

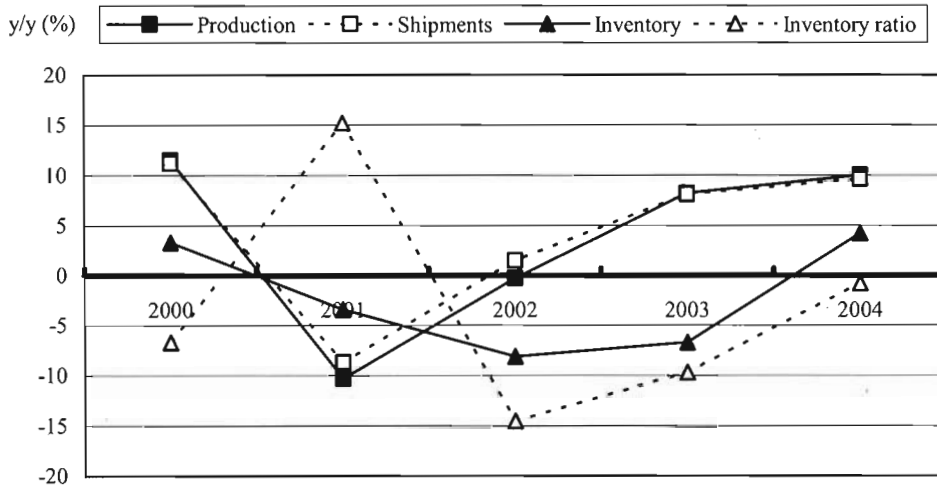
## Chapter 1 Trend of the Machine Industry in Japan

### 1-1 Trend of Production, Shipments, etc. of the Machine Industry

#### (1) Trend of the machine industry over the past five years

Diagram 1-1-1 shows the year-on-year change in the production index, shipment index, inventory index, and inventory ratio of the machine industry (general machinery, electrical machinery, information and communication equipment, electronic parts/devices, transport equipment, and precision instruments) from 2000 to 2004. Over the past five years, the production index increased over the previous year since the sustaining recovery in 2002, followed

by 8.2% in 2003 and 10.0% in 2004. The shipment index shows almost the same increasing trend. In contrast, the inventory index was on a downward trend until 2003 but turned positive in 2004. The inventory ratio showed an upward trend in 2004. This means that in 2004 the production and shipments of the general machinery industry gathered more upward momentum than in the previous year while leaving the issue of inventory adjustment.

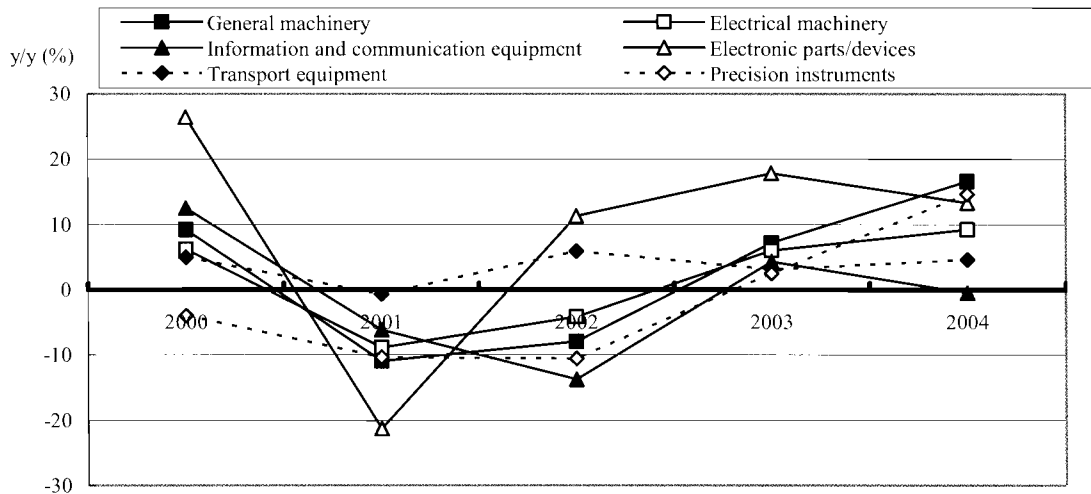


Source: Created based on the "Annual Report on Machinery Statistics," Ministry of Economy, Trade, and Industry

**Diagram 1-1-1 Trend of machine industry indices**

Diagram 1-1-2 represents the trend of the production index of the machine industry by category. As shown in the diagram, general machinery, electrical machinery, and precision instruments turned upward in 2003 and increased their upward momentum in 2004. Meanwhile, electronic parts/devices, though they recovered in 2003, showed a slightly decreasing trend in 2004. Information and communication equipment also showed a recovering trend in 2003 but ended up decreasing in 2004, clearly showing

that it is in a tougher game than the other sectors. General machinery showed the strongest recovery trend among the six major sectors with figures that confirm the recovery of Japan's machine industry. Precision instruments, which had been struggling until 2002, increased the positive tendency in 2004, returning to a better state. Electrical machinery also experienced steady growth. Transport equipment (excluding steel ships/rolling stocks, the same applies hereafter) has had stable footing since 2002.

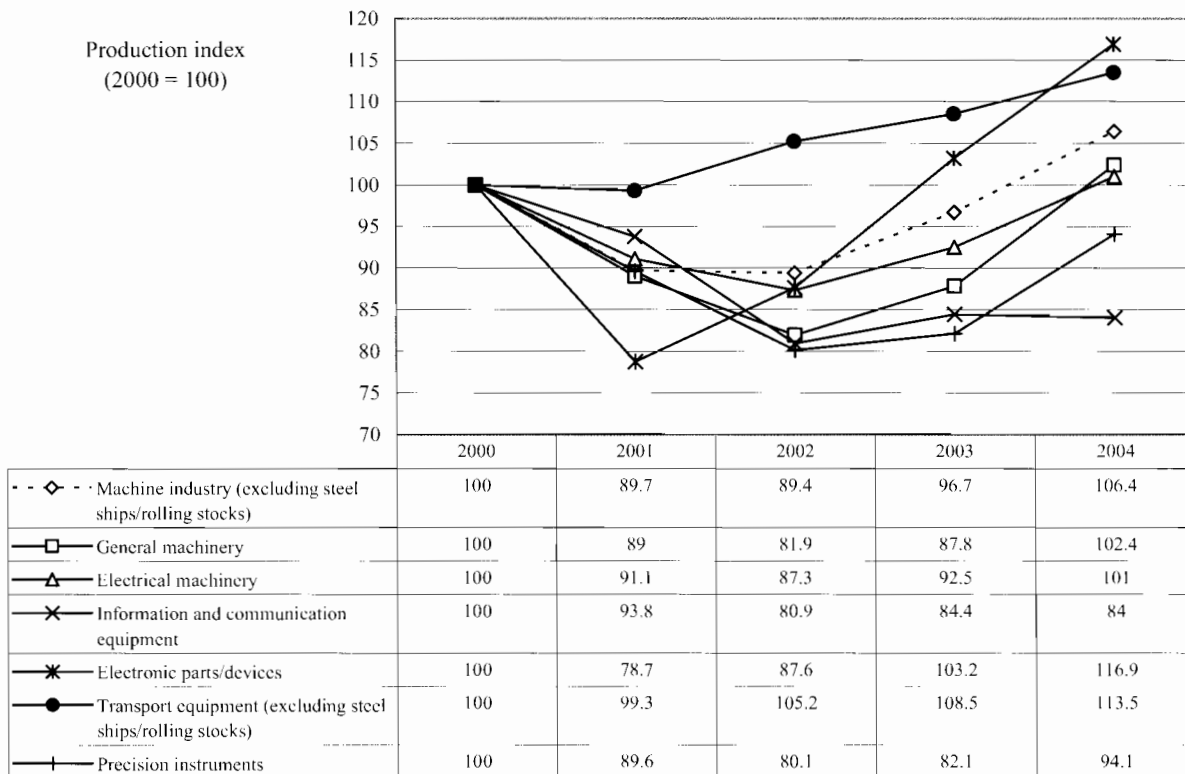


Source: Same as that of Diagram 1-1-1

**Diagram 1-1-2 Production index trend of machine industry by category**

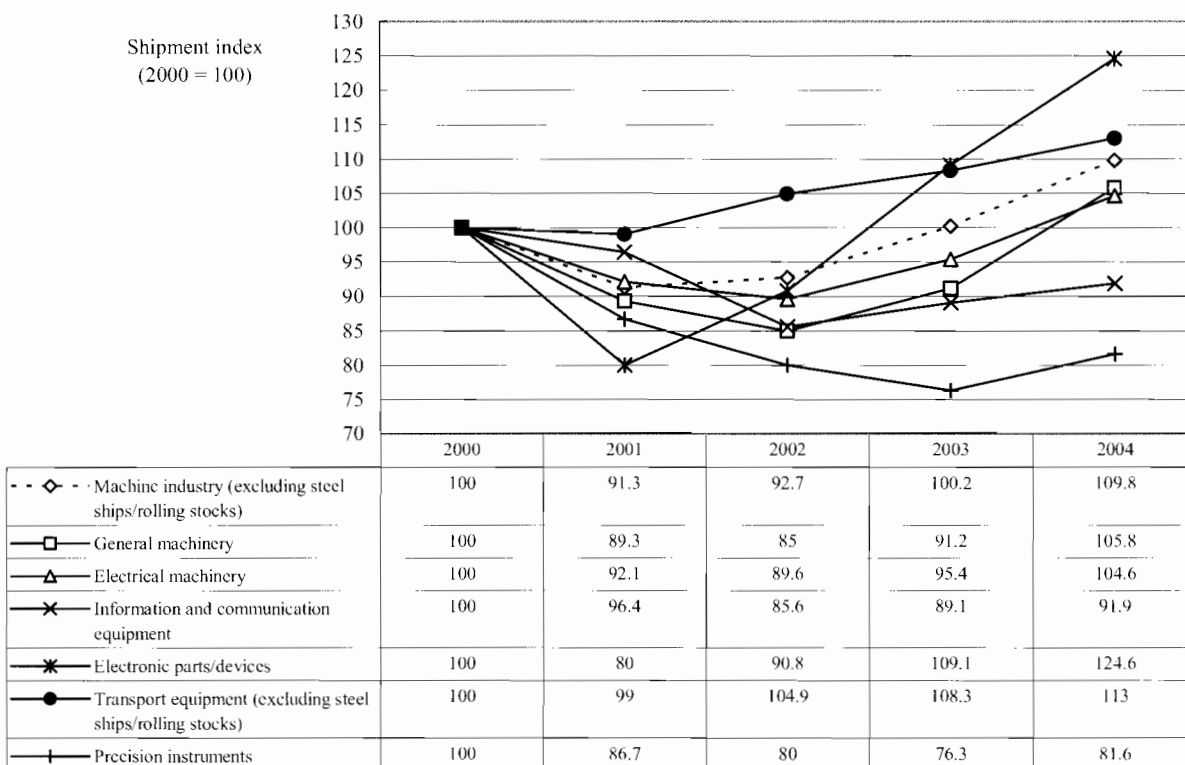
The production index and the shipment index of the machine industry as a whole and by sector with 2000 as 100 are shown in Diagrams 1-1-3 and 1-1-4, respectively. In 2003, the production index of the machine industry in general was on a recovery course but at this time the only sectors that were above the year 2000 level were transport equipment and electronic parts/devices. In 2004, however, all of the sectors other than information and communication equipment and precision instruments were above the year 2000 level, making the production index of the machine industry as a whole 6.4% above the year 2000 level. In 2004, the shipment index of all of the sectors other than precision

instruments and information and communication equipment were also above the year 2000 level, making the shipment index of the machine industry as a whole 9.8% above the year 2000 level, showing a stronger recovery trend. On a sector-by-sector basis, the increase in production/shipment indices is especially prominent for electronic parts/devices and is stable for transport equipment. Furthermore, those of general machinery are also above the year 2000 level, showing a sign of recovery. However, both the production index and the shipment index remained stagnant in the information and communication equipment and precision instruments sectors in 2004.



