

## Policies and Incentives

### Government Support for Semiconductors

The Korean government supports the early establishment of industry clusters and manufacturing infrastructures including roads, power and water supplies to encourage investments from the private sector and help Korean semiconductor firms maintain their world-class competitiveness.

In particular, aggressive support is provided for the development of promising products, such as NAND flash memories, CMOS image sensors (CIS) and power semiconductors, all of which will give domestic firms an advantage over their competitors.

### Government Policies to Promote Intelligent Semiconductors

Policy Objective	Description
Strengthen R&D and commercialization processes	<ul style="list-style-type: none"> <li>Transform Korea into the world's second largest semiconductor power by developing first-mover type technologies and products</li> <li>Secure original technologies to develop ultra-low power and high-performing intelligent semiconductors</li> <li>Develop core technologies related to OS and convergence-IP (intellectual property)</li> <li>Develop platforms for intelligent semiconductor devices (e.g. wearables, smart cars, etc.)</li> </ul>
Improve infrastructure	<ul style="list-style-type: none"> <li>Create a platform for the common use of software to design intelligent semiconductor products</li> <li>Build a system for IP sharing and distribution to improve efficiency in semiconductor designs and strengthen product competitiveness</li> <li>Build IP Open Network Kipex and a test bed for open SoC-SW convergence platforms</li> <li>Assist fabless companies to manufacture prototypes</li> </ul>
Cultivate workforce	<ul style="list-style-type: none"> <li>Cultivate a professional workforce for SoC-SW convergence intelligent semiconductors</li> <li>Operate programs to foster a high-quality workforce for intelligent semiconductors</li> </ul>

The government has plans to pursue the public-private joint development of neuromorphic chips and make intensive efforts to develop intelligent software system to introduce intelligent semiconductor products.

## Success Case

### ON Semiconductor Korea Co., Ltd. (United States)

With ON Semiconductor's acquisition of Fairchild in September 2016, Fairchild Korea Semiconductor Ltd. became part of ON Semiconductor.

ON Semiconductor Korea is the only foreign semiconductor company in Korea with a semiconductor fabrication plant in the country. It boasts streamlined production and sales systems as well as an outstanding R&D center.

ON Semiconductor Korea is in charge of the sales management of the entire Asian region, and its role has significantly grown in recent years.

## KOTRA WORLD WIDE

As Korea's Trade-Investment Promotion Agency, KOTRA has 127 overseas offices and 10 headquarters worldwide.

\* Invest Korea(IK), Korea's national investment promotion agency, was established as part of KOTRA to support the foreign businesses in Korea.



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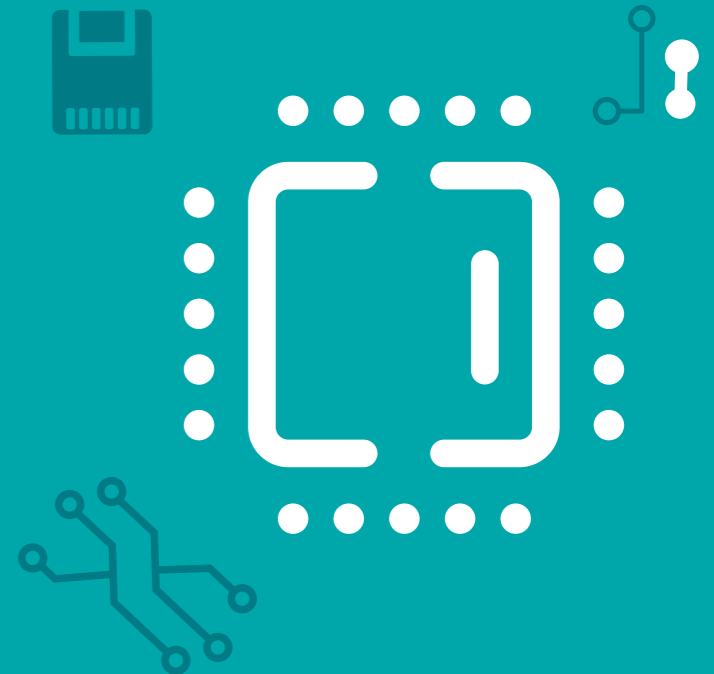
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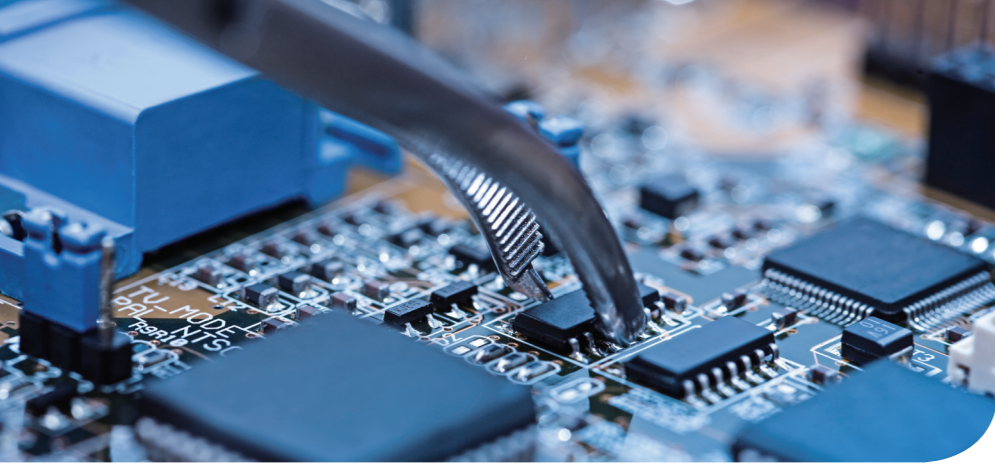
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KOREA'S LEADING INDUSTRIES

