

# Skills development strategies and the high road to development in the Republic of Korea\*

7

Byung You Cheon

## 7.1 Introduction

For more than four decades, since the early 1970s, the Republic of Korea has sustained strong and equitable economic growth. Increased productivity facilitated not only high rates of economic growth but also concomitant growth in wages and employment, which contributed to declining inequality. Skills development has been at the heart of this “high road” to development, which prioritizes “growth with equity” or “shared growth”. Education and training has been the cause and consequence of high rates of growth, rapid technological change, the opening of the economy and more equal income distribution, resulting in a virtuous circle of rapid catching up.

Government policies on education and training, pursued in harmony with other economic and social policies, helped substantially in establishing and maintaining such dynamic processes. In other words, education and training policies were closely coordinated with industrial policy; without integrating the skills development strategy into its industrial development strategy, it would have been difficult for the country to sustain this model of development over so long a period.

However, with rapid changes in the economic environment, this equilibrium came under increasing pressure, both internal and external. The Asian financial crisis of 1997 gave further impetus to economic opening and technological change, but also increased social and economic inequality. Since then, the

---

\* This chapter is a revised version of a background paper prepared for an ILO report.

government's role in the national economy, in respect to both skills development and industrial policies, has diminished. The challenge facing the economy in the twenty-first century is how to develop institutions and policies that enable it to respond flexibly to an environment characterized by further economic opening and technological change, while also restoring the "shared growth" conducive to both prosperity and equity by creating new education and skills development policies for the country.

This chapter sets out to review Korea's experience in education and skills development over the past four decades with the aim of understanding how government policies and institutions coordinated these policies with industrial policy. In other words, it explores what Nübler calls "collective capabilities" for catching up and industrial development (see Chapter 4 in this volume).

The chapter is structured as follows: Section 7.2 reviews Korea's rapid economic development and its welfare outcomes since the 1960s and explores the central role played by education and training in this process. Section 7.3 reviews the role of policy-makers and institutions in aligning and coordinating policies regarding education, research and development (R&D) and industrial development. Section 7.4 discusses challenges in the education and training system that the country faces as it moves into the innovation phase of economic development and into the knowledge economy. Section 7.5 presents lessons learned and conclusions.

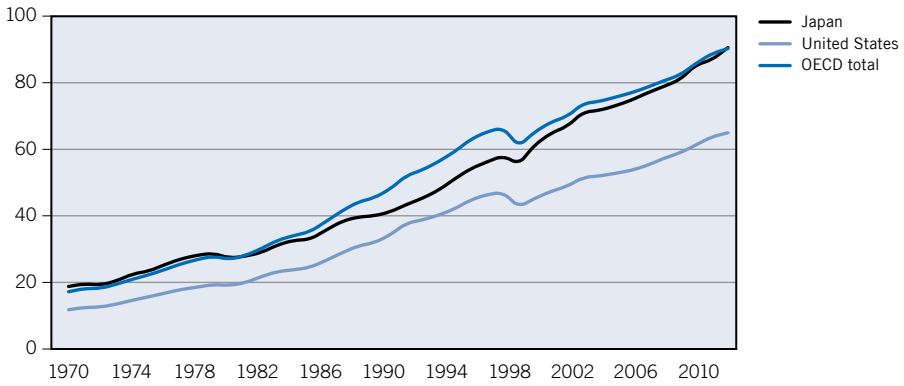
## 7.2 Economic development and skills development

### *7.2.1 The high road to development: Up to the crisis of 1997 and beyond*

The economic achievement of the Republic of Korea over the past four decades is considered one of the success stories of the global economy. Over this period the country has sustained growth rates of over 7 per cent, as a result of which per capita income has risen from just 17.2 per cent of the OECD average and 11.8 per cent of the US level in 1970 to over 90 per cent of the OECD average in 2010 (figure 7.1). This remarkable "catching-up" process continued even after the financial crisis of 1997.

This fast growth in the Republic of Korea was driven by productivity growth, which had long outstripped the labour productivity growth rates of the developed world (see figure 7.2): between 1992 and 2002 the country's output grew by an average of 5.6 per cent a year, well above those observed in the OECD area.

