

**Economics Series**

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No. 123, November 2011

## **Korea's Growth Performance: Past and Future**

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Marcus Noland is the Deputy Director of the Peterson Institute for International Economics and a Senior Fellow at the East-West Center.

This paper was prepared for the Asian Economic Policy Review Conference, 8 October 2011, Tokyo. I would like to thank Alex Melton for research assistance, and Lee Jong-wha, Mohamed Ariff, and other conference participants for helpful comments on an earlier draft.

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# **KOREA'S GROWTH PERFORMANCE: PAST AND FUTURE**

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Paper prepared for the Asian Economic Policy Review conference 8 October 2011, Tokyo. I would like to thank Alex Melton for research assistance, and Lee Jong-wha Mohamed Ariff, and other conference participants for helpful comments on an earlier draft.

South Korea is arguably the premier development success story of the last half century. For 47 years starting in 1963, the economy averaged 7 percent real growth annually, and experienced only two years of economic contraction: 1980 after the second oil shock and the assassination of President Park Chung-hee, and 1998 at the nadir of the Asian financial crisis (figure 1). At the start of that period South Korea had a per capita income lower than that of Mozambique or Bolivia; today it is richer than Spain or New Zealand, and was the first Asian and first non-G7 country to host a summit of the G20, the unofficial steering committee of the world economy.

The South Korean case is of interest for a variety of reasons. Rapid growth coincided with extensive state interventions in the economy, and considerable controversy exists as to how much this performance should be credited to the country's state-led development strategy and to what extent the lessons from that experience might be portable or applied elsewhere. The salience of this issue has grown as South Korea has become a more important provider of development assistance and advice. Now the country faces challenges in maintaining its superior economic performance in the face of an aging population domestically and a taxing external environment. Finally, the country confronts scenarios involving potential instability, collapse, and/or absorption of its neighbor, North Korea.

### **Historical Context**

Annexed by Japan in 1910, the Korean question occupied an anomalous position in the international diplomacy of the 1940s. The Koreans were promised their independence "in

due course” by the US, UK, and China at the Cairo Conference in 1943, which was reaffirmed at Potsdam in 1945. The war ended before the victorious powers could reach agreement on a trusteeship formula and the US and USSR hastily agreed to assume responsibility for accepting the surrender of Japanese forces and temporarily occupying the country, dividing responsibility in accordance with an American proposal at the 38th parallel, which had been previously identified as a possible boundary of Russian and Japanese spheres of influence in 1896 and 1905.

The starting point was not auspicious: agricultural and industrial production were well below pre-war levels and much of the physical plant and equipment barely functioning. Inflation hit triple digits. The ranks of the unemployed were swelled by the return of 500,000 refugees from other parts of the Japanese empire. Crime and gang activity surged. Levels of human capital and per capita income were higher in the North, which predominated in industry, mining, and power generation, as compared to the South which was largely agricultural.

Until 1947, the implicit assumption in US policy was that the peninsula would be reunited; hence no need to plan for an independent, self-sustaining South Korea. However, with the Soviets blocking proposals for peninsula-wide elections, in 1948 independent states staking claim to the whole peninsula were declared in the US and Soviet zones of occupation.

On 25 June 1950, North Korea invaded South Korea. Most of the capital stock was destroyed as armies from both sides twice traversed nearly the entire length of the peninsula. There was considerable population movement as well, mostly from the North to the South, and it is impossible to ascertain with any degree of certainty the capacities

of the two countries when hostilities ended in 1953 with the original borders more or less re-established.

At the end of the Second World War, the Korean nationalist movement reflected a wide ideological spectrum and was geographically dispersed: Rhee Syngman, the student of Woodrow Wilson who would eventually lead South Korea, had been in exile in the United States for 30 years; Kim Il-sung and other Korean communists had fled to the Soviet Union; there was a provisional government in exile in Shanghai; there were nationalists who had remained underground in the peninsula. After the division of the peninsula in 1948, both Rhee and Kim confronted the same formal problem, namely how to mobilize political support and create institutions through which to govern. Specifically, the former exiles faced a lack of institutional capacity (and hence had to rely, at least initially, on their respective patrons) as well as a basis for political loyalty, which could be inspired, compelled via repression, or bought through the creation and distribution of economic rents.

The expropriation of Japanese assets—both land and industrial—were one source of potential rents that could be channeled to political supporters. Another was to create them via policy intervention. South Korea inherited an economic legacy of state intervention from the Yi dynasty, through the Japanese colonial occupation (1910–45) that carried into the period of independence, reflecting the dirigiste character of Japanese administration and the continuation of extensive controls by the US military authorities in the immediate post-war period. An interventionist strategy that would permit the dispensation of political favors would amount to a continuation of past practices.

At the end of the Second World War, approximately 94 percent of the industrial assets in Korea were in the hands of the colonial government or Japanese citizens; when the Japanese were repatriated, they left behind roughly 2,500 businesses (Chung 2007). Starting in 1947, the US government began a process of selling or giving away formerly Japanese owned businesses, but the divestiture of assets really accelerated once Rhee took power.

The system was rife with favoritism and corruption. Chung (2007) estimates that the purchase prices for formerly Japanese owned assets were on average less than half their true value and payments in nominal terms would be further eroded by inflation. So, for example, a purchaser on a 10 year installment in 1955 would have seen the real burden of his debt reduced by more than half.

In principle, the disposal of these assets was to occur through public auctions but in reality, it appears that these procedures were routinely ignored. The majority of the beneficiaries of the divestiture program were individuals who had some prior connection to the asset. On one level this makes sense—it is precisely the former employees of these enterprises who would have the best understanding of the underlying worth of the asset and have the requisite knowledge to operate the plant and equipment. But it also had the effect of channeling economic bounties toward “collaborationists.” In other cases, local investors simply paid a “repatriation cost” to the Japanese owner to secure the title, claim ownership, and circumvent the divestiture program altogether. Some of today’s *chaebol*, or family-run conglomerates, can trace their origins (or at least significant expansions) to the asset divestiture program. The potential for building a political machine through such mechanisms is obvious.



Economic policy under Rhee also reflected the “urban bias” that was typical in developing countries of the period, signaling both the greater affinity of the governing elites with urban residents, as well as their fear that urban discontent, particularly in the national capital, could be politically destabilizing. The goal was maximizing the value of American aid (Cho 1994) which facilitated politicized rent distribution, financed most of the capital accumulation and, at its peak in the late 1950s, roughly 80 percent of imports (figure 2). South Korean policy could be summarized as the “three lows”: maintenance of a low price for grain (courting urban residents who could most easily challenge the regime); a low, that is, an overvalued, exchange rate; and low interest rates. The latter two conditions create excess demand for foreign exchange and bank loans, respectively, which then creates political opportunities for distributing rents (as well as incentives for corruption). The low interest rate policy had the further consequence of discouraging saving and capital accumulation.

