

# Electricals and Electronics Poised for Further Growth

By Hideo Ishii

Japan's electric machinery and electronics industries registered an annual average production increase of 9.1% in the decade from 1973 to 1983, far higher than the average for all manufacturing. In 1983, production value reached ¥18,414.7 billion (\$76.7 billion). This rapid growth has been paced by sophisticated electronic products such as computers, integrated circuits (ICs), video tape recorders (VTRs) and communications equipment. In 1965, transformers were the biggest earners, followed by other heavy products such as switchboards and three-phase motors. In 1975, the leading product was color television sets. But by 1983, the three biggest items were computers, VTRs and ICs in that order.

Exports between 1973-1983 increased at an annual average of 16.6%. Export value for 1983 reached ¥8,240.5 billion

(\$34.3 billion) proof that electric machinery and electronics have evolved into leading export industries that rank alongside the automotive industry. In the past, home appliances were the main export products. In recent years, however, high-technology goods such as computers and ICs have posted rapid growth in overseas markets. In 1980, Japan recorded a surplus in its IC trade with the United States, the frontrunner in high technology. Bilateral trade in computers produced a Japanese surplus for the first time in 1982. Japan has been catching up rapidly with the United States in this important field.

## Business climate

Both internal and external demand for electric machinery and electronics remain very strong thanks to firm domestic con-

sumption and a world business recovery supported by the expanding U.S. economy. Exports of heavy electric machinery leveled off during the global slump in plant and equipment investment, while internal demand was weak, reflecting the sluggishness in power industry investment. But as the world economy moved out of its slump, demand for small motors and other products began to show signs of life. Demand for consumer electric items, such as microwave ovens, firmed at home and abroad, and, other goods followed suit.

The main thrust for growth, however, came from high-tech electronics. VTR exports to the United States, the world's largest market, have continued to expand rapidly. In the first eight months of 1984, sales soared by 122.2% over the same period a year earlier. By contrast, VTR shipments to the European Community have slowed, partly because of the appreciation of the yen and partly because of the saturation of the British VTR rental market. But domestic Japanese demand for VTRs remains strong as the machines rapidly gain in popularity.

As for ICs, both internal and external demand remains robust, especially for 64K and 256K DRAM (kilobit dynamic random access memory) chips. Moreover, shipments of industrial electronic machines, such as computers and communications equipment, are firming, reflecting the growth of the information industry in industrialized nations.

Continued growth is forecast for the coming fiscal year in the main electronic product lines. However, there is some cause for concern about the American market. VTR inventories in the United States have swollen by about 100,000 units a month for the past several months. And the B/B ratio, an indicator of IC supply and demand, has gradually fallen. In September it dipped below 1.0 for the first time in many months, to 0.84. Actual demand for VTRs, however, is considered as strong as ever. Inventories, though rising, are still at a reasonably low level (the number of months divided by the number of units shipped out is about 1.5), and shipments of new models are expanding strongly. As for ICs, one major reason for the drop in the B/B ratio is the end of the double and triple orders which were placed at a time of overheated demand.



The rapid growth of Japan's electric machinery and electronics industries has been paced by sophisticated electronic products.

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Companies are also postponing orders in anticipation of lower prices. Nevertheless, the growth in VTR stocks and the fall in the B/B ratio are new phenomena after the strong demand of the past 18 months.

## Longer-term tasks

Domestic and overseas markets for electric and electronic machinery and equipment are expected to stay on an expansionary track for the time being, with electronic products leading the way. But in the short-term, recession and other temporary factors could adversely affect growth. Demand for electronic machinery and industrial equipment is likely to remain strong, not only because of a wave of office automation but also because of the increasing integration of computers and communications. High growth is anticipated for electronic components, particularly ICs, as electronics find ever wider use in other industries. Progress in home automation, meanwhile, can be expected to help expand consumer electronic markets in the medium- and long-term. In the short-term, however, no new star product is in sight that can match the success of the VTR.

The electric machinery and electronics industries hold great promise for growth, but they also face various problems.