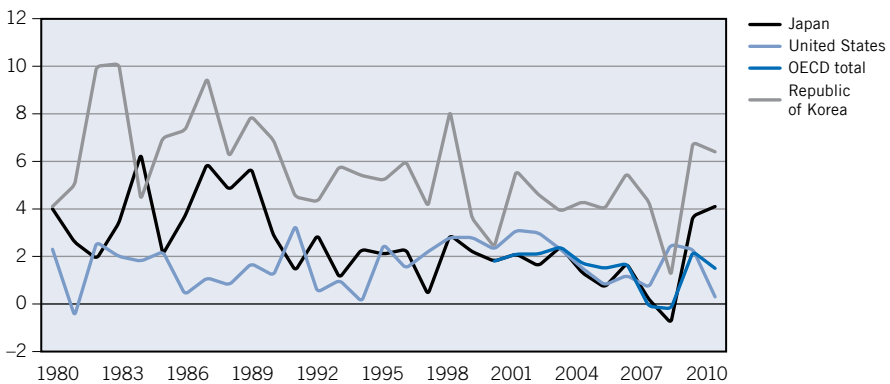
Figure 7.1 GDP per capita relative to OECD, Japan and the United States  
(Republic of Korea = 100 per cent)



Note: GDP in current prices and purchasing power parity.

Source: Author's calculations, based on data from the OECD STAN Database.

Figure 7.2 Growth rate of labour productivity, 1980–2010  
(percentages)

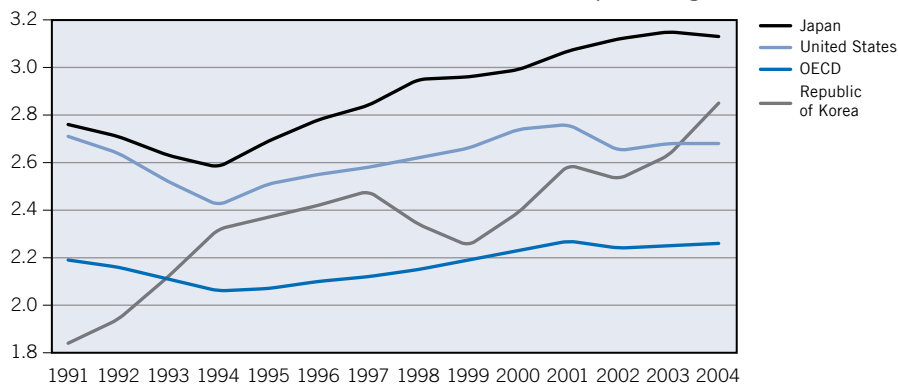


Source: Author's calculations, based on data from the OECD STAN Database.

The most important component of this growth was the increase in labour productivity at an annual rate of 4.3 per cent, double the OECD average (OECD, 2004).

This closing productivity gap reflects the country's success in moving beyond an industrial structure based on low-wage, labour-intensive industries to one based on capital- and R&D-intensive sectors. This process of structural transformation began in the mid-1970s with the creation of heavy and chemical industries through targeted industrial policies. From the early 1980s it moved on to knowledge-based industries with R&D strategies based on catching up through reverse engineering and duplicative imitation (*ibid.*, 2005). Investment in R&D

Figure 7.3 Ratio of R&D to GDP, Republic of Korea, Japan, United States and OECD, 1991–2004 (percentages)



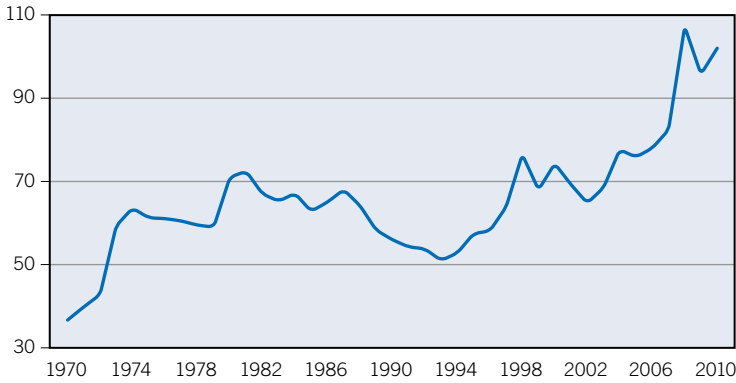
Source: Author's calculations, based on data from the OECD STAN Database.

has increased markedly since the mid-1980s: the ratio of R&D to GDP rose from 1.84 per cent in 1990 to 2.85 per cent in 2005 and has surpassed that of the OECD since 1993 and the United States since 2003, even though the absolute volume of R&D is still low (figure 7.3).

