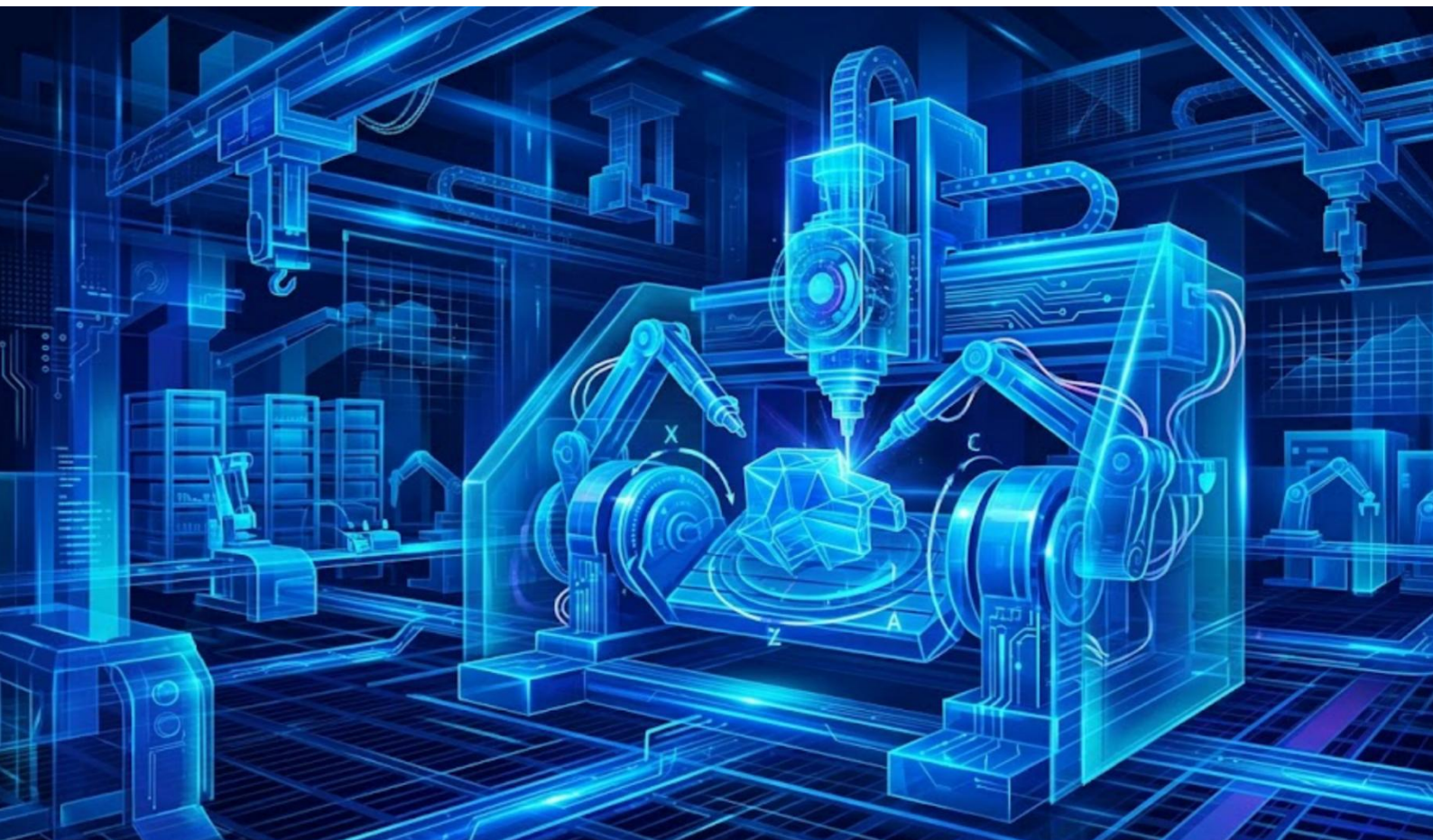


# CIC 灼识



## China's CNC Machine Tool Industry Report

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## Executive Summary

CNC machine tools serve as the core representative of intelligent manufacturing equipment, characterized by high technological complexity and strategic global importance. In China, while no national regulatory classification standard exists, the industry categorizes these tools by structural features, technological level, and the number of simultaneous axes—the latter being a critical benchmark for high-end manufacturing.

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## 1. Market Overview

### 1.1 Market Definition

CNC machine tools serve as the key representative of intelligent manufacturing equipment, standing out for their exceptional technological complexity and strategic market significance in the global manufacturing landscape. Equipped with CNC systems, they automatically process parts by logically running programmes defined by specific codes and encoded instructions, boosting both precision and efficiency.

