

Toward Rural-Based Development in East Asia under Globalization

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In common with other developing regions, the current wave of globalization in East Asia has been associated with a concentration of economic activities in megalopolises. The price paid for the benefit of the agglomeration economies resulting from this urban concentration has been formidable congestion and pollution. Income inequality has also increased. Migrants, who typically find initial employment in the urban informal sector, generally receive wages that are much lower than those of workers employed in the formal sector, where labor is protected by labor codes and unions. The widening income disparities have been a major source of social and political instability, as epitomized by higher crime rates and the greater frequency of riots.

A popular perception prevails that identifies these trends as an inevitable consequence of the integration of developing economies with the world economy as globalization progresses. However, globalization, which is characterized by the freer movement of goods and services across national borders, does not necessarily cause urban concentration and rural marginalization. Many industrial activities, especially labor-intensive manufactures such as cloth, garments, and standard electronic parts, which are characterized by weak economies of scale and modest transportation costs, need not be located in megalopolises.

Still, if these activities are to be located in the hinterland, there must be domestic trade networks linking foreign demand and rural producers. In the absence of such networks, the emerging demand for labor-intensive manufactures in developing economies tends to be met exclusively by factories located in metropolises, to which labor has migrated from the hinterland. However, cottage industries might be stimulated in rural areas, where the manufacturing costs are lower. This perspective is clearly supported by the experience of rural-based industrialization in Meiji Japan (1868–1912) and the striking success of balanced rural-urban growth in Taiwan, China, after World War II.

This essay aims to illustrate the critical role of the domestic trade network in supporting agricultural and industrial production in East Asia's hinterlands in response to rising global demand. The essay also discusses the ways and means to foster such networks.

The following section describes the unique nature of urbanization and industrialization in developing economies under the current wave of industrialization through a review of history and theory. The importance of the development of community-based trade networks to link rural producers with global markets is illustrated in the subsequent section with respect to industrial commodities and, in the section thereafter, with respect to agricultural commodities. Finally, policies that support these trade networks are discussed in the last section.

The megalopolis-centered system: theory and history

In this essay, the term megalopolis-centered system is used to characterize the economic system in developing economies in the modern era. In this system, economic, political, and cultural activities and resources are disproportionately concentrated in the primate cities and surrounding areas that constitute megalopolises. The megalopolis complex, typically only one in each economy (such as Bangkok in Thailand or Manila in the Philippines) or in each major region of larger economies (such as Shanghai in the lower Yangtze area of China), dominates the

economy by occupying on the order of 10 percent of the total population and 20 to 40 percent of the total gross domestic product.

How has this system been created?

The colonial legacy

The belief that globalization is a major force underlying the megalopolis-centered system through urban concentration and rural marginalization is widespread. It appears to have evolved out of a neo-Marxian perspective whereby global capitalism seeks to marginalize developing economies at the expense of advanced capitalist economies (Furtado 1963; Frank 1967; Baran 1957). In this perspective, free trade and foreign direct investment destroy indigenous industries, forcing rural people to specialize in primary commodity production at a mere subsistence level, while primate cities prosper as commercial and financial centers to support the business of shipping out primary commodities to advanced economies and distributing the industrial commodities imported from advanced economies. In this way, the global integration of developing economies gives rise to the dominance of primate cities in these economic systems.

This explanation of the role of globalization in creating the megalopolis fits well with the situation in developing economies under colonialism in the late 19th and early 20th centuries. When colonial powers imposed the free trade system on tropical economies, these economies were forced to specialize in the production of primary commodities (Bairoch 1975). Competition from industrial commodities imported from the West, which had already completed the industrial revolution, typically destroyed indigenous manufacturing among farm households and among cottage industries for the local consumption of home-produced goods (Hymer and Resnick 1969; Resnick 1970). Rural labor sought alternative employment on plantations and in mines geared to creating exports to industrialized economies. Colonial governments took various measures to enhance this process. They allocated available virgin land for the exclusive use of colonial planters, often even permitting the enclosure of the commons recognized among native communities so that they could be turned into plantations. Publicly funded agricultural research concentrated on cash crops grown on plantations to the neglect of subsistence food crops. Investments in infrastructure such as ports, roads, and railways were directed at facilitating the transport of cash crops and minerals for export. Native peasants shouldered a significant share of the cost of building infrastructure through various taxes and levies such as land and poll taxes. This taxation forced cashless peasants to seek wage employment, thereby expanding the supply of labor to colonial enclaves. All these policies increased the comparative advantage of cash crops and minerals over subsistence crops and domestically manufactured commodities (Myint 1965; Lewis 1970).

This process produced large port cities, typically one in each colony, linking domestic economies with international markets not only for trade, but also for financial and other services. These cities were usually sites of colonial administration and strong agglomeration economies. All private and public services were networked, and there were close connections between private firms and government offices. Because of the influx of colonial government officials, traders, shippers, and financiers, plus a large number of native employees and a swarm of coolies, the colonial primate city grew to a size incomparably larger than precolonial towns. Such a primate city gained a dominating role in each of the colonial economies. The megalopolis-centered system is thus a legacy of colonialism.

