2. Supply trends and final demand

(1) Outline of supply trends for final demand

- Supply trends for the quarter

**Characteristics**

- Overall supply trends for final demand decreased by 1.0% compared to the previous quarter, down for the first time in two quarters.
- Overall industrial supply for consumption decreased by 0.2% (id.), down for the first time in two quarters, due to a decrease in personal consumption, in spite of an increase in government consumption.
- Overall industrial supply for investment also decreased by 3.1% (id.), down for the first time in two quarters, due to decreased in private corporation facilities and public investment, in spite of an increase in private housing.
- Exports decreased by 1.7% (id.), down for the first time in two quarters, and imports also decreased by 0.8%, down for the second consecutive quarter.
- IT-related consumption decreased by 2.9% (id.) and IT-related investment decreased by 0.1% (id.), both down for the first time in two quarters.

<table>
<thead>
<tr>
<th>Changes in the Indices of All Industries (Final demand components)</th>
<th>2006 Ratios to the previous year</th>
<th>2007 Ratios to the previous year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total of final demand sector</td>
<td>2.3</td>
<td>1.6</td>
<td>▲ 0.1</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>5.9</td>
<td>6.9</td>
<td>▲ 0.7</td>
<td>2.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>1.5</td>
<td>1.1</td>
<td>0.2</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Consumption</td>
<td>1.1</td>
<td>1.1</td>
<td>▲ 0.2</td>
<td>0.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Personal consumption</td>
<td>1.4</td>
<td>1.4</td>
<td>▲ 0.5</td>
<td>0.9</td>
<td>0.4</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>2.6</td>
<td>4.0</td>
<td>▲ 1.4</td>
<td>2.3</td>
<td>▲ 0.4</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>1.0</td>
<td>0.3</td>
<td>▲ 0.3</td>
<td>0.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Special IT-related</td>
<td>1.4</td>
<td>1.9</td>
<td>▲ 0.4</td>
<td>1.4</td>
<td>▲ 0.9</td>
</tr>
<tr>
<td>Government consumption</td>
<td>0.5</td>
<td>0.4</td>
<td>0.7</td>
<td>0.2</td>
<td>▲ 0.1</td>
</tr>
<tr>
<td>Investment</td>
<td>1.5</td>
<td>▲ 0.6</td>
<td>▲ 2.0</td>
<td>0.9</td>
<td>0.3</td>
</tr>
<tr>
<td>Public investment</td>
<td>▲ 7.8</td>
<td>▲ 4.4</td>
<td>▲ 6.4</td>
<td>1.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Private housing</td>
<td>4.5</td>
<td>▲ 6.6</td>
<td>▲ 1.4</td>
<td>1.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Private corporation facilities</td>
<td>3.9</td>
<td>▲ 3.0</td>
<td>▲ 1.1</td>
<td>2.5</td>
<td>▲ 0.1</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>3.7</td>
<td>▲ 3.3</td>
<td>▲ 2.6</td>
<td>2.3</td>
<td>▲ 1.2</td>
</tr>
<tr>
<td>Construction</td>
<td>4.6</td>
<td>▲ 3.5</td>
<td>▲ 0.7</td>
<td>0.4</td>
<td>▲ 0.1</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>4.0</td>
<td>▲ 3.9</td>
<td>▲ 0.4</td>
<td>5.2</td>
<td>▲ 3.1</td>
</tr>
<tr>
<td>Special IT-related</td>
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<td>10.0</td>
<td>4.2</td>
<td>▲ 6.4</td>
<td>▲ 10.8</td>
</tr>
<tr>
<td>Exports</td>
<td>12.5</td>
<td>▲ 9.8</td>
<td>▲ 2.7</td>
<td>2.8</td>
<td>▲ 0.1</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>11.9</td>
<td>▲ 8.9</td>
<td>▲ 3.2</td>
<td>3.1</td>
<td>▲ 3.4</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>14.1</td>
<td>▲ 8.0</td>
<td>▲ 1.9</td>
<td>1.3</td>
<td>▲ 3.5</td>
</tr>
<tr>
<td>Imports</td>
<td>6.9</td>
<td>▲ 4.6</td>
<td>▲ 0.5</td>
<td>2.5</td>
<td>▲ 0.1</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>6.8</td>
<td>▲ 2.5</td>
<td>▲ 1.0</td>
<td>2.1</td>
<td>▲ 0.4</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>7.2</td>
<td>▲ 6.6</td>
<td>▲ 2.7</td>
<td>4.6</td>
<td>▲ 3.5</td>
</tr>
</tbody>
</table>