It is well known that the Republic of Korea began the process of industrialization in the mid-1960s with an outward-oriented and export-driven strategy. At an early stage of the country's development, the government had adopted export-oriented growth policies with the slogan of "nation building through exports". Up to the 1997 crisis, the opening up of the national economy was carefully controlled by the government, and between 1975 and 1997 the share of GDP attributable to trade remained relatively stable. However, it increased very rapidly after the crisis (figure 7.4), as the reduction in financial regulations and trade barriers accelerated the opening of the economy to the international market. Lately, too, Korea's strengths in technology-intensive sectors have boosted the importance of international trade in its economy.

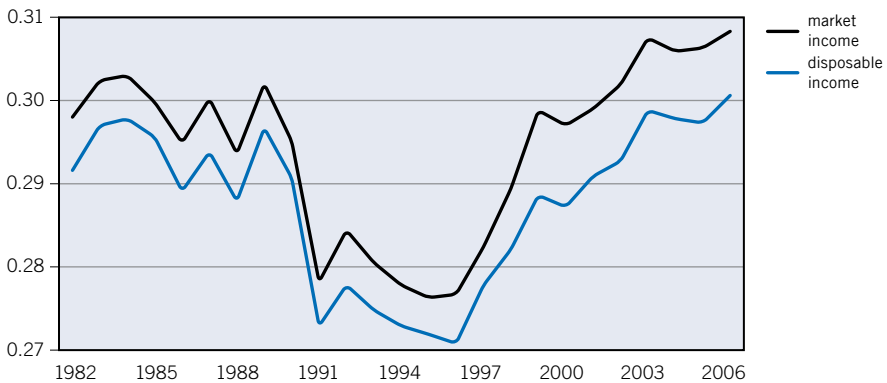
Alongside high productivity and output growth fostered by trade, the high road to development prioritizes "growth with equity", or "shared growth". This phenomenon in East Asian economies has been widely recognized, for example by the World Bank (1993) and by Campos and Root (1996). Before the 1997 crisis, reductions in both inequality and poverty accompanied rapid growth in the Republic of Korea. Income inequality, as indicated by the Gini coefficient, started to decline from the mid-1970s (Jomo, 2006; OECD, 1994) and continued to fall in the years leading up to the 1997 crisis (figure 7.5). As growth increased, so did employment and wages: the employment rate (ratio of those in employment

Figure 7.4 Ratio of trade to GDP, 1970–2010 (percentage)



Source: Author's calculations, based on data from the OECD STAN Database.

Figure 7.5 Trends in the Gini coefficient, 1982–2007



Source: Calculations by Roh Dae-Myung (Korea Institute for Health and Social Affairs), based on the Republic of Korea National Statistical Office, Household Income and Expenditure Survey.

to total labour force) has risen consistently even with high labour productivity growth, and real wages have also risen, albeit more slowly than productivity.

After the 1997 crisis, however, the Republic of Korea was required by the International Monetary Fund to open its economy to global product and capital markets. Combined with government investment in technology-intensive sectors, this resulted in a reduced potential for job creation. Inequality increased markedly, and the employment rate stagnated. The country thus found itself facing an urgent need to find ways to sustain productivity growth while at the same time creating jobs and reducing inequality and poverty – a combination of goals that represented a challenge to both industrial policies and the skills development system.

### *7.2.2 Growth with equity under pressure: The key role of education and training*

Investment in skills development was crucial to Korea's success in achieving sustained high economic growth rates while maintaining equity; it would not have been possible without the expansion of education and training opportunities. As Green et al. (1999) put it, the economic "miracle" has been accompanied by an education "miracle". Just as the country has conjured up an industrialized economy in the space of a generation, so it had constructed a complete apparatus of schools, polytechnics and universities, together with a network of public and private training centres.

Formal education was organized specifically to serve the needs of the economy by providing an increasingly highly skilled workforce. The subsequent expansion of the skills base has made possible Korea's rapid economic development. Nübler (2013 and forthcoming) argues that it is crucial to increase the diversity, variety and complexity of the knowledge structure in the labour force, and transform and enrich the specific mix of knowledge. Development of strong middle educational attainment structures has shown to be critical for enhancing the options for the development of manufacturing and broadening the scope for industrial development.

This chapter shows that the Republic of Korea has achieved a fast expansion and fundamental transformation of the national skills and knowledge base through formal education. The average length of time spent in education, across all age groups of the population, has increased from 7.6 years in 1980 to 11.6 years in 2010. For the cohort age 20–29, the corresponding increase is from 9.9 years in 1980 to 14.1 years in 2010 (table 7.1).