The impact of import substitution

After World War II, newly independent nations almost unanimously made industrialization a top priority. To counter the de-industrialization effect of free trade under colonialism, these nations commonly adopted the so-called import-substitution industrialization strategy. The strategy advocated the use of tariffs and quotas to reduce the competition from imports, thereby protecting large-scale modern industries at home. However, the tariffs and quotas raised the domestic prices of goods produced by such industries. Meanwhile, the same industries were given import quotas for the capital and intermediate goods they needed, which could be bought at low prices because of the overvaluation of the government-controlled foreign exchange rate. The victims of this strategy were consumers, but also unprotected industries, which were obliged to sell their products at lower prices and buy their inputs at elevated cost. Agriculture and small- and medium-scale industries suffered especially (Little, Scitovsky, and Scott 1970). For example, when large-scale synthetic fiber industries were protected, the high yarn prices that resulted damaged downstream textile-processing industries, which were usually run by small and medium enterprises using labor-intensive technologies. Note that weaving and garment making are among the industries most suitable for rural households and cottage industries. The protection of chemical fertilizers had the same negative effect on farmers. Thus, the scope for rural-based development was narrowed under import-substitution industrialization, which fostered the growth of industries supplied by large urban-based factories. Ironically, though intended to break the colonial economic system, the strategy strengthened it instead.

The nature of the second wave of globalization

The first wave of globalization in the 19th century under colonialism set the stage for the megalopolis-centered system to emerge through the de-industrialization of developing economies. Yet, this system was not counteracted, but strengthened through industrialization under the autarky-oriented import-substitution regime. In terms of chronological history, globalization may therefore appear to have promoted megalopolis-centered urbanization. Nonetheless, curbing globalization alone is unlikely to be effective in stopping urban concentration. If policies are to promote more balanced and equitable growth in the rural and urban sectors, they must be grounded on an understanding of the difference between the current wave of globalization and the earlier wave.

The first wave of globalization in the 19th century was generated by the rise of industrial power in Western nations, which resulted in the de-industrialization of developing economies under the dictate of comparative advantage (Baldwin and Martin 1999). In contrast, the second wave, currently in progress, has been characterized by the shift of comparative advantage in advanced economies from the industrial production of standardized commodities to the production of services, especially new knowledge and information. Under the present structure of comparative advantage, the integration of domestic with international markets is stimulating the growth of manufacturing activities in developing economies, unlike the first wave of globalization. In fact, East Asia is the region that has best exploited the industrialization opportunity created by the second wave.

In applying strategic trade theory to economic geography, Krugman (1991) assumed that the concentration of industrial activities in urban centers would generate strong, increasing returns to industrial production at significant costs in transportation. Rural areas were expected to

specialize in agricultural production, which would be characterized by constant returns. This assumption is flawed to the extent that Krugman's dichotomy between agriculture and industry with respect to economies of scale lacks empirical validity.

Indeed, strong evidence exists for the absence of economies of scale in agriculture in developing economies, though agriculture in developed economies is generally characterized by increasing returns (Hayami 1996; Hayami and Ruttan 1985). However, many industrial commodities, especially among labor-intensive manufactures such as cloth, garments, and standard electronic parts, are characterized by narrow ranges of increasing returns and modest transportation costs. Moreover, the share of commodities with weak economies of scale has been rising because global demand has been shifting from standardized products to differentiated products with shorter product cycles (Piore and Sabel 1984; Feenstra 1998). Indeed, the enormous expansion in the production of industrial commodities of this nature, that is, industrial commodities that represent a major link in the global value chain or commodity chain, is considered by some to underlie the East Asian economic miracle (Gereffi 1999; Tewari 2005). There is no reason to doubt the possibility that the hinterlands are able to produce such industrial commodities at lower cost than megalopolises to the extent that there are rural-urban differentials in the cost of labor and land.

Even for commodities characterized by strong increasing returns and high transportation costs, such as automobiles, the greater integration with external markets may induce industrial entrepreneurs to shift their production base to rural areas closer to export markets, such as to the border with the United States in the case of Mexico, as Krugman himself recognizes (Krugman and Elizondo 1966). Evidence for the existence of a tendency for trade liberalization to reduce urban concentration has been found in a cross-country study by Ales and Glaeser (1995).

Even if the integration of a domestic market with the international market stimulates the growth of industrial activities, there must be a domestic trade network linking foreign demand and rural producers if a significant share of these activities are to be located in the hinterland far from the trade entrepôt. A domestic trade network is vitally important in mobilizing a large number of peasant farmers for the production of labor-intensive, high-value agricultural commodities such as fresh fruits, vegetables, and flowers, for which international demand has been rising sharply.

The community-based trade network for rural industrialization

Trade liberalization, coupled with domestic deregulation, has greatly facilitated the effective use of the abundant labor in developing economies in response to the rising demand in high-income countries for labor-intensive products. However, these manufactures have been located disproportionately in major cities and their outskirts, such as Bangkok, Jakarta, and Manila.

This is different from the experience in Japan during the Meiji era (1868–1912) and in Taiwan, China, after World War II, when rural towns and villages were being developed as production sites for labor-intensive industrial and agricultural commodities (Ho 1982; Ranis and Stewart 1993). It was the domestic trade network of large numbers of small traders and processors tied together by community relationships that enabled the mobilization of labor in the hinterland for rural-based production geared for international markets.¹

In Meiji Japan, if an urban trader received a large order of cotton or silk cloth for export, for example, he usually entered into contracts with local collectors in rural areas to assemble the

needed amounts from many small weavers living in their native villages. To meet the demand, the trader had to put together a large bulk of commodities by a specified delivery date. The commodities had to meet a quality standard specified by the foreign buyer. If his collectors violated the contracts by mistake or opportunism, the export trader might have been obliged to pay a large cash penalty, and he would lose face among foreign customers. Thus, he normally endeavored to establish a relationship of mutual trust with collectors through repeated dealings over time, while interlinking commodity trades with credit and other transactions.

