



⏏ EE463 Globalization Development

# Transition to Electronic Manufacturing Industries in Taiwan

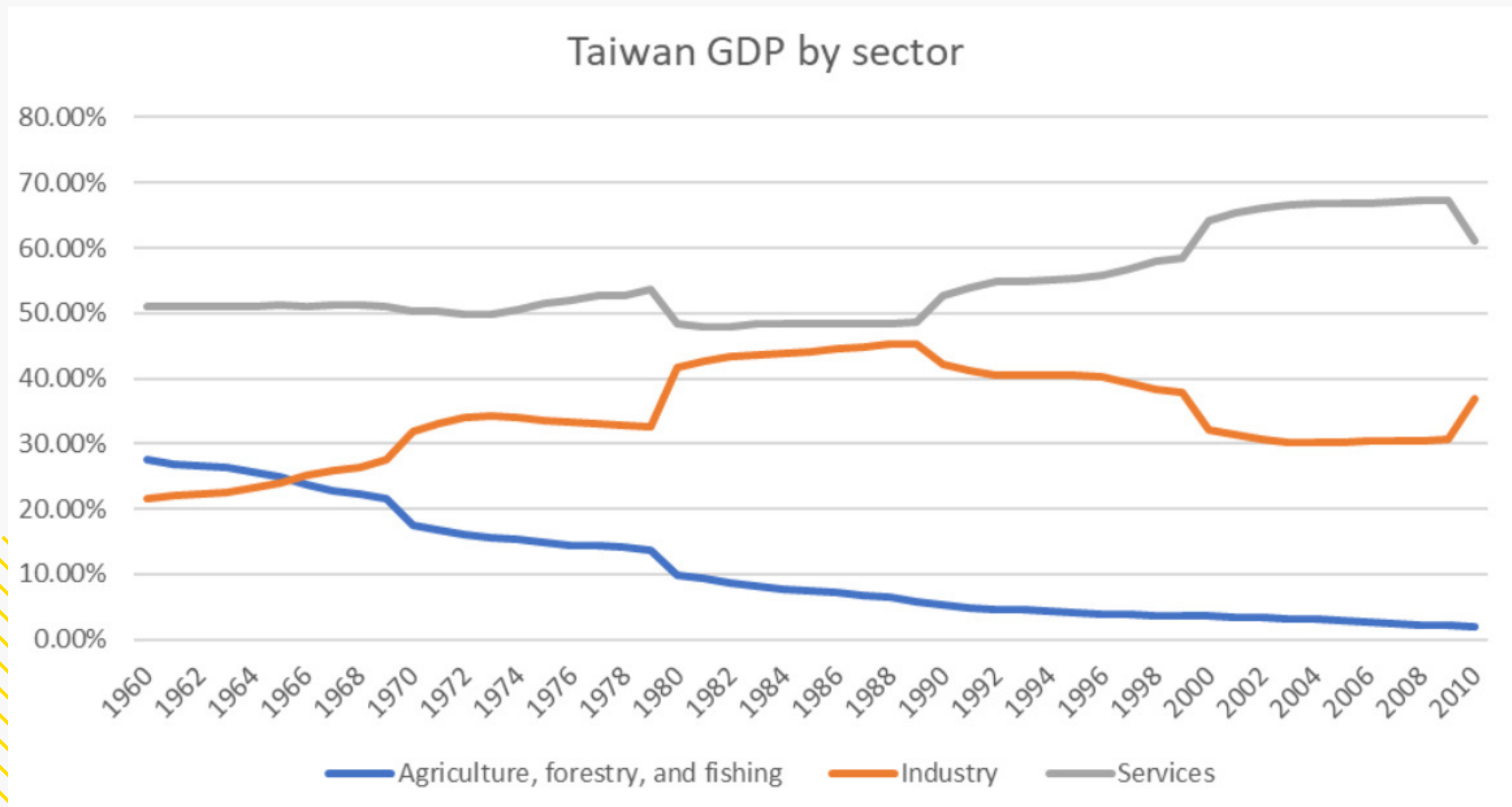
DR. JANUAR HAKIM

6204640780 Pinmanee Wangcharoen

6204641697 Kornpat Udomchoksakul

6304640433 Kanyamas Patthanakul

# Background



Agriculture has been one of the primary industries in Taiwan for a very long time. Taiwan produces 6.9 million tons of crops annually, comprising rice, vegetables, and flowers.