### **High Performance Period**

Rhee was eventually driven from power by urban discontent with poor economic performance, repression, and corruption, and was followed for a brief period by a weak government led by Premier Chang Myon. A military government led by General Park Chung-hee took control in 1961. He sought legitimacy through his ability to defend the country against Northern aggression and economic development.<sup>1</sup> When Park seized power, gross domestic saving net of aid was derisory (figure 3). Gross investment,

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<sup>1</sup> See, for example, footage of his 1961 visit to Washington and speech in Seoul upon his return: <http://www.youtube.com/watch?v=tdIMyynwoQs&feature=related>.

financed mostly by aid, stood at a bit more than 10 percent of GDP, and the current account was in rough balance. After two years of poor economic performance, the military government unified the existing multiple exchange rate system, devalued the currency, raised the real interest rate, and initiated a series of wide-ranging reforms. Domestic saving net of aid began rising rapidly (figure 3). Domestic investment began rising even faster.

While in some ways Park's reform package marked a fundamental departure from past practices (with respect to trade policy, for example), it retained an important role for the state in the development process. Pervasive regulatory entry barriers (and thus protection from competition for incumbents), and Park's penchant for sole-sourcing important infrastructural and other large-scale government supported projects, in effect socialized risk and created opportunities for cross-subsidization across different business ventures, encouraging the *chaebol* to diversify into otherwise unrelated lines of business. By the 1980s, the top 10 *chaebol* accounted for more than 20 percent of national income (SaKong 1993 Table A.20).

The country's exposure to international trade grew enormously (Figure 4). Not only did South Korea benefit from the conventional gains from trade, performance in the international arena was used as a neutral standard, free of domestic distortions, on which to benchmark the relative competitiveness of firms receiving industrial policy support—which was terminated to laggards.

The accumulation of capital contributed to rapid technological upgrading and a stunning transformation of the composition of output. In 1963 non-fuel primary products accounted for more than half of South Korea's exports, and human hair wigs was the

third leading item. A decade later South Korea's exports were dominated by manufactures such as textiles, electrical products, and iron and steel; only one primary product category, fish, made the top ten. Today, South Korea's merchandise exports are concentrated in motor vehicles and telecommunications equipment, and the country generates increasing service exports, much of it entertainment-related.

As seen in Figure 3, capital accumulation was financed primarily by growing domestic saving, augmented by a significant inflow of saving from abroad, nearly reaching 10 percent of GDP in 1971, and actually breaching this threshold in 1974 after the first oil shock. These inflows predominately took the form of long-term loans and trade credits from private lenders and public institutions (including the multilateral development banks). Portfolio inflows and inward foreign direct investments were negligible during this period. A substantial academic literature exists (e.g. Westphal, Purcell, and Rhee 1981, Westphal, Kim, and Dahlman 1985, Kim 1997) that attempts to understand the sources of South Korean industrial competence and that documents the varied forms of technological transfer and interaction between South Korean and foreign firms. Whatever the origins of South Korean technical mastery, much of the foreign capital arrived in the form of technologically disembodied loans.

In 1972, Park initiated the intensive promotion heavy industry through what came to be known as the Heavy and Chemical Industry (HCI) policy. Modest financial sector liberalizations that had been undertaken in the late 1960s were reversed in 1972, when interest rates were lowered and direct government control of the banking system was increased in order to channel capital to preferred sectors, projects, or firms. In order to finance large-scale projects, special public financial institutions were established, and

private commercial banks were instructed to make loans to strategic projects on a preferential basis. By the late 1970s, the share of these “policy loans” had risen to 60 percent (Yoo, 1994). These loans carried, on average, negative real interest rates, and the annual interest subsidy grew from about 3 percent of GNP in 1962-71 to approximately 10 percent of GNP on average between 1972 and 1979 (Pyo, 1989). With such a large share of national income at stake, the allocation of these highly subsidized loans became the focus of intense political activity.

Park was assassinated in 1979 during what amounted to a palace coup. General Chun Doo-hwan and his fellow officers more or less stumbled into power, driven more by intra-military rivalries and narrow career interests than by any real sense of where they wanted to take the country (Clifford 1997). Facing deteriorating economic performance, exacerbated by the second oil shock, Chun and his cronies turned to Western-trained economic technocrats, who were already attempting to introduce a stabilization policy and reverse the worst excesses of the HCI policy, to fix the economy and shore up the generals’ political legitimacy.

Despite at times carrying a large volume of fixed-interest loan debt, South Korea managed to avoid financial trouble until the early 1980s slowdown in global growth in the wake of the second oil shock. The external shocks that hit South Korea during the period 1979-1981 were actually larger than those affecting Argentina, Brazil, Chile, and Mexico (Balassa 1985 Table 1). Although external debt and debt service ratios had increased substantially in the late 1970s, South Korea was able to re-attain high sustained growth by 1983, more rapidly than its comparators, through a combination of a reduction in imports associated with a sharp, though brief, decline in income, together with real

exchange rate depreciation achieved through a 20 percent nominal devaluation. (The currency had also been devalued by 20 percent in 1974 following the first oil shock.) This pattern of relatively sharp income decline and real depreciation followed by rapid recovery was to be repeated in the 1997 crisis (Lee and Rhee 2000). The technocrats around Chun implemented a policy of macroeconomic stabilization through which they began to liberalize and deregulate the South Korean economy. A liberalization of the financial sector initiated under the Fifth Five-Year Plan (1982-86) and extended under the Sixth Five Year Plan (1987-91) attenuated “policy lending.”

During its period of rapid industrialization, South Korea experienced a rapid shift out of rural employment into manufacturing and services. Accompanying this was a rise in recorded female labor force participation. Hours worked were quite long, and few envied South Korea’s safety record. In the early 1960s, the Park regime enacted a series of changes that circumscribed union activities, effectively banning independent trade unions in 1971. Some believe that South Korea’s rapid industrial upgrading in the 1970s and 1980s under authoritarian governments was abetted by wage repression at the point of a gun.