The same applied to local collectors in relation to cottage weavers operating in rural villages and towns. Typically, a local collector developed contracts with weavers by providing yarn in advance and collecting cloth at a prescribed piece rate. Relatives, friends, and neighbors were preferred in the selection of contracting partners. Long-term, repeated contracts were offered so as to discourage opportunistic behavior, such as the embezzlement of yarn by weaving cloth at lower density than contracted. Opportunism was suppressed because of the expectation that contract violations would be punished socially through damage to reputations and ostracism within the small rural community. Once community sanction reduced opportunism, small-scale, family-based rural enterprises became more efficient than large factories under hierarchical management. This was so because of the advantage of the family firm in monitoring low-cost labor in the case of labor-intensive industries characterized by weak economies of scale. It was on the basis of such community-based trade networks that industrial activities spread widely throughout rural areas in Meiji Japan (Smith 1988; Itoh and Tanimoto 1998; Tanimoto 1998).

Contrary to the assumption of Krugman (1991), it is not the physical cost of transportation that makes the location of industries near the urban center advantageous, but the high transaction costs involved in enforcing contracts at the various stages of domestic trading from rural producers to urban exporters. It is not practical to rely on legal procedures for contract enforcement, since the costs of formal court procedures often exceed the expected gains from dispute settlement over the small transactions typical of rural entrepreneurs. Thus, rural-based industrialization in Japan critically depended on the successful use of the community mechanism to correct the agency problem stemming from information asymmetry.

Meanwhile, the wide dispersion of industrial activities to rural areas through community-based trade networks has already progressed in developing Asia, but, so far, it has not extended much beyond the outskirts of metropolises, unlike in the case of Japan (Hayami 1998). It may be argued that decentralized production systems such as the system of putting contracts out among small rural producers is only effective at a primitive stage of industrial production, but is not adequate at a more advanced stage. Indeed, a popular assumption based on the historical experience in Europe is that a system for outsourcing contracts is a premodern form of industrial organization. Though it was effective in promoting protoindustrialization before the industrial revolution, it was bound to fail in the modern era because it could be replaced by the modern factory system based on teams of hired wage laborers working together under the supervision of managers and foremen (Landes 1969; Pollard 1965). The factory system has the advantage of being able to mass-produce standardized goods with large-scale machinery so as to meet the demand of large national and international markets.

In Japan, however, there is evidence to indicate that the outsourcing system became more common after the beginning of modern economic growth with the nation's opening to international trade in the late 19th century. A case study in Saitama Prefecture shows that, before the Meiji Restoration (1868), farmers would weave cloth from yarn spun from their own harvested cotton and sell their products in cash to guild merchants in towns. The opening of

international trade and subsequent national unification brought large increases in demand for striped cotton cloth and major declines in the price of cotton yarn imported from abroad. This opportunity was exploited by rural traders outside the guild system who organized outsourcing contracts to lease looms and provide stocks of yarn to women weavers in farm households (Kandachi 1975; Tanimoto 1998). The enforcement of the contracts of the rural traders not only with these cottage weavers, but also with large wholesalers who shipped the cloth to distant markets critically depended on the strong community ties characteristic of rural Japan (Itoh and Tanimoto 1998). This example seems to indicate that the outsourcing system may be an efficient mechanism for meeting dynamic demand expansion by mobilizing labor at a low opportunity cost and a low supervisory cost since community relationships can be relied upon as the basis of contract enforcement. Indeed, this system served as a major instrument in organizing industrial production in the early stages of Japan's modern economic growth. Without a similar mechanism, the wide diffusion of industrial activities in rural areas through subcontract arrangements would not have been possible in Taiwan either (Amsden 1991; Gereffi and Pan 1994).

An important point is that the traditional outsourcing system organized by local traders was eventually transformed into the modern subcontracting system that is a mainstay of industrial strength in Japan. Although the scale of the establishments became larger among the contract agents and although household production gave way to factory production, the outsourcing system in its original form is still commonly practiced in the textile industry in Japan, similar to the case in Taiwan (Ho 1982). Today, the system is used by large chemical-fiber manufacturers and large trading houses based in metropolises as an instrument for the organization of small- and medium-scale enterprises in local industrial clusters so as to meet national and international demand. Large chemical companies still prefer to contract out weaving, dyeing, and garment-making activities rather than vertically integrating these downstream activities with fiber production. This is so partly because of the cheaper labor, but more because of the low cost of supervision, the strong work incentives available to management, and the flexibility created in employment and staffing (Itoh and Urata 1994).

