

The content of this article is provided by the Department of Investment Services, MOEA

The Status of the Machinery Industry in Taiwan

(I) Supply & Demand

In an attempt to promote and develop strategic industries, Taiwan actively develops high-tech information communication industry, boosting the information electronic and electronic component industries significantly. This is what elevates Taiwan's economy in recent years. "Machine is the heart of industry"; therefore, the machinery industry in Taiwan is also one of the main factors for Taiwan's economy growth.

In 2006, on the supply side, the output value of the machinery industry in Taiwan hit NT\$588.3 billions, ranked 15th worldwide. Since the beginning of 2006, the strong demand from China had boosted the output value of Taiwan's machinery industry. With the growing market of emerging European and Asian countries and USA, the output value of Taiwan machinery industry will keep ascending.

2006 Machinery Product Export Ranking

Machinery Product Type	2006 World Top 5 Export Countries					Taiwan Rank
	1 st	2 nd	3 rd	4 th	5 th	
	World Export Rate					
Metal Cutting Machine	Japan	Germany	USA	Taiwan	Italy	4 th
	30.6%	20.9%	17.3%	8.9%	6.3%	8.9%
Metal Forming Machine	Germany	Italy	Japan	USA	Taiwan	5 th
	20.9%	19.1%	16.6%	9.2%	8.5%	8.5%
Metal Manipulator Tool	China(HK)	Germany	USA	Japan	Belgium	6 th
	28.8%	18.2%	10.9%	8.9%	8.0%	4.1%
Non-Traditional Process Tool	Japan	China(HK)	Germany	Taiwan	USA	4 th
	43.5%	18.2%	12.8%	10.4%	4.4%	10.4%
Weave and Cloth Machine	Germany	Japan	Italy	China(HK)	Taiwan	5 th
	25.4%	18.4%	13.6%	13.5%	6.3%	6.3%
Woodworking Machine	Germany	Italy	Taiwan	Japan	China(HK)	3 rd
	30.9%	22.5%	9.5%	7.8%	6.7%	9.5%
Plastic and Rubber Machine	Germany	Japan	Italy	USA	China(HK)	6 th
	29.4%	16.1%	12.0%	9.7%	7.3%	6.5%
Electronic and	Japan	USA	China(HK)	Taiwan	Germany	4 th

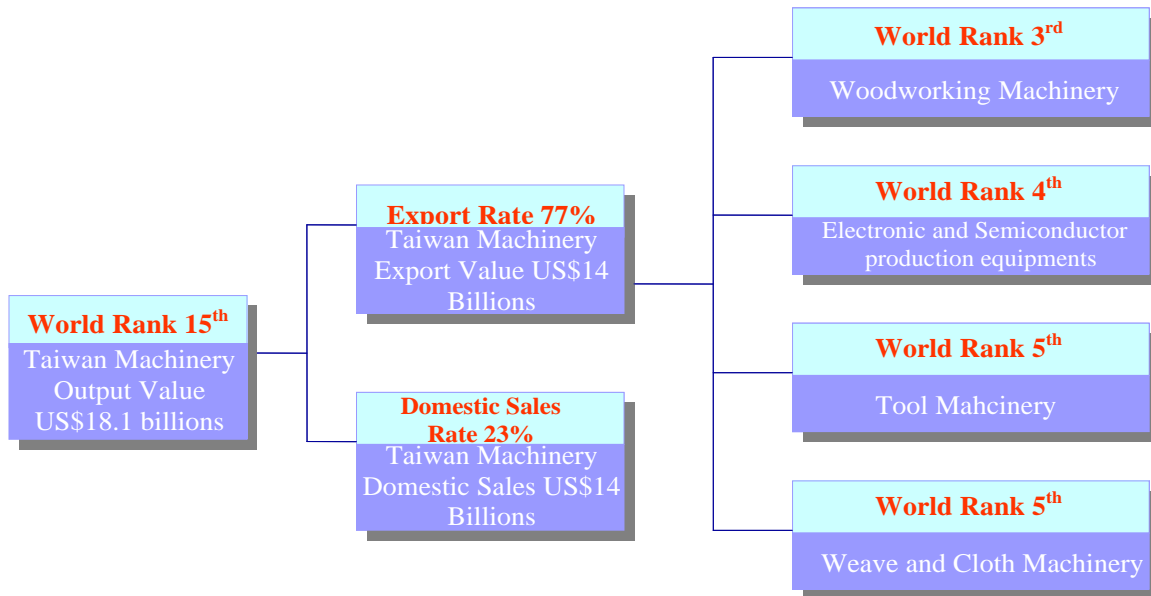
Semiconductor Production Equipment	52.5%	33.7%	3.4%	2.9%	2.4%	2.9%
Air Compressor Machine and Pump	USA	Japan	China(HK)	Germany	Taiwan	5 th
	38.3%	28.2%	16.3%	3.7%	3.0%	3.0%
Bearing, Gear Wheel and Power Transmission Device	Japan	USA	Germany	China(HK)	France	12 th
	25.8%	16.1%	14.4%	11.0%	6.8%	2.0%
Machine Transport Device	Germany	USA	Japan	China(HK)	Italy	15 th
	16.4%	16.2%	12.3%	11.4%	7.7%	0.9%
Metal Mold	Japan	Germany	China(HK)	Italy	USA	6 th
	21.5%	12.4%	11.1%	11.1%	11.0%	6.3%
Complete Machine	USA	Germany	Japan	Italy	China(HK)	11 th
	20.9%	17.9%	16.1%	8.3%	8.3%	2.2%

