



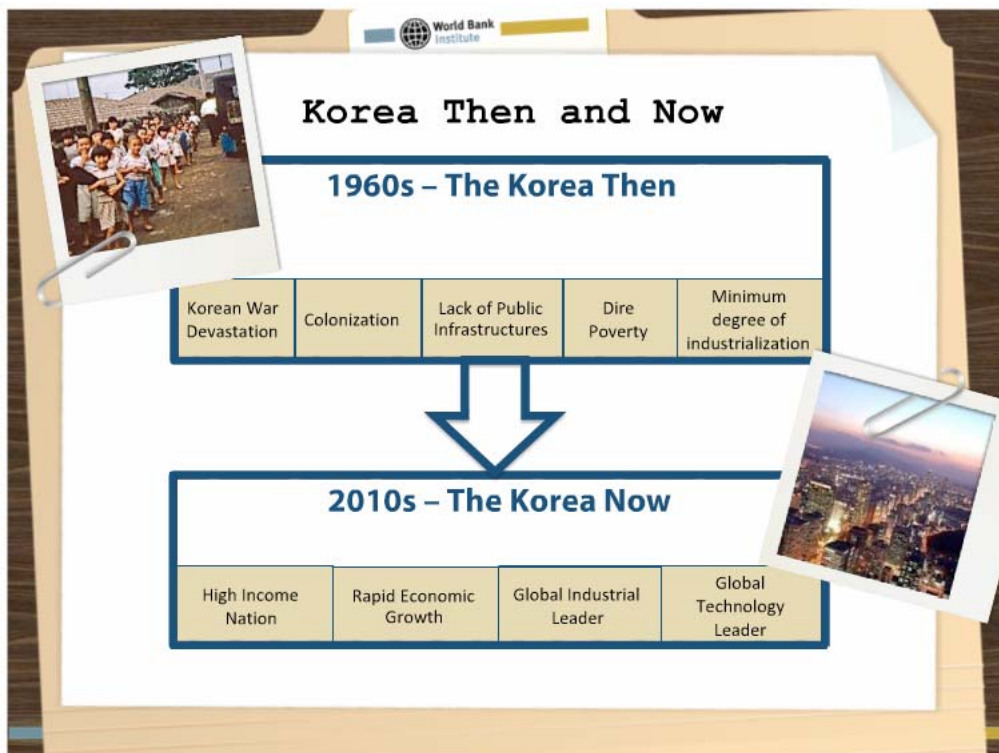
Introduction to Innovation Policy for Developing countries

Module 01: Case Study

Innovation Policy - The Korean Case



Slide 3



South Korea of the 1960s was in a dire situation. After recently emerging from the Korean War and Japanese Colonization, Korea lacked basic infrastructure and its people were mired in poverty. To compound the problem, corruption, lack of technology and political instabilities make the country one of the least livable location on earth.

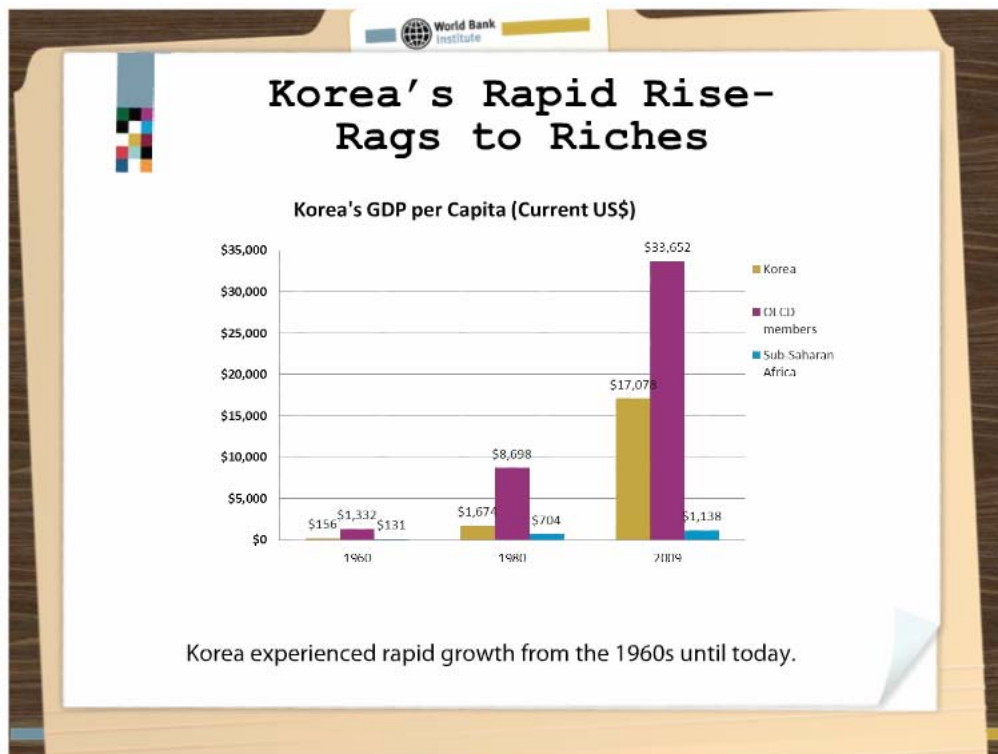
However, half a century later, Korea has transformed itself. Now a high income OECD nation, Korea has enjoyed decades of rapid economic growth, and its people are many times richer than they were merely 40 years ago. On the private front, Korean firms are among the most competitive and innovative players in the world, producing products ranging from heavy machineries to electronics.



Slide 4



Korea's Per Capita GDP at the start of the 1960s was barely above the average level in sub-Saharan Africa, and was only about one ninth of the level of OECD members.