In Japan today, the outsourcing system for processing chemical textiles is only one of many variations of the subcontracting system practiced in high-technology industries. The relationship between automobile producers and parts suppliers is well known. Their transactions are not only long term, but also multistranded, including technical guidance and credit guarantees. The subcontractors try to observe product-quality and delivery requirements. The assembler also tries to guarantee the appropriate treatment of subcontractors to maintain supply. Because the mutual trust thus created eliminates the danger of delays in the production chain, the subcontractors do not hesitate to invest heavily in the formation of specific skills and equipment consistent with the demands of the final producers. This establishment of an artificial community relationship is said to underlie the competitive strength of the Japanese automobile industry (Asanuma 1985; Abegglen and Stalk 1985; Fujimoto 1999).

It is interesting to note that Kiichiro Toyota, the founder of the Toyota Motor Company, intended to build a "pastoral factory" in Koromo City (today's Toyota City), a typical rural town with few industrial activities when he began automobile production in the 1930s. Toyota's idea was not only to locate the factory in a pastoral environment with cheap land and labor, but also to surround it with trustworthy parts suppliers connected by a community spirit. Toyota initially tried to contract with manufacturers who were receptive to Toyota's guidance even if they had no previous experience in precise, sophisticated metal processing (Wada 1998). It appears that Toyota's idea originated from his experience as a supplier of automatic looms for rural-based

weavers. His idea has borne fruit today as Toyota's highly efficient, modern subcontracting system known as *kanban*, the just-in-time system.

It is important to remember that the community-based contract enforcement mechanism in the subcontracting system in Japan today, as well as in the outsourcing system in the Meiji era, is not a mere remnant of a premodern agrarian society. Instead, it is an institutional innovation created by modern entrepreneurs in response to modern needs. They have installed community relationships in their business organizations to make these organizations consistent with social norms ingrained in the minds of people, thereby lowering the cost of contract enforcement. From this experience, entrepreneurs in the high-performing East Asia of today may learn a lesson on the opportunity for improving production and trade organizations through the exploitation of their own cultural endowments.

Mobilizing farm producers for global markets

Another issue of importance in promoting balanced rural-urban growth in a context of globalization is the forging of adequate links between farmers in the hinterland and the emerging international demand for agricultural products.

The traditional marketing system for peasant crops such as rice and corn is characterized by a relatively loose network of traders at various levels. Typically, the system consists of a hierarchy composed of a large number of self-employed agents and small traders specializing in the collection of minute marketable surpluses from peasants in villages (perhaps one might call these small traders village collectors) and larger traders in towns who engage in local retailing and in transshipment (one might call them town traders). The town traders gradually accumulate surpluses in the commodities supplied by the village collectors. These surpluses are left over after the needs of local retailing have been met. When these surpluses are sufficiently large, they are shipped to urban markets. Received as cargos by urban wholesalers, the rural surpluses are distributed to retailers or shipped on to other domestic markets or abroad. This system is characterized by relatively loose connections among traders. Community ties do exist at the local level and commonly involve repeated transactions; short-term credit frequently flows as advances or arrears, and buying and selling are essentially spot transactions (Dewey 1962; Davis 1973; Hayami 1999; Hayami and Kawagoe 1993).

Such a system works relatively efficiently for traditional peasant crops such as cereals and pulses, which are storable and for which product quality can easily be verified so that information asymmetry is insignificant. However, it does not appear that the system may serve as an appropriate channel to connect small family farms with wide national and international markets with respect to new, high-value commodities. The new agricultural commodities of rising global demand, such as vegetables, fruits, and flowers, are mostly perishable, and rapid delivery by producers to processing plants or directly to consumers is critical. Yet, it is not easy to assemble a large bulk of commodities adequate for marketing and processing so as to meet wide urban or foreign demand. Due to severe information asymmetry, the quality standardization of these commodities is also difficult, especially in the case of products that may be certified organic because the cultivation has involved little or no use of chemicals. For this purpose, farm-level production from planting to harvesting must be much more closely coordinated with the needs of marketing and processing than is the case in the prototype peasant marketing system. In that prototype system, decentralized decisions and production plans, including the choice of crop varieties and cultivation methods, are left to the individual farm producers.

The plantation system

A traditional approach to achieving sufficient coordination between farm production and processing and marketing for the delivery of tropical agricultural products to international markets is vertical integration into plantations (Hayami 1996, 2002). A typical example is the case of black tea. The manufacturing of black tea at a standardized quality for export requires a modern fermentation plant into which fresh leaves must be fed within a few hours of plucking. The need for close coordination between farm production and large-scale processing underlies the traditional use of the plantation system for black tea manufacture. Unfermented green tea, in contrast, is still predominantly produced on family farms in China and Japan. Another example is the production of bananas for export. In this case, the harvested fruit must be packed, sent to the wharf, and loaded on a refrigerated boat within a day. A boatful of bananas that can meet the quality standards of foreign buyers must be collected within a few days. The whole production process, from planting to harvesting, must therefore be precisely controlled so as to meet the shipment schedule. Thus, the plantation system has a decisive advantage in the production of bananas for export. However, this is not so for the production of bananas for domestic consumption. These bananas are usually produced on family farms.

The large plantation based on hired wage labor working under centralized management was an efficient organization in the effort to open new lands for export crop production. This was so because of the system's ability to erect the necessary infrastructure such as roads and harbors. However, after the land had been opened and the infrastructure had been built, the plantation system became increasingly more inefficient relative to the peasant system because of the high cost of supervising hired wage labor. Peasants who rely on family labor require no supervision. Because of the high cost of supervision in spatially dispersed and ecologically diverse farm operations, plantations usually practice monoculture. Intercropping and crop rotation are complicated and difficult to manage through a command system, implying that both labor input and income per hectare are lower on plantations. The strong bent of plantations toward mechanization further reduces the labor-holding capacity of the hinterland.

