2. Supply trends and final demand

(1) Outline of supply trends for final demand

① Supply trends for the quarter

【Characteristics】

・Overall supply trends for final demand declined by 1.7% compared to the previous quarter, down for the second consecutive quarter.
・Overall industrial supply for consumption decreased by 0.9% (id.), down for the first time in six quarters, due to decreases in both personal consumption and government consumption.
・Overall industrial supply for investment also decreased by 2.4% (id.), down for the third consecutive quarter, due to declines in private corporation facilities and public investment, although there was an increase in private housing.
・Exports decreased by 1.8% (id.), down for the second consecutive quarter, while imports increased by 0.1% (id.), up for the second consecutive quarter.
・IT-related consumption decreased by 2.8%, down for the second consecutive quarter. IT-related investment also decreased by 8.9% (id.), down for the first time in five quarters.

Changes in the Indices of All Industries (Final demand components)

(2000=100, Ratios to the previous year (quarter))

<table>
<thead>
<tr>
<th></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>1.0</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>5.9</td>
<td>6.9</td>
<td>1.7</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>1.5</td>
<td>1.1</td>
<td>0.4</td>
</tr>
<tr>
<td>Consumption</td>
<td>1.1</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Personal consumption</td>
<td>1.4</td>
<td>1.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>2.6</td>
<td>4.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>1.0</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Special IT-related</td>
<td>1.4</td>
<td>1.9</td>
<td>2.8</td>
</tr>
<tr>
<td>Government consumption</td>
<td>0.5</td>
<td>0.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Investment</td>
<td>1.5</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Public investment</td>
<td>1.78</td>
<td>1.45</td>
<td>0.7</td>
</tr>
<tr>
<td>Private housing</td>
<td>4.5</td>
<td>8.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Private corporation facilities</td>
<td>3.9</td>
<td>3.0</td>
<td>0.9</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>3.7</td>
<td>5.3</td>
<td>4.7</td>
</tr>
<tr>
<td>Construction</td>
<td>4.6</td>
<td>2.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>4.0</td>
<td>3.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Special IT-related</td>
<td>0.7</td>
<td>10.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Exports</td>
<td>12.5</td>
<td>9.8</td>
<td>3.0</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>11.9</td>
<td>8.9</td>
<td>3.0</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>14.1</td>
<td>8.0</td>
<td>5.9</td>
</tr>
<tr>
<td>Imports</td>
<td>6.9</td>
<td>4.6</td>
<td>2.1</td>
</tr>
<tr>
<td>Mining and manufacturing (Goods)</td>
<td>6.8</td>
<td>2.5</td>
<td>0.7</td>
</tr>
<tr>
<td>Tertiary industries (Services)</td>
<td>7.2</td>
<td>6.6</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Notes: 1. As the indices of all industries 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.
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 connect to those based on the 2005 base for calculating the indices of all industries (final demand components). Other data are annually adjusted for 2007 and seasonal indices are recalculated.
Source: “The Indices of All Industries (Final demand components)” (Estimated values)
② Trends in IT-related consumption and investment
【Characteristics】
・IT-related consumption for the first quarter of 2008 decreased by 2.8% compared to the previous quarter, down for the second consecutive quarter. Non-IT-related consumption also decreased by 1.1% (id.), down for the first time in six quarters.
・Non-IT-related investment for private corporation facilities decreased by 4.1% (id.), down for the third consecutive quarter. IT-related investment also decreased by 8.9% (id.), down for the first time in five quarters.

Changes in IT-related Consumption

Changes in IT-related Investment

Index level (2000=100, Seasonally adjusted)

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, cellular telephones, 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, fixed telecommunications, mobile telecommunications, 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)
(2) Outline of exports and imports

Export and import trends for the quarter

【Characteristics】
・Looking at the trends of exports for the first quarter of 2008 (on a quantity basis), in terms of the indices of all industries (final demand components), exports as a whole decreased by 1.8% from the previous quarter, due to a decline of 3.3% (id.) in received services (the tertiary industry), although exports of goods (the mining and manufacturing industry) increased by 1.6% (id.).
・By region, exports of goods increased in Europe, ASEAN, the Middle East and East Asia, while they decreased in the United States.

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

【Characteristics】
・Looking at the trends of imports for the first quarter of 2008 (on a quantity basis), in terms of the indices of all industries (final demand components), imports as a whole increased by 0.1% from the previous quarter, due to an increase of 1.5% (id.) in imports of goods (the mining and manufacturing industry), although service payments (the tertiary industry) decreased by 2.1% (id.).
・By region, imports of goods increased in the United States and ASEAN, but decreased in East Asia, Europe and the Middle East.

