

8. STRATEGIES FOR INDUSTRIAL CLUSTERING: INDUSTRIAL AGGLOMERATION, PRODUCTION NETWORKS AND FDI PROMOTION

Production networks, comprising a number of nodes and links, have been and will continue to be the key device to transform globalizing forces into the forces to deepen economic integration and to narrow development gaps in East Asia. In order to support this process, a key strategy is to reduce service link costs to make the “links” more efficient, as we discussed extensively in Chapters 3 and 4. Another key strategy is to foster the “nodes” through the formation and continuous upgrading of industrial clusters. Although industrial clusters are formed and upgraded as a result of business activities of the private sector, the role of governments is also important. In order to intensively investigate this issue, an ERIA research project entitled “*Analyses of Industrial Agglomeration, Production Networks and FDI Promotion: Developing Practical Strategies for Industrial Clustering*” has been conducted. This chapter summarizes the main findings and policy recommendations thereof.

8.1. Industrial clustering as a development strategy

The formation and strengthening of industrial bases are one of the conditions for developing countries to achieve economic development and poverty reduction. But even after virtuous cycles for industrial agglomeration are provoked in an industrial region, the region can face serious cost competition with other regions that have ample supplies of low-wage labor. To remain competitive, it is necessary for the region to fully seize the prospective benefits from ongoing regional integration and to upgrade its industrial structure to an innovative industrial cluster where companies conduct a range of research and development (R&D) activities, or collaborate to transfer knowledge and technologies. Nevertheless, mechanisms of forming and upgrading industrial clusters and networking them have not necessarily been empirically examined enough.

The objectives of this project are to conduct comprehensive studies on current conditions of industrial agglomerations, the impact of regional economic integration on industrial organizations in Asia, the characteristics of existing production networks of

industrial agglomerations, and industrial policies including FDI promotion and science and technology (S&T) development. This research project, in its initial phase, explored policy measures to facilitate industrial development and establish complementary relations between industrial agglomerations in ASEAN and East Asia. In other words, the main focus of the project was on prioritizing policy measures for industrial clustering to suggest practical strategies for developing industrial clusters, taking into account industrial development stages and types of industry, and ongoing regional trade and investment liberalization initiatives, as well as the accelerating pace of production networking.

8.2. Factors for and against industrial clustering: Observation in case studies

There are well-established and emerging industrial clusters in ASEAN and East Asia. These clusters consist of various types of industries, such as traditional artisanal, labor-intensive manufacturing, and knowledge-intensive service sectors. Their development is based on a mixture of local, national and international factors promoting industrial agglomeration and clustering. In addition, as a result of economic integration that facilitates trade and investments, industrial clusters in the region have become more dependent on one another, and competition among firms and industrial areas have intensified. These phenomena are reinforced by technological as well as managerial changes such as “modulization” and “fragmentation,” which is typically observed in the automobile and electronic sectors.

8.2.1. Factors encouraging industrial clustering

Although various factors are associated with clustering, a conducive business environment is a fundamental prerequisite for triggering industrial agglomeration, because agglomeration and clustering are driven by the private sector and market forces with appropriate support from the public sector, which includes both national and local conditions that influence decisions on investments by local entrepreneurs and foreign investors.

At the country level, stable macroeconomic environment and government institutional infrastructure, including the legal system, are indispensable for industrial agglomeration. These influence entrepreneurship in local companies by reducing costs

of financing, opening new operations, collaboration with other firms, and access to cutting-edge technologies, information and know-how. These also affect choices of country hosting FDIs by multinational companies (MNCs).

Local conditions have a larger influence on companies' selection of specific locations in which to locate. Infrastructure, including roads, ports and utilities and size of local markets, are of notable importance. The existence of supporting industries including suppliers of raw materials and parts, banking, legal consulting, and other business services that support business developments, are crucial, since these developments are related to infrastructure and local markets mentioned above. The establishment of MNCs' production bases contributes to the expansion of local markets.

Liberal trade policies and investment incentives have been the key policy instruments used to entice MNCs, which provide the driving force for industrial development. Liberal trade policies are essential to overcoming constraints, e.g. limited size of local markets and weakness of supporting industries. Investment incentives focus not only on MNCs but also on local companies to promote the development of SMEs and supporting industries. These policies need to be introduced, modified, and restructured in a "timely" way, in accordance with stages of industrial development and the degree of market competition.

All countries and local governments do not necessarily develop the capabilities to meet all of the conditions and introduce policies mentioned above. The policy to develop industrial zones and special economic zones (EPZs) by targeting specific geographic areas is cost-effective to economies under severe fiscal and institutional constraints.