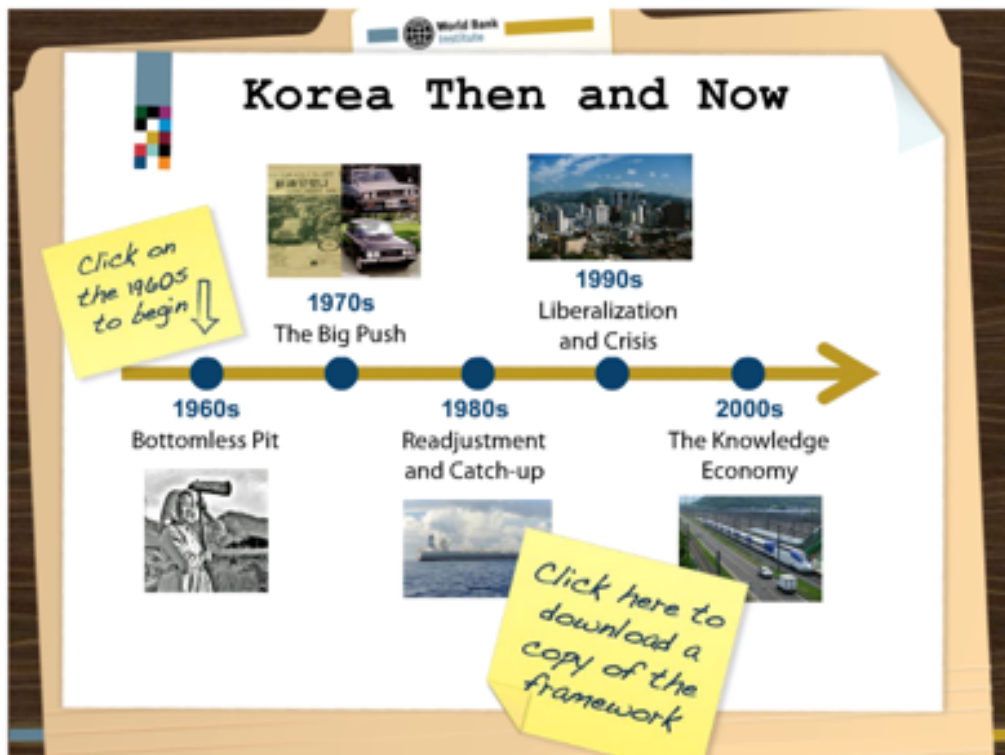




However, the country's series of reforms after the 1960s increased welfare measured in GDP per Capita by more than 100 fold from 1960 to 2009.

How did Korea achieve such stunning growth and success over the past 50 years? And what were the policies that led to such success? Let's take a look at how Korea got to where it is today from the dire conditions it was in merely half a century ago.

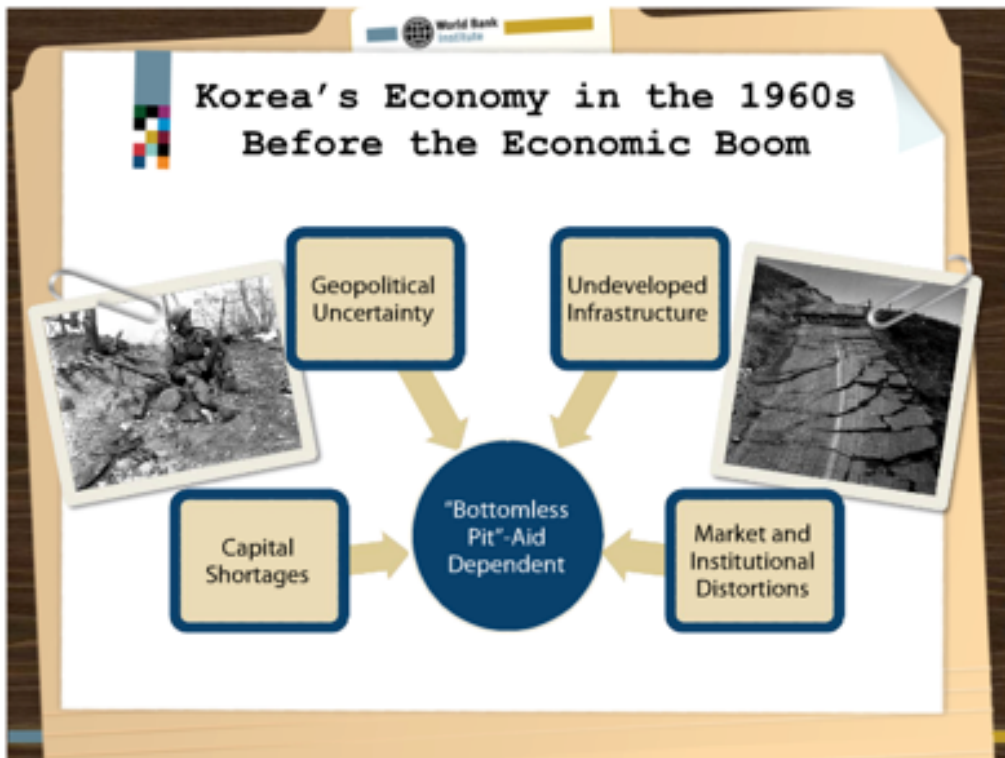
Slide 5



Use this interactive timeline to explore each decade from the 1960s to today. Before you begin, download a copy of the framework to help you think about how this case fits with the framework of the government as a gardener as introduced in Module 1. When you are ready, click on the 1960s to begin.