However, Taiwan was shifting itself from an agricultural-based economy to industrialization. Taiwan was rapidly industrializing, starting in the early 60s.

As a result, according to table 1, the agricultural sector contribution to the net domestic product gradually declined from 30% to 6% from 1960 to 1990, compared to the industrial sector that increased from 28% to 40%.





# Key factors

That led to rapid industrialization in Taiwan



## Government Policies

- policies giving incentives to foreign investors
- supported research
- investment in infrastructure and education.



## Skilled Workforce

Taiwan had a large pool of skilled workers who were able to meet the needs of the expanding industrial sector.



## Access to Capital

Taiwanese entrepreneurs were able to secure loans from banks that were willing to invest in the country's growing economy.

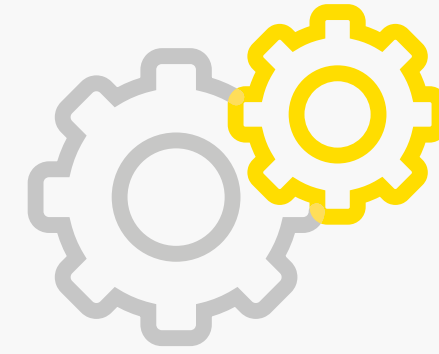


## Strategic Location

Attractive destination for foreign investors looking to access the region's growing consumer markets



# Key Factors

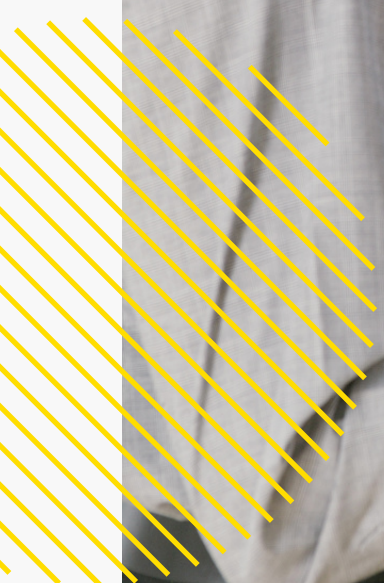
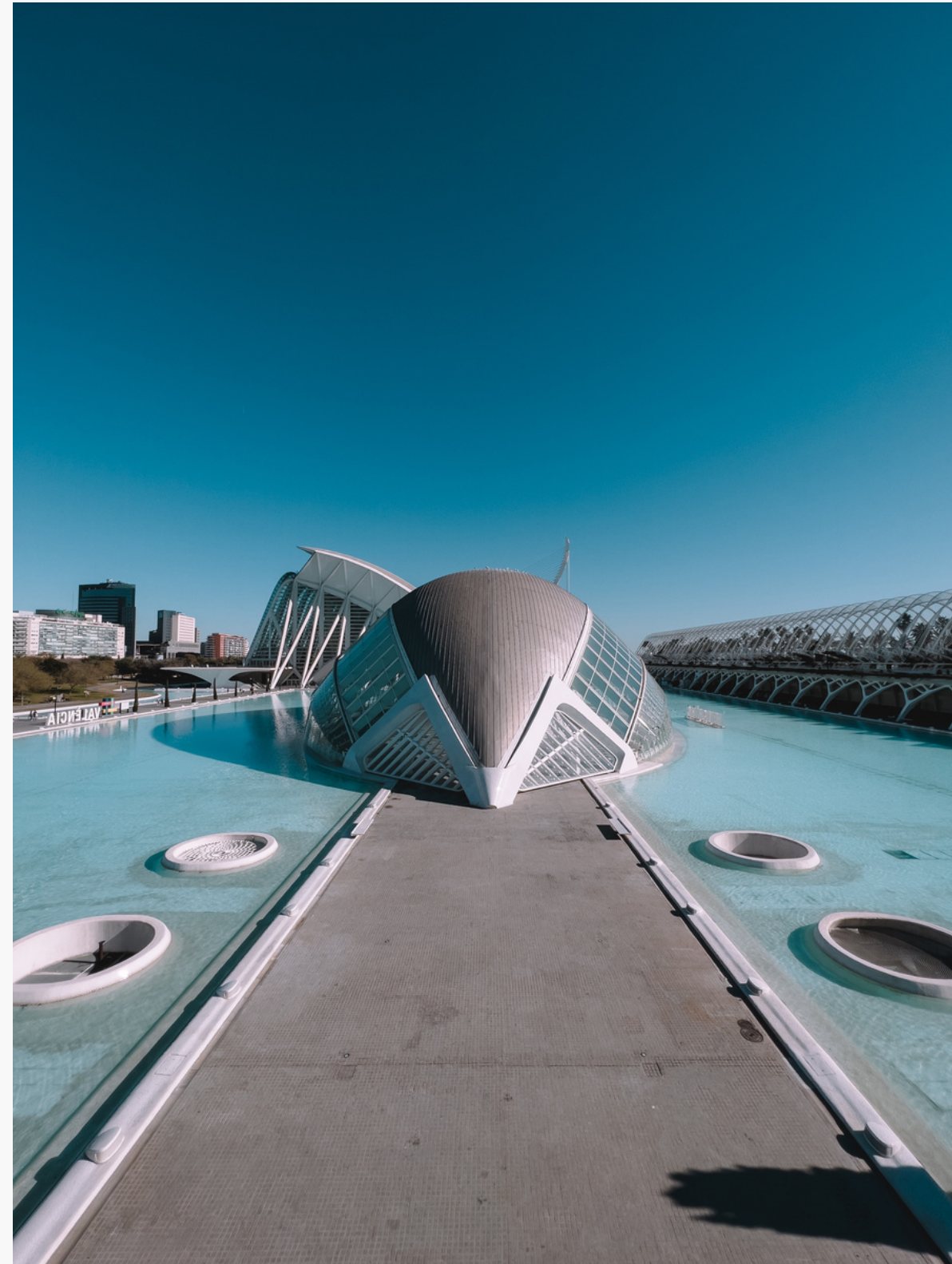