Source: Industrial Technology Research Institute IEK reorganize , 2007/08

On the demand side, Taiwan machinery industry is export-oriented, over 70% of machinery products exported overseas. The export value amounted to NT\$454.5 billions in 2006, around 77% of total output value. The major export products are tool machines, weave cloth machine and electronic and semiconductor production equipments.

Among the global ranking of machinery export value, Taiwan ranked 5th, on tool machinery, 4th on electronic and semiconductor production equipments, 3rd on woodworking machines, and 5th on weave and cloth machines. High quality, diversified production lines, and reasonable prices have earned widespread praises for Taiwan machinery industry. Therefore, Taiwan remains competitive on machinery brand around the global market.

Development of Taiwan Machinery Industry



Source: organized for the present study · 2008/1

Taiwan machinery industry has a complete supply chain., Delicate machinery industry clusters in central Taiwan with the mid-section branch of Mechanical and Systems Research Laboratories of ITRI, Precision Machinery Center, Cycling & Health Center and other research institutes and the peripheral universities and industrial parks. Most importantly, the cluster of machinery industry on design and R&D is initiated through mutual cooperation among related industries. The complete concerted network, flexibility and efficiency, and the keen spirit are all the factors that make Taiwan machinery industry transform from OEM to precision machinery industry base.

Taiwan Machinery Industry Future Development

Developing Domain	Main Technology	Developing Topics
High Speed	Delicate	Semiconductor Production Equipment
High Precision	Systematic	Image Monitor Production Equipment
High Add-On Value	Intelligently	Stream Machine
		Compound Machine
		Non-Traditional Brand New Production Machinery

Source: organized for the present study, 2008/1

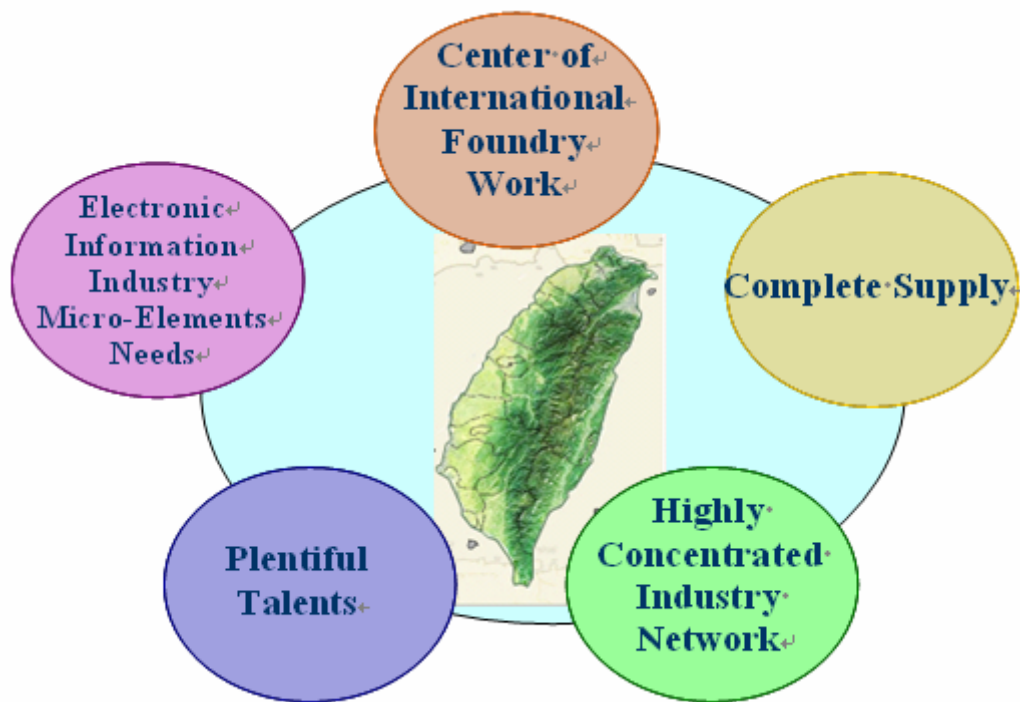
(II) **Analysis of a Gap in the Industry Supply Chain, Investment Niche, and Prospective Foreign Investor**

