



Healthcare Industry

An Overview of
Taiwan Excellence Products
(2019)



Taiwan's Healthcare Industry – Current State and Development Potential

Taiwan's medical device output value grows continually.

IEK Consulting estimates that in 2017 the output value for Taiwanese medical equipment was about US\$3.4 billion and will have reached US\$3.8 billion by 2019. The aging of society has resulted in an increased demand for assistive devices and bone implants, which, along with increased orders for blood sugar meters, test strips, and contact lenses, will be major drivers of output value growth. Taiwan has three opportunities for developing smart healthcare:

- A complete and comprehensive electronic industry supply chain and medical system.
- National Health Insurance data accumulated over 24 years can be applied in AI medicine development.
- Manufacturers and hospitals can collaborate to export solutions overseas.

State of Healthcare Industry Exports in Taiwan

1. In 2018 Taiwan's medical equipment industry had an export value of US\$31.4 billion and export growth of 10.73%.
2. The top seven categories of medical equipment produced in Taiwan were contact lenses; blood glucose meters and test papers; instruments and accessories for internal, external, dental and veterinary medicine; vehicles and accessories for disabled persons (wheel chairs); hospital consumables (gloves); testing reagents for purposes other than hepatitis or diabetes; and catheters/tubes. These seven categories include some of Taiwan's most dominant export products, with a total export value of US\$1.423 billion, accounting for 70.3% of the value of Taiwan's total medical equipment exports.
3. In particular, contact lenses are currently Taiwan's number one medical export, with their biggest market being Japan. Taiwan is now the world's sixth export country for contact lenses, and it is gradually transitioning from OEM to branded products. Catheters and tubes are one of the categories with the highest growth potential.

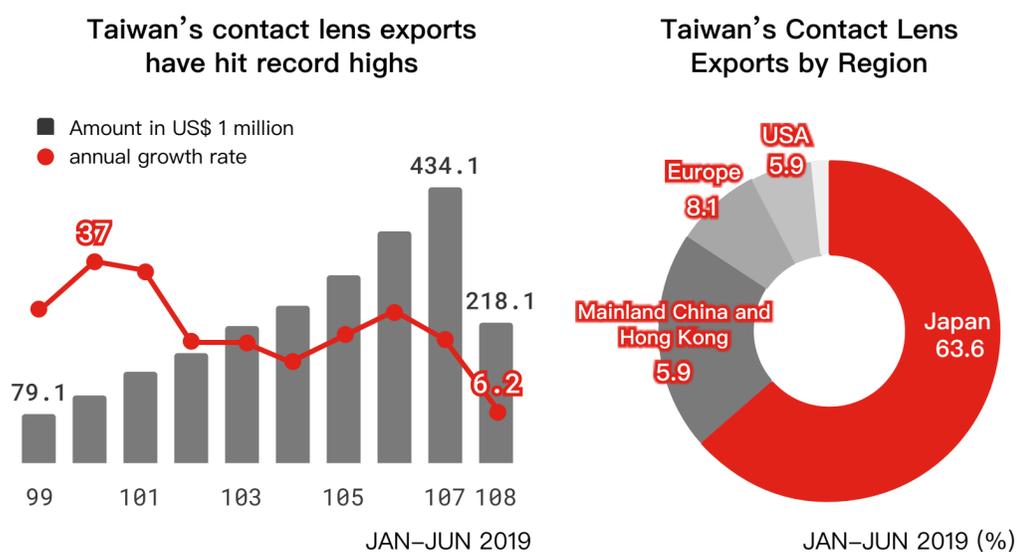


Figure (1.1) – Current State of Taiwan's Contact Lens Exports
Source: Department of Statistics, Ministry of Economic Affairs



Taiwan is extremely well suited for digital healthcare. Its medical environment has a high cost-to-performance ratio. Such areas as digitization and automation rely greatly on machinery integration and automated production, which dovetail with Taiwan’s IT and semi-conductors industries.

– Michel Chu, General Partner, Acorn Campus Taiwan



“Biomedical Industry Innovation and Promotion Program” Accelerates Biomedical Development

Taiwan boasts an excellent medical system, considerable achievements in clinical practice, and a complete human biology database. These, along with the National Health Insurance database, which is used to plan, monitor, and evaluate medical services, are the sources of Taiwan’s strength in the biomedical industry and its advantageous niche positioning. The island’s strong foundation in the information and communications technology (ICT) industry will also give Taiwan’s biomedical industry great opportunities to improve its overall competitiveness through artificial intelligence (AI) and cross-disciplinary medical cooperation.

