2. Supply trend and final demand

(1) Summary of supply trend for final demand

Supply trend for the quarter

The outline of the supply trend for final demand for the third quarter of 2006 was as follows:

Overall industrial supply for consumption decreased by 0.8% compared to the previous quarter, down for the first time in four quarters, due to a decrease in personal consumption by 1.0% (id.), down for the first time in four quarters, and in government consumption by 0.3% (id.), down for the second consecutive quarter.

Overall industrial supply for investment decreased by 2.0% (id.), down for the first time in two quarters, due to decreases in public investment (by 5.2%, down for the second consecutive quarter), private corporation facilities (by 1.7%, down for the first time in two quarters), and private housing (by 0.2%, down for the second consecutive quarter).

Exports increased by 3.6% (id.), up for the sixth consecutive quarter, and imports also increased by 0.9% (id.), up for the seventh consecutive quarter.

IT-related consumption decreased by 3.7% (id.), down for the third consecutive quarter, while IT-related investment increased by 3.9% (id.), up for the second consecutive quarter.

\[ \text{Changes in the Indices of All Industries (Final demand components)} \]
\[ (2000=100, \text{ Ratios to the previous year (quarter)}) \]

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2005</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ratio to the previous year</td>
<td>Ratio to the previous year</td>
<td>III</td>
<td>IV</td>
<td>I</td>
</tr>
<tr>
<td>Total of final demand sector</td>
<td>2.1</td>
<td>1.5</td>
<td>0.2</td>
<td>-0.6</td>
<td>1.1</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>6.7</td>
<td>1.7</td>
<td>0.2</td>
<td>-0.2</td>
<td>-0.1</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>2.0</td>
<td>1.5</td>
<td>0.3</td>
<td>-0.1</td>
<td>1.3</td>
</tr>
<tr>
<td>Consumption</td>
<td>1.7</td>
<td>1.2</td>
<td>0.4</td>
<td>0.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Personal consumption</td>
<td>1.4</td>
<td>0.9</td>
<td>0.1</td>
<td>0.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>0.8</td>
<td>0.5</td>
<td>0.2</td>
<td>0.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>1.5</td>
<td>1.1</td>
<td>0.0</td>
<td>-0.1</td>
<td>1.3</td>
</tr>
<tr>
<td>Special) IT-related</td>
<td>-2.6</td>
<td>0.9</td>
<td>1.4</td>
<td>1.7</td>
<td>-0.8</td>
</tr>
<tr>
<td>Government consumption</td>
<td>2.6</td>
<td>1.6</td>
<td>1.0</td>
<td>-0.3</td>
<td>1.5</td>
</tr>
<tr>
<td>Investment</td>
<td>0.8</td>
<td>2.6</td>
<td>0.0</td>
<td>-0.4</td>
<td>0.7</td>
</tr>
<tr>
<td>Public investment</td>
<td>-12.4</td>
<td>-4.2</td>
<td>-3.0</td>
<td>0.8</td>
<td>0.4</td>
</tr>
<tr>
<td>Private housing</td>
<td>2.2</td>
<td>3.5</td>
<td>4.3</td>
<td>-0.7</td>
<td>-0.2</td>
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<tr>
<td>Private corporation facilities</td>
<td>6.7</td>
<td>5.1</td>
<td>0.1</td>
<td>1.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>12.7</td>
<td>4.9</td>
<td>0.3</td>
<td>0.3</td>
<td>-1.4</td>
</tr>
<tr>
<td>Construction</td>
<td>1.2</td>
<td>6.9</td>
<td>-0.1</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>3.2</td>
<td>3.5</td>
<td>-1.5</td>
<td>3.5</td>
<td>-0.6</td>
</tr>
<tr>
<td>Special) IT-related</td>
<td>3.6</td>
<td>4.7</td>
<td>1.2</td>
<td>3.4</td>
<td>-2.5</td>
</tr>
<tr>
<td>Exports</td>
<td>11.3</td>
<td>4.1</td>
<td>0.2</td>
<td>0.2</td>
<td>-1.6</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>11.9</td>
<td>3.5</td>
<td>0.3</td>
<td>0.2</td>
<td>-1.4</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>9.2</td>
<td>5.8</td>
<td>0.1</td>
<td>-0.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>Imports</td>
<td>8.5</td>
<td>5.4</td>
<td>2.1</td>
<td>-0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>8.3</td>
<td>6.1</td>
<td>1.8</td>
<td>-0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>9.8</td>
<td>3.8</td>
<td>3.0</td>
<td>-2.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Notes: 1. For details of revision of base year to YR2000, and the definition of “IT-related consumption” and “IT-related investment” of the indices of all industrial supply, see “Outline of the revision of the 2000 base ‘Indices of All Industrial Supply’” of the main text.

2. As the indices of all industrial supply are calculated using various statistical data, preliminary figures are used for some basic data. Therefore, you should note that the indices of the previous quarter have been corrected to the revised figures.

3. The ratios to the previous year are original indices, and others are based on seasonal adjustment indices.

Source: “The Indices of All Industries (Final demand components)” (Estimated values).
② Trend of IT-related consumption and investment

IT-related personal consumption for the third quarter of 2006 decreased by 3.7% compared to the previous quarter, down for the third consecutive quarter. Non-IT-related consumption also decreased by 0.7% (id.), down for the first time in four quarters.

IT-related investment for private corporation facilities increased by 3.9% (id.), up for the second consecutive quarter, due to increases in general purpose computers, etc. Non-IT-related investment decreased by 3.0% (id.), down for the first time in two quarters.

Changes in IT-related Consumption

Index level (2000=100, Seasonally adjusted)

![Graph showing changes in IT-related consumption]

Note: IT-related consumption is consumption related to cellular telephones, personal handy phone systems, personal computers, fixed telecommunications business and mobile telecommunications business that are supplied to personal consumption.

Source: “The Indices of All Industries (Final demand components)” (Estimated values)

Changes in IT-related Investment

Index level (2000=100, Seasonally adjusted)

![Graph showing changes in IT-related investment]

Note: IT-related investments are investments related to communication wires and cables, power wires and optical fiber products for cables, digital and full color copying machines, key system telephone equipment, facsimile machines, electronic switching systems, digital transmission equipment, personal handy phone systems, basic exchange for mobile customer premises equipment, general purpose computers, mid-range computers, personal computers, external storage, input-output units, terminal equipment, software development and program creation (subcontracts) that are supplied to private corporation facilities.

Source: “The Indices of All Industries (Final demand components)” (Estimated values)
Trend of durable consumer goods and household consumption expenditure

Household (personal) consumption expenditure, which accounts for nearly 60% of the gross domestic product, is an important index to see the trend of the economy. Recent consumption expenditure, seen from real household final consumption expenditure (Note) in GDP, has continued to show a moderate increase, but the growth has been slowing down lately. Therefore, we compared and saw the differences between the current economic expanding stage (provisional) and the expanding stage in the 12th cycle based on statistical data of the supply side. Furthermore, we classified consumption expenditure data and statistical data of the supply side (by item) into three series (leading, coincident, and lagging) to figure out their relation by referring to other consumption-related indices.

Looking at the trend of personal consumption from the aspect of supplies (shipments) of goods for personal consumption of the mining and manufacturing sector, durable consumer goods, such as goods for culture and entertainment and passenger cars and motorcycles, contributed to the increase in the current economic expanding stage (provisional) just like in the expanding stage in the 12th cycle. Although the growth rate was smaller than that in the 12th cycle, the increase has been continuing for a longer period. The total growth rate during each of these expanding stages calculated from the annual average growth rate and the length of the growing period was 3.6% for the current expanding stage and 5.8% for the expanding stage in the 12th cycle.

