ITALIAN TRADE AGENCY
ICE - Italian Trade Commission
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CHINA'S MACHINE TOOL INDUSTRY, MARKET AND REGULATIONS

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1.1 Overview of China's Economy, Market Performance, and the Main Indicators of the Machine Tool Industry (January 2025)

1.1.1 Main economy indicators (summary of the highlights)

- Mild increase in prices of most commodities, with a few exceptions

  In January 2025, the retail prices of commodities rose by 0.5% year-on-year; among them, commodity prices in urban areas rose by 0.6% year-on-year, and commodity prices in rural areas rose by 0.3% year-on-year.

  By product type, food & tobacco & alcohol prices rose by 0.6% year-on-year; livestock & meat prices rose by 2.5%; culture & entertainment prices rose by 1.7%; in contrast, transportation and communication prices fell by 1.1% and 0.6% respectively.

- General decline in industrial producer prices, in line with the long-term trend

  In January 2025, the national industrial producer prices (ex-factory and purchasing prices) fell by 2.3% year-on-year, after already one year of continuous decline.

  By category, the prices of productive materials fell by 2.6%; the prices of extractive industry fell by 4.9%; the prices of processing industry fell by 2.7%; prices of daily necessities and consumer durables fell by 0.5% and 2.6% respectively.

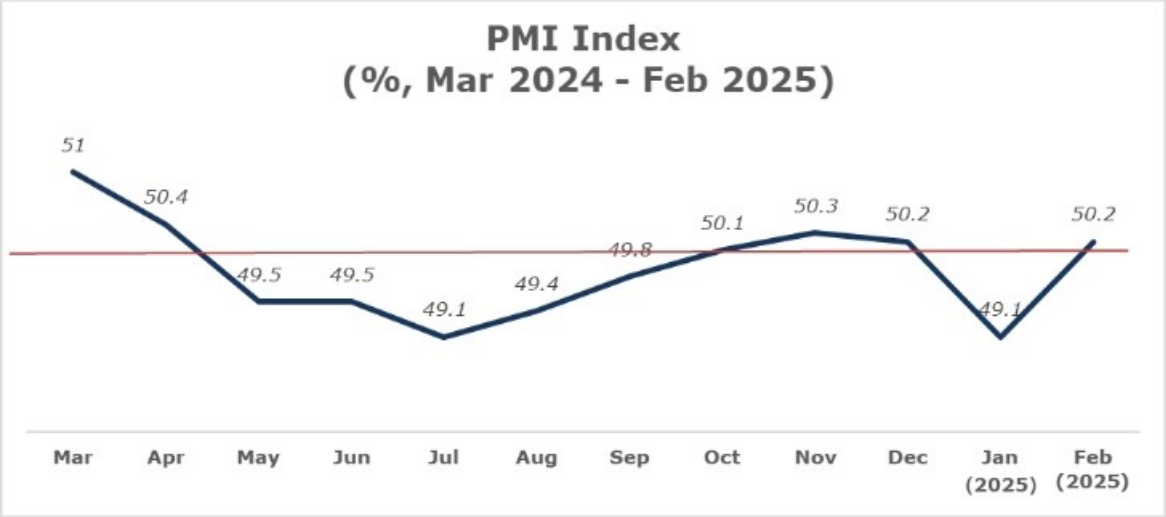
- Manufacturing PMI Index (February 2025)

  In February, the Purchasing Manager Index (PMI) for the manufacturing industry was 50.2%, showing a slight rebound after the contraction in January.

  Reasons for the industrial rebound:

  1)The rising purchasing prices for the core materials of the manufacturing industry.

  2) Enterprises (particularly large-scale ones) came back to full operation after the Spring Festival.