Among the most important are R&D and capital investment. These industries are actively promoting R&D and introducing new IC production equipment in order to commercialize promising products to meet strong customer demand. Despite

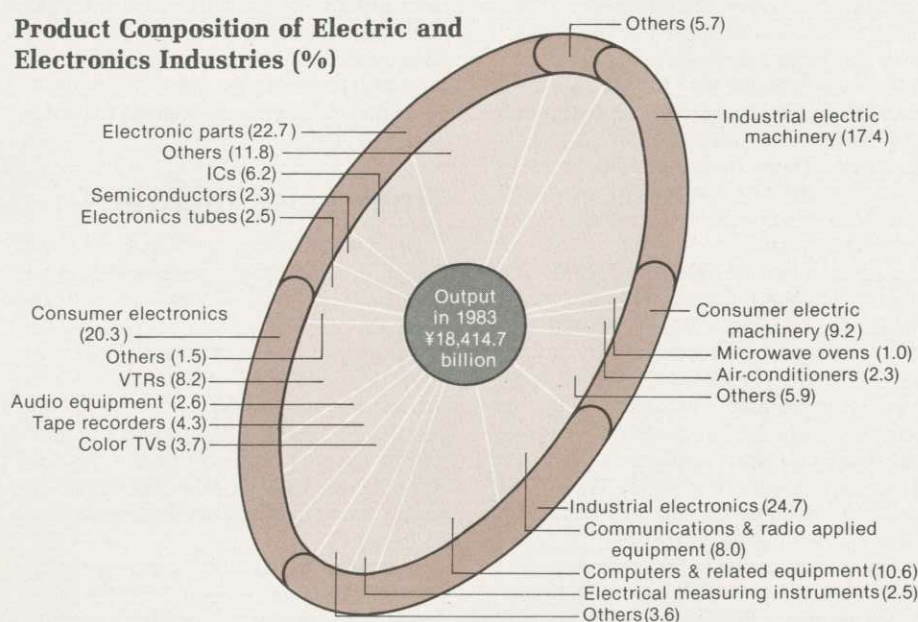
the enormous sums required, companies are expected to continue with these research and investment programs in order to win out over the competition. In view of the vast amount of capital involved, it is hoped that each company will carefully select priority areas and take market trends fully into account in efficiently allocating their funds.

The second big problem is trade friction. In the past, Japanese television set manufacturers had restrictions imposed on their exports to the United States. In more recent years, friction has been intensifying in semiconductors and communi-

cations equipment. VTR exports to the EC are moderated under the "weather forecast" formula, whereby importing countries are informed of the forecast of export levels. The possibility of new frictions arising in the future cannot be ruled out as other nations look to their electronics industries to play a leading role in social and economic development.

Japanese companies will have to work harder to form business tie-ups and joint production ventures with foreign enterprises if trade frictions are to be avoided. It is time for carefully thought-out measures for internationalization.

## Product Composition of Electric and Electronics Industries (%)



Source: Ministry of International Trade and Industry

## IC Sales and R&D/Capital Investment

FY	IC sales (A) (¥ million)		R&D spending (B) (¥ million)		B/A (%)	Investment outlay (C) (¥ million)		C/A (%)
		change from year before		change from year before			change from year before	
1973	86,223	—	17,029	—	19.7	18,874	—	21.9
1974	83,404	96.7	18,532	108.8	22.2	17,595	93.2	21.2
1975	108,158	129.7	21,524	116.1	19.9	11,379	64.7	10.5
1976	164,924	152.5	24,297	112.9	14.7	35,191	309.3	21.3
1977	155,474	94.3	24,456	100.7	15.7	21,958	62.4	14.1
1978	251,881	162.0	37,997	155.4	15.1	45,932	209.2	18.2
1979	374,910	148.8	54,774	144.2	14.6	84,103	183.1	22.4
1980	547,708	146.1	69,037	126.0	12.6	136,875	162.7	24.9
1981	618,139	112.9	92,179	133.5	14.9	155,449	113.6	25.1
1982	766,282	124.0	174,243	189.0	22.7	203,506	130.9	26.6
1983 (est.)	1,070,619	139.7	158,226	90.8	14.8	321,238	157.9	30.0
1984 (est.)	1,405,525	131.3	209,982	132.7	14.9	422,672	131.6	30.1

Source: Ministry of International Trade and Industry