Currently, the PRC government has no national regulatory standards for classifying CNC machine tools, and the industry adopts multiple classification methods: by structural features (vertical, horizontal, gantry and turning-milling types), by the number of simultaneous axes (five-axis and non-five-axis), and by technological level (high-end, mid-end and low-end categories).

#### **Definition of Five-axis CNC Machine Tools**

Five-axis CNC machine tools refer to CNC machine tools with five-axis simultaneous functionality and feature high-speed, precision, intelligent, and multi-processing functions along with

network communication functions. With additional rotary axes over non-five-axis CNC machine tools, they allow tools to move along linear feed axes and approach workpieces at more flexible angles, delivering superior processing quality and efficiency and making them the preferred solution for precision machining of complex spatial surfaces.

## 1.2 Market Size and Growth

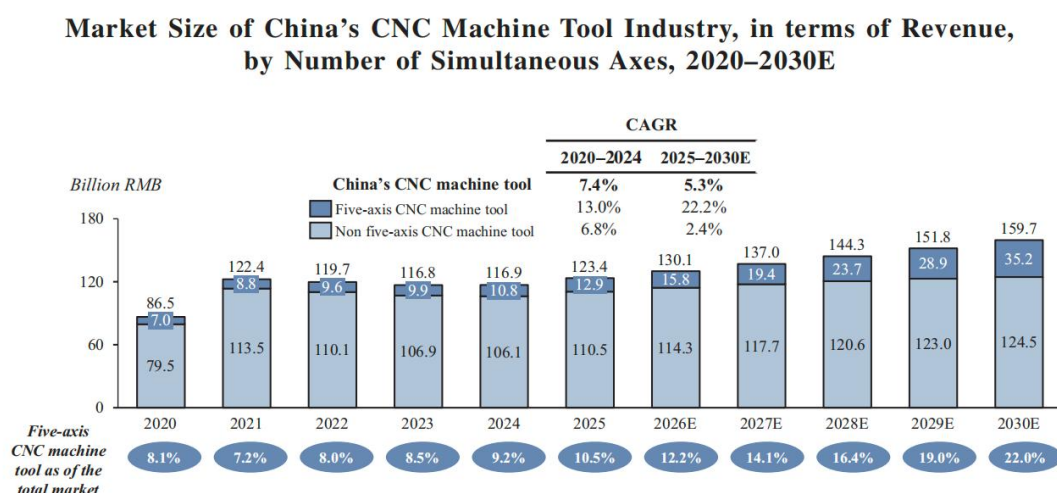
### **Market Size of intelligent manufacturing equipment**

At present, the development of intelligent manufacturing equipment has become the focus in the global technological competition. The global intelligent manufacturing equipment market reached RMB8,632.3 billion in 2025 and is forecast to hit RMB13,871.8 billion by 2030 at a 10.0% CAGR. China's market has shown robust growth, hitting RMB2,885.3 billion in 2025, accounting for about 33.4% of the global market, and is projected to reach RMB5,337.4 billion in 2030 with a higher CAGR of 13.1%.

Against this backdrop, as a core high-end segment of intelligent manufacturing equipment, CNC machine tools are benefiting directly from China's vast manufacturing demand and rapid industry upgrade.

## Segmentation by number of simultaneous axes

In terms of revenue, China's CNC machine tool market grew from RMB 86.5 billion in 2020 to RMB 123.4 billion in 2025, and is projected to reach RMB 159.7 billion by 2030 (5.3% CAGR). Within this industry, the five-axis CNC machine tool segment increased from RMB 7.0 billion in 2020 to RMB 12.9 billion in 2025 (10.5% market share), and is expected to surge to RMB 35.2 billion by 2030 (22.2% CAGR), expanding its market share to 22.0%.



Source: CMTBA, GACC, MIR, CIC Reports

China's CNC machine tool industry features a clearly stratified localization pattern. Benefiting from lower technical barriers, non-five-axis tools achieved a localization rate exceeding 77.0% in 2025. Conversely, high technological barriers limited the 2025