**Notes: A PMI index over 50 represents expansion within the manufacturing sector compared with the prior month; a reading under 50 represents contraction; and a reading at 50 indicates that the industry size remains unchanged.*

- PMI and component indexes (%) of China's manufacturing industry (Feb 2025)

	PMI	Production	New order	Raw material inventory	Employee	Supplier delivery time
Mar 2024	50.8	52.2	53.0	48.1	48.1	50.6
Apr 2024	50.4	52.9	51.1	48.1	48.0	50.4
May 2024	49.5	50.8	49.6	47.8	48.1	50.1
Jun 2024	49.5	50.6	49.5	47.6	48.1	49.5
Jul 2024	49.4	50.1	49.3	49.9	48.3	49.3
Aug 2024	49.1	49.8	48.9	47.6	48.1	49.6
Sep 2024	49.8	51.2	49.9	47.7	48.2	49.5
Oct 2024	50.1	52	50	48.2	48.4	49.6
Nov 2024	50.3	52.4	50.8	48.2	48.2	50.2

Dec 2024	50.2	52.1	51	48.3	48.1	50.9
Jan 2025	49.1	49.8	49.2	47.7	48.1	50.3
Feb 2025	50.2	52.5	51.1	47	48.6	51

- The manufacturing industry was showing a slight rebound, after the contraction in January.
- The production activities of the manufacturing enterprises came back to full operation after the Spring Festival.
- New market order of the manufacturing industry displayed a moderate increase.
- Inventories of raw materials was largely decreasing.
- Unemployment situation of the manufacturing industry was still decreasing.
- The delivery time of raw materials shortened to some degree.

1.1.2 Machine tool industry indicators (of the entire year of 2024)

According to data from China Machine Tool Industry Association, in the entire year of 2024,

- China's machine tool industry achieved a total revenue of 104.7 billion RMB, down by 5.2% year-on-year; the industry achieved a total profit of 26.5 billion RMB, down by 76.6% year-on-year, with a profit margin of 2.6%.
- The production value of metal-processing machine tools hit 20.5 billion yuan, up by 5.1% year-on-year; the consumption value of metal-processing machine tools hit 185.6 billion RMB, up by 1.4% year-on-year.
- China's international trade of machine tool products was valued at 31.9 billion USD, down by 0.3% year-on-year. (Import: 10.2 billion USD, down by 8.6% year-on-year; Export: 21.7 billion USD, up by 4.0% year-on-year).
- Top 5 exported/imported machine tool product categories:

	EXPORT		**IMPORT**	
	Category	***Value (in 100 million USD)***	***Category***	***Value (in 100 million USD)***
1	Specialty machine tools	23.3	Machine centers	18.8
2	Lathes	8.1	Specialty machine tools	8.3

3	Machine centers	8.1	Grinding machines	8.3
4	Forming and bending machines	7.2	Gear processing lathes	5.5
5	Cold metal working presses	5.6	Lathes	5

1.2 Overview of South China Cluster Analysis

1.2.1 Cluster overview

South China cluster consists of Guangdong Province, Hainan Province, and Guangxi Zhuang Autonomous Region. Among these three provinces/regions, Guangdong comes top in terms of the economic size and manufacturing prowess.

PROVINCE/REGION	SUMMARY (DATA OF 2024)
Guangdong	✧ The GDP reached 14.1 trillion-yuan, accounting for 10.4% of the national GDP (GDP ranked first in China for 36 consecutive years). ✧ Total import & export volume exceeded 9 trillion yuan, showing a year-on-year increase of 9.8% (total import & export volume ranked first in China for 39 consecutive years). ✧ Accommodating about 77,000 high-tech enterprises, with the total R&D expenditure hitting about 510 billion yuan. ✧ A national leader in high-tech industry, with outstanding manufacturing and innovation capabilities.
Hainan	✧ The GDP reached 793.6 billion yuan. ✧ Dominated by the service and agriculture industry (benefiting from the Free Trade Port policy), with a weak industrial foundation.
Guangxi	✧ The GDP reached 2,864.9 billion yuan, with a relatively diverse industrial structure. ✧ Economic scale is significantly larger than that of Hainan, and its industrial structure is more diverse.

	✧ However, focusing more on traditional industries such as nonferrous metal processing, but is now gradually transforming into green industries.

1.2.2 Main players

Compared to East China (Shanghai, Suzhou), South China (Guangdong) is a less popular destination for the machine tool industry due to historical factors. Shanghai and Suzhou built up a robust machine tool industry foundation as part of the planned economy from 1953 to 1978; by contrast, less attention was paid to Guangdong by state-owned machine tool enterprises during that period.

