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ABSTRACT

We look at Korea's industrialization strategy and experience from the 1960s to the mid-1990s. Three elements of the Korean industrial development and structural change are discussed: 1) its outward orientation and export push, 2) its climb up the ladder of comparative advantage, and 3) its economic management of the industrialization effort. Finally, we reflect on the lessons from the Korean experience.

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SOME LESSONS FROM KOREA'S INDUSTRIALIZATION STRATEGY AND EXPERIENCE

It is almost with disbelief that we learn that in 1965, the general assessment of Korea by the foreign-aid establishment was that it was "the hell-hole of foreign assistance", a "bottomless pit" and a "hopeless case". That's according to a major economic adviser in the design of Korea's Second Five Year Plan (Adelman 2007).[1]

By 1996, the year when Korea was admitted to the Organization for Economic Cooperation and Development, a group to which only high-income countries ~~can be a~~ are invited to be members, its Gross Domestic Product per head was US$16, 099, which marked an increase of 6.6 times its corresponding level in 1970 of US$2,432. Both figures are at constant 2005 prices, converted to ~~have~~ purchasing power parity.[2]

An independent Commission on Growth and Development (2008) identified 13 economic "success stories", which have grown since 1950 at an average rate of at least 7% for 25 years or longer. At that pace of expansion, an economy almost doubles in size every decade. And Korea is one of those fast-growing economies.[3]

From 1960 to 1979, the nation grew on average by 8% yearly. During this period, it implemented a targeted industrialization strategy focused on low-technology and light industries. Aside from achieving sustained economic growth, it has also shown great ability to recover from crises. After the 1979 oil shock, the nation rapidly recovered and regained an average yearly growth of 8.8% from 1981 to the mid-1990s. During this period, it shifted to support heavy industries oriented toward the export market.

In this brief essay on Korea's rapid economic growth, we focus our attention from the 1960s to the time when it joined the OECD in 1996, a period marked by its industrialization drive and structural transformation. Our interest is on its strategy of export-driven industrialization.

From experience, we know that one who goes through the literature on Korean economic growth can easily get bogged down in the detailed twists and turns of its economic history. So we have chosen in this essay to look at the forest, not the trees, and to present the broad contours of its economic development. Our modest goal is to make the Korean growth experience a matter of interest for the non-specialist on Korea, as well as for any reader with an interest in development.

In the sections that follow, we will look at three selected ingredients of the Korean model of industrialization, namely: 1) its outward orientation and export push, 2) its climb up the ladder of comparative advantage, and 3) its economic management of the industrialization effort. In the final segment, we reflect on the lessons from the Korean economic miracle.

Outward Orientation and Export Push

An important element of Korea's industrialization strategy is its emphasis on manufactured exports. Export targets were specified by product, market, and exporting firm. As one practitioner remarked, the export figures "were the only statistics that could not be faked" -- they were easily confirmable from bills of lading emanating from a single dominant port and trade-partner country records (Noland and Pack 2005).

Exports were interpreted as a relatively clean measure of the relative competitiveness of domestic producers -- local firms might be able to charge high prices in the small, protected domestic market, but this was not possible in the global marketplace. The export orientation and export metric provided a well-placed emphasis on performance in international markets as a barometer of success (see Table 1).

Table 1: Timing of Shifts in Trade and Industrial Policy of Korea

1961-73	Initial export take-off
1973-79	Heavy and chemical industry drive: selective promotion
1980-90	Gradual trade liberalization and move to less selectivity
1990-onwards	Trade liberalization and high-tech exports

Source: adapted from World Bank (1993), in Weiss (2005), pp 3-4

For a nation to choose in the 1960s the path of the export push was to swim against the tide of development consensus. Most of the developing world opted to attempt to build industries that produced substitutes for imported products kept out of the domestic markets by means of high tariffs and import restrictions. Hence, the sole focus of other nations was the domestic market. However, Korea studied Japan's earlier and contemporary policy experiences carefully and copied many of them (sometimes perhaps, even to its own detriment). The nation regarded Japan as the 'pathfinding explorer' (Young 2006).

The nation has promoted exports since the mid-1960s through a number of channels. First, the existing multiple exchange rate system was abolished, and the new unitary exchange rate was set and then managed to support the production activities of local 'comparatively advantageous' industries (Westphal 1990). Second, export subsidies and import concessions linked to exports were put in place to achieve the nation's export targets (OECD 2012) . Third, free trade export promotion zones were established.[4]

Korea started its export push by focusing on manufactured exports of labor-intensive technologically simple goods, such as clothing, footwear, processed food, sports goods, and toys. The nation began its export-led growth by means of a triangular trade with Japan, on which it depended for the supply of intermediate and capital goods, and with the United States, Korea's largest and main export market. With continued economic growth and industrial catch-up, the export markets as well as industrial structure diversified. The developing economies became increasingly important as export markets, while the nation exported more heavy and chemical industry goods.