Furthermore, supplies of services for personal consumption of the tertiary industry sector recorded almost the same annual average growth rate in the current expanding stage as in the 12th cycle. This shows that supplies of goods and services for personal consumption of the overall industry in the current economic expanding stage have increased only moderately with the annual average growth rate being 0.4% lower than that in the 12th cycle.

Note: In this text, real household final consumption expenditure excludes imputed rent of possessed houses.

Changes in Real Household Final Consumption Expenditure in GDP and the Index of Supply for Personal Consumption (Seasonally adjusted)

Source: “National Accounts” (Cabinet Office)
“The Indices of All Industries (Final demand components)”
Next, we figured out a time-lag correlation coefficient between real household final consumption expenditure in GDP and the Supply Index for Personal Consumption (at shipment stage, on an item basis) in the supply side statistics, and created three series (leading, coincident, and lagging) by classifying this index using the coefficient. As a result, the following were observed: (i) each of the series has been on an upward trend generally in the current expanding stage, and troughs before rises appeared first in the leading series, followed by the coincident and the lagging series, (ii) analyzing factors of the growth rate by respective series, the period to contribute to an increase varies for each one of them, and (iii) comparing the leading series to those in the same quarter of the previous year, the contribution ratio of durable consumer goods to the growth rate was large for the current stage. In the current economic expanding stage, a big wave could be observed with a peak in the third quarter of 2006 after the last peak in the fourth quarter of 2003.

As a background to support the increase in durable consumer goods in the current expanding stage, the following factors can be considered: 1) the market of attractive products such as digital cameras, DVD-videos, and liquid-crystal TVs has been developed, 2) consumers have come to consider goods rather inexpensive due to a continuous fall in prices, 3) changes in income have little impact on durable consumer goods, and 4) consumer confidence has remained at a high level.

As the goods classified into the leading series in personal consumption increased in 2006 for the first time since 2003, and consumer confidence (the index to judge when to buy in the following six months) has remained at a high level in 2006, there is a possibility that a future increase in domestic demand for durable consumer goods would work as a driving force for overall consumption expenditure.
Leading, Coincident, and Lagging Series of Supply of Goods and Services for Personal Consumption

① Factors analysis of supply for personal consumption by series

② Factors analysis of the leading series by goods and services

Source: “National Accounts” (Cabinet Office)
“The Indices of All Industries (Final demand components)"

Changes in Domestic Shipments of Major Durable Consumer Goods (Item)

Note: Figures for 2006 are the average of seasonally adjusted indices for periods between January and September.
Source: “Table of Total Supply of Mining and Manufacturing” (Estimated values)
Comparison of Indices of Consumer Confidence

Note: Figures on the left axis indicate that the upper is the better.
Source: “Consumer Confidence Survey” (Cabinet Office)
④ Investment trend of the electrical machinery industry and ripple effects in related industries

Capital investment in the manufacturing industry has been on an upward trend since 2003, and in particular, that in the electrical machinery industry has significantly contributed to the increase lately. Therefore, we considered the recent trend of capital investment and production by focusing on the situation of the electrical machinery industry, and made a trial calculation on the effects of their capital investment on other industries using the input-output table.

Based on the Financial Statements of Corporations by Industry, after the trough in the third quarter of 2002, the amount of capital investment (excluding software) in the manufacturing industry in the current economic expanding stage has been rising for 15 consecutive quarters from the fourth quarter of 2002 to the second quarter of 2006. By industry, the average contribution ratio to the growth rate of the manufacturing industry during these 15 quarters was the highest for the electrical machinery and information and communication electronics equipment industries. Based on the METI Survey on Investment in Equipment (as of March 31, 2006), the electronic machinery industry and the electrical machinery industry are both expected to further increase capital investment for FY2006 mainly for enhancing their production capacity.

Next, we compared production and the trend of capital investment in the electrical machinery industry mainly in the last 15 quarters with those in the past economic expanding stages. The average rate of increase of production from the previous quarter during the last 15 quarters was 1.9%, which was almost the same as the 2.0% average rate in the expanding stage in the 12th cycle. In particular, the average rate for the last one year was 3.3%, showing a higher growth than in the expanding stage in the 11th cycle (the average increase rate: 2.5%) and in the 12th cycle (2.0% (id.)). The average rate of increase of capital investment from the previous quarter during the last 15 quarters was 4.3%, which was higher than that in the expanding stage in the 12th cycle (2.6%). The average rate for the last one year was especially high at 6.5%, exceeding 6.2% in the expanding stage in the 11th cycle and 2.6% in the 12th cycle.

Changes in Ratio to the Previous Quarter and Contribution Ratio to Growth of Capital Investment (Seasonally adjusted, 2000=100)

Source: “Financial Statements of Corporations by Industry (Ministry of Finance)
Increases in Production and Capital Investment in the Manufacturing Industry
(Ratio to the previous quarter, Seasonally adjusted)

(2000=100)

\[
\begin{array}{|c|c|c|c|c|}
\hline
 & \text{The 11th cycle} & \text{The 12th cycle} & \text{Last 15 quarters} & \text{Last one year} \\
 & \text{Expanding stage} & \text{Expanding stage} & \text{(2002-IV to 2006-II)} & \text{(2005-III to 2006-II)} \\
 & \text{(1987-II to 1991-I)} & \text{(1994-I to 1997-II)} & \text{Average} & \text{Average} \\
\hline
\text{Production} & & & & \\
\text{Electrical machinery} & 2.5 & 2.0 & 1.9 & 3.3 \\
\text{Manufacturing} & 1.5 & 0.9 & 0.8 & 0.9 \\
\hline
\text{Capital investment} & & & & \\
\text{Electrical machinery/Information and communication electronics equipment} & 6.2 & 2.6 & 4.3 & 6.5 \\
\text{Manufacturing} & 5.1 & 0.4 & 3.3 & 3.7 \\
\hline
\end{array}
\]

Source: “Financial Statements of Corporations by Industry (Ministry of Finance)
“Indices of Industrial Production”

Distribution Ratio of Capital Investment by Purpose in FY2006 Plan

(\%)

\[
\begin{array}{|c|c|c|c|c|c|c|c|c|c|}
\hline
\text{Purpose} & \text{Upper: Actual capital investment for 2006 (estimate)} & \text{Ratio to the previous fiscal year} & \text{Distribution ratio by purpose} \\
 & \text{Down: FY2006 plan} & \text{Enhancement of production capacity} & \text{Renewal, maintenance repair} & \text{Subtotal (Enhancement of capacity, renewal, etc)} & \text{Research and development} & \text{Energy conservation, new energy} & \text{Environment preservation} & \text{Streamlining, labor saving} & \text{Others} \\
\hline
\text{Electronic machinery} & \text{FY2005} & 9,831 & 77.1 & 5.0 & 82.1 & 7.9 & 0.3 & 0.7 & 3.9 & 5.2 \\
\text{FY2006} & & 12,293 & 25.0 & 75.7 & 5.4 & 81.1 & 9.0 & 0.1 & 0.9 & 4.2 & 4.7 \\
\text{Electrical machinery} & \text{FY2005} & 1,865 & 26.7 & 13.8 & 40.5 & 15.2 & 0.3 & 1.3 & 12.7 & 30.0 \\
\text{FY2006} & & 2,844 & 52.5 & 29.6 & 15.5 & 45.1 & 13.6 & 0.3 & 2.0 & 12.5 & 26.5 \\
\text{Manufacturing} & \text{FY2005} & 54,131 & 46.9 & 18.5 & 65.4 & 8.7 & 1.6 & 3.1 & 9.8 & 11.1 \\
\text{FY2006} & & 67,308 & 24.3 & 45.8 & 19.6 & 65.4 & 8.6 & 1.3 & 3.1 & 10.4 & 11.2 \\
\hline
\end{array}
\]

Source: “METI Survey on Investment in Equipment”
Based on the Short-term Economic Survey of Enterprises in Japan (TANKAN), for the last 15 quarters, the Business Conditions DI of the electrical machinery industry has maintained the level of around 20%, the Supply and Demand DI has been at the level of neither “excess demand” nor “excess supply,” and the Fixed Investment DI showed a higher rate for companies replying “insufficient.” Therefore, the situation has changed to allow further capital investment.