Yet South Korea appeared to achieve “growth with equity”: measured wage inequality was low by international standards, as might be expected in the case of an industrializing labor- abundant country rapidly increasing its exposure to international trade (and *inter alia* the demand for low-skill labor in the export sector). In certain respects, South Korean labor markets developed a dualistic structure in which the industrial employees of the major *chaebol* occupied a privileged position relative to similarly skilled workers (i.e. they were able to capture some of the rents accruing to the

*chaebol*). The South Korean labor movement also developed a dualistic structure, with government-approved unions on the one hand and informal or underground unions on the other. Democratization in the late 1980s was accompanied by an explosion of repressed labor discontent, but by 1990, the level of strikes had returned to its historical level, and today, on such indicators as private sector unionization or labor turnover, South Korea is within OECD norms.

In sum, one could characterize South Korea as an economy that had begun industrialization, experienced a political upheaval and devastating civil war, and was essentially engaged in catch-up along a reasonably well-defined industrial path defined by Japan.

Problems arose as the country approached the international technological frontier and opportunities for easy technological catch-up began to erode. The disappearance of straightforward paths for industrial upgrading based on imitating the prior trajectories of more advanced economies put a heightened premium on the ability of corporate managements and their financiers to discern emerging profit opportunities. The old development strategy was no longer adequate, but decades of state-led growth had bureaucratized the financial system and created a formidable constellation of incumbent stakeholders opposed to liberalization and a transition toward a more market-oriented development model. As rents dissipated, both financial and non-financial firms scrambled to claim the dwindling low-hanging fruit.

Under these conditions, the financial sector liberalization undertaken in the early-1990s was less a product of textbook economic analysis than of parochial politicking. A combination of South Korean policy, its accession to the OECD, and the Basle accords

on capital adequacy created unintended incentives for short-term bank borrowing. The highly leveraged nature of the South Korean economy, together with the currency and term mismatches embodied in the mid-1990s surge of foreign debt exposure, left the economy vulnerable to a variety of negative shocks, and in 1997, in the context of the broader Asian upheaval, South Korea experienced a financial crisis with net clean-up costs that eventually amounted to 16 percent of 2001 GDP.

### **Portability vs. Irreproducible Conditions**

As South Korea becomes a more important provider of development assistance and advice, understanding what aspects of the “Korean model” might be applicable elsewhere is of more than academic interest.

As seen in table 1, in the 1950s, among the limited number of countries that such data are extant, South Korea had the world’s third highest ratio of human capital (measured as educational expenditures embodied in the workforce) to the contemporaneous level of per capita income, presumably because most of the capital stock had been destroyed in the Korean War. An indicator of pre-existing Korean technical prowess would be the simple observation that Koreans (possibly with the assistance of American or Soviet engineers) were able to keep industrial assets functioning in the period immediately following the expulsion of the Japanese. Moreover, in the following decades South Korea accumulated human capital more rapidly than comparable developing countries (a phenomenon abetted by a post-war demographic bulge of young people that facilitated training through conventional educational

institutions), and, following the economic reforms of 1963, increasing numbers of university graduates specialized in science and engineering, presumably of particular importance in the expansion of industrialization.

Human capital takes a long time to produce (roughly 12 years of schooling for a secondary school graduate) and once in the labor force, human capital of a particular vintage lasts a long time (perhaps 40 years or more). In contrast, physical capital is subject to relatively rapid accumulation—and scrapping as newer vintage capital embodying technological progress becomes available. South Korea invested roughly 30 percent of GDP for several decades. Moreover, if one believes that human and physical capital are complements in that effective usage of recent vintage physical capital requires skill and/or that high levels of human capital are positively associated with the ability to absorb technological innovations from abroad, then economies with high levels of human capital relative to physical capital are likely to experience rapid rates of total factor productivity growth. In short, South Korea was well positioned for rapid economic growth. At least some of what occurred would appear to be simply an example of neoclassical convergence from an unusual starting point.

Paradoxically, South Korea (along with several other high-performing Asian economies) may have also benefited from unusual endowments, specifically a relative lack of natural resources, in two ways. Figure 5 is a projection of labor, capital, human capital, and arable land endowments onto a two-dimensional diagram.<sup>2</sup> The average world endowment is represented by the intersection in the center of the triangle of the

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<sup>2</sup> In the interest of brevity, a similar projection substituting human for physical capital is not reported. It would be desirable to have such projections for the late 1940s or 1950s, but 1968 is the earliest date that this data can be assembled for a large group of countries.



three rays emanating from its vertices. As one gets closer to the corner, the relative abundance of that factor increases. So, for example, in figure 5, it is clear that Japan is very land-scarce (i.e., it is far from the land vertex), and that Japan has a higher capital-labor ratio than South Korea, which, in turn, has a higher capital-labor ratio than Taiwan.

Given their factor endowments, we would expect extremely land-scarce economies such as Japan, South Korea, Taiwan, Hong Kong, and Singapore to begin manufacturing activities relatively early in their development (as measured by per capita income), and to specialize relatively intensely in these activities (Leamer 1987). And in this context, industrial policy interventions to boost manufacturing would be “leaning with the wind” so to speak.

A comprehensive review of the evidence is beyond the scope of this paper, but it is fair to say that evidence supporting the existence for growth-accelerating impact of industrial policies is modest (Noland and Pack 2003). While it is relatively easy to document the impact industrial policy interventions had on the composition of output and trade (i.e. resources were indeed being shifted), attempts to formally model the impact of industrial policy interventions uniformly uncover little, if any, positive impact on productivity, growth, or welfare. The paper that considers most thoroughly the linkage between industrial policy and sectoral productivity growth, Lee (1996), fails to uncover productivity-enhancing effects of industrial policy interventions. Likewise, attempts to document interventions to capture inter-industry externalities and thereby expand the production set of the economy, assessed either directly through the input-output table (Pack 2000) or indirectly via time-series econometric analysis (Noland 2005), suggest that these conditions were generally not widespread. While industrial policy interventions

may have had a positive impact in some cases, quantitatively they could not have been the primary explanation for South Korea's extraordinary growth performance.

This relates to the third, and probably irreproducible, initial condition, namely the comprehensive land reforms undertaken out of rivalry with North Korea and with encouragement from the US, which could have reinforced backward and forward linkages and encouraged productivity increases in the agricultural sector. The result was "growth with equity" as the share of tenants or half-tenants fell from 67 percent of the rural population to 15 percent in 1954. The reason that this condition is probably irreproducible is that it is hard to imagine situations in which an incumbent government has enough political capital to take on something as fundamental as a land reform. It is virtually impossible to imagine a democratically elected government having the political power to overwhelm opposition to such a fundamental change. Certain post-conflict situations might present a possibility where outside actors with no real ties to the landlord class, or an indigenous government with weak ties to the local rural elite backed by strong foreign patrons might be able to take this on, however.

In short, South Korea in the 1950s was "deceptively poor" and some of the key factors that contributed to its subsequent superior performance were the product of very specific conditions and are unlikely to be reproducible elsewhere.