Climbing Up the Ladder of Comparative Advantage

In the 1960s, the government had identified labor-intensive manufactures as holding great promise for exports, but export promotion did not target specific industries or firms when providing incentives. It overcame the initial export pessimism ("Who would buy our products?") and let comparative advantage operate and focused its efforts on labor-intensive industries. It imported raw materials, intermediate inputs, and capital goods and used its cheap, high-quality labor to produce exports such as clothing and footwear**.**

However, the government was well-aware that outward orientation by itself was not enough to sustain growth. From the second half of the 1960s, it made concerted efforts to move into higher value-added segments along the value chain by making complementary investments in human capital and infrastructure. In pursuing industrial upgrading, the government looked thoroughly into what had to be done to fill the missing links in the domestic value chain and move up the quality ladder, and made conscious efforts to aim for international competitiveness from the outset (see Table 2).

Table 2: Changing Composition of Selected Top Korean Exports (percent of total exports)

Rank	1965	1975	1985	1994
No.1	Textiles, clothing, footwear 30.9%	Textiles, clothing, footwear 43.9%	Textiles, clothing, footwear 32.1%	Textiles, clothing, footwear 22.7%
No.2	Food 17.5%	Food 14.1%	Electrical machinery 7.2%	Electrical machinery 20.8%
No.3	Wood & paper products 11.1%	Electrical machinery 6.4%	Communications equipment 5.7%	Chemicals & pharmaceuticals 7.1%
No.4	Non-electrical machinery 1.5%	Wood & paper products 5.6%	Food 4.4%	Communications equipment 6.7%

Source: adapted from UNCTAD (1996) table 33, in Weiss (2005), p 4

After exploiting its comparative advantage to develop labor-intensive industries industries downstream, it sought to produce the intermediate inputs imported from foreign upstream industries through the acquisition of technology, the development of human resources, and the construction of optimal-scale plants aimed for the world markets. For example, in the chemical-textile value chain, the nation systematically built the links backward from export of textiles to production of synthetic fibers, to development of basic petrochemicals (see

Table 3).

Although capacity underutilization turned out to be a major problem at the end of the 1970s, the heavy and chemical industry (HCI) drive provided the foundation of many of the nation's leading industries, such as steel, shipbuilding, machinery, electronics, and petrochemicals (see Table 4). It strengthened significantly backward and forward linkages among these industries, as well as related industries such as automobiles, to increase the local content of exports (Lim 2011). It also enabled the nation to develop its own defense industry.

Economic Management of the Industrialization Effort

The industrialization drive requires quite a considerable effort from the government and industry. Initiating the industrial take-off and then coordinating to ensure that the push to industrialize be sustained requires both planning and continued monitoring of the economy.

In Korea, the government body that was responsible for the planning and coordination effort was the Economic Planning Board (EPB), which was created in 1961. As one scholar of Korean public administration puts it, "it is hard to imagine the successful economic development of South Korea without the EPB" (Choi 2014). It occupied the center of the nation's economic policy making and coordination structure, and had a great deal of control over other economic ministries and agencies.

The EPB was like a "super-ministry" equipped with strategic functions, such as development planning, national budget management, and management of aid, foreign capital (borrowing), and technology. Moreover, its head was given the rank of deputy prime minister, and he chaired the Economic Ministers' Council and directly reported to the president. It was in existence for 33 years before being suddenly dissolved in 1994.[5]

A major policy instrument in the industrial strategy have been the five-year economic plans. From 1962 to 1992, the government had formulated and implemented seven Five Year Plans for Economic Development, which set targets and allocated resources to achieve the objectives of industrial transformation and export-led growth. The five-year plans supported the creation of domestic capabilities by orchestrating action across several fields, such as industry and technology, trade, education and infrastructure.

The five-year plans sought national agreement on the direction of medium- and long-term policies by harmonizing various views from different segments of society. Usually, individual government ministries and agencies designed their own goals and strategies within the realm of their own mandates, and the EPB took the role of social planner by coordinating those plans and thereby designing a final comprehensive plan that was coherent at the national level.

