
The Miracle with a Dark Side: Korean Economic Development under Park Chung-hee

Prologue to the Miracle

South Korea came into being as the result of the partition of what had been, prior to the early twentieth century, the ancient kingdom of Chosun.¹ This partition into a communist North and a noncommunist South occurred shortly after the defeat of Japan in World War II in late 1945. Korea had been involuntarily absorbed into Japan in 1910, following more than a decade of Japanese domination after the slow collapse of the long-lasting but static Yi dynasty of Chosun. This dynasty had ruled Korea for more than half a millennium, from 1392 until 1910, but to a large extent as a vassal of Chinese rulers, first to the Ming dynasty and later to the Qing dynasty. From 1910 until 1945, Korea was effectively a colony of Japan.

During this period, though some might argue that Japan helped to lay the foundations for future Korean economic development, many Koreans experienced absolute declines in standard of living; and almost all detested the Japanese dominance (Mason et al. 1980). During the 1930s, as the Korean people and Korean resources were increasingly mobilized to serve Japanese war preparations, this detestation deepened. Thus, the

1. Chosun is one of several historical names for what is today known in the West as Korea, and the period of the Yi dynasty is now often termed the “Chosun period.” It was preceded by the kingdom of Koryon, from which comes the name “Korea.” Koreans today in fact call their nation “Hanguk,” which is a shortened version of the official name of South Korea, Dae Han Min Kook (Great Democratic Nation of Han).

liberation of Korea from Japan in 1945 should have occasioned joy among the Korean people—and, for a few months at least, it did. But alas, Korea quickly became a focal point of the rivalry between the United States and the Soviet Union, which had emerged from their rather tense alliance to defeat the Axis powers during World War II as opposing superpowers.

During 1946 to 1948, the United States and the Soviet Union each tried to create a government in Korea to its liking, but neither was able to rally a majority of Koreans around its favored candidate for national leader.² These were the right-leaning nationalist Syngman Rhee, supported by the United States (and by right-wing Koreans, many of whom had cooperated with the Japanese), and the Communist Kim Il-sung, supported by the Soviet Union. By 1947, it was clear that the majority of the people in the south were not particularly sympathetic to the Communist cause, despite their lack of enthusiasm for the right-wing elements so strongly supported by the Americans. At the same time, during 1946 and 1947 Kim Il-sung and Kim Tu-bong worked with Soviet troops occupying the north to build a strong Communist Party, formally called the Korean Workers' Party, out of what had been the resistance movement.³ The Communists quickly acted to eliminate moderate and right-wing elements and to establish the Korean Workers' Party as the effective governing organization in the north. To resolve an impasse that was created by the north being effectively governed by Communists and the south by rightists, a formal partition at the 38th parallel—meant to be temporary—was agreed on in 1948.

At the time of the partition, the south was the poorer of the two newly created Korean states, and its poverty was compounded by the arrival of refugees from the north. During the first years of its existence, moreover, almost everything went downhill in South Korea. Although its fledgling government was created as a democracy, the first election in 1948, which elected Syngman Rhee as president, was boycotted by leftists and hence lacked legitimacy in the eyes of many Koreans (and, indeed, many international observers). Rhee, although born in Korea, had spent most of his life on US soil. He held degrees from George Washington, Harvard, and Princeton Universities, and from 1919 until 1941, to the annoyance of Japan, he had been head of a self-proclaimed Korean government-in-exile based in Hawaii that captured the admiration of many Koreans at home. But by 1948, his support in Korea was waning, and what support he had came largely from those elements of Korean society that had collaborated with the Japanese.

2. For a detailed analysis of the situation in Korea between the liberation from Japan in 1945 and the onset of the Korean War, see Hastings (1987).

3. In classic Communist style, during the late 1950s Kim Il-sung eliminated Kim Tu-bong as a rival for power.

In June 1950, South Korea was invaded by North Korea. In the ensuing war, the early victories went to North Korea, whose armies overran most of the territory of the South within months (for a detailed analysis, see Hastings 1987). Only the intervention of UN troops, composed mostly but not entirely of US forces, kept the South from yielding completely. They at first were unable to repulse the northern invaders. Only the south-eastern Korean port city of Pusan did not fall to the North Koreans. But UN forces under US General Douglas MacArthur then launched a successful amphibious landing at Inchon, near Seoul, effectively cutting the northern army in half. The UN forces then pushed the North Koreans back to the border with China, overrunning in turn virtually all of the territory of the North. But North Korea itself was saved by outside intervention: Chinese forces, in a bold winter offensive, drove the UN back south. A stalemate ensued until 1953, when active hostilities were concluded with an armistice that left the Korean states legally at war with each other but de facto at peace and separated by a narrow no-man's-land at the 38th parallel, barely 50 kilometers from Seoul.

Before the war the Communist movement held some appeal to at least a substantial minority of South Korea's population, but the savagery of the North Korean army during its brief occupation of South Korea caused most of its supporters to change their minds. Thus, by the end of the war a much larger majority of the South Korean people was resolved not to be governed by the North. A leftist (and, at times, vocal) minority did remain, but it was small. Under these circumstances, in 1956, although the economy of South Korea was largely still in ruins, Rhee handily won reelection to the presidency as the man who had pushed back the North Korean invasion.

South Korea nonetheless remained a poor and largely underdeveloped nation for more than a decade after the war concluded. Large amounts of US aid enabled South Korea both to maintain its military and to keep its population from starving, but one intended goal of the aid, to create a light industrial base, went largely unrealized.⁴ One reason was widespread corruption: a significant amount of the aid was appropriated for private use, thereby creating a new class of wealthy Koreans and failing to reach the rank-and-file Korean people for whom it was intended. Some of these newly wealthy Koreans went on to found several of the large chaebol that were to become the backbone of the later Korean economic miracle (Jones and SaKong 1980). But the fact that they had, in the eyes of many of their fellow Koreans, obtained their initial wealth illicitly was to taint their many later accomplishments.

Another related reason for the lack of economic development was that the government encouraged import-substitution policies. Such policies

4. Numerous analyses were done at that time and later to probe why US aid was so ineffective. Cho S. (1994) reviews some of this material, drawing heavily from Steinberg (1985).

were attempted in much of the developing world, usually without creating significant economic growth. But they often did succeed in creating a class of wealthy entrepreneurs with a vested interest in keeping the failed policies in place. By the late 1950s, such a class existed in Korea. In addition, US policy, prompted by protectionist sentiment in the US Congress, was deliberately to discourage those Korean firms that might have become successful exporters from selling outside of Korea, especially in the textile industry. This is an issue discussed in more detail below.

Although Syngman Rhee again won reelection in 1960, popular dissatisfaction with both extensive election fraud and the poor state of the economy was widespread. In particular, most Koreans believed that cronies of Rhee were beneficiaries of corrupt government practices. Student riots erupted in April of that year, and during their suppression by Korean police at least 142 students died. This calamity in turn led to widespread calls for Rhee's resignation. The US government took the unusual step of issuing a statement that recognized the "legitimate grievances" of the Korean people. The Korean military subsequently let Rhee know that it too sided with the protesters.

Thus, confronted both with intense domestic pressure to resign and with loss of support from the United States, Rhee chose to step down. An interim government headed by Chung Huh was formed until elections could be held. Chang My-on (known in the United States as John Chang) was then elected prime minister and Yun Po-sun president. Chang initiated a series of major liberalizing economic reforms designed to reverse the economic stagnation. Unfortunately, the economy did not respond quickly to these reforms, and popular unrest, rather than subsiding after the resignation of Rhee, actually grew.

Military Coup, and the Miracle Begins

In the face of growing economic and social instability, the Korean military seized power in 1961, effectively ending any pretext of democracy in South Korea. Although many democratic trappings would remain in place, largely at the insistence of the United States (which constantly pressured the Korean government to permit more democracy throughout the period of military leadership), for more than thirty years Korea would effectively be under authoritarian military rule. It was under this rule that the "economic miracle" took shape.

The main organizer of the military coup was Kim Jong-pil, a young lieutenant colonel. But when the military actually took over the government, the leader who emerged was a more senior officer, Major General Park Chung-hee. Park had been a junior officer in the Japanese army during the 1930s and 1940s, and he was strongly influenced by a doctrine—widely

held by the Japanese military during that period (Clifford 1994)—characterized by a belief in strong, centralized management of the economy and by a strong nationalism. The first of these beliefs was almost Marxist in its stress on the extent to which the state should engage in centralized planning of the economy; indeed, when Park first took control in Korea, the Kennedy administration in the United States worried that he might be a “closet Communist.” However, the second element of this doctrine—intense nationalism—included complete rejection of international communism and the dominance of the Soviet Union in that movement. Park thus in fact proved to be something of an enigma: an intense Korean nationalist who had fought for the Japanese, who believed in the primacy of state power in economics, but who oversaw the creation of what were to become very large, privately owned industrial groups.

Park ruled by fiat for the next two and a half years; he then narrowly won an election held largely at the behest of the United States. He also won reelection in 1967 and again, narrowly, in 1971. In the 1971 election he faced strong opposition from a young firebrand, Kim Dae-jung, who is president of Korea at the time of this writing. Most observers believe that Kim might have won the earlier election had it been truly free. Shaken by nearly being bounced from power, Park ended any pretext of democracy; and from 1972 until his assassination by one of his own protégés in 1979, he ruled effectively as a dictator under the revamped “Yushin” constitution that made him president for life.

Park thus will be remembered by history for a number of reasons, many of them unfavorable. He effectively suppressed dissent in Korea, in the early years by relatively moderate means but with increasing harshness following 1972. Indeed, after 1972 he actively suppressed democracy. But he also placed the highest priority on improving the Korean economy, something that Syngman Rhee had not done. And, almost without question, with the help of a number of very able advisors, Park created what was to become the Korean economic miracle. For this reason, he enjoyed a large measure of popular support by the Korean people until the final years of his rule. Indeed, one reason why the United States, after a period of hand-wringing, recognized the new regime was that the Korean people themselves accepted it. Furthermore, the elections of 1963 and 1967 were legitimately won by Park; there is little evidence that they were rigged. The worst that can be said is that no really effective opposition existed in either year and that Park’s government did its best to prevent one from arising (the opposition was to become better organized and much more effective in the 1970s).

One step toward preventing dissent was the founding in 1961 of the Korean Central Intelligence Agency (KCIA), whose first head was Kim Jong-pil, the young officer who had initially led the coup. The mission of the KCIA was as much to keep tabs on potential opposition to the government within South Korea as to gather information about external threats

(mostly, of course, from North Korea). Given that North Korea did have agents provocateurs operating in South Korea, the link between the threat from the North and domestic opposition in the South was not fatuous. However, all too often, when dissidence arose in the South that was entirely legitimate and almost surely not instigated from the North, it was treated by the KCIA as though it were purely a product of North Korean provocation.

Though political agencies in the early Park regime were dominated by the military, economic agencies generally were not. Rather, under Park the status of economics experts in the Korean government rose considerably. One of Park's first acts was to elevate the status of economic planning in Korea, placing civilian experts in charge of it. In 1961 he created the Economic Planning Board (EPB), whose head was made deputy prime minister. In spite of the political title and high level of this position, Park insisted that it be filled by a person with superb technical qualifications rather than a political figure or a high-ranking member of the military.