Source: Same as that of Diagram 1-1-1

**Diagram 1-1-3 Production index trend of the machine industry**



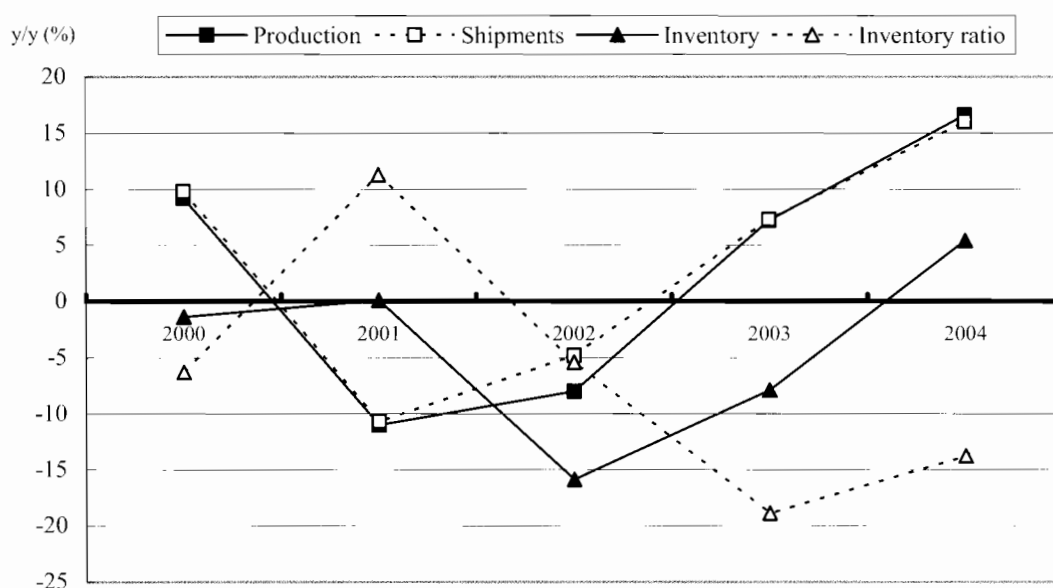
Source: Same as that of Diagram 1-1-1

**Diagram 1-1-4 Shipment index trend of the machine industry**

## (2) Trend of general machinery industry

The year-on-year trend of the production index, shipment index, inventory index, and inventory ratio of the general machinery industry (engineering and construction machinery, special industrial machinery, conveying machinery, industrial robots, agricultural machinery, metal working machinery, textile machinery, office machinery, refrigerating machines and appliances, molds and dies, and other general machinery) are represented in Diagram 1-1-5. Over

the past five years, the year-on-year production index of general machinery finally turned positive in 2003 and showed more robust growth in 2004. The year-on-year shipment index shows a similar trend. The year-on-year inventory index was negative in 2002 and 2003 but turned positive in 2004 while the inventory ratio has been negative since 2002—it is showing signs of increasing in the future.

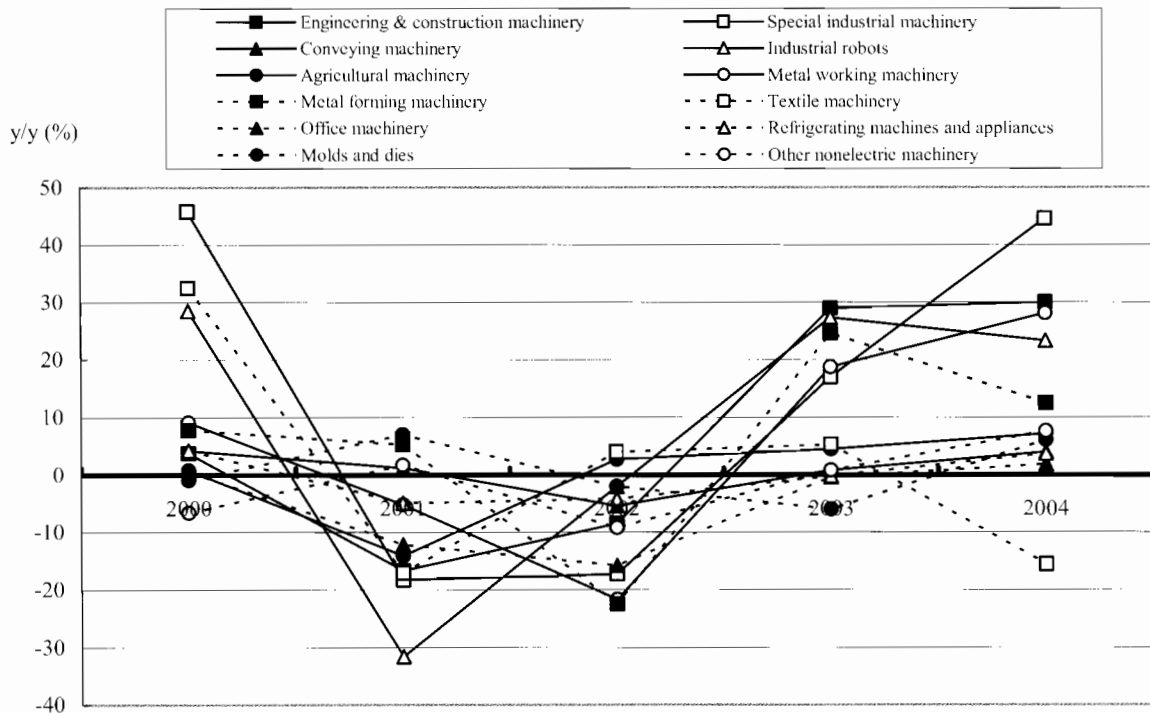


Source: Same as that of Diagram 1-1-1

**Diagram 1-1-5 Trend of general machinery industry indices**

The year-on-year production index of the general machinery industry by sector is represented in Diagram 1-1-6. In 2004, the figures of all of the sectors except textile machinery turned positive, showing a clear recovery trend of the general machinery industry, as described above. Growth is especially high in special industrial machinery, suggesting a recovery in demand

thanks to the increased equipment investment. Although metal working machinery is also growing steadily, the growth of metal working machinery and industrial robots is slowing slightly, while remaining high. As described above, in 2004, general machinery indices recovered steadily in all the sectors other than textile machinery.



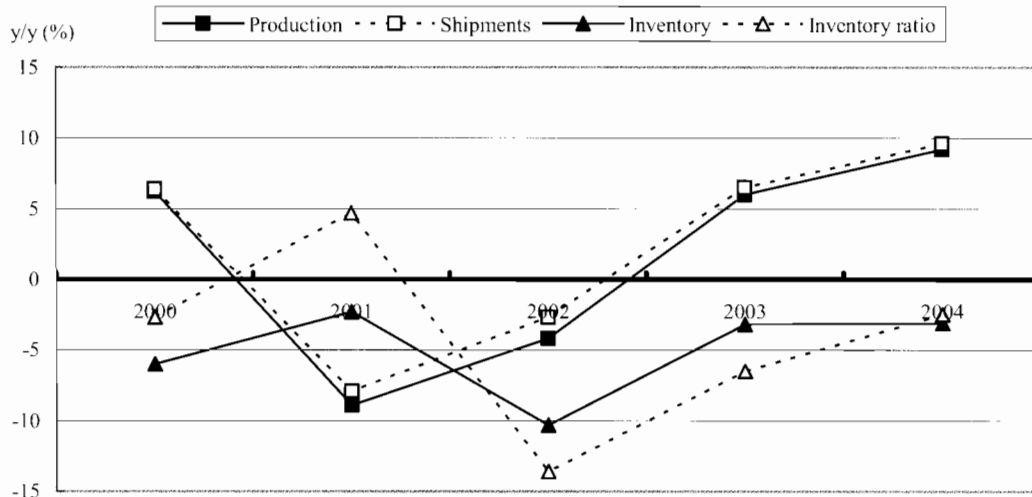
Source: Same as that of Diagram 1-1-1

**Diagram 1-1-6 Production index trend of general machinery industry by sector**

### (3) Trend of the electrical machinery industry

The year-on-year indices of the electrical machinery industry (electrical rotating machinery, electrical stationary machinery, switching devices, household electrical machinery, wiring devices and luminaries, associated electronic equipment, electrical measuring instruments, and batteries) are shown in Diagram 1-1-7. The production index and shipment index have maintained a recovery trend since 2002, with a nearly 10% increase over the previous year in 2004, suggesting that the electrical machinery industry is playing a driving role for the entire

machine industry. Although the inventory index remains unchanged from 2003, the fact that the inventory ratio started to increase in 2003 and increased even more in 2004 calls for attention to be paid to the future trend. Regardless, it is clear that the electrical machinery industry, which was stagnant until 2002, has been on a track to strong recovery since 2003, suggesting that the electrical machinery industry is now in a new development stage with the revitalization of the national economy.

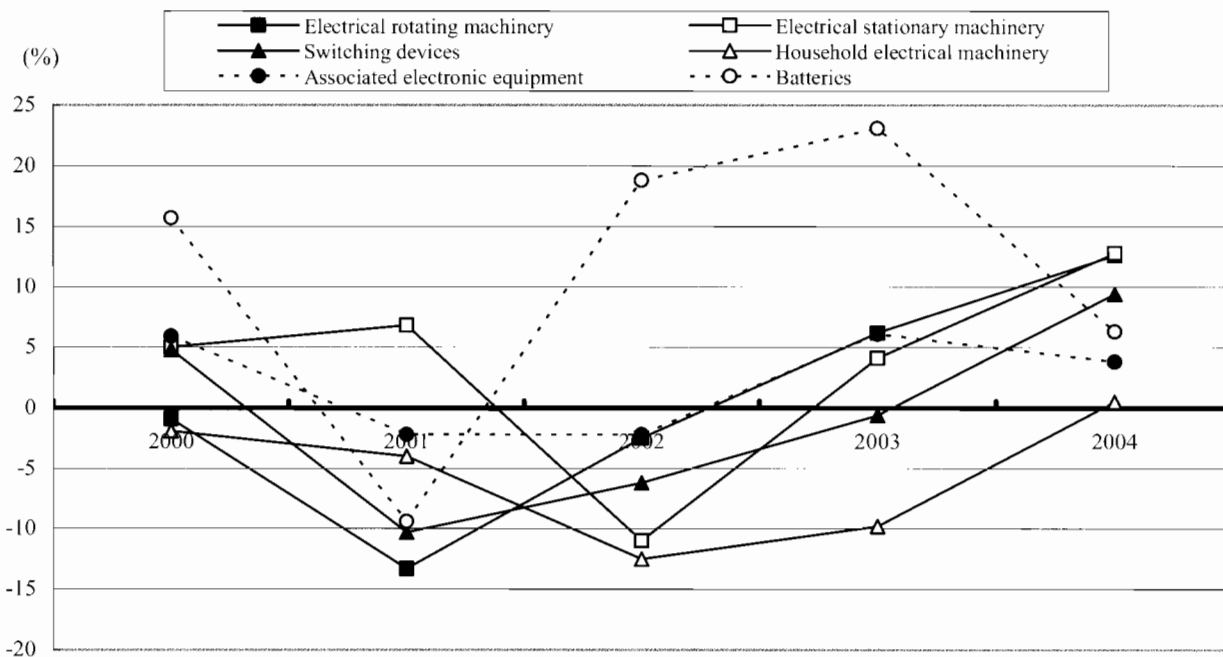


Source: Same as that of Diagram 1-1-1

**Diagram 1-1-7 Trend of electrical machinery industry indices**

Diagram 1-1-8 represents the sector-by-sector trend of electrical machinery industry indices (excluding wiring devices and luminaries). As shown in the diagram, electrical rotating machinery, electrical stationary machinery, and switching devices are steadily growing, playing a driving role in the electrical machinery industry. Batteries grew dynamically starting in 2002 but their production index

turned negative in 2004, causing concern about their future movement. Similarly, associated electronic equipment are showing a slight downward trend while electric machines for consumer use, which had been stagnant with a negative figure for the past five years, finally turned positive on a year-on-year basis in 2004, showing signs of recovery.



