MOEA

TAIWAN

KEY INNOVATIVE INDUSTRY –
SEMICONDUCTORS

To stimulate economic growth and create new momentum for industrial development, since 2016 the government has been actively promoting the "5+N Innovative Industries" development program including the smart machinery, biomedicine, Asia Silicon Valley (Internet of Things), green energy, national defense, and circular economy industries, plus advanced semiconductors and other key industries.

INCENTIVES

TAIWAN

TAX AND TARIFF INCENTIVES

- Business income tax rate is **17%**.
- Up to **15%** of R&D expenses may be credited against the profit-seeking enterprise income tax payable by the company in the current year.
- Imported machinery that is not yet manufactured domestically may enjoy tariff-free treatment.
- Royalty payments to foreign companies for imported new production technologies or products that use patents, copyrights, or other special rights owned by foreign companies are, with the approval of the Ministry of Economic Affairs, exempt from the business income tax.
- For operators stationed in Export Processing Zones, Science Parks and Free Trade Zones, imported raw materials, fuel, materials, semi-processed goods, and self-use machinery may be exempt from import duty, commodity tax, and sales tax. The business tax rate in such areas is zero on goods and services shipped abroad.

R&D SUBSIDIES

- **Global Innovation and R&D Partnership Plan**
  Subsidies are available for up to **50%** of total spending by foreign enterprises on the establishment of R&D centers in Taiwan.
- **Advanced Technology Research Plan**
  Subsidies are available for **40%** to **50%** of total development funding for new technologies that are not yet mature in Taiwan and that will, in the future, generate strategic products, services, or industries.
- **Integrated R&D Plan**
  Subsidies are available for **40%** to **50%** of total project cost for the integration of key and cross-sector technologies.
- **Industrial Upgrading and Innovation Program**
  For companies having R&D teams in Taiwan, subsidies are available for **40%** - **50%** of project funding for projects that conform to government programs and up to **40%** of funding for projects generated by the applicants themselves.