In 1962, the EPB introduced the first of what was to become a series of five-year plans for Korea's development. State-owned banks were created to help implement the government's development plans, and laws were passed to force private banks effectively also to become agents of their implementation. Over the next years, the Korean government became, in the words of former EPB member and Deputy Prime Minister SaKong Il, an "entrepreneur-manager" (SaKong 1993, 27). During the first and second five-year plans, the government itself was involved in industrial undertakings. In the 1960s, more than one-third of government expenditures were for investment, and public investment accounted for close to a third of all fixed capital formation. Thus, between 1963 and 1977, public enterprises in Korea grew at an annual rate of 10 percent and the share of these enterprises in GDP grew from slightly over 6 percent in 1963 to more than 9 percent in 1980 (SaKong 1993, table 3.4). Korea did not consider itself to be a socialist nation but, as SaKong points out, as recently as 1980 the output share of public enterprises in the GDP in Korea was as high as in a number of nations "with socialist intentions," such as India or Pakistan. This emphasis reflected Park's own philosophy, under which the state was meant to be the dominant agent in the economy.

However, as the Park years progressed, the Korean government's role as "entrepreneur-manager" increasingly was manifested not so much in public enterprises, as important as these were, but rather in the government's direction of activities undertaken by the surging private sector. At its core was a policy of subsidizing those private enterprises that were able to achieve increasingly higher levels of export or of substituting domestic production for imports. The subsidies largely took the form of preferential access either to foreign credit or to credit extended by domestic Korean banks. The former was especially important during the early Park years, when domestic Korean savings were low, while the latter

become increasingly important during the heavy and chemical industries drive of the 1970s, the topic of the following section.

Some Koreans, at least, tend to see the export orientation of the early Park strategy as the product of pure genius. Though the role of strategic planning cannot be ruled out, it must be recognized that the first five-year plan encouraged both exportation and import substitution (local manufacture of goods that were imported), without explicitly favoring either. Indeed, in the early 1960s, development strategies calling for import substitution were much in vogue among developing nations. Many economists advocated them despite their obvious flaw: such a strategy calls for allocating resources into activities for which the affected nation has revealed comparative *disadvantage*. The classical argument for the gains from trade are based on precisely the opposite approach—that resources should shift, as the result of trade opening, into those activities for which that nation enjoys comparative advantage. In the 1960s, the answer given to this obvious problem was that developing nations might have unrealized comparative advantage in certain sectors that could be exploited if only the right activities could be identified and nurtured.

During such a period of nurture, defenders of these strategies argued, it might be appropriate to grant so-called infant-industry protection from imports. The idea was that the “infants” would grow into robust and healthy “adults” and thus, over time, activities that initially had required protection from imports would transform into being capable of themselves successfully exporting. Whether or not infant-industry protection actually makes practical sense is a question hotly debated among development economists. There are strong arguments against its logic: for example, this protection is likely to promote the development of activities for which no transformation into “adulthood” ever takes place, leaving them perpetually inefficient. Nonetheless, in the first five-year plan, infant-industry protection was one route Korea chose to take, and it arguably had some degree of success. Indeed, the case of Korea is often cited by proponents of infant-industry protection as evidence that this policy can work.⁵

As Korean planners recognized in the early 1960s, if one accepts the logic of infant-industry protection, one faces the significant problem in choosing the right activities—that is, those in which latent comparative advantage does exist. If the choice is incorrect, a protected infant industry might remain an infant indefinitely, requiring state aid in the form of continuing subsidies or protection simply to survive and never prospering. Indeed, the accumulated experience of many countries that have pursued import-substitution policies has been that infants nursed under these policies never grow into robust adults (Noland and Pack 2003).

5. In addition to Amsden (1989), see Pack and Westphal (1986).

Rather, they can become voracious infants, consuming vast resources that might otherwise be allocated to more robust activities and thereby retarding development. Furthermore, such “fat infants” typically create significant constituencies for the continuance of state aid, notably in the considerable numbers of workers that they employ. And even if the enterprises never earn acceptable returns on capital invested, their subsidies often make major shareholders wealthy enough to become major contributors to political parties. Thus, these constituencies often can effectively “capture” public policy so as to ensure that the aid is not cut off.

Recognizing these likely pitfalls, Korean planners who worked under Park during the early years developed two unwritten policies. First, export expansion rather than import substitution received higher priority. Thus, those infants given the most nurturance by the state were those that delivered increased exports. Second, complementing the first policy, activities that did not produce the desired result of increased exports were allowed to fail, often with ruthless speed. The unwritten rule in Korea became, in effect, that an entrepreneur who got in tight with the government could become rich, but only if that entrepreneur’s export performance was outstanding. By contrast, in many other developing countries, only a close relationship with the government was necessary.

These unwritten policies are evidenced by the export data: although they had accounted for less than 5 percent of Korean GDP at the end of the 1950s, exports had risen to more than 35 percent of a much larger GDP by 1980. Such growth would likely have been impossible had Koreans simply attempted to increase exports of only those goods that were already being exported. Rather, under the unwritten rules, Korean entrepreneurs either took those risks required to succeed in building new areas of comparative advantage for Korea or failed to receive the preferences that were available to firms that met export goals. Under these policies, infants that failed to export were unlikely to achieve capture of government policy—though, as we shall see, the Korean record in this regard was not entirely unblemished.⁶

The antecedents of what became the chaebol, for the most part, were those firms that succeeded under the policies of Park during the 1960s. In fact, as already noted, the entrepreneurs who built these groups often were already quite wealthy by virtue of activities undertaken during the overtly corrupt Rhee years. But many of these same entrepreneurs also succeeded in enlarging their business during the early Park years under policies that demanded performance rather than cronyism.

The instilling of export-oriented values in established companies was facilitated by one of Park’s first acts: with great theatrics, in 1962 he

6. For various accounts of the export-led growth strategy initiated by Park, see Krueger (1979); Balassa (1988); Papanek (1988); Amsden (1989); SaKong (1993); Cho S. (1994); and Noland (2000).

went after wealthy Koreans who, in his eyes, had illicitly accumulated wealth during the Syngman Rhee period (Jones and SaKong 1980). Most such persons were not subjected to criminal prosecution, as they might have been under laws hastily passed by the Park regime, but rather were forced to pledge to work to build a new Korean economy. Lee Byung-chol of Samsung, then the wealthiest person in Korea, went so far as to pledge to give his entire fortune to the Korean government, and eight other wealthy businessmen followed suit. None of them actually ever did so, though Lee donated land on which he had built a golf course south of the city of Seoul for the construction of a new campus for Seoul National University. What was eventually required of Korea's business leaders was to establish successful operations in new sectors and activities selected by the government. They were obligated in principle to give shares in these new firms to the government (ostensibly to pay back the illicit component of their wealth to the Korean people), but such payments were rarely made. What Park's theatrics succeeded in doing was both to frighten existing wealthy entrepreneurs and to demonstrate that if they played by the new rules that Park set, they could do well under the new regime.⁷

In its first years, the EPB recommended abolishing the multiple exchange rate system that had been in use during the 1950s, under which the Korean currency was persistently overvalued, and replacing multiple rates with a single exchange value for the Korean won that was consistent with export competitiveness. Implementation of this reform proceeded by fits and starts. A unitary fixed rate was introduced in 1961 under which the won was effectively devalued twice against the dollar, but multiple rates were reintroduced in 1963. In 1965 a fluctuating unitary rate was introduced. At the recommendation of the EPB, the Korean government began to ease or remove many import restrictions after 1962, in particular easing or eliminating restrictions on imports of goods or services needed as inputs to exports.

First to benefit from the new policies and engage in export-led development in Korea was the textile and apparel sector. The cotton textile spinning and weaving industry had engaged, as in many countries, the first "modern" industry in Korea even prior to the Park years; indeed, one firm in this sector, Kyongsong Spinning and Weaving, was an important exception to the rule that Korean entrepreneurs did not flourish

7. These entrepreneurs included the founders of the SK, LG, Hyundai, and Samsung chaebol. Lee of Samsung in fact in 1962 held a personal fortune estimated to be as high as 19 percent of all wealth in Korea (it must be kept in mind that Korea was a poor country and some part of his fortune consisted of land that had been inherited; but his fortune also was based on corrupt dealings during the Rhee years). In 1963, Lee also paid very large fines to the government. Personal relations between him and Park remained rocky, but even so Lee emerged as one of the major entrepreneurs favored by the Park government. See Jones and SaKong (1980).

under Japanese occupation. Kyongsong was founded in 1919 and had become a major firm before liberation (Amsden 1989). During the 1950s, other firms had entered this sector; by the time of Park's coup d'état, about 15 Korean firms were engaged in cotton spinning and weaving. Despite their number, there was little competition in this sector, for these firms had created a formal cartel. This action was taken partly in response to their having received subsidized loans offered through US aid programs during the 1950s. One condition of the loans was that the recipients not export output to the United States (thus beginning a long tradition by which the US government would lecture Koreans on the virtues of open markets while keeping domestic US markets partly closed to Korean exports). Faced with overcapacity relative to domestic demand, the firms had formed what amounted to a cartel to allocate production quotas. By international standards, labor productivity in this sector was high.

The 1961 devaluations initially hurt the textile firms because they depended on imported cotton and thus had to raise prices of finished goods to pay for the imported input. The instinct of the firms was therefore to seek won revaluation, but the EPB convinced Park that devaluation was ultimately in Korea's best interests. Domestic demand for cotton textile products responded negatively to the higher prices, as would be expected, and even more capacity became idle. The obvious answer to the overcapacity problem facing the industry, and indeed what the EPB sought, was that Korean textile firms begin to export at least some of their output. Were they to do so, the won devaluations would have made Korean products more export competitive. However, a number of obstacles stood in the way. Besides the US policy, just noted, Korean firms simply had not established links with international distributors and other agents necessary to obtain export business.

Park's response, guided by the EPB, was to use a "carrot and stick" approach to encourage these firms to export. As carrots, a large variety of subsidies and other incentives were offered to textile firms—preferential loans conditional upon exporting, tax exemptions (including tariff exemptions for imported inputs), and other measures. Citing Woo K.D. (1978), Alice Amsden (1989, 68) notes that these subsidies were necessary to enable the Korean firms to compete against more-established Japanese exporters, which had noncost incumbency advantages (e.g., established relations with international wholesalers and distributors of textiles and textile products).⁸ In terms of comparative advantage, Korean textiles should have been internationally competitive with the Japanese product, and

8. SaKong (1993), however, puts a slightly different interpretation on the subsidies; he claims that they largely served to offset price distortions in Korean domestic markets that were created by import-substitution policies and thus enabled Korean exporters to get prices right.

thus perhaps temporary subsidies to offset incumbency advantages held by Japanese firms were warranted. Indeed, their experience in the textile sector taught the Koreans that more than price competitiveness was needed to develop export markets; nonprice incumbency advantages of other producers also had to be identified and overcome.