Notes: 1. As the indices of all industries (Final demand components) are calculated using various statistical data, preliminary figures are used for some basic data. Therefore, you should note that the indices of the previous quarters have been corrected to the revised figures.
2. The ratios to the previous year are original indices and others are based on seasonally adjusted indices.
3. Due to the base revision in 2005 for some data (Breakdown List of Mining and Manufacturing Shipments and Table of Gross Supply), from January 2007 onward, data regarding the mining and manufacturing sector are processed so as to correct to those based on the 2005 base for calculating the indices of all industries (Final demand components).
Source: “The Indices of all Industrial Supply (Final demand components)” (Estimated values)
**Trends in IT-related consumption and investment**

**Characteristics**

- IT-related consumption for the third quarter of 2008 decreased by 2.9% compared to the previous quarter and non-IT-related consumption decreased by 0.4% (id.), both down for the first time in two quarters.
- Non-IT-related investment for private corporation facilities decreased by 4.9% (id.) and IT-related investment decreased by 0.1% (id.), both down for the first time in two quarters.

### Changes in IT-related Consumption

![Changes in IT-related Consumption](image)

Index level (2000=100, Seasonally adjusted)

- Personal consumption
- Non-IT-related consumption
- IT-related consumption (Right scale)

### Changes in IT-related Investment

![Changes in IT-related Investment](image)

Index level (2000=100, Seasonally adjusted)

- Private corporation facilities
- IT-related investment
- Non-IT-related investment

**Notes:**

1. IT-related consumption is consumption related to cellular telephones, personal handy-phone systems (PHS), personal computers, fixed telecommunications and mobile telecommunications that are supplied for personal consumption.
2. 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, fixed communication equipment, personal handy-phone systems (PHS), basic exchanges 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.
3. Out of the aforementioned items, “PHS” and “facsimile machines” were excluded from the indices of industrial shipments due to the base revision in 2005. Therefore, they are excluded for the calculation of data from January 2007 onward.

Source: "The Indices of All Industries (Final demand components)" (Estimated values)
**Trends in savings rates**

**Analysis point 1**

The saving rates have been declining for households with the head aged 60 or older (Note) and jobless households.

**Characteristics**

- The average surplus rate between the fourth quarter of 2001 and the third quarter of 2008 was at a high level of 26.7% for workers’ households, while the rate was negative at -29.0% for jobless households.
- The saving rates have been declining for households with the head aged 60 or older and jobless households.

![Graph showing changes in saving rates and slopes for workers' households by age and jobless households](image)

Note: Only workers’ households are divided into age groups.

Source: “Family Income and Expenditure Survey” (Ministry of Internal Affairs and Communications)

**Analysis point 2**

Factors influencing the saving rates are income from jobs for households with the head aged between 60 and 69 and social security benefits for households with the head aged 70 or older and jobless households.

**Characteristics**

- Factors influencing the saving rates are income from jobs for households with the head aged between 60 and 69 and social security benefits for households with the head aged 70 or older and jobless households.
- Recently, the rising consumer price index and social security premiums have contributed to the decline of the saving rates.

![Graph showing factors influencing savings rates](image)

Note: The factor analysis formula is as follows:

\[
\text{Surplus rate} = \beta_0 + \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + \beta_3 \cdot X_3 + \beta_4 \cdot X_4 + \beta_5 \cdot X_5 + u
\]

- \(X_1\): Job income
- \(X_2\): Social security benefits
- \(X_3\): Social security premiums
- \(X_4\): Average interest rate on fixed deposits
- \(X_5\): Consumer price index

\(\beta\) Parameters of respective variables

Source: “Deposits and Loans Related Statistics” (Bank of Japan), “Consumer Price Index,” “Family Income and Expenditure Survey” (Ministry of Internal Affairs and Communications)
Analysis point 3

Deposit balance has been decreasing for households with the head aged 29 or younger and households with the head aged 70 or older. Disparity among each generation expands for older age groups.

Characteristics

Deposit balance has been decreasing for households with the head aged 29 or younger and households with the head aged 70 or older.

For households with the head aged 29 or younger, deposit balance has a high coefficient of correlation (0.85) with the house ownership rate. It is considered that their deposits decrease due to housing acquisition.

A decrease in deposit balance for households with the head aged 70 or older is considered to be attributable to a decline in income from jobs.

The Gini coefficient of deposit balance is higher the older an age group is than the 30 to 39-year-old group. Disparity among each generation has been expanding.

