2. Trend in supply and final demand

(1) Outline of the supply trend for the final demand in this quarter

The outline of the supply trend for the final demand in this quarter is as follows.
- As personal consumption has increased by 0.5% for two consecutive quarters compared to the previous quarter and government consumption has leveled off by 0.0% id., the supply of all industries for consumption has increased by 0.2% id. for two consecutive quarters.
- Investment for private corporate facilities has increased by 1.8% after seven quarters compared to the previous quarter and investment for private housing after three quarters by 1.3% id. and public investment by 0.1% id. Therefore, the supply of all industries for investment has increased by 1.2% id.
- Exports have decreased after three quarters by 0.8% compared to the previous quarter. Imports have increased by 2.5% id., increasing for three consecutive quarters.
- IT-related consumption has decreased by 0.2% compared to the previous quarter for two consecutive quarters and IT-related investment has decreased by 5.6% id.

Change in the supply indices for all industries

(1995=100, percentage change over the previous year, percentage change over the previous quarter seasonally adjusted)

(Notes) 1. IT-related consumption is consumption related to facsimiles, PHS/mobile telephones, pagers, cordless telephones, personal computers, domestic telecommunications business (mobile communications excluded) and mobile communications, which are also supplied for private consumption.
2. IT-related investments are investments for communication wires and power cables, optical fiber products for wires and cables, electrostatic indirect copying machines, digital color copying machines, cordless and dial telephones, key service units, facsimiles, electronic automatic exchange, transmission units, fixed communication devices, PHS and mobile telephones, pagers, base station communication devices, general purpose computers, mid-range computers, personal computers, external storage, input-output devices, terminal units, software development and program creation (subcontracts) that are also supplied to private corporate facilities.
3. Exponential calculations are made for various statistical data in order to obtain the supply indices for all industries.
Since some flash figures may be utilized as basic data, it must be noted that the indices of the previous quarter may be altered.
4. Retroactive amendments have been made to the supply indices for all industries corresponding the retroactive amendments made for the basic data, the Corporate service price index.
Source: Supply indices for all industries
(2) Trend in IT-related consumption and investment

IT-related consumption for this quarter decreased by 0.2% compared to the previous quarter, decreasing for two consecutive quarters, while non-IT-related consumption increased by 0.6% id. for two consecutive quarters.

In addition, IT-related investment for private corporate facilities decreased by 5.6% compared to the previous quarter for two consecutive quarters. On the other hand, non-IT-related investment increased by 3.6% id. for two consecutive quarters.

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**Change in IT-related consumption**

![Graph showing change in IT-related consumption](image)

*Note* IT-related consumption is consumption related to facsimiles, PHS/mobile telephones, pagers, cordless telephones, personal computers, domestic telecommunications business (mobile communications excluded) and mobile communications, which are also supplied for private consumption.

**Source:** Supply indices for all industries

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**Change in IT-related investment**

![Graph showing change in IT-related investment](image)

*Note* IT-related investments are investments for communication wires and power cables, optical fiber products for wires and cables, electrostatic indirect copying machines, digital color copying machines, key service units, mobile telephones, pagers, base station communication devices, general purpose computers, mid-range computers, personal computers, external storage, input-output devices, terminal units, software development and program creation (subcontracts) that are also supplied to private corporate facilities.

**Source:** Supply indices for all industries
Recently, capital investments have decreased and remained at a low-level, but the outlook is uncertain. If capital investments are at a low-level in the long term, replacement investments as well as new investments will decrease. As a result, it will arouse a concern about the deterioration and decay of facilities.

The Vintage (average age of facilities), an index indicating the deterioration and decay of facilities in manufacturing industry, had decreased during the bubble years, but basically it has been increasing. Dividing the Vintage into the useful life (hereinafter, we refer to vintage/average useful life as “the Real Vintage”) for the comparison by business, the businesses with high-level Real Vintage are the oil and coal products industry, textile and apparels industry, ceramics, stone and clay products industry, iron and steel business, and chemical industry, and most are businesses dealing with raw materials. The businesses with low-level Real Vintage are the electric machinery industry, non-ferrous metals business, transport equipments industry, and general machinery industry, which are mostly processing businesses.

The businesses with high-level Real Vintage are growing slowly, and from the ratio of overseas subsidiaries in Japanese subsidiaries, they have a low degree of progress in overseas operations. On the contrary, the growth rate of businesses with low-level Real Vintage is high, and they have high degree of progress in overseas operations.

Certainly, as for the businesses with a high degree of progress in overseas operations, We can consider that domestic investments decreased and hastened the deterioration and decay of domestic facilities because new investment sites shifted to overseas. However, the businesses with low-level Real Vintage have a high degree of the ratio of new construction and the ratio of retirement for domestic facilities, and the Real Vintage is increasing modestly.

