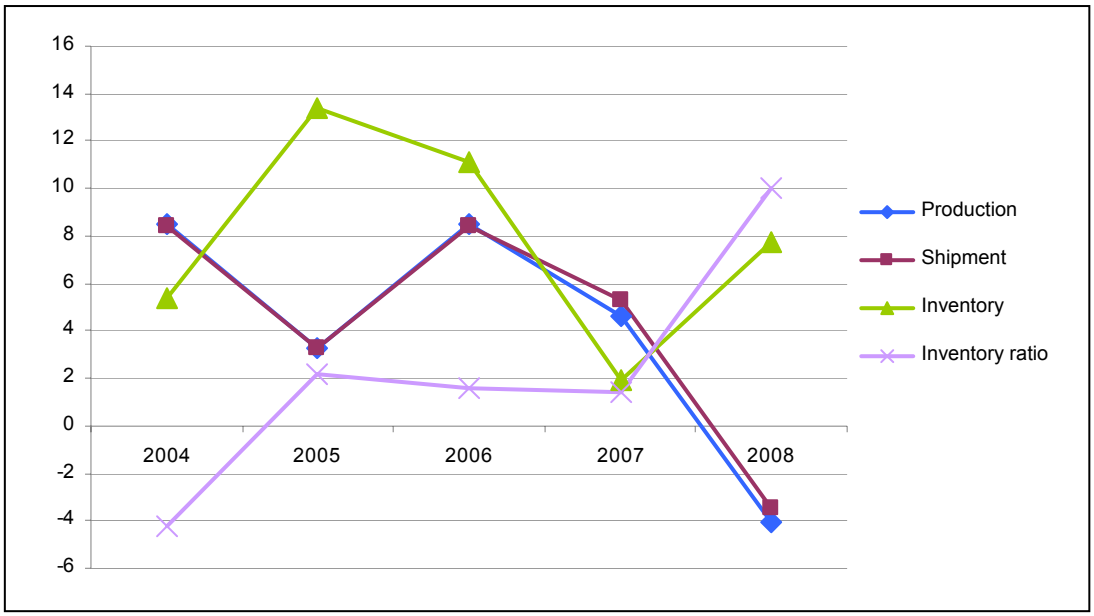
1. Trend of the Machine Industry in Japan

1.1. Trend of the production, shipment, etc. of the machine industry

(1) Trend of the machine industry in the past five years

The production index of the machine industry (excluding steel vessels and railway vehicles) in 2008 showed a decrease to -4.1 points, falling from the level in the previous year. Behind this was the fact that, while the output of precision machines rose, that of general machines, electronic parts and devices, transportation machines and information and communication machines all decreased. The shipment index also fell compared with the previous year's level because just as in the case of production index, this index declined for general machines, electronic parts and devices, transportation machines and information and communication machines although that of precision machines increased. The inventory index rose to +7.7 points, higher than in 2007, and this was because the inventory index of electronic parts and devices, information and communication machines and general machines increased although that of transportation machines fell. The inventory ratio rose to +10.0 points, a higher level than that in the previous year.

Fig. 1.1.1 Trend of the industrial indexes of the entire machine industry (year-on-year basis)



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

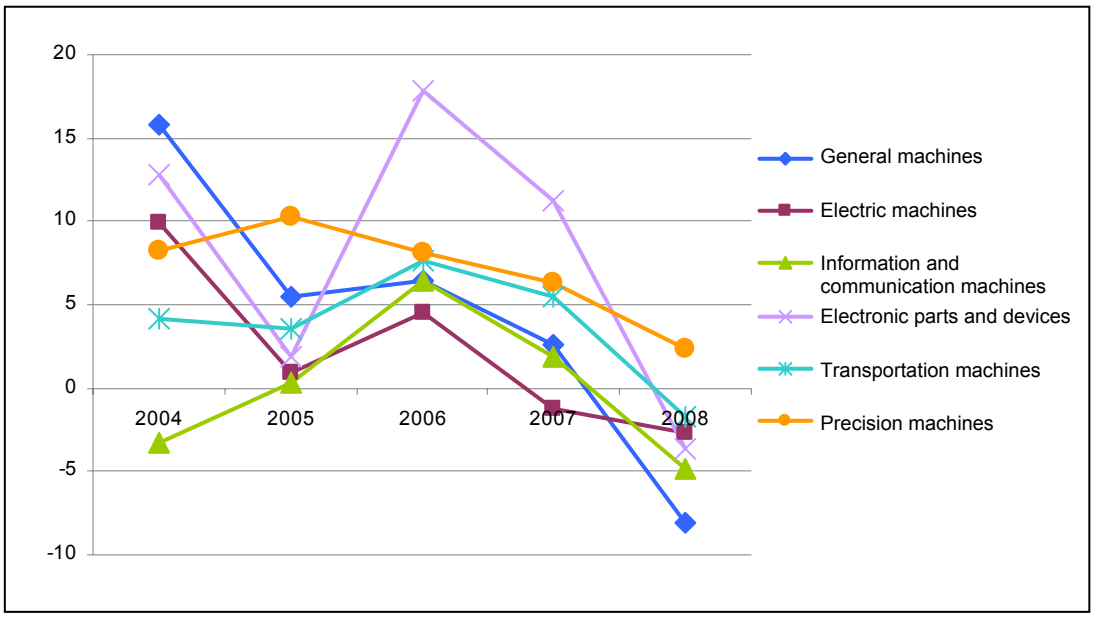
The trend of the production, shipment and inventory indexes and inventory ratio of the machine industry (excluding steel vessels and railway vehicles) on a year-on-year basis from 2004 to 2008 is as shown in Figure 1.1.1. As evident from this figure, the production index had been positive until 2007 but fell sharply in 2008. The shipment and inventory indexes turned into a decrease at the same time. By contrast, the inventory index and inventory ratio showed a downward trend in 2007 but

greatly rose in 2008, and the inventory index (as compared with the previous year) was higher than in 2004.

The probable factor contributing to the downturn of the machine industry in 2008 is slackening in transportation machines due to the Lehman shock-caused worldwide recession starting in September 2008, which began to affect general machines, etc., too, and was reflected on the statistics for 2008.

The trend of the machine industry indexes by business category is as shown in Figure 1.1.2. As this figure indicates, a great declining tendency is observed in all of the industrial indexes regardless of business category, and the figures in 2008 were negative for all of the business categories excluding precision machines. The sharpest decrease was seen in electronic parts and devices. Another important characteristic in 2008 was the fact that transportation machines and general machines, which had remained relatively firm in the past several years, entered a decreasing phase.

Fig. 1.1.2 Trend of the production index of the machine industry by business category (year-on-year basis)

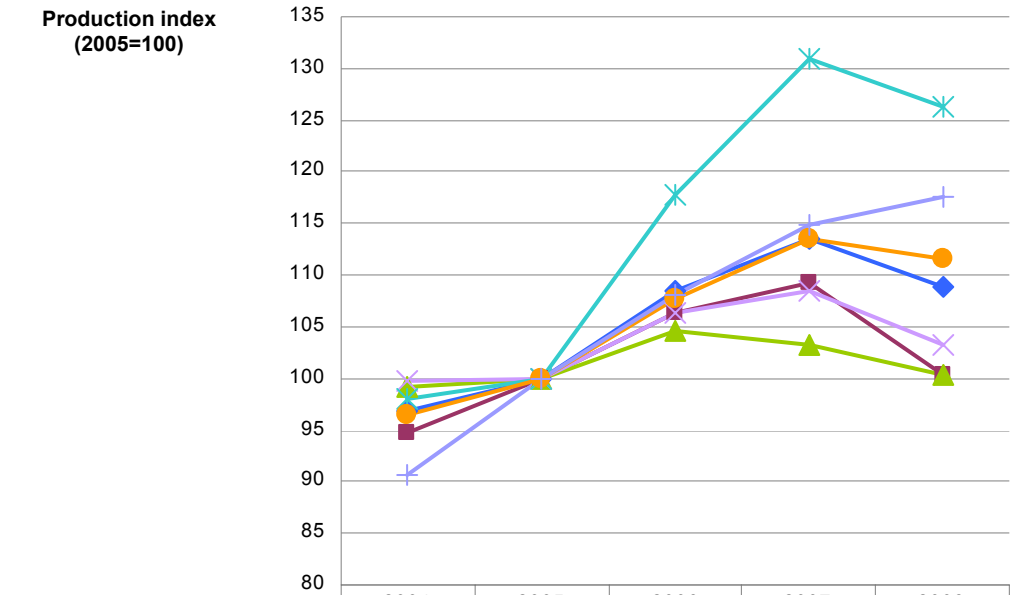


Source: Same as that for Fig. 1.1.1.

Figures 1.1.3 and 1.1.4 show the trend of the production and shipment indexes of the machine industry (excluding steel vessels and railway vehicles) as a whole and by business category supposing that the figure for 2005 were 100. First, the production index of the entire machine industry in 2008 was 108.9 points, which was higher than that in the base year 2005 by 8.9 points and on a similar level to that in 2006. Thus, the machine industry in 2008 recorded a better production index than in the base year 2005 as a whole, although it began to feel the impact of the Lehman shock. Behind this was the situation where precision machines continued to attain a good performance of 117.6 points and electronic parts and devices registered 126.3 points, which were

smaller than in 2007 but relatively favorable results. It can also be seen that transportation machines had a similar level to that in the previous year with 111.6 points. On the other hand, general machines and electric machines saw a similar level to 2005 with 100.4 points, and information and communication machines had 103.2 points, suffering a fall of 5.2 points from 2007. In the years ahead, it is feared that a rapid cool-off in the North American market after the Lehman shock will result in a prolonged stagnation in transportation machines and general machines.

Fig. 1.1.3 Trend of the production index of the machine industry (2005=100)



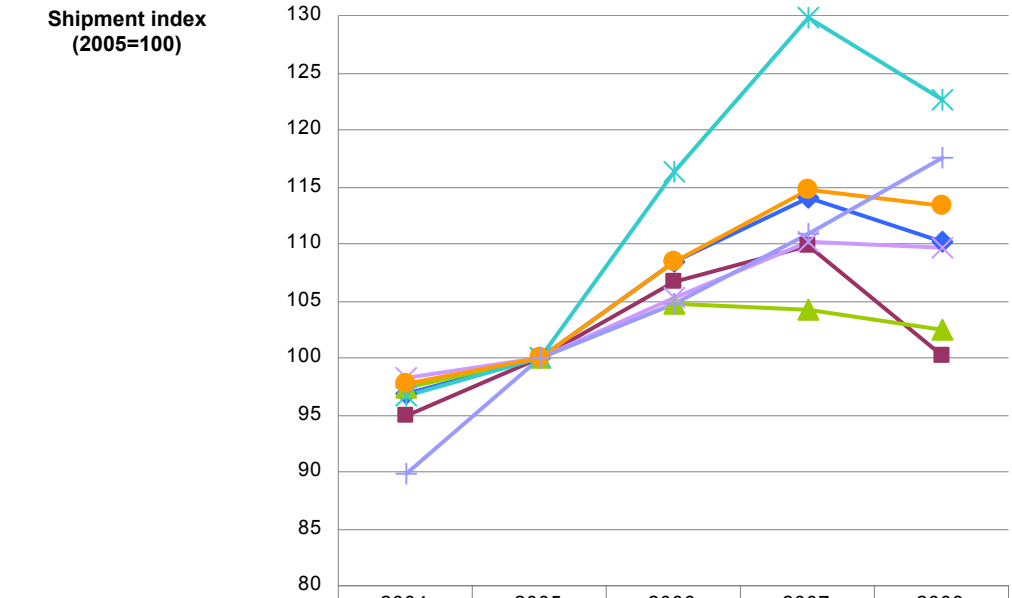
	2004	2005	2006	2007	2008
Machine industry (excluding steel vessels and railway vehicles)	96.8	100	108.5	113.5	108.9
General machines	94.8	100	106.4	109.2	100.4
Electric machines	99.1	100	104.5	103.2	100.4
Information and communication machines	99.7	100	106.4	108.4	103.2
Electronic parts and devices	98.1	100	117.8	131	126.3
Transportation machines (excluding steel vessels and railway vehicles)	96.5	100	107.6	113.5	111.6
Precision machines	90.7	100	108.1	114.9	117.6

Source: Same as that for Fig. 1.1.1.