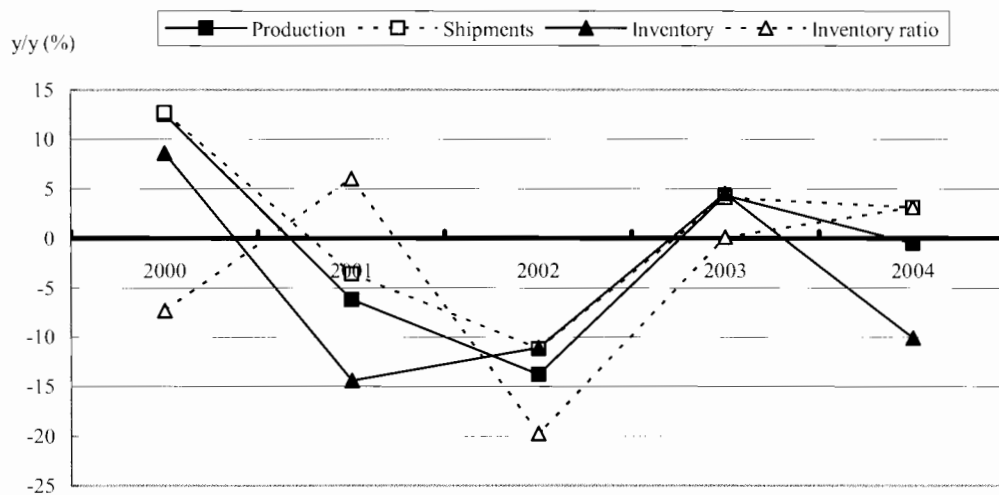
Source: Same as that of Diagram 1-1-1

**Diagram 1-1-8 Production index trend of electrical machinery industry by sector**

#### (4) Trend of information and communication equipment industry indices

The trends of the indices of the information and communication equipment industry (communication equipment, household electronic machinery and electronic computers) are represented in Diagram 1-1-9. As shown in this diagram, while the shipment index of the information and communication equipment industry

maintained a positive figure in 2004, its production index turned negative, suggesting a phase of production adjustment. Moving relative to this figure, the inventory index dropped by 10%. The inventory ratio, in contrast, has been showing a clear rising trend since 2003.

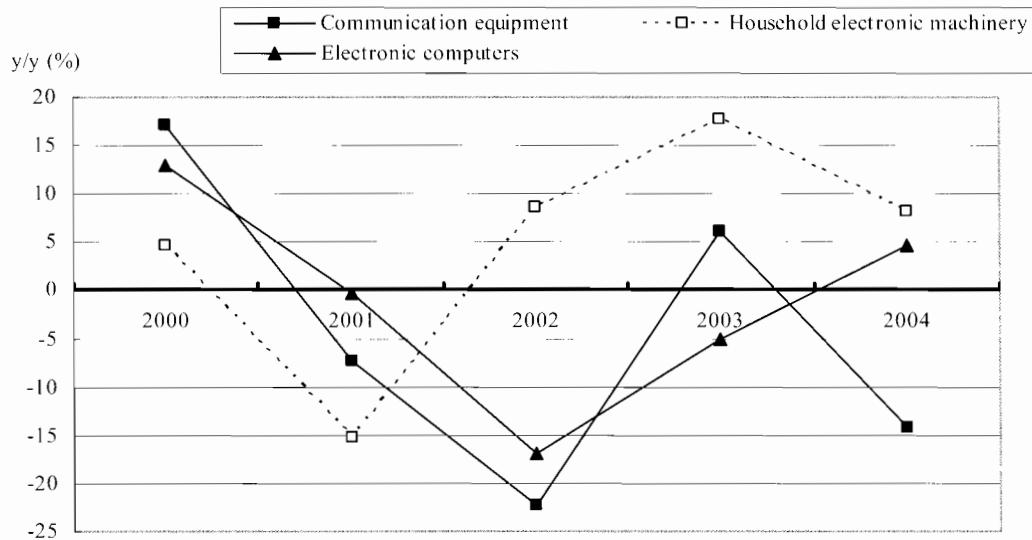


Source: Same as that of Diagram 1-1-1

**Diagram 1-1-9 Trend of information and communication equipment industry indices**

The sector-by-sector trend of the production index of the information and communication equipment industry is represented in Diagram 1-1-10. As shown in the diagram, household electronic machinery that had recovered in 2002 is now in reverse and on a downward trend in 2004. Similarly, communication equipment, which recovered in 2003, experienced a sudden

decent to a negative figure. In the meantime, electronic computers have maintained a recovery trend since 2003 but lack dynamism in their growth. In the information and communication equipment, attention shall be focused on the movement of digital-related products to determine whether household electronic machinery will recover or increase the downward tendency.



Source: Same as that of Diagram 1-1-1

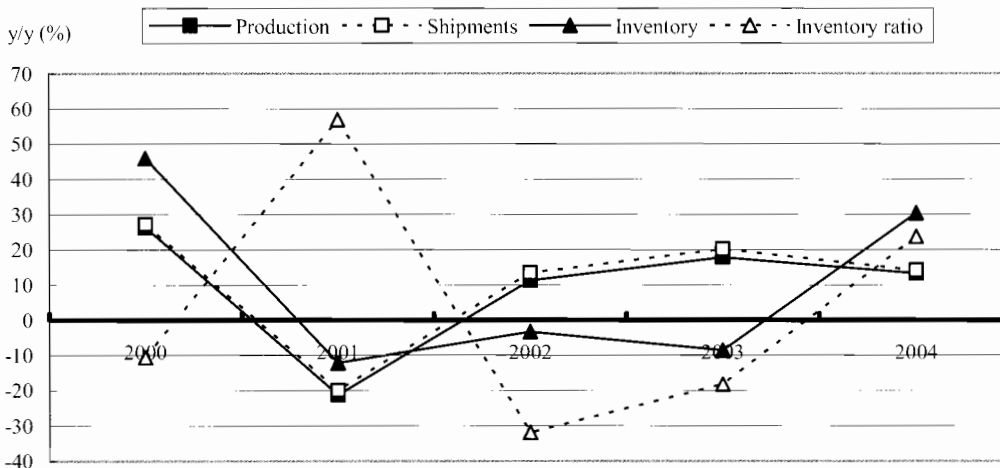
**Diagram 1-1-10**

**Production index trend of information and communication equipment industry by sector**

**(5) Trend of electronic parts/devices industry indices**

Diagram 1-1-11 represents the trends of the electronic parts/devices industry indices. In 2004, the production index and the shipment index, though still in a positive range, showed a

downward trend. Meanwhile, the inventory index and the inventory ratio both turned positive, suggesting a clear trend of inventory adjustment.



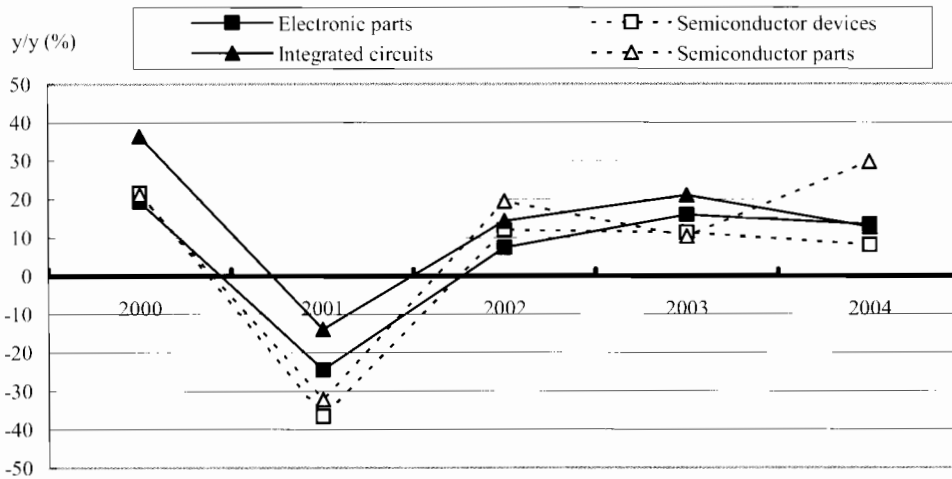
Source: Same as that of Diagram 1-1-1

**Diagram 1-1-11 Trend of electronic parts/devices industry indices**

The sector-by-sector trend of the production index of the electronic parts/devices industry is represented in Diagram 1-1-12. While 2003 saw similar trends in the industry in general, 2004 clearly showed an upward trend of

semiconductor parts. In contrast to electronic parts, semiconductor devices and integrated circuits showed a downward trend while still maintaining a positive figure.





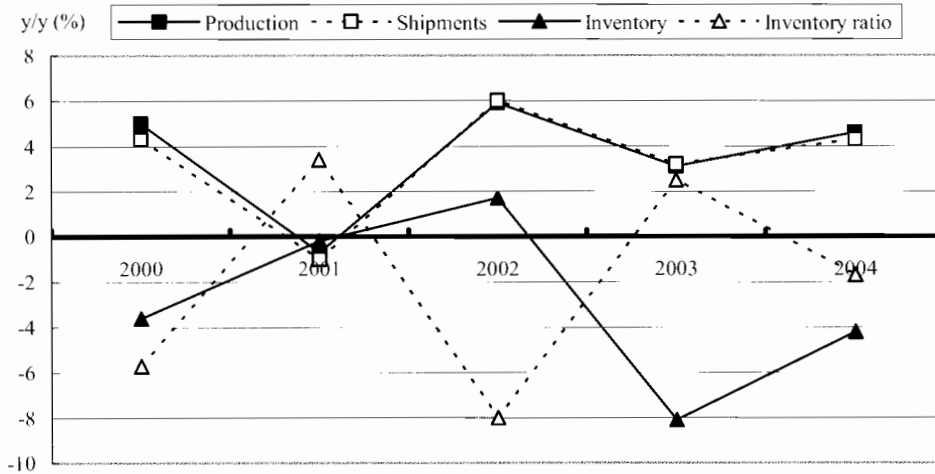
Source: Same as that of Diagram 1-1-1

**Diagram 1-1-12 Production index trend of electronic parts/devices industry by sector**

**(6) Trend of the transport equipment industry**

Diagram 1-1-13 represents the trends of the transport equipment industry indices. As is evident in the diagram, the production index and the shipment index have been positive on a year-on-year basis since 2002 and showed an

upward trend once more in 2004. The inventory index is still negative but shows signs of going upward. The inventory ratio moves in a cycle and turned negative in 2004.



