15. Industrial and Export Policy in South Korea

Many developing countries have conducted active industrial policies. Those of some countries have clearly been failures, such as India and Argentina. But industrial policy has not failed everywhere, and South Korea appears to be a good example of success. Exports, particularly manufactured exports, including such key sectors as motor vehicles, have grown at an extraordinary rate in Korea, as summarized by three charts at the end of this case study.

While one can never absolutely prove cause and effect, one of the most important reasons for South Korea's remarkable industrial achievements appears to be the orientation of its industrial policy toward promotion of exports of increasingly sophisticated skill and technology content. Strong financial incentives for industrial firms to move up the ladder of skills and technology have been present in most of its policies.

There appear to be market failures in the transfer of technology from developing countries similar to those in innovation of original technology in developed countries. Policies that reward success in the export of goods a step up in technology and skill content provide a good match between policy goals, incentives to firms to meet those goals, and monitoring to make sure goals are really met before rewards are received—or are "incentive compatible." Specifically, firms get efficient feedback on whether their goods meet world price and quality standards by competing on world export markets; and governments can more easily ensure that rewards go to firms that really make and sell the intended number and quality of the required products (exports can be "counted on the dock," or are otherwise more observable than goods for the home market). These points are brought out with a close examination of the case of South Korea.

There have been at least 21 major types of export promotion-oriented industrial policy interventions in South Korea. Only some of these policies have been in effect in any one industry and at any one time, and in recent years, effective subsidies have been considerably scaled back. By 2002 they had been largely, but not entirely eliminated. While industrial policy in Korea has changed dramatically as it has reached high income status, it is valuable as a case study for lower-income developing countries that want to understand its policies during its period of rapid catch-up. The 21 policy interventions were:

1. Currency undervaluation. The effective exchange rate (EER) for exporters was kept higher than that for importers. As early as 1964, South Korea's EER for exports was 281 and its EER for imports was 247—not trade neutrality but a pro-export bias.

2. Preferential access to imported intermediate inputs needed for producing exports, with strict controls to prevent abuse. Since 1975, rebates are only received after documenting the completion of the exports.

3. Targeted infant industry protection as a first stage before launching an export drive. South Korea has had high dispersion of effective rates of protection even with a relatively low average.

4. Tariff exemptions on inputs of capital goods needed in exporting activities. (This is a price incentive, while preferential access (#2) is based on quantity restriction.)

5. Tax breaks for domestic suppliers of inputs to exporting firms, which constitutes a domestic content incentive.

6. Domestic indirect tax exemptions for successful exporters.

7. Lower direct tax on income earned from exports.

8. Accelerated depreciation for exporters.

9. Import entitlement certificates (exemptions from import restrictions) linked directly to export levels. Korea has long maintained an extensive list of items generally prohibited for import, including both luxury goods and import substitution targets. Profitable exemptions from this prohibition have often been available for firms exporting specified goods having low profit margins.

10. Direct export subsidies for selected industries (no longer in use).

11. Monopoly rights granted to the firm first to achieve exports in targeted industries.

12. Subsidized interest rates for exporters.

13. Preferential credit access for exporters in selected industries, including automatic access to bank loans for the working capital needed for all export activities. Medium- and long-term loans for investment are rationed and often available only to firms meeting government export targets and pursuing other requested activities.

14. Reduced public utility taxes and rail rates for exporters.

15. A system of export credit insurance and guarantees, as well as tax incentives for overseas marketing and postshipment export loans by the Korean Export-Import Bank.

16. The creation of free trade zones, industrial parks, and export-oriented infrastructure.

17. The creation of public enterprises to lead the way in establishing a new industry. As Alice Amsden documents, public enterprises produced the first Korean output of ships and refined petroleum products and petrochemicals. Howard Pack and Larry Westphal found that "the share of public enterprises in Korea's nonagricultural output is comparatively high, being similar to India's."

18. Activities of the Korean Traders Association and the Korea Trade Promotion Corporation to promote Korean exports on behalf of Korean firms worldwide.

19. General orchestration of sector-wide efforts to upgrade the average technological level, through use of a new generation of machinery.

20. Government coordination of foreign technology licensing agreements, using national bargaining power to secure the best possible terms for the private sector in utilizing proprietary foreign technology.

21. The setting of export targets for firms (since the early 1960s.) Firms set their own targets, which may be adjusted by the government.

The use of manufacturing exports of growing technological content as a yardstick of performance automatically emphasizes targets with very strong development benefits. In addition, the world export market is an arena in which performance is clearly, quickly, and rigorously tested, while keeping the development ministries, whose resources and information capacities are inherently limited, tightly focused on relevant and manageable problems.

In this regard, export targets as a development policy mechanism hold the distinct advantage over general output targets in that they are easily observable. This fact has long been understood by LDC fiscal authorities who have taxed exports precisely because they are observable and therefore not subject to the tax evasion that is so rampant in the developing world.