The shipment index of the entire machine industry (Fig. 1.1.4) in 2008 was 110.1 points or an increase of 10.1 points over that in the base year 2005. This was a drop of 4 points from 2007 but can be regarded as a relatively high level. By business category, the figure for general machines was 100.1 points, close to that for 2005, showing a marked decline. Electric machines also continued to

decrease as in 2007 and stayed at 102.5 points. Information and communication machines registered 109.6 points, remaining steady although not so high as in 2007, and also firm were electronic parts and devices (122.6 points) and transportation machines (113.4 points). While almost all of the business categories suffered a fall in points from 2007, only precision machines enjoyed a better performance of 117.6 points (up 6.8 points over 2007).

Fig. 1.1.4 Trend of the shipment index of the machine industry (2005=100)



	2004	2005	2006	2007	2008
Machine industry (excluding steel vessels and railway vehicles)	96.8	100	108.4	114.1	110.1
General machines	95	100	106.6	109.9	100.1
Electric machines	97.3	100	104.7	104.2	102.5
Information and communication machines	98.2	100	105.3	110.2	109.6
Electronic parts and devices	96.6	100	116.4	129.9	122.6
Transportation machines (excluding steel vessels and railway vehicles)	97.7	100	108.4	114.7	113.4
Precision machines	89.9	100	104.8	110.8	117.6

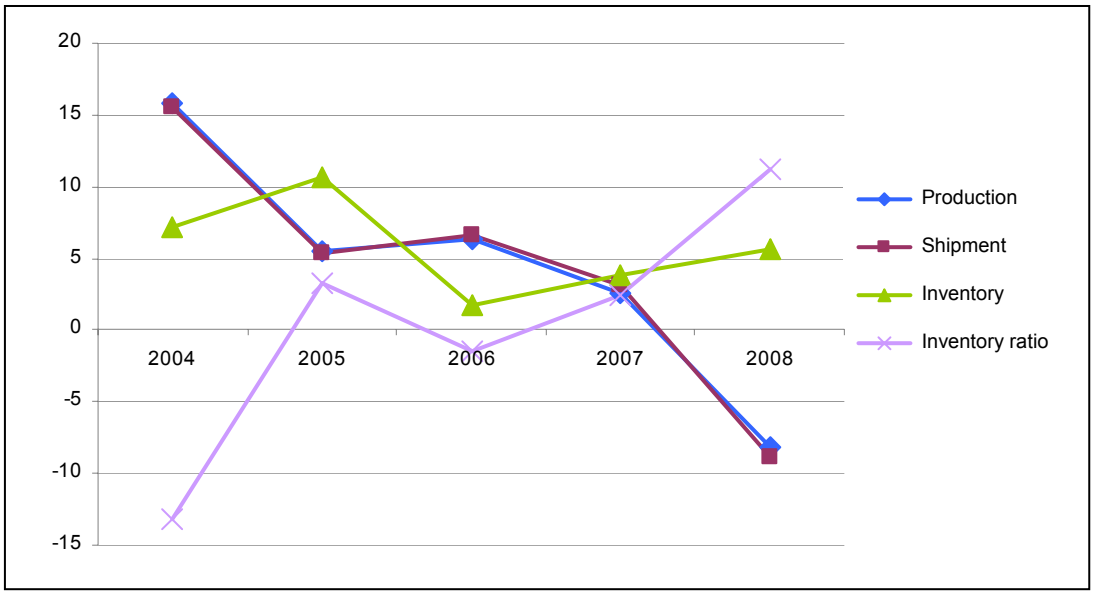
Source: Same as that for Fig. 1.1.1.

(2) Trend of the general machine industry

As shown in Figure 1.1.5, the production index of the general machine industry (boilers and motors, civil engineering and construction machines, chemical machines, life-related industrial machines, semiconductors and flat-panel devices, wind-powered and hydraulic machines and oil pressure equipment, conveying and carrying machines, industrial robots, farm machines, metal

machine tools, metal working machines, textile machines, freezers and applied products, dies, machinery tools, other general machines and general machine parts) in 2008 decreased to -8.1 points, a fall for the first time in six years. The impact of the decreased production of semiconductors and flat-panel devices, civil engineering and construction machines, boilers and motors, textile machines and other general machines can be pointed out as the reason for this. The shipment index also fell to -8.9 points, a decline after an interval of six years just as for the production index. The cause was the same as that for the production index: the lower shipment of semiconductors and flat-panel devices, civil engineering and construction machines, boilers and motors, textile machines, etc. By contrast, the inventory index increased to +5.7 points, a rise for the fifth consecutive year. The factor behind this is the fact that while the output of freezers and applied products, farm machines, etc. decreased, that of civil engineering and construction machines, general machine parts, boilers and motors, etc. grew. The inventory ratio rose to +11.2 points, an increase for two straight years.

Fig. 1.1.5 Trend of the industrial indexes of the general machine industry (year-on-year basis)

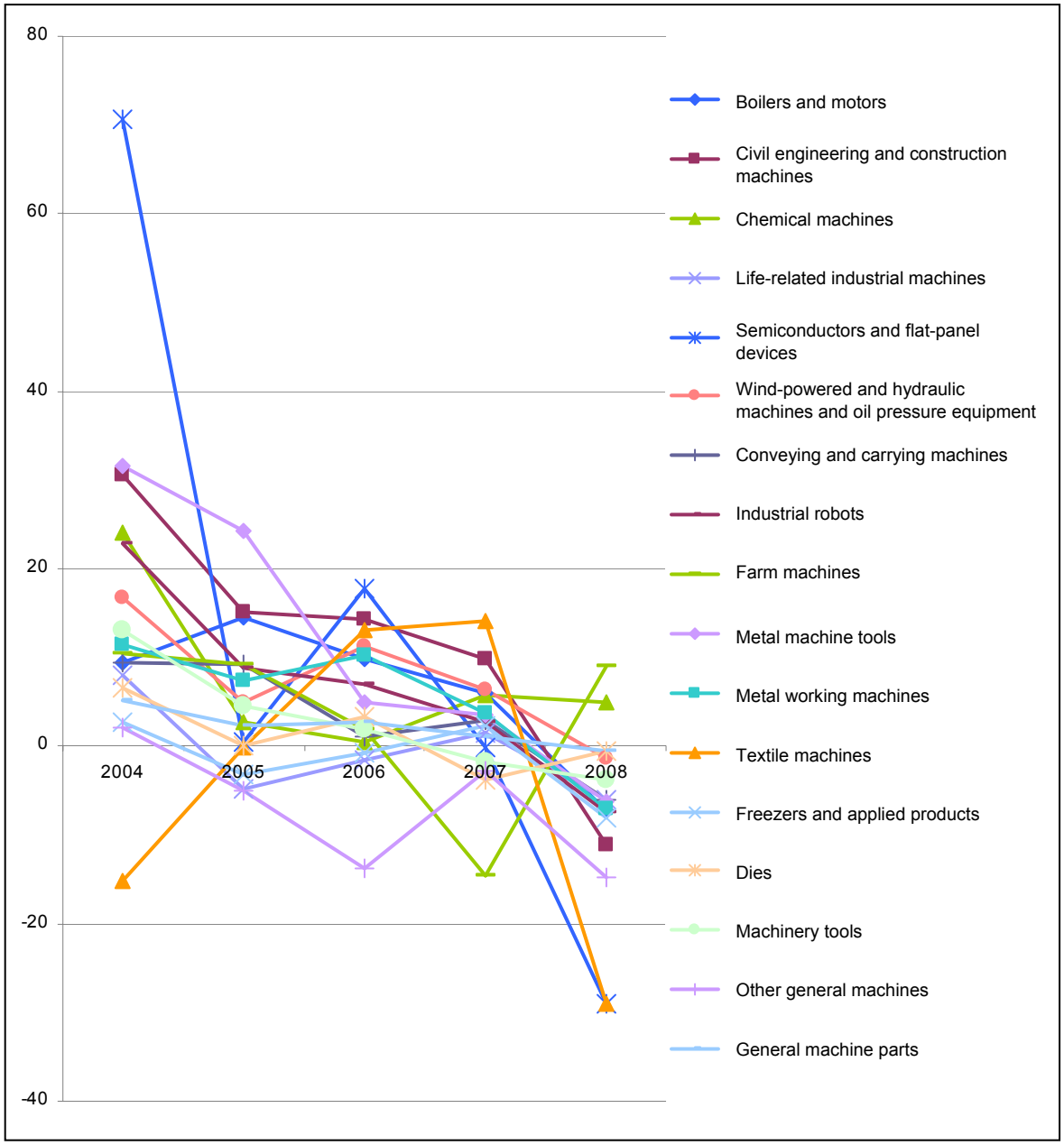


Source: Same as that for Fig. 1.1.1.

Figure 1.1.6 shows the trend of the industrial indexes of the general machine industry by business category. As evident from this figure, the business categories recording positive points were farm machines (+9.1 points) and chemical machines (+5.0 points) only, while all of the other general machine industries had a negative figure. Textile machines (-29.1 points) registered the lowest level as a reaction to the good performance in 2006 and 2007. Semiconductors and flat-panel devices started to be on the decrease in 2007 and had a further fall to -29.0 points in 2008. All of the other business categories registered a negative index, too: other general machines (-14.7 points), civil engineering and construction machines (-11.1 points), freezers and applied products (-8.1 points), industrial robots (-7.5 points) and boilers and motors (-7.3 points). The above figures indicate that a

rapid cutback in the production of automobiles for the U.S. market owing to the Lehman shock in September 2008 started to greatly affect the general machine industry, the manufacturer of production goods.

Fig. 1.1.6 Trend of the production indexes of the general machine industry by business category (year-on-year basis)

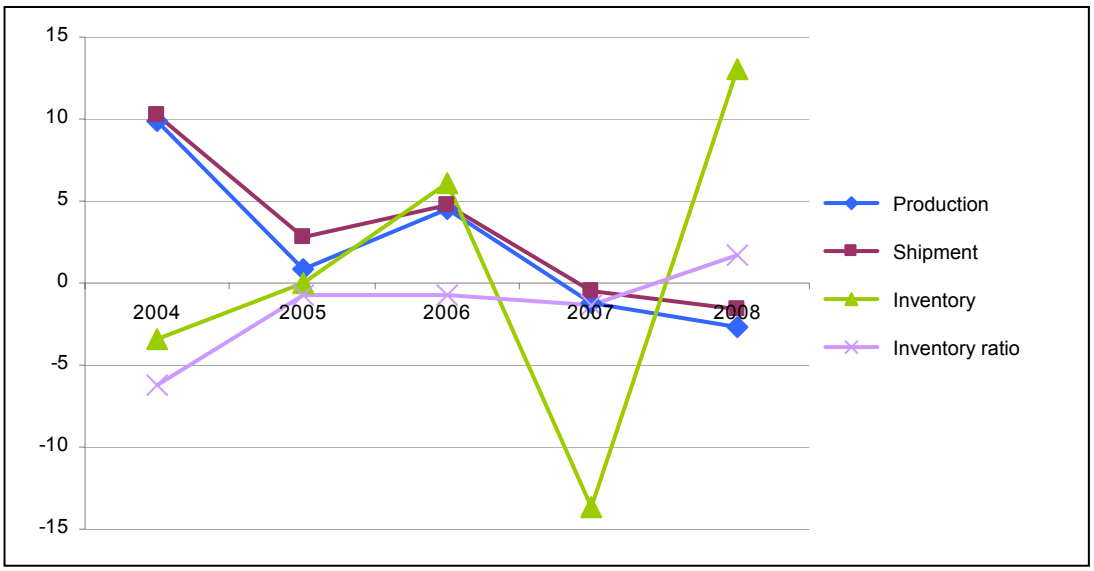


Source: Same as that for Fig. 1.1.1.