### **Institutions**

In recent years economists have come to appreciate the centrality of public institutions in contributing to economic performance. Yet South Korea, arguably the premier success story of the last half-century, has sometimes been described as a First World economy

with Third World institutions. Noland and Weeks (2009) examined South Korea's absolute and performance relative to 43 other countries on 52 institutional indicators derived from a variety of sources over the period 1996-2007. Although the country modestly underachieves on most of the 52 criteria, controlling for the level of per capita income, South Korea is not an outlier, and on most indicators it is converging on global norms from below. Indeed, South Korea placed eighth in the 2012 World Bank Doing Business ranking, the first time that it had cracked the top ten.

The patterns on specific indicators suggest that global institutions play some role as an external policy anchor. International trade policy, for example, has been the area in which there has been the greatest consensus about and articulation of international norms (such as free trade in goods), and international institutions such as the World Trade Organization have been the most developed. In the financial arena, there is less consensus about best practices with respect to either domestic institutions or external relations, and the international institutions (Bank for International Settlements and the International Monetary Fund) have been relatively less successful in promoting an international consensus about desirable norms. In areas such as labor policy, there has been little consensus beyond some minimal standards (i.e., prohibitions on forced or child labor), and the international institution, the International Labour Organisation, has been, and remains, weak. The Organization for Economic Cooperation and Development (OECD), which South Korea joined in 1996, has been at the forefront of anticorruption activities but has no enforcement power. In the area of competition policy, there has been little consensus about desirable practices, and really no international organization (except perhaps the OECD) has addressed these issues.

Perhaps it is not surprising then that South Korea has made great progress on protectionism (admittedly from a low base made possible by the lack of enforcement power in the WTO's forerunner, the General Agreement on Tariffs and Trade, and the "special and differential" provisions that made commitments by developing countries nonbinding). Arguably the next best performance has been in financial reform and issues relating to investment and probably the worst in the largely "domestic" arenas of competition and labor policy. The reason is straightforward: the existence of international norms gives policymakers a goal to aim for, and the existence of international institutions (and other avenues of international diplomatic pressure) helps in overcoming the historical weakness and parochialism of South Korean public institutions.

### **Contemporary Challenges**

While in comparative terms South Korea largely avoided the worst of the recent global financial crisis, it did not escape unscathed. Experiencing a sudden stop in capital flows following the collapse of Lehman Brothers, peak-to-trough the *won* plunged 43 percent against the US dollar. In part due to this recent history, South Korea has introduced measures to impede cross-border capital flows, and has been pushing the idea of international financial "safety nets" in the G20.

In the medium-run, given the large role that cross-border exchange plays in the South Korean economy, the general health of the global economy, will play an important role in South Korean performance. Internally, the country faces challenges with respect to still high levels of financial leverage, in particular high levels of household debt, which as of March 2011 stood at 125 percent of disposable income (International Monetary Fund 2011).

In the long-run, however, economists normally ascribe growth to the availability of the basic inputs to production such as labor and capital, together with productivity increase. In the case of South Korea, during its high growth period it benefited not only from the general openness of the world economy, but from a rapid expansion of the labor force and a relatively low number of dependents per worker, combined with a significant increase in the educational level of the workforce. Those favorable demographic factors are now reversing, however. In 2010, the “core productive population” aged 25-49 fell for the first time. Under current trends, within the next decade South Korea’s dependency ratio will begin rising, and by 2030 population size will begin to decline, falling below its current level by 2040 (Korea National Statistical Office 2006, Japan Center for Economic Research 2007).

Nothing is certain and changes in underlying behavior could frustrate these projections. But South Korea appears to be relatively inefficient in the provision of the social safety net (Koh 2011). If the forecasts prove broadly correct, they imply increases in health and pension burdens which will in turn necessitate adjustments in South Korean policies and practices, such as increasing the retirement age, improving the efficiency of delivery of health care and retirement services, and utilizing female labor, especially educated women, more efficiently. South Korea, which is among the members of the Organization for Economic Cooperation and Development (OECD), the club of rich industrial democracies, has some of the most restrictive immigration policies, may have to reconsider those as well, in response to changing demographics. South Korea’s demographic bonus could turn into a demographic onus.

These considerations point to the need to reform the tax system more generally. In the context of likely sluggish growth in some of South Korea's major export markets over the medium-term, the International Monetary Fund has recommended removal of tax incentives that favor export-oriented manufacturing over the service sector (International Monetary Fund 2010).<sup>3</sup> The government has begun to address this concern, albeit by introducing tax incentives for certain specified service industries, rather than moving toward neutrality by removing existing preferences. And looking north, President Lee Myung-bak has raised the possibility of a "unification tax" to hedge against the world's largest contingent liability.

South Korean investment has not returned to levels existing prior to the 1997–98 crisis, though in this respect South Korea is not alone: Investment in other crisis-affected Asian economies has never fully recovered either. This pattern may reflect overinvestment during the 1990s boom, secularly falling profitability as capital is accumulated, and political developments over the past decade. The rise of progressive political forces following the financial crisis, their contentious relationship with the corporate sector, and greater willingness to side with the unions in labor disputes may have contributed to a reduction in business confidence and a consequent attenuation by the business sector to engage in irreversible commitments, which, after all, is what investment represents. Labor market regulations, which make it difficult to fire permanent workers once they are hired, further reinforces caution with respect to expansions of capacity which may be effectively irreversible in the payroll dimension as

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<sup>3</sup> See also OECD (2008).

well.<sup>4</sup> Direct foreign investment flows into South Korea are relatively sluggish; in a recent UNCTAD survey, South Korea placed 130th out of 141 countries with respect to inward foreign investment performance, and outward investment is rising (UNCTAD 2008). The undeniable impression is that South Korea is losing its luster as a location for production.

Under such circumstances, squeezing the maximum productivity out of labor and capital inputs is essential to maintain growth. South Korea faces important competitive challenges posed by the country's intermediate position between its neighbors, low-wage China and high-technology Japan. Approaching the technological frontier, South Korea faces significant challenges in stimulating productivity growth. It is tempting to think of spurring productivity increases in terms of technological upgrading, and indeed, South Korea's technological progress, particularly in information technology, has been phenomenal. But increasing productivity involves more than just technological change; indeed, technology, narrowly defined, may not even be among the most important drivers. Financial sector reform, for example, could have a considerable impact on the availability of capital to underwrite the commercialization of innovative activity. Changes in labor market regulations could have an equivalent impact with respect to the efficient utilization of labor.