In the earlier phases of Korean economic development, the government took the leading role in formulating the five-year plans. The major issues of the plans were sector investments and mobilization of domestic and foreign capital to finance such investments. Each of the five-year plans identified key objectives, introduced selective policies and directed resources

Table 3: Key Features of Industrial Policy in Korea

Period	Priority Activities	Main Instruments
1960-73	Exports in general - key sectors labor-intensive manufactures	Import protection, export subsidies including duty drawbacks, credit allocations, export targeting
1973-79	Heavy and chemical industries - Priority sector steel, petrochemicals, nonferrous metals, shipbuilding, electronics and machinery; Priority firms selected large enterprises	Same as above, plus: Widespread use of policy loans to channel funds to priority firms and sectors. Investment incentives through tax credits.
1980-90	Manufactured exports, firms needed restructuring, small and medium enterprises. High technology activities now priority.	Phased import liberalization, ending of policy loans. Still government influence over allocation of credit. Investment incentives for R& D. Easing of restrictions on FDI.
1990-onwards	Private sector-led development; restructuring of 'chaebol' after 1997 Crisis.	Financial sector liberalization; open capital account

Source: adapted from Kim and Leipziger (1997), in Weiss (2005), p19

Table 4: Industrial Policy Objectives of Korea

Deepening Industrial Structure	Strong push into capital-, skill- and technology-intensive industry, especially heavy intermediates and capital goods
Raising Local Content	Stringent local content rules, creating support industries, protection of local suppliers, sub-contracting promotion
Foreign Direct Investment (FDI) Strategy	FDI kept out unless necessary for technology access or exports, joint ventures and licensing encouraged
Raising Technological Effort	Ambitious local R&D in advanced industry, heavy investment in technology infrastructure. Targeting of strategic technologies
Promotion of Large Local Enterprises	Sustained drive to create giant private conglomerates ('chaebol') to internalize markets, lead heavy industry, create export brands

Source: Lall (2004), Table 2

to achieve them. As the economy grew and the economic structures became more complex, the government-led economic development strategy became less effective (see Table 5).

Hence, since the 1980s, the five-year plan has evolved from a "directive" into an "indicative" plan that respects the initiative and the creativity of the private sector. The plans implemented in earlier years focused on expanding the productive capacity and mobilizing the required resources, whereas in later years, industrial rationalization and macroeconomic stabilization aimed to make the economy more efficient and productive.

Table 5: Development Regimes and Seven Five-Year Economic Plans in Korea

Development regimes	Government-led industrialization 1962--	Government-led industrialization 1982--	Transforming to market-led growth 1993--
Major plans	Five-year plans (**First** to **Fourth**)	Five-year plans (**Fifth** to **Sixth**)	'New economy' plan (**Seventh**)
Key features of plans	Mobilization and allocation of national resources	Rationalization and restructuring	Private sector's participation in government's planning
Focus of government policies	Export promotion, Heavy-chemical industries drive	Strengthening industrial competitiveness	Internationalization and economic liberalization
Key targets of fiscal policies	Supporting industrialization, Strengthening defense capabilities	Restoring fiscal prudence, Priorities on education and social welfare	Strengthening industrial competitiveness, Priorities on economic sectors

Source: adapted from Suh (2007), p29

Lessons from the "Miracle on the Han River"

Korea's economic miracle is referred to at times as the "Miracle on the Han River". The phrase refers to the river which flows through the capital, Seoul, and the allusion is to an earlier, impressive rebirth of a country similarly devastated by a war, in this case the Second World War, namely the West German economy, the "Miracle on the Rhine". What lessons can we draw from Korea's industrialization experience?

Lindauer and Pritchett (2002) made the observation that, because of Korea's rapid economic growth, any big idea in development economics had to encompass Korea before it could become conventional wisdom:

"Was Korea outward oriented or protectionist? Export promotion policy suggested

> outward oriented, while import protection suggested protectionist. Was Korea government-led or market-friendly? Examination of the mechanics of government direction of the economy suggested government-led; the use of the private sector as the instrument of investment and the role of business councils suggested market-friendly. Was Korea's growth Big Push or private sector- and productivity-led? This issue sparked generations of debate about Korea's total factor productivity (TFP). . .Those who argued that Korea proved that Big Push accumulation can lead to rapid growth tended to stress a low TFP, while those who emphasized the private sector role found a high TFP. Even when it was agreed that the Korean government intervened in growth, the question arose of whether that intervention was rules-based or discretionary. . ." (pp.15-6)

As the authors point out, these debates were often less about what Korea actually did than about what label to apply to Korea and then sell to other nations eager to emulate Korea's success.