(3) Trend of the electric machine industry

As Figure 1.1.7 shows, the production index of the electric machine industry (rotary electric machines, stationary electric machines, switching devices and equipment, consumer electric machines, wiring/lighting appliances, electronic application devices, batteries and other electric machines) in 2008 was -2.7 points, a fall year on year, continuing the declining trend of 2007. A substantial decrease in the output of electric measuring instruments as described later and the falling production of electronic application devices, which had been relatively steady in the past several years, can be pointed out as main reasons behind this. The shipment index increased a downward trend as the production index, and the sluggish sentiment about the electric machine industry was undeniable. As the production and shipment indexes increased the falling tendency, the inventory index in 2008 considerably rose and the inventory ratio also showed a positive figure, turning from the downward trend in the past.

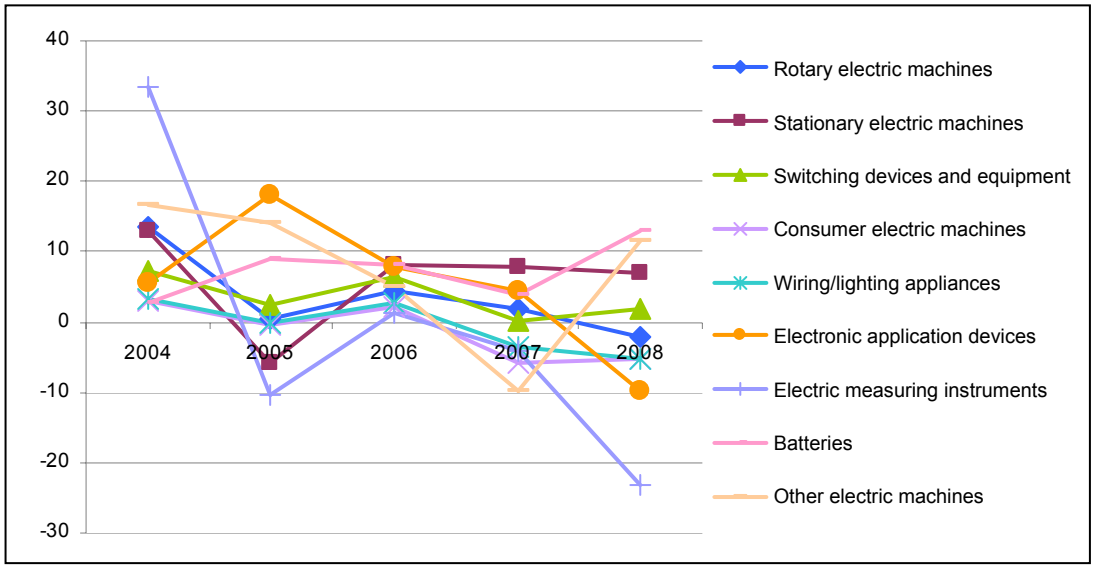
Fig. 1.1.7 Trend of the industrial indexes of the electric machine industry (year-on-year basis)



Source: Same as that for Fig. 1.1.1.

The trend of the production index of the electric machine industry by business category is as shown in Figure 1.1.8. From this figure, it can be seen that the performance of batteries and other electric machines were very favorable in 2008. The production index of batteries in 2008 was +12.9 points, attaining a high in these several years. Other electric machines turned into a positive figure of 11.5 points from -9.7 points in 2007, achieving a rapid recovery. Stationary electric machines were also firm, keeping a level of +7 points or so since 2006. On the other hand, the production index of electric measuring instruments entered a negative phase in 2007 and increased this trend in 2008, registering -23.1 points. Another segment suffering a substantial fall in the production index was that of electronic application devices; this product segment had a positive figure until 2007 but suffered a sharp fall to -9.9 points in 2008.

Fig. 1.1.8 Trend of the production index of the electric machine industry by business category (year-on-year basis)

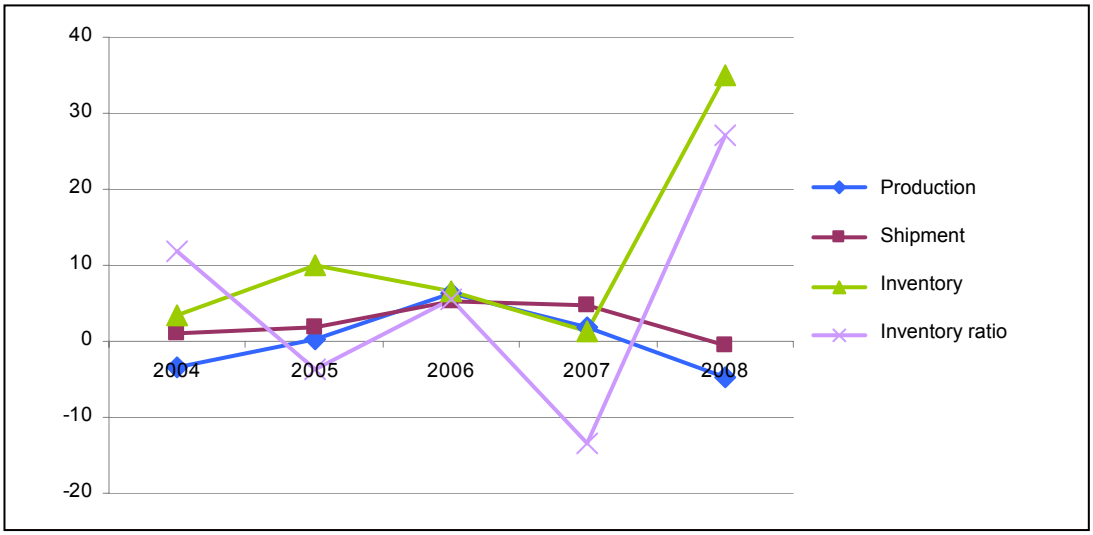


Source: Same as that for Fig. 1.1.1.

(4) Trend of the information and communication machine industry

Figure 1.1.9 shows the industrial indexes of the information and communication machine industry (communication machines, consumer electronic machines, electric computers and other information and communication machines). As evident from this figure, the industrial indexes of this industry entered a decreasing phase in 2008; the production index was -4.8 points and the shipment index, -0.5 points.

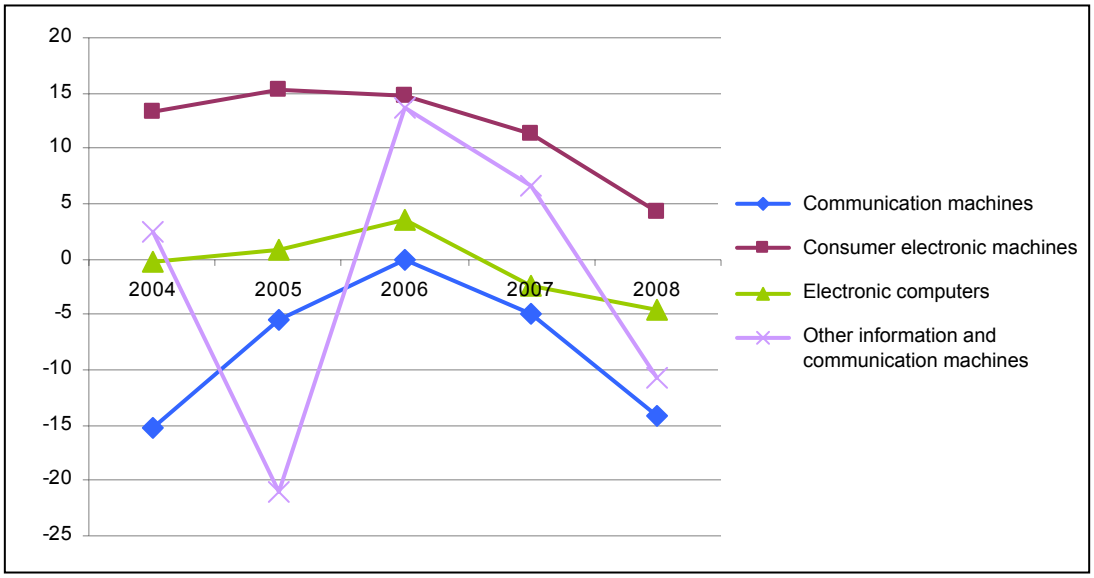
Fig. 1.1.9 Trend of the industrial indexes of the information and communication machine industry (year-on-year basis)



Source: Same as that for Fig. 1.1.1.

The trend of the production index of the information and communication machine industry by business category is as shown in Figure 1.1.10. As this figure indicates, the production index of communication machines was -14.1 points, a substantial decrease from the previous year. That of other information and communication machines, which was relatively high with +6.7 points in 2007, showed a great decline to -10.8 points in 2008. The production index of electric computers was in a downward trend already in 2007 and went down further to -4.5 points in 2008. As a result, consumer electronic machines were the only segment of the information and communication machine industry that registered a positive production index of +4.2 points in 2008. This segment had a production index over +10 points until 2007 but experienced a marked fall to less than 10 points in 2008.

Fig. 1.1.10 Trend of the production index of the information and communication machine industry by business category (year-on-year basis)

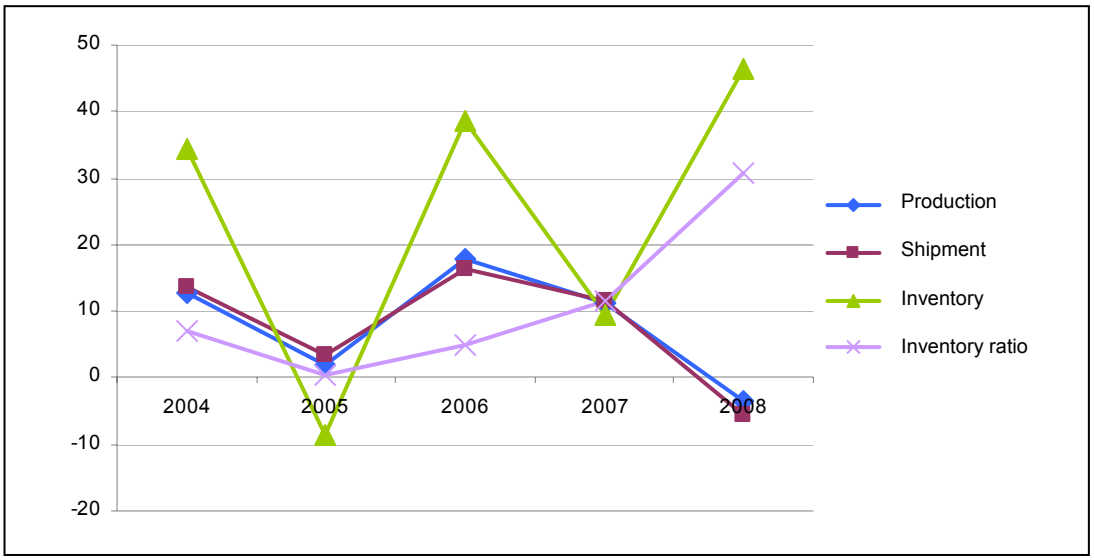


Source: Same as that for Fig. 1.1.1.

(5) Trend of the electronic parts and device industry

Figure 1.1.11 shows the industrial indexes of the electronic parts and device industry (electronic parts, semiconductor devices, integrated circuits and semiconductor parts). As seen in this figure, the production index in 2008 was -3.6 points, a lower level than in the previous year. The shipment index had kept a favorable tendency during the past several years, but suffered a sudden drop in 2008. The shipment index also declined to -5.6 points at the same time as the production index. Reflecting the sluggishness of both the production and shipment indexes, the inventory index in 2008 considerably rose to +46.3 points, which were larger than +38.5 points in 2006. Similarly, the inventory ratio increased to +30.9 points, much more than +11.5 points in 2007. What can be pointed out as the reasons behind these situations are weak domestic demand and the fact that as the global market for electronic parts and device was in confusion, price competition intensified further.