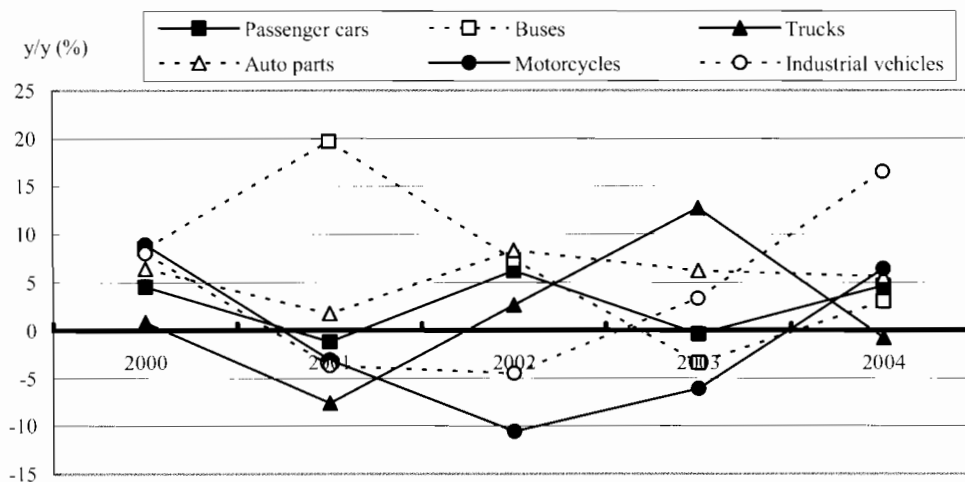
Source: Same as that of Diagram 1-1-1

**Diagram 1-1-13 Trend of transport equipment industry indices**

The sector-by-sector trend of the production index of the transport equipment industry is represented in Diagram 1-1-14. As shown in this diagram, trucks, which had continued strong performance until 2003, turned negative in 2004 after a round of demands due to diesel control.

In contrast, industrial vehicles have grown greatly, playing a role in driving the transport equipment industry. In addition, motorcycles moved from negative to positive simultaneously, against the background of the increased demand for large motor scooters for highway riding. In

this way, the transport equipment industry, with the exception of trucks, sustained strong performance in 2004.



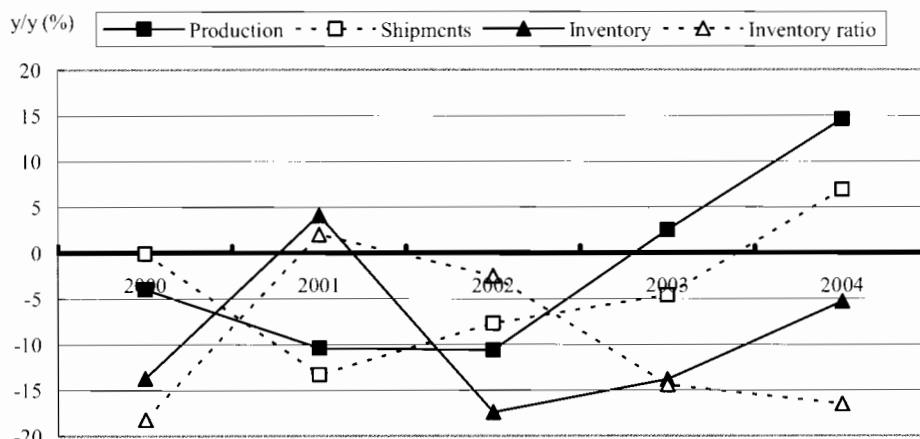
Source: Same as that of Diagram 1-1-1

**Diagram 1-1-14 Production index trend of the transport equipment industry by sector**

**(7) Trend of the precision instruments industry**

Diagram 1-1-15 represents the trends of the precision instruments industry indices. As evident in the diagram, the production index and the shipment index of the precision instruments industry in 2004 greatly increased, strengthening the recovery trend that began in 2003. The production index, in particular, showed robust per-

formance, with a 15% increase over the previous year. However, the inventory index has been rising since 2003, calling for attention to future movement. The inventory ratio may increase in the future because it has been negative since 2002.

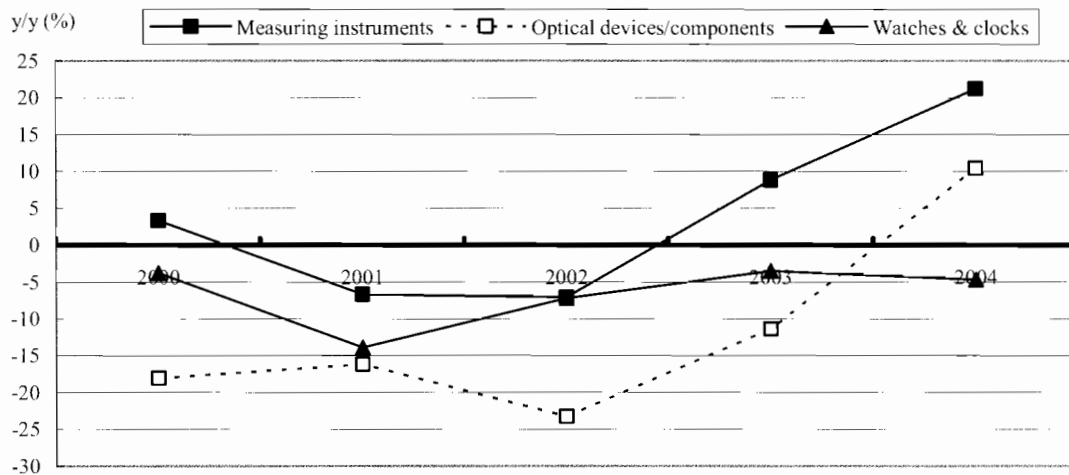


Source: Same as that of Diagram 1-1-1

**Diagram 1-1-15 Trend of precision instruments industry indices**

The sector-by-sector trend of the production index of the precision instruments industry is represented in Diagram 1-1-16. As shown in this diagram, the precision instruments industry in 2004 is strengthening its recovery trend with measuring instruments driving the recovery of the entire industry as in 2003. In the year 2004, optical devices/components, which had long

been stagnant, turned positive, showing the possibility of their playing a role, together with measuring instruments, in driving the precision instruments industry. The background of this good performance is the positive impact of the demands in the optical field, digital cameras in particular. In contrast, watches and clocks remain stagnant with a negative figure.



Source: Same as that of Diagram 1-1-1

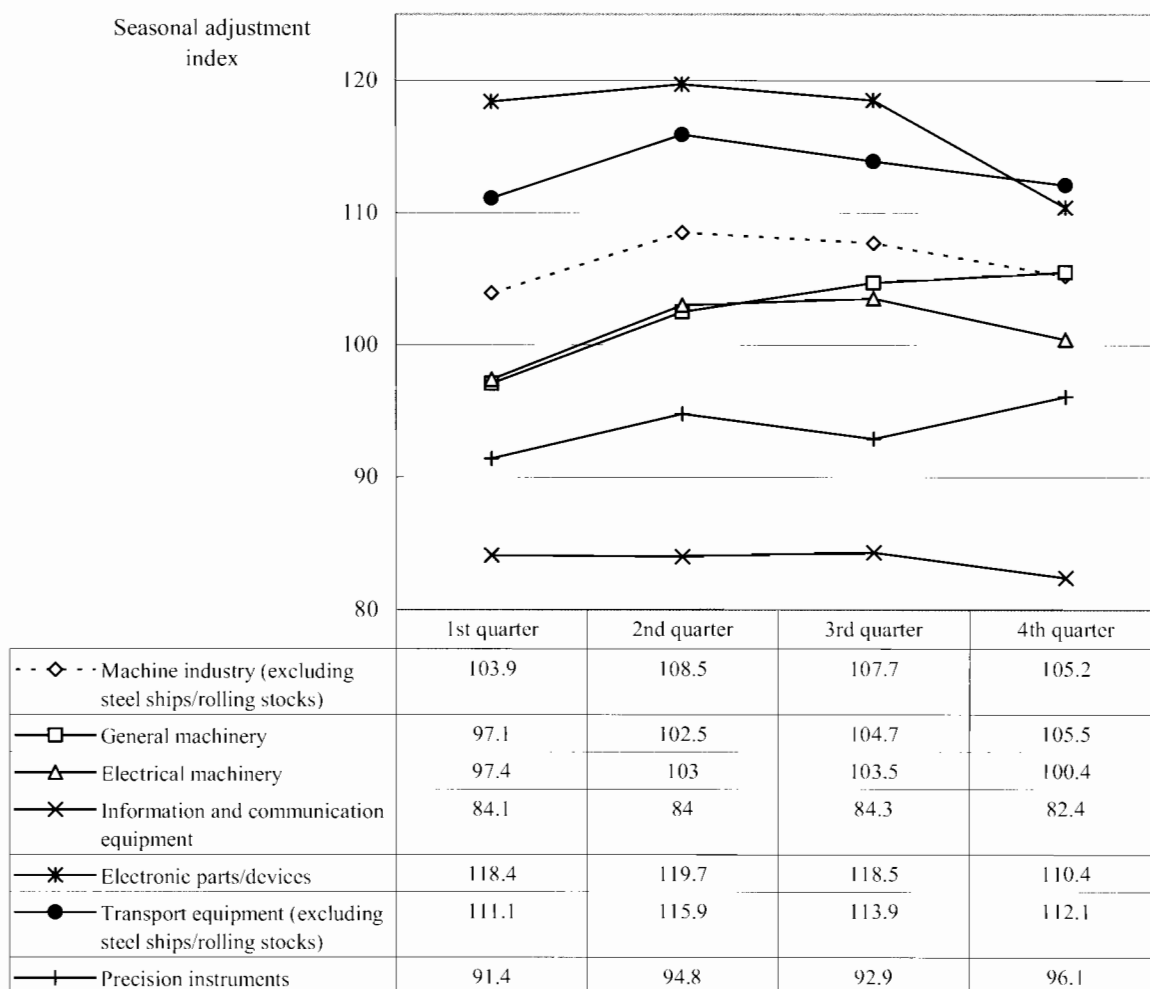
**Diagram 1-1-16 Production index trend of precision instruments industry by sector**

## 1-2 Trends of Machine Industry Indices in 2004

### (1) Trend of production index in 2004

Diagram 1-2-1 represents the trend of the machine industry and its major sectors in the four quarters in 2004 based on the production index (seasonal adjustment index, 2000 = 100). As shown in this diagram, the machine industry as a whole (excluding steel ships/rolling stocks) sustained strong performance through all the quarters of 2004. The 2nd quarter, in particular, experienced a powerful recovery with an increase of 8.5% over the year 2000. Looking at it by major sector, we recognize that electronic parts/devices and transport equipment industries (excluding steel ships/rolling stocks) continued

their high standing but showed a downward trend in the latter half. In contrast, industrial machinery was under 100 in the 1st quarter but took an upward course from the 2nd quarter onward. Precision instruments, though in an up trend in terms of the index, could not reach the level of the year 2000. Electrical machinery, which showed good performance in the 2nd and 3rd quarters, took a downward course in the 4th. Information and communication equipment continued struggling at about an 80% level of the year 2000.