As shown below, the expansion of education was carried out very rapidly and was closely coordinated with the industrial development strategy. As a result, there were no major, protracted episodes of skills shortages despite sustained periods of unprecedented growth. This confirms the capability framework developed by Nübler, which holds that transformation of the knowledge structure in the labour force needs to precede structural transformation in the economy, as it determines the options and space for diversification into new industries.

The resources for this expansion of education were supplied by the population as well as by the government. Korea spent 7.6 per cent of GDP on educational institutions at all levels in 2008, well above the OECD average of 5.9 per cent, and the second highest proportion among OECD countries after Iceland (OECD, 2011). Although public expenditure on education as a proportion of GDP (4.7 per cent) is slightly below the OECD average (5.0 per cent), private spending on education is the highest in the OECD, at 2.8 per cent in 2008. Sustained high

Table 7.1 Average years of educational attainment by age group

	All ages	6–19	20–29	30–39	40–49	50+
1980	7.6	6.5	9.9	9.2	7.5	4.2
1985	8.6	6.7	11.0	10.1	8.5	4.6
1990	9.5	7.7	12.0	11.1	9.5	5.5
1995	10.3	7.0	12.7	12.1	10.5	6.3
2000	10.6	5.7	13.1	12.8	11.2	7.2
2005	11.2	4.2	13.8	13.6	12.3	8.2
2010	11.6	4.8	14.1	14.0	13.0	9.1

Source: Republic of Korea National Statistical Office, Population Census.

growth rates, rapid changes in technology, high rates of job creation, increases in real wages and more equal distribution of incomes have all acted as incentives to the private sector to invest in education and assume much of its cost.

At the same time, rapid change in Korea's economy, affecting export trends and industrial and employment structures, opened up a wide range of new job opportunities; the more highly educated were in a better position to take advantage of them, thus intensifying the demand for education (J.W. Lee, 2001). The outward-oriented development strategy also contributed to the expansion of the skills base. Larger and more competitive markets boosted the demand for skilled workers and for demand-led expansion of training. At the same time, they enhanced prospects for using education and skills, providing the population with incentives to obtain even more education. As a result, a virtuous cycle was created in which education and growth reinforced each other.

Furthermore, a more equal distribution of income contributed substantially to the expansion of the skills base, increasing both access to and desire for higher education as the sole means of improving one's social status. The Republic of Korea vastly reduced educational inequality between 1970 and 1995. In 1970 its Gini coefficient of education was higher than Brazil's, at 0.439, but by 1995 it had declined dramatically to 0.189, the lowest among the group of 12 developing countries examined by Lopez, Thomas and Wang (1998).

However, since the mid-1990s the picture has changed. The educational base has continued to expand, with increasing rates of entry into higher education, but inequalities have become more pronounced. In 2011 high-income households, with incomes exceeding 6 million Korean won (KRW) per month, spent 11.7 times as much on education as low-income households with monthly incomes of KRW 1 million or less. In 1993 the corresponding multiple was only 5.5 (Cheon et al., 2013). This widening discrepancy may reflect increasing expenditure on

private education. Korean universities and colleges are comprehensively ranked by the scores that students achieve in their entrance examinations, and heightened competition has prompted many families to spend considerable sums on tutoring and private education. The result is that expansion of education is now increasing inequality and maintaining divisions of social status across generations rather than reducing inequality and increasing social mobility, as was originally intended. This growing inequality in education and income has developed alongside the wholesale opening of the economy to global markets beyond the reach of government regulation, continuing technological change and the weakening of industrial policies.

### 7.3 Government policy on education and training

The following section reviews Korean government policy on education and training in the era of industrialization (1965–95) and in particular the new focus on higher education policy and R&D policy.

#### *7.3.1 Education and training policies in the era of industrialization*

A low level of public expenditure on education does not mean that government policy is of little significance to skills development. Education and training policies in the Republic of Korea have played a prominent role not only in expanding the country's skills base in order to enhance the options for industrial development, but also in managing labour supply and demand and in upgrading skill levels according to the demand of industries. During the industrialization stage (1965–95), skills development in Korea was led by the government and complemented by the private sector. During this period the emphasis was on general and

预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/report?reportId=5\\_22630](https://www.yunbaogao.cn/report/index/report?reportId=5_22630)