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 total 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” and “Table of Total Supply of Mining and Manufacturing” (both estimated values)
Possibility of an economic recession in Japan from the supply-side viewpoint

[Awareness of the issue]
- The current economic expansion stage, since hitting bottom in January 2002, has been setting a new record, surpassing the previous longest period of post-war prosperity, called the “Izanagi boom.” However, industrial production decreased in the first quarter of 2008, down for the first time in four quarters, and tertiary industry has also registered a decline recently. The overall economy has thus been leveling off in general.
- Therefore, we verified the possibility that the Japanese economy has slipped into recession through examining the “estimate of economic situation by the probit model” and the “correlation between the supply side and the demand side (such as trends in exports and producer goods in the indices of industrial production).”

[Conclusion]
- Based on the results of the analyses, the mining and manufacturing industry and the tertiary industry are both unlikely to have entered into recession at the moment. Capital investment and exports and imports all remain flat in general.
- However, the following factors call for concern: the areas of industries and goods that have been playing a role as driving forces have begun to show a slowdown; there are signs that capital investment has entered into recession; and some exports have shown a decelerating trend.
- As the deterioration of the U.S. economy and further upsurge in the prices of raw materials and fuels may have a significant impact on Japanese industrial activities, we should keep an eye on future trends.

[Analysis point 1 for the mining and manufacturing industry]
- Although industrial production continues to be in an expansion stage, producer goods and capital goods have shifted to an economic contraction stage.

[Characteristics]
- The business conditions DI for the manufacturing industry has been on a declining trend recently, but industrial production has remained firm.
- Based on the result of analysis by the probit model, industrial production has generally been in an expansion stage, even in 2008, and is expected to remain so in the future. Therefore, the probability of an economic shift is not high. However, it is observed that producer goods and capital goods have shifted to an economic contraction stage.
- Production of the general machinery industry and exports of the electronic parts and devices industry, which had played a role as driving forces in the 14th cycle (since January 2002), have begun to show declines recently.
Fig. 2 Estimate of Economic Expansion Stages and Economic Contraction Stages by the Probit Model (Industrial Production)

Note: See the main text for estimating equations, etc.
Source: “Indices of Industrial Production” and "Index of Manufacturing Production Forecast"

【Analysis point 2 for the mining and manufacturing industry】
～ A larger number of industries have come to have difficulties in achieving their production plans. ～

【Characteristics】
• Regarding changes in business sentiment for production activities, we compared the current stage with past economic stages using the Realization Ratio of Forecast (12-month backward moving average) obtained based on the Indices of Production Forecast. The result shows that negative margins were generally smaller in the 14th cycle, suggesting more careful production plans were being implemented.
• In the meantime, the Realization Ratio of Forecast itself has been declining recently, and the magnitude of the declines has been expanding for many industries. Future production trends need to be watched closely.

Fig. 9 Business Conditions DI of Manufacturing Industry and Indices of Production Forecast (Realization Ratio of Forecast)

Note: Data for the Realization Ratio of Forecast are for up to March 2008. Changes from the previous quarter are the differences of data for March, June, September and December.
Source: “TANKAN” (Bank of Japan) and “Indices of Production Forecast"
【Analysis point 1 for the tertiary industry】
～ Tertiary industry activities in the 14th cycle have been declining moderately since hitting a peak. ～

【Characteristics】
• Assuming the peak in each economic cycle to be 100, we compared the changes in the periods around each peak. Tertiary industry activities in the 14th cycle have been at a higher level than those in the 11th or 12th cycle, showing no significant decline as seen in those cycles.
• Comparing the average growth rate during the period between the peak and the bottom of each economic cycle, the negative margin in the 14th cycle was smaller than in the 11th or 12th cycle.
• However, it should be noted that since February 2008, the magnitude of decline has become larger than in the 13th cycle.

【Analysis point 2 for the tertiary industry】
～ The decline in tertiary industry activities since the peak of the 14th cycle is attributable to trends in the security brokers and dealers, engineering and architectural services and leasing industries. ～

【Characteristics】
• The following industries contributed to a decline in overall tertiary industry activities from the peak (in August 2007) of the 14th cycle to March 2008 (average growth rate during the period: -0.17%):
  - Finance and insurance (contribution ratio to the average growth rate during the period: -0.09% points): Industries such as the security brokers and dealers industry decreased.
  - Business support services (-0.04% points (id.)): The engineering and architectural services industry and the leasing industry decreased.
  - Information and communication (-0.02% points (id.)): Industries such as the fixed telecommunication industry decreased.
  - Learning support (-0.01% points (id.)): Foreign language schools, etc. decreased.