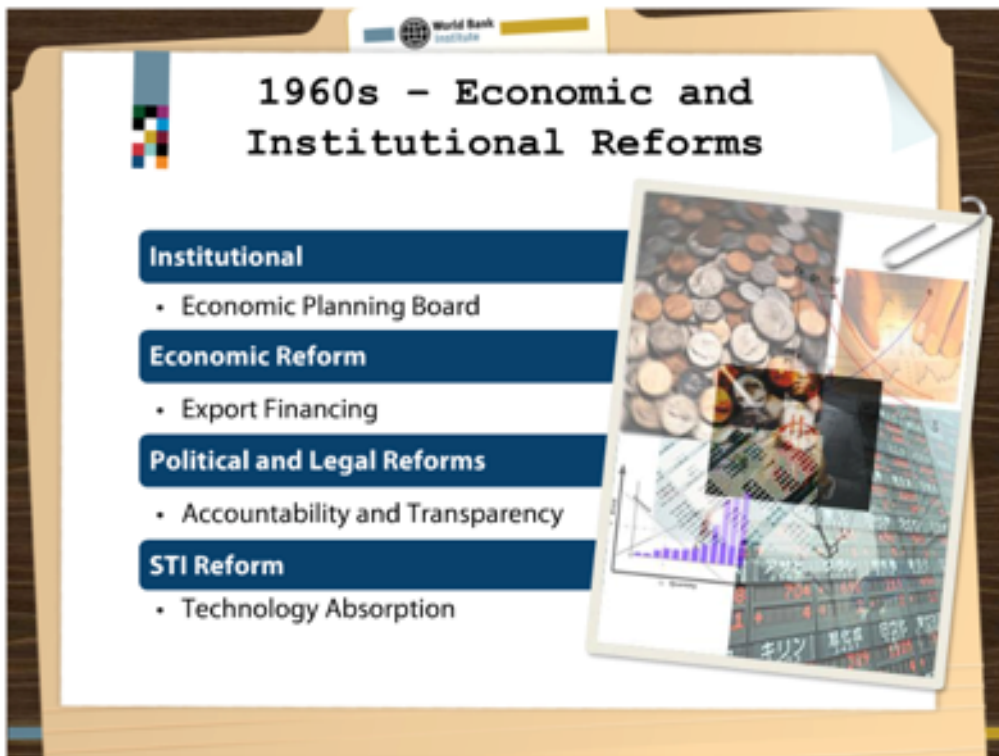
Slide 6



Korea in the 1960s, prior to its economic reforms, was a country facing many issues. The country faced a vast array of problems ranging from geopolitical uncertainties as a result of its proximity with North Korea and the USSR, to vast capital shortages and under-developed infrastructures as a result of WWII and the ensuing Korean War. To compound the problem, the country was aid dependent, and there were rampant corruption and distortion in the economy. As a result, Korea's development stagnated, and the overall income of its citizens was not much higher compared to that of those living in sub-Saharan Africa at the time. Many in the United States at the time thought of Korea as a "bottomless pit" for foreign aid with little hope of economic development.



Slide 7



Realizing the problems within the economy, the government initiated significant number of reforms through the 1960s that targeted all aspects of the economy including institutional setup, political and legal reform, and trade and economic reform. Institutionally, to jumpstart economic reforms, the government established the Economic Planning Board to help formulate economic and trade policies, albeit with a long-term focus.

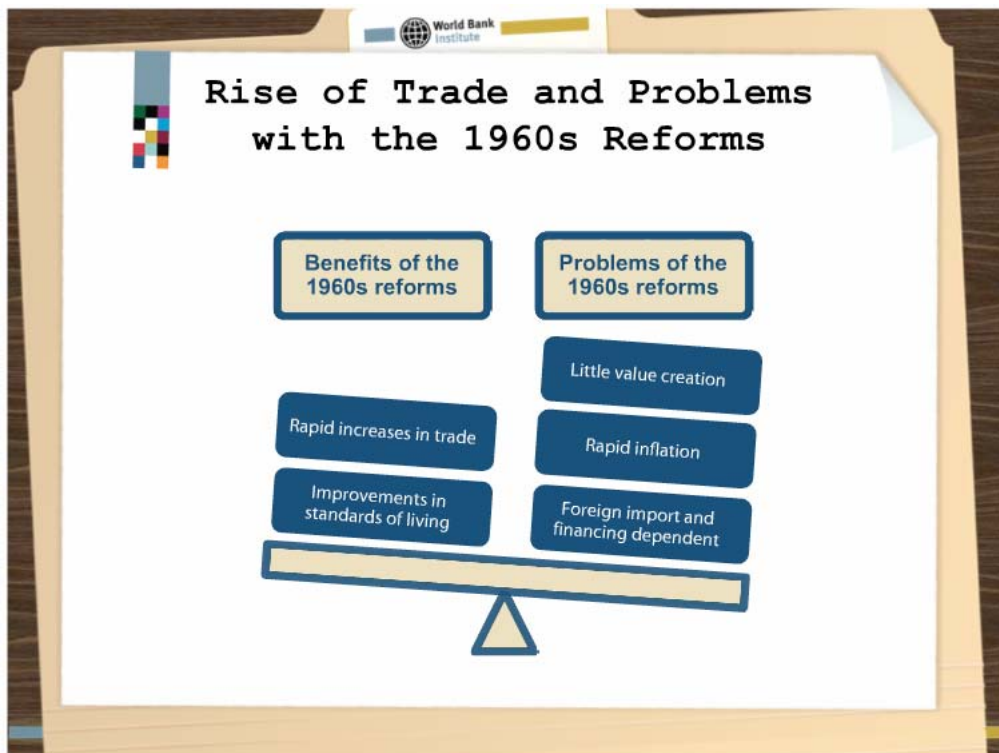
On the economic front, the government readjusted its macroeconomic policies, which ranged from currency devaluation to interest rate adjustments. In addition, the government provided export financing in order to jumpstart the industrial base of the nation.

To strengthen the investment and economic climate, the government also initiated legal reforms aimed to strengthen regulations against the crony capitalism rampant during the 1950s, and sought to improve governance and accountability including efforts to improve transparency.

Lastly, to strengthen the science, technology, and innovation capabilities of the nation, Korea first adopted a policy that focused on foreign technology acquisition and adoption. In this time, the country also started to construct the legal and institutional frameworks that support learning and technology adoption in the country, paving the way for later success in technological scaling up among Korean enterprises.