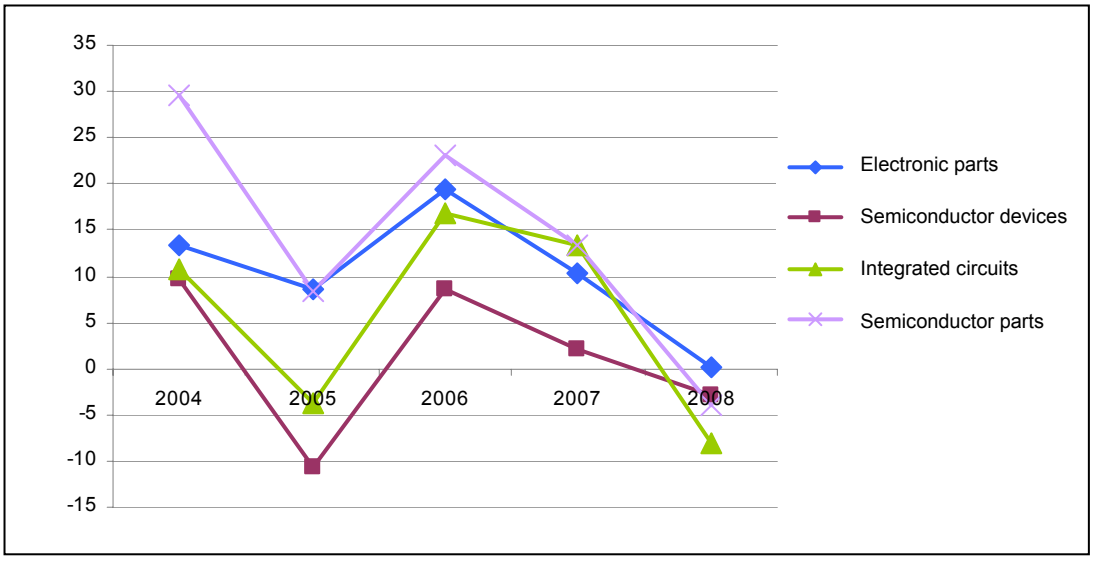
Fig. 1.1.11 Trend of the industrial indexes of the electronic parts and device industry (year-on-year basis)



Source: Same as that for Fig. 1.1.1.

The trend of the production index of the electronic parts and device industry by business category is as shown in Figure 1.1.12. As evident from this figure, the index of integrated circuits greatly decreased from +13.4 points in 2007 to -8.1 points in 2008. That of semiconductor parts also fell from +13.3 points in 2007 to -3.9 points in 2008. The index of semiconductor devices turned into a negative one, too.

Fig. 1.1.12 Trend of the production index of the electronic parts and device industry by business category (year-on-year basis)

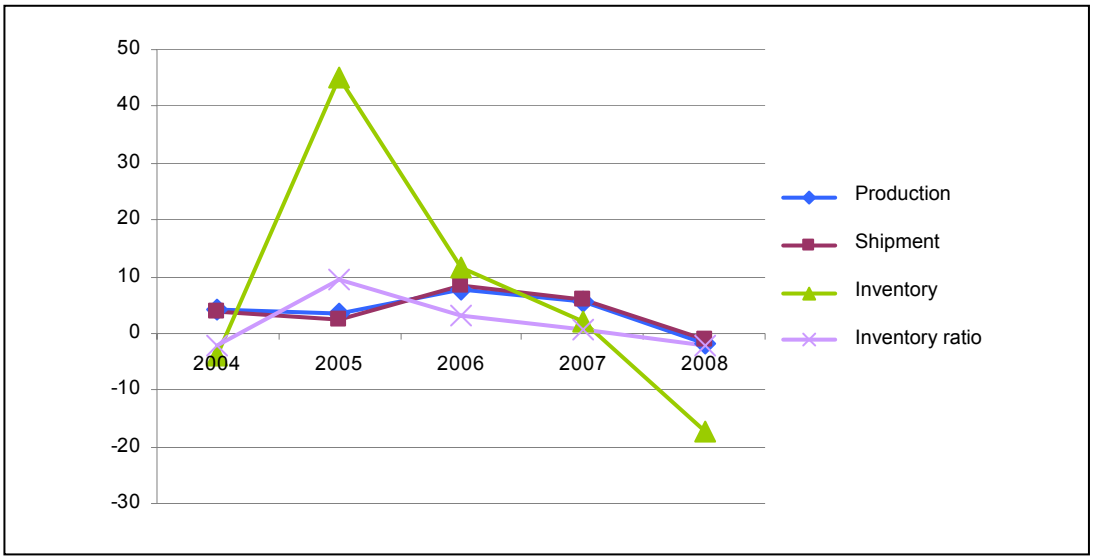


Source: Same as that for Fig. 1.1.1.

(6) Trend of the transportation machine industry

Figure 1.1.13 shows the industrial indexes of the transportation machine industry (passenger cars, buses, trucks, automotive parts, two-wheeled vehicles and industrial vehicles). As this figure indicates, the production index of the transportation machine industry in 2008 was -1.7 points, suddenly turning into a decreasing stage from the positive figures of 5 points or so recorded until 2007. The shipment index declined to -1.1 points, too. In addition, the inventory index greatly dropped to -17.3 points, and the inventory ratio entered a downward phase. The main factor contributing to this discouraging situation is the fact that while transportation machines had enjoyed a good performance until the first half of 2008, overseas demand for these products started a rapid decline in the second half affected by the Lehman shock and manufacturers all began to reduce production.

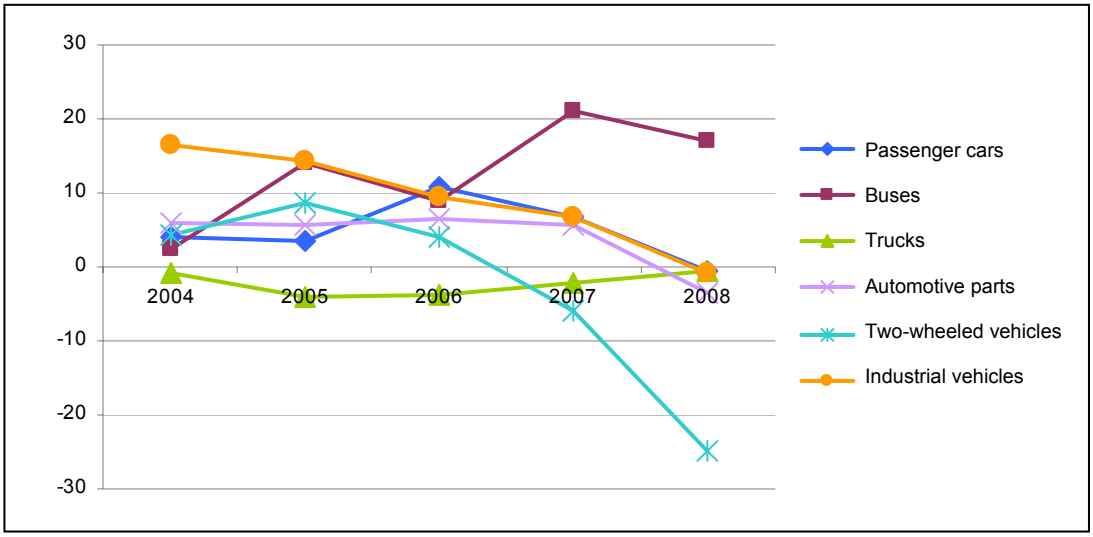
Fig. 1.1.13 Trend of the industrial indexes of the transportation machine industry (year-on-year basis)



Source: Same as that for Fig. 1.1.1.

The trend of the production index of the transportation machine industry by business category is as shown in Figure 1.1.14. As seen in this figure, a notable tendency in 2008 was a sharp drop in the production index of two-wheeled vehicles. The index of these vehicles was already in a decreasing trend in 2007 with -6.0 points and further fell to -24.9 points in 2008. The situation where young people continued to move away from two-wheelers in Japan can be mentioned as the reason behind this, and it is supposed that poorer overseas demand caused by the impact of the Lehman shock affected domestic output. Another characteristic in 2008 is that the index of passenger cars experienced a downward phase, and at the same time the index of automotive parts, which had achieved relatively good results in the past, fell to -3.6 points. Trucks had -0.5 points but showed a recovering trend a little. Only products enjoying favorable results were buses, recording a high level of +17.1 points, although this was lower than +21.1 points in 2007.

Fig. 1.1.14 Trend of the production index of the transportation machine industry (year-on-year basis)



Source: Same as that for Fig. 1.1.1.

(7) Trend of the precision machine industry

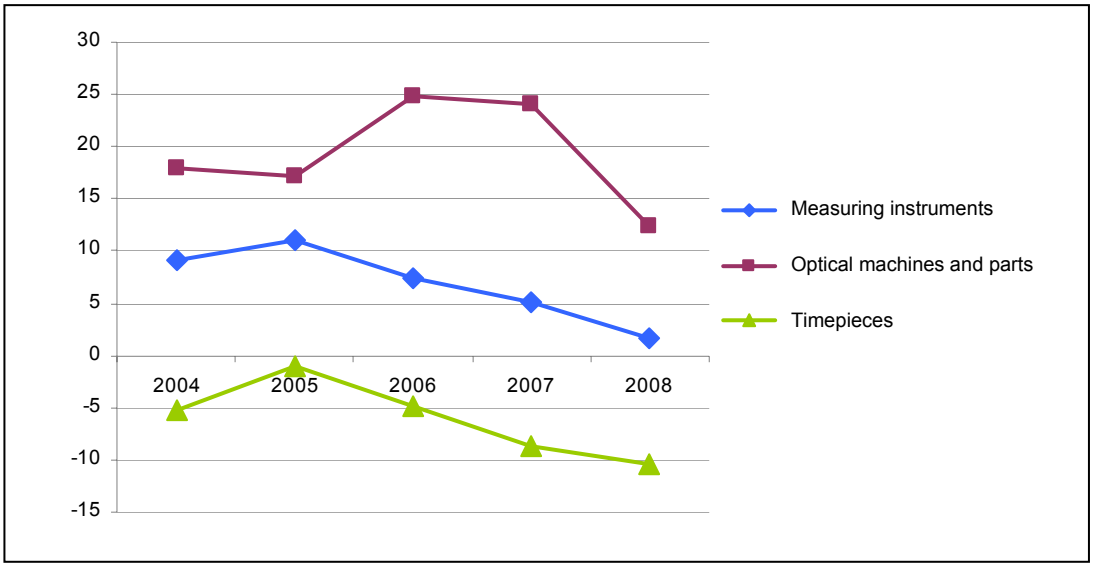
Figure 1.1.15 shows the industrial indexes of the precision machine industry (measuring instruments, optical machines and parts, and timepieces). As evident from this figure, the production index of the precision machine industry in 2008 kept a positive figure of +2.3 points although the level was the lowest in the past several years. The shipment index was +1.6 points, a relatively good figure. The inventory index and inventory ratio have tended to show a positive and negative figure every three years, and in 2008, it suddenly turned into a negative one.

Fig. 1.1.15 Trend of the industrial indexes of the precision machine industry (year-on-year basis)

Source: Same as that for Fig. 1.1.1.

The production index of the precision machine industry by business category as compared with the previous year is as shown in Figure 1.1.16. As indicated in this figure, timepieces suffered a big drop; their production index in 2008 was -10.4 points, a level lower than -8.6 points in the previous year. By contrast, optical machines and parts kept a good result with +12.3 points, although this was lower than +24.1 points in 2007. The index of measuring instruments has continued to fall since 2006 and was +1.6 points. As summarized above, the production index by business category in 2008 (as compared with the previous year) was generally on a downward trend: while optical machines and parts, which are related to the medical care and test device fields, kept up a high level, it is supposed that the area of measuring instruments, which depends on the situation of capital investment, was influenced by the Lehman shock and in a declining phase as the world economy stagnated. For timepieces, the introduction of some popular products, such as new mechanical timepieces, can be regarded as a flash of hope. However, because the production system of timepieces is a combined-type one adopted after the introduction of digital products, it is now totally integrated into the network of global supply chains rather than that of domestic production, and timepiece functions have been built in cellular phones. For these reasons, the situation where no rapid expansion in domestic demand can be expected will continue in the years ahead.