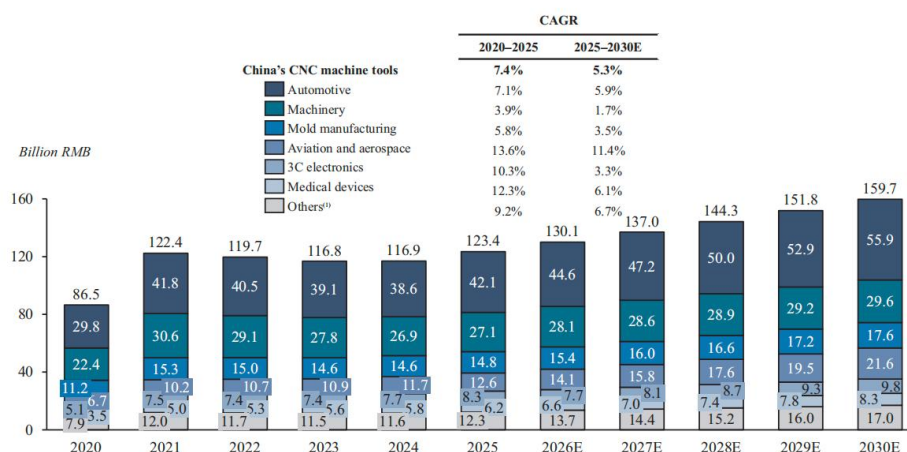
localization rate of five-axis CNC machine tools to 59.5%. Driven by domestic suppliers accelerating technical breakthroughs to match international performance standards and dismantle overseas dominance, the localization rate for five-axis CNC machine tools is projected to surpass 78.0% by 2030.

### **Segmentation by downstream application scenarios**

Currently, major downstream application scenarios for CNC machine tools include automotive, machinery, and die and mold manufacturing. In terms of revenue, in 2025, the market sizes of CNC machine tools in these sectors reached RMB42.1 billion, RMB27.1 billion, and RMB14.8 billion, respectively, accounting for 34.1%, 22.0%, and 12.0% of the total market.

In addition, the demand in aviation and aerospace, 3C electronics, and medical devices is expected to further grow. The market sizes for these sectors are projected to grow from RMB12.6 billion, RMB8.3 billion and RMB6.2 billion in 2025 to RMB21.6 billion, RMB9.8 billion and RMB8.3 billion in 2030.

## Market Size of China's CNC Machine Tool Industry, by Downstream Application Scenarios, in terms of Revenue, 2020–2030E



*Note: The market size of China's CNC machine tools in other sectors include the market sizes of CNC machine tools in sectors such as railway transportations, shipbuilding, new energy photovoltaics, low-altitude economy and robotics.*

Source: CMTBA, GACC, MIR, CIC Reports

## 1.3 Market Size of Five-axis CNC Machine Tool Industry

### Segmentation by structures

According to different structural features, five-axis CNC machine tools can be divided into five-axis horizontal CNC machine tools, five-axis turning-milling CNC machine tools, five-axis vertical CNC machine tools and five-axis gantry CNC machine tools. Simpler vertical/gantry five-axis CNCs dominate the market, whereas complex horizontal/turning-milling models for high-end

manufacturing see rising market and localization growth.

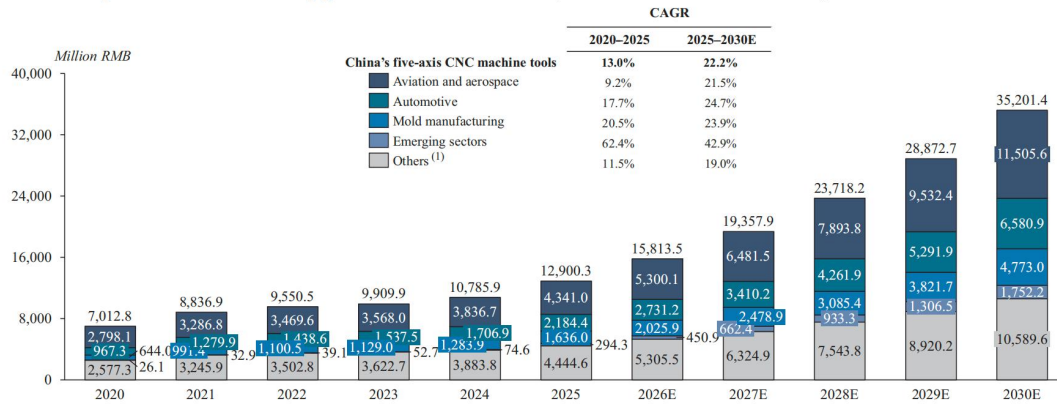
In terms of revenue, the market for horizontal & turning-milling five-axis CNCs rose from RMB1,016.9 million in 2020 to RMB1,693.7 million in 2025 (10.7% CAGR), and will hit RMB5,119.6 million in 2030 (24.8% CAGR).

### **Segmentation by downstream application scenarios**

The growing demand for high-end manufacturing is driving the increased adoption of five-axis CNC machine tools across various sectors, with aviation and aerospace currently representing the most significant scenario, accounting for 33.7%. Crucially, driven by domestic substitution, the localization rate of this sector is also expected to increase from 54.6% in 2025 to 73.0% in 2030.

Moreover, the vigorous development of general sectors is also expected to drive the continuous growth in the demand for five-axis CNC machine tools. Alongside these traditional markets, emerging sectors including robotics and the low-altitude economy will further accelerate adoption as they demand the high-precision processing capabilities unique to five-axis systems.