## Infrastructure development

This helped to improve transportation and logistics, making it easier to move goods in and out of the country.

## Strong Culture of Entrepreneurship

This provided a fertile ground for the development of new industries and the growth of existing ones.



# Key issues & Challenges



## Dual Structures

- Dual structure is a coexistence of a modern, high-tech sector and a traditional, low-tech sector within the same economy.
- The government initially focused on developing low-tech industries such as textiles and electronics.
- As Taiwan's economy matured, the emphasis shifted to high-tech industries, which demanded a more skilled workforce and cutting-edge technology.
- Traditional sector fell behind and suffer.
- Exporting businesses faced significant fixed costs.
- Resulted in a widening income gap between high- and low-skilled workers, uneven regional development, and an overreliance on the high-tech sector for economic growth.

## B. Taiwan

	(U.S.\$ million)						
	Total	Color TVs		Computers		ICs	
1981	6,421	498	(7.8)	2	(0.0)	237	(3.7)
1982	5,996	391	(6.5)	7	(0.1)	310	(5.2)
1983	7,315	491	(6.7)	21	(0.3)	336	(4.6)
1984	9,458	555	(5.9)	195	(2.1)	470	(5.0)
1985	8,451	509	(6.0)	168	(2.0)	393	(4.7)
1986	13,610	748	(5.5)	344	(2.4)	667	(4.9)
1987	19,149	894	(4.7)	824	(4.3)	853	(4.5)
1988	23,708	847	(3.6)	1,310	(5.5)	1,068	(4.5)
1989	28,293	861	(3.0)	1,843	(6.5)	1,362	(4.8)
1990	28,995	595	(2.1)	1,908	(6.6)	1,486	(5.1)
1991	32,538	579	(1.8)	2,294	(7.1)	1,838	(5.6)
1992	34,768	516	(1.5)	2,466	(7.1)	2,243	(6.5)
1993	36,627	487	(1.3)	2,266	(6.2)	3,546	(9.7)

## Relocation of foreign-based firms

- Ongoing for several years and has accelerated
- Result of factors such as rising labor costs and a shift in global manufacturing to Southeast Asia due to their lower labor costs and more welcoming business environments
- Fewer job opportunities and slower economic growth.
- Rising wages are a major contributor.
- The increasing cost of doing business and the appreciation of the N.T. currency.

