

Lessons from (S) Korea

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Abstract: After examining the critical role of the two five year plans (1962-67, focusing on infrastructure development and import substitution; 1967-72, emphasising export oriented industrialisation) in the rapid economic progress of (S) Korea, this paper discusses how mismanaged financial liberalisation led to severe economic troubles of the country in the late 1990s.

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No observer can fail to be deeply impressed by the economic development of (S) Korea. In the aftermath of the Japanese occupation and the Korean war, the overwhelming majority of the population lived at subsistence levels, with average per capita income less than US\$60 a year. Since then, (S) Korea has become a thriving OECD country with an even distribution of income and a per capita income over US\$10,000. Even the financial debacle of the late nineties, which revealed serious structural and policy flaws, does not disprove the fundamental effectiveness of the (S) Korean strategy of government-led, export-oriented development.

The (S) Korean experience contradicts the 'Washington consensus,' which is opposed to government-led development and has tied the hands of policy makers in most developing countries. (S) Korean development was led by an activist government — mobilising private entrepreneurs, the bureaucracy and the general public — that pushed its plan for economic growth and gave continual detailed attention to economic matters. Policies were developed and modified, and excesses

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corrected, in a deliberate and pragmatic fashion. Had the neoliberal prescriptions forced on most LDCs been adopted in (S) Korea during the 1960s and 1970s, there would not have been a (S) Korean economic miracle.¹

This paper describes two five-year plans implemented under President Park, who not only provided inspiration but also personally guided investment, trade and financial policies. The first plan, 1962-1967, focused on infrastructure development and import substitution. The second, 1967-1972, emphasised export-oriented industrialisation.

First Five-Year Plan (1962-66)

The turning point for (S) Korea was the ascension to the presidency in 1961 of Major General Park Chung Hee. Before President Park took office, massive unemployment had provoked demonstrations by students and the unemployed. Foreign aid and government loans to an impoverished (S) Korea were financing more than half of imports and over 80 per cent of investment. Park quickly transformed (S) Korea from a passive *soft state* to an activist *hard state* with a banner slogan of 'eradicating poverty through rapid economic growth'. Economic development was an integral part of a nationalistic vision of a strong, independent (S) Korea.

Upon coming to power, President Park quickly made his intentions clear and credible. He sacked 10 per cent of the top bureaucracy and sent the rest to two-week retraining courses that stressed both management techniques and commitment. Throughout his regime, President devoted 3 to 4 hours a day to the economy, and kept abreast of both general developments and specific issues (Jones and Il Sakong, 1980).

Strategy

The basic strategy for increasing employment was to apply labour-intensive methods to construction of new infrastructure, including roads, dams, irrigation, and other transport and energy projects. Import substitution, a complementary means to increase employment, was adopted primarily to improve the balance of payments. Policies were targeted toward expanding industries that produce inputs for other industries — cement, chemical fertiliser, refined petroleum, iron and steel, and synthetic fibers. Another goal was self-sufficiency in food grains within five years.

Import substitution was pursued by implementing measures to reduce the inflow of foreign goods. The main mechanisms used to protect the domestic market were import controls, tariffs, a severely undervalued currency, and multiple exchange rates. The rate of protection was highest for consumer goods and lowest on

intermediates. According to Westphal (1978), the effective exchange rate for exports was 10 per cent above that for imports. Exchange premiums and cash subsidies, rather than indirect taxes and tariffs, were the main sources of this differential. Quantitative import controls were more important than the biased trade incentives. The list of prohibited imports exceeded 600 in 1965, and a third of actual imports were on the restricted list (Westphal, 1978).

The government set low prices for staple foods to allow industrialisation to take place at low wages. Lacking the stimulus of high prices, agricultural investment was low and farm productivity improved only slowly. Not surprisingly, (S) Korea fell short of its announced goal of self-sufficiency in grains. Subsidised imports of grain from the US (PL 480) and rice rationing compensated for deficient agricultural development.²

Macroeconomic Management

The overall macroeconomic management of the economy was anything but conservative. In the face of a low domestic savings rate, the rapid industrialisation generated inflation, which averaged 16 per cent and exceeded 20 per cent in two out of five years.³ Some price controls were used prior to 1964 to stabilise prices, though with only limited success.