Slide 8

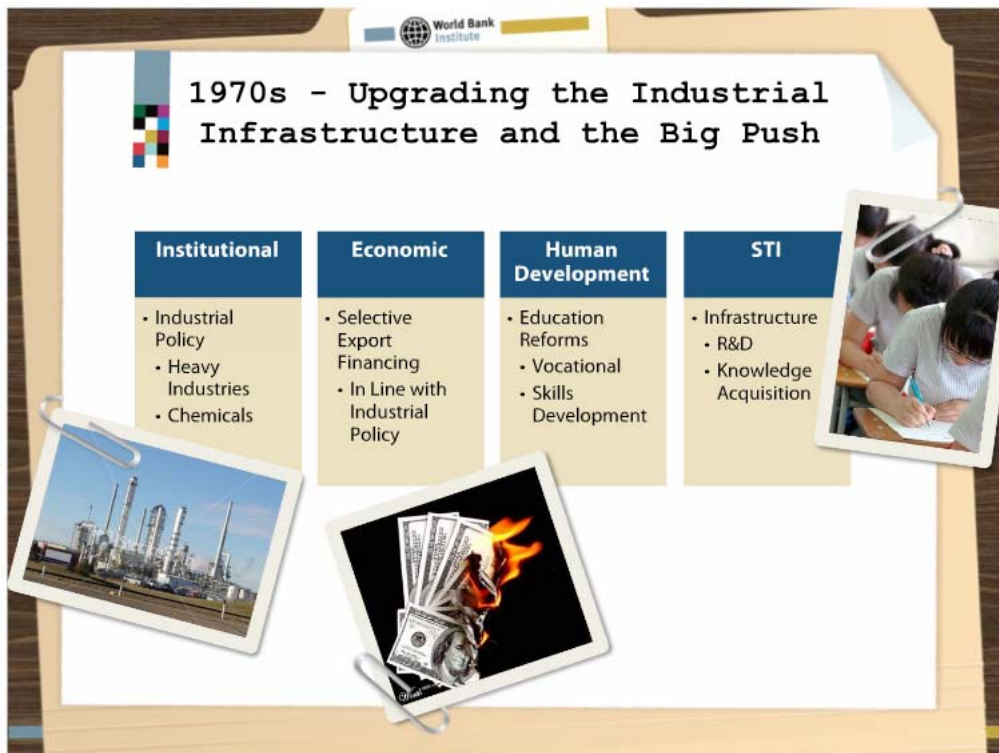


As a result of the reforms from the 1960s, economic conditions in Korea improved dramatically. Trade as a percent of GDP increased from merely 15% at the beginning of the decade, to nearly 40% by the end. GDP per capita also grew at an average rate of nearly 6% year over year during the same time. As a result, standards of living improved, and trade gave a much needed boost to Korea's industrial capacity, allowing the country to jumpstart its industrialization process.

However, the rapid rise in trade and industries came at a price. As a result of economic distortions, Korea's light industry's growth outpaced that of other sectors, leading to an unbalanced economy that was heavily dependent on foreign imports of raw materials and financing. As a result, the economy suffered from rapid inflation. In addition, Korea's exports were largely of low-tech nature and created little value added for the economy despite large trade volume, and generated fewer spillovers in terms of knowledge and technologies for the economy.



Slide 10



By the 1970s, the Korean Government recognized the problems with 1960s reforms and adopted a new set of policies aimed at resolving them. Among the major reforms, Korea created a targeted approach to export and industrialization. This target included heavy and chemical industries with exclusive focus on machinery, metallurgy, chemical and shipbuilding.

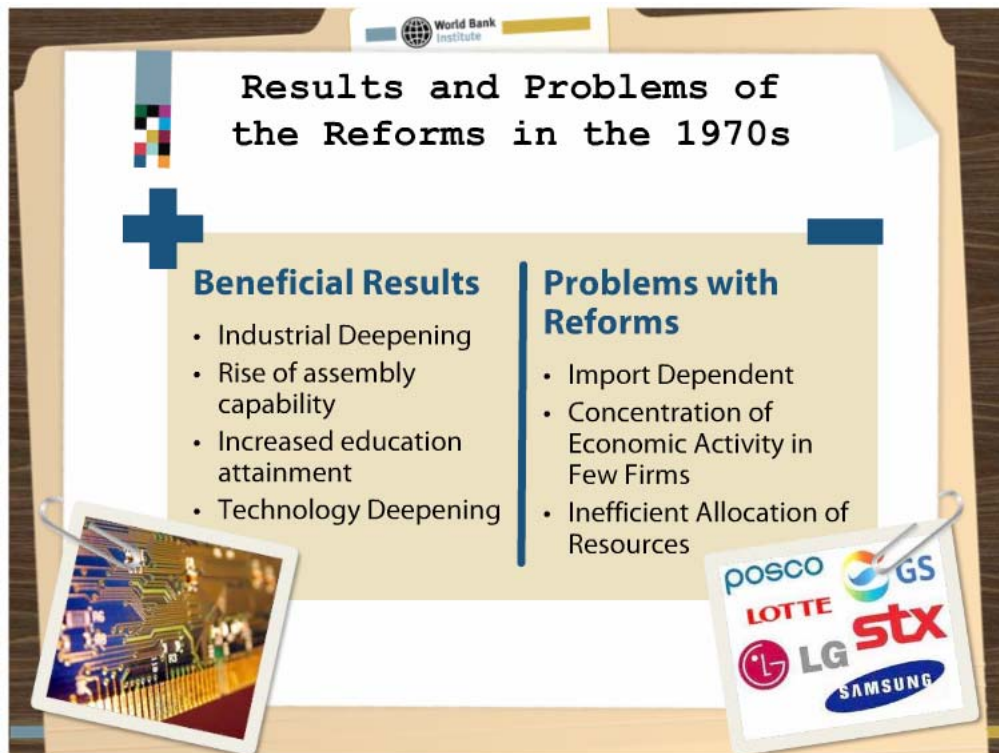
To dampen growth in the light manufacturing sector, Korea moved to change its financing structure, became more selective with its export financing scheme, and supported only those firms whose products met the goals of the new industrial policies.

In addition to industrial policy readjustments, Korea remodeled its old education system in order to foster the human resources needed for its now high tech focused industrialization.

In terms of STI-related reforms, the Korean government began to construct the infrastructures needed for R&D. These infrastructures served, at the time, to operate, and later acquire foreign technologies for domestic firms. However, they also formed the foundation for Korea's industrial labs the 1980s as companies utilized their expertise to scale up products for international competition.