# Government Strategies



## The dual structure



### Research and Development (R&D)

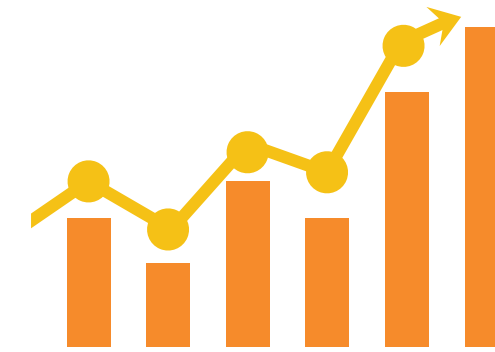
- Promotes industrial innovation and R&D to level the playing field between large and small businesses.
- In 2018, the government launched the "5+2 Innovative Industries Plan" to promote innovation in the "Asian Silicon Valley" and "smart living" as well as green energy, smart machinery, biomedicine, national defense, and the circular economy.
- this plan will diversify and innovate the industrial ecosystem
- making it easier for SMBs to grow and compete with larger firms.
- The government increased R&D spending to spur innovation and commercialization of academic research.

### SME Innovation and Entrepreneurship Development Plan

- "SME Innovation and Entrepreneurship Development Plan" was released in 2016 to encourage and assist SMEs in innovation and entrepreneurship.
- The goals are to boost SMEs' management skills, expand their access to capital, and encourage their international expansion
- Financial support, counseling services, and training programs are provided.
- The Small and Medium Enterprise Credit Guarantee Fund was set up by the government to make it easier for lenders to take less risk and for SMEs to get more capital.



# Government Strategies



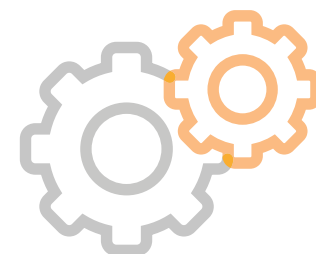
## Relocation of foreign-based firm



## Promotion of Industry Upgrading and Transformation (PIUT)



- Plan to improve and change Taiwan's industries so that they can attract and keep foreign-based companies
- Offers monetary and other incentives to foreign-based firms that relocate to Taiwan to modernize their operations and adopt cutting-edge manufacturing technologies.
- First announced in 2015. The primary goal is to encourage the growth of high-tech sectors like green energy production, biotechnology, and smart machinery.
- Subsidies for the implementation of cutting-edge manufacturing technologies, as well as tax breaks and funding for R&D, are all part of the package
- Set up several innovation and technology transfer centers to encourage partnerships between businesses and universities