Major machinery industries in Taiwan like tool machine, manipulator tool, woodworking machine and shoemaking machine are all located in central Taiwan; mold industry clusters are in northern Taiwan; plastic machine industry gathers in southern Taiwan. Through information exchange among tight industry networks, central satellite companies and the concerted system, the cost of trading and the uncertainty could be reduced to avoid risk. All these facts indicate that Taiwan's competitiveness on cost in the global machinery industry.

Rich in talents is another advantage of Taiwan. The highly-available advanced education brings many well-qualified high-tech talents. These talents are all well-versed in R&D and with strong capabilities to commercialized techniques. Furthermore, for the future development of 3C products aiming at minifying in size and weight, the portable micro-device is

the trend while demand of micro-elements piles up. In the future, the advanced requirement of processing techniques will make Taiwan the excellent trial base for developing precision machinery industry.

Taiwan Machinery Industry Development Advantage



Source: organized for the present study, 2008/1

Taiwan machinery industry is export-oriented. The output value amounted to NTD588.3 billion in 2006, with 77% for exporting. However, the industry gap for Taiwan machinery industry in mechanical equipment and key components have to rely on imports. The mechanical equipment with high unit price is exported for cutter manufacturing, ball screw, linear guideway, auto components, electronic products, production on semiconductors and LCD.

Taiwan should invite potential foreign manufacturing businesses on key components, such as Heidenhain, the control system business from Germany,

SECO, ESA, The BIT, Valenite, Bilz, Emag Maschinenfacrik, EXCELLON, ACC, SCHMOLL and so on.

(III) Major Suppliers in Taiwan

With the development of technologies, Taiwan machinery industry is actively heading toward the fields of high speed, high precision, and high added value. In addition to semiconductor processing equipment and image display processing equipment, Taiwan in matching the industry and having the main shaft of minification, systematization, and intelligence, remains involved in the hi-tech fields with high added value, such as linear machine tool, compound machine tool, non-traditional processing equipment.

At the center location of ocean transportation in Asia, Taiwan has the key connecting function for development in Asia. Taiwan possesses capabilities to execute the OEM and to meet the hi-tech level of U.S.A and Japan. Taiwan also is capable of integrating local and overseas production bases, to stand out in the global supply chain. At present, some multi-national corporations have regarded Taiwan as the center for purchasing, R&D, manufacturing and operation, which brings great benefits to Taiwan on developing precision machinery industry of high added value.

Taiwan Machinery Industry Major Companies

Machinery Industry	Companies
Tool Machine	TONG-TAI MACHINE & TOOL CO., LTD., Awea Mechantronic Co. LTD., Victor Taichung Machinery, Taiwan Takisawa, YCM, Quaser Machine Tools, Inc., Fair Friend Enterprise Group, Goodway Machine Corp., Chin Fong Machine Industrial Co., LTD., Shieh Yih Machinery Industry Co., LTD., Ching Hung Machinery & Electric Industrial Co., Ltd.
Metal Manipulator Machine	Basso Industry Corp., Jenn Feng Co., Ltd., De Poan Pneumatic Corp., Rexon Industrial Corp., Ltd, Kinik Copamny Ltd.
Weave and Cloth	Zeng Hsing Industrial Co., Ltd., Taiwan Janome Sewing

Machine	Machine Co., Ltd., Pai Lung Machinery Mill Co., Ltd., LK & LH Co., Ltd., Sunbeen Precision Machine Inc.
Woodworking Machine	Anderson Industrial Corp. Chiu Ting Machinery Co., Ltd., Chang Type Industrial Co., Ltd.
Rubber Plastic Machine	Fu Chun Shin Machinery Manufacture Co., Ltd. Chen Hsong Machinery Taiwan Co., Ltd., Chuan Lih Fa Machinery Works Co., Ltd.
Electronic and Semiconductor Equipment	Mirle Automation Corporation, Foxsemicon Integrated Technology Inc., Control Semiconductor Co., Ltd., Gallant precision Machining Co., Ltd., Chroma Ate Inc., Test Research, Inc., TKK, Ta Liang Technology Co., Ltd.
Machine Component	HIWIN Technologies, Corp., Tung Pei Industrial Co., Ltd., Hota Industrial MFG. CO., Ltd., Keyarrow (Taiwan) Co., Ltd.

Source: Industrial Technology Research Institute IEK reorganize, 2007/12