In order to see the ripple effects that capital investment in the electrical machinery industry has on other industries, we calculated how much production was induced in various domestic sectors by 3.1691 trillion yen capital investment in the electrical machinery/information and communication electronics equipment industries in 2004 (Source: “Financial Statements of Corporations by Industry”), using a 2004 simplified input-output table\(^\text{Note 1}\)). The total amount of induced production was 4.3352 trillion yen, of which 2.5449 trillion yen was for the manufacturing industry and 1.7903 trillion yen for the non-manufacturing industry, showing a larger portion for the manufacturing industry. On a Major Division (32 sectors) basis, among the top five industries in the manufacturing industry, the general machinery industry (975.2 billion yen, 38.3\(^\%\)\(^\text{Note 2}\)) took the first place, followed by the electrical machinery industry (757.8 billion yen, 29.8\%), the iron and steel industry (234.7 billion yen, 9.2\%), other products industry (131.0 billion yen, 5.1\%), and the fabricated metals industry (87.3 billion yen, 3.4\%).

As we have seen so far, no disheartening factors have been observed for the electrical machinery industry in either business conditions, supply-demand balance, or sentiment on sufficiency or insufficiency of fixed investment. For the time being, production and capital investment is unlikely to decline sharply. Steady investment can be expected to continue to realize FY2006 investment plans. We can also expect positive ripple effects on other manufacturing related industries, such as the general machinery industry, iron and steel industry, and fabricated metals industry.

Note 1: As for conditions of the trial calculation and the interpretation of the results, see the main text.
Note 2: The % ratio to the total amount of induced production in the manufacturing industry (2.5449 trillion yen) (hereinafter the same for latter figures in the parentheses)

### DI for the Electrical Machinery Industry (Seasonally adjusted)

![DI for the Electrical Machinery Industry (Seasonally adjusted)](source: “Short-term Economic Survey of Enterprises in Japan (TANKAN)” (Bank of Japan))
The Amount of Production Induced by 2004 Capital Investment in the Electrical Machinery Industry by Sector

(Estimated values, on Major Division (32 sectors) basis, Manufacturing industry)

Source: 2004—“2004 Simplified Updated Nationwide Input-Output Tables (73 sectors, Table of market prices)
2000—“2000 Input-Output Tables” (Ministry of Internal Affairs and Communications)
“Financial Statements of Corporations by Industry (Ministry of Finance)
Relation between the operating rate index level and capital investment

At the initial stage of economic recovery, companies first raise the operating rate of existing equipment to increase production. However, when the operating rate reaches a certain level, it becomes difficult to increase production only by raising the operating rate. They then come to make capital investment positively to enhance production capacity.

Therefore, we made an analysis using the Chow Test\(^\text{Note}\) to examine whether the operating rate index level changes the relation between capital investment and the operating rate index, and figure out what level of the operating rate index causes the changes.

Specifically, we rearranged time series data of the operating rate index and capital investment compared to the same quarter of the previous year according to the operating rate index at the time, and divided the data in two at a specified level of the operating rate index. Then we calculated a statistical value (F-value) to examine whether there are any changes between the former half and the latter half of the data with regard to the relation between the operating rate index and capital investment (the percent increase caused in capital investment by a 1% increase of the operating rate index). We repeated this calculation as shifting levels of the operating rate index where to divide the data in two.

The statistical value called the F-value is for judging the reliability of the presumption that the relation between the operating rate index and capital investment does not change between the former part and the latter part of the data. A higher F-value implies a higher possibility that the relation between the operating rate index and capital investment changes at that level of the operating rate index.

Note: The Chow Test is a method to figure out any structural changes in time series data by dividing the data in two at a certain point of time and statistically examining whether parameters estimated in respective periods are equal.
Chow Test concerning Relation between the Operating Rate Index and Capital Investment

Notes:
1. Rearrange time series data (1979-I to 2006-II) of the operating rate index and capital investment compared to the same quarter of the previous year according to the operating rate index at the time.
2. Divide the data in two at a specified level of the operating rate index and implement regression as follows for the former data and the latter data, respectively, with regard to the relation between the operating rate index and capital investment.
   \[ \text{Capital investment (compared to the same quarter of the previous year)} = \alpha + \beta \times \text{Operating rate index (compared to the same quarter of the previous year, three quarters before)} \]
3. If the relation between the operating rate index and capital investment does not change between the former data and the latter data, there is a following relation between the parameters obtained through regression based on the former data (\( \alpha_1, \beta_1 \)) and the parameters obtained through regression based on the latter data (\( \alpha_2, \beta_2 \)).
   \[ \alpha_1 = \alpha_2, \quad \beta_1 = \beta_2 \]
4. Calculate a statistical value (F-value) to judge the reliability of this presumption. A higher F-value implies a higher possibility that the relation between the operation rate index and capital investment changes at that level of the operating rate index.

Source: “Financial Statements of Corporations by Industry (Ministry of Finance)”
“FY1994 Annual Economic Report” (Cabinet Office)
The results of the Chow Test showed the highest F-value when the operating rate index was around 102. Therefore, it is considered that changes occurred in the relation between the operating rate index and capital investment at this level. The value of elasticity of capital investment against the operating value index (the percent increase caused in capital investment by a 1% increase of the operating rate index) was around 2.1 when the operating rate index was below 102, and around 2.5 when the operating rate index was over 102. Furthermore, changes are likely to have occurred again when the operating rate index was around 107. However, we should note that the operating rate index exceeded 107 often during the period of the bubble economy (among the 33 quarters when the operating rate index exceeded 107, 15 quarters were within the period of the bubble period (1986-IV to 1991-I).

Based on the results mentioned above, the current operating rate index has been on an upward trend, after hitting the bottom at 88.0 in the fourth quarter of 2001. It exceeded 102 in the second quarter of 2004, and posted 105.6 in the second quarter of 2006, being at a level where companies are willing to make capital investment. Recent active capital investment can be explained also with this high level of the operating rate index.

However, it should be noted that we just estimated the relation between the operating rate index and capital investment through one of many statistical methods, based on their relation known from the past data. The results do not completely match with the actual trend of the operating rate index and capital investment. For example, companies have been apt to take a cautious stance recently instead of appropriating their entire cash flow to capital investment. Such trends may have some influence on the relation between the operating rate index and capital investment.

Changes in the Operating Rate Index (2000=100, Seasonally adjusted) and Capital Investment

(Operating rate index level)

Capital investment (compared to the same quarter of the previous year (%))

Source: “Financial Statements of Corporations by Industry (Ministry of Finance)
Changes in Capital Investment and Cash Flow
(Four-quarter Moving Average, Manufacturing, All scales)

Note: Cash flow = Ordinary profits × 0.5 + Depreciation cost
Source: “Financial Statements of Corporations by Industry (Ministry of Finance)
(2) Outline of export and import trends

① Export and import trends for the quarter

Looking at the trends of exports and imports for the third quarter of 2006 (on a quantity basis), exports as a whole increased by 3.6% compared to the previous quarter, due to increases in exports of goods (the mining and manufacturing industry) by 3.7% (id.), and received services (the tertiary industry) by 4.2% (id.). Imports as a whole increased by 0.9% (id.), due to an increase in imports of goods (the mining and manufacturing industry) by 1.3% (id.), in spite of a decrease in service payments (the tertiary industry) by 3.0% (id.).