Machine tool companies in Shanghai and Suzhou are focusing on the downstream clients in heavy industries, which have a greater demand for high-end machine tools; whereas the companies in Guangdong are mostly serving general civilian products and rough machining parts, resulting in a smaller demand for high-end machine tools (the majority of machine tool companies in Guangdong are privately-owned and operating in the middle-to-low market segments).

Below is a list of representative machine tool companies in South China (Guangdong):

Company name	Location	Main products
Guangdong Create Century Intelligent Equipment Group Corporation Limited	Guangdong	• Focus on the R&D and production of middle-to-high-end CNC machine tools, especially five-axis linkage machining centers.
Guangzhou Machine Tool Works Co., Ltd.	Guangdong	• Founded in 1958 as the largest CNC machine tool manufacturer in South China. • Main products include (middle-to-low-end) gantry machining center, vertical & horizontal machining center,

		turning center, CNC lathe, etc.
GSK CNC Equipment Co., Ltd.	Guangdong	• The leading enterprise in the R&D and manufacturing of CNC machine tool systems and industrial robots in China. • Main products include servo drives, servo motors, CNC systems for machine tools, etc.
Guangdong Harvest Star Technology Co., Ltd.	Guangdong	• Main products include (middle-to-low-end) drilling & tapping machining centers, vertical & horizontal machining centers, gantry machining centers, engraving & milling machining centers, profile machining centers, portal vertical machining centers, etc.
Guangzhou Hachi CNC Equipment Co.Ltd	Guangdong	• Specialize in the production of high-end intelligent CNC machine tools such as high-precision CNC composite profile machining center, CNC gantry machining center, five axis linkage profile machining centers, etc.

1.2.3 Major upstream industries

Province	Performance in main machine tool upstream industries
Guangdong	▪ In a leading position in China's precision parts industry, with an industrial cluster containing cities like Guangzhou, Shenzhen, and Dongguan; most

	companies in the industry are privately owned; with an integrated and complete supply chain. ▪ Guangdong is laying forth policies (Action Plan for Cultivating Strategic Emerging Industry Clusters for High-end Equipment Manufacturing) to promote the R&D and production of key machine tool components such as high-end CNC systems, laser rotary cutting heads, and high-speed & high-precision electric spindles.
Guangxi	▪ The upstream industries of machine tool products are still in the early stage, with high-end manufacturing relying on the supply of external resources and core technologies remaining weak.
Hainan	▪ A weak industrial base and small market size for the upstream industries. ▪ Hainan province's 14th five-year-plan stimulates a number of upstream industries such as precision machinery parts; the Free Trade Port policy initiative provides support to attract foreign-invested enterprises (and boost technological innovation).

1.2.4 Major downstream industries

Sector	Geographical features
Automotive	▪ The largest automobile industry base in China's south cluster is located in Guangdong (Guangzhou, Shenzhen, Foshan). ▪ Guangdong's new energy vehicle production reached 3.6178 million units in 2024 (a year-on-year increase of 43%), accounting for about 1/4 of the country's total production.
Mold	▪ The mold manufacturing industry in the south cluster (particularly Guangdong) is in the leading position in China, with a tremendous edge in plastic and hardware molds. ▪ Guangdong's mold manufacturing industry is dominated by small-and-medium-sized enterprises.
3C	▪ The smartphone production in Guangdong accounts for more than 40% of the country's total, with the

	output of some other products like home appliances and electronic information ranking top in the world.
Aerospace	▪ China's south cluster still lags behind other regions e.g. Beijing, Shaanxi, Sichuan, Liaoning, in the aerospace industry. ▪ By 2026, Guangdong plans to build the world's leading low-altitude industry, and the size of the low-altitude economy (economic activities and industries centered around manned and unmanned aerial vehicles operating in airspace typically below 1,000 meters (3,280 feet) above ground such as drone deliveries for goods and food) is expected to exceed 300 billion yuan.
Shipbuilding	▪ Guangdong Longxue Shipbuilding Co., Ltd, one of the three major shipbuilders in China, is based in Guangzhou. ▪ Jiangmen city is the second largest shipbuilding base in Guangdong, specializing in medium-sized ships and offshore engineering equipment. ▪ South China cluster is facing the fierce competition from the traditional shipbuilding provinces, such as Jiangsu and Zhejiang.
Construction Machinery	▪ The construction machinery industry in South China cluster is in the front (despite not leading) position in the country.
Metallurgy	▪ The metallurgical industry in China's south cluster is relatively weak with a low rate of steel self-sufficiency.