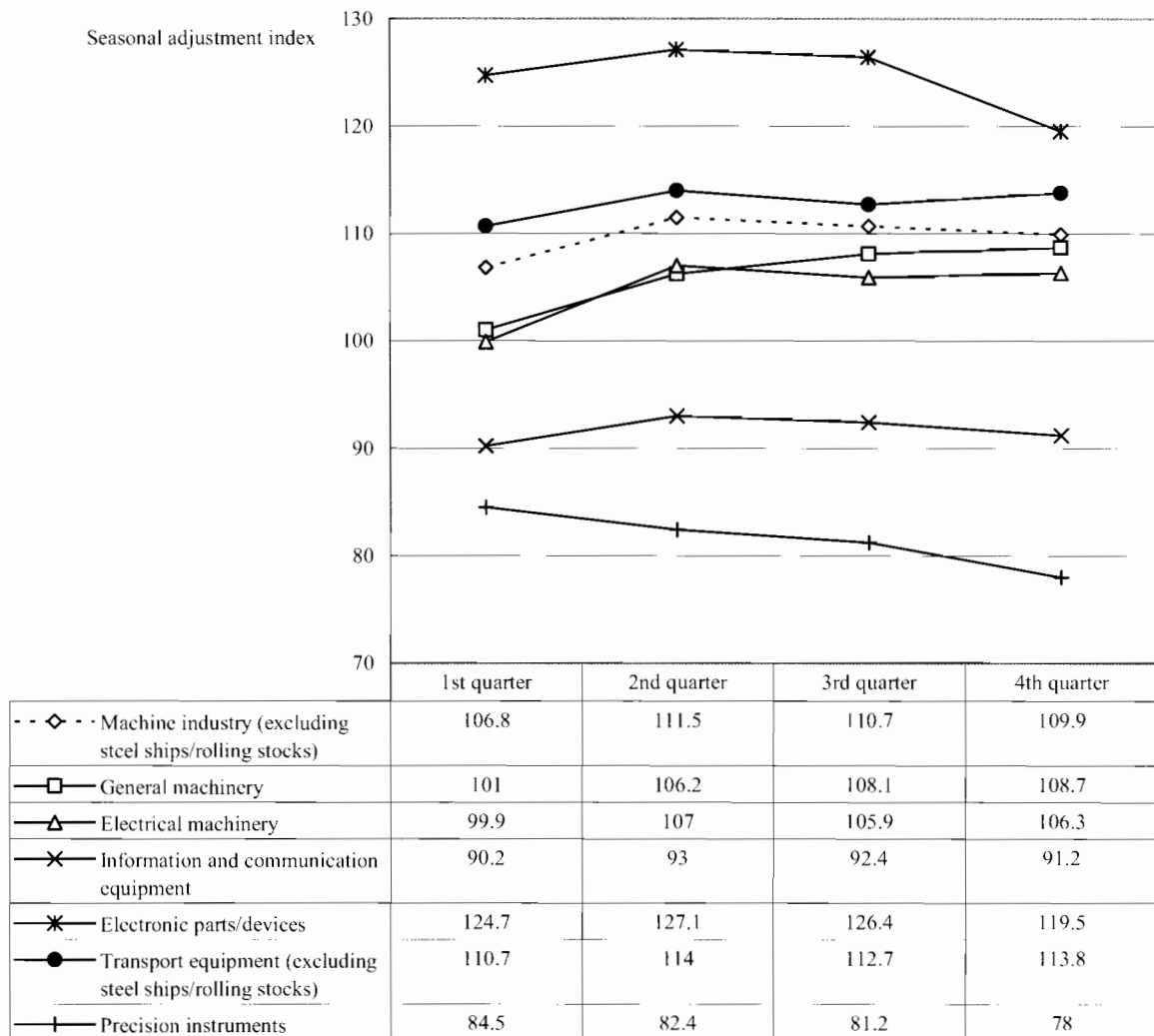
Source: Same as that of Diagram 1-1-1

**Diagram 1-2-1 Production index of the machine industry by quarter in 2004**

## (2) Trend of the shipment index in 2004

The shipment index of the four quarters of 2004 (seasonal adjustment index, 2000 = 100) is represented in Diagram 1-2-2. As shown in this diagram, the index of the machine industry as a whole was 6% over the level of the year 2000 from the 1st quarter and maintained strong performance afterward. Looking at it by major sector, electronic parts/devices maintained a high level of increase of 25% over the year 2000 from the 1st quarter and maintained strong performance afterward. In contrast, the information and communication equipment industry was struggling with an index that was below the year 2000 level throughout the four quarters. Precision instruments, too, remained stagnant with a figure less than 80% of the year 2000 level in the last quarter.

the index remained at the level of the year 2000 in the 1st quarter but showed strong performance with a 6 to 8% increase from the 2nd quarter onward. The electrical machinery industry, too, has a shipment index that was below the year 2000 level in the 1st quarter but maintained about a 6% increase from the 2nd quarter onward. In contrast, the information and communication equipment industry was struggling with an index that was below the year 2000 level throughout the four quarters. Precision instruments, too, remained stagnant with a figure less than 80% of the year 2000 level in the last quarter.



Source: Same as that of Diagram 1-1-1

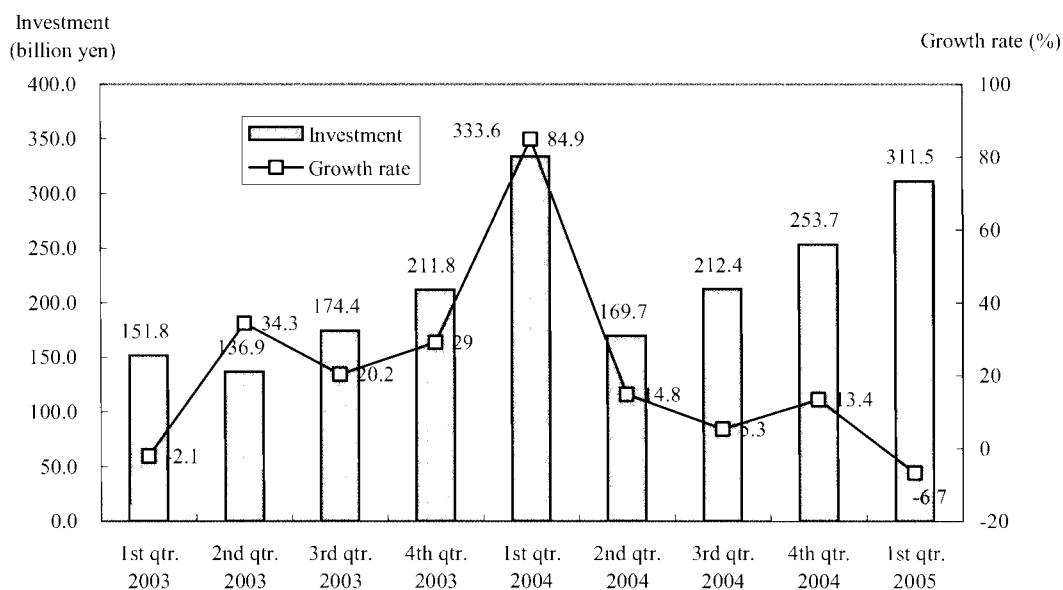
**Diagram 1-2-2 Shipment index of the machine industry by quarter in 2004**

## 1-3 State of the Equipment Investment in the Machine Industry

### (1) State of the equipment investment for general machinery

Diagram 1-3-1 represents the trend of equipment investment for general machinery (excluding software investment here and throughout) from the 1st quarter of 2003 through the 1st quarter of 2005. As is evident in this diagram, equipment investment for general ma-

chinery peaked at ¥333.6 billion in the 1st quarter of 2004 and then declined considerably followed by a gradual recovery in a cyclic move, crossing the ¥300 billion mark again in the 1st quarter of 2005.



Note: Growth rate is on a year-on-year basis.

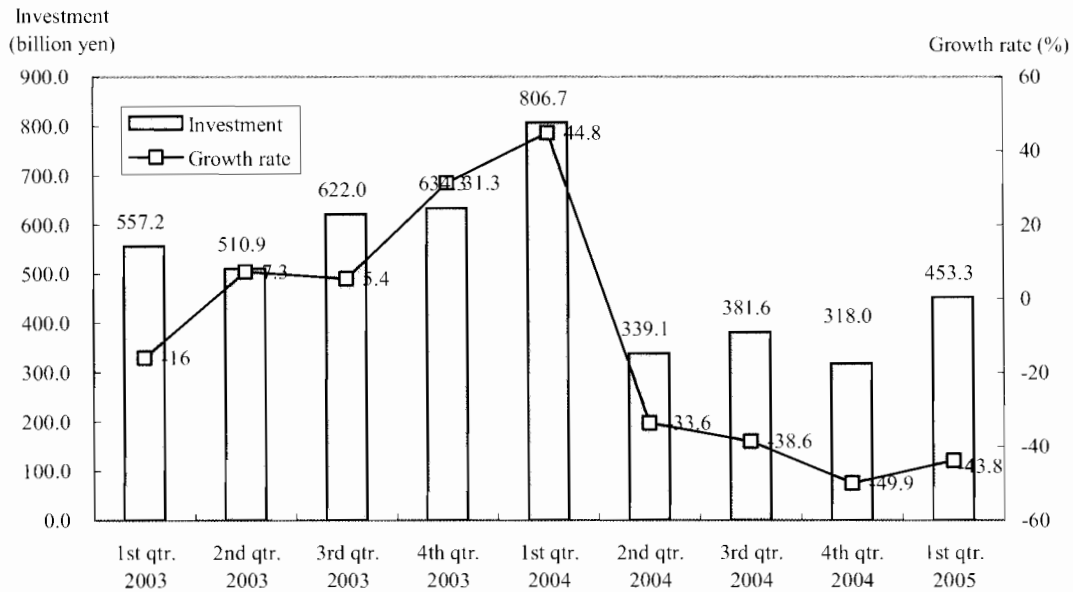
Source: Created based on the "Corporation Statistics Survey," the Ministry of Finance

**Diagram 1-3-1 State of equipment investment for general machinery**

### (2) State of the equipment investment for electrical machinery

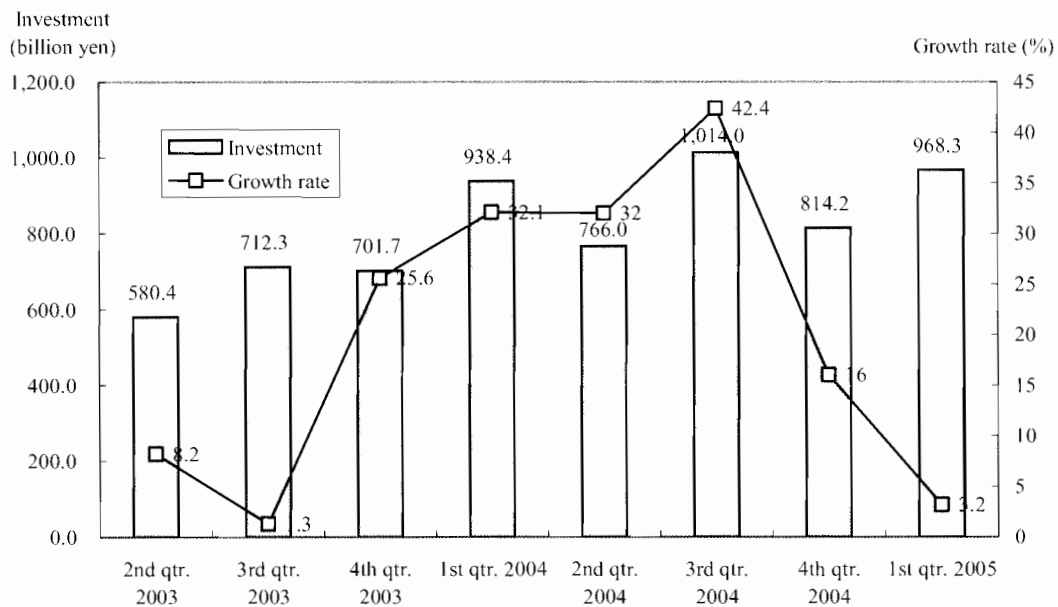
Diagram 1-3-2a represents the trend of equipment investment for electrical machinery (Diagram 1-3-2a shows only the data of electrical machinery and does not include those of information and communication equipment) from the 1st quarter of 2003 through the 1st quarter of 2005. As shown in this diagram, investment increased gradually from the 2nd quarter of 2003, crossing the ¥800 billion mark in the 1st quarter of 2004. However, it has remained in the range between ¥300 billion and ¥450 billion since the 2nd quarter of 2004, showing that the equipment

investment is losing momentum. The trend of the equipment investment of electrical machinery and information and communication equipment combined is represented in Diagram 1-3-2b. As shown in this diagram, when equipment investment of information and communication equipment is added to that of electrical machinery, an investment peak is seen in the 3rd quarter of 2004 at a massive ¥1 trillion. It then fell to the ¥800 billion level in the 4th quarter of 2004 but showed an upward trend with more than ¥960 billion in the 1st quarter of 2005.