POLICY FOCUS

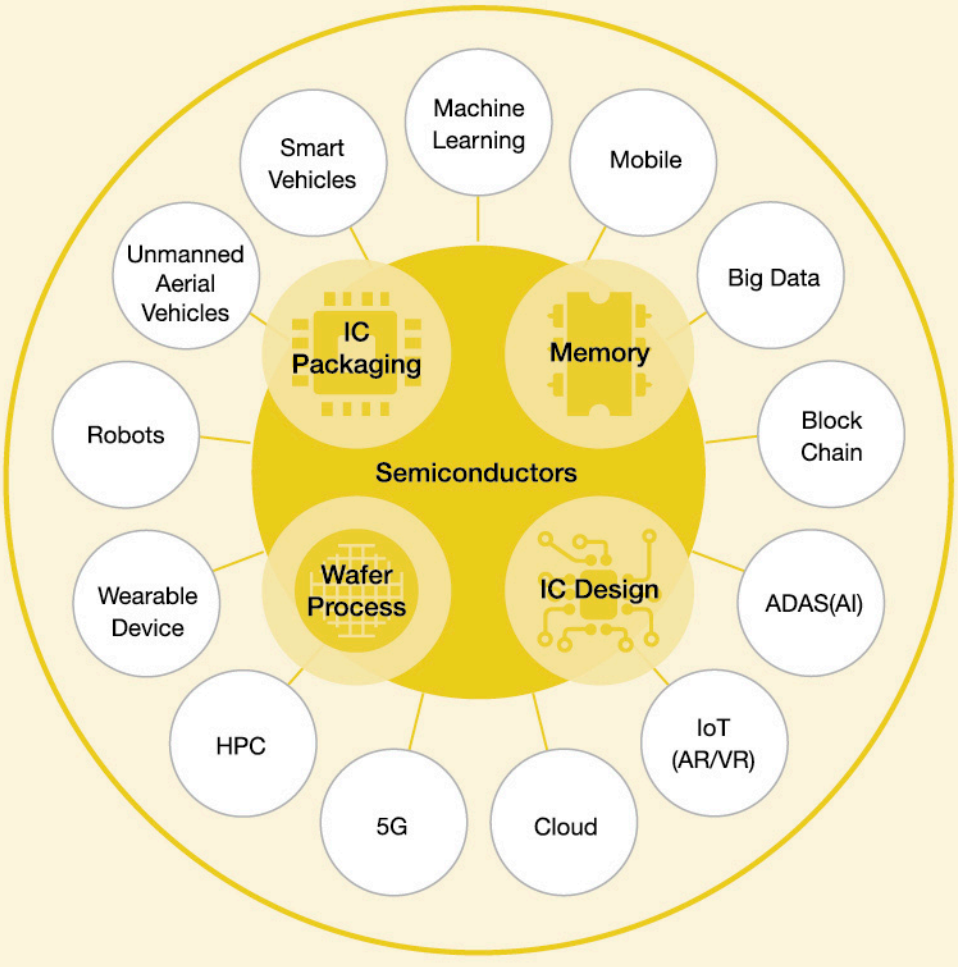
- **Semiconductors**

  Taiwan has a comprehensive semiconductor industry cluster and is the world's densest and most technologically advanced semiconductor production base. Semiconductor manufacturing has been listed as a key industry for national development with the aim of upgrading the industry, achieving an innovative economy, and grasping developmental opportunities in the digital age.

- **Expansion of Cross-discipline Cooperation of Semiconductors**

  Semiconductor chips are the common foundation on which the 5+N innovative industries are based. As the link that connects the 5+N innovative industries with the IoT, they require chip design and semiconductor technologies. Taiwan hopes to guide the semiconductor industry in expanding from consumer electronic products into cooperation in innovative industries such as green energy, smart machinery, agriculture, biomedicine, and electric vehicles. Semiconductors, therefore, are listed among the 10 major industries in the 2018 industrial innovation R&D plan.

The Semiconductor Industry - the base for innovative industries in Taiwan



INVESTMENT ENVIRONMENT

- **Convenient Transportation Infrastructure**

  Traveling within Taiwan is very convenient. It takes only 90 minutes to travel from the north to the south by High Speed Rail, facilitating prompt technical support.

- **Comprehensive Industry Clusters**

  Taiwan has a complete upstream-downstream IC industrial chain that reaches from upstream IC design through IC manufacturing to final IC packaging and testing, in a professional division of labor model that is unique in the world. Taiwan ranks second globally in total IC production value, after only the USA (and ahead of Korea and Japan). Furthermore, a comprehensive chain of interconnected industry clusters stretching from Hsinchu to Taichung and Tainan facilitates the joint development of advanced processes.