8.2.2. Obstacles to industrial clustering

The findings from most of the surveyed countries indicate that the main obstacles to industrial clustering are largely related to upgrading existing industries in the surveyed regions in comparison with the result of successful industrial development. The shortage of low-cost labor is typical. More serious problems are the shortage of skilled labor and professionals that hinder industrial upgrading and innovations. Another constraint is the lack of upgrading physical and institutional infrastructure such as roads, customs procedures, intellectual property rights, legal systems and legislation, in the absence of which it will be difficult to raise the added-value of products and

improve logistics, production methods, and innovative activities.

Coordination failures are one of the most serious key policy issues differentiating the performance of industrial cluster policies. An issue related to this is missing linkages between firms, business associations, public and private research and development institutes, universities, and national as well as local governments. The roles of local governments, business organizations, or key persons in regions are also crucial for success in organizing public-private partnerships to unify all local initiatives into clustering.

For less developed countries, clustering is a new concept, and is not sufficiently reflected in regional and national policies in these countries, which results in insufficient linkages among related parties.

8.3. Factors affecting industrial agglomeration and upgrading:

Evidence from econometric analyses

Econometric methods were applied to data collected by mail surveys. To summarize the findings from the econometric analyses, the results of the estimations based on the pooled data are presented in what follows.

8.3.1. Factors promoting industrial agglomerations

At the beginning of industrial agglomeration, companies started with production that was labor-intensive, aiming at local markets in the closed economy. As mentioned in the case studies, factors such as institutional infrastructure and proximity to suppliers/subcontractors are important for the first movers to the surveyed areas. As ASEAN economies became increasingly open, firms tended to be more export-oriented, facing serious cost competition. Consequently, factors such as low-cost labor, and the protection of intellectual property rights (IPR) emerged as important for firms (latecomers) to open offices there, as they became more and more capital intensive, with business activity shifting to the production of components and parts.

Although investment incentives, liberal trade policies, and variables related infrastructures are not statistically significant, the coefficients on these variables do suggest that investment incentives are important for first movers, while liberal trade policy are essential for latecomers. In addition, first movers seem to attach importance

to physical infrastructure, including roads and ports, while latecomers seem to be more concerned with utilities and telecommunications infrastructure. This implies a need to shift policy in accordance with the stage of industrial development.

8.3.2. Factors promoting industrial upgrading

To verify factors promoting industrial upgrading, we developed econometric models with four types of upgrading carried out by respondents in last three years, which are selected as a dependent variable (Y). The independent variables (Xs) include characteristics of firms and levels of “satisfaction” with 20 factors that were the same as the above-mentioned models of industrial agglomeration. We categorized upgrading into the following four types: (a) introduction of a new good; (b) adoption of a new method of production; (c) opening of a new market; and (d) acquisition of new supply of inputs.

In order to strengthen the analysis of industrial upgrading, we developed another model of upgrading that includes “D-score” analysis. D-score is defined as a simple difference between “importance” and “satisfaction” attached to each of the 20 factors. Larger D-score for a specific business condition implies more dissatisfaction with it.

A key finding from the D-score models is that the legal system has a negative impact on most of the types of innovation carried out by MNCs. It is difficult, however, to identify a common factor that is applicable for all four types of upgrading. For example, estimated signs of the coefficients in the econometric model that includes the level of satisfactions with respect to 20 factors as independent variable suggest that promoting factors depend on the type of upgrading. As for the introduction of a new good, a liberal trade policy is an encouraging factor, while utilities and access to export markets are discouraging factors.

8.3.3. Sources of new technologies and information

From the analyses on the sources of new technologies and information based on the D-score model, MNCs tend to transfer technology from other MNCs and have less technical cooperation or assistance from local governments in comparison with local companies. MNCs that are not satisfied with the local financial system tend to receive technical assistance from foreign agencies, including official development assistance (ODA). But those that have problems with physical infrastructure tend to depend on

technical cooperation or assistance from local business organizations that are familiar with local situations.

On the other hand, local firms that face problems with infrastructure and financial system acquire technologies and information through technical assistance from foreign agencies. But well-designed government institutional infrastructure is an important factor for non-MNCs to encourage firms to receive technical assistances from foreign agencies. Technical cooperation or assistance from local universities, or R&D institutes is also important for firms unsatisfied with financial system.

These findings partly reflect the present situation, with MNCs and non-MNCs having different networks to obtain new technologies and information. In other words, MNCs are carefully observing capabilities of local firms in deciding whether or not to establish closer linkages with local firms.