Slide 11



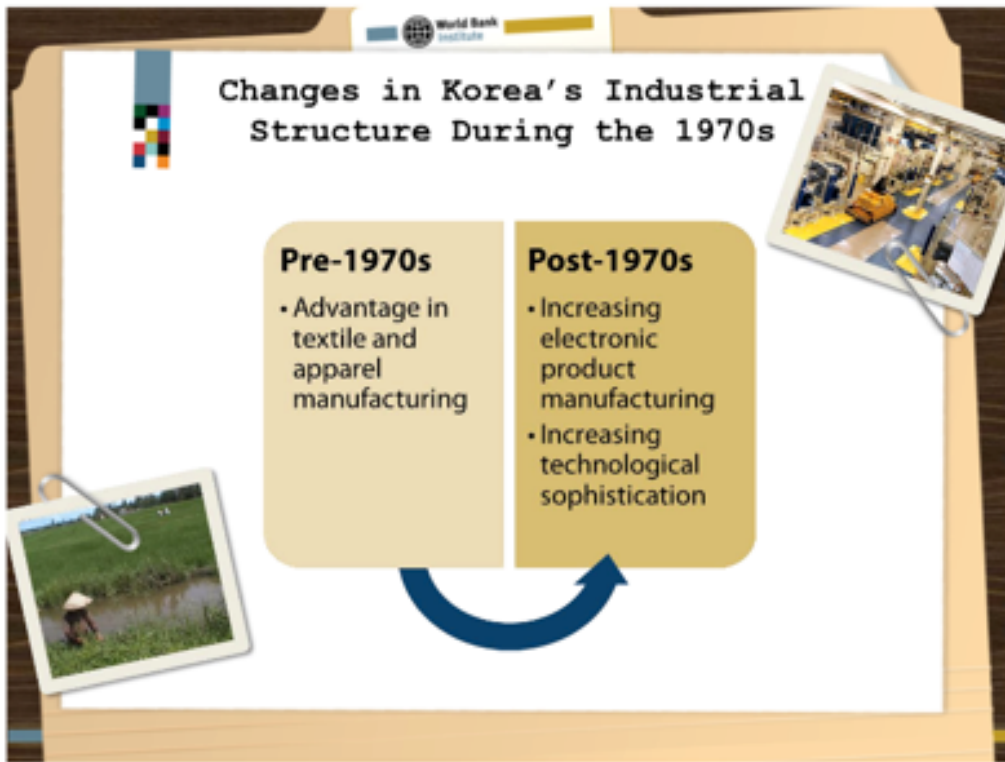
The reforms of the 1970s created rapid industrial deepening in Korea, where due to the lack of capital, the larger and more capital-intensive firms became major players in the economic sphere. In addition, the shift in policies gave rise to Korea's assembly capability and boosted education attainment in the country.

However, the rise in assembly made Korea even more import dependent, as the firms needed foreign imported components in order to assemble products for exports that created little value added for the firm. In addition, industrial deepening created a few large players in the economy that began to form vertical monopolies over the nation's market system. Lastly, subsidies and macroeconomic policies continued to generate distortions in the economy, often leading to wasteful spending by the government on sectors with which Korea had no competitive advantages in.

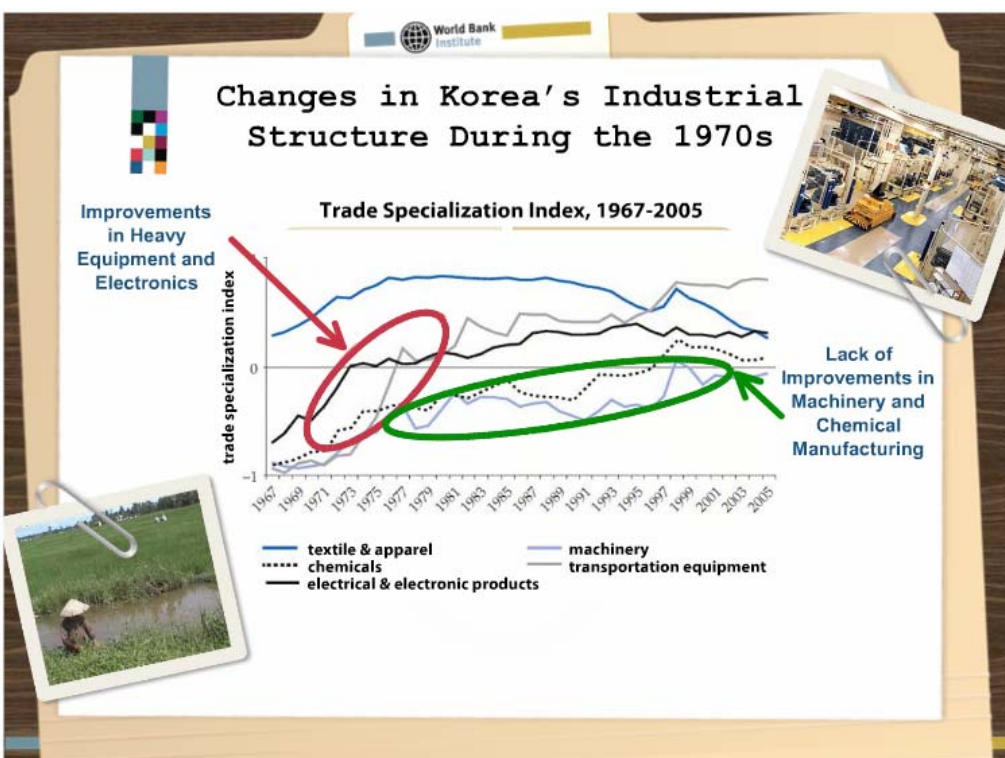
By the late 1970s, Korea's "big-push" approach to growth began to run into political and institutional bottlenecks. Decades of growth left not only efficiencies in resource utilization, but also in equality and welfare for the country's citizens.



Slide 12



One major effect of the reforms of the 1970s was a change in Korea's industrial structure. Where before the 1970s, Korea enjoyed a substantial advantage in textile and apparel manufacturing, the supports in the 1970s made heavy equipment and electronic product manufacturing much stronger.





At the same time, however, inefficiencies in the financing scheme became visible as chemicals and machinery, the key pillars of Korea's reforms, did not show any improvements in export advantage until the late 1990s.