Fig. 1.1.16 Trend of the production index of the precision machine industry by business category (year-on-year basis)



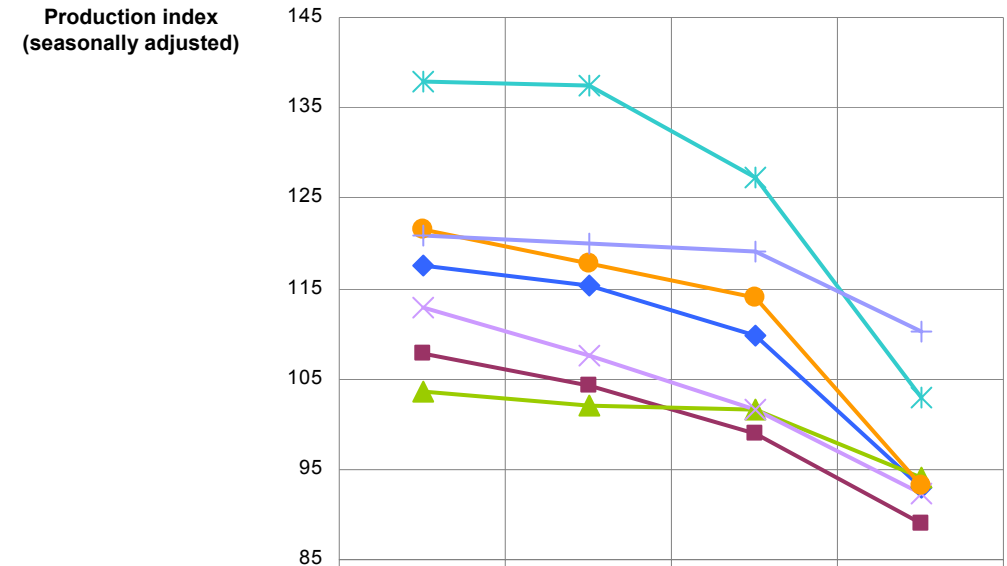
Source: Same as that for Fig. 1.1.1.

1.2. Trend of the industrial indexes of the machine industry in 2008

(1) Trend of the production index in 2008 by quarter

Figure 1.2.1 shows the trend of the production index (seasonally adjusted; 2005=100) in 2008 by quarter of the entire machine industry and its main branch industries. As shown in this figure, the production index of the entire machine industry (excluding steel vessels and railway vehicles) declined in points in all of its main branch industries in the IInd quarter and after, showing a marked downward trend especially in the IIIrd and IVth quarters. In the IVth quarter, all of the branch industries, except electronic parts and devices and precision machines, had a fall from the level in the base year 2005, driven into a very difficult situation. By main branch industry, the general machine industry registered over 100 points until the IInd quarter but fell to 99.0 points in the IIIrd quarter and to 88.9 points in the IVth quarter. The electric machine industry managed to secure over 100 points until the IIIrd quarter but declined to 94.1 points in the IVth quarter. The information and communication machine industry started to increase a downward trend in the IIIrd quarter and went below the 100-point mark in the IVth quarter. The electronic parts and device industry was able to register over 100 points until the IVth quarter but the performance in the IVth quarter was a sharp decrease to 102.9 points from 127.2 points in the IIIrd quarter. The transportation machine industry (excluding steel vessels and railway vehicles) did well until the IIIrd quarter, recording over 110 points, but fell suddenly to 93.1 points in the IVth quarter, showing a noticeable declining tendency. Finally, the precision machine industry, together with the electronic parts and device industry, recorded more than 100 points until the IVth quarter, when it enjoyed a high level of 110.3 points while the electronic parts and device industry decreased its index to 102.9 points. As summarized above, the production index of the machine industry in 2008 by quarter truly indicated the fact that the production began to drop rapidly in the IVth quarter that came after the Lehman shock in September 2008.

Fig. 1.2.1 Production index of the machine industry in 2008 by quarter (seasonally adjusted; 2005=100)



	Ist quarter	IInd quarter	IIIrd quarter	IVth quarter
Machine industry (excluding steel vessels and railway vehicles)	117.5	115.3	109.7	92.9
General machines	107.9	104.3	99	88.9
Electric machines	103.5	102.1	101.5	94.1
Information and communication machines	112.9	107.5	101.6	92.3
Electronic parts and devices	137.9	137.5	127.2	102.9
Transportation machines (excluding steel vessels and railway vehicles)	121.5	117.7	114	93.1
Precision machines	120.8	120	119.1	110.3

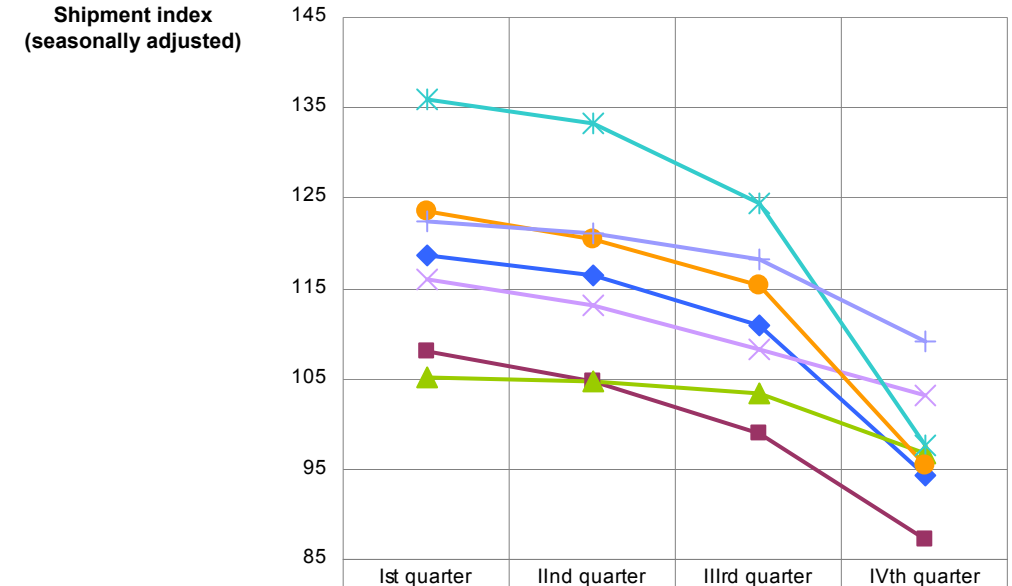
Source: Same as that for Fig. 1.1.1.

(2) Trend of the shipment index in 2008 by quarter

Figure 1.2.2 shows the trend of the shipment index (seasonally adjusted; 2005=100) in 2008 by quarter of the machine industry and its main branch industries. As seen in this figure, the shipment index of the whole machine industry (excluding steel vessels and railway vehicles) in 2008 remained relatively good until the IIIrd quarter but decreased to 94.4 points in the IVth quarter, falling into a difficult situation just as for the production index. By main branch industry, the general machine industry went below 100 points in the IIIrd quarter and then fell sharply to 87.2 points in the IVth quarter, the lowest level of the machine industry. The electric machine industry showed a relatively gradual fall until the IIIrd quarter although in a downward trend, but decreased to 96.7 points in the IVth quarter. The information and communication machine industry showed a falling tendency but registered 103.2 points even in the IVth quarter, which were higher than the level in the base year

2005. The electronic parts and device industry was on the decline but on a high level until the IIIrd quarter but suddenly dropped to below 100 points in the IVth quarter. The transportation machine industry (excluding steel vessels and railway vehicles) was on a relatively high level until the IIIrd quarter but decreased to 95.4 points in the IVth quarter, which was the second lowest after the general machine industry. Finally, the precision machine industry had the slowest falling trend of the main branch industries.

Fig. 1.2.2 Shipment index of the machine industry in 2008 by quarter (seasonally adjusted; 2005=100)



	Ist quarter	IInd quarter	IIIrd quarter	IVth quarter
Machine industry (excluding steel vessels and railway vehicles)	118.7	116.5	110.9	94.4
General machines	108	104.6	98.9	87.2
Electric machines	105.1	104.7	103.4	96.7
Information and communication machines	115.9	113.1	108.3	103.2
Electronic parts and devices	135.9	133.2	124.5	97.7
Transportation machines (excluding steel vessels and railway vehicles)	123.6	120.4	115.3	95.4
Precision machines	122.4	121.1	118.1	109.1

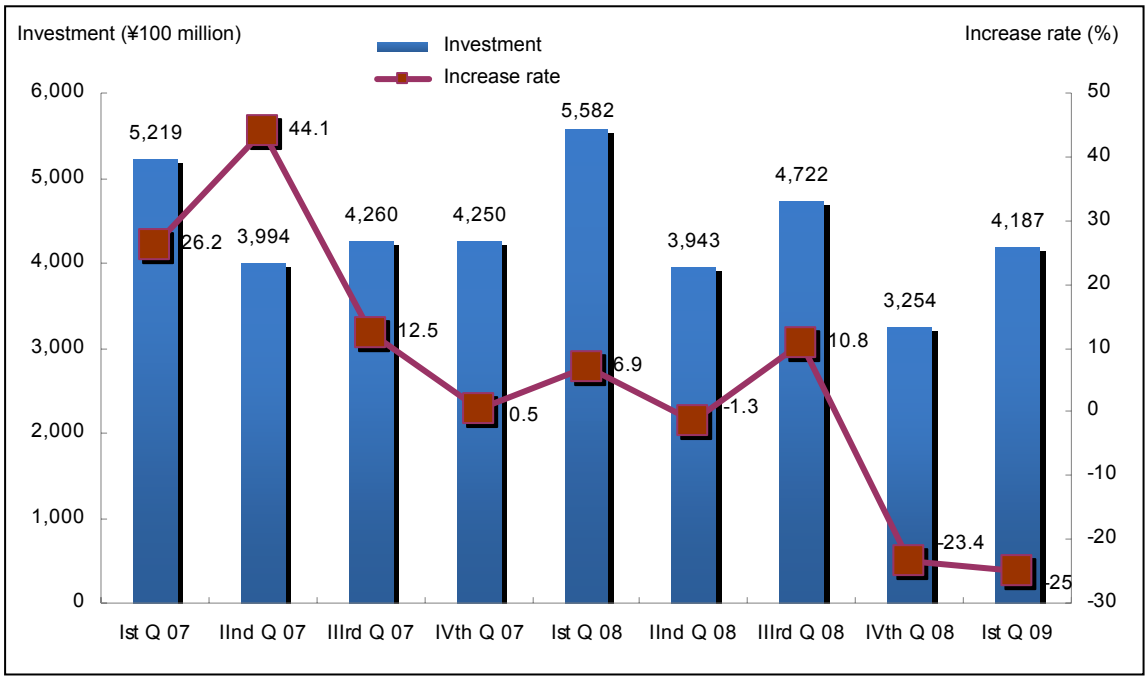
Source: Same as that for Fig. 1.1.1.

1.3. Situation of the capital investment of the machine industry

(1) Situation of the capital investment of the general machine industry

Figure 1.3.1 shows the trend of capital investment of the general machine industry from the Ist quarter of 2007 to the Ist quarter of 2009. As this figure indicates, the capital investment of the general machine industry began to substantially decrease in the IInd quarter of 2007, and this tendency continued until the IVth quarter of that year. The fall was especially big in the IVth quarter of 2008. The trend of the increase rates (quarter-on-quarter) reached a peak in the IInd quarter of 2007 and was then on the decline in general, decreasing to -20% in the IVth quarter of 2008 and the Ist quarter of 2009. As noted, the capital investment of the general machine industry had a periodical trend but started to show a considerable quarter-on-quarter decrease in the IVth quarter of 2008. It can be seen from this fact that affected by the decreased production by the automobile industry (described later) due to the impact of the Lehman shock, capital investment in general machines, including machine tools, began to be cut back rapidly.

