



# Introduction to Innovation Policy for Developing Countries

## Module 04: Case Study South Korea Experience



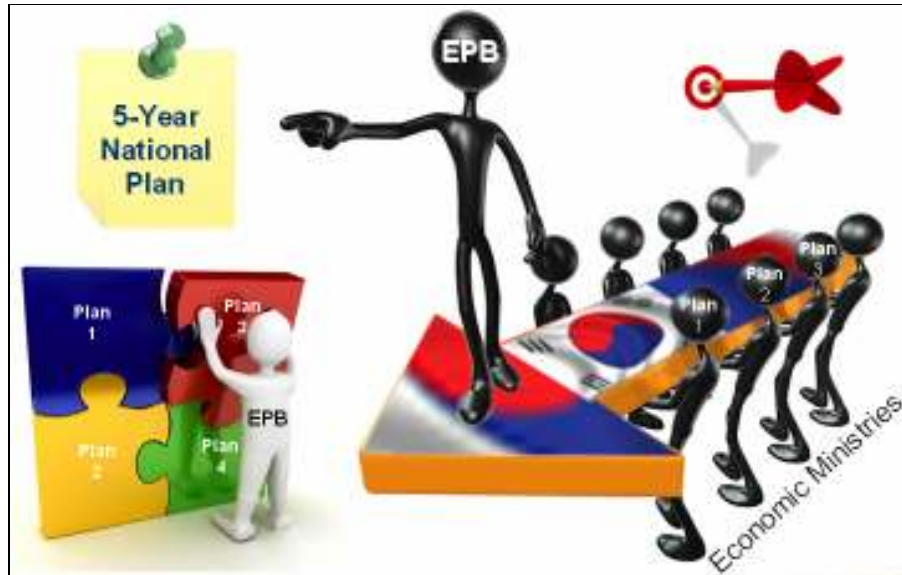
### Case Study: South Korea Experience

We now look at initiatives and policies on the macro-level in Korea to support innovators. This approach has been characterized by substantial government intervention, especially in the early stages of development. Korean experience shows how a country moved in the direction of innovation promotion after the Asian Financial Crisis, emphasizing on exports, and realizing that a different set of public goods were required to promote SMEs.



### Korea: Economic Planning Board & 5-year Plans

The Economic Planning Board (EPB), created in 1961, embodied this spirit. The EPB, as a central agency for economic planning and coordination, wielded considerable influence over other economic ministries until it became the Ministry of Finance and Economy (MOFE) in 1994. Principally, it was responsible for coordinating five year plans that had been formulated by the Korean government. Usually, individual government ministries and agencies came up with goals and strategies within the realm of their own missions, and it was the responsibility of the EPB to integrate them within a final comprehensive plan that gelled at a national level. Some sense of this direction can be grasped from the fact that the first to fourth development plans were effectively blueprints for the national economy, listing very specific goals and targets for each five-year period.



### Korea's Traditional Industrial Policy

Korea's national champions, so called "chaebols", have been supporting this strategy. Selective industrial policies directed domestic savings through a captive financial system to a few favored firms, though chronic shortages of domestic savings made the Korean economy heavily dependent on foreign capital. They also initially protected firms from global competition, though as they found their feet, so they were pushed into proving their mettle by exporting.