One can conceptualize the process of productivity advancement as encouraging innovation in emerging sectors or activities, while at the same time terminating practices that discourage productivity increases in existing activities. Where South Korea falls

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<sup>4</sup> See OECD (2005, 2008) for further details.

badly behind is in the heavily regulated service sector, and it is here that the greatest opportunities for productivity increase lie.

In terms of productivity, the South Korean service sector lags the industrial sector, and this divergence is far larger in South Korea than it is in most other OECD countries. In fact, estimates by the IMF and the Hyundai Research Institute indicate that while total factor productivity growth, a concept that measures productivity increase taking the application of both labor and capital into account, has been rising at a rate of 3–4 percent per year outside the service sector over the last quarter century, productivity in the service sector has actually declined (Schiff 2007, Hyundai Research Institute 2010). According to these calculations, South Koreans are actually getting less output in the service sector, once inputs of labor are taken into account, than they were in the 1970s.<sup>5</sup> Whatever the specifics, considerable evidence suggests that South Korea faces a real problem with respect to service sector productivity—and the importance of this problem is growing. China’s rise means that manufacturing is likely to play a smaller role in the South Korean economy in the future, a trend that will be reinforced domestically by the growth of South Korea’s elderly population who tend to consume relatively more services than the population as a whole. The service sector could also be a contributor to the balance of payments; it has been estimated that the *Hallyu* phenomenon, the

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<sup>5</sup> These calculations should be approached with a certain degree of skepticism: the exercise embodies a host of assumptions about the nature of technological change (nicely reviewed in Pack (2001)), assumes that factors are paid their marginal products which is almost surely not the case in South Korea during at least the early part of the sample period, and the econometric literature rejects the constant-returns-to-scale translog production function as an adequate representation of the South Korean economy, or at least its manufacturing sector, over the relevant time period (Kwon 1986, Park and Kwon 1995, Kwack and Lee 2005). The scale of economy specification issue is less of a concern with respect to the service sector, however, and this is where the real problems lie.



increasing exports of South Korean music “K-pop”, TV programs, films, and games etc., is contributing \$1.5 billion in value-added to the economy and \$1 billion in service exports, a figure that could rise dramatically if counterfeiting, especially in China, was eliminated (Choi 2010).

Technological upgrading could increase service sector productivity, but the lack of use of cutting edge technology appears to be less of the cause than a symptom of the sector’s woes, which are more closely associated with institutional policies and practices which impede competition, particularly by facilitating barriers to entry by new competitors, both foreign and domestic. The time, cost, and number of procedures to create a new firm are above the OECD average. The situation is further complicated by policies that at once impose barriers to entry, but then effectively subsidize incumbent SMEs that dominate the service industry (OECD 2008, 2010; IMF 2009). To make matters worse, the stock of foreign inward investment in the service sector is among the lowest observed in industrial countries, as is the share of research and development accounted for by the service sector (OECD 2010). Reforms could include extending deregulatory practices introduced to six Free Economic Zones to the entire country, reforming restructuring practices with regard to failing SMEs, and decriminalizing the personal bankruptcy code to encourage more expeditious restructuring by financially-challenged entrepreneurs.

Fortunately, financial sector development could both increase productivity in that important sector, as well as encourage increased aggregate saving and investment, increase the allocative efficiency of investment, improve access to capital to productive SMEs, and, by extension, stimulate the degree of competition in the economy more

generally. In the context of the current crisis, the IMF has suggested a number of reforms, including linking support more clearly to restructuring efforts and upgrading bank supervision and regulation (IMF 2009).

What is likely to prove difficult over the longer-term is balancing the need to increase the degree of financial integration between South Korean corporations and their foreign counterparts, with the sensitivity of South Korea, located between the large economies of China and Japan, to impede this process to preserve national corporate autonomy. In the future, the development of large sovereign wealth funds is likely to enhance the salience of these concerns, raising the specter of foreign government affiliated entities taking over South Korean firms. South Korea has a history of xenophobia when it comes to foreign investment; one hopes that currently contemplated capital controls undertaken in response to the crisis, are not used for, or morph into more general restrictions on foreign investment.

Such developments are particularly unfortunate in the context of the perennial challenges posed by South Korea's industrial structure which is dominated by a small number of large *chaebol*. Foreign corporate competitors and private investors are one potential source of market discipline, which can be imposed on the *chaebol* without resorting to direct regulation, and a potentially positive and constructive force. The foreigners and the emerging good governance movement represented by organizations such as the Center for Good Corporate Governance and the Korea Corporate Governance Fund are natural allies in promoting more fair and transparent practices in the South Korean corporate sector.

Beyond the financial sector, the nature of South Korean labor market regulation has long encouraged segmentation where there is a small cadre of relatively secure and legally protected employees, who are mainly employed by *chaebol* or public enterprises, and a much larger group of part-timers and workers employed by SMEs, who labor under far less secure conditions. The result is a dualistic system which is rigid in some respects and flexible in others, and confers considerable protection to some workers, but few safeguards to others, and encourages confrontational behavior by South Korea's unions. When South Korea was confronted with the specter of mass unemployment during the 1997–98 crisis, it was forced to expand the existing social safety net, yet the provision of social insurance still lags comparators in the OECD. The crisis likewise encouraged reform of some of South Korea's most debilitating labor practices. Looking forward South Korea could gain from further diminishing the degree of labor market dualism and segmentation, continuing to rein in highly restrictive regulations (with respect to issues such as hiring and firing, for example) which hamper South Korea in international competition, while building legislation protecting the interests of non-regular workers and encouraging the smooth deployment of labor to its most productive uses.<sup>6</sup>

Beyond these generic improvements in the functioning of capital and labor markets, there is scope for more narrow reforms to the innovation system. As South Korea approaches the technological frontier, there are fewer opportunities for imitation and reverse engineering, while at the same time foreign firms are likely to be increasingly reluctant to transfer technology to potential South Korean competitors. The OECD has identified a number of areas of potential improvement (OECD 2005). South Korea's

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<sup>6</sup> See OECD (2005, 2008) and Kim (2007) for more detailed discussions of labor market issues.

innovative activities are concentrated in a limited number of sectors, and research and development activity in services is low. Considerable scope exists for improving the integration of innovative activities occurring in the universities and other public sector institutions and the private sector within South Korea, as well as the degree of cross-border integration between researchers in South Korea and those located elsewhere. As in the case of financial and labor market reforms, the government of South Korea is making efforts in this direction, though more remains to be done. These activities received a boost with President Lee's August 2008 announcement of a "Green Growth" initiative funded at 107 trillion won or about 2 percent of GDP.