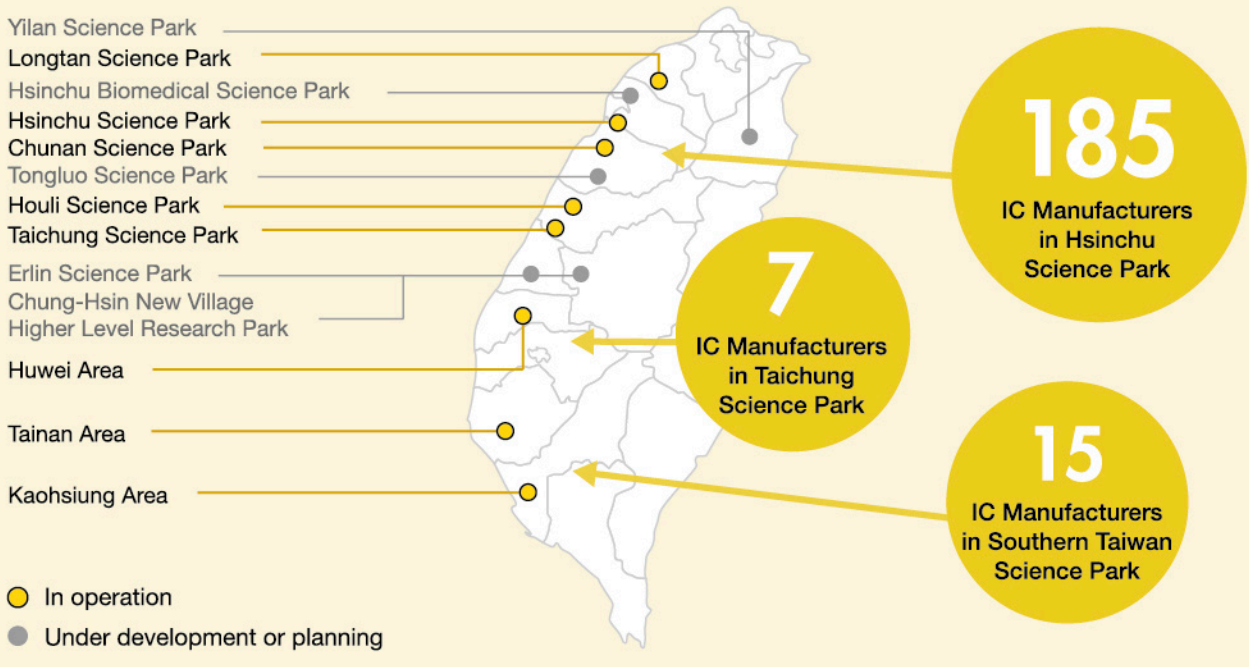
- **An International Leader in Semiconductor Processes**

  Taiwan ranks number one globally in OEM wafer production, with advanced process technologies that have entered the 14 nm and 10 nm realms and solidify Taiwan's standing as a world leader. Taiwan's IC packaging and testing industry also ranks number one, with more than half of the world's top-10 IC packaging and testing companies. Years of development have fostered a great number of dedicated professionals with mature technology, making it easier for international companies to develop their business and establish positions of world leadership in Taiwan.

- **Continued Expansion of R&D Resources**

  Taiwan's IC industry continues to invest resources in R&D, enabling it to lead global semiconductor technology to new heights of achievement. In addition to establishing autonomous semiconductor technologies, the industry is able to shorten the lead time for the mass production of high-tech semiconductor products through the international technological cooperation model.

Semiconductor Clusters in Taiwan



INVESTMENT OPPORTUNITIES

Continuous Growth of Demand for Semiconductor Materials

Taiwan has as many as 300 IC manufacturers, and their total procurement of semiconductor materials was worth US$9.79 billion in 2016. Taiwan has been the top buyer of semiconductor materials in the world for seven consecutive years, and its demand for new materials and equipment will grow continuously as its IC production continues to expand.

Business opportunities in semiconductor materials:

The high-end photoresists, metal targets, film coatings, and special process reaction gas currently used in Taiwan's IC production, as well as wire binding, sealing materials, and filling plastic for IC packaging, are all imported. IC manufacturers hope that international suppliers will come and produce these materials in Taiwan so as to reduce their supply risk. Furthermore, 10nm IC processing will soon enter mass production in Taiwan, creating more demand for high-end materials for both IC production and packaging. Taiwan hopes to strengthen cooperation with international manufacturers in supplying this demand.

Continuous Growth of Demand for Semiconductor Equipment

Taiwan is the location of major global wafer foundries and advanced packaging and testing services. Their procurement of new equipment reached a value of US$12.23 billion in 2016, making Taiwan the world's top buyer of new semiconductor equipment for the fifth year in a row.

Business opportunities for semiconductor equipment:

Suppliers in Taiwan are now capable of providing components for 6-8 inch wafer production and packaging process equipment, but not for 12-inch wafer process and high-tech packaging equipment. Investment by foreign suppliers in the following areas is welcome:

- Preliminary process facilities: Film deposition control technology, etching evenness control, and DUV exposure laser source technology.
- Advanced packaging process equipment: Photo resist coating technology, copper plating technology, laser cutting technology.