# SEMICONDUCTORS



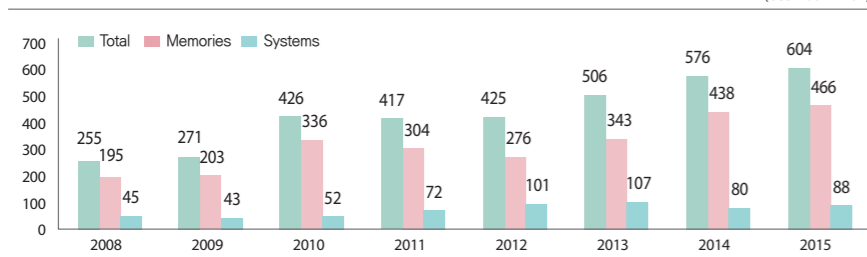


# 01

## Korea's Semiconductor Industry

Korea's semiconductor industry has maintained continuous growth despite the global economic slowdown.

Korea's Semiconductor Industry Output (USD 100 million)

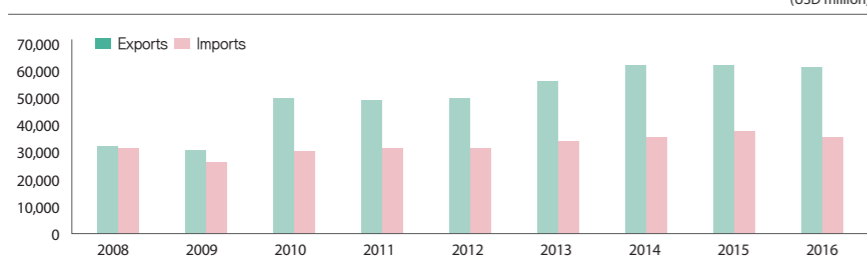


Source : Ministry of Industry, Trade and Energy

Memories make up the majority of semiconductor products manufactured by Korean companies, which currently dominate the global memory market.

Korea's flagship memories are dynamic random access memory (DRAM) and NAND flash memory products. Recently, there has also been a rise in the production of application processors (AP), display driver ICs (DDI), CMOS image sensors (CIS), and power management integrated circuits (PMIC).

Korea's Semiconductor Exports and Imports (USD million)



Source : Korea International Trade Association (KITA)

# 02

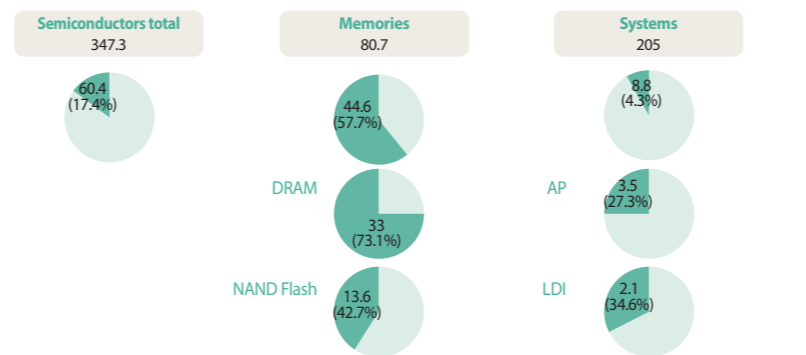
## Competitiveness

### The World's Second Largest Chip Maker

Korea is the world's second largest chip maker accounting for 17.4% of the global semiconductor industry as of 2015.

Korean semiconductor memories hold a global market share of 57.7% (system products: 4.3%) thanks to its overwhelming competitiveness, which is attributable to proactive investment in equipment and processing technologies.

Global Market Share of Korea's Semiconductor (2015)



Source : IHS (Apr. 2016)

By company, Samsung Electronics boasts the world's second largest market share of 11.6%. SK hynix ranks third with a market share of 4.8%.

Global Top 5 Semiconductor Companies (2015)

Rank	Company	Sales (USD billion)	Market Share (%)
1	Intel	51.4	14.8
2	Samsung	40.2	11.6
3	SK hynix	16.5	4.8
4	Qualcomm	16.5	4.8
5	Micron	14.1	4.1

Source : IHS, Apr. 2016

### Market Opportunities for Semiconductor System Products

While Korea is projected to maintain its technological competitiveness in memories, its semiconductor systems sector still needs to improve to compete on the global stage.

If global semiconductor system manufacturers with advanced technologies enter the Korean market, they are likely to benefit significantly from a variety of local upstream and downstream industries.

# 03

## Industry Clusters

Korean semiconductor companies are concentrated in the capital area (Seoul and Gyeonggi-do), while some are located in Chungcheongbuk-do, Chungcheongnam-do, and Gyeongsangbuk-do.

Regional Distribution of Korean Semiconductor Companies



### Pangyo Techno Valley

Most Korean semiconductor companies in the capital area, especially fabless companies, are clustered in Pangyo, Seongnam-si. Pangyo Techno Valley is easy to access from Seoul where in-demand businesses and quality talent are concentrated, and spurs competition and collaboration among companies.



### Pyeongtaek Semiconductor Cluster

Pyeongtaek Semiconductor cluster, located 80 km south of Seoul, is where Samsung Electronics has decided to build the world's largest semiconductor complex. When the Pyeongtaek manufacturing plant begins mass production in 2017, it will form the largest semiconductor cluster in the world that links the companies in Giheung, Hwaseong and Pyeongtaek.