Contract farming

The approach that has recently been advocated as a substitute for the plantation system is the contract-farming or core-satellite system in which an agribusiness enterprise or a cooperative manages processing and marketing and contracts with small growers to guarantee supplies of farm-produced raw materials (Goldsmith 1985). The contract may include stipulations on the quantities of the material to be supplied and on delivery deadlines, but also on prices, credit, and technical extension services. In this way, the advantage of the agribusiness in large-scale processing and marketing and the advantage of the peasant system in farm-level production may be combined. As a system for coordinating activities among economic agents, contract farming is a variation on the subcontracting system. In fact, if the contract used in contract farming includes a stipulation that a principal organizer should provide inputs such as fertilizer to farmer-agents in advance as credit in kind, the system has exactly the same structure as the outsourcing system.

Contract farming has recorded significant successes, notably, in pineapple processing by multinational agribusinesses in Thailand. Because of the system, Thailand has become the top

exporter of pineapple products in the world, surpassing the Philippines, where production is based on the plantation system. However, many failures have also been reported (Siamwalla 1992; Jaffee and Morton 1995). The failures have usually stemmed from the difficulty faced by agribusinesses or cooperative management in enforcing contracts with a large number of smallholders in terms of the quantity and quality of their output and the amount of delivery time to processing plants and marketing centers. The moral hazard on the side of farmer-agents often involves opportunistic behavior by agribusiness principals. For example, an agribusiness principal might initially offer a high price to induce agents to specialize in the production of a certain crop under contract and then later breach the price agreement once the agents have specialized (Glover 1987; Singh 2002). Thus, similar to the case of subcontracting systems in manufacturing, the success of contract farming critically depends on the establishment of mutual trust between agents and principals, possibly by exploiting the community relationships prevailing in Asian villages.

The case of vegetable marketing in Java

The case of the informal contract-farming system may be illustrated by my own field study of commercial vegetable marketing in an upland village in Java, Indonesia (Hayami and Kawagoe 1993, chap. 4). The village is located on a hilly plateau near the border between West Java and Central Java, about 300 kilometers east of Jakarta. Typical of upland villages, this village used to possess only meager endowments in land and, hence, low incomes relative to lowland villages endowed with irrigated rice lands. The average farm size was only 0.4 hectares, half of which was under tenancy. Farmers traditionally staked out bare subsistence by using the mixed cropping of upland crops, such as corn, soybeans, and upland rice.

Within about five years beginning in the mid-1980s, the village economy underwent a major change because of the successful introduction of commercial vegetable production mainly geared for metropolitan markets. With this innovation, the average farm income per hectare increased by as much as eight times, surpassing the income level of irrigated rice farming in lowland areas. The relatively cool elevated environment in the study village and its surroundings is suitable for vegetable production. In the 1980s, the rapidly rising urban demand for fresh vegetables in the wake of the success of labor-intensive industrialization in Indonesia based on liberalization in trade and foreign direct investment began to spill over to this hinterland. However, the opportunity this represented for marginal farmers could not have opened up in the absence of a new marketing system for the delivery of large bulks of perishable products to the Jakarta metropolis 300 kilometers away.

The vital consideration in marketing vegetables to distant urban areas is the need to minimize the time required for delivery from producers to consumers. If an entrepreneur is to organize the long-distance shipments efficiently, he must assemble full truckloads of vegetables. For example, if a truck is carrying only a half load, the unit transportation cost will double with respect to a full load. But, in the case of fresh vegetables, unlike the case of storable commodities, the shipper cannot wait until the full truckload is assembled unless the assembly process is speedy. For this reason, marketing must be tightly coordinated with the production and harvesting process.

The organizers of the long-distant shipment of vegetables in the case of the village under study are called intervillage collectors. They assemble vegetables through smaller collectors called village collectors. A typical intervillage collector in the study village was a landowner