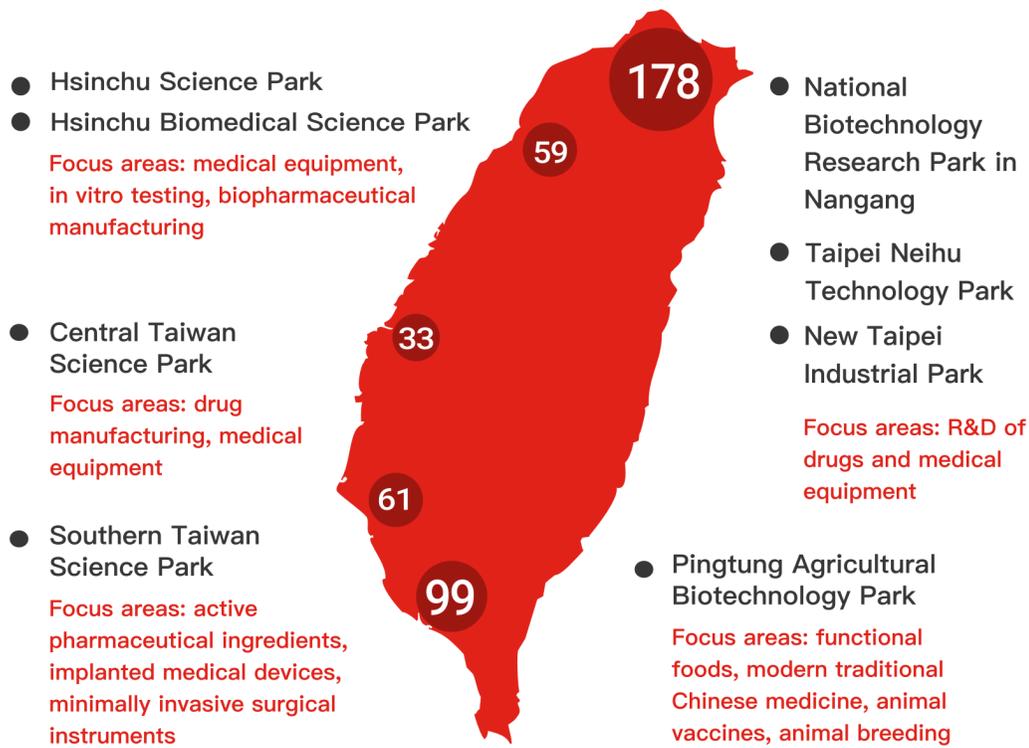


Figure (1.2) Distribution of Biotechnology Companies in Taiwan
Unit: Number of biotechnology companies in the region

● The Nangang Pharmaceutical R&D Cluster

Integrates the clinical research of a science park, university, and medical center and forms a complete ecosystem linking medical institutions and local manufacturers.

● The Hsinchu Biopharmaceutical Cluster

Integrates the clinical research of a science park, university, and medical center and forms a complete ecosystem linking medical institutions and local manufacturers.

- The National Taiwan University Hospital Hsinchu Campus established in the Hsinchu Biomedical Science Park: integrates clinical needs, product development, and clinical trials.
- A medical equipment commercialization center to integrate resources, attract investment, and accelerate bio/ICT development.
- A fast trial production service platform to engage in commercialization counseling and incubation in accordance with ISO13458 for swift product launches.
- Local offices of Food and Drug Administration and Center for Drug Evaluation providing consultation and speedy review, guiding verification and preparation for new product regulations.
- Residencies of select international medical equipment teams, enhancing the vision of the domestic medical equipment industry and forging connections with the international medical equipment industry.

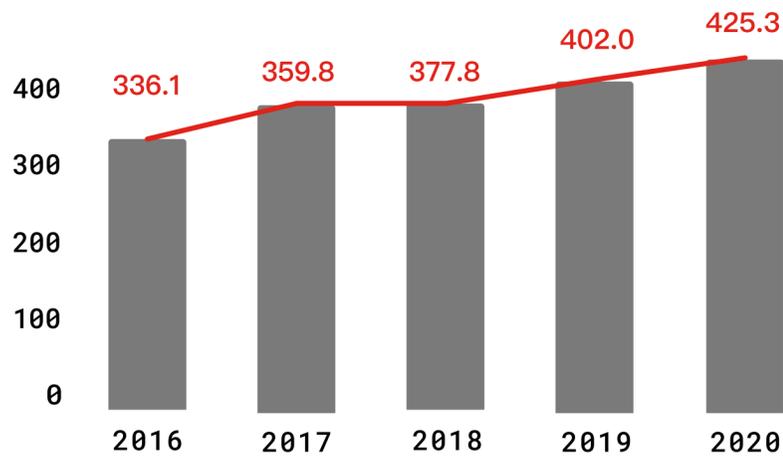
● Biotechnology Clusters in Central and Southern Taiwan

- Promoting a centralized medical industry alliance, use of hospital experience, academic research and teaching, and locally produced medical equipment.
- Creating links with Southeast Asian technology resources: attracting doctors from Southeast Asia to learn medical technologies in Taiwan and promoting Made-in-Taiwan medical equipment.
- Attracting international students to study in Taiwan, take part in innovative industries, and expand commercial links with foreign countries.
- Providing assistive device leasing services: promoting local use of high-quality assistive devices to develop the assistive device and service industry and improve the standards of Taiwan's assistive device industry.