This approach produced results. In 1961 textiles accounted for about 25 percent of Korean exports totaling \$5.7 million. In 1965, four years later, total exports had risen to more than \$106 million, of which textiles made up 41 percent.⁹ Firms that would eventually become the largest of the chaebol figured in this dramatic growth. For example, one of the star performers was the Cheil Wool Textile Company, founded in 1954 by Lee Byung-chol—who was, as noted above, one of the businessmen cited for corruption by Park in 1963. Cheil became the leading industrial firm in the emergent Samsung group. The name “Samsung” comes from a trading company founded by Lee in 1948, from which Lee made his early fortune deemed “illicit” by Park.

The third largest of the chaebol at the time of the 1997 financial crisis, Daewoo, also began its life in 1967 as a trading company whose major business was the export of textiles and apparel. Specifically, Daewoo rose because it was able to obtain export quota rights to the United States when the United States began to sharply restrict imports of apparel.¹⁰ In the early years, Daewoo’s business consisted mostly of selling the right to export clothing to the United States to other firms; its business was simply to collect (to use the economists’ term) the rents that accrued to those rights. Over the period 1967-76, Daewoo’s exports grew at an annual compound rate of 122 percent. This business was so lucrative that the quota rights were eventually placed in a firm separate from the rest of the group; its sole function was to enrich the original owners but bypass new minority shareholders. But by 1968 Daewoo was engaged in the manufacture as well as the trading of textiles.

Although the export performance of the textile industry and of certain other light industries (e.g., footwear) created the first major spurt of growth of the Korean economy, the development of such industries was not really what Park had in mind for Korea. Rather, he dreamed of a time when Korea would be a major international producer of such products as steel, ships, heavy vehicles, and heavy machinery—products that Park associated with national strength (an association that dated to Park’s years with the Japanese military). During the 1960s, however, the EPB was of a

9. In 1964, when Korean exports first reached the \$100 million mark, Park established a national “Export Day” at which high export performers received awards handed out by him personally (SaKong 1993).

10. In obtaining these rights, Daewoo chairman Kim Woo-chung doubtless was able to make use of a personal tie to give him access to the president: his own father had been a teacher of Park Chung-hee (see Clifford 1994).

somewhat different mind-set. The EPB experts were all trained (or at least well read) in economics, and they emphasized to Park that if Korea were to succeed as an exporting nation, the government should continue to develop industries in which the Korean economy had at least latent comparative advantage. These, according to the EPB, were in light manufacturing. The EPB agreed with Park that more capital-intensive industries might be built over time, but disagreed that an attempt to develop them should be made early on. Thus, as the EPB prepared a succession of five-year plans for the Korean economy, the experts stressed comparative advantage, while Park continued to push in the direction of heavy industries.

For a time, the EPB held sway. One reason was that the very success of the textile sector in establishing itself as a major exporter served during the 1960s to hold in check Park's ambitions in heavy industry. In addition, the growth of new heavy sectors would require very high rates of capital formation, whose financing in turn necessitates that a nation either generate domestic savings or import large amounts of capital from abroad. During the 1950s, net domestic savings in Korea were close to zero, with the result that capital formation had to be largely financed from abroad (mostly in the form of concessional aid), and this situation was inherited by Park. Consequently, to finance sizable capital formation in the early Park years, Korean firms largely had to look overseas, and the availability of this financing was limited. Foreign lenders simply were unwilling to lend money to build steel mills or shipyards to Korean firms with little or no experience in the heavy industries. For example, whereas the first five-year plan, at Park's insistence, called for the development of an integrated iron and steel complex in Korea, the World Bank nixed that idea. Thus, Korean dependence on foreign finance initially played into the hands of the EPB and constrained Park's ambitions.

Dependence on foreign finance did, however, give the government a potentially powerful method for guiding economic activity, which was to control credit extended by foreign lenders to Korean enterprises by acting as guarantor of that credit. The Park government was very quick to recognize this potential. In 1962, the Foreign Capital Inducement Deliberation Committee was formed within the Economic Planning Board to screen applications by Korean firms for foreign finance. The power to control which firms would receive foreign credit thus came to be used by the government as a tool of industrial policy. This power was used extensively when Korean firms, under government direction, began to invest in highly capital-intensive activities—the heavy sectors of which Park dreamed—during the early 1970s.¹¹

11. Or, to quote SaKong (1993, 106), "foreign borrowing in Korea has been tightly monitored from the very beginning to make sure that borrowed capital is used productively." Sakong also notes, however, that the government considered all appropriate applications and that the policy was quite liberal, resulting in "excessive" foreign borrowing. This

As growth took off in Korea, national savings rose from essentially zero in the early 1960s to close to 20 percent of GDP in 1970. This jump enabled a growing fraction of domestic capital formation to be financed domestically rather than internationally. Savings as a percentage of GDP continued to grow after 1970, reaching almost 25 percent of GDP in 1980, close to 30 percent in 1985, and more than 35 percent in 1990; Korea thereby transformed itself from a low-savings nation to one of the world's highest savings nations. Although this change enabled Korea to become less dependent on capital from abroad to finance investment, rates of Korean capital formation in most years nonetheless continued to outstrip domestic savings. Thus, Korea continued to be a significant net capital importer, as reflected in a negative balance of payments on the current account, until the middle 1980s. But the greater availability of domestic savings to finance investment implied that those sectors into which this investment was directed could be increasingly determined by the government without being constrained by foreign creditors.

In fact, as domestic savings grew in Korea, control over how to direct those savings fell almost completely in the government's hands, because in 1962 the Park government had brought the financial sector largely under government control. Most banks were nationalized, and a law was passed enabling the government to protect lenders from default risk on at least some loans by means of government loan guarantees. This measure set in motion a process by which banks and other lending institutions became willing to take larger risks than they might otherwise have done. But, at the same time, because they were protected from default, these institutions over time failed to fully develop the capability to assess and manage risk, a failing that was to hurt Korea in the future.

The government's control over loan allocation in fact increased during the Park years. Initially the government made generally available through the banks subsidized loans for working capital to any firm that could demonstrate success in exporting. But in later years subsidized long-term loans increasingly were available only to those firms specifically designated by the government.¹²

"excess" resulted because until the late 1970s, borrowing from abroad carried lower interest costs than borrowing from domestic sources, and exchange rate risk was mitigated by the government's efforts to hold the real rate approximately constant (in fact, as noted later in the text, the real rate's appreciation over that time tended to favor borrowing from abroad even more).

12. During the 1960s, credit (loans for working capital) was granted largely on a nondiscriminatory basis; any firm operating in any sector could qualify if it convinced the government that the result would be increased exports. Later, as will be described below, the EPB began to attempt to "pick winners"—those sectors or activities in which it believed Korean firms could become internationally competitive exporters. But at this time, when allocating long-term credit, the government also frequently favored one firm over another even if both firms participated in the same industry and that industry was among those being promoted by the government.

Because of government control of lending and the preferential terms on which many loans were made, by the late 1960s Korean firms had already become very debt-heavy in their financial structures. The debt-to-equity ratio of the Korean corporate sector was upwards of 400 percent, much higher than in most nations. One consequence was that in 1969 a number of highly indebted companies in Korea were teetering on the edge of bankruptcy, and this number grew in 1970 and 1971. The cumulative result was that Korea faced an international liquidity crisis in 1971 because many of the troubled firms had large foreign loans on the books. In response, the International Monetary Fund forced Korea to devalue the won. This helped exports but also raised the won value of foreign debt held by the troubled corporations, forcing a reduction in foreign borrowing. In 1972, in an effort to ease the financial burden on Korean firms, Park attempted to control the curb market, the largely informal and uncontrolled market for funds that existed outside of the banking system. Lenders in the curb market were told that there would be a three-year moratorium on repayment of debt incurred by firms through this market. This action had the unintended effect of reducing the wealth of the many Korean households that had lent their saving to the curb market. Households reacted by refusing to invest new funds in it. Because many businesses were dependent on the curb market for liquid funds, the overall result proved to be the reverse of what was sought: financial pressures on most firms were increased, not reduced. When this became apparent, Park backed off his efforts to control this market. Even so, with this misstep the popularity of the Park government, which had been very much based on economic successes, began to wane.

As part of the drive to increase exports, the Park government initiated a number of diplomatic moves during its early years. The first, in 1965, was to normalize diplomatic relations with Japan, enabling commercial relationships to develop between Japanese firms and Korean firms. This normalization was highly unpopular, but it bolstered the export capabilities of Korean firms, which in some cases became major suppliers to Japanese firms. As a result, Korean firms gained not only export markets that otherwise would have been unavailable but also a channel by which Japanese technology was transferred to the Korean suppliers. Thus, Korean firms became suppliers to Japanese firms in a number of sectors in which the Korean firms were new entrants, such as the manufacture of electrical and electronic components and other light manufacturing that was more technology intensive than textiles and footwear. For a time, the success of these new ventures further strengthened the hand of the EPB, which continued to argue that Korea's future lay in gradually "deepening" the capital-to-labor ratio of Korean industry and in upgrading Korea's export sectors by advancing skill and knowledge rather than by immediately establishing heavy capital-intensive industry. Knowledge-intensive light and medium industries were seen by the EPB as activities in which Korea

held latent comparative advantage, but Park continued to dream of heavy industry.

Other diplomatic moves fed into the drive to transform Korea into an exporting nation. Trade agreements negotiated by the Park government with a number of countries enlarged the number of markets to which Korean firms could sell. Trade-related institutions such as the Korea Trade Promotion Agency (KOTRA), Korea Traders Association (KTA), and the Federation of Korean Industries (FKI), as well as numerous industry-specific trade associations, were created to help facilitate trade. KOTRA was a government agency charged with finding export business opportunities and educating Korean business as to how to avail themselves of those opportunities. (KOTRA also had the power to tax Korean imports, raising revenues that were meant to finance KOTRA's export promotion activities but were also used as political slush funds by Park.) The KTA was a private-sector group that worked with KOTRA to realize overseas market opportunities, and during the Park years it was effectively under KOTRA's control. The FKI was formed by that group of entrepreneurs that had been branded by Park in 1962 as corrupt and who subsequently pledged their personal fortunes to the development of Korea. Even so, the FKI was to become the major vehicle by which the government conveyed its marching orders to Korean industrialists. The new Korean institutions all contributed to the continued rise of Korea as an exporter of light manufactured goods, including final goods as well as intermediate goods such as electronic components. For example, by 1970 Korea had emerged as a major exporter of footwear as well as textile and apparel products, and of a variety of other light manufactured goods such as women's accessories and electronics products.

We can thus summarize the early Park years: Following a disappointing decade after the Korean War, Korea under Park's leadership attempted "export-led growth" policies (intermixed with import-substitution policies). The export-led policies were quite successful, as measured by growth of Korea's exports from sectors in which the country held demonstrated comparative advantage (mostly the textile and apparel sectors). The policies initiated under Park and the EPB simply worked far better than did the earlier policies attempted under Rhee.

However, even in the midst of this reversal of the poor performance of the Rhee era, Korean planners in the EPB worried that the positive results might not be sustainable. In particular, as detailed in the next section, they were concerned that Korea might, over time, lose comparative advantage in those sectors in which Korean firms were currently exporting successfully. They also were under constant pressure from Park to include in their plans the establishment of heavy industry. Thus, in the coming years, the government was to engage in a large-scale experiment in industrial policy, with the aim of creating new sectors in Korea in which domestic firms could become internationally competitive.