1.3 Overview of the Upstream Industry, Enterprise Geographical Distribution and the Supply Trends

1.3.1 Major upstream application overview: functional parts industry

Major functional parts of the machine tools include tool magazines, gears, milling heads, tool holders, CNC turntables, etc, each with unique functions:

Tool magazine	

	Ensure the precision, automation and efficiency of machine tools by quickly replacing tools and reducing downtime.
Gear	Ensure the accuracy of power transmission.
Milling head	Determine the quality of the cutting process.
Tool holder	Affect the stability and accuracy of the machine tool.
CNC turntable	Realize multi-angle high-precision processing.

Note:

Tool magazines and CNC turntables are of vital importance when it comes to the precision and efficiency of machining. The turntable (especially five-axis turntable) is an important part of multi-axis machining centers, which can realize the processing of complex curved surfaces, multi-angle bevel operations, and multi-faceted processing in one clamping. It significantly improves the processing accuracy and efficiency while reducing the clamping error. Tool magazine directly affects the automation level and processing efficiency of machine tools. An efficient and stable tool magazine system can quickly replace tools and reduce downtime. It is one of the core components of CNC machine tools to improve productivity.

1.3.2 Enterprise geographical distribution

Below is a list of leading providers for main machine tool function parts (turntable and tool magazine) in China.

Company	HQ location (China office)	Main products	Country of Origin
GSA+ Xuyang Precision Machinery (Jiashan) Co., Ltd.	Zhejiang	Turntable	Taiwan (China)
Shanghai Tanshing Enterprise Co., Ltd.	Shanghai	Turntable	Taiwan (China)
Kitagawa Corporation (Shanghai)	Shanghai	Turntable	Japan
TSUDAKOMA Wujiang Office Suzhou	Jiangsu	Turntable	Japan
Shanghai Detron Industrial Automation Co., Ltd.	Shanghai	Turntable	Taiwan (China)
Sandvik Coromant	Shandong	Tool magazine	Sweden

Kennametal (China) Co., Ltd.	Tianjin	Tool magazine	America
Iscar International Trading (Shanghai) Co., Ltd.	Shanghai	Tool magazine	Israel
Mitsubishi Materials Management (Shanghai) Co., Ltd.	Shanghai	Tool magazine	Japan
Kesler (Shanghai) Machine Tool Spindle Maintenance Co., Ltd	Shanghai	Tool magazine	Germany

Source: ITA Machine Tool Desk, In3act Analysis

Additional notes:
China's CNC turntable market is mainly occupied by enterprises from Taiwan (China), with few large-scale enterprises from the mainland. Taiwan's (China) CNC turntable technology is higher than that of mainland, but slightly lower than that of developed countries such as Germany, Japan and Italy.
Tool magazines, are often offered as part of the comprehensive solutions by leading foreign enterprises in China (together with cutting tools, the management systems), therefore improving production efficiency.

1.3.3 Supply trends of functional parts industry

CNC rotary table

According to the research of LP Information (an institute based in China), in 2021, the sales revenue of the CNC rotary tables in China reached out 543.2 million USD, and is expected to reach 1,116.8 million in 2028 (displaying a CAGR of 10.47%).

Future trends of China's CNC rotary table market:

- ✓ Increasing competitiveness of domestic products: At present, the production of high-end CNC rotary tables still relies heavily on foreign enterprises, but with the technology advancement of local manufacturers, made-in-China CNC rotary tables are expected to become increasingly competitive and gradually replace foreign products.
- ✓ Application in high-end machining fields: with the rising demand for high-end downstream products such as five-axis CNC machine tools, the application of CNC rotary tables in high-end machining fields, such as aerospace and automobile, will be expanded.

Tool magazine

- ✓ With increasing focus on machine tool flexibility, reliability, and efficiency, tool magazine producers are pursuing faster tool changing speeds, greater tool capacity, and enhanced durability.
- ✓ The growing needs for five-axis machining and complex components production are driving up the market for sophisticated tool management systems, which are capable of handling intricate geometries and optimizing tool usage.