### Five-Year Plans: Fiscal Policy Tools

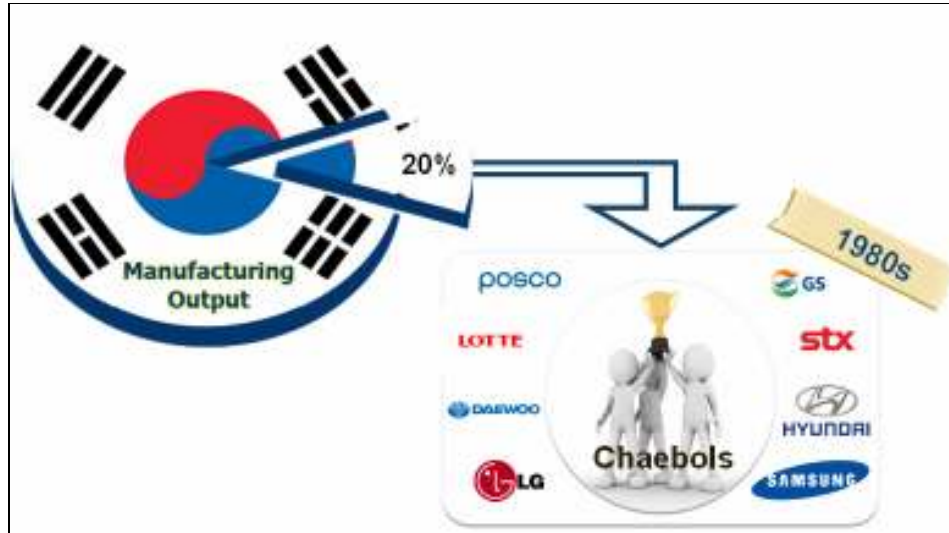
While the list of preferential industries changed in response to new five year plans, the policy tools were similar: long term fiscal incentives and financial subsidies including tariff exemption for importing intermediary goods, tax incentives, preferential access to capital, accelerated depreciation of imported equipment and subsidized prices of energy and transportation. The government also intervened in the banking system, directing subsidized lines of credit to certain sectors, projects and firms.



### Oligopolistic Market Structure

While the Korean government set up public R&D facilities such as the Korea Institute of Science and Technology (KIST) in 1966, the chaebols were the major source of assimilation and innovation of technology in the initial stages of this process. The result was an oligopolistic market structure in major industries. For example, in the early 1980s, the top ten chaebols including Hyundai, Samsung, Daewoo, and LG were alone responsible for 20 per cent of Korea's manufacturing output.





### Limitations of Korea's Economic Planning Board Model

The uneven output of the system reflects a number of problems, not least restrictive curriculum policies and lack of incentives for professors and institutions –public and private- to upgrade and improve curricula. Over the years, the Central and State Governments have introduced legislation, which has resulted in a multiplicity of regulation, an overlapping of mandates results in confusion and conflict. Shortage of faculty is another problem as higher wages in the private sector have made it for universities hard to recruit and retain talented staff. Finally weak mechanisms for accreditation - has resulted in differing 'academic quality' standards across institutions and underutilization of capacity. Weak links with industry create a mismatch between market needs and worker skills.





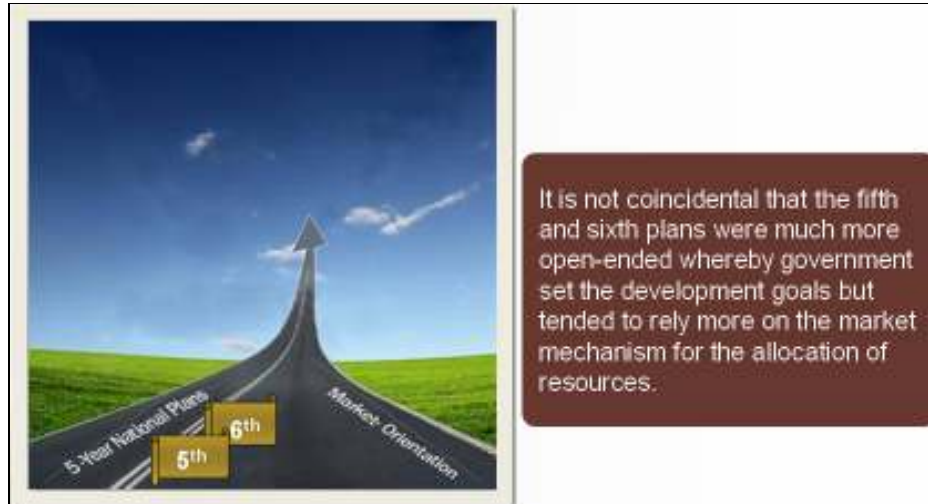
This proved a remarkably successful strategy in the immediate task of moving countries out of poverty. The experience of other countries, however, has shown that this approach is difficult to sustain over the long-term. Government intervention that favors a few insiders is easier to capture. Even if the government is committed to hard budget constraints and rigorously screening incumbents, protection means that badly managed firms are allowed to hang on indefinitely and assume that they will be bailed out if they run into trouble. Providing market discipline while promoting the accumulation of profits and the build-up of organizational capabilities is therefore a tricky dilemma for government. Trusting the whims of bureaucrats is vulnerable to silent reversals if not accompanied by more systematic discipline.