A final challenge confronting South Korea is growing income and wealth inequality. Again, South Korea is not alone in this regard: technological change and globalization have resulted in increased inequality in many countries, and South Korea is far from the worst. Yet the rise of inequality has been particularly pronounced in South Korea, and unsurprisingly it is an enormously sensitive issue (Koh 2011). As South Korea grapples with inequality going forward, the key issue is to use public policy in a constructive way, by addressing lingering dualism in the labor market, for example. The risk is that inadequate or ineffective public policies in the face of the widening gap could provoke a political reaction that could damage the fundamental drivers of South Korean success. This concern is made more acute by the imperative to maximize productivity growth created by the ongoing medium-term challenges posed by the global financial crisis, South Korea's looming longer-term demographic challenge, and the predicament created by its economic and geographic placement between Japan and China.

## **North Korea**

Lastly, South Korea faces contingencies involving its neighbor, North Korea. While detailed consideration of the North Korean situation is beyond the scope of this paper, it is worth considering the impact on the South Korean economy of unification with North Korea whether it came through a prolonged consensual process or more abruptly as it did in the German case. One can think of two sorts of effects. The first is the pure economics impact of integration, and the second is the impact on internal political economy. With respect to the first issue, key is the magnitude and nature of cross-border movements of labor and capital.

North Korea is arguably the world's most distorted economy. Fundamental reform could have two profound effects: First, there would be a significant increase in exposure to international trade and investment.<sup>7</sup> Second, changes in the composition of output could be tremendous, involving literally millions of workers changing employment (Noland 2000 Chapter 7, Noland, Robinson, and Wang, 2000a). Specific modeling results suggest that this process would be accompanied by an increase in inequality in North Korea, albeit in the context of a significant improvement in living standards and a dramatic reduction in poverty.

For South Korea, in pure economic terms, integration of product markets alone is unlikely to have a major impact on the South Korean economy—trade with North Korea would mostly substitute for trade with other countries and, given the small size of North

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<sup>7</sup> From a North Korean perspective, qualitatively similar results would be obtained if it liberalized preferentially and formed a customs union with South Korea (Noland, Robinson, Liu 1999; Noland, Robinson, and Wang, 2000b). Trade with both South Korea and the rest of the world would increase, and, from the standpoint of the whole peninsula, the customs union would be strongly trade creating.

Korea relative to South Korea, trade creation and diversion would have a trivial impact on South Korea. The distributional implications would be minor, and modeling results indicate, for example, that the formation of a customs union would be Pareto-improving for the South (Noland, Robinson, Liu 1999; Noland, Robinson, and Wang, 2000b).

In contrast, what matters is the factor market integration (and, by assumption, the stability of the North Korean state and the consequent ability to sustain enormously different levels of income across the two parts of the Korean peninsula, possibly by maintaining the demilitarized zone). Factor market integration could have a profound effect on the South. Key factors determining the impact on the South Korean economy would include:

- How fast North Korea could absorb new technology,
- How much labor would be permitted to migrate from the North to the South, and
- How much capital would be invested in the North? How much of it would come from the South and how much from other parties? Would this capital be invested on market or concessional terms?

A critical variable affecting virtually every issue of interest would be the magnitude of cross-border labor migration from North to South. Migration would act as a substitute for capital transfer. The more labor are allowed to migrate, the lower the amount of capital investment necessary to reconstruct the North Korean economy.

Choosing a plausible and prudent set of parameters, previous research suggests that under a “deep integration” scenario of moderate, controlled, cross-border migration, and rapid convergence in North Korea toward South Korean levels of productivity,

bringing the level of income in North Korea to half that of the South would require a decade and hundreds of billions of dollars of investment – and contingent on the amount of investment that could be financed from abroad, internal transfers similar in relative magnitude to the German case (Noland, Robinson, and Liu 1998, Noland, Robinson, and Wang 2000b, Funke and Strulik 2005). However, these costs are calculated as the amount of investment needed to raise per capita incomes in North Korea to a target share of South Korean incomes, and the Bank of Korea data suggest that the North Korean economy has essentially stagnated for the last 20 years, while South Korea has continued to grow (figure 6). The models are roughly log-linear and were benchmarked to data from the 1990s. As a first approximation, if the difference between per capita incomes in the two countries has easily more than doubled since 1996, then the estimated costs of unification will have risen to well over \$1 trillion (roughly equal to South Korea's annual national income) and would be growing by the day.

Such a process would be accompanied by:

- A mild slowing of the South Korean growth rate, a rapid acceleration of the North Korean growth rate, and an increase in peninsular output relative to the no integration baseline (Noland, Robinson, and Wang 2000b, Funke and Strulik 2005).
- Within South Korea a shifting of income from labor to capital, and within labor, from relatively low-skilled to relatively high-skilled labor. If one assumes that capital is predominately owned by high-skilled labor, then this suggests that the process will be accompanied by increased income and wealth inequality in

South Korea (Noland, Robinson, and Liu, 1998, Noland, Robinson, and Wang, 2000b).

- Across the various sectors of the South Korean economy, there would be a tendency for sectors such as construction to expand, while internationally traded-goods sectors would be disadvantaged, particularly if there was a large inflow of capital from beyond the Korean peninsula (Noland, Robinson, and Liu, 1998, Noland, Robinson, and Wang, 2000b).

And, of course, unification would have benefits as well as costs. Given the extreme militarization of North Korea, there would be a peace dividend associated with the reduction of military tensions on the Korean peninsula and the concomitant reduction in military expenditure. And the models suggest that while economic growth in South Korea would slow relative to a no-unification baseline, North Korean growth would increase dramatically, and overall peninsular growth would accelerate. These figures serve as yet another illustration of the tremendous cost borne by the North Korean people of the failure of the country's leadership and associated economic stagnation for more than two decades.

Put crudely, the economics come down to the movement of Southern money north or the movement of Northerners south. The policies that are ultimately adopted will be a function of politics. A number of cleavages are possible: between the North and the South, and within South Korea between capital and labor (owners of capital viewing Northerners as a new source of cheap labor, and labor regarding the North as a potential source of labor market competition). Cleavages within the South Korean labor force, between high-skilled and low-skilled workers could also occur. Depending on the



macroeconomic policies applied, the internationally traded- and non-traded goods sectors could be affected in very different ways, opening up another cleavage. It is also possible that different regions within South Korea might react differently to these developments depending on local assessments of the costs and benefits of particular initiatives.