By region, exports of goods increased in the United States, East Asia, ASEAN, and Europe. Imports of goods increased in East Asia and ASEAN.

Changes in Exports by Region (Goods)

Index level (2000=100, Seasonally adjusted)

Notes: 1. The export index is estimated by rearranging the trade statistics with the shipment index group, and the import index is estimated by rearranging the trade statistics with total supply index group.
2. The regional classification was amended according to the revision of the base year 2000. The names of each country are as follows:
   ASEAN: Singapore, Thailand, Malaysia, Philippines, Indonesia, Vietnam, Myanmar, Laos, Brunei, and Cambodia;
   East Asia: Republic of Korea, Taiwan, China (including Hong Kong);
   Middle East: Iran, Iraq, Bahrain, Saudi Arabia, Kuwait, Qatar, Oman, Israel, Jordan, Syria, Lebanon, the United Arab Emirates, Gaza and Yemen.

Sources: "Breakdown List of Mining and Manufacturing Shipments";
   "Table of Total Supply of Mining and Manufacturing" (Estimated values)
Progress of world trade and intra-regional trade in East Asia

Looking at the changes in the amount of trade in East Asian countries, fast-growing China maintained the first place (2005 exports and imports in China showed a 2.9-fold increase and a 3.1-fold increase, respectively, from 1999). In particular, increases were significant in China for exports to EU25 and North America and imports from Asia. The development in East Asian countries has so far been led by Japan, specializing in respective strong industry fields, with neighboring countries following behind. However, it is notable that economic activities in East Asian countries have recently been affected by significant changes in China, which has been developing rapidly with its increasing international competitiveness.

The amount of trade in China and the amount of direct investment in China from the world have both increased almost in a synchronized manner. It seems that the increase in the amount of trade in China was brought about by foreign manufacturing companies which have positively developed their production/processing bases in China.

Notes:
1. East Asian countries here refer to 13 countries (ASEAN+3; Philippines, Singapore, Malaysia, Indonesia, Thailand, Myanmar, Vietnam, Laos, Cambodia, Brunei, South Korea, China (including Hong Kong), and Japan). However, as the World Trade Atlas sets certain limits to the definitions of independent trading states, this data excludes Myanmar, Vietnam, Laos, Cambodia, and Brunei (hereinafter the same).
2. Figures for China include those for Hong Kong, but exclude the amount of trade between China and Hong Kong (hereinafter the same).

Source: “World Trade Atlas”

Contribution Ratio to Growth of the Amount of Trade in China and Japan (2005/1999, Left: exports; Right: imports)

Changes in the Amount of Accepted Direct Investment and Trade in China

Note: The amount of accepted direct investment is a cumulative value since 1996.

Source: “World Trade Atlas”, “JETRO overseas information file”
Next, we overviewed the actual condition of a triangular trade in East Asia via China (which refers to a trade that countries such as Japan supply parts to China, assemble them locally, and export finished products from China to the U.S. and Europe), which has been supported by enhanced capacity of the production based in China due to increasing direct investment in East Asia from countries like Japan and the U.S. We divided East Asia’s exports of major machinery items (general machinery (code 84 in the HS classification), electrical machinery (code 85 (id.)), and transport equipment except rolling stocks (code 87 (id.)) among major export items) into the amount of finished products and that of parts.

Exports of parts in 2005 were large from Japan, China, South Korea, and Singapore, all showing significant increases from 1999. In particular, exports of parts to East Asia contributed most significantly to the increase. Looking at exports of parts to East Asia, it becomes clear that the contribution of exports from Japan, South Korea, and Singapore to China was extremely large.

Regarding exports of finished products, exports from China to North America and EU25 prominently contributed to the increase, while the contribution of exports from Japan to North America and EU25 became very small.

Therefore, it can be said that division of labor has been organized for major machinery industries in the East Asian countries, where countries like Japan, South Korea, and Singapore play a role as a “parts supplying country” which exports parts to countries like China, and China as a “final assembling country” which processes and assembles products. Furthermore, it implies that, in addition to direct exports from Japan to the U.S. and Europe, there is another trade route in which products processed and assembled in China are finally exported to the U.S. and Europe. In other words, network of division of labor by process mainly for parts that seems to have been organized in the East Asian area may have slowed down Japan’s exports to the U.S. and Europe.

### Comparison of Contribution Ratio to Growth of Exports of Major Machinery Items from East Asia (2005/1999)

<table>
<thead>
<tr>
<th>Exports of parts (To the World)</th>
<th>Exports of parts (To East Asia)</th>
<th>Exports of finished products (To the World)</th>
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</thead>
<tbody>
<tr>
<td>To others</td>
<td>To other East Asian countries</td>
<td>To others</td>
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<tr>
<td>To EU25</td>
<td>To Thailand</td>
<td>To EU25</td>
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<tr>
<td>To Latin America</td>
<td>To Indonesia</td>
<td>To North America</td>
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<tr>
<td>To North America</td>
<td>To Malaysia</td>
<td>To Other Asian countries</td>
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<td>To Other Asian countries</td>
<td>To Singapore</td>
<td>To East Asia</td>
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<td>To East Asia</td>
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<td>To Thailand</td>
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<td>To Japan</td>
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<tr>
<td></td>
<td>To other East Asian countries</td>
<td></td>
</tr>
</tbody>
</table>

Note: In the figure of exports of parts (To East Asia), contribution ratio for 1999 does not include exports from Singapore to Indonesia, as the data is not available. See the main text for HS codes of finished products and parts. Source: “World Trade Atlas”
In East Asia, the rate of inter-regional trade has been increasing, and mutual dependence has been strengthened. This is considered to have been brought about by division of labor by process with China in its core, which has rapidly accelerated inter-regional trade of goods, such as parts. Therefore, we measured the trade relations between each East Asian country by its level. The simple average of trade relation level among corresponding East Asian countries increased by 0.2 for both exports and imports in 2003, compared to 1999. In East Asia, trade relations have become closer.

Furthermore, we examined how the trade relation level changed significantly between the respective two countries. Looking at the contribution ratio to the changes in the amount of trade (2003/1999), that of major machinery items was large as mentioned above. Among the said items, the weight of the parts supply route became larger for the above-mentioned route from Japan, South Korea, and Singapore to China, the route from Thailand to Indonesia (code 87), the route from Malaysia to Thailand (code 84), the route from Philippines to China (code 84), and the route from the Philippines to Indonesia (code 87). Thailand, where the automobile industry is concentrated, seems to have become a supply base of auto parts to Indonesia which has high market potential. The Philippines, where the government has placed priorities on IT-related areas in recent years, and other countries also seem to have been supplying parts to the automobile industry in Thailand. The coefficient of imports from the Philippines was generally high in all countries including China, which implies that the Philippines, whose domestic market is small, have been growing as an exporting country of parts, etc.

Notes: 1. The total amount of exports and imports in East Asian countries 
2. Ratio of inter-regional exports (imports) 
   = Total amount of exports (imports) to the region of each country in the region / Total amount of exports (imports) of each country in the region × 100

Source: “World Trade Atlas”

Note: See the main text for how to view the trade relation level. In routes with ※, the contribution ratio of parts is 10% or more among increases (2003/1999) in the amount of trade of major machinery items through those routes.