Source: Same as that of Diagram 1-3-1

**Diagram 1-3-2a State of the equipment investment for electrical machinery**



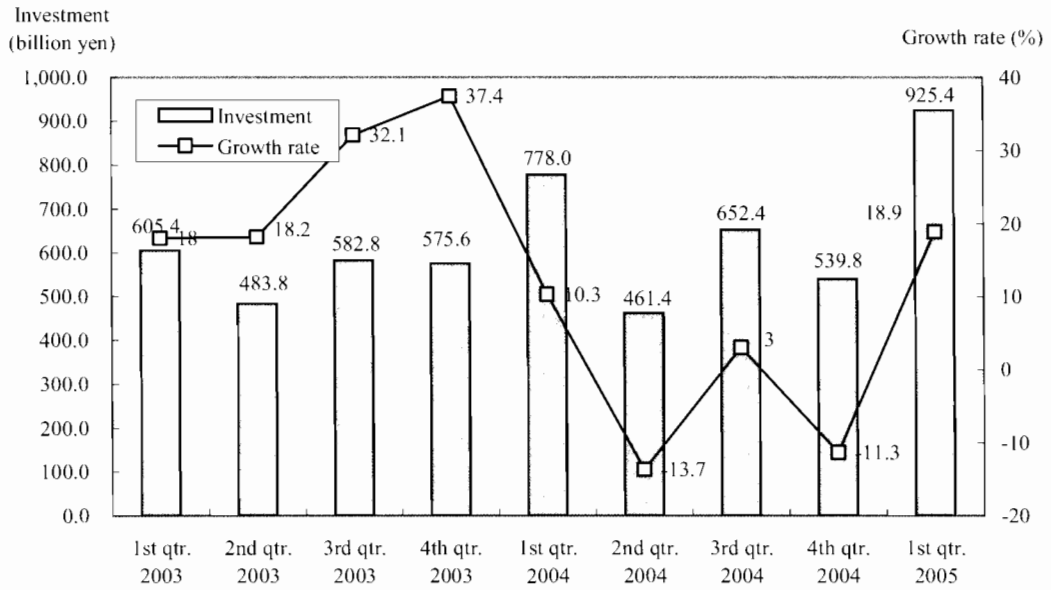
Source: Same as that of Diagram 1-3-1

**Diagram 1-3-2b State of equipment investment for general machinery and information and communication equipment**

### (3) State of the equipment investment for transport equipment

Diagram 1-3-3 represents the trend of equipment investment for transport equipment from the 1st quarter of 2003 through the 1st quarter of 2005. Equipment investment for transport equipment reached nearly ¥780 billion

in the 1st quarter of 2004, then dropped to ¥460 billion in the 2nd quarter but generally remained very active, recording over ¥900 billion in the 1st quarter of 2005.



Source: Same as that of Diagram 1-3-1

**Diagram 1-3-3 State of equipment investment for transport equipment**

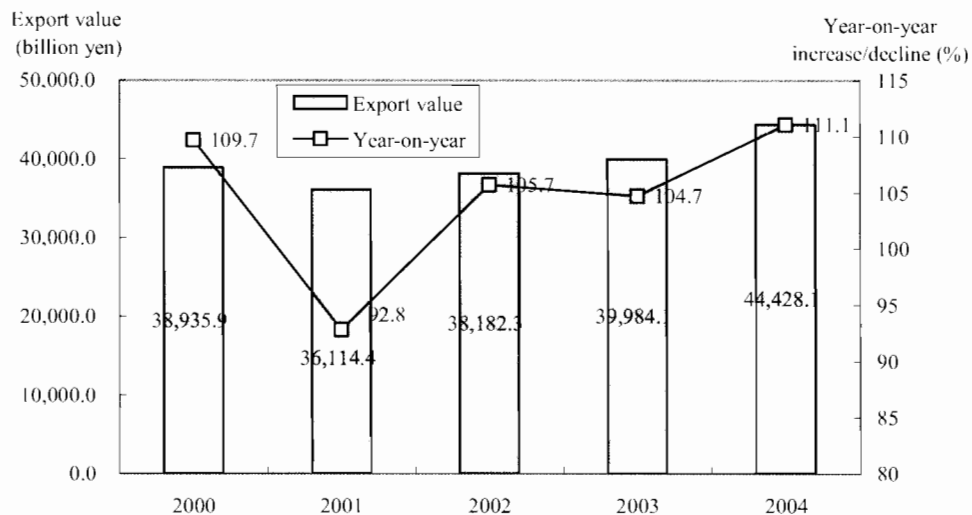


## 1-4 Export State of the Machine Industry

### (1) Export state of the entire machine industry

Diagram 1-4-1 represents the export trend of the machine industry as a whole during the past five years. As shown in this diagram, the total export of the machine industry fell to the ¥36 trillion level in 2001 but came close to ¥40

trillion in 2003 and recorded over ¥44.4 trillion (an 11.1% increase over the previous year), confirming the recovery of the export capability of the machine industry.



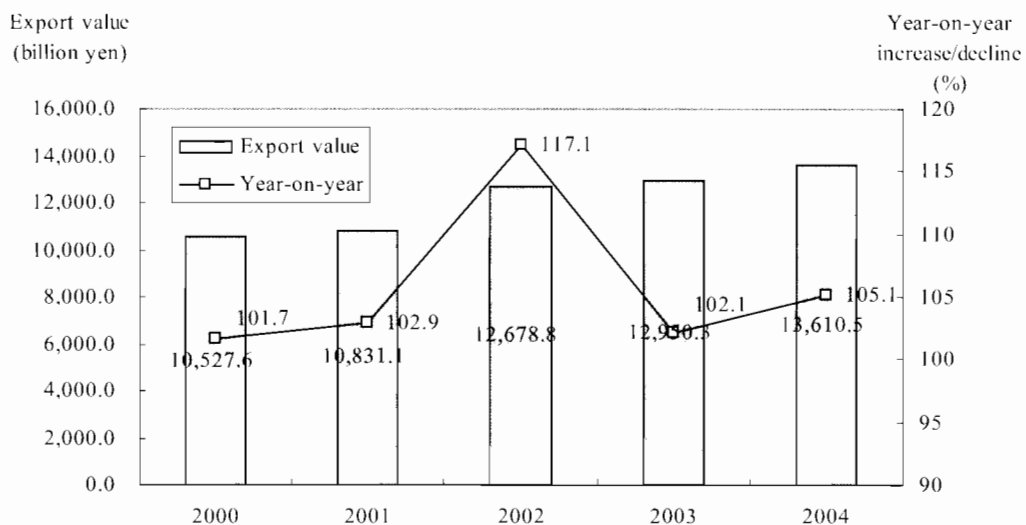
Source: Created based on the "Foreign Trade Statistics," Ministry of Finance, and "Machinery Foreign Trade Statistics," Japan Machinery Center for Trade and Invest

**Diagram 1-4-1 Export state of the entire machine industry**

### (2) Export state of automobiles and passenger cars

Diagram 1-4-2 represents the export trend of automobiles (including passenger cars). As shown in this diagram, the export value of auto-

mobiles has kept an upward trend since 2000 and grew to over ¥12.6 trillion in 2002, over ¥12.9 trillion in 2003, and ¥13.6 trillion in 2004.

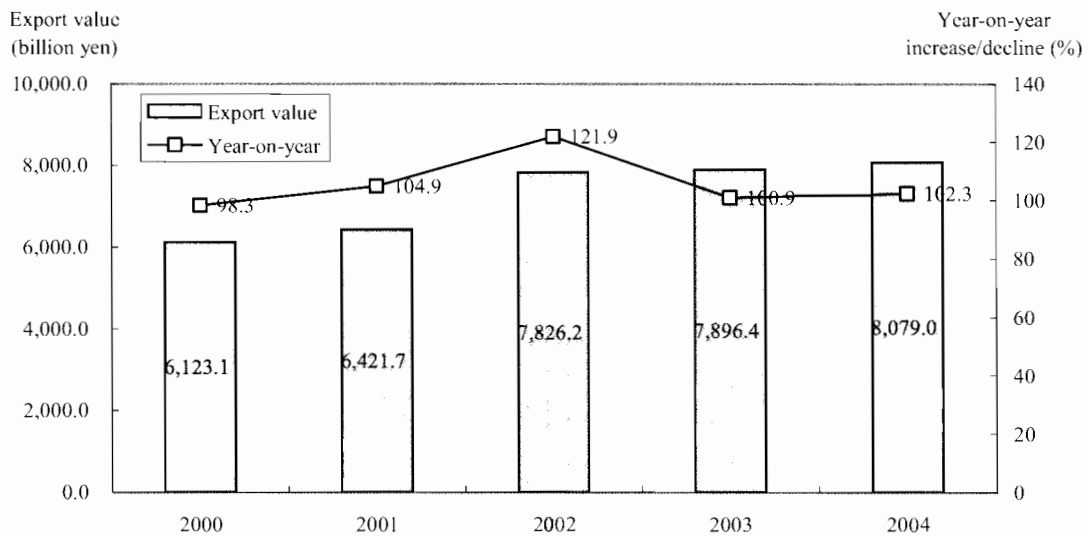


Source: Same as that of Diagram 1-4-1

**Diagram 1-4-2 State of the total export of automobiles**

The state of the export of passenger cars that account for about 60% of the total export of automobiles is represented in Diagram 1-4-3. As

shown in this diagram, the export value reached the ¥8 trillion level in 2004 with an increase of 2.3% over the previous year.



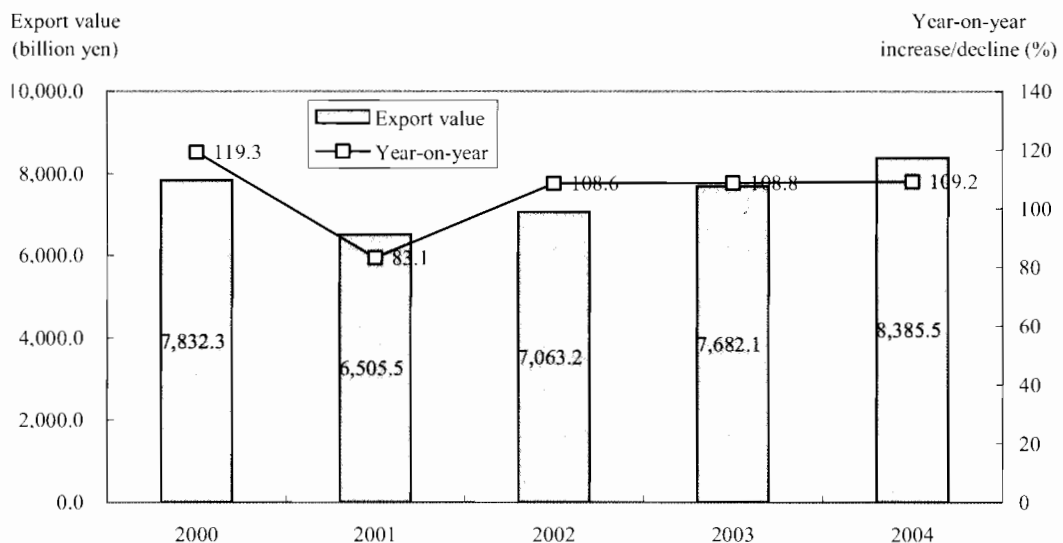
Source: Same as that of Diagram 1-4-1

**Diagram 1-4-3 Export state of passenger cars**

**(3) Export state of household electronic machinery**

Diagram 1-4-4 represents the export trend of household electronic machinery. As shown in this diagram, the export value in 2004 recorded a remarkable increase of 9.2% over the previous year with ¥8.38 trillion, which was the highest value in the past five years. This may be due to

the increasing export of core components/parts, etc. from Japan against the background of the growing demand for household electronic machinery, including various components/parts in Asia, especially in China.



