Machine Tools in China

Industry Study with Forecasts for 2017 & 2022

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INDUSTRY STRUCTURE
Demand to increase 9.2% per annum through 2017

Demand for machine tools in China is projected to increase 9.2 percent per year to 600 billion yuan in 2017. Gains will be stimulated by healthy growth in manufacturing production, especially in the industrial machinery and transportation equipment industries. In addition, a continuing shift in the product mix toward higher-value product types such as machining centers, CNC machine tools, and multitasking machine tools will help drive market gains in value terms. Moreover, increasing regulations regarding energy conservation will lead to growth in demand for energy-efficient machine tools.

Shipments to slightly outpace demand

Machine tool shipments in China are projected to slightly outpace demand through 2017, benefiting from sizable expansions in the domestic market plus rising demand for Chinese machine tools in a number of export markets as the quality of Chinese machine tools continues to improve. Exports of machine tools will rise at a strong annual rate through 2017, driven by improved product quality, especially in small CNC machine tools, while prices remain competitive.

China will continue to see its trade deficit in machine tools expand for the foreseeable future. As imports increase through 2017, foreign suppliers will continue to benefit from growing demand for the precise and sophisticated machine tools needed to manufacture advanced machines.

Metal cutting machine tools to remain largest segment

Metal cutting machine tools will continue to be the largest product segment in 2017, benefiting from a relatively wider range of applications in durable goods production and a comparatively greater variety of metal cutting product types. Growing demand for highly advanced and comprehensive metal cutting machines -- especially for machining centers and multitasking machines -- will also further boost product sales. Growth in demand for metal forming equipment is forecast to slightly outpace that of metal cutting machine tools through 2017, benefiting from strong growth anticipated in the motor vehicle, shipbuilding, aerospace, and power transmission and distribution industries.

Advances in key markets to track average industry pace

The industrial machinery and transportation equipment markets have the largest impact on overall machine tool sales, as they accounted for well over half of all demand in 2012. Gains in these two markets are forecast to be near the market average through 2017. Sustained plans to expand durable goods production, facility renovations, and new product innovation in all markets will continue to stimulate growth. Machine tool demand in the electrical and electronics market is also expected to expand near the average rate through 2017, benefiting from strong increases in fixed investment in the home appliance and power generating equipment industries.
Mechanical Presses -- Demand for mechanical presses in China is expected to grow 10.9 percent annually to ¥61 billion in 2017. Mechanical presses make up the largest product type of the other forging machine segment, accounting for 74 percent of demand in 2012. Mechanically driven mechanical presses are powered by mechanical power from a flywheel, crank, or clutch and are used to form or shape metal workpieces. Although mechanical presses are a relatively low-end product, mechanical presses will continue to be the largest product type of presses and other forging machines, accounting for 76 percent of demand in 2017, due to their efficiency and ease of repair. Unlike other machine tools, the market for mechanical presses is dominated by non-CNC types because mechanical presses as a product type are not especially advanced in technological terms; thus, non-CNC models generally are able to meet end-product requirements. However, going forward, non-CNC mechanical presses will face growing competition from CNC models and will lose market share.

Various types of mechanical presses are used for different purposes. For example, hot die presses produce parts with high rigidity and are suitable for large batch processing and large parts processing. Cold extrusion presses, on the other hand, are usually vertical types with a small table and are often used for processing small metal parts such as toothpaste tubes and bullet cases.

Hydraulic presses -- Demand for hydraulic presses is forecast to grow 10.5 percent annually to ¥13.0 billion in 2017. Growth will be driven by increases in both manufacturing output and export sales of a wide range of Chinese machines. However, product sales will be restrained to some degree by the limited technological capability of domestically produced hydraulic presses, especially for large-sized presses. Hydraulic presses use a hydraulic cylinder to generate compressive force and utilize liquid pressure to form metal workpieces. hydraulic presses are commonly used for forming metal workpieces with high precision and efficiency.

### TABLE III-1

<table>
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<th>Item</th>
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<th>2012</th>
<th>2017</th>
<th>2022</th>
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<td>44.5</td>
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<td>Metal Forming</td>
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### CHART V-1

**MACHINE TOOL DEMAND IN CHINA BY REGION, 2012**

(386 billion yuan)
Sample Profile, Table & Forecast

Dalian Machine Tool Group Corporation
100 Liaohe East Road
DD Port, Developing Zone
Dalian, Liaoning 116620
China
86-411-8754-9888
http://www.dmtg.com

Annual Sales: ¥14 billion [US$2.2 billion] (verified by company, 4/13)
Employment: 8,000 (verified by company, 4/13)

Key Products: Turning centers, lathes, machining centers, milling machines, and machine tool castings and accessories

Dalian Machine Tool Group (DMTG) is a producer of machine tools, automotive power assembly, and power transmission components, and has operations in manufacturing, microelectronics, and foreign trade. The Company is 65 percent owned by Dalian Golden Technological Development Company Limited (China), a privately held company; 20 percent owned by Dalian Industrial Development Company (China), a state-owned investment firm; and 15 percent owned by Dalian Huaxin Trust Company Limited.

With ¥12 billion in related sales and a 3.1 percent share, Dalian Machine Tool Group was the second largest supplier to the machine tool market in China in 2012. The Company produces machine tools such as turning centers, lathes, machining centers, and milling machines. Turning centers include the VT-MH series of vertical turning centers that can automatically complete the cutting of outer surfaces, among other functions. DMTG’s lathes include CDL and CW series gap bed, CKE series computer numerical control (CNC) flat bed, CDS series high speed, CD series horizontal, and CL and DL series CNC

TABLE IV-7

<table>
<thead>
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<th>Item</th>
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<th>2022</th>
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<td>Total Machine Tool Demand</td>
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</table>

STUDY COVERAGE

This Freedonia study, Machine Tools in China, offers historical data (2002, 2007, 2012) as well as forecasts for 2017 and 2022 for demand by product, market and region of China. This study also assesses key market environment factors, details industry structure, evaluates company market share and profiles 38 competitors in the Chinese machine tools industry.
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