In a similar vein, though referring to East Asia -- but which applies to Korea as well -- Rodrik (1999) notes that the region has long served as the "Rorschach test" for economists. Observers with a favorable take on industrial policy saw in it a confirmation of their theories on the importance of state intervention. Free market advocates saw instead the triumph of small government. Trade economists viewed it as a miracle based on outward orientation, labor economists stressed the early emphasis on education, and macroeconomists pointed to its fiscal conservatism. Growth theorists debated the respective contributions of human capital, physical capital, and technology adoption.

In the debate on the role of state intervention, there are those who argue, that for all of the apparent government intervention, Korea's economic polices were market-conforming. Industrial targeting and foreign trade interventions canceled each other out in ways that made Korea behave much like a liberalized economy. As we showed above in our brief overview of Korean economic growth, as per capita income grew and the complexity of the economy increased, government responded by withdrawing from many of its specific targeted interventions in favor of more general macro controls over the economy.

As Perkins (1997) notes, all sides of the major controversies surrounding Korea's economic growth have, in a sense, been partly correct. But no single view is correct for all periods of Korea's development experience. The Korean economy and economic policy in the first half of the 1990s was very different from what it was in the 1960s and 1970s.

At the start of this essay we made mention of the Growth Commission's selection of 13 economic "success stories". The object of the exercise by the commission was to find the common ingredients of these economies, and five "striking points of resemblance" are listed. One of the five points is that they let markets allocate resources.[6] As a Korean economist commented, "conspicuously missing from the list is the use of nonmarket measures to coordinate productive activities, facilitate industrial upgrading and innovation, and cope with external shocks" (Lim 2011). However, in fairness to the commission, it did include the point that these economies had committed, credible, and capable governments.

Table 6: Timeline of Selected Events in the Korean Economy

1945	Liberation from Japanese colonial rule
1948	Establishment of Republic of Korea
1950-53	Korean war
1960-65	Announcement of first major step in trade policy reform and continuous expansion of export incentives
1961	Nationalization of commercial banks
1964	Major devaluation of won, the domestic currency
1965	Unification of exchange rates; move to positive real interest rate for commercial banks
1967	Korea joins the General Agreement on Tariffs and Trade (GATT); import regime is liberalized by switching from positive list to negative list system
1972	First domestic debt crisis; presidential emergency decree places a three-year moratorium on the payment of corporate debts to curb-market lenders
1973	Government launches a heavy and chemical industry (HCI) drive
1979	Government announces 'comprehensive stabilization program', which ends the HCI drive
1980	Major devaluation of the won; further trade liberalization, including multi-year tariff reduction plan
1980s	"Rationalization" of industries in financial troubles
1983	Privatization of commercial banks
1988	Interest rate deregulation begins
1989	Piecemeal liberalization of international financial transactions begins, including a more market-determined exchange rate
1993	Government announces "new economy 100 days plan"
1994	Korea "graduated" from being a recipient of World Bank borrowing
1996	Korea joins OECD in December; commitments to financial liberalization are made

Source: adapted from Krueger and Yoo (2002) and Devieux (2013)

Footnotes (refers to the numbers inside [ ] in the main text):

1. The said Second Five Year Plan had a number of foreign "primary advisers": Bela Balassa and Margaret Musgrave on trade reform; Richard Musgrave on tax reform; Edward Shaw, John Gurley and Hugh Patrick on monetary policy, in addition to Irma Adelman on planning techniques (Adelman 1999, p70).

2. The 1970 data are the earliest year available for Korea at the OECD online statistical database.

3. The other 12 economic "success stories" are (by region): Africa--Botswana; Latin America--Brazil; Middle East--Oman; Europe--Malta; and East Asia--China, Indonesia, Hong Kong, Japan, Korea, Malaysia, Singapore, Taiwan, and Thailand.

4. The government established in 1970 the first free trade zone (FTZ) in Masan. This special zone provided an industrial estate where land, utilities, transport facilities, and even buildings were supplied by the government at highly-subsidized rates. The FTZ also allowed the duty-free entry of goods destined for re-export. A second zone was put up in Iri in 1973 (Nicolas et al. 2013).

5. The EPB and the Ministry of Finance were merged in 1994 into the Ministry of Finance and Economics, which was later separated in 1999 into the Ministry of Planning and Budget and the Ministry of Finance. In 2008, the Ministry of Strategy and Finance was formed by combining both functions.

6. The other four "striking points of resemblance" of the 13 economic "success stories" are: 1) they fully explointed the world economy; 2) they maintained macroeconomic stability; 3) they mustered high rates of saving and investment; and 4) they had committed, credible, and capable governments.

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