Fig. 1.3.1 Situation of the capital investment of the general machine industry



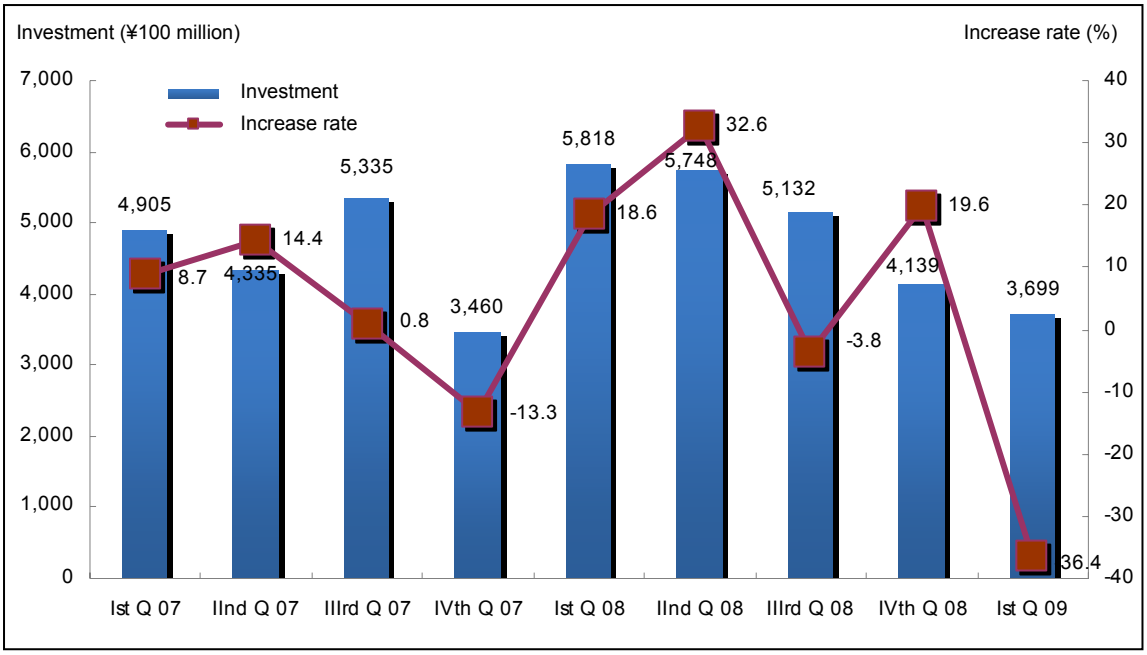
Note: Increase rate figures are those as compared with the same quarter of the previous year.
Source: Based on the Ministry of Finance, “Statistical Survey of Incorporated Enterprises.”

(2) Situation of the capital investment of the electric machine industry

Figure 1.3.2 shows the trend of capital investment of the electric machine industry from the Ist quarter of 2007 to the Ist quarter of 2009. As seen in this figure, the capital investment of the electric machine industry decreased greatly in the IVth quarter of 2007; the amount of investment dropped to ¥346.0 billion and the increase rate (quarter-on-quarter) to -13.3%. Thereafter, the investment

showed a recovering tendency in the Ist quarter of 2008 but suffered a great fall again in the Ist quarter of 2009, with the increase rate (quarter-on-quarter) lowering to -36.4%.

Fig. 1.3.2 Situation of the capital investment of the electric machine industry

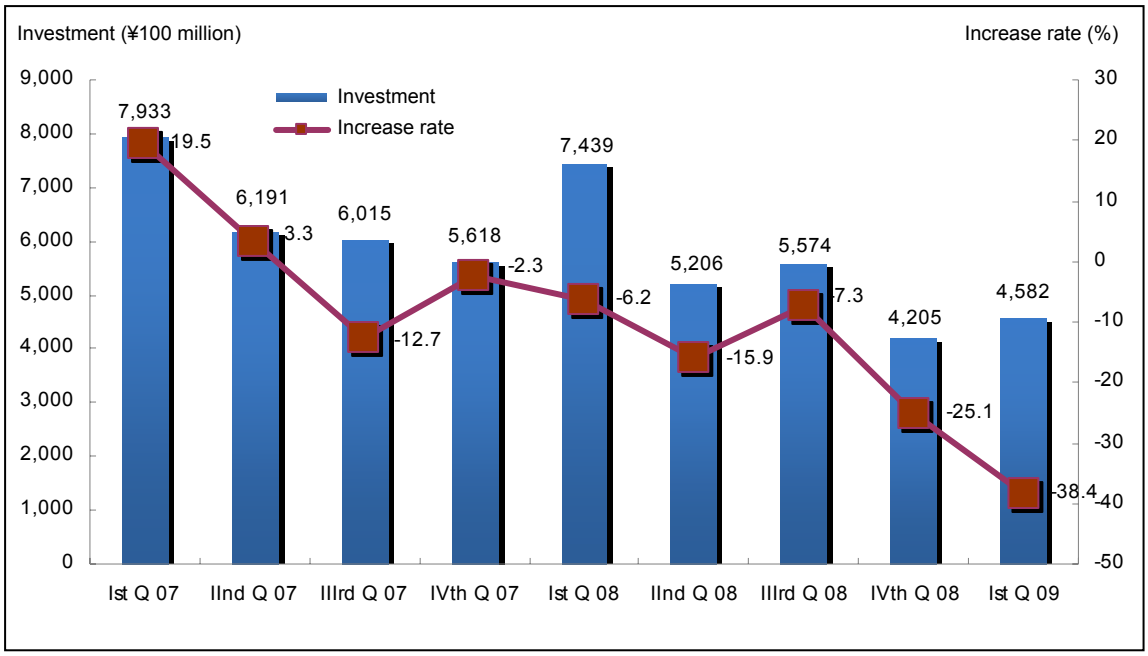


Note: Increase rate figures are those as compared with the same quarter of the previous year.
Source: Same as that for Fig. 1.3.1.

(3) Situation of the capital investment of the information and communication machine industry

As seen in Figure 1.3.3, the capital investment of the information and communication machine industry continued to be in a very difficult situation. Although some recovery was shown in several quarters, the investment went down to the ¥400.0 billion-yen mark in the IVth quarter of 2008, and the increase rate (quarter-on-quarter) in the Ist quarter of 2009 decreased to -38.4%.

Fig. 1.3.3 Situation of the capital investment of the information and communication machine industry

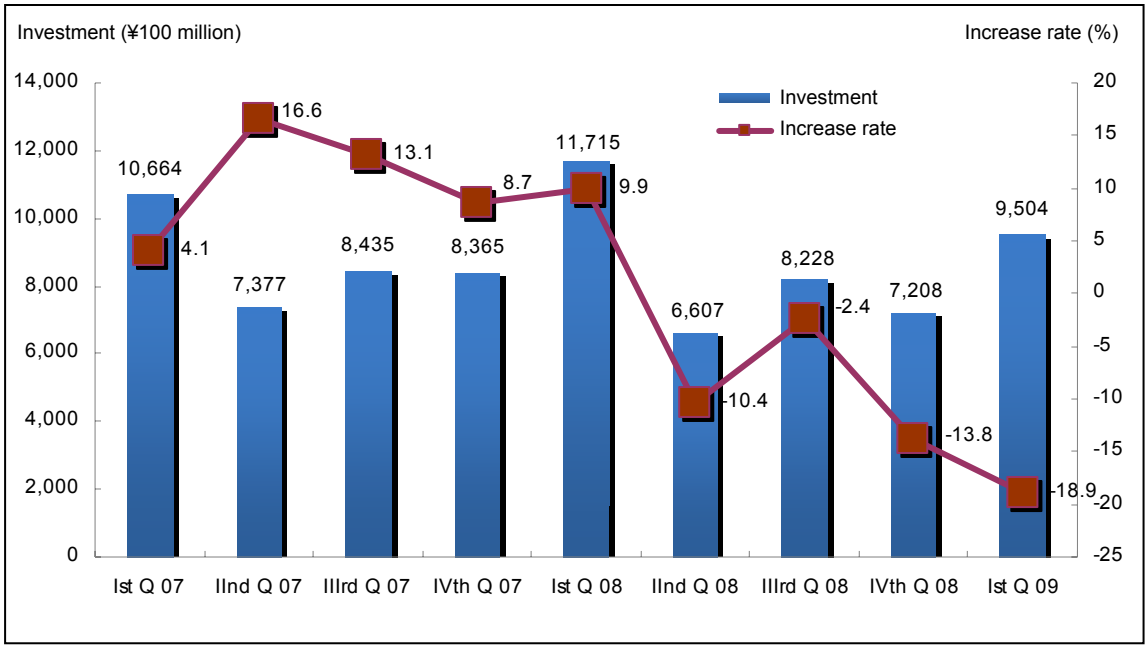


Note: Increase rate figures are those as compared with the same quarter of the previous year.
Source: Same as that for Fig. 1.3.1.

(4) Situation of the capital investment of the transportation machine industry

As seen in Figure 1.3.4, the capital investment of the transportation machine industry has a periodical character, such as an increase in the amount of investment in the Ist quarter of the year, and this character affects the investment amount in general machines, which are industry goods. Until the Ist quarter of 2008, the investment amount tended to move between ¥700.0 billion and ¥1,000 billion but declined greatly in the IInd quarter of 2008, when the increase rate (quarter-on-quarter) dropped sharply to -10.4%. A downward trend continued after that; in the Ist quarter of 2009, the amount of investment reached almost ¥1,000 billion, but the increase rate fell to -18.9%, making rapid decreases in capital investment after the Lehman shock more evident.

Fig. 1.3.4 Situation of the capital investment of the transportation machine industry



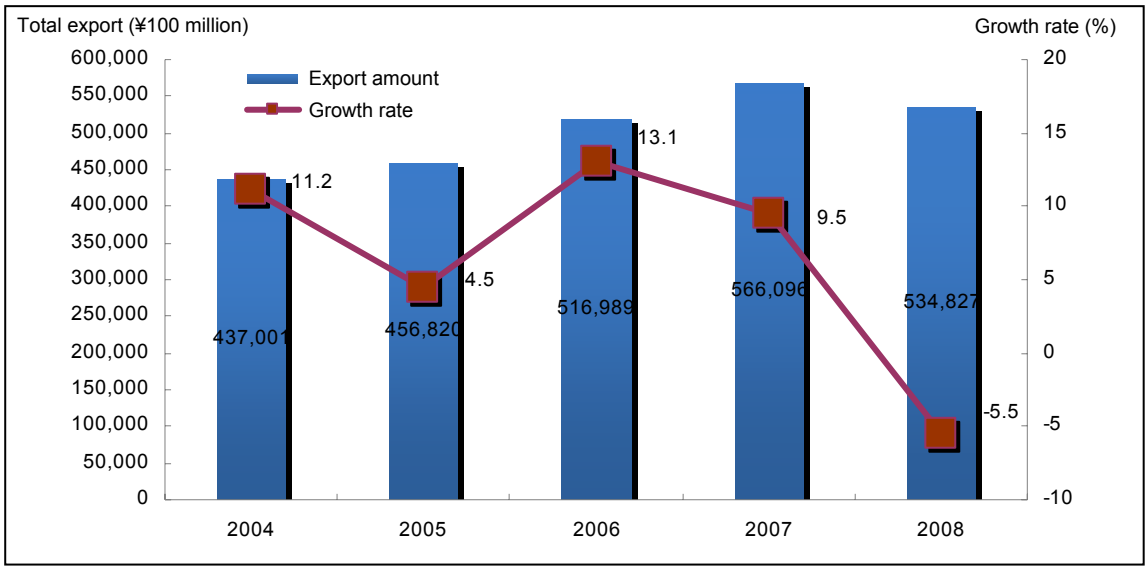
Note: Increase rate figures are those as compared with the same quarter of the previous year.
Source: Same as that for Fig. 1.3.1.