The HCI Drive

Beginning in the late 1960s and continuing over the next 10 years or so, the direction of Korea's policies toward the creation of export industries changed, particularly under what has come to be known as the "heavy and chemical industries (HCI) drive" that was formally launched in 1973. As suggested in the previous section, this change of economic strategy was accompanied by a change in the style of Park's leadership, which became increasingly authoritarian during the 1970s—especially after the 1971 election, which was followed by a series of protests. Park's response in 1972 was to declare martial law and then to change the Korean constitution to make himself president for life. In 1973 Kim Dae-jung, who after the 1971 election had become the main leader of what organized opposition to Park existed, was abducted from a Tokyo hotel by Korean security agents who intended to assassinate him. International disapproval of this incident was loud and swift, particularly on the part of the United States and Japan. The Japanese government was especially outraged because the kidnapping had taken place on Japanese soil. Kim was spared death largely because of rapid intervention by the US ambassador to Korea, Philip Habib, who made it clear that the United States would view Kim's death as a serious matter that would affect relations between Korea and the United States.

This incident also caused the popularity of the Park government within Korea itself to drop even further. Indeed, as a result of this failed kidnapping and the increasingly repressive nature of the Korean government, the whole period of the HCI drive, especially its last years, was a time of rising domestic discontent, even though economic growth through much of this period remained positive. Because this was also the period during which the largest of the chaebol began to take shape, there exists in Korea to this day an association of the rise of these firms with the repressive aspects of the last years of Park's rule.

The genesis of the change of economic policy was to be found in the EPB's second five-year plan. This plan, announced in 1967, was meant to cover the period 1971-76. In many ways it mimicked the first five-year plan; for example, it called for specific goals with respect to increased exports and industrial production. However, the plan also suggested that the sectoral composition of exports should change, with the emphasis moving from light manufacturing to heavy manufacturing industries—a shift clearly favored by Park even if not endorsed wholeheartedly by the EPB itself. As early as 1967, some movement in this direction already in fact had begun. But the second five-year plan sought to accelerate the shift. Accordingly, a series of industry-specific acts (detailed below) were passed in the years 1967-70 that signaled exactly what sectors would be promoted by the government.

The second five-year plan was supplanted in 1972 by a third five-year plan, which enunciated three basic goals: the development of agricultural and fishing industries, a major increase in exports, and a further buildup of the heavy and chemical industries. But in 1973, President Park, acting under martial law, announced the Heavy and Chemical Industry Declaration; this marked the official launch of the HCI drive, which shifted priorities still further toward heavy and chemical industries. This declaration was apparently made by Park without consulting the EPB, and it thus marks a takeover of economic as well as political policy by Park. The EPB was not dismantled, but for the next six years, until the assassination of Park, its influence would be much diminished.

Even so, the hand of the EPB was strong in the HCI program. SaKong Il (1993) notes that Park saw such a program as necessary because EPB planners themselves forecast that export growth via the light industries that had grown so impressively during the 1960s and early 1970s could not be sustained. Also, the EPB believed that new protectionist measures were likely to be enacted by those countries that were Korea's major markets in those sectors in which Korean products were already well established, especially textiles, apparel, footwear, and consumer electronics. In fact, a new protectionist measure to benefit the textile and apparel sectors had been introduced in 1964 in the United States (the Short-Term Agreement on Cotton Textiles). Four years later, Richard Nixon waged a successful campaign to become US president in 1968 on a platform that included still more protection for these sectors.

A second concern of the EPB was possible future loss of comparative advantage in many of the sectors in which Korea had become a successful exporter. In particular, in the light manufacturing industries Korea was seen as likely to face rising competition from developing nations in Southeast Asia. Given that these sectors tend to be quite labor intensive, and because Korean wages were rising rapidly, planners at the EPB believed that Korea could rapidly lose comparative advantage to countries where labor costs were considerably lower. Following the 1971 visit of President Nixon to China, fear of loss of comparative advantage to China overtook fear of loss to Southeast Asia.

In addition, although Korea had boosted exports from only 2.4 percent of GDP in 1962 to almost 10 percent of GDP in 1970, imports as a share of GDP also rose, from 18.3 percent to 24.4 percent. Thus, the balance of trade of Korea remained negative. This might be expected: Korea was a rapidly growing economy and, to maintain growth, international import of capital was necessary, causing a current account deficit. Nonetheless, alarm spread when, after the balance of trade had improved during the first couple of years of the Park government, it began to deteriorate in 1966 and subsequent years.

Even so, EPB planners remained skeptical of the idea that to offset potential loss of comparative advantage, Korea should attempt quickly

to develop new comparative advantage in heavy capital-intensive sectors. They continued to favor rather a gradual move into more capital- and knowledge-intensive sectors. Park, by contrast, believed in the all-out pursuit of heavy industries. The third five-year plan thus reflected a compromise between Park and his economic advisors. But, as just noted, the HCI Declaration of 1973 superseded the third five-year plan and signaled Park's complete takeover of economic planning.

In fact, even before the HCI drive, differences between Park and the EPB were increasingly being resolved in Park's favor. This tendency is revealed in the sectors targeted in the series of legislative acts that had been passed in conjunction with the second five-year plan (and that thus predated the HCI Declaration). In fact, because these sectors largely coincided with those given priority under the HCI Declaration, the latter did not so much change the direction of Korean policy as change the rate at which the direction changed. The Industrial Machinery Promotion Act of 1967, the Shipbuilding Promotion Act of 1967, the Electrical Industry Promotion Act of 1969, the Steel Industry Promotion Act of 1970, and the Petrochemical Industry Promotion Act of 1970 all called for measures to be taken to grant firms entering into these sectors preferential treatment—easy access to both foreign and domestic credit, tax breaks, public provision of infrastructure, and so on.

The major goals of these acts, with one exception, were to be accomplished by private firms responding to the incentives offered by the government. In the case of the steel industry, whose development required a huge front-end investment (i.e., the resources had to be committed prior to any commercial output being achieved), the plan called for a state-owned firm to be created: the Pohang Iron and Steel Company (POSCO). This venture has arguably been the most successful of all the undertakings to come out of the HCI period; at the time of this writing, in fact, POSCO is the world's second largest and, by most accounts, most efficient steel-making firm. POSCO was established in 1968, and another former general in the Korean army who had been trained in Japan (at the prestigious Waseda University) was put in charge of the firm. This general was Park Tae-joon, who was to run POSCO as though it were a military operation until he retired in 1992. Finance and technical assistance for what was to become a very large integrated steel mill in the then-sleepy fishing town of Pohang, located on the southeastern Korean coast, was obtained from Japan, which had pledged to provide financial assistance to Korea as part of the 1965 normalization of relations (and as compensation for the colonial period). Park Tae-joon's Waseda connections helped to persuade Japanese officials to allow the assistance to be used to create a modern steel complex in Korea, even though some of these officials were concerned that this complex, if successful, could mount serious competition to Japan's steel industry (Amsden 1989; Clifford 1994). What was to become a 9 million ton per year mill was up and running in Pohang in 1972, one year

before the HCI Declaration. The output of this mill would provide input for other HCI ventures, most notably a number of entries into large-scale shipbuilding. Twelve years later an even larger complex was opened on an artificial island in Kwangyang Bay, in southwestern Korea.

The ensuing HCI drive had the effect of establishing Korea as a world-class competitor in at least some of the designated heavy industries; but it also created a number of major weaknesses, imbalances, and inequities in the economy (and reinforced certain weaknesses that were already present). Also, the HCI drive propelled the formation of the very large chaebol and the subsequent concentration of economic power in their hands. Moreover, during the HCI drive, development of the financial sector in Korea almost ground to a halt, as all available resources were concentrated into the heavy industries under government direction. As is argued later in this book, the concentration of economic power in a few large groups and the failure to develop a strong financial sector combined to lay the foundation for major problems that would later confront Korea, some of which remain unresolved.

President Park's HCI Declaration of 1973 thus continued to target the sectors enumerated in the earlier acts. The declaration also added non-ferrous metals to the sectors targeted and mentioned a goal of producing 500,000 automobiles annually by 1980. Park subsequently created a Heavy and Chemical Industry Planning Council to implement his grand scheme. Effectively, this council replaced the EPB as his main group of economic advisors. Cho Soon (1994) notes because this new group operated under heavy secrecy, it is difficult to know exactly what it did during the years of its existence. Nonetheless, judging from what is known, the council seems to have been more concerned with solving technical and engineering problems than with evaluating whether the projects being implemented made economic sense, as the EPB might have done. But the Heavy and Chemical Industry Planning Council did at least nominally share authority over planning with the EPB, which continued to devote attention to the economic viability of projects that were undertaken and provided some moderating influence, albeit to an extent not entirely clear.

As part of the HCI drive, in 1973 a law was enacted to create 13 heavy and chemical industry complexes throughout Korea at which facilities in the chosen sectors were to be established. This establishment would be accomplished in part by means of heavy government subsidies. But the nature of the activities required that the policy toward subsidies be revamped. In particular, because these facilities were to be very large in scale, any subsidies for their building would almost necessarily have to be offered selectively and not, as during the earlier period, on a nondiscriminatory basis. The Korean government simply did not have sufficient resources to hand out such large subsidies to all applicants. Likewise, because those projects that continued to be financed overseas would

be larger than in the past, overseas lenders would require government guarantees as a condition for granting the loans. During the 1960s, in contrast, although Korean firms had required government permission to borrow abroad, once this permission had been granted the overseas lenders did not require government guarantees. Thus, the government was also forced to become more selective than in the past with respect to which firms were given permission to borrow abroad, as it could guarantee only a small number of large loans. Furthermore, because the creation of the new activities required that resources be sunk on a front-end basis, receipt of subsidies could not be conditioned on performance.

Of course, if subsidies now were to be given to only a few firms—subsidies both large and front-ended—the door was opened to the possibility of cronyism, such that political considerations could effectively determine precisely who received the subsidies. Thus, one story often told about the HCI drive is that an entrepreneur's access to the subsidies was ultimately a function of his relationship with Park Chung-hee. To be sure, Park had always preferred those entrepreneurs who demonstrated that they were capable of meeting the government's goals. But no Korean would deny that of all the entrepreneurs who might have had such a capability, those who actually received subsidies were individuals who found favor one way or another with the Korean president.

Moreover, in the years of the HCI drive it is clear that favored entrepreneurs "followed the subsidies." That is to say, their choice of activity was dictated by what subsidies were available. Thus, William Zeile (1996) demonstrates a significant correlation between the numbers of chaebol-affiliated firms that were established in new sectors during the early years of the HCI drive and the measures of credit preference granted to those sectors. These were the circumstances under which, during the HCI drive, the large chaebol grew out of what had been much smaller groups of firms.