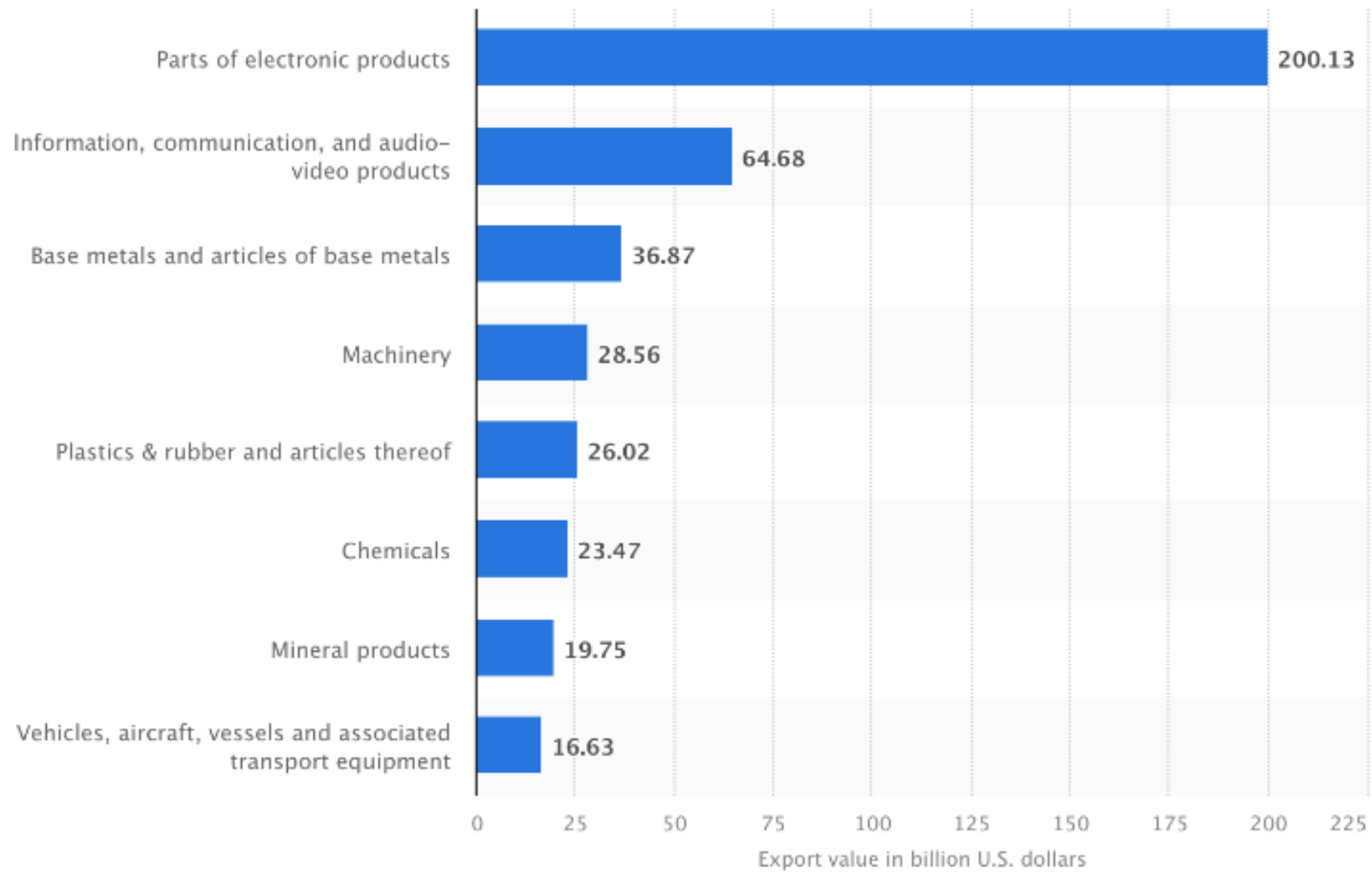


## Free Economic Pilot Zones (FEPZs)

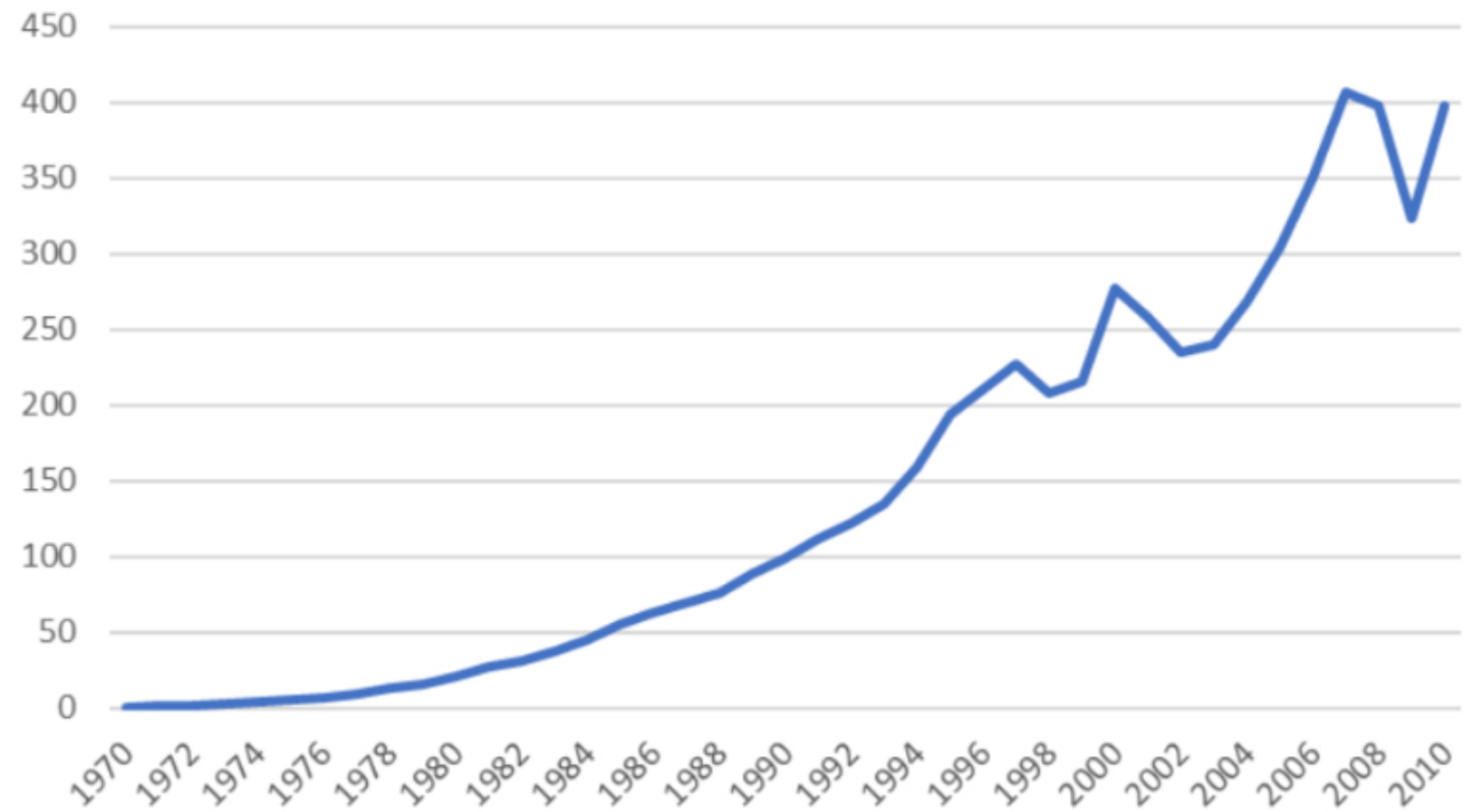


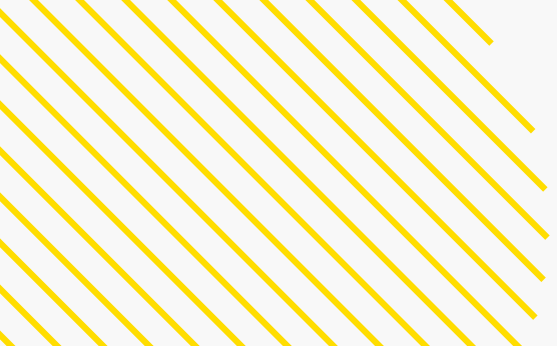
- provide investors with tax breaks, simplified regulatory processes, skilled labor, and financial backing
- In 2014, Taiwan announced the establishment of the first FEPZ in Kaohsiung -> Green energy, intelligent machinery, biotechnology, and pharmaceuticals, national defense and aerospace, high-value agriculture, and international healthcare
- In 2015, Hsinchu FEPZ promotes technology, Pingtung FEPZ promotes agriculture
- Taoyuan County received a fourth FEPZ in 2016 to boost aviation
- Increasing the number of FEPZs makes it easier for foreign companies to do business in Taiwan and encourages them to relocate

# Graphs and Evidences



Taiwan Industrial Exports (USD billions)





# Conclusion



**Some of the lessons learned from Taiwan's experience. It emphasizes the importance and effectiveness of government support and investment in R&D, as well as the need for collaboration between industry and academic systems, which is supported by a large number of skilled workers. According to the report, investing in human capital development and education is critical to retaining a skilled workforce in the electronic manufacturing industry.**

