Automation Achieved

Photo: Cahners Exposition Japan Ltd.

Amid an active business environment, CIM Japan Impact '90 exhibition held in July attracted thousands of visitors.

Demand for machine tools, pushed by widespread automation among Japanese enterprises, has been vigorous so far in fiscal 1990. The strong trend toward automation has been fueled by a sustained expansion of domestic demand, together with an increasing structural labor shortage. Automation has been achieved largely by combining numerically controlled machine tools with automated warehouses and automatic guided vehicles.

To increase their competitive edge, manufacturers have begun to expand beyond machine tool manufacture to the fabrication of entire handling robots and automatic guided vehicles. This strategy has resulted in increased industry sales. As a result, the machine tool industry as a whole has an order backlog large enough to keep it going for about six months, at the current rate of production. Machine tool plants are thus likely to remain at capacity operation for some time to come.

Under such pressure, the machine tool industry itself is feeling the pinch of a serious labor shortage, rising subcontract costs and product delivery delays. Manufacturers are reviewing their subcontractor-oriented production systems, raising their own production ratio of components, and introducing sophisticated computer-integrated manufacturing (CIM) systems into their production processes. Amid their present good business performance, machine tool manufacturers are therefore continuing to actively invest in new plant and equipment.

Exports of machine tools, meanwhile, are slowing. Although exports to Southeast Asia and the European Community remain strong, the industry has tightened its voluntary restraint on exports to the United States since April 1990. Production of machine tools in the U.S. has also made good headway, further contributing to a gradual decrease in exports to the U.S.

Imports of machine tools, in contrast, have shown marked growth, due to a rapid increase in imports of high-precision, specialized types from the U.S. and Europe, as well as low-priced, universal types from Southeast Asia.

In fiscal 1991, however, the industry will probably face a slowdown in the influx of orders due to a cooling of interest in investment programs, for several reasons. The Gulf crisis, for one, continues to add to worries about general business prospects. Small and medium-sized businesses, which depend heavily on bank loans and leases, will also likely be dissuaded from investment by interest rates, which seem likely to remain high.

Partly as a result of the economic slowdown in the U.S., the growth in exports of machine tools will likely slacken further in fiscal 1990. The trade surplus, which has been widening since fiscal 1988, will thus likely stop growing. Imports are also expected to slow down amid a more conservative investment climate in Japan. Growth in imports, however, will far outstrip export growth for the year, with the value of imports likely reaching 20% of the value of exports.

As for overseas production, Japanese machine tool manufacturers must increasingly cope with the need to use locally made parts, especially ball screws and hydraulic machinery, in their fabricated products. A shortage of overseas staff, such as English-speaking engineers, is another ongoing challenge. Under the circumstances, Japanese makers plan to expand their efforts to establish local production facilities capable of manufacturing needed parts. The transfer of production technology and production-control know-how to local manufacturers and joint-venture partners will be the crucial elements of this strategy.

In fiscal 1991, both domestic and foreign demand will slacken and personnel depreciation costs will steadily rise, with the result that some machine tool makers, especially smaller firms, are likely to suffer some setbacks in profit growth, although total profits will remain high.

In contrast with fiscal 1990, when supply was very tight and demand consistently strong, growth in the influx of new orders will taper gradually in fiscal 1991. To counter this trend, machine tool makers will probably make further efforts to diversify into the production of electric discharge machines, laser beam machines and plastic injection molding machines to bolster their earning power.

To give their products higher value added and to meet their consumers' systematization needs more quickly, machine tool manufacturers will also likely turn increasingly to tie-ups with peripheral makers. They will also attempt to transform themselves into integrated engineering enterprises through their participation in international R&D projects such as MAP (Manufacturing Automation Protocol) and IMS (Integrated Manufacturing System).

(Hidekazu Okino, economist)

Machine Tools Supply and Demand (¥ billion)