Global Semiconductor Materials Market

Unit: US$ Billions

Global Ranking		2015	2016
1	**Taiwan**	**9.42**	**9.79**
2	South Korea	7.09	7.11
3	Japan	6.56	6.74
4	China	6.08	6.53
5	Other Regions	6.09	6.12
6	North America	4.97	4.90
7	Europe	3.07	3.12
Total		43.29	44.32

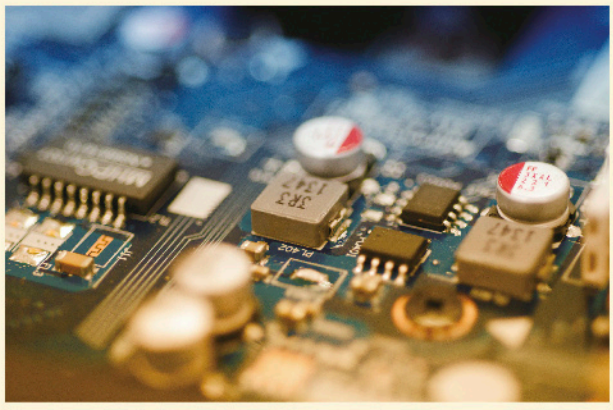
Global Semiconductor Equipment Sales

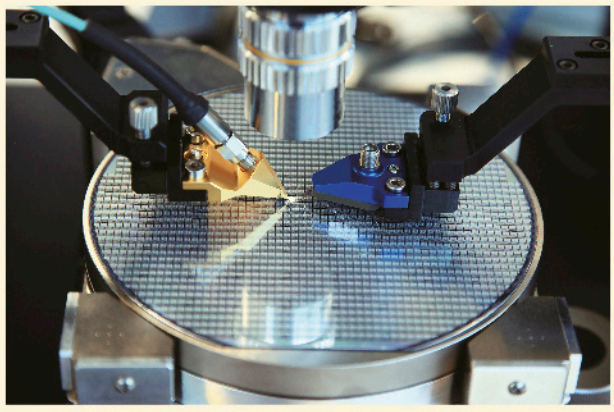
Unit: US$ Billions

Global Ranking		2015	2016
1	**Taiwan**	**9.64**	**12.23**
2	South Korea	7.47	7.69
3	China	4.90	6.46
4	Japan	5.49	4.63
5	North America	5.12	4.49
6	Other Regions	1.97	3.55
7	Europe	1.94	2.18
Total		36.53	41.24

• Major Foreign Investors in Taiwan

In the field of semiconductor equipment, there are ASML of Holland and Applied Materials Inc. and Lam Research of the USA, which have established R&D centers or talent incubation HQs in Taiwan. In the field of electronic materials there are Hsin-Etsu Chemical and Tokyo Ohka Kogyo of Japan and DOW Chemical Company and Cabot Microelectronics of the USA, which have established new plants or expanded operations in Taiwan to meet customer demand.





Taiwan's Globally Leading Semiconductor Industry

2016	Taiwan Production (US$ Billion)	Global Production (US$ Billion)	Taiwan Share(%)	Taiwan Ranking
IC Design	20.2	104.1	19.4%	No.2
Wafer OEM	**35.6**	**50.1**	**71.1%**	**No.1**
Memory Mfg.	5.7	70.9	8.0%	No.4
IC Packaging/ Testing/OEM	**14.4**	**25.9**	**55.6%**	**No.1**
Total IC Production	75.9	251.0	30.2%	No.2

DEPARTMENT OF INVESTMENT SERVICES, MINISTRY OF ECONOMIC AFFAIRS (INVESTAIWAN SERVICE CENETER)

As the one-stop window for the promotion of FDI and the provision of investment services in Taiwan, DOIS provides investors with all necessary assistance during the investment process. Its services include information gathering, investment evaluation, partner finding and matchmaking, and access to water, electricity and land in the beginning stage of the investment process; application for permits and incentives during the investment implementation period; and the elimination of operational obstacles, assistance for the expansion of operational scale, and help for the implementation of new startup investments after the investment process is completed. For investment projects in excess of NT$500 million, DOIS provides special courtesy services by designated project managers.

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