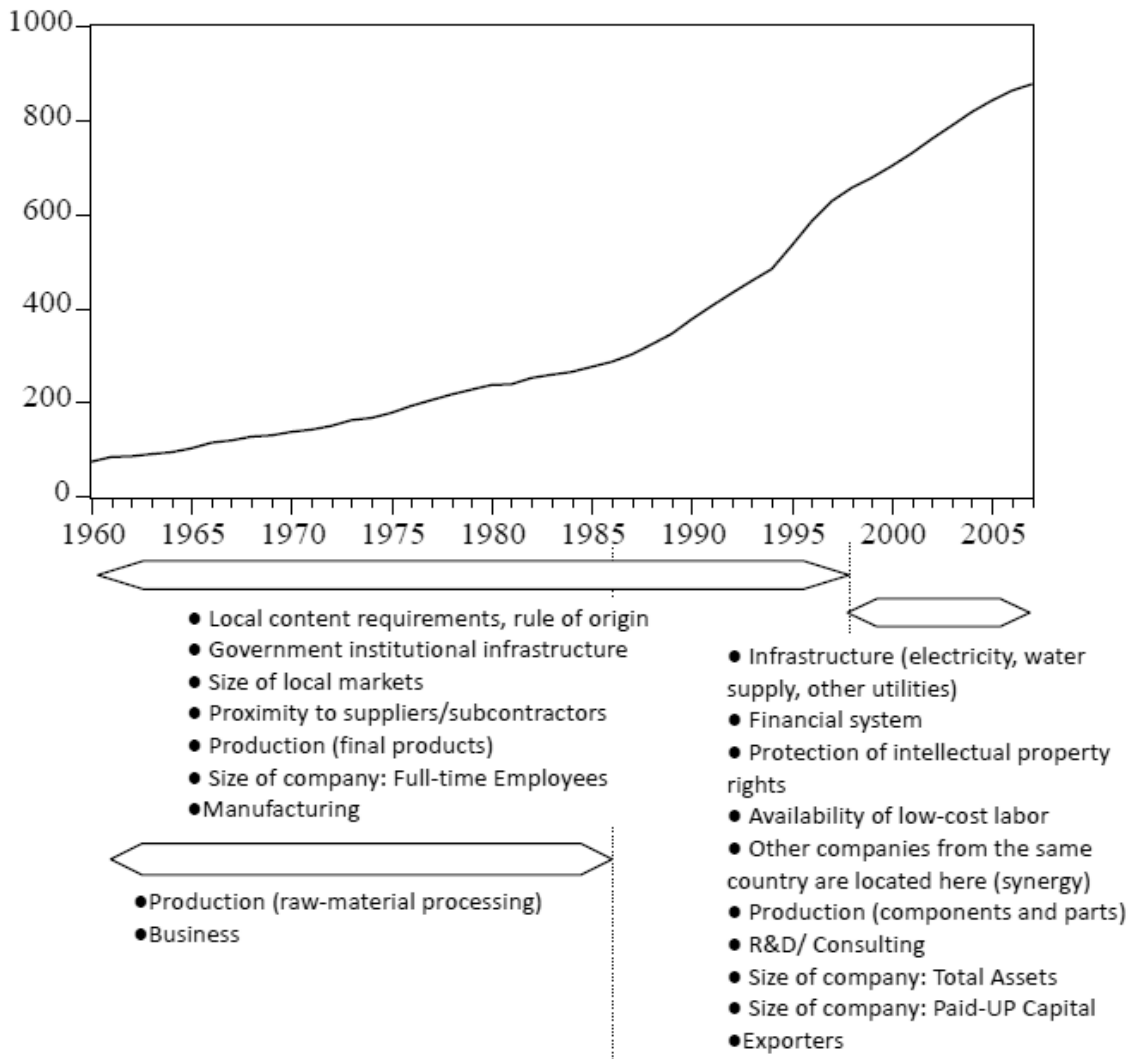
8.3.4. Collaboration among business, universities and governments

Clustering policies should be determined according to policy priorities and adjusted on a timely basis to meet changes in the business environment. Even though there are no standardized policy packages applicable to all stages of industrial development and all types of innovation, it is imperative to promote interaction among businesses, universities, local governments, other public authorities and other organizations that seek the full benefits of clustering (Figure 8-1).