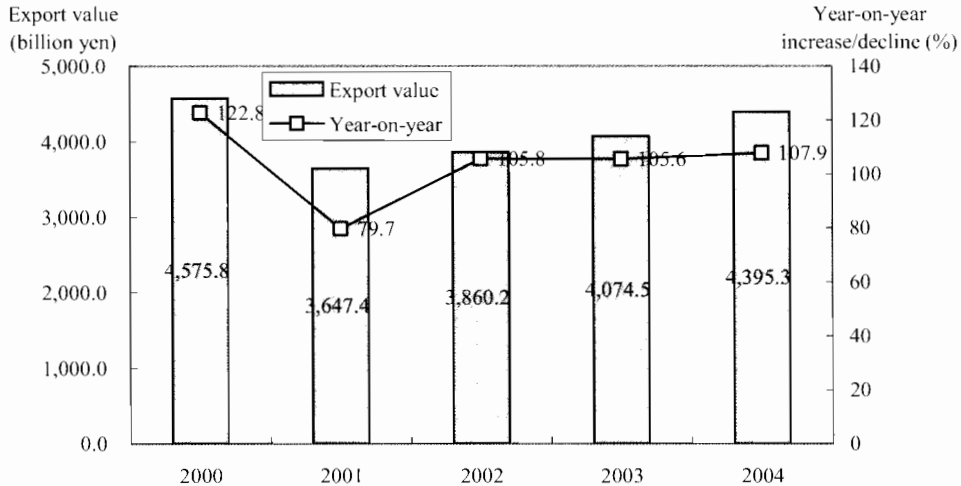
Source: Same as that of Diagram 1-4-1

**Diagram 1-4-4 Export state of household electronic machinery**

#### (4) Export state of electronics devices

Diagram 1-4-5 represents the export trend of electronics devices. As is evident in this diagram, the export value of electronics devices peaked at ¥4.57 trillion in 2000, stagnated in 2001 and 2002, and then moved upward to the ¥4 trillion level in 2003 and strengthened the

recovery trend in 2004 with ¥4.39 trillion, which was still below the year 2000 level. The background of the export recovery is the growing demand for IT-related devices, especially in the Asian region.



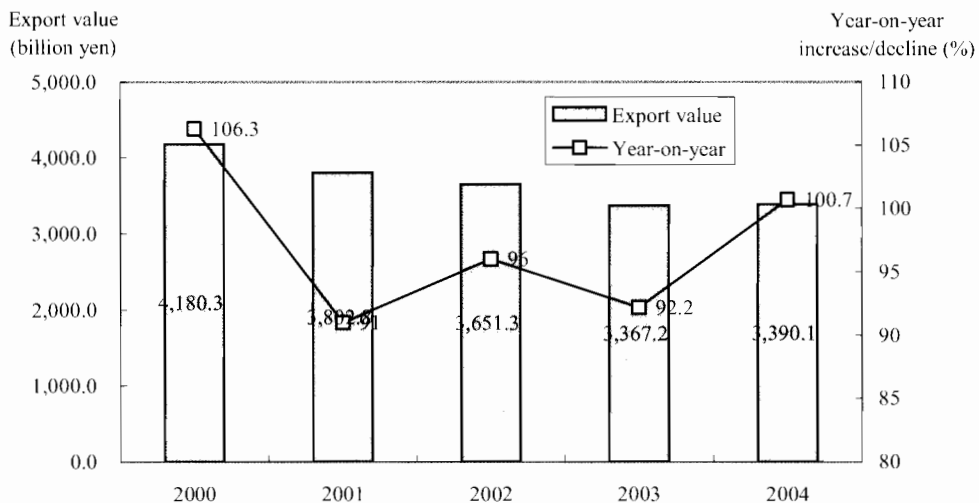
Source: Same as that of Diagram 1-4-1

**Diagram 1-4-5 Export state of electronics devices**

#### (5) Export state of electric telecommunication machinery

Diagram 1-4-6 represents the export trend of electric telecommunication machinery. As is evident in this diagram, the export has been on a downward trend after recording a 5-year peak in 2000 at ¥4.18 trillion, regrettably showing a sig-

nificant decrease in export capability in this field. However, 2004 saw a slight increase of 0.7% over the previous year, suggesting a sign of improvement. Let us hope for further recovery in the future



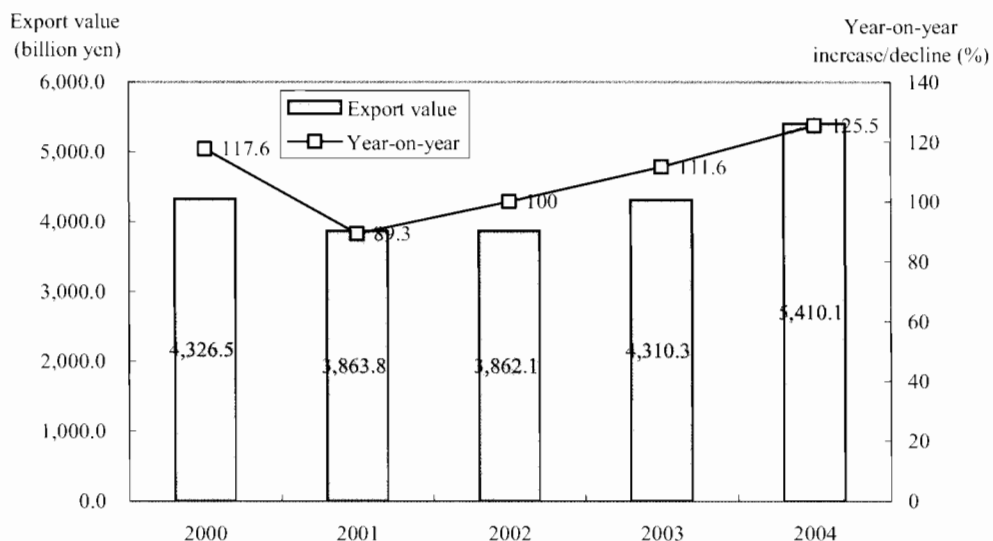
Source: Same as that of Diagram 1-4-1

**Diagram 1-4-6 Export state of electric telecommunication machinery**

### (6) Export state of industrial machinery

Diagram 1-4-7 represents the export trend of industrial machinery. As is evident in this diagram, their export value was on a downward trend up to 2002 after a peak of ¥4.3 trillion in 2000 but recovered to the ¥4.3 trillion level in 2003 and jumped to ¥5.4 trillion (25.5% increase

over the previous year) in 2004. The backgrounds include the continued demand in this field accompanying the strong equipment investment in the Asian region, especially in China.



Source: Same as that of Diagram 1-4-1

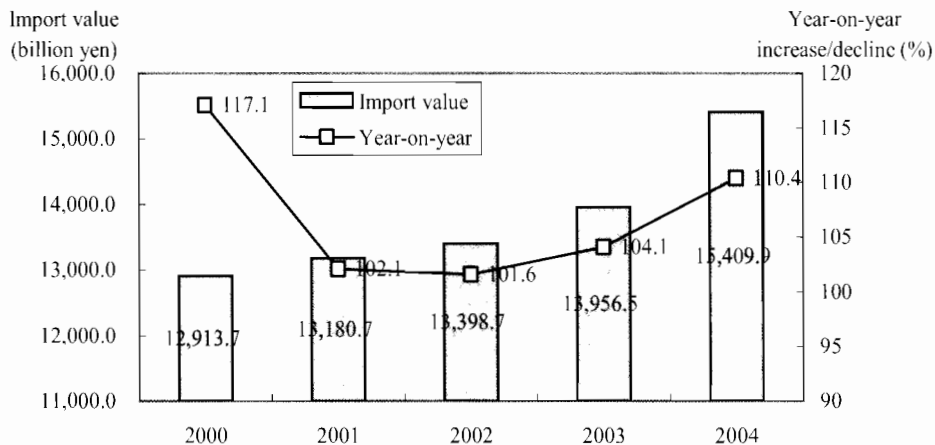
**Diagram 1-4-7 Export state of industrial machinery**

## 1-5 Import State of the Machine Industry

### (1) Import state of the entire machine industry

Diagram 1-5-1 represents the import trend of the machine industry as a whole over the past five years. As shown in this diagram, the import value of the machine industry continued gradual growth from 2000 to 2003 with a clear tendency of the increasing foreign dependency rate of the

industry. In 2004, it recorded a remarkable increase of 10.4% over the previous year to ¥15.4 trillion. This is evidence of the progress of globalization in the Japanese machine industry as well as enhanced international specialization.



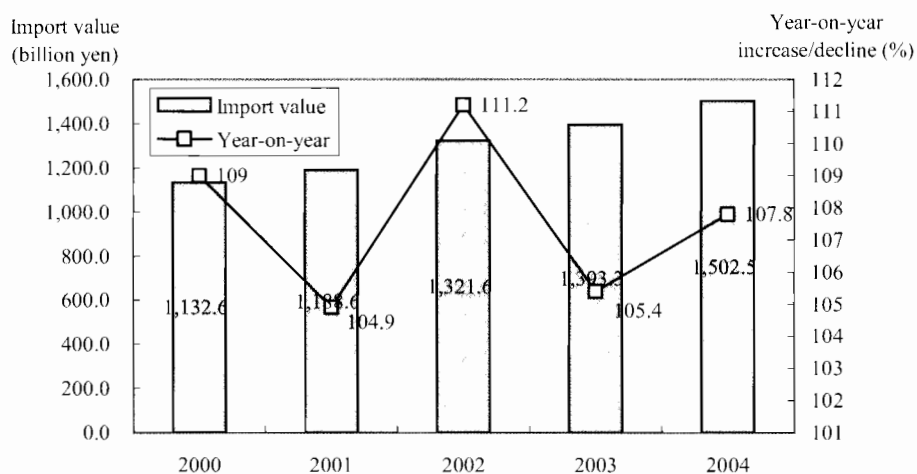
Source: Same as that of Diagram 1-4-1

**Diagram 1-5-1 Import state of the entire machine industry**

### (2) Import state of automobiles and passenger cars

Diagram 1-5-2 represents the import trend of automobiles (including passenger cars) during the past five years. As shown in this diagram, the import value of automobiles has kept a gentle upward trend since 2000 and grew to the ¥1.3 trillion level in 2002. This is enough to suggest a

stronger trend of import and reverse import by Japanese companies. In 2004, imports reached ¥1.5 trillion, the highest value in the past five years, with an increase of 7.8% over the previous year.