The financing of investment required both foreign exchange and domestic savings. In 1962 the national savings rate was just over 3 per cent with both personal and government savings negative. The national savings rate rose over the period to an average of 8 per cent of GNP, but the gross domestic investment ratio exceeded the national savings rate by an average of 8.4 percentage points per year. The bulk of investment was financed by US aid, which had started to decline in 1957, and foreign private loans, which previously had been negligible.

The mobilisation of domestic savings was facilitated by two important policy changes in 1965. First, tax reform increased government revenue by 50 per cent. Second, there was a doubling of real interest rates on bank deposits. The increase in real interest rates, which previously had been negative, raised the share of bank loans from less than one fifth of loanable funds to over half.

Results

Contrary to present conventional wisdom on economic development, import substitution in (S) Korea was successful and accounted for most of the economic growth during this period (Kim and Roemer, 1979). Manufacturing production rose

by almost 50 per cent. GDP grew an average of 8 per cent per year, almost double the annual growth rate from 1953 to 1962. Growth of per capita income averaged 7 per cent, leading to an increase in GNP per capita of 40 per cent. Labour absorption was significant with a 10 per cent increase in employment. However, due to growth in the labour force, unemployment plus underemployment declined only moderately to 15.5 per cent. Nevertheless, the trade deficit remained quite large as the industrialisation effort forced a 75 per cent increase in industrial imports.

There was substantial investment in education. Between 1961 and 1966, both primary and secondary enrolments rose by about a third, while university enrolment doubled. By 1966, (S) Korea had achieved universal primary education and the rate of university enrolment was greater than in Great Britain. The health of the population improved with infant mortality declining over 10 per cent and life expectancy rising almost 6 years (National Statistical Office, 1994). New social welfare measures were introduced, including government and military pensions. Poverty assistance and disaster relief policies were also initiated (Kwon, 1993a, 1993b).

Poverty remained substantial with two-fifths of all households in 1965 falling below the absolute poverty line (55 per cent of urban and 36 per cent of rural households) (Suh, 1985). However, (S) Korea's income distribution in 1965 was one of the most even in the world. Egalitarian asset redistributions had been undertaken by the government after the liberation from Japan (Choo, 1977, 1985), with two land reforms and asset confiscation of Japanese collaborators. During the 1962-66 period, there was rapid absorption of labour from a relatively low productivity sector, agriculture, to a high productivity sector, manufacturing. The technology used to construct infrastructure was labour-intensive, and the capital/output ratios were very low by international standards.

In sum, this short period of classical, import-substituted industrialisation emphasised infrastructure development and producer goods. The industrialisation benefited from the protection afforded by strict and pervasive restrictions on imports, including tariffs and significantly undervalued exchange rates. Industrialisation was further promoted by subsidised credit and by foreign exchange licensing and allocations. The strategy was successful from both a growth and social development perspective. However, the newly produced industrial output was not competitive in world markets and, by the end of the period, the opportunities for further industrial output expansion afforded by increases in domestic demand had been exhausted.

Second Five-Year Plan (1967-1972)

The period of the second five-year plan was the golden age for (S) Korean economic development. The emphasis shifted from import substitution in producer inputs to the exporting of labour-intensive consumer goods.⁴ This yielded rapid industrialisation and a surge in growth with equity. Starting the period with substantial unemployment, (S) Korea virtually exhausted its supply of surplus labour. The export orientation of the second five-year plan was innovative, for at the time most developing countries were focused on import substitution.

Several factors motivated the reorientation towards exports. First, the size of the domestic economy was woefully small. The total (S) Korean GDP generated the equivalent domestic purchasing power of a typical American city of about two thirds of a million. This was hardly sufficient to support significant industrialisation.