Slide 14

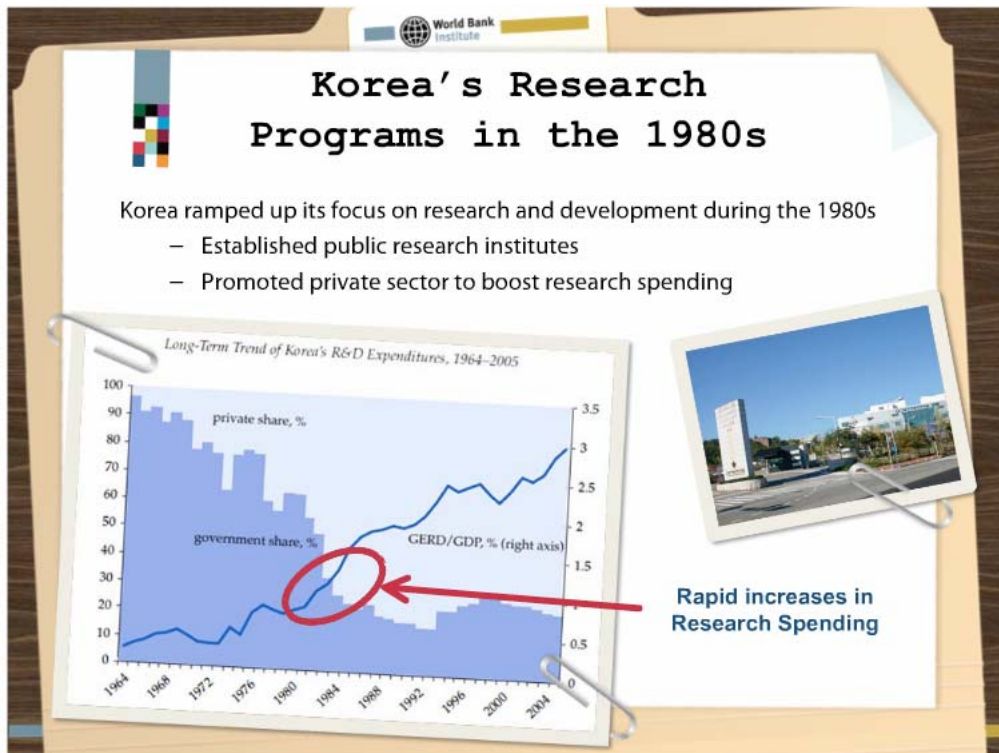


With the country again facing many problems at the start of the decade, the period of the 1980s saw massive reforms much like those in the 1960s, targeting all aspects of Korea's government and economy. On the political front, a full-fledged democracy was instituted to conform with economic realities of the country while other reforms targeting areas ranging from welfare to social equality took shape.

In terms of economic reforms, the country attempted, for the first time, to move away from a centrally directed economic structure and began to liberalize the economy. Trade liberalization, deregulation and labor reforms began to push Korea's economy toward the structures of a mature economy.



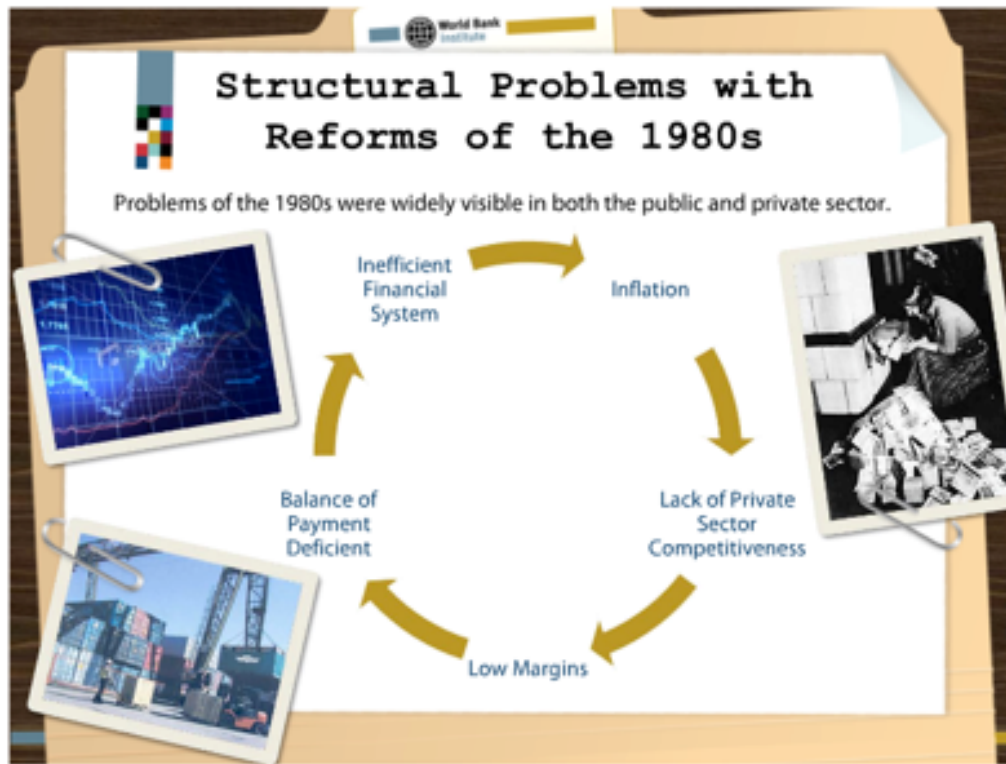
Slide 15



Aside from all the macroeconomic and institutional reforms, one of the other major landmark changes to the Korean economy was the first large attempt to drive scientific research and development. In particular, the private sector took a large role in the surge in research spending. In the 1980s, a large number of policies were instituted to promote firm level research spending and the government also established a significant number of public research institutes to promote domestic research. As a result, research spending increased rapidly during this time, and private sector players provided most of the boost.