The risk for South Korea associated with engagement is not the creation of symmetric dependency as is sometimes alleged. The disparity in the relative economic impact would be reinforced by disparity in political and social impact as well. The process of economic integration would create highly asymmetric dependency in favor of the South. The real threat to the South of economic integration lies elsewhere. The South Korean economy has real problems with non-transparent and corrupt government-business relations. In the North, there is no real difference between the state and the economy. Any large-scale economic integration between the North and the South will be by its very nature a highly politicized process, and the expansion of the government's role in the South Korean economy that would accompany this process could be a set-back for the quality of governance.

## **Conclusions**

South Korea is arguably the premier development success story of the last half century. It is increasingly held up as an exemplar for poorer countries around the world. Setting aside possible contingencies involving North Korea, the primary conventional economic challenges facing South Korea today are interrelated problems revolving around the

country's demographics, long-term fiscal position, and lagging productivity in the services sector.

These are daunting challenges. Yet two generations ago few would have predicted South Korea's stunning rise. One can only hope that the strengths that the country has exhibited in achieving its extraordinary past accomplishments will be equally evident as it addresses its future challenges.

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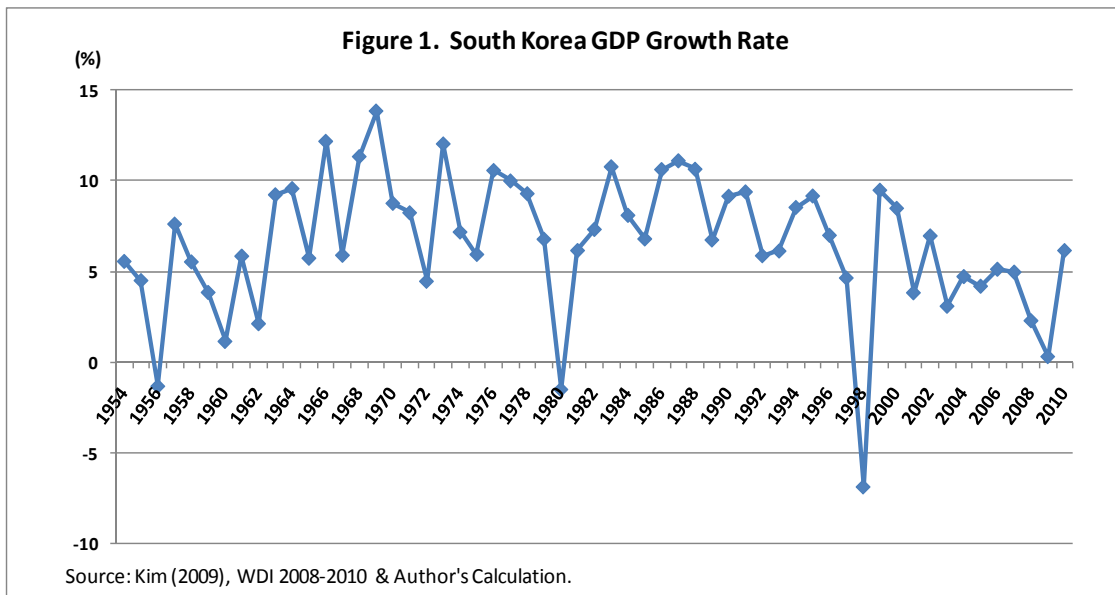
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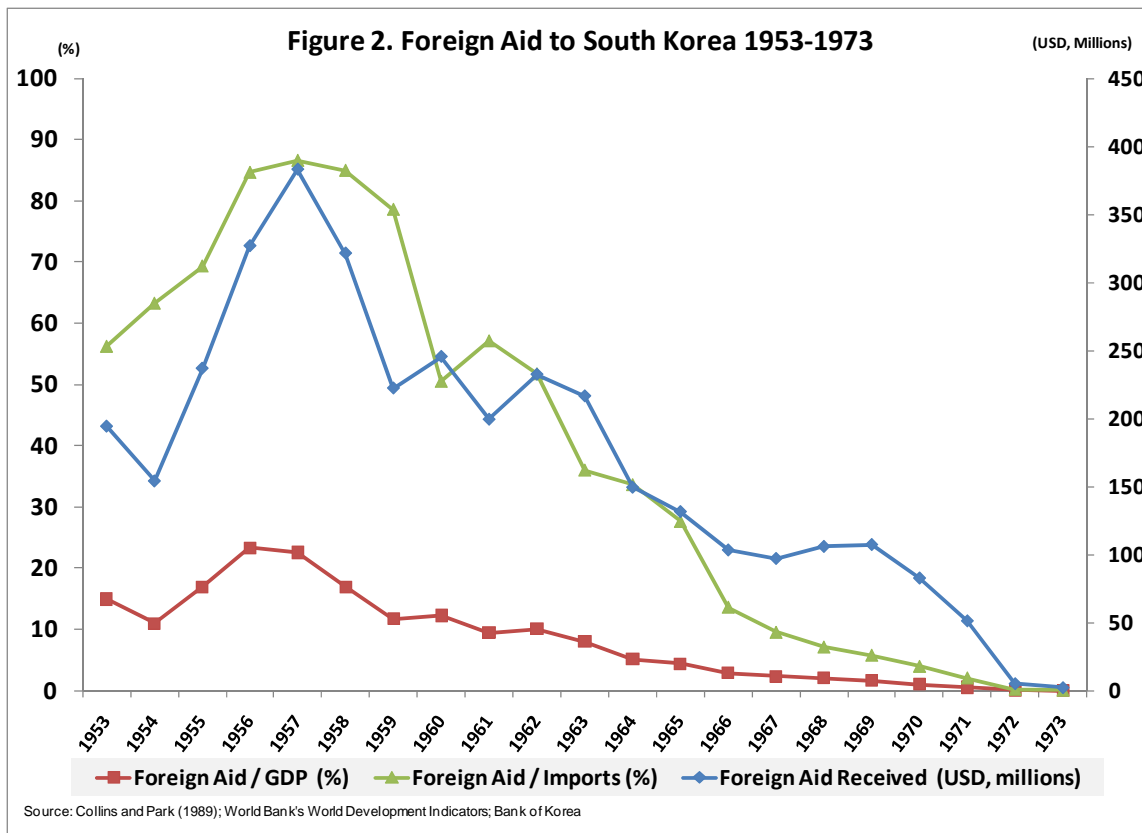
**Table 1 Human Capital Index and per capita income, mid-1950s**

Country	Year	Human Capital Index	Per capita income	Ratio of Human Capital Index to per capita income
Japan	1955	1,673	519	3.2
The Philippines	1956	738	277	2.7
<b>Korea</b>	1955	494	217	2.3
Israel	1954	1,200	609	2.0
Thailand	1955	302	181	1.7
Greece	1956	693	468	1.5
Malaysia	1957	334	351	1.0
United States	1955	2,293	2,443	0.9
Italy	1956	787	971	0.8
Turkey	1955	267	365	0.7
Argentina	1955	760	1,059	0.7
Mexico	1955	352	637	0.6
Spain	1955	389	652	0.6