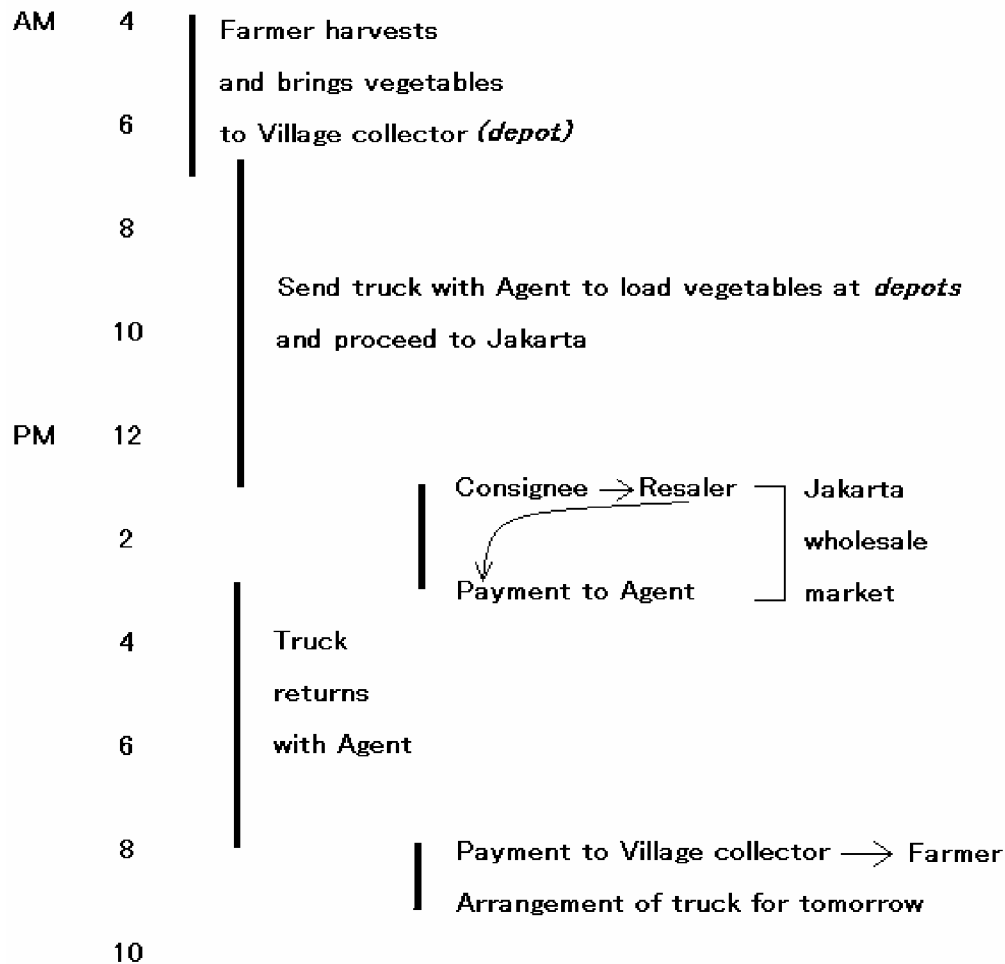
with about 5 hectares of farmland (which is quite large as a holding in Java). He would contract with some 20 village collectors to assemble vegetables from the village and its surroundings for shipment, mainly to markets in Jakarta.

His daily operations are illustrated in figure 5.1. In the early morning, farmers harvest vegetables and deliver them to the homes of village collectors, which are commonly called depots. Then, the intervillage collector sends chartered trucks, each with one of his agents, to go around the depots to load up the assembled vegetables. As soon as a truck becomes fully loaded, it immediately proceeds to Jakarta. In about five hours, the truck reaches one of the two major wholesale markets in Jakarta. The cargo is delivered to a consignee, who sells vegetables by the sack to resellers. Although formal auctions are not practiced, each operation is a *de facto* auction because many resellers gather together to buy in competition. The resellers bring their purchases to their stalls within the market and sort out vegetables by grade for sale to retailers, such as grocery shopkeepers and peddlers. As soon as the intervillage collector's agent receives sales proceeds from the consignee, the truck returns to the village. After receiving the money from the agent, the intervillage collector goes around among his village collectors to pay them for the vegetables they collected in the morning. Each receives the rightful share of the sales proceeds taken in Jakarta, less the commission of the intervillage collector. On this occasion, the intervillage collector also seeks to obtain estimates from the village collectors on the amounts of vegetables they can assemble the next morning. He then charters the appropriate trucks from various sources for the next day's operation.

This is a tightly scheduled operation designed for the quick delivery of perishable commodities to metropolitan consumers with a minimum loss in value. For this marketing system to be viable, the intervillage collector must be able to secure (1) a reliable supply from vegetable growers via village collectors and (2) the conscientious services of consignees in metropolitan wholesale markets. Let me explain the second point first. The consignee in the Jakarta markets is not a formal agent officially licensed to preside over auctions based on formal rules, unlike the case of wholesale market agents in developed economies. No official record is kept on the transactions between the consignees and their resellers. Thus, the intervillage collectors cannot check if the sales reports handed to their agents by the consignees are accurate. It is also difficult for the agents to monitor each consignee's dealings with resellers, which occur in an apparently unorganized, chaotic manner. In fact, agents and drivers usually go to lunch when the *de facto* auction is taking place.

Under such conditions, a consignee's conscientious services can only be secured on the basis of mutual trust established through regular, long-term transactions. It is easy for a consignee to cheat an intervillage collector on the sale of a single cargo. However, if a consignee underreports prices by too much and too often, the chance becomes high that his opportunism will be detected when the intervillage collector compares trade outcomes with other intervillage collectors in the same community. The consignee might thus lose the business provided not only by this particular intervillage collector, but also by others in the same circle. This would be a serious loss since the consignees live on the commissions they make from the *de facto* auction sales. In this way, the community mechanism of social opprobrium and ostracism restrains the moral hazard associated with reliance on marketing agents outside a village community, such as consignees in the markets of Jakarta. This mechanism works essentially the same as the threat of group embargo organized by Maghribi traders in North Africa during the Middle Ages to counteract the threat of the confiscation of their property by the rulers of trading posts on the Mediterranean Sea (Greif 1989, 1993).

FIGURE 5.1. Operations of an Intervillage Vegetable Collector, Upland West Java



Source: Hayami and Kawagoe 1993, chap. 4.