3. Trends by kind of industry
(1) Trend in the manufacturing industry
A. Iron and Steel industry
– Production and shipments increased for the third consecutive quarter and for the fourth consecutive quarter, respectively, due to increases in all industries. –

① Production increased by 1.8% compared to the previous quarter, up for the third consecutive quarter, due to increases in all industries including hot roll steel and cold finished steel, etc. Shipments also increased by 1.9% (id.), up for the fourth consecutive quarter, due to increases in all industries. Inventory decreased by 0.2% compared to the end of the previous quarter, down for the second consecutive quarter, due to decreases in hot roll steel and crude steel, etc.

② Sub-classification by industry
1) Production of crude products increased by 1.7% compared to the previous quarter, up for the first time in two quarters.
2) Production of hot roll steel increased by 2.6% (id.), up for the third consecutive quarter.
3) Production of steel pipes and tubes increased by 3.7% (id.), up for the first time in two quarters.
4) Production of cold finished steel increased by 3.6% (id.), up for the third consecutive quarter.
5) Production of metallic coated steel increased by 1.3% (id.), up for the second consecutive quarter.
6) Production of steel castings and forgings increased by 0.3% (id.), up for the second consecutive quarter.

B. Non-ferrous metals industry
– Production increased for the fourth consecutive quarter, continuing rising from a slight increase. –

① Production increased by 0.2% compared to the previous quarter, up for the fourth consecutive quarter, due to an increase in non-ferrous metal castings. Shipments decreased by 0.8% (id.), down for the first time in four quarters, due to decreases in electric wires and cables, and refining of non-ferrous metals. Inventory increased by 2.7% compared to the end of the previous quarter, up for the first time in three quarters, due to increases in refining of non-ferrous metals, and electric wires and cables.

② Sub-classification by kind of industry
1) Production of refining of non-ferrous metals decreased by 2.2% compared to the previous quarter, down for the first time in five quarters, due to decreases in electrolytic gold, etc. Shipments also decreased by 1.9% (id.), down for the second consecutive quarter. Inventory increased by 3.7% compared to the end of the previous quarter, up for the first time in three quarters.
2) Production of copper and copper-base alloys and aluminum rolling products decreased by 0.9% compared to the previous quarter, down for the first time in four quarters, due to decreases in aluminum rolling products, etc. Shipments remained flat at 0.0%. Inventory increased by 0.5% compared to the end of the previous quarter, up for the second consecutive quarter.
3) Production of electric wires and cables decreased by 0.2% compared to the previous
quarter, down for the first time in seven quarters, due to decreases in copper electric wires, etc. Shipments also decreased by 1.8% (id.), down for the first time in two quarters. Inventory increased by 1.2% compared to the end of the previous quarter, up for the first time in two quarters.

4) Both production of non-ferrous metal castings increased by 1.1% compared to the previous quarter, up for the fourth consecutive quarter, due to increases in die castings, etc. Shipments also increased by 1.1% (id.), up for the fourth consecutive quarter.

C. Fabricated metals industry

— Both production and shipments decreased for the first time in two quarters. —

1) Production decreased by 1.0% compared to the previous quarter, down for the first time in two quarters, due to decreases in metal products for buildings, equipment for heating and kitchens, and fabricated structural metal products. Shipments also decreased by 0.1% (id.), down for the first time in two quarters, due to decreases in equipment for heating and kitchens, fabricated structural metal products, and metal products of buildings. Inventory increased by 0.2% compared to the end of the previous quarter, up for the third consecutive quarter, due to increases in equipment for heating and kitchens, and other metal products.

2) Sub-classification by kind of industry

1) Production of fabricated structural metal products decreased by 0.2% compared to the previous quarter, down for the first time in two quarters, due to decreases in structural-steel frames, and steel towers, etc. Shipments also decreased by 1.3% (id.), down for the first time in two quarters.

2) Production of metal products of building decreased by 3.0% (id.), down for the first time in two quarters, due to decreases in aluminum sashes for wooden houses and aluminum sashes for buildings, etc. Shipments decreased by 0.4% (id.), down for the first time in two quarters. Inventory also decreased by 1.4% compared to the end of the previous quarter, down for the first time in two quarters.

3) Production of equipment for heating and kitchens decreased by 3.5% compared to the previous quarter, down for the second consecutive quarter, due to decreases in oil space heaters and gas over double burner cooking appliances, etc. Shipments decreased by 4.5% (id.), down for the first time in two quarters, while inventory increased by 4.4% compared to the end of the previous quarter, up for the third consecutive quarter.

4) Production of other metal products increased by 0.9% compared to the previous quarter, up for the second consecutive quarter, due to increases in powder metallurgical products (machinery materials) and wire springs, etc. Shipments increased by 1.8% (id.), up for the first time in three quarters. Inventory also increased by 0.3% compared to the end of the previous quarter, up for the second consecutive quarter.

D. General machinery industry

— Both production and shipments decreased for the first time in two quarters, due to decreases in special industrial machinery and metal cutting machinery, etc. —

1) Production decreased by 2.0% compared to the previous quarter, down for the first time in two quarters, due to decreases in special industrial machinery, metal cutting machinery, chemical
machinery, metal forming machinery, and fans, pumps and oil hydraulic equipment, etc. Shipments also decreased by 3.1% (id.), down for the first time in two quarters. Inventory decreased by 2.4% compared to the end of the previous quarter, down for the first time in two quarters. The inventory ratio also decreased by 5.5% compared to the previous quarter, down for the second consecutive quarter.

2) Sub-classification by kind of industry

1) Production of special industrial machinery decreased by 5.6% compared to the previous quarter, down for the first time in two quarters, due to decreases in flat-panel display manufacturing equipment, injection molding machinery, and plate making machinery, although there were increases in printing machinery and semiconductor products machinery, etc.

2) In spite of an increase in numerically controlled lathes, production of metal cutting machinery decreased by 7.8% (id.), down for the first time in two quarters, due to decreases in special purpose machinery, grinding machinery, machining centers, and numerically controlled electrical discharge machines.

3) Production of chemical machinery decreased by 29.4% (id.), down for the first time in two quarters, due to decreases in blenders, mixers and crushers, separators, reaction vessels, dust collectors, heat exchangers, and filters.

4) Production of metal forming machinery decreased by 16.4% (id.), down for the first time in two quarters, due to a decrease in mechanical presses and rolls for the steel industry, although there was an increase in hydraulic presses.

5) Production of fans, pumps and oil hydraulic equipment decreased by 2.1% (id.), down for the first time in six quarters, due to decreases in pumps, compressors, and pneumatic equipment, in spite of an increase in oil hydraulic equipment.

6) Production of boilers and power units increased by 2.1% (id.), up for the second consecutive quarter, due to increases in parts and accessories of boilers, parts and accessories of steam turbines, and internal combustion engines for industry.

7) Production of agricultural machinery increased by 4.7% (id.), up for the third consecutive quarter, due to increases in wheel tractors and agricultural driers.

E. Electric machinery industry

– Production increased for the second consecutive quarter, due to an increase in lithium ion storage batteries, etc. –

1) In spite of decreases in electrical measuring instruments, etc., production increased by 3.0% compared to the previous quarter, up for the second consecutive quarter, due to increases in batteries, electrical rotating machinery, and household electrical machinery. Shipments increased by 1.9% (id.), up for the second consecutive quarter, due to increases in batteries, household electrical machinery, and electrical rotating machinery, although there was a decrease in wiring devices and luminaries, etc. In spite of an increase in batteries, etc., inventory decreased by 6.0% compared to the end of the previous quarter, down for the first time in three quarters, due to a decrease in household electrical machinery. The inventory ratio increased by 1.4% compared to the previous quarter, up for the second consecutive quarter.