However, the above-referenced networks, particularly between MNCs and local firms, do not necessarily exist at the beginning, although they represent the key channel for technology diffusion in developing countries. Local firms and business associations are required to consolidate their footholds for absorbing new technologies with the support of local and central governments.

Governments are required to harmonize all local efforts for improving the quality of infrastructure, human resources, and institutional frameworks. Developing these R&D capabilities is considered as “public goods,” which contribute not only to industrial agglomeration but also to knowledge and technology transfers and innovation.

Figure 8-1: Factors promoting industrial agglomeration



Note:

1. Based on mail surveys conducted in Indonesia, Philippines, Thailand and Vietnam.
2. Indicated factors are statistically significant at 20%.

Source: Tsuji and Ueki (2008).

8.4. Policy recommendations

As countries begin to industrialize, there is a tendency for industries to concentrate initially in areas where physical infrastructure is readily available and subsequently, for related industries, to gravitate closer together, thereby taking advantage of inherent synergies. In the process, industry clusters are formed, with each geographical area specializing in certain activities, leading to spatial diffusion of industries. This is the case not only for early movers like Malaysia and Thailand, but also for the latecomers

like Cambodia and Vietnam. It is important to underscore that this process is essentially a private-sector phenomenon, driven by market forces and aided by government support.

As industrial agglomeration and clustering contribute significantly to economic growth and development through increased competitiveness, there is certainly a case for policies that promote cluster formation. The current focus on physical infrastructure and logistics, liberal trade and investment regimes, economic reforms aimed at privatization and deregulations, practiced in many countries in the region, must continue with increased vigor. Small and medium enterprises, which play an important role as ancillary industries, need much help, as they are beset with various sorts of problems, ranging from lack of market information, bank credit and technical know-how to acute shortages of skilled manpower. Local SMEs are heavily dependent on domestic markets, typically showing no or little interest in exporting. All this calls for policy initiatives at the national level that would provide easier access to factors of production, raw materials, market information and other inputs that would help reduce the cost of doing business for these firms.

Regional initiatives can complement national initiatives in alleviating some of the problems faced by industrial clusters, especially in emerging economies. It is in this spirit that the following three concrete proposals are put forward. These proposals are doable. As the first two proposals would entail large investments, it is suggested that they are financed on a PPP (private-public partnership) basis with both industry and government contributions. The third proposal is envisaged as an entirely private sector affair, albeit recognized and endorsed by the East Asian governments. The latter may help set up such associations, with commercial attaches in embassies playing initially a catalytic and subsequently a facilitating role.

8.4.1. East Asian Centers for Standards and Testing

The first proposal is to establish East Asian Centers for Standards and Testing for a number of key industries (e.g. electronics, automobiles, machinery, furniture, footwear). This will facilitate harmonization of standards, in addition to certification of standards for all market destinations. A centralized facility for a given industry, catering to the whole region, will reduce cost, thanks to economies of scale and scope. This will also enable products to move more freely within the region once the standards are tested and

certified. This will lead to greater intra-regional specialization and increased intra-industry trade flows, with more and more inputs being sourced externally, which would render the region's industrial products internationally competitive.

8.4.2. East Asian Resource Centers

The second proposal relates to the establishment of East Asian Resource Centers for selected industries, which will serve not only as repositories of information relating to the focus industry, but also as “intelligence centers” that would gather and disseminate vital information to all the stakeholders and as “alert centers” that would draw the attention of the industry players to new threats, challenges and opportunities. Events, policies, technologies, pronouncements and initiatives in the major markets that would impinge upon the industry will be analyzed by the Resource Center and disseminated quickly for the industry and the relevant ministry to act upon. The timely flow of pertinent information is crucial for strategic planning at the firm level and to facilitate policy adjustments at the ministry level.

8.4.3. East Asia-wide Industry Clubs

The third proposal calls for the formation of East Asia-wide Industry Clubs for the major industries. These industry associations would enable firms to interact and network with one another and act as lobby groups to influence national, regional and global policies that would impact on the industry interests. The industry clubs can also help the members overcome the problem of acute shortages of skilled workers by promoting skill development. Instead of setting up “regional” technical training facilities to meet the industry needs, it would be cost-effective to make use of existing facilities in the region through mutual accreditation and recognition. The industry clubs can help identify the various training facilities and training programs available in the region. In addition, the industry clubs can mount schemes that would enable its members to send their technicians for hands-on training experience in the workplace of other member firms.

East Asia-wide Industry Clubs are likely to work well, as they provide the “critical mass”, given the extensive regional production network in the EAS region, especially if the EAS can provide an avenue for their concerns and views to be heard by policy makers.