Second, the economy was poor in natural resources and, despite success with import substitution, still had few intermediate industries. Thus, the import content of gross output was very large: 0.6 units in imports were required to generate one unit of additional domestic production. As foreign aid was expected to be phased out in about a decade, this meant that export capability would have to be built up to support domestic production. Of course, elevated import/output coefficients were used in other countries to argue for deepening import substitution into intermediates and machinery. But not only are the early years of import substitution in intermediates necessarily more import-intensive than existing production, they are also more capital-intensive. The deepening of import substitution into intermediates would therefore have caused a further widening of the trade gap and would have been unable to generate sufficient employment to absorb the unemployed labour force.

A third factor was that abundant human resources were available at low wages. (S) Korea could capitalise on this comparative advantage by producing goods for export. Fourth, President Park, committed to economic independence, recognised that exports were necessary to reduce dependence on foreign aid. Finally, there were the examples of Japan and Taiwan, which were already successfully pursuing export-oriented strategies.

Strategy

The government aggressively sought to expand exports. The actions ranged from nondiscretionary market-oriented measures to presidential pressure on individual firms.

Measures to promote import substitution remained in place, strengthening the position of manufacturers with export potential. Foreign competition was restricted

by tariffs, import licensing, foreign exchange controls, and prohibitions on imports of some commodities and quotas on others. Tariff rates varied from 13.5 per cent on mining and energy to 106 per cent on beverages and tobacco (Koo, 1977). Keeping the exchange rate low not only restrained imports, but also stimulated exports.⁵

New initiatives to expand exports included long-term low-interest government subsidised loans and price controls on critical inputs and wages (Song, 1996). On a selective basis, and especially to favour new industries, manufacturers of exports were granted income tax reductions, loan guarantees to stimulate loans from abroad, cheap credit, and the right and foreign exchange to purchase needed machinery, equipment and raw materials free of import duties. Raw materials needed to manufacture exports could be imported duty free, and a 'wastage allowance system' permitted the domestic resale of some portion of the raw materials ostensibly imported for the manufacturing of exports. Even though it was not the intention to discriminate among exports, the incentive system resulted in commodity specific effective exchange rates. The effective subsidy rate varied widely, ranging from 125 won per dollar for exported nylon fabrics to 5 won per dollar for fresh fish (Koo, 1977).

Was this complex policy preferable to an outright devaluation? Second-best trade theory suggests that unified exchange rate systems are suboptimal in the presence of factor/market imperfections, externalities, monopoly and 'infant industries' (Little et al., 1970; Srinivasan and Bhagwati, 1978; Mitra, 1992a, 1992b; and Devarajan et al., 1990). Co-ordinated tax or tariff cum subsidy policies are needed to overcome these distortions and move the economy towards optimality.⁶ Finally, in the presence of market imperfections and externalities, an exchange rate which is favourable to exports may delay capital deepening and the expansion of the domestic market for exportables. The last effect is especially important; even in export industries the contribution of domestic demand is likely to exceed that of exports.⁷

The analysis of market incentives does not tell the whole story of how the export drive was accomplished. The government established a variety of export-promotion organisations, including the (S) Korea Trade Association, the (S) Korea Trade Promotion Corporation, and government-financed research institutes. Discretionary command (non-market) methods were vigorously applied, including presidential jawboning. The Ministry of Commerce established ever rising export targets and monitored the performance of individual firms. Firms exceeding their quotas were rewarded by increased subsidised credit and import licenses. Firms that fell short were liable to lose their foreign trade licenses and were subject to harsh measures such as tax audits and the shut-off of utilities and revoking of trading licences.

The president himself kept close track of enterprise export performance and worked tirelessly to stimulate exports. Monthly meetings were held between the president and large exporters in which those who did best were honoured. At such

meetings and by other channels, the president was kept informed of specific bureaucratic and factor supply bottlenecks to export expansion, which he directed his staff to clear.

Macroeconomic Management

Macroeconomic management continued to be oriented toward growth rather than stability. The gross domestic investment rate averaged 22 per cent of GNP, which exceeded the gross domestic savings rate by about a third. A large shortfall in savings occurred despite a doubling of the savings rate from its value in the previous period.⁸ The ratio of credit to GNP more than doubled and inflation, although moderate, exceeded 10 per cent every year.

Almost two-fifths of the aggressive investment programme was financed by foreign loans. The main instrument to promote this inflow was a system of guarantees by (S) Korean banks for the repayment of loans.