2) Sub-classification by kind of industry
1) Production of **batteries** increased by 7.7% compared to the previous quarter, up for the first time in two quarters, due to increases in lithium ion storage batteries with an increasing demand for laptop personal computers for China and Taiwan, and in alkaline storage batteries and alkaline manganese dioxide batteries, etc., although there was a decrease in lead acid storage batteries.

2) In spite of a decrease in engine generators for general use, production of **electrical rotating machinery** increased by 3.8% (id.), up for the first time in three quarters, due to increases in small capacity motors, and in servo motors with an increasing demand for domestic use and exports.

3) In spite of a decrease in electric rice cookers and rice jar combination, production of **household electrical machinery** increased by 1.5% (id.), up for the first time in three quarters, as separate type air conditioners increased partly as a backlash of a decrease due to bad weather in the previous quarter, and there were also increases in refrigerators with freezers, and washing machines, etc.

4) Although there was an increase in electric test and measuring equipment, production of **electrical measuring instruments** decreased by 9.0% (id.), down for the first time in two quarters, as semiconductor characteristic measuring equipment decreased due to a decrease in demand for memory IC testers for foreign and domestic semiconductor manufacturers.

F. Information and communication electronics equipment industry

– Production increased for the first time in two quarters, due to increases in general purpose computers and personal computers, etc. –

① In spite of a decrease in communication equipment, production increased by 1.9% compared to the previous quarter, up for the first time in two quarters, due to increases in electronic computers and household electronic machinery. Shipments increased by 3.8% (id.), up for the second consecutive quarter, due to increases in electronic computers and household electronic machinery, although there was a decrease in communication equipment. In spite of an increase in video cameras, inventory decreased by 7.2% compared to the end of the previous quarter, down for the first time in three quarters, due to decreases in color televisions, liquid crystal televisions, and DVD-videos. The inventory ratio also decreased by 8.0% compared to the previous quarter, down for the first time in three quarters.

② Sub-classification by kind of industry

1) In spite of a decrease in mid range computers, production of **electronic computers** increased by 13.3% compared to the previous quarter, up for the second consecutive quarter, as there were increases in input-output units, as well as in general purpose computers due to a release of high-end models for domestic telecommunication businesses, and in personal computers due to a start of production of winter models.

2) In spite of decreases in liquid crystal televisions, etc., production of **household electronic machinery** increased by 1.0% (id.), up for the first time in two quarters, due to increases in digital cameras, as well as in video cameras with a favorable demand in the year-end shopping season.

3) Although there were increases in basic exchange for mobile customer premises equipment, etc., production of **communication equipment** decreased by 18.5% (id.), down for the
second consecutive quarter, due to the following reasons: the diffusion rate has reached a high level; orders for cellular telephones decreased as consumers waited for new models, expecting the introduction of the number portability system; fixed communication equipment decreased due to a decrease in orders for disaster-prevention radio systems for municipalities; and there was also a decrease in digital transmission equipment.

G. Electronic parts and device industry
– Production increased for the first time in two quarters, due to increases in memories and active matrix LCDs (middle and small), etc. –

① Production increased by 6.4% compared to the previous quarter, up for the first time in two quarters, due to increases in all industries such as integrated circuits, electronic parts, and semiconductor parts. In spite of a decrease in semiconductor devices, shipments increased by 7.9% (id.), up for the first time in two quarters, due to increases in electronic parts, integrated circuits, and semiconductor parts. Inventory increased by 15.2% compared to the end of the previous quarter, up for the fourth consecutive quarter, due to all industries such as integrated circuits, electronic parts, and semiconductor devices. The inventory ratio increased by 2.1% compared to the previous quarter, up for the third consecutive quarter.

② Sub-classification by kind of industry
1) In spite of decreases in micro computers, etc., production of integrated circuits increased by 6.5% (id.), up for the first time in two quarters, due to increases in metal oxide semiconductor ICs (memory) for cellular telephones, in metal oxide semiconductor ICs (logic ICs) for game machines, liquid crystal televisions, and cellular telephones, and in metal oxide semiconductor ICs (CCD) for cellular telephones.

2) Although there were decreases in active matrix LCDs (large), etc., production of electronic parts increased by 6.3% (id.), up for the seventh consecutive quarter, due to the following reasons: active matrix LCDs (middle and small) for cellular telephones, etc. increased; fixed capacitors increased due to an increase in demand for personal computers and cellular telephones and due to a continuing increase in the number of high-capacity small ceramic capacitors to be loaded into highly functional electronics; and electronic circuit boards increased due to an increase in high-value added multilayer substrates for cellular telephones, etc.

H. Transport equipment industry
– Production increased for the fourth consecutive quarter, due to increases in passenger cars, etc. –

① Production increased by 0.1% compared to the previous quarter, up for the fourth consecutive quarter, due to increases in passenger cars, motor vehicle parts, and trucks, etc. Shipments decreased by 0.2% (id.), down for the first time in four quarters. Inventory decreased by 2.7% compared to the end of the previous quarter, down for the second consecutive quarter. The inventory ratio decreased by 7.5% compared to the previous quarter, down for the second consecutive quarter.

② Sub-classification by kind of industry
1) Production of passenger cars increased by 0.4% (id.), up for the fourth consecutive quarter.
By goods, large passenger cars increased by 1.6% (id.), up for the fourth consecutive quarter, due to increases both in domestic use and in exports, mainly to the U.S. Minivans increased by 8.4% (id.), up for the third consecutive quarter, due to positive effects caused by introduction of new models and the domestic market’s preference shifting to minivans with good mileage. In contrast, although exports to the U.S. and Europe increased, small passenger cars showed a decrease of 4.6% (id.), down for the second consecutive quarter, due to decreases in domestic use.

2) Production of trucks increased by 3.5% (id.), up for the second consecutive quarter. By goods, large trucks increased by 4.1% (id.), up for the second consecutive quarter, due to increases both in domestic use and exports to the U.S. and Europe. Mini trucks increased by 4.2% (id.), up for the second consecutive quarter, due to an increase in domestic use. In spite of a decrease in domestic use, small trucks also increased by 0.5%, up for the first time in three quarters, due to an increase in exports to Europe and East Asia.

3) Production of motor vehicle parts increased by 2.3% (id.), up for the first time in two quarters, due to increases in drive, transmission and control parts, chassis and body parts, and suspension and brake parts, etc.

4) Production of motorcycles decreased by 1.4% (id.), down for the first time in two quarters, due to a decrease in motorcycles (less than 125ml), although there was an increase in motorcycles (more than 125ml).

3 Number of registrations and reports of new vehicles
Looking at domestic demand of automobiles by the number of new registrations and reports of new vehicles, the number of vehicles, as a whole, decreased by 1.40 million (a decrease of 3.7% compared to the same quarter of the previous year), down for the second consecutive quarter. Inside of this, passenger cars decreased by 1.12 million, a decrease of 4.5% (id.), down for the second consecutive quarter. Trucks decreased by 0.27 million, a decrease of 0.3% (id.), down for the first time in six quarters. Buses also decreased by five thousand, a decrease of 1.4% (id.), down for the second consecutive quarter.