Fig. II-1-19 Changes in Deposit Balance for Workers’ Households by Age and Jobless Households
(2005=100; Quarterly average; 4-quarter backward moving average)

Fig. II-1-21 Gini Coefficient of Deposit Balance by Age of the Heads of Households (2007)

Source: “Family Income and Expenditure Survey” (Ministry of Internal Affairs and Communications)
**Analysis point 1**

~ The index of capital investment for all industries declined for the fifth consecutive quarter ~

**Characteristics**

- The index of capital investment for all industries (excluding finance and insurance industries) of all sizes for the 14th cycle has been on a declining trend for five consecutive quarters, after hitting a peak in the first quarter of 2007.
- By industry, the manufacturing industry renewed its record high in the second quarter of 2008, while the non-manufacturing industry has shown a decline for the fifth consecutive quarter after hitting a peak in the first quarter of 2007.
- Although the index of capital investment for the manufacturing industry has been on an upward trend, the index of operating ratio has already shown a decline. Therefore, it is highly likely that the growth of the index of capital investment from 4 quarters earlier will become sluggish.

**Analysis point 2**

~ In the 14th cycle, export-oriented industries expanded capital investment due to an increase in exports and a rise in the index of operating ratio ~

**Characteristics**

- In the 14th cycle, export-oriented industries led an increase in capital investment.
- Export-oriented industries significantly expanded capital investment in the 14th cycle, in response to an increase in exports and a rise in the index of operating ratio. This enhanced overall capital investment.

(Note) Export-oriented industries: The following six industries are highly dependent on exports:

- Iron and Steel
- Non-ferrous Metals
- General Machinery
- Information and Communication Equipment
- Transport Equipment
- Precision Instruments

**Notes:**

1. The amount of capital investment is adjusted originally by the X-11 default of the X-12-ARIMA method.
2. The amount of capital investment of all industries and the non-manufacturing industry does not include that of the finance and insurance industries.
3. The 2005=100; Seasonally adjusted; 4-quarter backward moving average.
   - Manufacturing industry
   - Non-manufacturing industry

Source: "Financial Statements Statistics of Corporations by Industry" (Ministry of Finance)
Analysis point 3]
~ Recently, the index of operating ratio for export-oriented industries has deteriorated, with its exports and capital investment leveling off ~

Characteristics
- The export value increased slightly or remained the same for most of the export-oriented industries.
- The index of operating ratio has been declining for all export-oriented industries.
- The index of capital investment leveled off for most of the export-oriented industries.

Fig. II-2-19 Changes in Export Values, the Index of Operating Ratio and Capital Investment (2005=100; Seasonally adjusted; 4-quarter backward moving average (only the index of capital investment): All sizes)

Notes: 1. The amount of capital investment is adjusted originally by the X-11 default of the X-12-ARIMA method.
2. The export value is adjusted originally by the X-11 default of the X-12-ARIMA method.

Analysis point 4]
~ Deterioration in ordinary profits has also affected capital investment ~

Characteristics
- Recurring profit margin has been decreasing for all export-oriented industries.
- A comparison between the amount of ordinary profits and capital investment of export-oriented industries with that of four quarters earlier shows the following:
  - Both ordinary profits and capital investment increased: Transport Equipment
  - Ordinary profits decreased and capital investment increased:
    - Iron and Steel; Non-Ferrous Metals; General Machinery
  - Both ordinary profits and capital investment decreased:
    - Electrical Machinery and Information and Communication Electronics Equipment; Precision Instruments
(2) Outline of exports and imports

Export and import trends for the third quarter

[Characteristics]

Looking at the trends of exports for the third quarter of 2008 (on a quantity basis), in terms of the indices of all industries (final demand components), exports as a whole decreased by 1.7% from the previous quarter, due to a decline of 1.4% (id.) in exports of goods (the mining and manufacturing industry) and a decline of 0.7% (id.) in received services (the tertiary industry).

By region, exports of goods to the United States and East Asia decreased, while those to the Middle East, ASEAN and Europe increased.

Changes in Exports by Region (Goods) (2005=100; Seasonally adjusted)

[Characteristics]

Looking at the trends of imports for the third quarter of 2008 (on a quantity basis), in terms of the indices of all industries (final demand components), imports as a whole decreased by 0.8% from the previous quarter, due to a decline of 3.0% (id.) in service payments (the tertiary industry) and a decline of 0.1% (id.) in imports of goods (the mining and manufacturing industry).

By region, imports of goods from Europe and ASEAN decreased, while those from East Asia, Middle East and the United States increased.