From these points, the businesses that have relatively high degree of demand for domestic market, such as the businesses dealing with raw materials, have high-level Real Vintage in general and are growing modestly. On the other hand, the businesses with high degree of dependency on exports and high-level ratio of overseas operations, such as the processing businesses, generally, have low-level Real Vintage and are growing fast.
Change in Real Vintage by business

- Manufacturing industry
- Textiles and apparel
- Oil and coal products
- Ceramics, stone and clay products
- General machinery
- Chemicals
- Non-ferrous metals business
- Electric machinery
- Transport equipment

Source: "National Wealth Survey" (The Economic Planning Agency)
Statistics for private capital stocks (Cabinet Office)

Change in indices of Real GDP

Source: “System of National Accounts (SNA)” (Cabinet Office)
The ratio of Real Vintage and subsidiaries in foreign countries (FY2000)

Source: Basic Survey of Japanese Business Structure and Activities

The ratio of new construction and retirement (Average between 1992-2000)

(Note) The dotted line in the diagram shows “Ratio of new construction = Ratio of retirement”

The figure below this line indicates the reduction of capital stock. The figure above this line shows the increase. The full line is the balancing line for the average ratio of new construction and retirement in the manufacturing industry. If the figure is below this line, the ratio of retirement is relatively higher than that of new construction. If the figure is above, the ratio of new construction is higher.

Source: Statistics for private capital stocks (Cabinet Office)
(4) Starts of low-level condominium apartments for the first time in three years

<table>
<thead>
<tr>
<th>In new housing starts, those of condominium apartments have decreased for two consecutive quarters and marked a low level after about three years since the second quarter of 1999. Housing starts of condominium apartments in two major metropolitan cities (the National Capital Region, the Kinki Region) show almost the same tendency as those in whole country and the inventories have increased since the third quarter of 2001, and came to at a high level of 16,600 units in this quarter.</th>
</tr>
</thead>
<tbody>
<tr>
<td>In terms of housing starts and inventories of condominium apartments in two major metropolitan cities from the inventory cycle, housing starts have diminished due to the expansion of inventory, and they are considered likely to enter the phase of Inventory Adjustment in the future.</td>
</tr>
<tr>
<td>The changes in each composition ratio of new housing starts for condominium apartments and owned detached houses are contrastive and we can see the relationship similar to the trade-off, but since 2000, the composition ratio of condominium apartments has been consistently higher than that of owned detached houses, and especially, the difference have expanded in 2001.</td>
</tr>
<tr>
<td>Though the relationship between condominium apartments and owned detached houses can be observed from various aspects, such as the change of generation for purchase or the change of life-style, here, we focus on purchase prices. Purchase prices of condominium apartments are consistently cheaper than those of owned detached houses and the difference expanded especially in 2000 and 2001. Therefore, in the phase of business uptrend in the indices of all industrial activities, new housing starts of owned detached houses which show more expensive purchase prices than condominium apartments, increase relatively. On the contrary, in the phase of business recession, new housing starts of condominium apartments increase. Since 2000, due to fall in purchase prices of condominium apartments, it can be considered that the demand has shifted to condominium apartments as a whole and housing starts also have increased in condominium apartments.</td>
</tr>
<tr>
<td>From these points, it may be assumed that the reasons why housing starts dropped at a low level are that the composition ratio of housing starts in owned detached houses increased relatively due to the mild business uptrend, and that housing starts of condominium apartments diminished due to the inventory expansion and are entering a phase of Inventory Adjustment.</td>
</tr>
</tbody>
</table>
Changes in housing starts of condominium apartments in all of Japan and two major metropolitan cities, and change in the inventory

Source: Statistics on Building Construction Starts (Ministry of Land, Infrastructure and Transport)
“Real Estate Economic Research” (Real Estate Economic Institute Co., Ltd.)

Inventory cycle for housing starts and inventory of condominium apartments
(Two major metropolitan areas)

Source: “Real Estate Economic Research” (Real Estate Economic Institute Co., Ltd.)
Changes in the composition ratio of condominium apartments and owned detached houses and the indices for all industrial activities compared to the previous quarter

(Note) Index figures are used to compare the composition ratio of condominium apartments and owned detached houses. Source: “Statistics on Building Construction Starts” (Ministry of Land, Infrastructure and Transport)

Changes in the purchase price of houses in all of Japan and in two major metropolitan cities

Source: "Research for the Users of the Government Housing Loans" (The Government Housing Loan Corporation)
(5) Outline of export and import

- Trend of export and import

The trend of exports and imports for the third quarter of 2002 indicates that the exports of goods (the mining and manufacturing industry) have deceased by 0.6% compared to the previous quarter, and the receipt of services for exports has deceased by 0.5% id. Therefore, total exports have deceased by 0.8% id. For imports, the payment of services has decreased compared to the previous year by 4.4% for the first time in three quarters. However, the imports of goods (the mining and manufacturing industry) have increased for four consecutive quarters by 4.7% id. Therefore, total imports have increased for three consecutive quarters by 2.5% id.

In terms of region, exports to the EU and U.S. have decreased. However, exports to East Asia, and the ASEAN9 have increased. Though imports from the ASEAN9 have decreased, imports from the U.S., EU, and East Asia have increased.