I. Precision instruments industry
– Production increased for the second consecutive quarter, due to increases in analytical instruments and interchangeable lenses for cameras, etc. –

① In spite of a decrease in watches and clocks, production increased by 3.7% compared to the previous quarter, up for the second consecutive quarter, due to increases in measuring machines and instruments, and optical apparatus and parts. Shipments decreased by 0.9% (id.), down for the second consecutive quarter, due to decreases in optical apparatus and parts, and watches and clocks. In spite of an increase in measuring machines and instruments, inventory decreased by 0.7% compared to the end of the previous quarter, down for the second consecutive quarter, due to decreases in optical apparatus and parts, and watches and clocks. The inventory ratio decreased by 0.2% compared to the previous quarter, down for the second consecutive quarter.

② Sub-classification by kind of industry

1) In spite of decreases in testing machines, etc., production of measuring machines and instruments increased by 4.1% compared to the previous quarter, up for the second
consecutive quarter, due to increases in gas-meters and measuring instruments, in addition to rises in analytical instruments, which increased due to a favorable demand for gas chromatographs, high-speed liquid chromatographs, and saccharimeter for exports.

2) Production of **optical apparatus and parts** increased by 6.9% (id.), up for the second consecutive quarter, due to increases in 35mm cameras, in addition to rises in interchangeable lenses for cameras affected by a release of new models of single-lens reflex digital cameras.

3) In spite of an increase in battery driven type clocks, production of **watches and clocks** decreased by 3.0% (id.), down for the first time in two quarters, due to a decrease in battery driven type watches (movements) with declining exports to China.

**J. Ceramics, stones and clay products industry**

- **Production increased for the second consecutive quarter, due to an increase in glass for automobiles.**

  ① Production increased by 1.0% compared to the previous quarter, up for the second consecutive quarter, due to increases in glass and glass products, and other ceramics, stone and clay products. Shipments decreased by 1.6% (id.), down for the first time in two quarters, due to decreases in cement and cement products, glass and glass products, and ceramic wares and fine ceramics. Inventory increased by 0.5% compared to the end of the previous quarter, up for the first time in four quarters, due to increases in glass and glass products, cement and cement products, and ceramic wares and fine ceramics.

  ② Sub-classification by kind of industry

  1) In spite of a decrease in glass products such as glass containers, production of **glass and glass products** increased by 2.8% compared to the previous quarter, up for the first time in six quarters, due to an increase in glass with a favorable demand for sheet glass and safety glass for automobiles.

  2) Production of **cement and cement products** increased by 0.1% (id.), up for the second consecutive quarter, due to an increase in cement products for private construction, although cement decreased due to a sluggish demand for public works and a delay of construction caused by bad weather.

  3) Production of **ceramic wares and fine ceramics** decreased by 1.4% (id.), down for the second consecutive quarter. This is because sanitary ceramic wares decreased as a backlash of last-minute buying in the previous quarter, tiles and ceramic wares for tablewares and kitchenwares decreased due to increasing imported products and inactive consumption, and fine ceramics for structural use also saw a decrease.

  4) Production of **other ceramics, clay and stone products** increased by 0.7% (id.), up for the third consecutive quarter, due to increases in quick lime and refractory bricks.

**K. Chemicals (excl. Drugs) industry**

- **Production increased due to increases in plastic (materials), and cyclic chemicals and synthetic dyes, etc.**

  ① Production increased by 1.9% compared to the previous quarter, up for the first time in four quarters, due to increases in plastic (materials), cyclic chemicals and synthetic dyes, and
synthetic rubbers. Shipments increased by 0.5% (id.), up for the second consecutive quarter, due to increases in cyclic chemicals and synthetic dyes, industrial organic chemicals, and plastic (materials), etc. Inventory increased by 1.8% compared to the end of the previous quarter, up for the first time in two quarters, due to increases in plastic (materials), sensitive materials for photography, and cyclic chemicals and synthetic dyes, etc.

2) Sub-classification by kind of industry

1) Production of plastic (materials) increased by 4.7% compared to the previous quarter, up for the first time in six quarters, due to increases in polypropylene, polystyrene, and polyethylene, etc. These increases were all brought about by the completion of periodical repairs at several establishments.

2) Production of cyclic chemicals and synthetic dyes increased by 8.1% (id.), up for the first time in two quarters, as there were increases in phenol for domestic use and for China, and in terephthalic acid (pure) and styrene monomer both for domestic use.

3) Production of synthetic rubbers increased by 4.5% (id.), up for the first time in three quarters, due to the completion of periodical repairs at several enterprises.

L. Petroleum and coal products industry

– Production and shipments both decreased for the first time in two quarters, due to decreases in heavy fuel oil B and C, and kerosene, etc. –

1) Production decreased by 1.4% compared to the previous quarter, down for the first time in two quarters, due to decreases in heavy fuel oil B and C, kerosene, and naphtha, etc. Shipments also decreased by 2.2% (id.), down for the first time in two quarters, due to decreases in kerosene, heavy fuel oil B and C, gasoline, and naphtha, etc. Inventory increased by 5.7% compared to the end of the previous quarter, up for the first time in two quarters, due to increases in naphtha, kerosene, and heavy fuel oil B and C, etc. The inventory ratio increased by 9.9% compared to the previous quarter, up for the first time in three quarters.

2) Trends in major goods

1) Production of gasoline increased by 0.7% compared to the previous quarter, up for the first time in three quarters. Shipments decreased by 1.0% (id.), down for the third consecutive quarter, due to sluggish sales caused by price hikes. Inventory decreased by 2.6% compared to the end of the previous quarter, down for the first time in two quarters.

2) Production and shipments of naphtha decreased by 3.7%, and 4.1%, respectively, compared to the previous quarter, both down for the first time in two quarters. Inventory increased by 30.8% compared to the end of the previous quarter, up for the first time in three quarters.

3) Production of kerosene decreased by 5.4% compared to the previous quarter, and shipments decreased by 13.1% (id.), due to a decrease for domestic use caused by a declining demand from the industry. Production and shipments both decreased for the first time in two quarters. Inventory increased by 9.7% compared to the end of the previous quarter, up for the first time in two quarters.

4) Production of gas oil increased by 2.0% compared to the previous quarter, up for the second consecutive quarter. Shipments also increased by 3.5% (id.), up for the first time in three quarters, due to increases in demand for exports. Inventory decreased by 1.0% compared to the end of the previous quarter, down for the first time in three quarters.
5) Production of heavy fuel oil B and C decreased by 9.8% compared to the previous quarter, down for the first time in two quarters. Shipments also decreased by 8.7% (id.), down for the first time in two quarters, due to a decrease in demand for electricity. Inventory increased by 11.2% compared to the end of the previous quarter, up for the second consecutive quarter.

6) Production of coal products (coke) increased by 1.5% compared to the previous quarter, up for the first time in three quarters. Shipments increased by 4.1% (id.), up for the first time in two quarters, due to an increase in demand for domestic use. Inventory decreased by 6.8% compared to the end of the previous quarter, down for the third consecutive quarter.

M. Plastic products industry

– Production decreased for the first time in two quarters, while shipments remained flat. –

1) In spite of an increase in manufacturing material-related production, production decreased by 0.1% compared to the previous quarter, down for the first time in two quarters, due to decreases in construction material-related production and consumption material-related production. Shipments remained flat at 0.0% (id.), due to an increase in manufacturing material-related production, although there were decreases in construction material-related production and consumption material-related production. In spite of a decrease in construction material-related production, inventory increased by 1.0% compared to the end of the previous quarter, up for the third consecutive quarter, due to increases in manufacturing material-related production and consumption material-related production.