This distortion has a well-publicized (if not self-evident) anti-export bias effect. South Korea puts this "fiscal observability" to use as the centerpiece of its industrial policy system, in a way that reverses by 180 degrees the negative incentive effects of export taxes.

Enforcement of export targets in the case of Korea is mostly moral or "cultural" in nature, but the evidence seems persuasive that in Korea these have been among the most powerful incentives. South Korea as a whole has an extensive pattern of "rituals" reinforcing these economic incentives with cultural ones. A key ritual in Korean economic life is the Monthly National Trade Promotion Meeting. According to Yung Whee Rhee, Bruce Ross-Larson, and Gary Pursell,

"Chaired by the president, the monthly trade promotion meetings are select gatherings of the ministers and top bureaucrats responsible for trade and the economy; the chief executives of export associations, research organizations, and educational institutions; and the heads of a few firms, mainly the general trading companies and other large firms. The prominence of those attending shows that the monthly meetings are far more than perfunctory meetings to improve coordination between the private and public sectors."

Firms in the sample were either represented by their particular export association or, in many cases for large firms, represented directly. After briefings, awards are typically presented for excellent export performance. On a more national scale, one of the major national holidays in South Korea is called "Export Day," which has been held on November 30 since 1964, when exports first topped $100 million. As Rhee, Ross-Larson, and Pursell describe,

"The focus of the celebration is the award of prizes at a large public gathering, prizes that the heads of firms take seriously. There are President's prizes for being the number one exporter in an industry, for export merit as a small or medium-sized firm, for exceeding a target by more than 50 percent. There are Prime Minister's prizes for inventions, for excellence in design, for having a high reputation in exhibitions overseas, or for developing an export product of high quality. And there are prizes for reaching a certain level of exports. There are in addition industry medals and prizes awarded by various ministries. The award of these prizes is akin to the pinning of medals on officers—with salutes, solemnity and sharp strides. The heads of firms typically display the awards in their offices—along with a picture of the president and calligraphy inscribed to the head of the firm and carrying messages on the importance of exporting."

To what extent is this cultural aspect of the Korean export experience transferable to other countries? There is no obvious connection between Export Day and Confucianism. The love of public recognition through contests and competitions, medals and prizes seems to be a universal human trait. Such an approach has been adopted successfully by the United States, in the popular Malcolm Baldridge awards. Most likely, the idea could be successfully adopted by other developing countries. In fact, this approach has been adopted by Thailand. On the other hand, one may reasonably doubt its effectiveness in the absence of reinforcing economic policies.

Import substitution often precedes, logically and empirically, export promotion. The influential study of Hollis Chenery, Sherwin Robinson and Moses Syrquin concludes that "periods of significant export expansion are almost always preceded by periods of strong import substitution." Strong support for the implication that this import substitution phase had something to do with the export success that followed comes from the observations that after the switch to export promotion the leading industrial sectors did not change.

In the South Korean case, industrialization began with an import substitution phase in the 1950s and early 1960s. After the country's switch to an export-led growth strategy in the 1960s, selective protection of industry continued to play a very important role in industrial development.

In addition to many domestic content regulations, Richard Luedde-Neurath has described how South Korea maintained a very extensive system of import controls well into the 1980s. What he terms the "Korean Kaleidoscope" includes restrictive trader licensing, widespread quantitative controls, systematic foreign exchange allocation under the Foreign Exchange Demand and Supply Plan, intervention in export-import settlements, required advance deposits (which have been as high as 200% of import value), and capricious customs practices. An important example is that prospective importers must realize minimum export earnings before becoming eligible to import; these obligations began at $10,000 in 1962 and have increased over time to $1,000,000 in 1982.

Pack and Westphal conclude that "through import restrictions, selectively promoted infant industries were often initially granted whatever levels of effective protection were required to secure an adequate market for their output as well as a satisfactory rate of return on investment. Initial rates of effective protection were frequently in excess of 100 percent." The country also utilizes an informal system of indicative planning type protectionist measures. In South Korea, tariffs are primarily collected on final goods and intermediate inputs for domestic sales rather than exports. As Robert Wade notes, tariff rates appear much higher when they are averaged over non-export-related imports only. Finally, Peter Petri presents data that leads him to conclude that Korea has "an unusually protection-prone export bundle."

Thus in the Korean case, import controls may be called a "handmaiden" of successful industrial export promotion. In the first instance, many export industries begin as infant industries requiring protection. Pack and Westphal stress that as a result of the export promotion reforms of the early 1960s, "imports destined (either directly or indirectly as inputs) for the domestic market remained subject to tariffs and quantitative controls."

However, the system of controls on these imports was rationalized and thereby converted from a mechanism of socially unproductive rent seeking into an instrument of industrial promotion." Second, as Luedde-Neurath notes, the developing industrial sector functions as a whole and benefits from externalities and linkages between firms, making a market failure case for general protection. Finally, Amsden has pointed out that in South Korea cross-subsidization across divisions within firms as a company enters new export markets, such as shipbuilding, is intentionally facilitated by government. Diversified companies understand that they are expected to use the monopoly rents that they earn from these various import barriers as working capital for expansion into new sectors. The state also offers supplemental support for entering new markets as needed.

