Manufacturing industries were classified as “high” import-competing industries if they ranked in the top quartile of U.S. import share changes during 1979-1994; these industries had an increase in import share exceeding 13 percentage points. “Medium” levels of import competition referred to industries in the middle two quartiles, and “low” for the bottom quartile. Linking this definition of import competition to the Displaced Worker Surveys, which are biennial supplements to the U.S. Current Population Survey, Kletzer (2001) obtained samples of trade-displaced workers who lost jobs in U.S. industries facing increased import competition.

Compared to workers who lost jobs in other sectors of the U.S. economy, the characteristics of trade-displaced workers in manufacturing include being “slightly older, notably less educated, with longer job tenures, somewhat more likely to be a minority, and far more likely to be production oriented (just less than one-half of manufacturing displaced are lower-skilled blue collar workers...)” (Kletzer, 2004: 7). These characteristics of displaced workers in manufacturing do not correspond with the profile of workers who succeed in typical training programs, which limits their probability for re-employment. This has led Kletzer and others to discuss new policies, such as wage insurance, designed to improve the opportunities for workers in trade adjustment programs.

Bernard, Jensen, and Schott (2004) take a close look at how U.S. firms have responded to the dramatic decline of the U.S. manufacturing sector, which fell from 26% to 14% of the U.S. workforce between 1960 and 2000, while manufacturing's output as a share of gross domestic product diminished from 27% to 16%. Utilizing plant-level data for four 5-year panels from 1977 to 1997, Bernard et al. find that these overall declines in the manufacturing sector mask substantial cross-industry and within-industry reallocations of manufacturing, in accordance with the predictions of endowment-based trade theory. Increased exposure to low-wage country imports is shown to be negatively associated with plant employment, output growth, and the probability of plant survival across industries in the United States. Within industries, capital-intensive plants do better than labor-intensive ones in terms of their likelihood to withstand import competition and grow.

This study is also notable because it contains the first systematic evidence of "industry switching" by plants facing import competition. Looking at relatively detailed four-digit industry codes, U.S. manufacturing plants are shown to adjust to competition from low-wage countries by altering their product mix toward more capital- and skill-intensive industries as low-wage imports increase (Bernard, Jensen, and Schott, 2004: 20-21). This methodology appears to provide a way to link employment shifts to industrial upgrading in an advanced industrial country. Case studies have been the main method used thus far to document industrial upgrading in developing economies, but it would certainly be desirable to identify more rigorous quantitative methods to try to link job shifts with upgrading outcomes in a series of new comparative industry and value chain studies.

In the international arena, it is exceedingly difficult to find reliable comparative data on the quantity and quality of jobs across industries and countries. The most useful comparative statistics on development that could establish a baseline for employment studies are those provided by United Nations agencies such as UNIDO. Major international trends in the production and trade of manufactures indicate substantial progress by developing countries. Developing economies have doubled their share of manufacturing value added between 1975 and 2000, with close to 25% of global value added in the latter year; the manufactured exports of developing nations account for over 70% of their total merchandise exports in 2000; and, at a sectoral level, there is a clear shift in the developing world away from raw materials and resource-based manufactures to at least low-tech manufactured exports (Kaplinsky, 2004: 2, using UNIDO data).

Developing countries appear to be narrowing the gap with advanced industrial economies in terms of selected indicators of manufacturing competitiveness. Between 1990 and 2000, the share of developing economies in world manufactured exports increased from 16.6% to 26.8%, while the share of industrialized economies decreased from 80.3% and 69.2% and the transition economies grew from 3.1% to 4%. Figures on the technological structure of manufactured exports show that the "high tech" portion of total manufactured exports for developing economies nearly doubled from 17.4% to 33.7% between 1990 and 2000, while the increase for industrialized countries during this decade was more modest, from 23.2% to 41.7%. Nearly 42% of East Asia's manufactured exports were in the high-tech category in 2000, and almost one-third of Mexico's exports fell into this same category (UNIDO, forthcoming).