Fig. 12 Trends in Overall Tertiary Industry Activities around the Peak of Each Economic Cycle (2000=100, Seasonally adjusted, 3-month backward moving average)

Fig. 15 Contribution Ratio by Industry to the Average Growth Rate of Overall Tertiary Industry Activities during the Period between the Peak to the Bottom (for the 14th Cycle up to March 2008) (2000=100, Seasonally adjusted, 3-month backward moving average)

Note: See “Note” of Fig. 10 in the main text for the definition of peaks and bottoms in this figure.
Source: “Indices of Tertiary Industry Activities”
【Analysis point 3 for the tertiary industry】
～ Industries contributing to the decline in tertiary industry activities have shown changes different from those seen in past cycles, since hitting the peak of the 14th cycle. ～

【Characteristics】
・Major industries that contributed to the declines in overall tertiary industry activities during the period between the peak and the bottom in past economic cycles (transport, wholesale trade, retail trade, personal services and business support services) have remained at a higher level, with a smaller magnitude of decline, since hitting the peak of the 14th cycle, compared with the changes of these industries in similar periods in the past.
・However, it should be noted that the transport industry and the business support industry have come to show an expanding decline since the beginning of 2008.

Fig. 16 Changes in Indices of Activities by Industry around the Peak in Each Economic Cycle
(2000=100, Seasonally adjusted, 3-month backward moving average)

Note: Each cycle’s peak is as follows:
Source: “Indices of Tertiary Industry Activities”

【Analysis point 1 for investment】
～ The index of capital investment has been on a declining trend since the second quarter of 2007 due to the influence of the non-manufacturing industry. ～

【Characteristics】
・The index of capital investment (all industries of business) for the 14th cycle has been on a declining trend after reaching the highest point in the first quarter of 2007, and turned negative compared with the index four quarters before, in the fourth quarter of the same year.
・By industry, the manufacturing industry has still been on an upward trend.
・In the meantime, the non-manufacturing industry reached the highest point in the first quarter of 2007, but rapidly slowed down its growth after that, turning negative in the fourth quarter of 2007. The decelerating growth of overall industry is largely attributable to such changes in the non-manufacturing industry.

Fig. 21 Changes in the Index of Capital Investment (All industries, All sizes)
(2000=100, Seasonally adjusted, 4-quarter backward moving average, comparison with 4 quarters before)

Notes: 1. The amount of capital investment is adjusted originally by the X-11 Default of the X-12-ARIMA method.
2. Shadowed parts show economic contraction stages.
Source: “Financial Statements Statistics of Corporations by Industry” (Ministry of Finance)
【Analysis point 2 for investment】
〜 Contribution of the services industry to the decline has become clear. 〜

【Characteristics】
• Since hitting a peak, the period average growth rate of the index of capital investment (all industries of business) between the first quarter of 2007 and the fourth quarter of 2007 (geometric average using seasonally adjusted indices) was ▲1.28%.
• Looking at the contribution ratios to the period average growth rate during the same period, the automobile and automobile accessories industry, fabricated metals industry and general machinery industry contributed significantly to the growth of overall manufacturing industry.
• In the meantime, the services industry made a significant contribution to the decline, pushing down the growth of overall industry.

【Analysis point 3 for investment】
〜 Mid-sized enterprises and SMEs in the non-manufacturing industry have shown deterioration both in cash flows and the amount of capital investment. 〜

【Characteristics】
• Looking at cash flows and the amount of capital investment in the fourth quarter of 2007 by type and size of industry, large enterprises, mid-sized enterprises and SMEs in the manufacturing industry and large enterprises in the non-manufacturing industry have maintained positive both in cash flows and the amount of capital investment, compared with four quarters before. In contrast, mid-sized enterprises and SMEs in the non-manufacturing industry have shown a declining trend both in cash flows and the amount of capital investment.
• Out of the overall non-manufacturing industry, the services industry registered negative both in cash flows and the amount of capital investment, compared with four quarters before, irrespective of the size of industry.
• In comparison with past economic cycles, in the 14th cycle, mid-sized enterprises and SMEs have begun to show a declining trend earlier and have been quick to hold back capital investment.