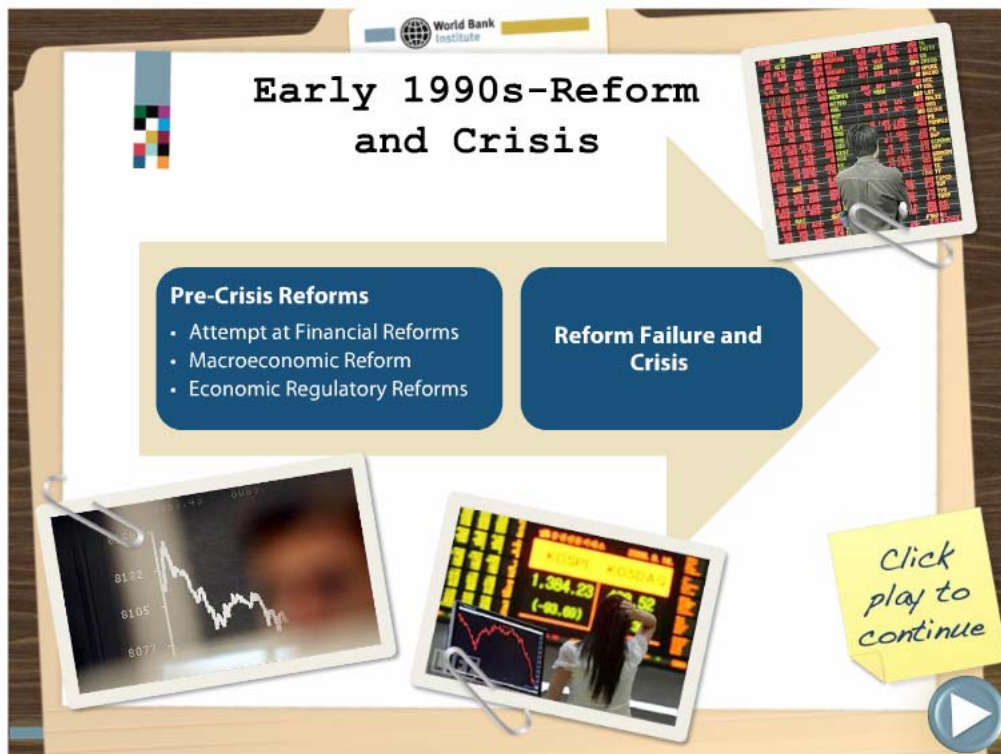
Slide 16



As Korea entered the 1990s, the country became one of the world's best known economies, having achieved a stunning rate of growth over the 3 decade preceding it. However, problems were deeply ingrained into the Korean economy as a result of the inefficiencies with Korea's exported oriented growth strategy, as well as the finance structure of the economy. In particular, after 1980s reforms, welfare programs boosted Korean's demand and the country began to experience balance of payment deficits when imports outpaced exports. In addition, increasing inflation, and the protective nature of many of the country's trade policies led to uncompetitive firms that existed with eroding profit margins. Lastly, the semi-state owned or conglomerate based financial system that started in the 1960s was highly inefficient, and toxic assets were widespread on their balance sheets.



Slide 18

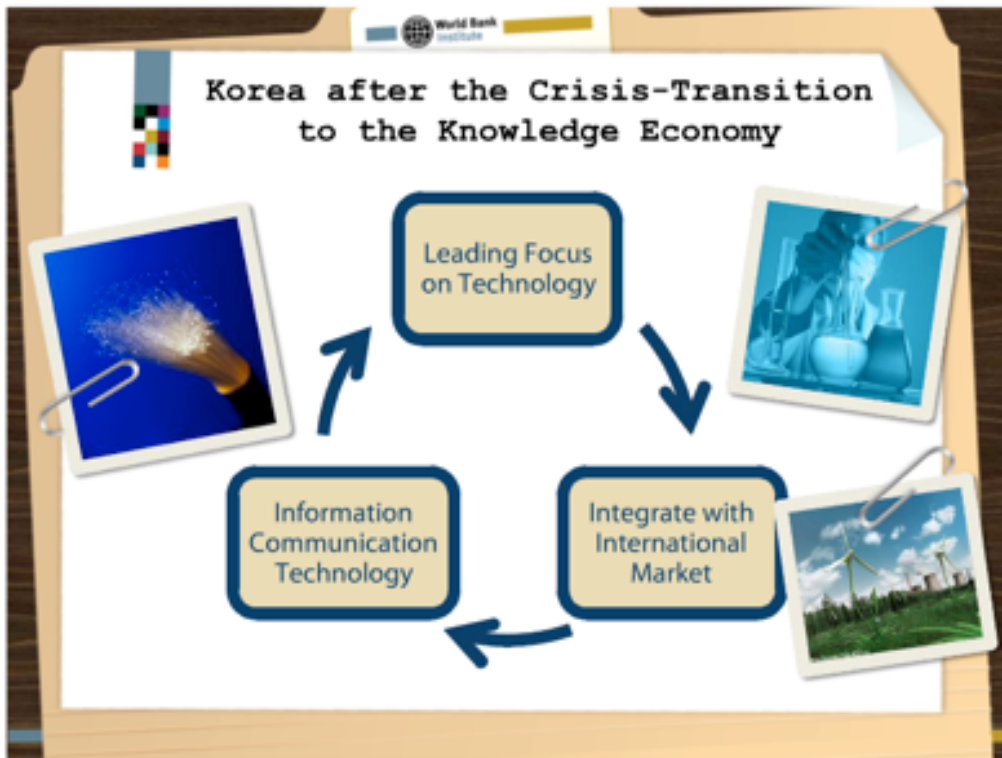


Korean policy makers recognized these inherent problems, and attempted to reform the country's creaking systems during the early 1990s. The reforms targeted the financial sector, aiming to make the banks more competitive, macroeconomics, ranging from currency to interest rates, and economic regulation, seeking to change regulations pertaining to trade and competition, in the domestic economy.

While Korea made efforts to overhaul its troubled system, changes came slowly, and the crisis that developed in Southeast Asia quickly struck the country in 1997. Faced with private sector woes ranging from high corporate leverage to labor market rigidity, Korea soon saw many of its corporations under stress. Moreover, with persistent government intervention distorting economic incentives over the past three decades, the finances and competitiveness of many large enterprises, and even the country's economy itself, began to crumble as the crisis began to unfold in Asia.



Slide 19



As Korea began to recoup from the crisis, its policy makers recognized that widespread economic reforms were needed to resolve the country's problems. Korea is no longer a poor developing nation, and its policies must reflect the changes that are long overdue. In essence, the new policies no longer focused on the "catch-up" styled reforms of the early decades. Instead, the aims of these reforms were to transform Korea into a knowledge economy. Policies in existence today focus on several different pillars of the innovation landscape.