Since artificial intelligence became a hot topic around 2017, cognitive technology and IoT applications have become a key focus of the global biomedical industry and the investment community. Due to population aging in recent years, demand for medical treatment is on the rise, and new technologies and products have ushered in an era of growth in the global pharmaceutical and medical equipment markets. (In 2017 the total value of the medical equipment market was US\$402.8 billion, and it is expected to increase to US\$521.9 billion by 2022.)

2016–2020 Global Medical Equipment Market Scale

■ Amount in US\$1 billion



Compound growth rate
5.7%

Figure (1.3) – Global Medical Equipment Market Scale
Source: Taitra

Taiwan has an excellent foundation in machine tool and precision machinery technology. Future areas of growth for the smart machinery industry will be smart machine tools and special production equipment, smart industrial robots, additive manufacturing equipment, intelligent manufacturing systems, as well as smart modules and components.

Global Healthcare Industry Market Trends

An Aging Global Population—In 2050, the world's population aged over 60 is expected to 22%.

According to the United Nations' "World Population Prospects" report, the global population will reach 9.15 billion by 2050. In particular, people above 60 will account for 22% of the global population (approx. 2 billion people). By then, the growth rate of the population above 60 years old will be higher than that of those under 14 and 15–64 years old. Outside of Africa, the population above 65 in all the major continents will exceed 20%, becoming "super-aged societies."

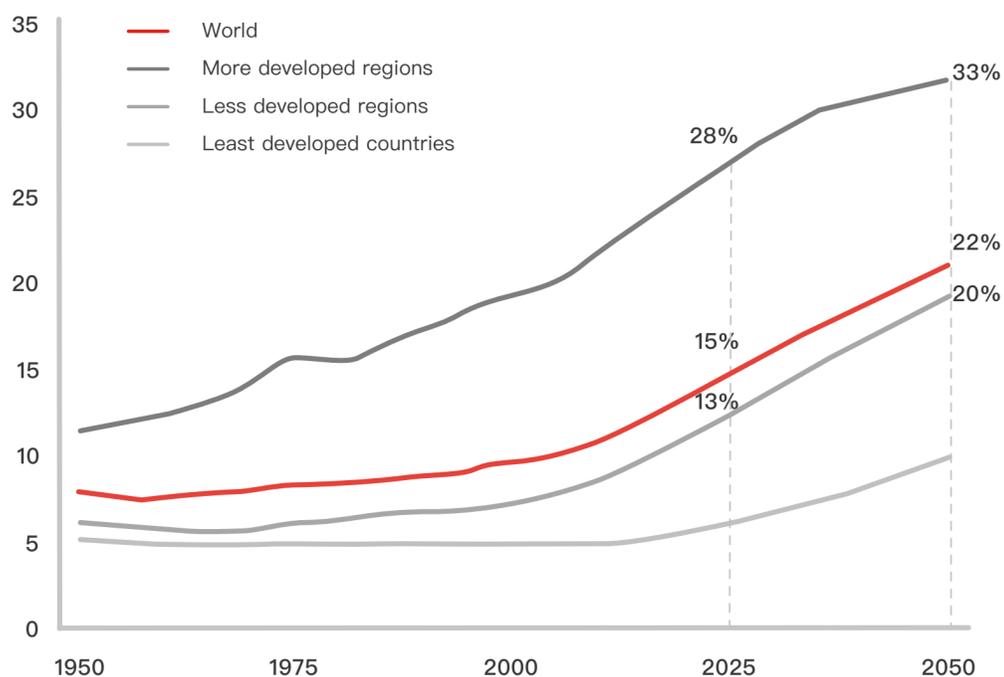


Figure (1.4) – Estimated Senior Populations Worldwide
Source: United Nations

● Medical and health policies promote innovation in medical equipment and technology.

Observations of the regional market development of medical equipment show that the United States is the world's largest medical equipment market. Since President Donald Trump took office, taxation reform plans have been actively promoted. In order to seize the opportunities, major medical equipment manufacturers have also gradually adjusted their capital allocation in order to input more R&D resources or expand product portfolios to promote more active industrial mergers and acquisitions. If the United States decides to abolish the 2.3% consumption tax on medical equipment before 2020, more momentum can be injected into the overall medical equipment market.

● The medical expenditure ratio continues to increase.

According to Deloitte, the global medical health expenditure for 2018–2022 will increase by 5.4% annually, which is a substantive increase compared to 2.9% for 2013–2017.

Sources

- Figure (1.1) – Current State of Taiwan's Contact Lens Exports
Source: Department of Statistics, Ministry of Economic Affairs
- Figure (1.2) Distribution of Biotechnology Companies in Taiwan
- Figure (1.3) – Global Medical Equipment Market Scale
Source: Taitra
- Figure (1.4) – Estimated Senior Populations Worldwide
Source: United Nations
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