As Pack and Westphal summarize the evidence, "something approximating neutrality" applies to "established industries... But there has been substantial industry bias in favor of the promoted infant industries."

Given the central role of technological progress in this type of development strategy, it may be asked what role multinational corporations played in transferring technology. There is a large literature exploring the pros and cons of multinational firm presence for development and analysis of policies intended to maximize these benefits and minimize these costs.

A major World Bank study by Larry Westphal, Rhee, and Pursell has concluded that "Korea's export industrialization has overwhelmingly and in fundamental respects been directed and controlled by nationals... technology has been acquired from abroad largely through means other than direct foreign investment." The role of multinational corporations in the economy has been much smaller than in most other middle-income countries.

Unquestionably, in the late 1980s and early 1990s, South Korea substantially liberalized. The lesson question is whether they would have done as well had they liberalized sooner. This is a question that can never be answered with certainty. Some economists have argued that South Korea would have industrialized even faster if it had maintained a free trade policy from the beginning. In any case, active industrial policy continues to this day, emphasizing Korean entry into the most leading-edge, high-technology fields.

South Korea's Ministry of Trade and Industry has targeted new materials, computer-controlled machine tools, bioengineering, microelectronics, fine chemistry, optics, and aircraft as fields in which it predicted that the country could catch up with the U.S. and Japan economically and technologically. Government is involved with the whole process. As South Korea becomes a candidate for developed country status, targeted industrial policies oriented toward technology enhancement are continuing to play a central role. Samsung has already become one of the largest world players in semiconductors.

What stands out in the case of industrial policy in South Korea is the selective involvement of government in projects in which technological progress (product, process or organizational) has been a central concern. This policy theme may be traced from early attempts at achieving technology transfer in relatively basic industries to the current efforts of South Korea to develop original innovative capacity in high technology sectors.

Of course, it is impossible to prove that Korea's industrial policies were responsible for its success. It cannot be ruled out that Korea might have done even better without these policies. Moreover, one can argue as have Joseph Stern and his collaborators that the central role of the state was necessary in industrial policy in large part because of the way that government set up the rules of the economic game, including the allocation of credit. This itself ensured that major initiatives like the chemical and heavy industry drive were impossible without government direction. Because South Korea often looked to the example of Japan in setting industrial policy, one can argue that the country followed a "patterns of development" analysis rather than a classic industrial policy. The costs of industrial policy in Japan did not become apparent until many years later, and the same could prove true of Korea. These views certainly have some merit. Clearly, the 1997 financial crisis was at least abetted by some of the less sagacious of the industrial policy legacy.

But the central interpretation that seems most favored by the evidence is that the South Korean industrial policy mix has served to overcome market failures involved in the process of technological progress. That such market failures are endemic to original technological progress is a well-known proposition of economics. But there may have been a massive underestimation of the importance and extent of such market failures in the transfer of product, process, and organizational innovations to developing countries. And unlike Japan, Korea appears to have responded relatively quickly to the need for reform following the crisis. Korea has returned to strong growth since 1998, in striking contrast to Japan. It remains to be seen, however, how systematically the country will follow up on needed modernizing reforms once the pressure of the crisis has receded.

Obviously, the fact that these policies have been used successfully in South Korea does not automatically negate the arguments that such policies may in general be subject to the corruptions of rent-seeking activities. Understanding how South Korea was successful in this regard while so many others failed will likely be a major focus of development studies in coming years.

As a preliminary conclusion, the case of South Korea suggests that it is a combination of industrial policies addressed to specific market failures, and consistent with underlying market forces (as well as the local political economy) that promotes industrial development. Without proper attention to incentives (for both market and rent-seeking activities), these same industrial policies can prove counterproductive. Countries that cannot find the political will to use protection as a highly selective and strictly temporary instrument of industrial policy in cases where large, identified market failures can be shown to exist, are probably better off abandoning this instrument altogether; the case of Bolivia is probably a good example of this.

Even prior to the financial crisis, Korea's now democratic government is making a series of adjustments designed to make its market economy function in a more mature way. In the past, the government encouraged giant conglomerates, or *Chaebol*, to expand and enter new markets as a way of achieving economies of scale and scope, to facilitate exporting, and to facilitate its control over the economy by keeping the number of companies it had to stay in close contact with small.

Now that the Korean economy is established, the Chaebol are seen as liabilities to further growth. They are also seen as political liabilities, or as companies that unfairly received government advantages in the past from which other companies did not benefit. Antitrust regulations are now being enacted and enforced; this will probably make the Korean economy much more competitive in the future. As the Korean economy approaches maturity, government's role in the productive sector continues to recede.

But the lesson for developing countries that would like to emulate South Korea's success is that until the world technology frontier is approached, government does have an important role, even in the productive sector, until domestically-based private industry can establish itself.

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