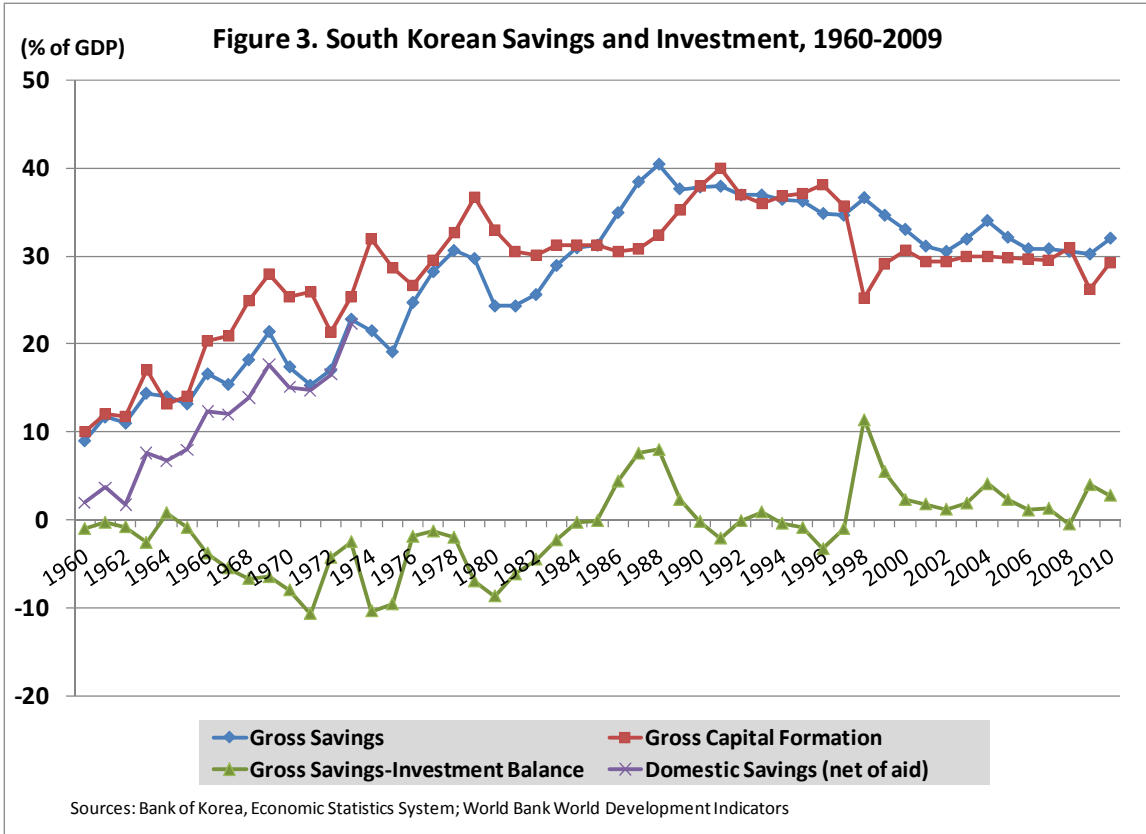
*Note:* Human Capital Index is educational expenditure embodied in the labor force. See Psacharopoulos (1973). Values for Japan, Mexico, Spain, Turkey, and the United States are interpolated from 1950 and 1960 observations; values for Greece and Italy interpolated from 1951 and 1961 observations; values for Argentina and Thailand interpolated from 1947 and 1960 observations.

Per capita income is purchasing power adjusted figure in international dollars from Penn World Tables.









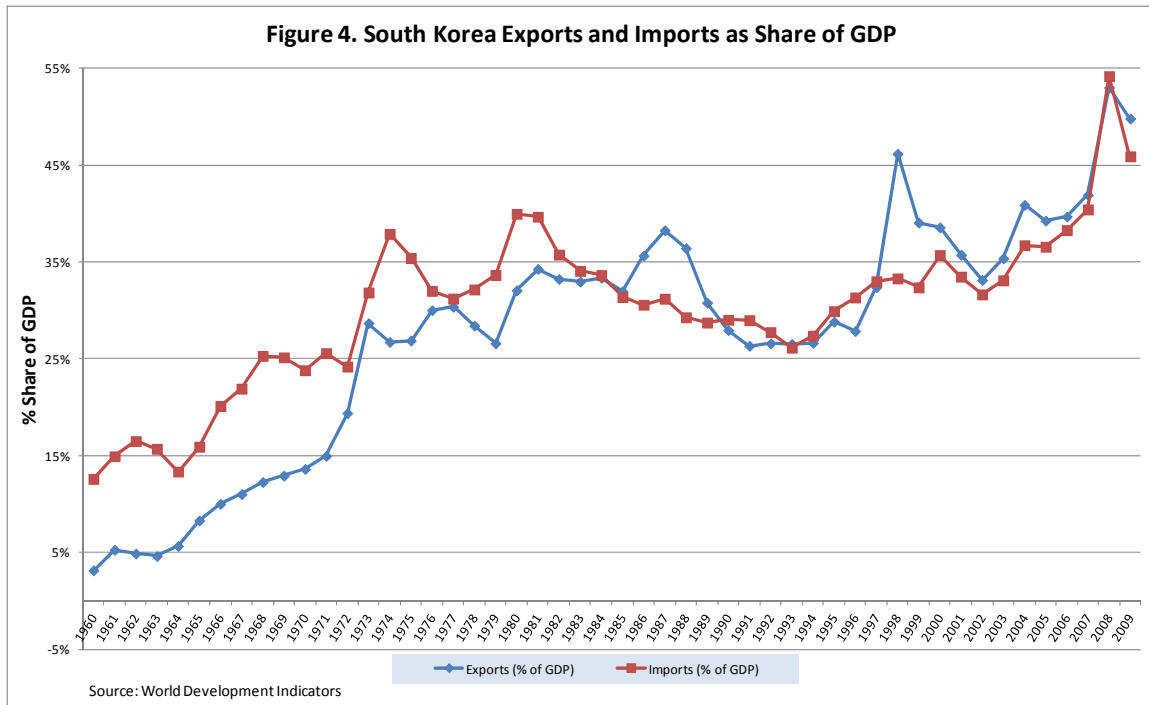


Figure 5. Endowment triangle: labor, physical capital, land (1968 data)