Changes in Imports by Region (Goods) (2005=100; Seasonally adjusted)

Notes: 1. The export index by region is estimated by rearranging the trade statistics into shipment index groups, and the import index by region is estimated by rearranging the trade statistics into supply index groups.

2. The names of each country or region are as follows:
   - ASEAN: Singapore, Thailand, Malaysia, Philippines, Indonesia, Vietnam, Myanmar, Laos, Brunei and Cambodia
   - East Asia: Republic of Korea, Taiwan and 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" (both estimated values)
Capital investment of Japanese overseas subsidiaries

**Analysis point 1**
- Capital investment of Japanese overseas subsidiaries has been concentrated in the transport equipment industry

**Characteristics**
- Looking at the percentage distribution of the number of Japanese overseas subsidiaries (manufacturing, hereinafter the same) by type of business and by time of the establishment or commencement of capital participation, the textiles industry, the precision instruments industry and the electrical machinery industry seem to have started their overseas operations relatively early, while the transport equipment industry delayed overseas expansion.
- By type of business, the transport equipment industry accounts for only 18.2% (in FY2006, hereinafter the same) of the total number of Japanese overseas subsidiaries (manufacturing, hereinafter the same), but the amount of its capital investment accounts for 49.6% of the total.

Fig. II-3-8 Changes in the Number of Japanese Overseas Subsidiaries (Manufacturing) and Percentage Distribution by Type and Time of Establishment or Start of Capital Participation

Fig. II-3-9 Changes in the amount of Capital Investment of Japanese Overseas Subsidiaries (Manufacturing)

Source: “Basic Survey of Overseas Business Activities”

**Analysis point 2**
- Regarding the amount of capital investment between FY1998 and FY2006, domestic corporations and overseas subsidiaries are positively correlated

**Characteristics**
- When categorizing the amount of capital investment and ordinary profits of Japanese companies into that of domestic corporations and that of overseas subsidiaries, the growth of the latter exceeds the former. This is partly due to the fact that Japanese companies have positively increased overseas production so as to enhance their international competitiveness.
- Regarding the amount of capital investment of Japanese companies (i.e. domestic corporations + overseas subsidiaries), no significant correlation was observed between domestic corporations and overseas subsidiaries for both overall manufacturing industry and each type of businesses for the whole period (from FY1989 to FY2006) and the period between FY1989 and FY1997. However, for the period between FY1998 and FY2006, significant positive correlation was confirmed for the overall manufacturing industry and for the chemicals, general machinery, electrical machinery and transport equipment industries.

Fig. II-3-15 Correlation in Capital Investment Indices (2005=100) of Japanese Overseas Subsidiaries and Domestic Corporations (Manufacturing)

Note: Figures in the parentheses are t-values.
Source: “Financial Statements Statistics of Corporations by Industry” (Ministry of Finance), "Basic Survey of Overseas Business Activities"
Analysis point 3

Factor 1 of Analysis point 2: Affected by the fact that Japanese companies respond to overseas demand with local production and domestic demand with domestic production

Characteristics

It seems that Japanese companies engaged in business in the chemicals, general machinery, electrical machinery and transport equipment industries have strengthened their domestic and overseas supply systems, in anticipation of a future expansion of global demand.

Japanese companies in general respond to increasing overseas demand with local production and domestic demand with domestic production. Such tendencies have contributed to an increase in capital investment of domestic corporations and overseas subsidiaries. This is considered to be one of the factors that caused a high correlation between the amount of their capital investment for the period between FY1998 and 2006.

Table II-3-6 Changes in Sales of Japanese Companies by Destination (FY2006/FY1998; Manufacturing + 4 types of industry)