The problem with these aggregate trade statistics is that we have no way of knowing the degree to which developing economies are only carrying out the labor-intensive and low-technology processes *within* these high tech industries. The global value chain approach allows us to conceptually distinguish between high-value and low-value activities, and the evidence for vertical specialization derived from value chain case studies would lead us to expect that firms in developing economies carry out lower value added activities than would companies in the advanced industrial categories. However, the only way to test these hypotheses directly is to link more precise employment or plant-level data with disaggregated trade statistics, the way Kletzer (2004) and Bernard, Jensen, and Schott (2004) have done. Obviously, most developing countries do not collect the data that would make such analysis possible.

Highlighting the development dilemmas wrought by globalization, Kaplinsky (2004) provides evidence that despite the wide diffusion of productive capabilities to developing countries in the last several decades, the growing importance of global buyers has squeezed both profit margins and incomes for developing country producers. As a result of these pressures, the price of manufactured exports began to decline in the 1990s. Not only have the prices of manufactured exports from developing countries as a group fallen relative to the prices for developed country exports between 1988 and 2001, but the likelihood for prices of manufactured exports to fall is greater the lower the income group of the countries, and the lower the technology content of the products being considered (Kaplinsky, 2004: 15). Thus, the “gains from globalization” are clearly not being spread uniformly to all developing economies.<sup>10</sup>

### **Challenges for the Workshop**

In his keynote address to the 2004 Sloan Industry Studies Annual Meeting, held in Atlanta, Georgia in April, Nobel laureate economist Robert Solow issued a challenge to the Industry Centers community, and by extension to all fieldwork-based industry researchers: to work together to leverage their deep expertise in specific industries in order to come up with an overarching global-scale view of the trajectory of contemporary industrial development, and to use this vision to generate a shared conceptual framework. If such a framework were hammered out, it could, in turn, help to develop new methodologies for use by researchers from a wide variety of disciplines in order to get at some of the complex sets of questions surrounding globalization’s impact on employment, competition, innovation, and economic development. This is a tall order, but this workshop can be seen as a small but significant step in getting this process of assessment, comparison, generalization, and methodological innovation underway.

The questions we hope to address in this workshop include the following:

1. Are there trends in production and employment that cut across many global industries?
2. Is there a common conceptual framework that can help to explain these trends?

---

<sup>10</sup> In their insightful comparative case study of Kenyan export horticulture and the Tamil Nadu textile industry in India, Dolan and Tewari (2001) show that the dominant role of global buyers in the two industries has had both positive and negative effects on industrial upgrading and local development. Thus, our conclusions need to recognize the complexity of case-and-effect relationships in specific cases, as well as the importance of timing, path dependence, and intervening institutional factors.

3. Is there a common set of methodological tools that we can develop to move our research forward?
4. What kinds of collaboration will be needed to leverage the insights gained through field research to help guide the questions being asked and methodological approaches being pursued by economists carrying out longitudinal and cross-sectoral studies of the impact of global outsourcing on employment, and vice-versa?
5. What kind of data resources and surveys would be needed to support these new research methodologies?

