Technology Transfer and Asia's Economic Revolution: Keynote Speech

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Technology transfer has played a major role in the economic development of postwar Asia. Technology was transferred first from the United States to Japan. In the 1950s, technology in the nylon, transistor, shipbuilding, steel, and chemical industries was aggressively introduced from the United States and adopted in Japan. From the 1960s, technology was transferred from the United States and Japan to Taiwan, Hong Kong, Singapore, South Korea, and others, and in many cases, the technology was conveyed to these areas from the United States via Japan. As we entered the 1980s, technology was introduced from the Asian newly industrialized economies (NIEs)—Taiwan, South Korea, Hong Kong, and Singapore—to the Association of South-East Asian Nations (ASEAN) countries. Since technology transfer necessarily involves the transfer of know-how in financing and management as well, it greatly benefits the economic development of the countries receiving the technology.

There are many methods to transfer technology from one country to another. Although the most common method was through direct investment into the receiving country, there were also agreements permitting the use of the technology. Hong Kong and Singapore received much direct investment, but in Taiwan and South Korea, where foreign financing was not welcomed until the 1980s, the technology was introduced through licensing agreements or as part of contracts to supply equipment. This channel allowed the manufacturers of export goods in the two countries to produce and sell their products using American or Japanese brand names.

In the early stages, companies in East Asia sought subcontracting agreements and adopted technology in this manner. Most of the final goods for export were produced under the direction of foreign buyers. The first to come in pursuit of subcontractors in this area were the large Japanese trading companies. Soon, American trading companies followed. These foreign buyers were involved in the production process, giving directions frequently, and also giving advice. Thanks to these business activities, Asian companies were able to learn and absorb the new technologies.

For example, South Korea and Taiwan both started out by exporting mainly textiles, such as synthetic fibers, and then later started exporting electronic parts. Soon thereafter, they began exporting steel, petrochemicals, and then ships. Their textile industries have developed to the extent that they are now beginning to expand outside their own economies and to build plants in the ASEAN countries. Their electronics and automobile industries are expanding into Europe and the United States. They succeeded in absorbing and then developing further the capital and technology that they received from the industrialized countries.

As a result, the Southeast Asian export picture has changed dramatically, and machinery and electronics have become the major exports from Singapore, Malaysia, and South Korea. Similar trends can be observed in the Philippines, Thailand, and China.

The effectiveness of policies concerning technology transfer is not easy to evaluate. There are cases such as Hong Kong, where the atmosphere is quite free, and cases such as Japan, South Korea, and Taiwan, where governments have intervened heavily—promoting technology transfer in specific industries, which has likewise been successful. It is possible that, in the early stages of industrial development, clear government policies may help to advance technology transfer.