Results

The economy grew very rapidly. GNP expanded on average 9.6 per cent per year, and structural change accelerated as the share of manufacturing in GNP increased by 50 per cent while that of agriculture dropped by a third. Per capita GNP increased by a factor of more than two and a half.

The annual increase of exports averaged a phenomenal 46 per cent, leading to a tenfold increase in exports over the period.⁹ Manufacturing led the way as its share of exports increased from 60 to 70 per cent. In 1973 export manufacturing industries accounted for 50 per cent of the capital stock and 33 per cent of employment.¹⁰ However, since imports had been so much larger than exports, trade deficits continued to be substantial (Hong, 1979, p. 361).¹¹

The labour market became tight, with employment rising by 25 per cent, and unemployment cut in half. The average wage of unskilled workers tripled. The distribution of income became even more level than it had been in 1965 with a doubling of the income share of the poorest decile. School enrolments increased by 28 per cent, primarily due to an expansion in secondary education.¹² Infant mortality dropped by 30 per cent, and life expectancy rose by another five years (National Statistical Office, 1994).

The Planning Process

The planning process was integral to the (S) Korean development strategy. A year and a half before the second five-year plan went into effect, well publicised lengthy meetings began. Attending the meetings were the top staff of the Economic Planning Board and the economic ministers of the cabinet.¹³

The meetings were chaired by the Deputy Prime Minister and began with the Economic Planning Board briefing the ministers on various features of the plan.¹⁴ Each minister raised questions about the assumptions and implications relating to his or her own bailiwick: employment (Minister of labour), agriculture (Minister of Agriculture), exports (Minister of Commerce and Industry), and foreign exchange requirements and inflation (Minister of Finance). Thus, the planners were forced to consider the implications of their plan from a broad national perspective. The ministers and their staffs, whose efforts would be critical to plan implementation, were mobilised in support of the plan. Everyone was sensitised to interconnections among sectors and issues.

A press conference was held after each meeting to ensure that the public was also kept informed. When the plan was finally adopted, it contained no surprises. It was apparent that the content had been considered carefully and was based on nonpartisan analysis. This perception aided in the general acceptance of the plan and promoted adherence to its provisions.

Two linked quantitative models underlaid the plan. A macroeconomic model forecast the growth of aggregate demand, inflation, and foreign exchange needs (Adelman and Kim, 1969). A dynamic input/output model helped in determining the amount of investment in each sector (Adelman et al., 1969).

The macroeconomic model incorporated three gaps: a current balance gap, a savings/investment gap and the government deficit. Various scenarios were run to predict the effects of policy choices on these gaps as well as the consequences for growth and consumption. Based in part on these calculations, but also on consultant reports¹⁵ that were part of the preparation for the export drive, the currency was sharply devalued, interest rates on bank deposits were doubled, and selective trade liberalisation was implemented (Adelman and Kim, 1969).

The input/output model of sectoral investment requirements was also critical. Using the income, consumption, export and government expenditure growth results of the macroeconomic model, the sectoral levels of final demand and the required levels of imports were forecast. These were then used as inputs to the input/output model. The input/output model predicted output and employment by sector, as well as the investment and import requirements for each sector (Adelman et al., 1969).

Investment requirements were calculated in an iterative fashion. Capital/output ratios were applied to the forecasts of sectoral outputs in order to determine capacity

requirements for the sectors. Investment requirements were then calculated as the differences between capacity requirements and current capacity. Investment matrices, both by sector of destination and by sector of origin, were then incorporated into the final demand vector and the whole exercise was repeated until the initial and final investment levels converged.

Industry committees modelled on the French indicative planning process were formed for each of ten industrial sectors. These committees brought bureaucrats from the Ministry of Commerce and the Economic Planning Board together with each other and with entrepreneurs. Since there were investments on the drawing board which were not captured by the existing surveys, they recast the forecasts of changes in their sectors. The work was iterative, as changes forecast by industry committees for other sectors were fed into the work of each sector. Technological and market information was thereby imparted to entrepreneurs and bureaucrats alike as the planning proceeded.¹⁶

The next step was perhaps the most important. To make the investment plan 'real,' the government ensured that the appropriate investments would be made. Firms submitted investment applications to the Ministry of Finance. In most sectors, the ratio of proposed investments to investment requirements was above 500 to 1; in a few sectors the industry committees had to solicit additional applications. Projects were evaluated on the basis of economic feasibility, financial rate of return, net foreign exchange generation, and calculations of social rates of return. The projects in each sector were ranked, and the highest ranking ones were selected until the requirements of the plan were attained.