To sustain this mechanism, an intervillage collector must send a truckload regularly to each consignee, one per wholesale market. Furthermore, more than one truckload is necessary if the intervillage collector is to reduce his risk. As is common with perishable commodities, the price of vegetables fluctuates widely in each wholesale market, depending on variations in the amounts in the cargoes the market receives. In order to reduce the risk involved in these variations in market prices, the intervillage collector has to diversify the destinations of his cargoes. In the case of the intervillage collector under illustration, he usually sent his cargoes to four separate wholesale markets.

Similarly, the task of the intervillage collector's effort to meet the first condition, namely, to secure a reliable supply of vegetables from farmers, is difficult because the needed supply is not only large in volume, but must also be regular and predictable for the sake of accurately scheduling transportation. A device used by intervillage collectors to secure reliable supplies is to tie both village collectors and farmers to themselves through credit. The intervillage collector

advances credit to farmers through village collectors to guarantee delivery of the collected vegetables. This practice of supplying credit to cement a business relationship is also occasionally used by large wholesalers in towns in their dealings with small collectors in villages with respect to storable commodities such as corn and soybeans. However, the credits involved in the trade in these crops are short term, ranging from a few days to a few weeks, and seldom flow to the farmers. A unique aspect of vegetable marketing is that this credit practice is universal and involves long-term production credits that are supplied to farmers for two or three months. Typically, a village collector assigns vegetable growers in-kind credits in the form of fertilizer and chemicals in exchange for which the growers agree to deliver their entire harvests to him. The credit repayments of the farmers are deducted from the sales proceeds generated by the vegetables over the course of a harvest season. Village collectors receive the fertilizer and chemicals they need for these credit operations from the intervillage collector, in exchange for which they, in turn, agree to supply the intervillage collector with all the vegetables they assemble. The contracts are seasonal, but they are normally renewed regularly in subsequent seasons.

Interest is not explicitly charged on credits to farmers. Nor do collectors pay credit-receiving farmers lower prices relative to noncredit farmers. Nevertheless, the collectors are able to recover the costs of the credit by taking advantage of differential prices between collectors and farmers. For example, intervillage collectors can buy urea in large lots at Rp 185 per kilogram from fertilizer dealers in towns and allow village collectors to charge Rp 200 to farmers on credit payments because this is the price farmers would have to pay if they were buying fertilizer in small lots at village grocery stores. As illustrated in table 5.1, the average cost of current inputs provided as credit in kind would have totaled Rp 70,500 per farm according to my 1990 survey if farmers themselves were to buy locally in cash, whereas the same inputs could have been purchased by collectors at the cost of Rp 65,550. In a credit operation, collectors would charge farmers Rp 70,750 for these inputs. If the credit is paid back in two months, collectors earn, in effect, an interest rate of 3.9 percent per month. The cost of the credit to intervillage collectors, who generally own sizable land assets, would have been close to 1.5 percent per month, which was the official interest rate on collateral loans from the government bank, Bank Rakyat Indonesia. Thus, collectors may capture a large margin if they are acting as financial intermediaries, which is considered a return to their higher credit monitoring capability with respect to farmer-debtors relative to the bank's monitoring capability.

While this is a lucrative credit operation for collectors, it is also advantageous for farmers. The input cost if a farmer makes a purchase using his own cash (Rp 70,500) relative to the payment the farmer would eventually make to collectors for credit in kind (Rp 70,750) means that the effective interest rate is 0.2 percent per month. This is much lower than the interest rate the farmers would have paid if they had purchased the inputs, on credit, from fertilizer dealers (1.9 percent) or if their purchases were based on noncollateral loans from the government bank (3.8 percent), including the high transaction costs in dealing with the bank relative to the small size of the typical farmer credit. Thus, the credit contracts involved in the informal contract-farming system represent a Pareto improvement because they benefit both collectors and farmers.

The credit contract stipulates that, during one season, the farmer will sell his produce exclusively to a particular village collector at the prices offered by the latter (usually defined as the proceeds of sales at metropolitan markets, minus the cost of commissions of a certain percentage going to village and intervillage collectors). The contract does not assign the market power of a monopsonist to the collector. If the prices offered by the collector are judged too low

relative to regular market prices, the farmer can shift to another collector in the next season. The same relation holds between an intervillage collector and village collectors. Indeed, one intervillage collector who had been operating in the study site was cut off by discontented farmers and village collectors because he had developed a reputation for paying unfair prices.

TABLE 5.1. Cost of Credit to Vegetable Producers under Alternative Schemes, Majalengka District, West Java, 1990

<i>Scheme</i>	<i>Input cost per farm^a (Rp)</i>	<i>Effective interest rate^b (% per month)</i>	
		<i>Farmer</i>	<i>Collector</i>
<i>Cash purchase</i>			
Farmer (in small lots)	70,500	n.a.	n.a.
Collector (in large lots)	65,550	n.a.	n.a.
<i>Credit purchase</i>			
Collector's trade credit	70,750	0.2 (2.2)	3.9 (58.1)
Fertilizer dealer's sale on credit	73,250	1.9 (25.8)	n.a.
Bank loan	75,950	3.8 ^c (56.3)	1.5 ^d (19.6)

Source: Hayami and Kawagoe 1993, 129.