Another issue is that while these structures were appropriate for economic catch-up and the task of absorbing and adapting innovations made elsewhere, they began to run out of steam once they were compelled to blaze innovative paths of their own – arguably the harder part. As economies approach the technology frontier where information about what works is limited, dynamism relies on bottom-up, broad-based experimentation through a combination of private and public action – a point well-illustrated by Fundación’s own discovery efforts, which will be introduced in the next case study.

### Shifting Toward a Market-Driven Approach

The Korean experience also underscored these lessons: it is not coincidental that the fifth and sixth plans were much more open-ended whereby government set the development goals but tended to rely more on the market mechanism for the allocation of resources.



More fundamentally, the seventh plan was the last in the series of government's five-year plans, as the onset of the financial crisis of 1997 diverted government efforts to crisis management. After the immediate crisis years, government revealed the Knowledge-based Economy (KBE) Development Plan in 1999. The KBE plan marked a significant departure from previous government plans. It contained policy goals and targets for Korea as a KBE, but a much reduced leadership role for the state which was aimed instead at creating the right conditions for businesses to innovate. At the same time, structural reforms were introduced to secure rule of law and provide greater transparency, disclosure of information, and accountability for market players, as well as for the government.

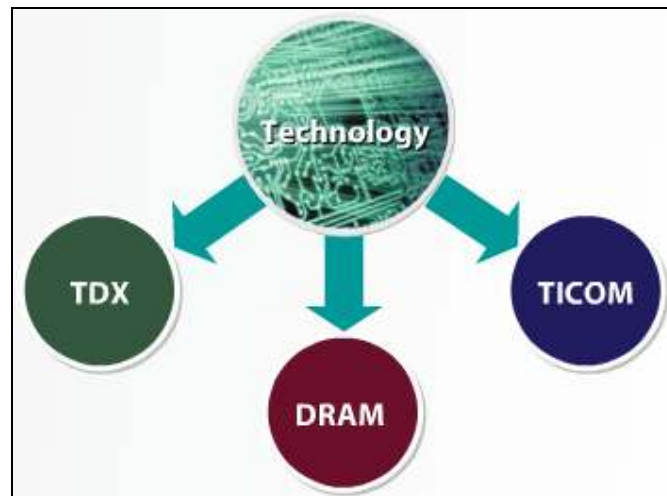




To take one example: within the corporate sector, stronger protection was given to the property rights of minority shareholders; the accountability and independence of the board of the directors was enhanced; restrictions on mergers and acquisitions were relaxed; the role of creditors in corporate governance was strengthened; and the financial soundness of firms was improved.

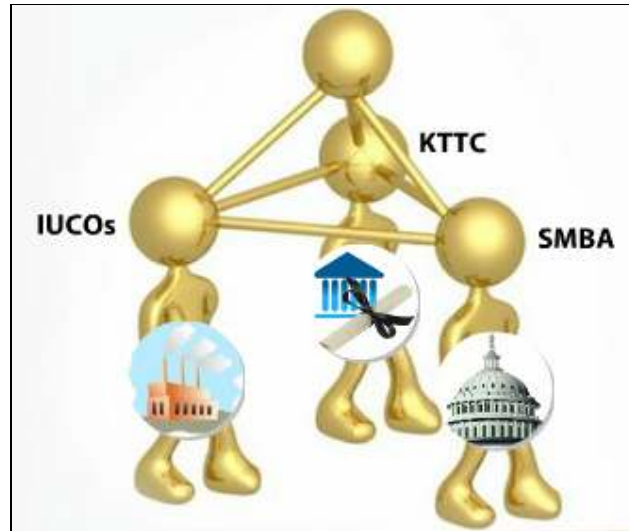
### Leveling the Playing Field between Actors in the Market Economy

This change of direction has been signalled by efforts to distribute resources to small and medium-size technology-oriented business rather than to conglomerates. While Korea has a strong tradition of public and private sector collaboration -the well-known technologies TDX, DRAM and TICOM were all developed by R&D consortia involving GRIs and private firms- the perception is that the industry-academia-government interface, especially in regards to SMEs is weak.