The planning process and the very existence of a plan were essential. The building of the plan generated a national consensus in support of economic development. The presence of the plan afforded a rational, nonpartisan mechanism for government to promote private investment.

Financial Liberalisation

Financial liberalisation did not begin in (S) Korea until 1981. Banks were gradually privatised, but the government continued to mandate loans in support of its development agenda. It established a system in which specific banks were designated to garner finance for particular corporations for specified activities.

(S) Korea's capital market was closed to foreigners until after the two five-year plans, discussed above, were completed. Beginning in 1972, foreign banks were allowed to open branches in (S) Korea. Portfolio investment by foreigners was not allowed until 1982. In 1985, (S) Korean firms were permitted to raise capital abroad by issuing convertible bonds, but direct foreign investment in the (S) Korean stock

market was not permitted until 1992. Restrictions on the convertibility of the won in trade-related transactions were not lifted until 1988. In 1990, a managed float exchange rate system was adopted.¹⁷ Capital account convertibility for capital inflows was started in 1991 with substantial restrictions. After 1994, under pressure from the US and the IMF, steps were taken to liberalise both the inflow and outflow of capital. Banks began to borrow abroad without significant oversight. Together with the high-interest rate policy, this led to a rapid increase in foreign liabilities of banks.

As of 1996, the financial system of (S) Korea was in a precarious transition from a completely nationalised to a fully developed market-based system. Bank regulation and supervision were not adequate. Initially, gradual financial liberalisation was important to maintain the thrust of the government-led development strategy. However, government-mandated loans implied that banks wound up with unsound loan portfolios.

Elevated interest rates encouraged borrowing abroad, especially after world interest rates started declining during the nineties. Naturally, the foreign borrowing was denominated in dollars, exposing banks to exchange rate risk. About 80 per cent of loans were short-term, making the solvency of banks and *chaebols* sensitive to fluctuations in foreign confidence in (S) Korea's economic prospects. Since (S) Korea was committed to maintaining a stable exchange rate, the short term debt was unhedged.

Between 1995 and 1997 international claims on banks had risen by 30 per cent, from US\$77 billion to US\$103 billion. International banks enjoyed implicit government guarantees against the insolvency of (S) Korean banks and could thus take excessive risks when lending to (S) Korean banks.¹⁸ An exogenously-induced decline in exports, and reduced profits deteriorated corporate balance sheets, and put the private banking sector at risk. The banks responded to these developments with a mix of increased interest rates on loans and curtailment of credit, which in turn further hurt balance sheets, reduced their ability to service debt, and curtailed the growth of exports and domestic sales. Since banks were allowed to invest in stocks and real assets, they were also directly vulnerable to asset price fluctuations.

The government adopted a high interest rate, tight money policy, which set domestic real interest rates way above world markets. By 1997 the Korean stock market fell to below half its value in 1991. Unable to raise new equity capital on the stock market, firms had to resort to borrowing. The huge interest rate differential between domestic and foreign loans, in turn, accelerated foreign borrowing, thus deteriorating the soundness of bank balance sheets further and endangering macroeconomic stability.

Worsening Korean economic vulnerability was the government policy of allowing an unsustainable rapid rise in real wages. The motivation was political: to pre-empt the opposition parties, which represent labour interests, from gaining

popular support. By 1994 the index of real wages stood about 11 percentage points above that of labour productivity. Just before the financial crisis, the average wage level in Korea was about 30 per cent above that in the United Kingdom.¹⁹

The Financial Debacle

The strategy of export-led growth made the economy sensitive to external price shocks (e.g. oil), and the pace of international trade. In the crisis of 1997-98, the specific exogenous shocks to Korea were a lengthy recession in Japan and a world-wide decline in demand for computer chips, ships, automobiles, and garments. Simultaneously, the contagion from the financial crisis in Southeast Asia manifested itself in a decrease in exports to other Southeast Asian countries, and more importantly, increased export competition due to the precipitous fall in the value of the currencies of its competitors.