1.4. Situation of the export of the machine industry

(1) Situation of the export of the entire machine industry

Figure 1.4.1 shows the trend of the amount and growth rate (year-on-year) of the export of machines and equipment (general machines, electric machines, transportation machines and precision machines) from 2004 to 2008. As this figure indicates, the export of machines and equipment showed a decline of roughly ¥3,126.9 billion to ¥53,482.7 billion and the growth rate was -5.5%. The share of the export of machines and equipment was 20.9% for the top-ranking U.S., followed by China (13.4%) and South Korea (4.9%). As described above, the export amount of machines and equipment had grown favorably in the past five years but turned into a fall in 2008. The impact of the rapidly deteriorating U.S. market, the largest importer, after the Lehman shock in September 2008, can be quoted as a reason behind this. As a result, the export destinations of machines and equipment are expected to shift to China, the second largest importer, and Southeast Asia with increasing speed in the future.

Fig. 1.4.1 Situation of the export of machines and equipment

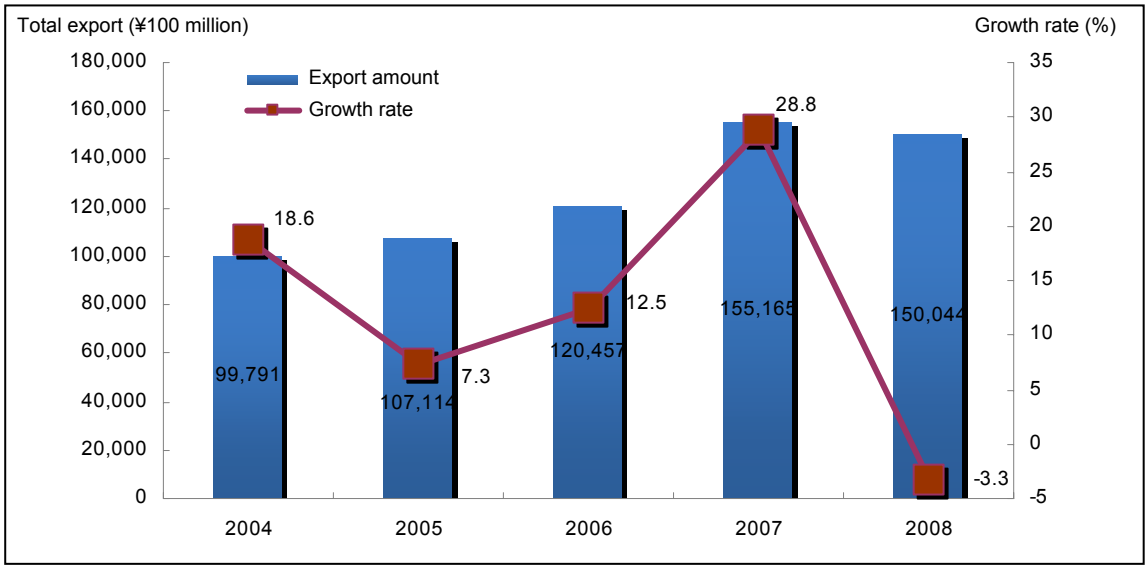


Note: Growth rate figures are those as compared with the previous year.
Source: Based on the Japan External Trade Organization (JETRO), "Trade Statistics Data Base."

(2) Situation of the export of general machines

As shown in Figure 1.4.2, the amount of export of general machines in 2008 was about ¥15,000 billion or a drop of ¥512.1 billion from the previous year, and the growth rate was -3.3%. By importing country, the U.S. ranked top with 18.1%, accompanied by China (15.6%) and South Korea (7.2%).

Fig. 1.4.2 Situation of the export of general machines

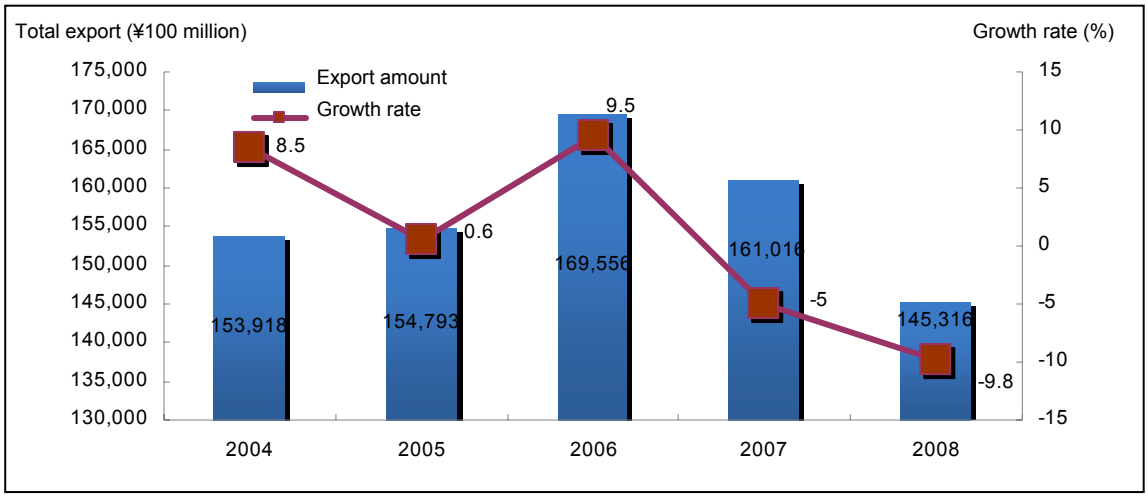


Note: Growth rate figures are those as compared with the previous year.
Source: Same as that for Fig. 1.4.1.

(3) Situation of the export of electric machines

As Figure 1.4.3 shows, the amount of export of electric machines in 2008 decreased by ¥1,570.0 billion, and the growth rate was -9.8%. The largest importer was China that accounted for 21.7% of the total export amount.

Fig. 1.4.3 Situation of the export of electric machines

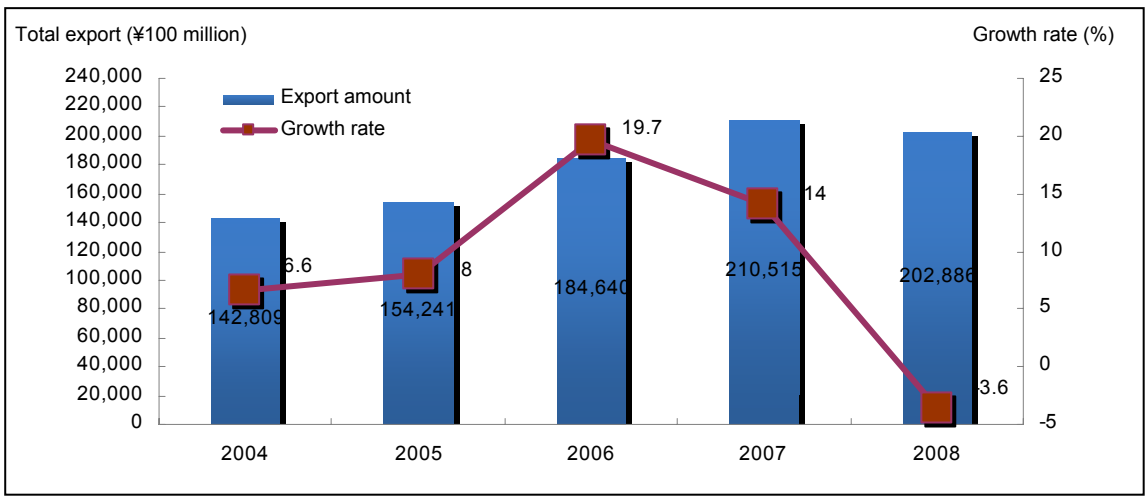


Note: Growth rate figures are those as compared with the previous year.
Source: Same as that for Fig. 1.4.1.

(4) Situation of the export of transportation machines

Figure 1.4.4 shows that the amount of export of transportation machines in 2008 was ¥20,288.6 billion or a growth rate of -3.6%. The largest export destination was the U.S. (27.6%).

Fig. 1.4.4 Situation of the export of transportation machines

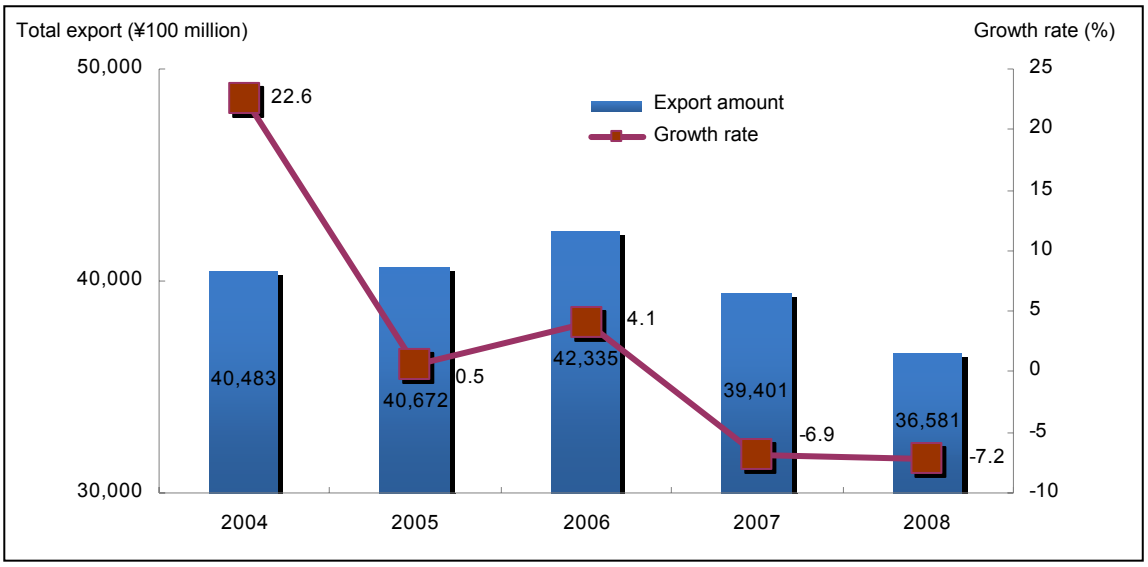


Note: Growth rate figures are those as compared with the previous year.
Source: Same as that for Fig. 1.4.1.

(5) Situation of the export of precision machines

As shown in Figure 1.4.5, the amount of export of precision machines in 2008 was ¥3,658.1 billion or a fall of ¥282.0 billion year on year. The growth rate was -7.2%, lower than in the previous year. By importing country, China took first place (19.5%), followed by the U.S. (19.2%) and South Korea (8.8%).

Fig. 1.4.5 Situation of the export of precision machines



Note: Growth rate figures are those as compared with the previous year.
Source: Same as that for Fig. 1.4.1.

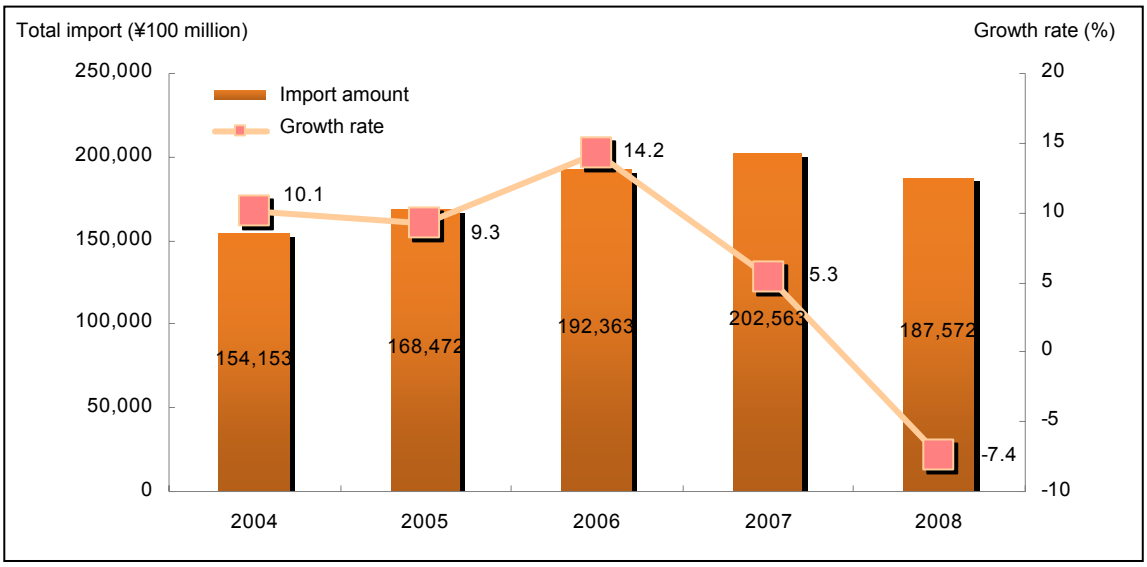
1.5. Situation of the import of the machine industry

(1) Situation of the import of the entire machine industry

Figure 1.5.1 shows the amount and growth rate (year-on-year) of the import of machines and equipment (general machines, electric machines, transportation machines and precision machines) from 2004 to 2008. As seen in this figure, the import of machines and equipment had favorably increased in 2003 and after but dropped by about ¥1,500.0 billion to ¥18,757.2 billion or a growth rate of -7.4% in 2008, suddenly increasing a falling tendency. The factor contributing to this situation is probably the fact that owing to a rapid deterioration of the world economy affected by the Lehman shock in September 2008, Japanese machine industries put the brakes on their procurement of machine parts and the like from abroad as a result of changes in capital investment plans and reduction in production. In the import of machines and equipment in 2008, the import from China accounted for 33.3%, making the country the largest exporter and a third of the machine and equipment import by Japanese businesses one from China. The U.S. (17.6%) gained second place and South Korea (7.6%), third place. As noted, due to the reduced production of automobiles for the U.S. market and the declining investment intentions of Japanese machine industries, a downward trend in the import amount of machines and equipment will continue for some time in the

years to come. Moreover, machine industries in Japan are beginning to shift their export to China and Southeast Asia and will enter a reconstruction stage of a global supply chain within China, Japan and Southeast Asia.