<table>
<thead>
<tr>
<th>Japanese companies</th>
<th>Classification by destination</th>
<th>For Japan</th>
<th></th>
<th></th>
<th>For foreign countries</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Domestic corporation</td>
<td>Overseas subsidiaries</td>
<td>Domestic corporation</td>
<td>Overseas subsidiaries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Growth rate (%)</td>
<td>27.9</td>
<td>15.3</td>
<td>13.6</td>
<td>133.3</td>
<td>72.9</td>
<td>53.9</td>
</tr>
<tr>
<td></td>
<td>Contribution ratio to growth rate (%)</td>
<td>12.0</td>
<td>10.7</td>
<td>1.5</td>
<td>3.5</td>
<td>6.0</td>
<td>9.5</td>
</tr>
<tr>
<td>Chemicals</td>
<td>Growth rate (%)</td>
<td>33.4</td>
<td>19.7</td>
<td>18.1</td>
<td>274.6</td>
<td>94.0</td>
<td>81.1</td>
</tr>
<tr>
<td></td>
<td>Contribution ratio to growth rate (%)</td>
<td>16.0</td>
<td>14.7</td>
<td>1.4</td>
<td>1.7</td>
<td>6.4</td>
<td>10.9</td>
</tr>
<tr>
<td>General machinery</td>
<td>Growth rate (%)</td>
<td>33.7</td>
<td>45.3</td>
<td>63.3</td>
<td>143.8</td>
<td>41.1</td>
<td>37.1</td>
</tr>
<tr>
<td></td>
<td>Contribution ratio to growth rate (%)</td>
<td>17.6</td>
<td>24.6</td>
<td>14.9</td>
<td>4.2</td>
<td>13.6</td>
<td>15.4</td>
</tr>
<tr>
<td>Electrical machinery</td>
<td>Growth rate (%)</td>
<td>17.8</td>
<td>8.8</td>
<td>5.8</td>
<td>86.2</td>
<td>42.1</td>
<td>39.2</td>
</tr>
<tr>
<td></td>
<td>Contribution ratio to growth rate (%)</td>
<td>6.4</td>
<td>4.4</td>
<td>1.4</td>
<td>11.3</td>
<td>4.6</td>
<td>6.7</td>
</tr>
<tr>
<td>Transport equipment</td>
<td>Growth rate (%)</td>
<td>63.0</td>
<td>24.4</td>
<td>24.6</td>
<td>412.3</td>
<td>136.1</td>
<td>62.4</td>
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<tr>
<td></td>
<td>Contribution ratio to growth rate (%)</td>
<td>17.2</td>
<td>14.7</td>
<td>2.4</td>
<td>4.9</td>
<td>10.6</td>
<td>35.2</td>
</tr>
</tbody>
</table>

Note: For calculation formula for each item and major HS 2-digit classification, see the main text on p. 151.

Analysis point 4

Factor 2 of Analysis point 2: Affected by complementary supply of parts and completed products between domestic corporations and overseas subsidiaries in the machinery industries

Characteristics

In the aforementioned three machinery industries (general machinery, electrical machinery and transport equipment), a cooperative relationship seems to exist generally for complementary supply of parts and completed products between domestic corporations and overseas subsidiaries. This may have been significantly affected by the fact that Japanese companies have positively promoted their strategies to build a system of vertical international specialization, such as through shifting their processing or assembling processes overseas.

As a result, production of domestic corporations and overseas subsidiaries increased in these three machinery industries. This is considered to be one of the factors that increased the amount of capital investment of both domestic corporations and overseas subsidiaries.

Fig. II-3-17 Exports and Imports Between Japan and North America and East Asia by Completed Products and Parts (Electrical machinery)

Note: “Japan → North America” shows the value of exports from Japan to North America and “Japan → North America” shows the value of imports to Japan from North America (the same holds for East Asia). It should be noted that the data are based on customs statistics and include trade with companies other than Japanese overseas subsidiaries. For major HS 4-digit classification of completed products and parts, see the main text on p. 155.
Source: “World Trade Atlas” (Global Trade Information Services)
【Analysis point 5】
〜 The import unit value of completed products of general machinery, electrical machinery and others increased 〜

【Characteristics】
Looking at the import unit value of overall machinery products, Japan’s import unit value of completed products increased from 1994 to 2007. Among completed machinery products, the import unit value of general machinery and electrical machinery showed an increase, which suggests that, of these items, mainly high-value added products have been imported to Japan.

High-value added machinery products have come to be manufactured at overseas sites due to expansion of capital investment of overseas subsidiaries, which is considered to have raised Japan’s import unit value.

Fig. II-3-18 Percentage Changes in Japan’s Import Unit Value of Machinery Products (2007/1994)

Notes: 1. In the graph above, the decline in transport equipment (completed) is mainly due to declines in items such as motorcycles (HS: 8711), while items such as passenger cars (HS: 8703) showed an increase.
2. The import unit value refers to dollar/unit for completed products and dollar/kg for parts. “Electrical machinery (Total)” is the average of values for electrical machinery, information and communication electronics equipment and electronic parts and devices. It should be noted that the data are based on customs statistics and include trade with companies other than Japanese overseas subsidiaries. For major HS 4-digit classification of completed products and parts, see the main text on p. 136.
Source: “World Trade Atlas” (Global Trade Information Services)