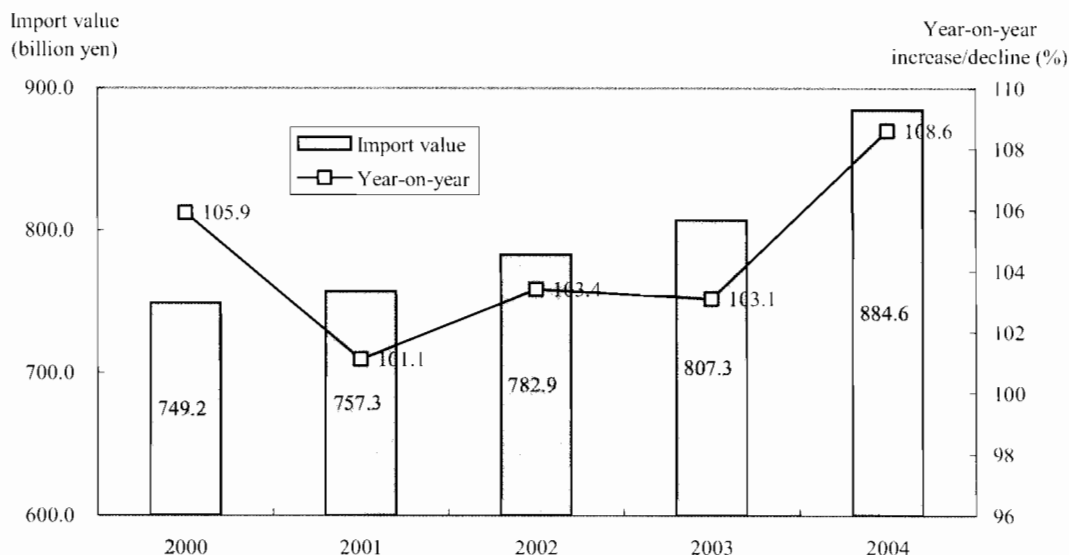


Source: Same as that of Diagram 1-4-1

**Diagram 1-5-2 Import state of automobiles**

The state of the import of passenger cars is represented in Diagram 1-5-3. The import value reached the ¥800 billion level in 2003 and fur-

ther recorded over ¥880 billion (accounting for 58.9% of the total import of automobiles) in 2004.



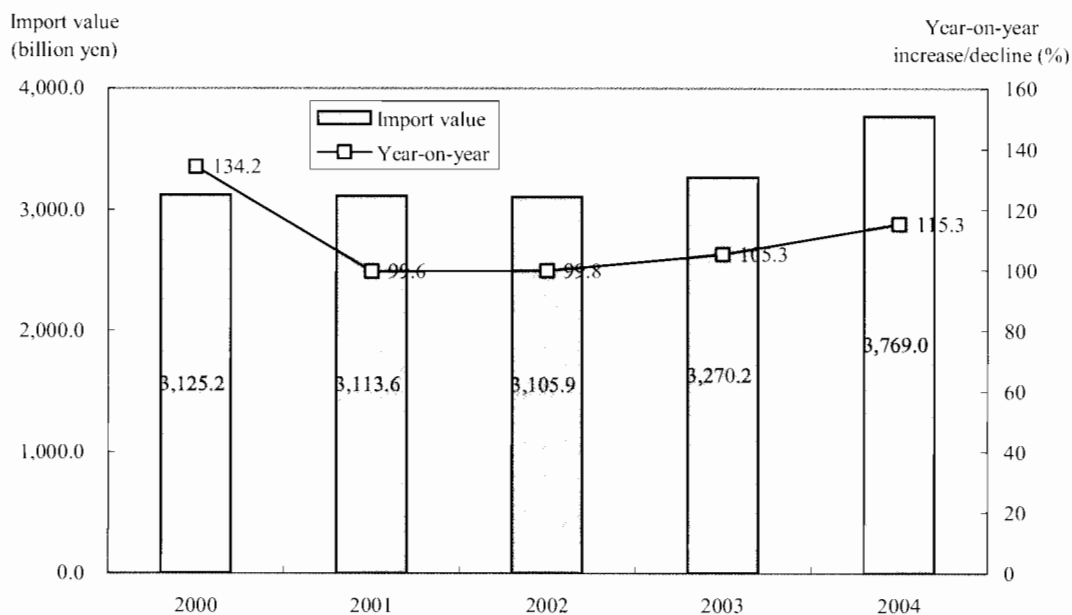
Source: Same as that of Diagram 1-4-1

**Diagram 1-5-3 Import state of passenger cars**

**(3) Import state of household electronic machinery**

Diagram 1-5-4 represents the import trend of household electronic machinery. Imports, which had been broadly flat since 2000, ex-

ceeded ¥3.2 trillion in 2003 and further grew to ¥3.77 trillion in 2004 with an increase of 15.3% over the previous year.



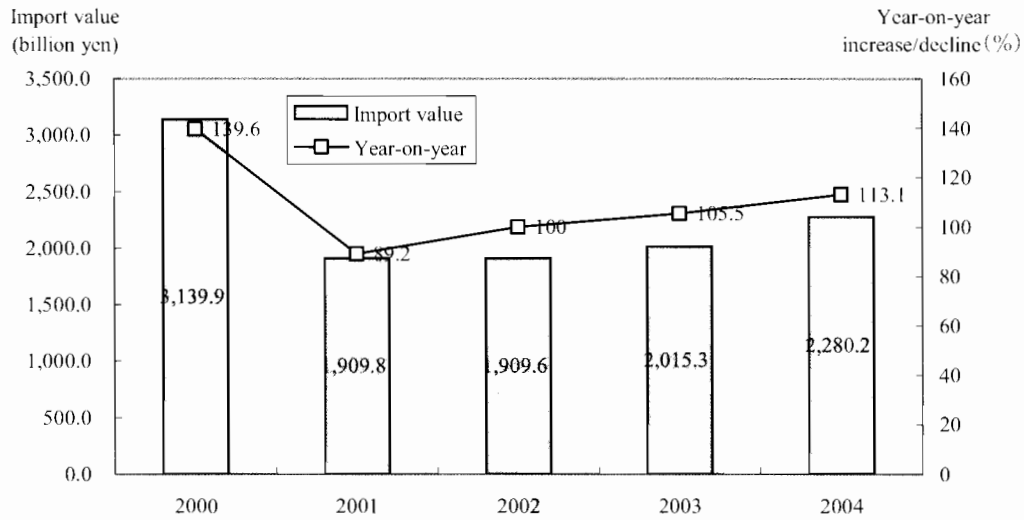
Source: Same as that of Diagram 1-4-1

**Diagram 1-5-4 Import state of household electronic machinery**

**(4) Import state of electronics devices**

Diagram 1-5-5 represents the import trend of electronics devices. As is evident from this diagram, the import of electronics devices was on the decrease in 2001 and 2002 but finally

recovered to the ¥2 trillion level in 2003 and showed signs of increasing, reaching ¥2.28 trillion (13.1% increase over the previous year).



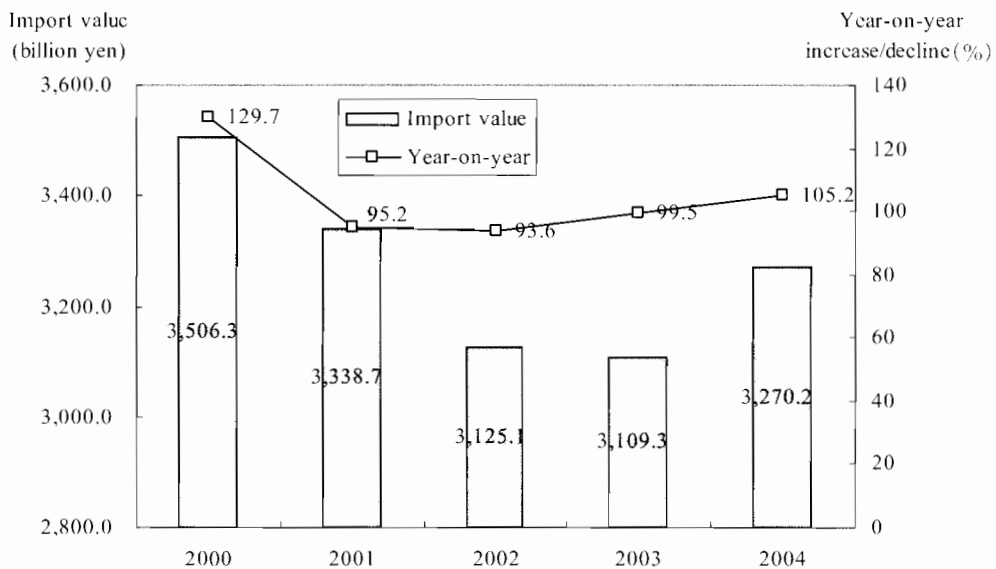
Source: Same as that of Diagram 1-4-1

**Diagram 1-5-5 Import state of electronics devices**

**(5) Import state of electric telecommunication machinery**

Diagram 1-5-6 represents the import trend of electric telecommunication machinery. As shown in this diagram, imports were on a

downward trend from 2001 to 2003 but increased 5.2% over the previous year to ¥3.27 trillion in 2004, showing a slight recovery.



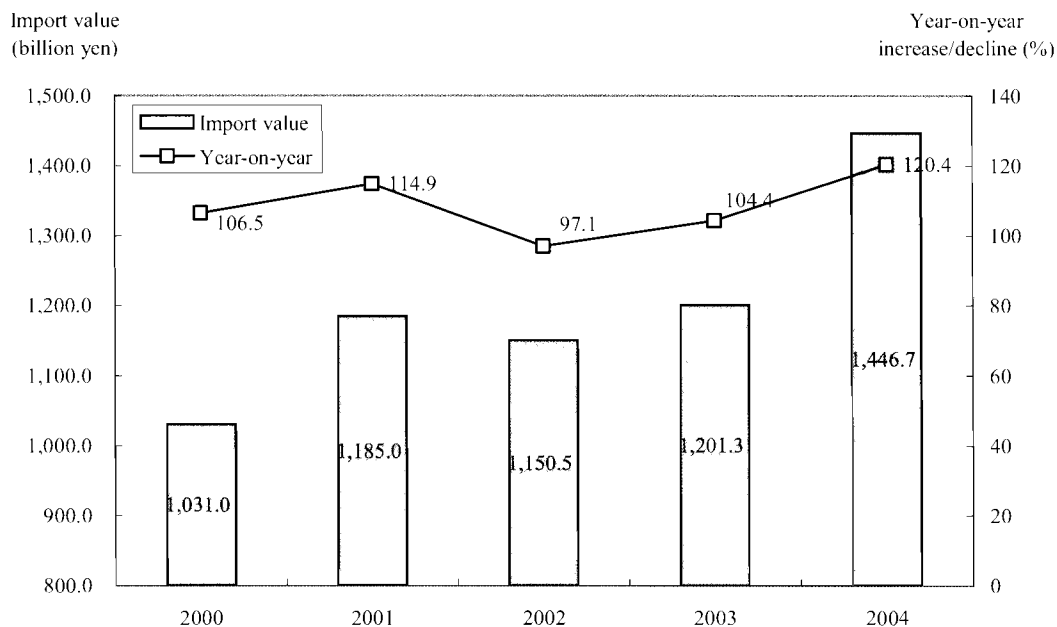
Source: Same as that of Diagram 1-4-1

**Diagram 1-5-6 Import state of electric telecommunication machinery**

**(6) Import state of industrial machinery**

Diagram 1-5-7 represents the import trend of industrial machinery. Its export value reached the ¥1.2 trillion level in 2003 and further grew to

over ¥1.44 trillion, increasing 20.4% over the previous year, which suggests that imports are also on the upbeat in this industry.



Source: Same as that of Diagram 1-4-1

**Diagram 1-5-7 Import state of industrial machinery**