On the knowledge side, major efforts were made to internationalize the Korean economy as the country shed many of its trade and protective barriers, and increased regulation on key governance aspects in order to boost competition and foreign investment. Reforms on research and development included universities and government sponsored research institutes, where market needs were used as benchmarks for measuring success. Lastly, Korea sought to improve its physical infrastructures for innovation. Hence, Korea maintained high investments in not only R&D, but also ICT infrastructure with significant benefits to firms and research institutions in the country.



Slide 20



Aside from targeting the knowledge and technological fundamentals of the economy, Korean policy makers also undertook reforms in the institutional and economic systems.

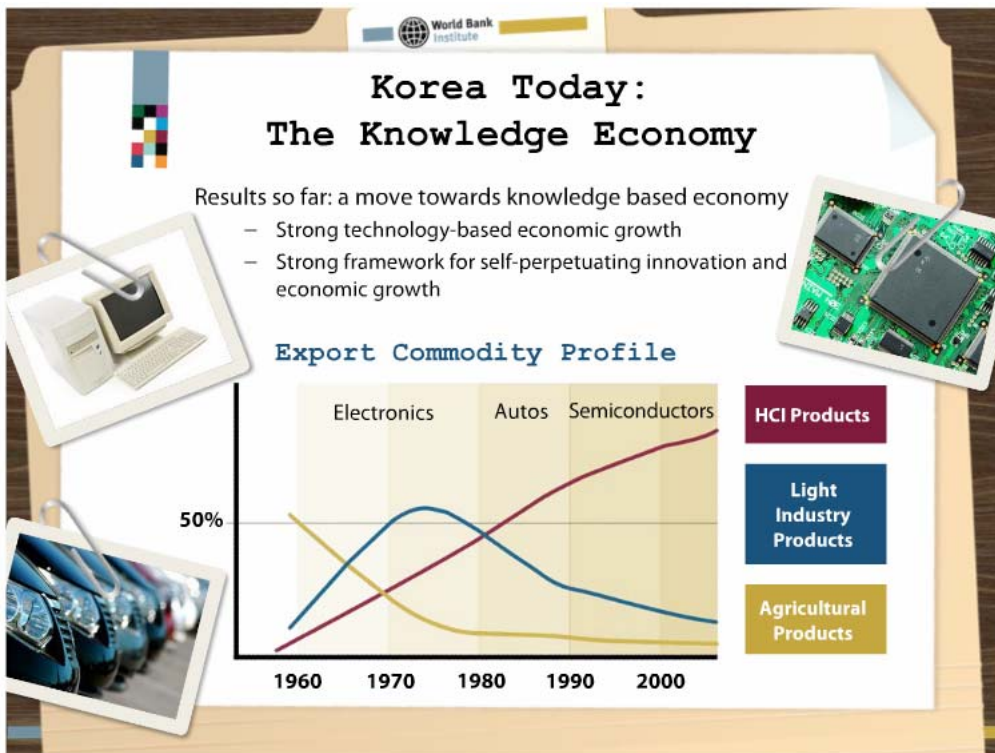
One of the key changes was in the tax structure of the country where new tax laws supported the growth of innovative firms and encouraged spending on research and development. In addition, the government sought to support small and medium enterprises through government sponsored venture capitals.

Regulatory reforms aimed at improving transparency, the business environment, and welfare, were also implemented in order to enhance the stability and attractiveness of Korea as an investment destination.

Changing the structure of the financial system was also a key pillar of Korea's reform efforts; the state shed much of its policies used before the crisis and tried to form a competitive financing landscape in Korea.



Slide 22



While the long-term impact of Korea's recent policies are still in progress, it has already demonstrated influential effects in changing the structure of the Korean economy. With a strong focus on a whole-government approach to an innovation-based economy, Korea has seen strong results in its economic performance, as well as the competitiveness of its products. No longer the "assembly plant" it used to be, Korea is now at the frontier of many of the world's technology-intensive products ranging from automobiles to semiconductors and electronics. In addition, this shift has allowed the country to create a balanced economy that does not only rely on exports for growth. Domestic consumption, high-tech industries, and clean energy have all picked up in Korea, driving innovation and competition, as well as the economy forward.



Slide 23



So how does Korea fit into our framework of the government as the gardener? At the beginning of this brief case study we asked you to consider how it fits with the framework outlined in module one. Click on the glowing markers to view our thoughts about how this case fits into the framework.



Summary: Korea - Then and Now

Watering

- Export Financing (1960s)
- Selective Financing for Key Industries (1970s)
- Industrial Policy for Heavy and Chemical Industries (1970s)
- Financial and tax incentives for private R&D investments and technology start-ups (1980s)
- Financial System Reform (1990s till present)

the Soil **Removing Weeds**

Preparing the Ground

Instructions: Click on the glowing markers to view how this case fits into the government as the gardener framework.

Summary: Korea - Then and Now

Removing Weeds

- Macroeconomic Reform and Economic Planning Board (1960s)
- Transparency and Accountability Reform (1960s)
- Market Deregulation (1980s till present)
- Trade Liberalization (1980s till present)
- Strengthen Governance and Market Liberalization (1990s till present)

Fertilizing the Soil **Weeds**

Preparing the Ground

Instructions: Click on the glowing markers to view how this case fits into the government as the gardener framework.



Summary: Korea - Then and Now

Instructions
Click on the glowing markers to view how this case fits into the government as the gardener framework.

Watering

Fertilizing the Soil

Removing

Preparing the Ground

- Universal Primary Education (1950s)
- Vocational and Skill Training Schools (1970s)
- Higher Education (1990s until present)

Summary: Korea - Then and Now

Fertilizing the Soil

- Public Sponsored Research Institutes (1960s until present)
- Private Sector Involvement and Research Tax Reforms (1980s until present)
- Tapping Knowledge Through Foreign Investments (1980s until present)
- Market Oriented Research Agenda (late 1990s until present)
- University Involvement (late 1990s until present)

Watering

Fertilizing the Soil

Removing Weeds

Preparing the Ground

Instructions
Click on the glowing markers to view how this case fits into the government as the gardener framework.