## References

- Asian Development Bank. 2004. *Asian Development Outlook 2004*. Manila: Asian Development Bank.
- Bernard, Andrew B., J. Bradford Jensen, and Peter K. Schott. 2004. "Survival of the Best Fit: Exposure to Low-Wage Countries and the (Uneven) Growth to U.S. Manufacturing Plants." *Journal of Economic Literature* (forthcoming).
- Blackwell, Ronald. 1997. "Globalization and the American Labor Movement." Pp. 94-105 in *Audacious Democracy: Labor, Intellectuals, and the Social Reconstruction of America*, (eds.) Steven Fraser and Joshua B. Freeman. Boston: Houghton Mifflin.
- Chandler, Alfred D., Jr. 1977. *The Visible Hand: the Managerial Revolution in American Business*. Cambridge, MA: Belknap/Harvard University Press.
- Dedrick, Jason, and Kenneth L. Kraemer. 1998. *Asia's Computer Challenge: Threat or Opportunity for the United States and the World?* Oxford: Oxford University Press.
- Dicken, Peter. 2003. *Global Shift: Reshaping the Global Economic Map in the 21<sup>st</sup> Century*, 4th edition. London: Sage.
- Dolan, Catherine, and John Humphrey. 2000. "Governance and Trade in Fresh Vegetables: The Impact of UK Supermarkets on the African Horticulture Industry," *Journal of Development Studies* 37 (2): 147-176.
- \_\_\_\_\_. Forthcoming. "Changing Governance Patterns in the Trade in Fresh Vegetables between Africa and the United Kingdom." *Environment and Planning A*.
- Dolan, Catherine S., and Meenu Tewari. 2001. "From What We Wear to What We Eat: Upgrading in Global Value Chains." *IDS Bulletin* 32, 3 (July): 94-104.
- Dossani, Rafiq and Martin Kenney. 2004. "The Next Wave of Globalization? Exploring the Relocation of Service provision to India." Paper submitted for the *Globalization, Employment, and Economic Development Workshop*, Sloan Workshop Series in Industry Studies. Rockport, Massachusetts, June 14-16.
- Engardio, Peter, Aaron Bernstein, and Manjeet Kripalani. 2003. "Is Your Job Next?" *Business Week*, February 3, pp. 50-60.
- Gereffi, Gary. 1994. "The Organization of Buyer-Driven Global Commodity Chains: How U.S. Retailers Shape Overseas Production Networks." Pp. 95-122 in *Commodity Chains and Global Capitalism*, (eds.) Gary Gereffi and Miguel Korzeniewicz. Westport, CT: Praeger.
- Gereffi, Gary, and Raphael Kaplinsky (eds.). 2001. *The Value of Value Chains: Spreading the Gains from Globalisation*. Special issue of the *IDS Bulletin*, vol. 32, no. 3.
- Gereffi, Gary, and Olga Memodovic. 2003. "The Global Apparel Value Chain: What Prospects for Upgrading by Developing Countries?" Vienna, UNIDO: Strategic Research and Economy Branch. <[http://www.soc.duke.edu/~ggere/web/UNIDO-Global%20Apparel\\_2003.pdf](http://www.soc.duke.edu/~ggere/web/UNIDO-Global%20Apparel_2003.pdf)>
- Gereffi, Gary, John Humphrey, and Timothy Sturgeon. Forthcoming. "The Governance of Global Value Chains." *Review of International Political Economy*.

- Hamilton, Gary, Robert Feenstra, and Misha Petrovic. 2004. "Demand Responsiveness and the Emergence of Capitalism in East Asia: A Reassessment of the 'Asian Miracle'." Paper submitted to the *Globalization, Employment, and Economic Development Workshop*, Sloan Workshop Series in Industry Studies. Rockport, Massachusetts, June 14-16.
- Hira, Ron. 2004. "Implications of Offshore Outsourcing." Paper submitted for the *Globalization, Employment, and Economic Development Workshop*, Sloan Workshop Series in Industry Studies. Rockport, Massachusetts, June 14-16.
- Kahn, Sayeeda. 2003. "Bangladesh Braces for Trade Law Changes." *Verité Monitor*, Issue 7 (Spring/Summer): 9-10.
- Kaplinsky, Raphael. 2000. "Globalisation and Unequalisation: What Can Be Learned from Value Chain Analysis?" *Journal of Development Studies* 37, 2: 117-46.
- \_\_\_\_\_. 2001. "Is Globalization All It Is Cracked Up to Be?" *Review of International Political Economy* 8, 1: 45-65.
- \_\_\_\_\_. 2004. "How Does It All Add Up? Caught Between a Rock and a Hard Place." Paper submitted for the *Globalization, Employment, and Economic Development Workshop*, Sloan Workshop Series in Industry Studies. Rockport, Massachusetts, June 14-16.
- Karamouzis, Frances. 2003. "A Look at India for Offshore Sourcing Options." Gartner Research, AV-18-8057, July 29.
- Kletzer, Lori G. 2001. *Job Loss from Imports: Measuring the Costs*. Washington, DC: Institute for International Economics.
- \_\_\_\_\_. 2004. "Trade-related Job Loss and Wage Insurance: A Synthetic Review." Paper submitted for the *Globalization, Employment, and Economic Development Workshop*, Sloan Workshop Series in Industry Studies. Rockport, Massachusetts, June 14-16.
- Lazonick, William, Michael Fiddy, and Steven Quimby. 2002. "'Grow Your Own' in the New Economy? Skill Formation Challenges in the New England Optical Networking Industry." In R. Forrant and J. Pyle (eds.), *Globalization, Universities, and Sustainable Development*. London: Elgar.
- McKendrick, David G., Richard F. Doner, and Stephan Haggard. 2000. *From Silicon Valley to Singapore: Location and Competitive Advantage in the Hard Disk Drive Industry*. Stanford, CA: Stanford University Press.
- Milberg, William. 2003. "The Changing Structure of Trade Linked to Global Production Systems: What Are the Policy Implications?" Paper prepared for the World Commission on the Social Dimension of Globalization, International Labor Organization, Geneva. April.
- Pink, Daniel H. 2004. "The New Face of the Silicon Age: How India Became the Capital of the Computing Revolution." *Wired Magazine*, Issue 12.02, February, pp. 1-14.
- Porter, Michael. 1998. "Clusters and the New Economics of Competition." *Harvard Business Review*, Nov/Dec.
- Prahalad, C.K., and Gary Hamel. 1990. "The Core Competence of the Corporation." *Harvard Business Review*. May-June (3): 79-91.