2) Production by use

1) In manufacturing material-related items, plastic products for machine tools and parts increased by 1.3% compared to the previous quarter, up for the second consecutive quarter, due to an increase in transport equipment parts for automobiles. Plastic containers blow-molding increased by 1.9% (id.), up for the second consecutive quarter, due to increases mainly in PET bottles for drinks thanks to higher temperature than usual. Plastic containers (excl. blow-molding) also increased by 7.3% (id.), up for the first time in four quarters, due to increases in pallets for transport and containers for drinks.

2) In consumption material-related items, plastic products for daily necessities and miscellaneous goods decreased by 3.5% (id.), down for the third consecutive quarter, due to decreases in storage goods and gardening goods. Plastic foamed products decreased by 1.0% (id.), down for the first time in two quarters, due to a decrease in other foamed products.

3) In construction material-related items, plastic pipes decreased by 10.4% compared to the previous quarter, down for the first time in two quarters, as a backlash of last-minute buying before the price rise in the previous quarter. Plastic reinforced products decreased by 4.0% (id.), down for the first time in two quarters, due to decreases in bathtubs, etc. Plastic material for building decreased by 1.8% (id.), down for the first time in three quarters, due to decreases in floor materials, etc. Plastic plates also decreased by 2.3% (id.), down for the first time in two quarters, due to a decrease in corrugated plates as a backlash of last-minute buying before the price rise in the previous quarter.
N. Pulp, paper and paper products industry
– Production increased for the first time in two quarters, while shipments decreased for the second consecutive quarter. –

1) Although paperboard decreased, production increased by 0.5% compared to the previous quarter, up for the first time in two quarters, due to increases in paper, pulp, and converted and processed paper. Shipments decreased by 1.5% (id.), down for the second consecutive quarter, due to decreases in all industries such as paper, paperboard, converted and processed paper, and pulp. In spite of a decrease in converted and processed paper, inventory increased by 4.1% compared to the end of the previous quarter, up for the first time in four quarters, due to increases in paper, paperboard, and pulp.

2) Sub-classification by kind of industry
   1) Production of paper increased by 0.6% compared to the previous quarter, up for the first time in two quarters, due to increases in all goods except household and sanitary paper. Shipments decreased by 1.9% (id.), down for the second consecutive quarter, due to decreases in household and sanitary paper, newsprint paper in rolls, and communication paper. Inventory increased by 3.9% compared to the end of the previous quarter, up for the first time in two quarters.
   2) Production of paperboard decreased by 1.2% compared to the previous quarter, down for the second consecutive quarter, due to a decrease in container board. Shipments also decreased by 0.3% (id.), down for the second consecutive quarter, due to a decrease in paperboards for paper containers. Inventory increased by 5.6% compared to the end of the previous quarter, up for the second consecutive quarter.
   3) Production of converted and processed paper (corrugated cardboard sheets) increased by 0.1%, compared to the previous quarter, up for the first time in two quarters. Shipments decreased by 0.2% (id.), down for the second consecutive quarter.

O. Textiles industry
– Production remained flat, and shipments decreased for the first time in two quarters. –

1) Production remained flat at 0.0% compared to the previous quarter, due to an increase in man-made fibers, although there were decreases in woven fabrics, clothes, and other textile products. Shipments decreased by 2.0% (id.), down for the first time in two quarters, due to decreases in clothes, other textile products, and spun yarn, etc. Inventory increased by 2.0% compared to the end of the previous quarter, up for the first time in 21 quarters, due to increases in clothes, other textile products, and man-made fibers, etc.

2) Sub-classification by kind of industry
   1) Production of man-made fibers increased by 3.3% compared to the previous quarter, due to increases both in synthetic fibers (filament) and synthetic fibers (staple). Shipments increased by 0.8% (id.), due to increases both in synthetic fibers (filament) and synthetic fibers (staple). Inventory also increased by 0.6% compared to the end of the previous quarter, due to an increase in synthetic fibers (filament).
   2) Production of spun yarn decreased by 2.4% compared to the previous quarter, due to decreases in all goods including synthetic fiber yarn. Shipments also decreased by 5.9% (id.), due to decreases in all goods including synthetic fiber yarn. Inventory decreased by
5.7% compared to the end of the previous quarter, due to decreases in cotton yarn and synthetic fiber yarn.

3) Production of **woven fabrics** decreased by 1.0% compared to the previous quarter, due to decreases in silk and spun silk fabrics, cotton fabrics, and synthetic fiber fabrics (staple), etc. Shipments decreased by 0.2% (id.), due to decreases in silk and spun silk fabrics, and cotton fabrics. Inventory increased by 0.2% compared to the end of the previous quarter, due to increases in woolen fabrics, silk and spun silk fabrics, and towel cloth.

4) Production of **clothes** decreased by 0.8% compared to the previous quarter, due to decreases in woven fabrics outer wear, and knitted fabrics outer wear. Shipments decreased by 6.8% (id.) due to decrease in all goods except underwear. Inventory increased by 2.8% compared to the end of the previous quarter, due to increases in all goods including knitted fabrics outer wear.
(2) Trends in tertiary industries

A. Commerce

① The total sales amount for the wholesale industry was 112.7200 trillion yen. Total sales increased by 6.4% compared to the same quarter of the previous year, up for the 12th consecutive quarter. This was because the machinery and equipment wholesale industry increased, due to favorable conditions of electronic parts such as semiconductors and active exports of machinery for construction and mines, and the minerals and metals wholesale industry increased, although the apparel, apparel accessories and notions wholesale industry, etc. decreased.

② The total sales amount for large wholesalers was 30.4365 trillion yen. Total sales increased by 6.1% (id.), up for the tenth consecutive quarter.

③ The total sales amount for the retail industry was 31.7900 trillion yen. Total sales increased by 0.6% (id.), up for the first time in two quarters, because the fuel retail sale industries increased, resulting from the price increase of petroleum products on the rise in prices of crude oil, and the foods and beverages industry also increased, although there were decreases in the other retail sale industry and in the motor vehicles retail sale industry due to a sluggish demand for small and large passenger cars.

④ The total sales amount for large retailers was 5.1457 trillion yen, slightly increasing by 0.1% (id.), up for the first time in three quarters.

⑤ The total sales amount and service sales amount for convenience stores was 1.9494 trillion yen, decreasing by 0.8% (id.), down for the first time in 12 quarters.

B. Specific service industries

・Business services

① The contract amount for commodity leases (based on acceptance inspection) decreased by 0.9% compared to the same quarter of the previous year, down for the second consecutive quarter, while the purchase amount for delivery items increased by 0.7% (id.).

② The total sales amount for the rental industry increased by 0.1% (id.), up for the first time in two quarters.

③ The total sales amount for the information service industry increased by 1.3% (id.), up for the sixth consecutive quarter.

④ The total sales amount for advertising increased by 0.3% (id.), up for the second consecutive quarter.

⑤ The total amount handled by the credit card services increased by 10.2% (id.). By type of business, sales credit business increased by 13.3% (id.), and consumer credit business decreased by 1.6% (id.).

⑥ The total amount of orders received in engineering services decreased by 7.7% (id.), down for the first time in nine quarters. The breakdown shows that domestic demand increased by 2.6% (id.), while foreign demand decreased by 23.8% (id.).

・Personal services

① In the leisure and amusement services, amusement parks and theme parks, golf driving ranges, and golf courses increased, while there were decreases in theaters, performances, companies promoting professional sports and performances, bowling alleys, movie theaters,
and pachinko parlors.

② In the culture and lifestyle services, fitness clubs, wedding ceremony halls, funeral services, and cram schools increased, while foreign language conversation classes, and culture centers decreased.