Fig. 1.5.1 Situation of the import of machines and equipment

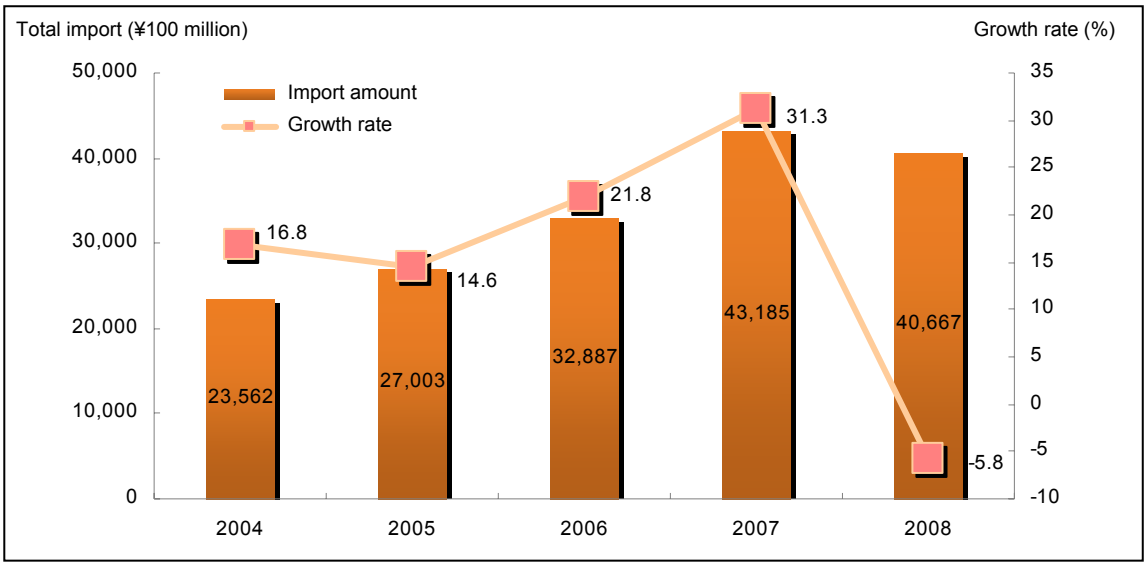


Note: Growth rate figures are those as compared with the previous year.
Source: Same as that for Fig. 1.4.1.

(2) Situation of the import of general machines

As shown in Figure 1.5.2, the amount of import of general machines in 2008 was ¥4,066.7 billion or a growth rate of -5.8%. By exporting country, China (30.2%) took first place, accompanied by the U.S. (22.7%) and Germany (8.2%).

Fig. 1.5.2 Situation of the import of general machines

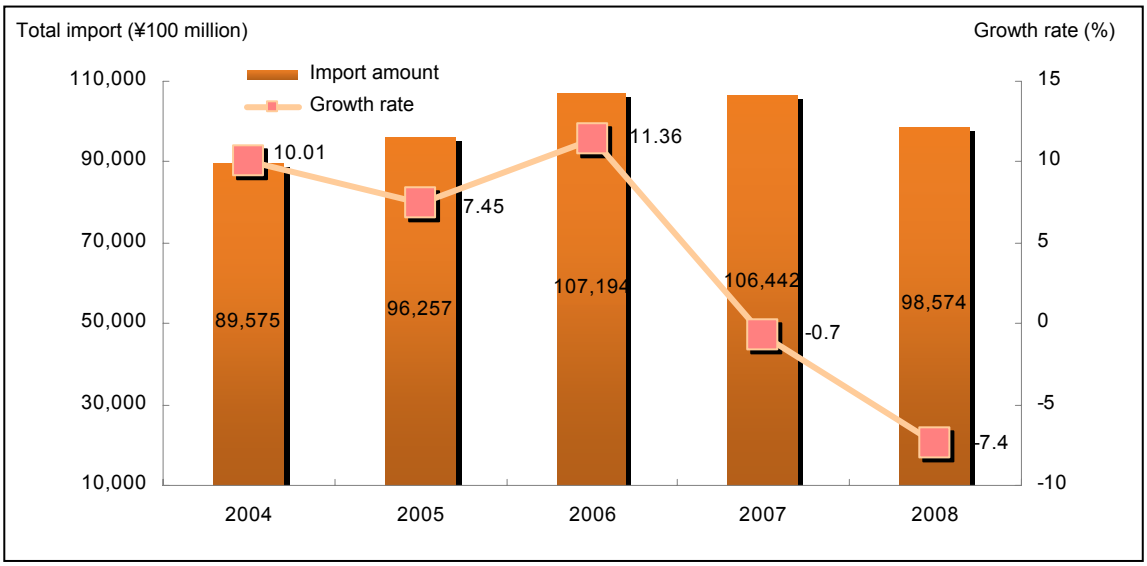


Note: Growth rate figures are those as compared with the previous year.
Source: Same as that for Fig. 1.4.1.

(3) Situation of the import of electric machines

As seen from Figure 1.5.3, the amount of import of electric machines in 2008 was a little smaller than ¥9,860.0 billion (growth rate: -7.4%). China had a much higher share of 43.1% of the total import.

Fig. 1.5.3 Situation of the import of electric machines

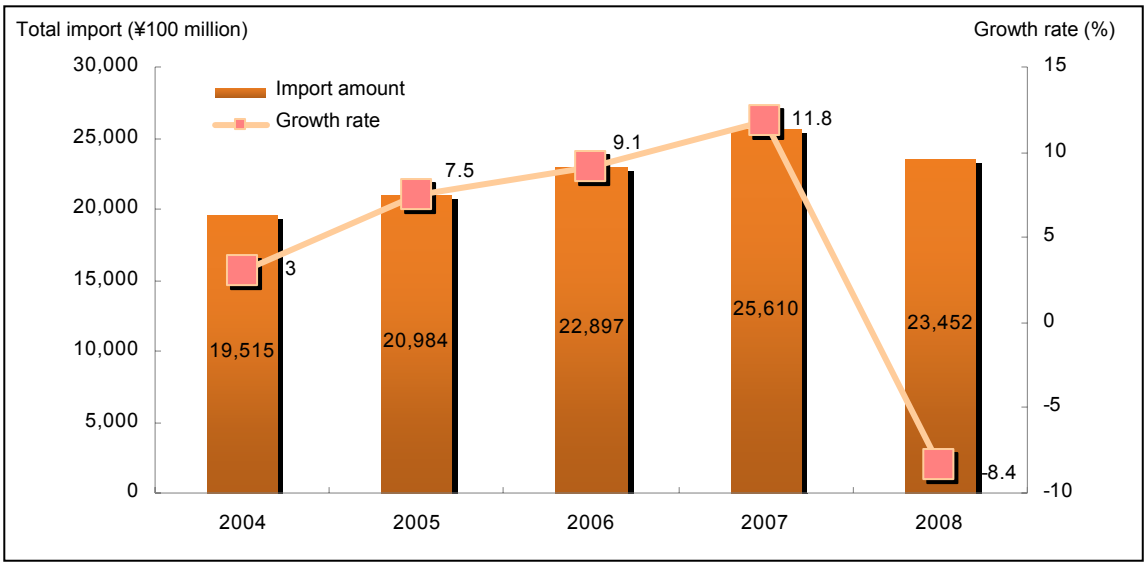


Note: Growth rate figures are those as compared with the previous year.
Source: Same as that for Fig. 1.4.1.

(4) Situation of the import of transportation machines

Figure 1.5.4 shows that the amount of import of transportation machines in 2008 was ¥2,345.2 billion, a sharp decrease of -8.4%. The U.S. (30.0%) had the largest share, followed by Germany (20.9%) and China (12.9%).

Fig. 1.5.4 Situation of the import of transportation machines

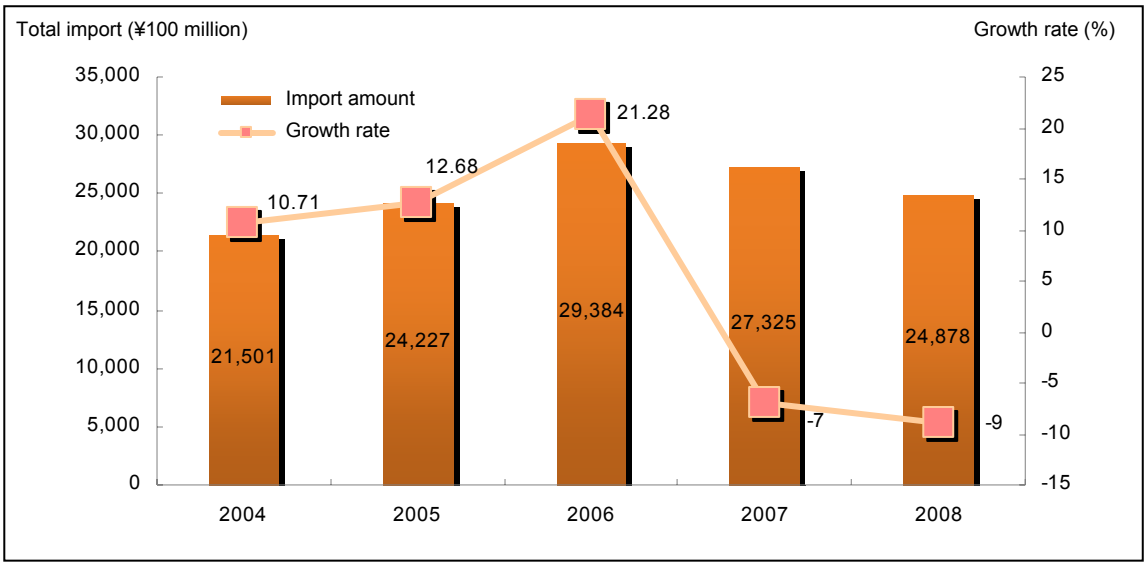


Note: Growth rate figures are those as compared with the previous year.
Source: Same as that for Fig. 1.4.1.

(5) Situation of the import of precision machines

Figure 1.5.5 shows that the amount of import of precision machines in 2008 was ¥2,487.8 billion (growth rate: -9.0%), which was a fall larger than that in 2007. The U.S. ranked first in the share of Japan's import, accompanied by China (18.8%) and Switzerland (8.9%).

Fig. 1.5.5 Situation of import of precision machines



Note: Growth rate figures are those as compared with the previous year.
Source: Same as that for Fig. 1.4.1.