Most devastatingly, financial crises elsewhere in Southeast Asia caused a re-evaluation of (S) Korea's creditworthiness. In late 1997, (S) Korea experienced a huge swing in foreign capital flows. As a result, there was a 20 billion dollar outflow for the year, compared with a 100 billion dollar inflow the previous year.

The ill-timed liberalisation of capital flows was largely a consequence of President Kim's decision to join the OECD, apparently to increase his legitimacy and popular support. Joining the OECD required, as a precondition, free capital markets. (In this context, it is indicative that the Mexican crisis of 1994-95 occurred only six months after she became a member of the OECD.)

The debacle would not have taken place if (S) Korea had waited five to seven years before joining the OECD and used the interim period to: (1) strengthen the balance sheets of banks and the corporate sector; (2) grant greater independence to banks in making loans; (3) increase the capacity of banks to evaluate the financial soundness of proposed projects and the solvency of corporations; and (4) raise the transparency of corporate accounting practices.

Without premature capital-market liberalisation, other policy mistakes and institutional inadequacies would merely have resulted in a recession, as they did in 1972, 1980-81, and 1992. If the reversal in capital flows had not been so severe, (S) Korea would not have had to submit to the overly stringent and partly ill-conceived IMF conditionality which, despite being accompanied by the largest financial rescue package in IMF history to date, will slow down (S) Korea's recovery and increase its pain.

Ironically, the impressive economic progress contributed to (S) Korea's vulnerability once overly optimistic foreign evaluation of (S) Korea's prospects turned excessively pessimistic. The lesson of the Southeast Asia financial contagion is that international capital flows pose serious threats to national economic stability.

A mix of regulation, disincentives, or other impediments to short-term capital flows is indispensable.

The Lessons

The growth of a developing economy cannot be adequately engineered through macroeconomic variables alone.

In (S) Korea, a multitude of 'carrots and sticks'—market and non-market, discretionary and nondiscretionary—were used to achieve both general and specific goals. Government intervention thereby provided the dynamic behind growth. While some mistakes were made, interventions were market conforming or remedied market failures, if not in the short-run, at least in the medium term and long-run.

A 'big bang' is to be avoided.

All elements of liberalisation should be phased in carefully: domestic markets, trade, financial system, macroeconomic management, and foreign capital inflows. (S) Korea decontrolled trade only gradually and selectively, mixing the need to use imports as a source of competition and exports as a test of competitiveness with the need to provide sheltered markets for new industries during their 'infant' phase. (S) Korea paid dearly when it violated its strategy of gradualism by prematurely opening domestic capital markets before the financial system was fully developed.

Nor should a puritanical approach be taken toward inflation.

Till the 1980s, (S) Korea pursued a moderately loose, though not profligate, macroeconomic policy in support of development. It worried relatively little over macroeconomic stability during its first 30 years. Nevertheless, during this loose-money period, government-budget deficits never exceeded 2 per cent of GNP and the annual rate of inflation 30 per cent. A facilitating factor was strict control over foreign capital markets.

A sound state is the sine qua non of a sound economy.

With leadership committed to development, it is possible to turn a corrupt, soft state into a hard, developmental state. When the (S) Korean state was first created, the economy was considered a sinkhole for foreign assistance. It was only with the birth of the strong developmental state and the adoption of a coherent development program that the (S) Korean economic miracle was born.

NOTES

¹ This conclusion is based not only on the (S) Korean record but also on the experience of Taiwan and Japan and the late European industrialised. Scitovsky (1985), and Adelman (1997) show that (S) Korean

development policy was similar to that of Taiwan, and Song (1996) shows it was comparable to that of Japan. Morris and Adelman (1988) describe the activist development policy of the late industrialised.

² Hardly a case of simply 'getting prices right', economic policies violated neoliberal precepts. Prices that were temporarily distorted (combined with a suitable mix of subsidies and controls) had positive effects (Amsden, 1989).