2. Italian Machine Tool Manufacturers' "4P Strategy" in China-- Product, Price, Place, and Promotion

China has always been an enticing market for Italian machine tool manufacturers, given the extensive manufacturing base, a robust supply chain, and the vast downstream demand. In the past decades, Italian companies has been outperforming China's local enterprises in the high-end market segment mainly due to the advanced technology and superior customization capabilities. However, with China's local enterprises rapidly catching up, the aspect of marketing strategy ("4P Strategy") is becoming increasingly important for Italian companies to maintain an edge in China's competitive landscape.

Product strategy

Italian machine tool manufacturers are leveraging their extensive customization experiences to offer flexible machine tool and automation solutions, tailored to the needs of Chinese clients. For example, an Italian enterprise has introduced a multi-spindle, multi-turret turning center for processing components in new energy vehicles, which not only boosts production efficiency but also fits in with high-precision requirements; and another Italian enterprise's expertise in machining large structural components and high-rigidity materials helps the company win recognition in China's high-end machine tool markets including aerospace, defense, and shipbuilding.

In addition, Italian machine tool manufacturers can establish technology centers in China, so as to collaborate with Chinese technology entities (automation, robotics, CNC system) in the R&D of new products with higher levels of adaptability and competitiveness.

Price strategy

Benefiting from the advanced technology (despite being caught up by local competitors), craftsmanship, and defect reduction, Italian machine tool manufacturers often price their products higher than mid-to-low-end products by Chinese counterparts, particularly for high-precision components. Also, localized assembly and production of components help reduce the tariff and logistic costs of Italian machine tool manufacturers, further enhancing the profit margin.

Place (distribution) strategy

It is essential for Italian machine tool manufacturers to set up offices, technology support centers, and warehouses in China's key manufacturing regions, such as the Northeastern Region, the Yangtze-River Delta Region and the Pearl-River Delta Region, to provide spare parts and timely after-sales service for customers.

Moreover, Italian machine tool manufacturers should consider collaborating with local agents with a mature distributing network, so as to tap into the local machine tool market more easily and perhaps even expand into vertical markets like defense, shipbuilding, aerospace and automotive.

Promotion campaign strategy

- ✓ Actively participate in major industry exhibitions & seminars in China (etc. CIMT and CCMT)—to increase brand visibility and earn consumer trust through live demonstrations and technical exchanges.
- ✓ Use digital marketing platforms like Wechat, Douyin, and Bilibili for product promotion, as well as posting videos of equipment operations & user experience & maintenance guide—to enhance customer interaction and brand stickiness.
- ✓ Collaborate with professional magazines, industry opinion leaders, and authoritative associations to obtain third-party endorsements—to consolidate the professional image and credibility in the high-end market.

3. Machine tool industry exhibitions: Recent highlights

Shanghai International Machine Tool Exhibition 2025 (CME 2025) was held from 3rd to 6th March in Shanghai, marking the 11th anniversary of the event series. With over 1200 vendors (from both domestic and international markets) in place, this large event laid focus on areas such as new energy vehicles, electric equipment manufacturing, and aviation solutions, displaying core functional components of CNC machine tools, laser processing equipment, metal grinding tools, etc. The

exhibition venue was divided into 5 different zones: metal-cutting machine tools, metal-forming machine tools, grinding tools, machine tool accessories, as well as Smart Factory.

A double-spindle double-turret CNC turning center made presence in the exhibition event, featured by the dual-turret follow-up processing and dual-spindle synchronous dynamic material receiving functions. This CNC turning center has two channels that can process metal independently, and the sub-spindle adopts an electric system so as to achieve high-torque, high-efficiency and precision machining.

Outstanding features of the CNC turning center:

High efficiency-- the maximum speed of the spindle is 5000 rpm/min, and the rapid movement can reach 30 m/min. Also, by incorporating Taiwan(China)'s latest CNC system, the X-Y-Z-C axis linkage interpolation can be realized,

High rigidity and stability-- by adopting the flat bed, 30-degree inclined guide rail, and reinforced rib design, the distortion and thermal deformation can be minimized.