## Market Size of China's Five-axis CNC Machine Tool Industry, by Downstream Application Scenarios, in terms of Revenue, 2020–2030E



*Note: The market size of China's five-axis CNC machine tools in other sectors include the market sizes of five-axis CNC machine tools in sectors such as medical devices, 3C electronics, machinery, shipbuilding, new energy photovoltaics and integrated circuit equipment.*

*Source: CMTBA, GACC, MIR, CIC Reports*

## 2. Key Growth Drivers

### 2.1 Key Drivers of Five-axis CNC Machine Tool Industry

#### **Cyclic rebound & Replacement wave**

China's machine tool industry follows a roughly 10-year iteration cycle, with the last production peak in 2011-2014, and is now transitioning from a downturn to a new demand wave. Stricter environmental standards are also accelerating outdated equipment replacement, creating strong demand for five-axis CNC machine tools.

#### **Domestic substitution demand**

Developed countries have long treated five-axis CNC machine tools as strategic equipment, imposing technical blockades and export restrictions. Accelerating localization has become a national strategy and industry consensus to mitigate supply chain risks.

#### **Technological breakthroughs**

Domestic suppliers' independent R&D and large-scale production of precision components have lowered manufacturing costs, while AI and digital tools have reduced usage costs. Lower costs and complexity are accelerating penetration across various sectors.

## **Favourable policies and regulations**

The PRC government introduced a series of policies to create a favourable environment for China's five-axis CNC machine tool industry. These policies cover multiple key support areas, including promoting the localization of core industry components, accelerating the renewal and consumption of machine tool equipment, providing targeted financial subsidies for technological research and development, implementing preferential tax measures to reduce corporate operational burdens, and strengthening government procurement support to expand the market application of domestic high-end CNC products.

## **2.2 Key Trends of Five-axis CNC Machine Tool Industry**

### **New materials and new structural technologies drive performance breakthroughs of five-axis CNC machine tools.**

Carbon fiber composites, with high specific stiffness, low density and near-zero thermal expansion, are key to overcoming traditional technical bottlenecks. Applied to machine bed components, they significantly reduce weight and energy consumption while enhancing rigidity, vibration resistance and thermal stability, enabling high-speed precision and stability with broad application

potential.

**AI technologies are transforming application models.**

AI will revolutionize complex existing CNC systems and programming software by enabling direct processing instruction generation from 3D models and intelligent decision-making via multi-modal large models. Combined with digital twin technology, it also supports virtual debugging, energy optimization, fault prediction, environmental adaptation and real-time precision calibration.

**Five-axis CNC machine tools will gradually replace non-five-axis models.**

With clear advantages in processing accuracy and efficiency, they excel at complex tasks and high-end manufacturing. Technological advancements further improve their cost-effectiveness, making them the mainstream as non-five-axis tools show limitations in high-precision complex part processing.

**Domestic complete machine and core component suppliers are rising rapidly.**

Their product performance is increasingly comparable to international standards. With competitive pricing and localized

services, they are gradually replacing imports, shifting from single-machine sales to integrated solutions. Core component localization has also made significant progress with strong policy support.

### **Applications are expanding from industrial to consumer sectors.**

Miniaturized design, lower production costs and automatic toolpath generation have significantly reduced acquisition and operation barriers, extending five-axis CNC machine tools to consumer scenarios such as creative design, educational practice and personalized production.

## **2.3 Future Outlook**

China's CNC machine tool sector, as a vital subset of the intelligent manufacturing equipment industry, has emerged from its cyclical trough to usher in a powerful wave of equipment replacement. Looking ahead, the global industrial digitalization wave and favorable domestic policies will continue to drive the sustained and steady expansion of the broader intelligent manufacturing industry.

Notably, the five-axis CNC machine tool segment, as the fastest-growing and most technologically advanced subsector, is leading this industry-wide upgrade. However, China's five-axis CNC



machine tool industry faces four major challenges: intense market competition dominated by German and Japanese overseas suppliers, insufficient independent supply of core components such as CNC systems and rotary axes, shortage of interdisciplinary skilled talents and rising labor costs and limited acceptance in the general industrial market due to high equipment complexity and lack of necessary technical personnel and usage experience. Furthermore, the industry confronts five key entry barriers: technical and process, manufacturing, financial, talent and brand barriers.



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All statistical data presented is verifiable and grounded in information available as of the date of this report.



Extracts are refined summaries of in-depth CIC industry research reports, highlighting supply and demand trends, key growth drivers, R&D trends and future outlook, etc. of various segmented fields, integrating multi-dimensional insights such as expert interviews, market surveys and industry data analysis.

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