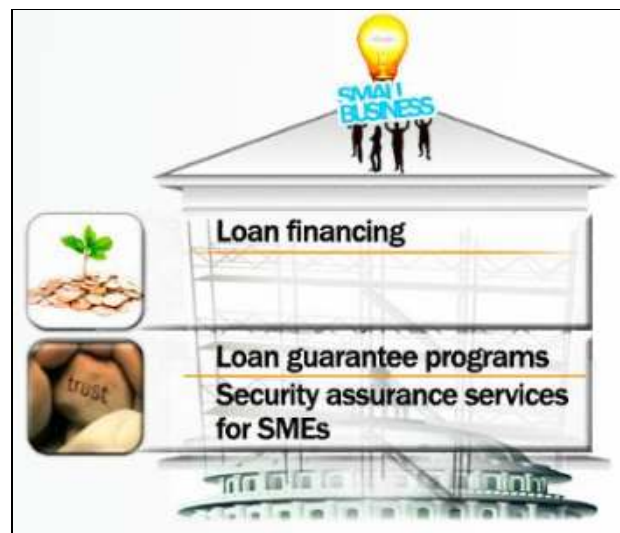
To this end, the Law on Fostering Industrial Education and Industry-University Co-operation (2003) has spawned hundreds of industry-university co-operation offices (IUCOs) in Korean universities and colleges while the establishment of the Korea Technology Transfer Centre (KTTC) in 2000 has promoted technology transfer by bringing together technology users and suppliers and has already partnered with 16 overseas organisations. The Small and Medium Business Administration (SMBA) also oversees a number of valuable programs: the Inno-Biz scheme, for instance, identifies innovative SMEs with superior technologies which have the potential develop into global blue-chip firms and provides them comprehensive support through schemes such as technology assurance and preferential treatment for credit.





### Financial Public Provisions to Support SMEs

Finance is another area in which the government has sought to assist entrepreneurs: loan financing and loan guarantee programs are one of the most forms of support for technological innovation in the private sector. More indirectly, government provides security assurance services for SMEs which cannot access bank loans due to a lack of collateral and technology. The rationale for technology appraisals is that they increase the transparency of opportunities and risks associated with new technology investments that, in turn, should increase liquidity in the market and financing opportunities.





Venture capital funding, supported by the KOSDAQ, has also increased, though there is a concern that the public sector's involvement in the sector has grown too large reflecting the disappointing returns realized by private investors since the early 2000s. Similarly, there is a perception that the venture capital industry has been too rigid across sectors and industries and too focussed on start-ups, overlooking other forms of assistance, notably latent opportunities to drive productivity improvements through the restructuring of existing firms.



### Initiative Outcomes: Success

What should we make of these initiatives? As the Korean economy has become more complex led by exports such as semiconductors, automobiles, ships, mobile phones and synthetic fibres, so the services provided by government have followed the suit. Tackling the divide between the chaebol and SME has been an important focus for Korean policy and there are some indications that they have been successful. The amount of R&D undertaken by SMEs increased almost fivefold between 1997 and 2006 and now represents almost one-quarter of Korean business and enterprise R&D.



### Initiative Outcomes: Pitfalls

However, outcomes are not free from problems. Many schemes on offer are too small to make a difference, especially when they are viewed from a system's perspective: for instance, a mere one per cent of the public research budget is devoted to technology transfer and commercialisation. At the same time, many are too fragmented, resulting in a lack of critical mass, and overlaps and gaps in support. Another issue is that while support for innovation in the manufacturing has flourished, it has dwindled for services. A holistic understanding of innovation suggests that manufacturing needs a productive and competitive services sector to prosper, and consequently Korea should seek to diversify its competitive advantage by potentially providing a wider range of business support.

**Holistic Understanding of Innovation**

- Manufacturing needs a productive and competitive services
- Diversify its competitive advantage by potentially providing a wider range of business support