Indeed, as the HCI drive progressed, a pattern of investment undertakings on the part of those firms that were to become the chaebol became discernible. At the outset of the drive, each of the predecessor firms of what were to become the largest of these groups entered into one or a few of the targeted sectors; by and large, they did so successfully, in that they overcame technical barriers to entry. Whether total return on each investment was satisfactory—where the return includes externalities and the underlying investment includes all subsidy components—is another matter. Analysis of the HCI period does show that average returns on capital were high (Hong 1981; Hsieh 1997). This finding, taken together with the rapid growth in per capita income that Korea continued to experience during the HCI period, might suggest that most new undertakings earned positive social returns on investment. However, Yoo Jung-ho (1989) demonstrates that capital invested in the HCI-designated sectors earned average rates of return that were lower than for other sectors.

This conclusion does not imply that returns were inadequate in the HCI sectors, but it might indicate overinvestment in these sectors such that marginal returns on new investments were low. Investors nevertheless made these investments because the available subsidies compensated them for the low returns.

Over time, each of the groups also began to diversify by entering into other “priority” sectors, with two results. First, the groups began to look more and more alike; that is, they all were operating in the same sectors. Second, subsidies continued to flow to these groups even as the positive rationale for granting such subsidies—which rests on the existence of a “wedge” between high social rates of return and lower private rates of return—was diminishing: as the scope of the activities of the chaebol expanded and activities were duplicated, the social rate of return on the investments made by the groups was almost surely declining, to the point that eventually it likely became negative.

We examine further indicators of the success or failure of the HCI drive in the next section of this chapter. First, however, we consider the experiences during this period of several of what were to become the largest chaebol.

One of the priority sectors of the HCI drive was shipbuilding. The largest operation created in the sector prior to the HCI drive was that of Hyundai; Hyundai’s main business was construction, carried out through Hyundai Engineering and Construction Company (HECC), which remained the flagship of the Hyundai group until that group was broken into several components in 2001. HECC’s first business had been construction work for the US Army, and such work remained important through the mid-1960s. A big break came at that time, when HECC received a contract from the Korean government to construct a highway from Seoul to Pusan. In 1964 Hyundai started its first manufacturing operation, a small cement mill, for which it relied for technical assistance on two US companies, George A. Fuller and Allis-Chalmers. Ten years later Hyundai would export a large-scale cement plant to Saudi Arabia. In 1967 Hyundai established a small-scale car company, about which more shortly.

Through the early HCI years, the construction business of HECC continued to grow; indeed, this business developed into a major export operation in the early 1970s when HECC first won numerous construction contracts in other Asian nations, especially in Southeast Asia and, later, contracts in the then cash-flush oil-exporting nations of the Arabian Gulf. HECC’s rising reputation as a major international player in construction was based on the ability of the firm consistently to bid low on major projects, and then to deliver the project on time without cost overruns.

With the onset of the HCI drive, Hyundai began to diversify its activities by entering into the sectors targeted for development by the government. Hyundai’s first really big new venture was initiated in 1970, when a shipbuilding division was created within HECC to start a large-scale

shipyard at Ulsan, a small town near Pusan.¹³ This move was not, of course, driven by dispassionate analysis on the part of Hyundai management indicating that shipbuilding might be a good activity to enter. Rather, Hyundai was responding to the government's 1967 act to promote shipbuilding. Thus, the decision to enter the sector was ultimately determined by the government and, indeed, Hyundai needed the government's blessing to go ahead with its plans.

Korea at the time already did have some shipbuilding capability, in particular that represented by the government-owned Korea Shipbuilding and Engineering Corporation (KSEC). It is unclear why Hyundai was chosen to carry out government plans to enter into the production of very large ships rather than, say, KSEC, whose capacities could have been enlarged. (As it happened, later on during the HCI drive, KSEC was given the go-ahead to create an operation to build large ships—and this project, as we shall see below, proved to be a near disaster.) Indeed, one might wonder why this sector was pursued at all; at the time that the decision to enter shipbuilding was made, there was an emerging worldwide glut of capacity, and few shipyards anywhere were operating profitably. A plausible explanation is simply that President Park had developed a close relationship with Hyundai founder and chairman Chung Ju-yung.

For whatever underlying reasons, Hyundai pressed ahead with its plans with the strong support of the government. In 1972, when the shipyard was beginning to take shape, the operation was incorporated as a separate firm from HECC; the new firm was Hyundai Shipbuilding and Heavy Industries, later renamed simply Hyundai Heavy Industries (HHI). The spin-off apparently had to do mainly with tax treatment of income from the new operation.

The shipyard began building its first ships, two identical very large crude carriers commonly known as "supertankers," in 1973, using steel from the POSCO mill that was by now operating nearby in Pohang. The ships were finished in March 1975, significantly behind schedule. The largest barrier to entry that Hyundai had to overcome was not inadequate finances—with government guarantees behind it, Hyundai was able to raise the needed capital abroad—but rather insufficient human capital: it lacked the knowledge and skills necessary to build large-scale ships. Thus, the start-up of the yard required much technical assistance from abroad. In 1973, about 70 personnel from Hyundai were sent to work at A&P Appledore shipyard in Scotland to learn how to organize and manage a large shipbuilding operation. Appledore itself was in financial distress and welcomed the revenue from Hyundai. Hyundai engineers concurrently learned ship design from the Scottish firm Scotliithgow, which sent personnel to the Ulsan facility to work on the two large crude

13. The following paragraphs on Hyundai Heavy Industries rely on information in Amsden (1989) supplemented by information in Hyundai annual reports.

carriers, which were identical in design to ships produced at its own yards. The main benefit to Scotlithgow was the additional revenue; Scotlithgow also was suffering economically. Thus, perhaps because the shipbuilding sector was in a depressed state, Hyundai was able to acquire needed technology on the cheap. Additional technical assistance was soon obtained from Kawasaki's shipyards in Japan, which licensed the Hyundai yards to build two more ships in 1974 of design similar to the Scotlithgow ships, all of which were destined for the Greek oil tanker tycoon George Livanos. Hyundai later won orders for a type of container vessel originally designed by another Scottish firm, Govan, that was going out of business. This order enabled Hyundai to achieve some needed scale economies in production.

As noted by Alice Amsden (1989), the support of the Korean government to HHI has never been publicly documented in any detail but is known to have been very substantial. The creation of the shipyard required a front-end investment of \$900 million, which was at the time a very large sum for a single undertaking by a Korean firm. Overseas credit for this investment was arranged by the government, which also guaranteed the loans. The government provided as well the land and infrastructure needed by the shipyard free of charge, a practice that would be repeated many times over for favored projects. Furthermore, the government supplied financial assistance to help HHI to win its first order. Amsden notes that in addition to start-up subsidies, the government gave HHI, and other shipbuilders, continuing financial assistance. Such assistance was probably necessitated by the state of shipbuilding during the 1970s; as already noted, the industry was suffering from excess capacity worldwide.

In addition, the Korean government required that crude oil delivered to Korean oil refineries be carried in Korean-made ships, and Hyundai was given a monopoly in implementing this requirement. Thus, Hyundai Merchant Marine Corporation (HMMC, or Hyundai Marine) was established to take delivery of the oil tankers from Hyundai's shipyard and to operate them. As a consequence, Hyundai became not only a shipmaker but also a shipping line.

In spite of the assistance it received from the government, during the early years of its shipbuilding operation HHI found itself beset with a number of problems. The worst of these were technical. In particular, Hyundai lacked the internal capability to modify ship designs to meet specific needs of individual customers. The firm responded by investing to increase its own technological competence and to wean itself from reliance on the assistance of foreigners. To this end, Hyundai Industrial Research Institute was founded in 1978 to concentrate on ship design. It was eventually staffed with about 900 well-trained technical personnel; through its efforts, HHI was able to stop drawing on foreign design expertise altogether. In 1984 HHI started the Maritime Research Institute,

which worked on advanced ship design, enabling HHI to enter into the production of vessels such as liquefied natural gas (LNG) carriers, which commanded higher margins than “commodity” ships such as oil tankers.

Also in 1978, the firm created Hyundai Engine and Heavy Machinery Company to produce ship engines and other heavy components that had previously been sourced from Japan; the new company was intended both to reduce costs and to increase reliability of engine delivery. To be internationally competitive in this industry, a firm’s ability to meet delivery deadlines for ships was as important as making a low bid. Hyundai suspected that Japanese producers had both raised prices and intentionally delayed delivery of engines in order to reduce the competitiveness of HHI. Although operating in an industry marked by low or negative profitability worldwide, HHI showed profits in its public statements. Nevertheless, HHI and its associated operations almost surely incurred massive losses (especially if one counts the losses that doubtless were incurred, albeit never reported, by Hyundai Marine). It could report profits only because many if not most of these costs were borne by the government (and thus by the Korean people at large, who also had to pay for some indirect transfers that benefited Hyundai, notably those created by the monopoly right granted to Hyundai Marine to transport crude oil to Korea) and not by the shareholders of the emerging Hyundai group.

Low profits notwithstanding, HHI was not the only large shipbuilding firm that came into existence during the HCI drive. In addition to the new entrant Hyundai and the incumbent (and failing) KSEC, two other of the emerging chaebol, Samsung and Daewoo, created large-scale shipbuilding operations by the end of the HCI drive. But unlike Hyundai, neither Samsung nor Daewoo entered the shipbuilding business from the ground up. Instead, during the late 1970s both took over ailing firms that had attempted to enter the sector but had gone bankrupt doing so. Samsung acquired Daesung Heavy Industry Company, an entrant into shipbuilding by another nascent chaebol, in 1977. Daewoo became a shipbuilder by acquiring KSEC’s failing shipyard at Okbo in 1978.

The KSEC shipyard was meant to function on the same scale as Hyundai’s Ulsan yard. However, from the beginning it had been dogged by financial and operating difficulties. Reportedly, Daewoo took it over in 1978 with a 51 percent equity share at the insistence of Park Chung-hee, despite the reluctance of its chairman, Kim Woo-chung (the remaining shares were held by the government-owned Korea Development Bank). At the time of the takeover, completion of the Okbo yard was years behind schedule. Over the next several years, Daewoo was to invest more than a quarter billion dollars into this shipyard without the operation ever showing a profit. It would become one of several albatrosses plaguing the Daewoo group that would eventually bring the whole chaebol down.

The KSEC/Daewoo Okbo operation underscores one of the darker aspects of the HCI drive: many of the activities then created encountered

from the onset serious difficulties that were never fully resolved. Indeed, one characteristic of the entire HCI period in Korea was that a sizable number of attempted entries into the targeted industries resulted in bankruptcies—or, to use the terminology in favor at the time, created “unsound” firms. The first response of the Korean government to the emergence of “unsound” firms was to assist them by wiping out their debts and allowing them to continue in operation with clean balance sheets (this is in fact how the Korea Development Bank came to be a 49 percent owner of the Okbo shipyard). But to the surprise of few, this approach was not very successful; by 1976 the government found itself forced to broker on a large scale the acquisition of unsound firms by firms (or groups) that were deemed sound.

Cho Soon (1994) notes of such acquisitions during the later years of the HCI drive that the government stepped in with “rescue loans” meant “to avoid the massive layoffs that would accompany bankruptcy.” This action established a precedent that would be followed right up to current times: banks would be forced by the government to lend to firms in difficulty in order to keep them from shutting down operations and laying off workers. It could be argued that the earlier policy of allowing nonperforming firms to fail was not entirely abandoned, because the takeover of the unsound firms resulted in the original shareholders losing their stakes in the failing firms. The hope was that the unsound firm would be turned around by the new owner. But, as noted, this did not always happen.