- Quimby, Steven. 2003. "Labor Force Blueprint." Merrimack Valley Investment Board. Lawrence, MA.
- Rai, Saritha. 2004. "Indian Services Giant Hits \$1 Billion in Annual Sales." *New York Times*, April 14.
- Rawski, Thomas 2004. "Recent Development in China's Labour Economy." Paper submitted to the *Globalization, Employment, and Economic Development Workshop*, Sloan Workshop Series in Industry Studies. Rockport, Massachusetts, June 14-16.
- Reardon, Thomas, and J. A. Berdegúe. 2002. "The Rapid Rise of Supermarkets in Latin America: Challenges and Opportunities for Development." *Development Policy Review* 20, 4: 371-88.
- Reich, Robert. 1991. *The Work of Nations: Preparing Ourselves for 21st Century Capitalism*. New York: Knopf.
- Roach, Stephen S. 2003. "Outsourcing, Protectionism, and the Global Labor Arbitrage." Morgan Stanley Equity Research, Special Economic Study, November 11, pp. 1-14.
- Sturgeon, Timothy. 2002. "Modular Production Networks. A New American Model of Industrial Organization." *Industrial and Corporate Change* 11, 3: 451-496.
- Sturgeon, Timothy and Richard Florida. 2000. "Globalization and Jobs in the Motor Vehicle Industry." Report to the A.P. Sloan Foundation, posted as MIT IPC Working Paper 01-002 at <http://web.mit.edu/ipc/www/publications.html>.
- \_\_\_\_\_. 2004. "Globalization, Deverticalization, and Employment in the Motor Vehicle Industry." Pp. 52-81 in *Locating Global Advantage; Industry Dynamics in a Globalizing Economy*, (eds.) Martin Kenny with Richard Florida. Stanford, CA: Stanford University Press.
- Sturgeon, Timothy and Richard Lester. 2004. "The New Global Supply-base: New Challenges for Local Suppliers in East Asia." In *Global Production Networking and Technological Change in East Asia*, (eds.) Shahid Yusuf, Anjum Altaf and Kaoru Nabeshima. Oxford University Press.
- The Economist*. 2004a. "The New Jobs Migration." February 21, p. 11.
- The Economist*. 2004b. "The Great Hollowing-out Myth." February 21, pp. 27-29.
- UNCTAD (United Nations Conference on Trade and Development. 2002). *Trade and Development Report, 2002*. Geneva: UNCTAD.
- UNIDO (United Nations Industrial Development Organization). Forthcoming. *Industrial Development Report 2004/2005*. Vienna: UNIDO.
- USITC (United States International Trade Commission). 2002. *Shifts in U.S. Merchandise Trade 2001*, Appendix C. Washington, DC: USITC.
- \_\_\_\_\_. 2004. *Textiles and Apparel: Assessment of the Competitiveness of Certain Foreign Suppliers to the U.S. Market*. USITC Publication 3671, January.
- Waldman, Amy. 2004. "India Takes Economic Spotlight, and Critics Are Unkind." [nytimes.com](http://nytimes.com), March 7.

Weil, David. 2004. "Improving Standards in the Apparel Industry: Can Government Make a Difference?" Paper presented at the Annual Meeting of the Sloan Industry Studies Centers, April 20.

Williamson, Oliver. 1975. *Markets and Hierarchies*. New York: The Free Press.

\_\_\_\_\_. 1985. *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*. London: Macmillan.

*Women's Wear Daily*. 2003. "Raising Quota Questions." May 20.