³ Between 1960 and 1981, (S) Korea had the highest inflation rate among the Asian newly industrialising countries (Song, 1996).

⁴ The design of the second five-year plan is described in detail in Adelman (1969).

⁵ The effective exchange rate for exports relative to imports was increased by about 20 per cent and kept relatively stable thereafter (Westphal, 1978). This figure does not take into account either the benefits from the protection of the domestic market or the reduction in incentives to producers of non-exportables. Both of these factors increased prices and profits for domestic sales of exportables.

⁶ It is difficult to make the estimates of imperfections and externalities needed to optimise subsidies, and the discretionary nature of subsidies invariably leads to some corruption and rent seeking. Nevertheless, (S) Korea's success makes it hard to dispute that the positive effects outweighed the negative effects.

⁷ For example, expansion of domestic demand from 1968 to 1973 accounted for 63 per cent of the total growth of light manufacturing, while growth in exports accounted for only 34 per cent (Suh, 1985).

⁸ High savings were not characteristic of (S) Korea's economic development until after the mid 1980s. Prior to 1971, the savings rate fell far short of the Rostow minimum of 15 per cent of GNP. Low savings meant that inflationary finance and high rates of foreign capital inflows were required to achieve growth. The recent shift to a high savings rate has enabled the continuation of growth while pursuing anti-inflationary policies.

⁹ The contribution of exports to GNP growth rose from 9.4 per cent in 1966-68 to 23.6 per cent during 1970-73 (Suk, 1977, pp. 401-403). One can question whether the growth in exports was dynamically efficient. The labour/intensity of exportables decreased by one third (Hong, 1979, p. 370) while the import-content of exportables increased (Suk, 1977, p. 412). This reflects the use of import incentives, such as duty-free imports and 'wastage allowances' which allowed the import of duty-free intermediate goods in excess of what was needed for production.

¹⁰ In 1968 manufacturing export industries accounted for only 14 per cent of the capital stock and 20 per cent of employment (directly and indirectly). Estimates are from Hong (1979, p. 363).

¹¹ Substantial imports of intermediate goods and machinery were required to implement the export-led industrialisation drive. The overall import coefficient for exported goods was 40 per cent (Suk, 1977). Thus, despite continued protectionist policies, the economy became considerably more open with the sum of imports plus exports almost doubling as a share of GNP.

¹² The educational strategy was to expand primary schooling first and then secondary, and to delay expansion at the college level. This had an egalitarian effect. It contrasts with the Brazilian strategy, for example, in which secondary education was just sufficient to feed college enrolments. (Adelman and Robinson, 1978)

¹³ For a description of the planning effort, see Cole and Young (1969).

¹⁴ Discussions about the planning model posed difficulties. For example, the head of the Economic Planning Board asked how to explain a three-gap model to the ministers. Adelman suggested constructing a Calder-type mobile with metal rods linking the savings/investment, import-export, and government revenue-and-expenditure functions.

¹⁵ The primary advisers were: Bela Balassa and Margaret Musgrave on trade reform; Richard Musgrave on tax reform; Edward Shaw, John Gurley and Hugh Patrick on monetary policy; and Irma Adelman on planning techniques.

¹⁶ Interestingly enough, the committees tended to overestimate the effects of planning changes on their sectors and a post-mortem comparison of the planned and actual changes revealed that the input/output coefficients could have been left unchanged.

¹⁷ In this system the Ministry of Finance and the Bank of (S) Korea were no longer directly involved in setting exchange rates. But the bands imposed on the daily fluctuations of the won-dollar exchange rate were narrow and the government continued to exercise indirect influence on the exchange rate through its foreign exchange transactions. In 1992, the exchange rate band was widened to 0.8 per cent.

¹⁸ Krugman (1998) attributes the crisis to this factor.

¹⁹ Another policy error was to peg the exchange rate to the dollar. The result was to reduce export competitiveness, increase the trade deficit, and lower the growth rate of the economy. Japan's declining exchange rate meant an automatic currency appreciation of the won, some 12 per cent between 1990 and 1996 (Radelet and Sachs, 1998).

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