Thus, both Samsung and Daewoo entered shipbuilding by acquiring unsound firms. Such acquisitions would continue to be a major means by which the largest chaebol expanded over the next two decades. But many of the failing firms continued to be unsound even after being taken over by the large chaebol. They were able to remain in business only because their operations were in effect subsidized by better operations within the same group.

Even after the HCI drive ended, a number of other shipbuilding operations were started in Korea. In 2001 nine major shipyards were listed (ones that built large oceangoing ships, i.e., not including facilities that were repair-only or that built smaller vessels for use on inland waterways), owned by eight different firms: Hanjin (the owner of Korean Airlines, which took over KSEC’s operations other than Okbo), Samho, Daedong, Shina, and Daesun as well as the three large chaebol listed above. Daesun reentered the business in the late 1980s. In the 1990s the Halla group, controlled by close relatives of Hyundai’s founder Chung Ju-yung, also attempted to enter the large shipbuilding sector, with disastrous results for the group (see chapter 4).

What can be said about these other operations? First, they were all on a significantly smaller scale than those of Hyundai. According to the Korean Register of Shipping, the total number of ships delivered by or

on order with Hyundai since HHI's inception through year-end 2000 was 1,224. All other shipyards combined have delivered or have on order 1,490 ships. The two largest shipbuilding operations in terms of ships delivered apart from HHI are Daewoo Heavy Industries and Samsung Heavy Industries. The ships delivered by or on order from Daewoo Heavy Industries total 541, and this operation has, as just noted, been heavily money-losing from the outset. (In some years, Daewoo has reported profits on its shipbuilding, but it is difficult to know to what extent these might have derived from subsidies.) In 2002, although the Daewoo group had failed, Daewoo Heavy Industries was still in business. It had a negative net worth, and a market value of close to zero.

Samsung Heavy Industries, which holds the Samsung shipbuilding operation, has compiled a somewhat better record. Although it delivered or has on order 391 ships, significantly fewer than Daewoo, according to statements published by the company it has earned profits in more years than has Daewoo. But losses were reported in 1996, 1997, and 1998. The price of equity shares in the firm has plummeted in recent years, with the result that the market price of the firm is now significantly below book value. Nonetheless, the Samsung group has a reputation for being generally better managed than the other large groups in Korea; one possible indicator of superior management is that Samsung Heavy Industries has in recent years had significantly higher sales per employee than the comparable units of either Daewoo or Hyundai.

Shipbuilding thus stands out as an example of how firms decided to enter into a new sector, following the subsidies rather than evaluating expected total return on investment. This approach almost surely led to overinvestment in the sector reducing average returns on capital invested. The experience of Daewoo suggests that at the margin, these returns were low or even negative.

The same pattern is visible in other sectors. For example, entry into electronics, one of the sectors designated by the HCI drive, was largely driven by the availability of subsidies. Some predecessor firms to the chaebol were already participating in this sector before the drive began—notably Goldstar (the “G” in LG), which was founded in 1959 to assemble radios. By the time of the enactment of the Electrical Industry Promotion Act of 1969, Goldstar was producing a number of electronic and electrical goods, including television receivers, telephones, and home appliances. At least some of Goldstar's production was as a subcontractor to Japanese firms; indeed, Goldstar products were in some cases exported and sold under the brand names of non-Korean firms. Other firms had already entered this sector prior to the 1969 Act, such as the Taihan group, which was in fact the largest electronics firm in Korea prior to the HCI drive but which did not fare well once the drive began.

Still other firms entered electronics following the passage of the Electrical Industry Promotion Act of 1969. Two of these were firms associated

with what were to become the “big five” chaebol: Samsung established the Samsung Electronics Company in 1969, and Daewoo created an electronics firm in 1971. Daewoo’s electronics operations were later enlarged via acquisition of the Taihan group, which had become “unsound.” Both Daewoo and Samsung initially produced television sets, again often acting as subcontractors to foreign firms so that Korean-made products were exported and often ultimately sold under a foreign brand name.¹⁴ The remaining two of the big five entered into the electronics sector well after the conclusion of the HCI drive—Hyundai in 1983, and SK only in 1995 by beginning to produce telecommunications equipment.

During the HCI drive, the Korean government sought to upgrade Korean electronic firms from merely being assemblers of televisions and producers of relatively simple components. Accordingly, ambitious long-term goals were set for these firms to become producers of advanced electronics products, including computers. The usual array of incentives was offered, centering on subsidized loans (including overseas credits). But the government also established an industrial park that would be dedicated to semiconductor and computer manufacture, and founded and placed in this park a government-supported research institute that would work with Korean companies to build technological competencies. The domestic market for targeted products was closed to foreign competition, and foreign direct investment in these products was also forbidden. However, recognizing that the main obstacle to successful entry by Korean firms into electronics, as into shipbuilding, was their lack of relevant technologies, and recognizing also that technology was not as easily bought outright from overseas sources in the electronics sector as in shipbuilding, the government allowed joint ventures to be established between Korean firms and foreign firms that were seen as technological leaders. Three of the five biggest chaebol formed such joint ventures during the HCI period: Samsung, Daewoo, and Goldstar. At a later time, Hyundai did also.

The HCI drive also called for Korea to become a significant producer of automobiles. In this sector, there is some question as to which company was the first entrant. The Hyundai Motor Company was established in 1967 for the purpose of producing cars and, during its early years, assembled Ford Motor Company’s Cortina from parts shipped to Korea by Ford. But the goal of the HCI drive was integrated production not assembly of imported components. Hyundai’s first truly Korean car—not a foreign-designed car assembled in Korea and sold under a Korean nameplate—was the Pony. Unveiled in 1974, it went into production only in 1976. Although of Korean design, the Pony nonetheless used a substantial number of imported components; the first car with all-Korean content was not built until 1994.

14. See Moran (2001) on the role played by contracting to foreign multinationals in the development of the Korean electronics sector.

In the meantime, Hyundai had competition. The most successful was Kia, which had been founded in 1944 to manufacture bicycles but had in the intervening years diversified into motorcycle production (1961) and small trucks (1967). In late 1974, Kia beat Hyundai to the punch by producing the first car of Korean design actually to roll out of a Korean factory (Ford was a minority shareholder in Kia). Another small entrant into the automobile sector, Asia Motors, proved to be an “unsound firm” and was acquired by Kia in 1976. A somewhat more successful new entrant, Shinjin, did well during the 1960s as an assembler of General Motors vehicles but was unable during the HCI period to create a product that could compete successfully with Hyundai’s Pony. Shinjin, declared unsound in 1978, was acquired by Daewoo, resulting in the formation of Daewoo Motors, set up originally as a 50-50 joint venture with General Motors. From the beginning, the relationship between Daewoo and General Motors was difficult. In 1992 General Motors relinquished much of its control of Daewoo Motors, becoming a minor shareholder, and Daewoo subsequently went on a major binge of expansion that would help to lead the already troubled group to bankruptcy. But after the bankruptcy of Daewoo in 2000 and following protracted negotiations, General Motors acquired Daewoo Motors in 2002.

The End of the HCI Drive, and an Evaluation

It was apparent by 1976 that the HCI drive was creating major problems in Korea; the fourth five-year plan, issued that year, indicated that of the industries originally designated for development, only three—steel, shipbuilding, and heavy machinery—would be granted continued support (Clifford 1994). Even this decision did not reflect a dispassionate judgment as to which sectors were likely winners. Rather, these were the sectors into which large sums of money had already been sunk, creating gigantic facilities in which thousands of Koreans were already employed (Cho S. 1994). In other designated sectors where significant employment had not been created, projects were scaled back or canceled—for example, in nonferrous metals and fertilizers (which were to have become the backbone of the chemical side of the HCI drive).¹⁵

Even so, the HCI drive ended not in that year but in 1979, when Park was assassinated. The assassination was linked to riots during October by laborers in the cities of Masan and Pusan. These riots were, at least in part, instigated by President Park’s order that Kim Young-sam, later to become Korea’s president but then a rising opposition politician in the

15. Korea did eventually succeed in establishing a competitive petrochemical industry; unlike most sectors in Korea, however, this one involved very substantial foreign direct investment.

National Assembly who urged moderate democratic reform, be expelled from the Assembly. In the last week of October, in a bizarre twist of events, Park was assassinated by his own head of national intelligence, Kim Jae-kyu, who had become one of Park's closest advisors. Kim apparently acted in fear that Park was about to sack him in favor of another advisor, Cha Chi-chul, who had advocated a tougher position than his own in dealing with the demonstrators. Cha was also killed by Kim. The full story of the assassination will never be known, for the one person who could have supplied it—Kim Jae-kyu—was executed about four months after committing these crimes. Detailed accounts of the assassinations and their aftermath are offered by William Gleysteen (1999) and John Wickham (1999).¹⁶

At least one reason for the growing popular dissatisfaction was a widespread perception that the HCI drive was concentrating wealth in the hands of a few Koreans. Public resentment was doubtless reinforced by a perception that those Koreans who were getting wealthy were the friends and cronies of Park. This might not have been entirely fair; as already noted, at least some of the founders of the rising chaebol were not particularly close personally to Park. Also, as early as 1974, the government had attempted to rein in the credit granted to the largest chaebol. Responding to the concerns of EPB economists that debt levels of the largest firms were becoming excessive and creating financial risk, it enacted a banking act intended to strengthen their supervision. However, the new requirements in fact did little to check the expansion of these groups or to reduce the amount of credit granted to them.

Nonetheless, there is no question that the HCI drive had the effect of concentrating wealth in the hands of relatively few families. As SaKong Il has shown (1993, table 2.5), income distribution in Korea did become more skewed during the 1970s; the Gini coefficient—a measure of inequality in income distribution—rose from 0.332 in 1970 to 0.391 in 1976, and during those years the proportion of income going to the richest 10 percent increased from 25.4 percent to 29.5 percent. (In contrast, income distribution had become less skewed during the 1960s.) Furthermore, it is almost certain that joined with the trend during the 1970s toward a more inequitable income distribution was an even sharper trend toward more inequitable distribution of wealth. Also significant was the common perception that the growing wealth of an elite group of Korean families was more the result of subsidy than of performance. And the empires of these families did grow: whereas in 1970 the top 30 business groups in Korea controlled a total of 126 subsidiaries, by 1979 that number had risen to 429.

16. At the time of the Park assassination, these two authors were the two most senior US officials stationed in Korea: Gleysteen was the US ambassador, and Wickham was commander of US military forces.