Note: n.a. = not applicable.

a. Cost for 150 kg of urea, 50 kg of triple superphosphate, 100 kg of ammonium sulphate, and 1 l of Azodrin per 125 *bata* (0.18 ha).

b. Interest rates per year are shown in parentheses.

c. The official interest rate, plus transaction costs.

d. The official interest rate for a collateral loan.

Because they have a reliable supply of vegetables assured by a mutually beneficial contract, intervillage collectors are able to organize an efficient system to carry out the long-distance marketing of perishable commodities.

Enforcement of the contract depends solely on relationships among farmers and collectors living in the same village community. It is difficult to enforce such contracts with traders who live outside the community, especially ethnic Chinese traders who are based in towns, despite their dominance in the trade in storable commodities. This vegetable marketing system is also said to be difficult and risky for cooperative managers; because they are not the owners of any residual profit, their incentive to take risks is low.

The intervillage collectors in Java, as sketched out above, resemble closely, in image, the rural entrepreneurs who led industrialization in Meiji Japan (Smith 1956; Itoh and Tanimoto 1998). More remarkable is the fact that the informal contract-farming system they have organized has the same structure as the just-in-time system of Toyota. In both systems, the principal secures reliable supply through agents by relying on community relationships to enforce contracts. Both are successful in securing the just-in-time supply of materials for processing and shipment.

This resemblance may not be mere coincidence. The Toyota Automobile Company began as a rural industry, and managers possessed a community relationship with parts suppliers from the start. Toyota's intricate marketing system was designed and operated by indigenous entrepreneurs rooted in rural villages.

Despite the hypothesis of Geertz (1963), the peasant population of Java is likewise motivated by a modern spirit of entrepreneurship. If there is a way to tap its potential, rural entrepreneurship may become an important basis for balanced rural-urban growth. This growth

would involve the development of labor-intensive agricultural and industrial production in the hinterlands of developing economies. The potential appears to be especially strong in East Asia, where tight relationships of community have been forged among stable villages practicing sedentary agriculture, especially irrigated rice culture (Platteau and Hayami 1998).

Some policy implications

Investments in transportation and communication infrastructure such as roads, railroads, electricity grids, and information technology networks are indispensable for the development of internal trade. The establishment of industrial clusters within agglomeration economies outside metropolises may be facilitated by the creation of industrial parks and export processing zones (Sonobe and Otsuka 2006). Holding industrial fairs is effective in giving rural entrepreneurs access to urban and foreign markets. Above all, research and development on industrial and agricultural technology geared to rural production, as well as education, training, and extension among rural producers, are vital for rural-based development. Without efforts to upgrade the capacity of rural producers, outsourcing to rural areas by urban manufacturers and traders because of the low wages is unlikely to be sustainable, or it might work, but only as a mechanism to lock workers in developing economies into simple low-wage tasks at the bottom of the global value chain (Gereffi 1999; Humphrey and Schmitz 2002; Tewari 2005).

While national and municipal governments must undertake the maximum effort to provide such public goods, they should refrain from distorting the incentives of market agents. If markets are competitive, profit-seeking private entrepreneurs in rural areas will try to make the best use of community relationships to reduce transaction costs so as to beat the competition. The resulting efficiency improvements in marketing will benefit both consumers and producers, including poor peasants and cottage manufacturers.

On the other hand, if government and the agencies of international development assistance give special favors to cooperatives and self-help associations by granting monopoly rights or exclusive access to subsidized credits and inputs, the benefits will tend to be captured by the political elites in the communities controlling these organizations. This would motivate these elites to allocate their efforts to rent seeking rather than to reducing costs and improving services so as to beat out the market competition.

In organizing contract farming, it is not appropriate to grant exclusive franchises over territories to agribusiness enterprises or cooperatives. This would force farmers operating in these territories to deliver their products to processing or marketing centers controlled by a single principal. Farmers should be given an exit option; they should be allowed to trade with other principals after they have completed their current contacts. Otherwise, the contract-farming system will be oppressive and monopsonistic in exploiting smallholders.

It is important to recognize that, in the absence of competitive markets, community relationships will become mechanisms so the rich and powerful may exploit the poor. The relatively closed corporate groups in the Japanese automobile industry are able to escape this evil because there is strong competition among corporate groups (such as Honda versus Toyota), and this reduces the scope for monopoly price setting. Likewise, assemblers refrain from monopsonistic exploitation of parts suppliers because of the fear that good parts suppliers will migrate to the other corporate group. The same applies in the case of vegetable marketing in Indonesia with respect to the availability of exit options for farmers in counteracting possible monopsony by collectors. However, if the government were to collude with political elites in

suppressing competitive markets, the failure of communities will loom large, and the scope for rural-based development will be narrowed.

Certainly, forging an efficient link between rural producers and global demand is only one of the preconditions for rural development. Another important step would be to promote links between industry and commerce within the rural sector and agriculture, where any increase in agricultural productivity in export cash crops and subsistence food crops would be a significant advance (Ho 1982; Ranis and Stewart 1993; Hayami 1998). Strengthening the connection between the hinterlands and international markets will necessarily also promote the links existing within the rural sector of the domestic economy.

Notes

¹ The analysis in this section is largely based on the experience of Japan. However, the experience of Taiwan does not seem to lead to a different conclusion, despite the widely differing political economy environments (Caldwell 1976; Amsden 1991; Gereffi and Pan 1994; Lane 1998).

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