Notes:
1. Cash flow = Ordinary profit × 0.5 + Depreciation expense
2. Large enterprises: with capital of 1 billion yen or more
   Mid-sized enterprises and SMEs: with capital of 10 million yen or more and less than 1 billion yen
Source: “Financial Statements Statistics of Corporations by Industry” (Ministry of Finance)
【Analysis point 1 for exports and imports】
～ Exports and imports have still been in an expansion stage, with little likelihood of an economic shift.～

【Characteristics】
• Looking at the trends in exports from Japan in the 14th cycle (on a quantity basis), a decelerating trend can be observed mainly in producer goods and capital goods after the second quarter of 2007. The electronic parts and devices industry, general machinery industry, and information and communication electronics equipment industry, in particular, have contributed to the slowdown.

• A slowdown in imports in and after the second quarter of 2006 and an improvement in and after the fourth quarter of 2007 were mainly attributable to trends in producer goods, among which the electronic parts and devices industry and the mining industry contributed significantly to such changes.

• In general, linkage between export and import trends and the economy has become more evident in the 12th or 13th cycle, compared with past economic cycles (the 10th or 11th cycle).

• For reference, when examining imports, whose linkage with the Japanese economy is supposed to be relatively high, by using the probit model, we can infer that the Japanese economy has still been in an expansion stage and that there is little likelihood that an economic shift has occurred.

Fig. 30 Estimate of Economic Expansion Stages and Economic Contraction Stages by the Probit Model
(Exports and imports)

Note: See the main text for estimating equations, etc.
Source: "Breakdown List of Mining and Manufacturing Shipments" and "Table of Total Supply of Mining and Manufacturing" (both estimated values)
【Analysis point 2 for exports and imports】
~ Japanese exports of electrical machinery to East Asia have been slowing down due to the weakness in the U.S. economy. ~

【Characteristics】
• It is inferred that the slowdown in Japanese exports of HS code 85 (electrical machinery and equipment and parts thereof) to East Asia (on a value basis) has been indirectly caused by the weakness in the U.S. economy, due to the progress of trilateral trades from Japan to the U.S. via East Asia.
• Specifically, exports of transmission apparatus for radio-broadcasting or for televisions and of personal computers and parts thereof from East Asia to the U.S. decreased due to the weak U.S. economy, which may have caused a slowdown in Japanese exports of IC components, etc. to East Asia.

Fig. 47 Trilateral Trades from Japan to the U.S. via East Asia (Seasonally adjusted)
(Contribution ratio of 3-quarter backward moving average compared with 3 quarters before)

Notes:
1. Notes: 1. Contribution ratio to growth rate of the trade value of top two items in the HS code. HS code 8529 refers to transmitting and receiving apparatus for radio-broadcasting or for TVs; HS code 8525 refers to transmission apparatus for radio-broadcasting or for TVs; HS code 8542 refers to integrated circuits; HS code 8471 refers to automatic data processing machines including personal computers; and HS code 8473 refers to accessories for office appliances including personal computers.
2. Trade values are in terms of U.S. dollars, and are seasonally adjusted originally using the default X-11 of the X-12-ARIMA method.
Source: "World Trade Atlas" (Global Trade Information Services, Inc.)

【Analysis point 3 for exports and imports】
~ A slowdown in Japanese exports to the U.S. has received a relatively small impact from the rising export prices caused by the yen’s appreciation. ~

【Characteristics】
• We examined the possibility that the recent tendency of a strong yen against the U.S. dollar has brought about a rise in export prices on a dollar basis. As a result, it was confirmed that it was hard for Japanese enterprises in general to pass their losses from the strong yen on to export prices due to the weak U.S. economy in the second half of 2007.
• Therefore, it is inferred that the slowdown in Japanese exports to the US has received a relatively small impact from the rise in export prices on a dollar basis caused by the yen’s appreciation.

Fig. 48 Changes in Foreign Exchange Rates

Fig. 49 Changes in Exchange Rate Elasticity of Japanese Exports

Notes:
1. Exchange rate elasticity =
(Changes from the previous quarter of export price index (on a contracted currency basis))/
(Changes from the previous quarter of nominal effective exchange rate)
2. Nominal effective exchange rate is obtained by calculating the weighted geometric mean of the respective exchange rates between the Japanese yen and other major currencies using the weight of trade between Japan and the relevant countries or regions and then creating an index of the result as of a specified base point in time.
Sources: "Foreign Exchange Rates" (Bank of Japan), "Effective Exchange Rate" (Bank of Japan) and "Export Price Index" (Bank of Japan)