Table 2.1 Interest rates, by category, in Korea during the HCI period

Year	General loan ^a nominal rate	Policy loan nominal rate ^a (export)	Curb market loan rate	GDP deflator	Real interest rate on general loan ^b	Real interest rate on export loan ^b
1971	22.0	6.0	46.4	12.9	9.1	-6.9
1972	15.5	6.0	37.0	16.3	-0.8	-10.3
1973	15.5	7.0	33.4	12.1	3.4	-5.1
1974	15.5	9.0	40.6	30.4	-14.9	-21.4
1975	15.5	9.0	41.3	24.6	-9.1	-15.6
1976	18.0	8.0	40.5	21.2	-3.2	-13.2
1977	16.0	8.0	38.1	16.6	-0.6	-8.6
1978	19.0	9.0	39.3	22.8	-3.8	-13.8
1979	19.0	9.0	42.4	19.6	-0.6	-10.6
1980	20.0	15.0	44.9	24.0	-4.0	-9.0

a. Administered loan.

b. Nominal rate minus GDP deflator.

Sources: SaKong (1993, table A18), and author's calculations; data originally from Bank of Korea.

There was a factual basis for the widespread belief in Korea that the HCI drive not only favored the already wealthy but did so by giving select entrepreneurs public money. Interest rates on “policy loans”—those that financed the heavy investments of the HCI drive—were below market rates and, indeed, below the rate of inflation during most of the HCI period. Thus, the real rate of interest on policy loans was generally negative throughout this period, especially for export loans. A real negative rate was of course tantamount to a subsidy (see table 2.1). And, as stressed earlier, policy loans were available only to firms that were selected by the government. Even in 1980—when the HCI drive had ended, Korea was in recession, and the government was implementing stabilization policies—interest rates on policy loans remained negative.

In a recent unpublished paper, Anne O. Krueger and Yoo Jung-ho (2001) provide data on preferential loans as a percentage of total loans outstanding by deposit money banks in Korea from 1963 to 1998.¹⁷ They also estimate the subsidy implicit in policy loans granted to Korean enterprises from 1963 to 1982, where the policy loans include the preferential loans granted by the deposit money banks and loans made through the Korea Development Bank (a “nonbank bank”). Krueger and Yoo show that from 1963 to 1970, preferential loans rose from 5.5 percent to almost 10 percent

17. Similar calculations, with roughly consistent findings, are made for just the HCI period by Zeile (1991a).

Table 2.2. Estimated subsidy component in policy loans of Korean banks and ordinary income reported by Korean manufacturing firms, 1963-82 (billions of won)

Year	Total subsidy implicit in policy loans	Ordinary income reported by Korean manufacturing firms	Ratio: Subsidy/income
1963	1.2	4.5	0.27
1964	2.7	5.6	0.48
1965	3.9	6.6	0.59
1966	3.9	11.4	0.34
1967	3.3	13.4	0.25
1968	5.5	20.6	0.27
1969	7.9	24.3	0.33
1970	14.5	22.9	0.63
1971	20.3	11.8	1.72
1972	21.5	56.5	0.38
1973	26.0	62.3	0.42
1974	54.2	176.1	0.31
1975	107.6	169.7	0.63
1976	165.7	313.6	0.53
1977	172.9	390.0	0.44
1978	187.3	615.1	0.30
1979	256.7	573.9	0.45
1980	271.8	-55.7	n.a.
1981	454.1	5.6	81.09
1982	546.6	403.6	1.35

n.a. = not applicable

Sources: Krueger and Yoo (2001, table 4), and author's calculations.

of total loans outstanding, and rose further to around 18 percent of total loans outstanding by 1980. During the HCI years (1973-79), this percentage ranged from 16.4 to about 19 percent. The subsidy component is difficult to calculate because the implicit subsidy is the difference between interest that would be paid under a free-market lending rate and the interest actually paid for the preferential loans, and the former is not available (curb market rates cannot be used to estimate the free-market rate, because so much credit was allocated at nonmarket rates that the curb market was only a fringe market). As just noted, the real rate of interest in Korea during the HCI period on policy loans was often negative, and hence one readily surmises that the subsidy element was indeed large.

Krueger and Yoo thus calculate the free-market rate as a three-year moving average of the sum of the real GDP growth rate and the CPI rate of inflation. Using this estimate, they compare the implicit subsidy that this rate implies with the total ordinary income (earnings) reported by the Korean manufacturing sector for the years 1963-81, as shown in table 2.2. The table also shows the ratio of the estimated subsidy to the

ordinary income of this sector. As can be seen, the ratio varies substantially from year to year, because both the estimated subsidy and the reported earnings of the manufacturing sector change; but at no time was the ratio below 0.27, and in some years it was above 1.0. During the pre-HCI years (1963-72), the average ratio was 0.53; but it fell to 0.44 during the HCI years (1973-79). This suggests that although favored firms during the HCI period received very heavy government subsidies, the overall rate of subsidization actually fell somewhat compared to the earlier period.

Zeile (1991a) has derived measures of the relative cost of loans across manufacturing sectors during the HCI period. His main finding, consistent with that of Krueger and Yoo, is that those firms expanding in targeted sectors were in fact recipients of loans on more favorable terms than were available to firms operating in nontargeted sectors. Zeile also shows that the sectors that were "favored" in terms of credit preference tended to achieve larger increases in net exports over the following decade (i.e., the 1980s) than nonfavored sectors.

Yet though it is clear, as previously suggested, that the subsidies largely determined the strategies that were followed by large Korean firms, rates of return on capital were great enough that overall the subsidies were doubtless, in the words of Krueger and Yoo, "intramarginal." That is to say, many and perhaps even most of the projects undertaken were ones that might have earned satisfactory returns on capital even in the absence of subsidies, although some unsound firms were created in the process. Citing W. Hong (1981), Krueger and Yoo (2001) note that overall return on capital invested during the HCI period might have been as great as 35 percent, despite the many business failures during those years.¹⁸ We may thus raise a real question: to achieve the goals of the HCI drive, were subsidies actually required? Alternatively, might not the goals have been met with government intervention that was less heavy-handed, that did not so patently favor certain enterprises (and, in so doing, bestow extraordinary benefits on a small group of families)?

Of course, as John F. Kennedy observed, "a rising tide lifts all boats," and this statement applied to the Korean economy during the 1970s. Yet even if the income of the average Korean was rising, Korean popular dissatisfaction over increasingly inequitable income distribution mounted as the 1970s progressed. Park tried to deal with this dissatisfaction by encouraging sizable wage hikes in 1976 to 1978 (table 2.3), increases that were well in excess of productivity gains and hence put cost-push pressure on the underlying industries. Nevertheless, discontent welled up when the overall economic performance of Korea deteriorated significantly in 1979. Per capita GDP growth during the period 1967-71 (SaKong

18. Sakong (1993, table 3.6) cites rates of return in the manufacturing sector during the HCI period ranging from 17 percent to 40 percent, but gives no indication of how these were calculated. No data on these rates of return for years after 1977 are given.

Table 2.3 Real growth rates, nominal wage increases, inflation rates, and real wage increases in Korea during the HCI and Chun periods (percent)

Year	Real GDP growth rate	Nominal rate of wage increase in manufacturing	Rate of inflation	Real rate of wage increase in manufacturing
1972	5.1	13.9	12.0	1.9
1973	13.2	18.0	3.7	14.3
1974	8.1	35.3	16.8	8.5
1975	6.4	27.0	25.5	1.5
1976	13.1	34.7	17.9	16.8
1977	9.8	33.8	12.1	21.7
1978	9.8	34.3	7.0	17.3
1979	7.2	28.6	19.8	8.8
1980	-3.7	22.7	27.3	-4.6
1981	5.9	20.1	21.4	-1.2
1982	7.2	14.7	7.6	7.1
1983	12.6	12.2	3.6	8.6
1984	9.3	8.1	2.1	5.7
1985	7.0	9.9	2.6	7.3
1986	12.9	9.2	3.0	6.2

Sources: GDP data: SaKong (1993, table A.39); wage data: Cho S. (1994, table 5.2); inflation data: Bank of Korea.

1993, table 2.3), before the HCI drive, had averaged 8.7 percent, and it slipped slightly to 7.3 percent during the years 1972-76.

In spite of some slippage in the per capita GDP growth rate, nominal rates of growth of wages in Korean manufacturing rose during the HCI period. Much of the increase in nominal wages was absorbed by inflation (see table 2.3) but, even so, real wage increases (wage increases adjusted for inflation) were quite high during 1976-78, indeed much higher than could be justified by productivity increases. Real wage increases in excess of productivity increases are not, of course, sustainable in the long run, because the long-run result is a rise in unit costs of production, such that the relevant good becomes uncompetitive in world markets. Given this, a likely explanation for government tolerance of the unrealistically large real wage increases in Korea during the late 1970s was that Park hoped that these would serve to mollify rising public discontent with his rule. But when real wage increases began to spiral downward in 1979, the result was to intensify the already strong sentiment in Korea against Park's increasingly strong-handed rule.

Adding to the imbalances, the government had attempted to keep the nominal exchange rate fixed; in dollar terms Korean unit labor costs therefore rose during the late 1970s, reducing the price competitiveness of Korean exports. One result was that beginning in 1976, Korean export growth

Table 2.4 Exports, imports, and trade balance as a percentage of GDP in Korea, 1961-79

Year	Exports as percent of GDP	Imports as percent of GDP	Trade balance as percent of GDP
1962	2.4	-18.3	-15.9
1963	3.3	-20.7	-17.4
1964	4.1	-13.8	-9.7
1965	6.0	-15.3	-9.3
1966	6.8	-19.5	-12.7
1967	7.4	-23.3	-15.9
1968	8.8	-28.1	-19.3
1969	9.4	-27.6	-18.2
1970	9.9	-24.4	-14.5
1971	11.6	-25.5	-13.9
1972	15.0	-23.6	-8.6
1973	23.7	-31.4	-7.7
1974	23.9	-36.4	-12.5
1975	24.4	-34.8	-10.4
1976	26.8	-30.6	-3.8
1977	27.2	-29.4	-2.2
1978	24.7	-29.1	-4.4
1979	24.6	-33.1	-8.5

Sources: SaKong (1993, table 8.4), and author's calculations; from Bank of Korea data.

began to slow—just as HCI projects were coming on line. By 1979 exports as a share of GDP were declining, an indication that growth was coming from nontargeted sectors (see table 2.4). The balance of trade throughout the Park years was negative, reflecting the fact that Korea, as a rapidly growing economy, was a net capital importer. However, the (negative) balance of trade as a percentage of GDP had been reduced throughout the 1970s (with the exception of the 1973-74 “oil shock” years, when a jump in oil prices caused it to rise temporarily). Thus, when in late 1978 and 1979 this balance turned suddenly worse, the change was seen as a warning sign.

In response to the deteriorating economic situation, Park authorized a number of measures to stabilize the economy; these were announced in mid-April of 1979. Their main objective was to bring inflation under control, and to that end both fiscal and monetary policies were tightened. Such tightening required that policy loans granted to the chaebol for large HCI projects be reined in and that loans no longer be given at interest rates that were, in real terms, negative. Thus, the announcement of these measures effectively signaled the end of the HCI drive. In addition, real wage increases were reduced significantly in 1979. Unfortunately, the measures failed to prevent further overall economic deterioration. Later that year, the Korean economy was subjected to the external shock of oil

price increases. Unusually cold weather added to the country's woes, as agricultural production slumped. Finally, following the assassination of Park in October 1979, the discontent that was already brewing erupted into a period of political upheaval marked by frequent strikes and protests, which disrupted industrial production.