Another machine tool product that caught attention is the multi-axis laser welding workbench, featured by the automatic welding system. The step-by-step mechanism of the workbench system is:

- Capturing real-time images of the welding area by using the CCD camera as a sensor (for welding seam detection).
- With information processing and machine vision technology, the captured images are transferred into the computer memory for follow-up operations.
- Processing the obtained welding information in the computer memory and then sending it to the motion control card.

- Controlling the actuator to perform the necessary welding movements (ultimately achieving the welding automation).

4. Trade Exchange Data in the Machine Tool Industry between Italy and China (January-November 2024)

Italy's machine tool exports and imports worldwide (in millions of euros, Jan-Nov 2024)

	Export			Import		
	Value	YOY change 2023-2024	Percentage share	Value	YOY change 2023-2024	Percentage share
Asia	656.1	+5.2%	18.8%	263.3	-43.6%	27.4%
Oriental Asia	283.9	-10.9%	8.1%	255.2	-43%	26.5%
China	216	-13.2%	6.2%	64.1	-16.3%	6.7%
Worldwide total	3493.5	+1.9%		961.5	-40.6%	

Italy's machine tool exports and imports with China by category (in millions of euros, Jan-Nov 2024)

Marked blue are the respective indicators for worldwide total

		Value	YOY change	Share of worldwide total
Metal-cutting machine tools	Export	162.5 (1469.4)	-11.6% (+0.8%)	10.9%
	Import	25.2(63.5)	-19.1%(-41.4%)	4.0%
Metal-forming machine tools	Export	37.7(345.9)	-0.9%(-14.6%)	2.4%
	Import	12.5(178.6)	-44.5%(-36.6%)	7.0%
Non-conventional technology machine tools	Export	17.1(396.8)	+22.0%(+6.9%)	4.3%
	Import	25.4(150.5)	-12.1%(-41.9%)	16.8%

Key takeaways:

From January to November 2024, Italy was pivoting the focus from Oriental Asia countries (South Korea, Japan, China) into "Global South" countries for machine tool export. Meanwhile, Italy's machine tool import was tremendously decreasing (roughly cut by a half) on a worldwide level.

From January to November 2024, Italy's machine tool trade with China was falling for almost all product categories (with import falling more sharply than export), except the fact that Italy's export of non-conventional technology machine tools was stilling showing a robust growth momentum.

5. Tenders and Bids (March 2025)

Announcement for Horizontal CNC Lathe of Large Bearing Division

Required by Luoyang Bearing Group Co., Ltd.

Action deadline: Mar 2, 2025

Announcement of Centralized Procurement of Lathe Spare Parts Required by Jiugang Group **Action deadline: Mar 3, 2025**
Announcement of Second Tender for Procurement Project (Section 3) of 5-meter Vertical Lathe and Other Equipment Required by Luoyang Bearing Science & Technology Co., Ltd. **Action deadline: Mar 7, 2025**
Announcement of Procurement Project of Heavy-Duty Slant Bed CNC Lathe Required by Ansteel Group Zhongyuan Industrial Development Co., Ltd. **Action deadline: Mar 14, 2025**
Announcement of Procurement Project of Shanghai Zhenhua Heavy Industry - EDM CNC Wire Cutting Machine Tool Required by Shanghai Zhenhua Heavy Industry (Group) Co., Ltd. **Action deadline: Mar 17, 2025**
Announcement of Procurement Project of Lathe Tools and Accessories Required by Beitai Iron and Steel (Group) Co., Ltd. **Action deadline: Mar 19, 2025**
Announcement of Procurement Project of Dual Spindle CNC Turret Lathe Required by Huangshi Dongbei Refrigeration Co., Ltd. **Action deadline: Mar 20, 2025**
Tender Notice for Reinforcement Processing Equipment (Second Edition) Required by Equipment Centralized Tendering and Procurement Center of China Railway 25th Bureau Group Co., Ltd. **Action deadline: Mar 27, 2025**

Announcement of Electric Spark Numerical Control Wire Cutting Machine Procurement Project Required by Shanghai Zhenhua Heavy Industry (Group) Co., Ltd. **Action deadline: Mar 27, 2025**
Announcement of Procurement Project of CNC Lathe (Second Announcement) Required by Shenyang Micro Control Flywheel Technology Co., Ltd. **Action deadline: Mar 27, 2025**