Indeed, the sorry end of the HCI period, with Korea in recession and in the throes of rampant political turmoil, has led some analysts to conclude that the HCI drive must be judged a failure (see, e.g., Yoo J. 1989; Noland 1993; Clifford 1994; Noland and Pack 2003). But as others have noted (e.g., Amsden 1989; Zeile 1991b; SaKong 1993; Cho 1994), this judgment may be too harsh. In fact, the record is very mixed. The period was one in which Korean firms did successfully enter new industries. Overall rates of return on capital were almost surely positive, although the marginal products of capital (and hence the real rate of return) in the HCI was actually lower than in nonfavored sectors (Yoo J. 1989). William Zeile (1991b) has calculated total factor productivity (TFP) increases by sector in Korea during the years 1972-85, finding that most of the sectors that were created under the HCI drive experienced TFP increases as rapid as those in nontargeted sectors.¹⁹ In some sectors they were in fact much higher than the average for all Korean manufacturing. Such results might be expected for a number of reasons (e.g., achievement of scale economies, implementation of newer and better technologies, and learning by doing).

However, some analysts have calculated that total factor productivity did *not* grow especially fast in Korea during the HCI drive and, indeed, its growth might even have been negative. For example, Park Seung-rok and Jene K. Kwon (1995) argue that TFP experienced a negative growth despite rapid growth of output; in their calculations, the increased output was generated entirely by growth in factor inputs (capital and labor). Lee Jong-wha (1996), by contrast, detects positive TFP during the HCI drive; but unlike Zeile, he finds that the sectors heavily supported by the Korean government experienced less rapid TFP increases than other manufacturing industries. In fact, Zeile (1993) also finds that TFP increases in the sectors dominated by the chaebol, which by and large were the heavily supported sectors, are below average when R&D spending and economies of scale are accounted for. Zeile concludes that this "casts serious doubt on the proposition that the chaebol possess an organizational advantage which has contributed to the rapid advances in productivity observed for the Korean economy" (1993). A number of other

19. Total factor productivity measures increase in output that is not accounted for by increase in factor input. For example, if additional investment in a sector doubles all factor inputs (e.g., total plant and equipment and total number of workers), one might expect output to double. In such a case, there would be no increase in total factor productivity. If, however, output more than doubles, the difference is attributed to an increase in total factor productivity.

studies reporting various conclusions regarding TFP growth in Korea are reviewed by Kwack Sung-yeung (2000). A general problem in assessing them is that measurement of TFP growth is extremely sensitive to the exact methodology used (above all else, to choice of production function), leading to results that are not extremely robust—that is, different analyses yield different results even if they are performed rigorously and objectively. This is unfortunate, because more than anything else, an evaluation of the success of industrial policy rests on a determination of whether such policies, when applied, cause rates of TFP to increase or decrease.²⁰

Moreover, because inefficient capacity was often created in these industries, a good many of the new ventures proved to be “unsound.” Further, rather than closing such operations, the Korean government most often subsidized their takeover by more sound firms. The hope was that the takeover would result in a turnaround in the unsound operation; the reality was sometimes the creation of a much larger unsound firm.

Nevertheless, the process of having sound firms take over unsound ones was instrumental in the growth of the large chaebol. The share of the top 10 groups rose from about 5 percent of Korean GDP at the beginning of the HCI period to more than 10 percent at the end (SaKong 1993, table A.21). Also during this period, these groups created practices and problems that in some cases have continued to the present. These included the creation or acquisition of groups of poorly performing operations, high levels of debt, huge moral hazard problems, and the related emergence of a “too big to fail” mentality in Korea. Moral hazard is discussed in more detail later; in brief, large and well-connected enterprises in Korea have been viewed as likely to be bailed out by the government were things to go seriously wrong for them, thus giving banks an incentive to lend funds to them without any critical review of the process. The problems created by moral hazard finally exploded in 1997, and they still have not been entirely worked out.

20. Indeed, the debate over whether the Asian “economic miracle” was real or ephemeral founders on this point. The results of Alwyn Young (1995), cited by Paul Krugman (1994) in a widely read article on Asian growth that claims it resulted almost entirely from nonsustainable growth of factor inputs, are that TFP growth throughout Asia was not particularly high during the era of the “miracle.” But these results are contested by a number of credible analysts (e.g., Hsieh 1997).

Appendix 2.1

Might Industrial Policy in a Developing Country Succeed for Reasons Not Explained by Classical Economics?

Can a rationale for industrial policy, such as that behind Korea's HCI drive, be developed that does not rely on the infant-industry argument (which, as demonstrated in the text, is flawed on both theoretical and pragmatic grounds)? Novel theoretical insight into this issue—not specific to the case of Korea,²¹ but nonetheless providing some basis for explaining why the HCI drive was at least a partial success—is to be found in a very recent book by Ralph Gomory and William Baumol (2000), a prominent mathematician and economist respectively. As the Nobel Prize-winning economist Robert Solow declares in a book-jacket blurb, the reasoning of Gomory and Baumol is innovative; furthermore, while they cannot yet be shown to be correct, neither can their arguments be dismissed out of hand.

Gomory and Baumol argue that at least some aspects of neoclassical trade theory are wrong. In particular, they claim that the revealed comparative advantage of a nation can be determined more by accident of history than by factor endowment, as trade theory asserts. Specifically, if a nation happens to establish a new industry by committing significant resources to creating capacity for a particular type of good or service whose production is characterized by scale economies, then the entry barrier formed by that scale economy gives that nation a created advantage in that good or service. Indeed, the scale economy can follow from a requirement that substantial resources be precommitted before the commercial production of a product has begun, creating a “sunk cost” that must be amortized against future production. In this case, the average cost per unit of production declines constantly as production takes place, so that an incumbent with a history of production can produce at a lower average unit cost than a new entrant. Gomory and Baumol call “retainable” any activity that is characterized by sunk front-end costs and increasing returns to scale (so that average unit costs fall as output increases). Once a firm establishes itself in such activity, it is protected by barriers to entry that bar easy challenges by new entrants.

Gomory and Baumol also note that whereas neoclassical trade theory posits a unique free trade equilibrium that both is more or less predetermined by the factor endowments of nations and is optimal from the point of view of all countries, in an economy where activities are retainable many free trade equilibriums are possible in principle. Furthermore, none among these is optimal for all nations. Some of these equilibriums are such

21. Indeed, as is detailed below, the Korean experience exposes some of the limitations of Gomory and Baumol's reasoning.

that all nations might benefit by moving from one particular equilibrium to some other equilibrium. Others are such that one or possibly a group of nations can benefit by changing to another equilibrium, while another nation (or other nations) would suffer reduced welfare from such a shift. Thus, in the world of Gomory and Baumol, to maintain a free trade equilibrium that enables each nation to continue, ad infinitum, specializing in those sectors in which it currently holds comparative advantage does not necessarily produce the best outcome for all nations. Rather, in this world, under some circumstances it can be advantageous to all nations for some industries to move from one country to another. Generally, such shifts will benefit everyone if relatively rich countries (i.e., ones with high per capita incomes) yield activities to relatively poor ones. But some such moves can, under other circumstances, create income losses for those nations that lose activities. These losses tend to occur, for example, if activities move from countries that already are relatively rich to other countries that are also relatively rich.

Any such movement implies that new entry must be made into the industry: for example, a new entrant in a relatively poor country displaces (or at least takes market share away from) an incumbent producer in the relatively rich country. Given that incumbent firms operating in retainable industries are protected from challengers by scale economies, how can such new entry hope to succeed?

One possible answer is that the migration of the activity is accomplished via foreign direct investment, so that the incumbent firm itself is the agent of the transfer (presumably thus avoiding many of the costs associated with creating the activity). In this case, managerial control is retained by the incumbent (and foreign) firm, a potentially undesirable circumstance from the viewpoint of the residents or the government of the country to which the activity has migrated. Objections might arise even if very substantial benefits to the local economy are created by this migration.

There are other alternatives. In a case in which the scale economy derives from costs that must be sunk before entry, the government may grant subsidies to cover these costs, so that they are not fully borne by the producer but rather are assumed in part society at large.²² According to economists, however, a subsidy is warranted only if any undertaking that is subsidized creates some sort of external benefit—that is, a benefit that is not captured either by producers or users of the product or service created by the undertaking, so these benefits are themselves captured by society at large (though not necessarily enjoyed by each member of this society in proportion to the costs borne by that member). The total of

22. A subsidy must be financed by the government that grants the subsidy, and government finances come ultimately from taxes paid by the citizens whom the government serves.

such benefits must exceed, or at least equal, the cost of the subsidy. Gomory and Baumol argue that this condition might be met if the economy, by incurring the sunk costs of entry, gains activities that offer higher per worker productivity than is available elsewhere in the economy. Benefits to the public (or at least some members of it) would then be created in the form of higher wages in the new activity than could be achieved in other activities.²³

In the framework of Gomory and Baumol, the HCI drive and other industrial policy initiatives can be seen as deliberate efforts to create retainable industries in Korea. Indeed, we have already seen that EPB planners believed that the sectors in which Korea had achieved export success during the 1960s were nonretainable. Gomory and Baumol note that the characteristics of a nonretainable industry include constant or decreasing returns to scale, low costs of entry (implying, as noted, lack of one source of scale economy), and no extremely specialized knowledge associated with the industry—that is, the required knowledge is available from a number of sources and is relatively easy to grasp. For example, the cutting and sewing of garments corresponds to their definition of a non-retainable activity. This industry might indeed be expected to migrate to whatever nation is able to offer the lowest wages (even if, after the activity has landed there, its effect might be to drive up the marginal product of labor and hence to put upward pressure on wages).

Thus, by the reasoning of Gomory and Baumol, the EPB was correct in its assessment in the late 1960s that Korea would not be able to long retain its revealed comparative advantage in textiles and apparel and in other light industries. But the EPB did not urge that Korea move quickly into retainable activities, such as those in the heavy industrial sector. Gomory and Baumol might therefore have agreed with Park Chung-hee that it was appropriate for Korea to seek to enter sectors requiring large up-front investments in which scale economies were significant, though the list as actually drawn up might not have been entirely to these scholars' liking.²⁴

23. Strictly speaking, the wage rate is equal to the marginal productivity of labor; that equality is, in fact, a condition for profit maximization in a firm. If labor mobility is high (i.e., labor markets are efficient) and labor is homogenous, the creation of an activity that raises marginal productivity in an economy should cause all wages to rise to a new level. Practically speaking, however, the conditions are unlikely to be fulfilled. Nonetheless, the new activities are likely to offer new job opportunities for skilled workers, enabling workers who possess the requisite skills to command wage premiums and thus earn higher than average wages. Over time, as new activities are created and labor markets respond to the new demands generated by these activities (i.e., workers learn the required skills), the net result should be rising wages over a broad swath of the labor force.

24. On this matter, however, I have not consulted either Gomory or Baumol and do not claim to speak for them!

Do Gomory and Baumol endorse Korean industrial policy? The answer is “not explicitly.” But they nonetheless do provide some new ammunition that is sure to benefit those analysts who claim that industrial policy can play a useful role in economic development. And, as noted above, while their theories are not proven, they should not be rejected out of hand either.