### Change in export by region (goods)

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S.</th>
<th>EU</th>
<th>ASEAN9</th>
<th>East Asia</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td></td>
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<td>1998</td>
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<td>2001</td>
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<tr>
<td>2002</td>
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</tbody>
</table>

### Change in import by region (goods)

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S.</th>
<th>EU</th>
<th>ASEAN9</th>
<th>East Asia</th>
<th>Middle East</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>2002</td>
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</tbody>
</table>

(Note): The import index is estimated by rearranging the trade statistics with the total supply index groups.

2. The regional classifications are as follows:

- ASEAN 9: Singapore, Thailand, Malaysia, Brunei, the Philippines, Indonesia, Vietnam, Laos, and Myanmar.
- East Asia: Korea, China, Taiwan, and Hong Kong.
- Middle East: Iran, Iraq, Bahrain, Saudi Arabia, Kuwait, Qatar, Oman, Israel, Jordan, Syria, Lebanon, the United Arab Emirates, Gaza, and Yemen.

Source: “Total Mining and Manufacturing Supply Table”
(6) Trend of technological trade

As for the trend of “technological trade” out of service trades, we outline its relationship with the sales amount of Japanese subsidiaries by country.

The change in “charges for the use of patents” out of “other services” in the balance of services in the balance of payments statistics indicates that payment is still in excess in the balance of Japanese technological trade, but the deficit is diminishing.

In terms of region, the balance of technological trade for Asia shows a large surplus. On the other hand, though the balance of technological trade for the U.S. shows a large amount of acceptance, the amount of payment exceeds it. Therefore, the whole balance shows an excess in payment.

On the other hand, when examining in the research report for science and technology, the balance of technological trade which specializes in the manufacturing industry and includes technological offers and acceptance such as technical know-how and guidance, we can find that the balance does not move with the charges for the use of patents in the balance of payments statistics and as a total, the export amount of technology has exceeded the import amount of technology since 1993, and exports have been in excess. And also, in the balance for the U.S., the export amount of technology has exceeded the import amount of technology since 1997, and exports have been in excess.

Changes in charges for the use of patents by trading area

Change in technological trade specializing mainly in the manufacturing industry by trading area

Source: "Balance of Payments statistics" (BOJ)
In terms of technological trade by business, software business and other industries specialize in import. However, the transport equipment industry and iron and steel business specialize in export.

According to these facts, technical know-how and guidance as well as the use of patent rights are found to play a large part in technological trade.


(Note: The specialization coefficient of trade = (Export amount of technology - Import amount of technology)/(Export amount of technology + Import amount of technology))

For the background behind the increase in technological trade, the influence of activities by Japanese subsidiaries can be expected. In terms of the relationship between the sales amount of subsidiaries in the manufacturing industry and the acceptance amount of the technology trade (including technical know-how), both the exports of technology and the sales amount of foreign subsidiaries in the manufacturing industry are increasing. However, the correlation coefficient to whole world was at a low level. On the other hand, the correlation coefficients to Asia and the U.S. were at relatively a high level.

From these points, it may be assumed that the patents made in Japan and technical know-how and guidance from Japan are introduced and utilized in the manufacturing industry of Japanese subsidiaries in Asia and North America.

Changes in sales amount of foreign subsidiaries in the manufacturing industry and exports of technology

<table>
<thead>
<tr>
<th>Sales amount of foreign subsidiaries (manufacturing industry)</th>
<th>Correlation coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export amount of technology (whole world)</td>
<td>0.66</td>
</tr>
<tr>
<td>Export amount of technology (to Asia)</td>
<td>0.93</td>
</tr>
<tr>
<td>Export amount of technology (to North America)</td>
<td>0.83</td>
</tr>
</tbody>
</table>

(Note) Estimated period is 1889-2001.
The regional classifications are as follows:
Asia: China, Korea, the Philippines, Thailand, Indonesia, etc.
North America: U.S.A., Canada, Mexico, etc.

(7) Import expansion of electric machinery from Asia
The change of the specialization coefficient of trade by item in electric machinery which expands the exports and imports for Asia, is as follows. The specialization coefficient of trade by item on the whole world basis (we selected the items of which import amount in 2001 was over 100 billion yen) specialized in exports in many items. However, the degree has declined sharply, three items such as stereo sets shifted from the specialization in export to in import. Relationship of trade for East Asia indicates that seven items such as TV and video out of thirteen items shifted from the specialization in export to in import. Furthermore, relationship of trade for the ASEAN9 also shows that five items such as telephones out of thirteen items shifted from the specialization in export to in import.

<table>
<thead>
<tr>
<th>Change in the specialization coefficient of trade in electric machinery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Whole world</strong></td>
</tr>
<tr>
<td>The specialization in export</td>
</tr>
<tr>
<td>The specialization in import</td>
</tr>
<tr>
<td><strong>East Asia</strong></td>
</tr>
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</tr>
<tr>
<td>The specialization in import</td>
</tr>
</tbody>
</table>

(Note) East Asia : Korea, China, Taiwan, Hong Kong
The items belonging to the 85 class in the HS classification are regarded as electric machinery.

The specialization coefficient of trade: \( \frac{\text{Export amount} - \text{Import amount}}{\text{Export amount} + \text{Import amount}} \)
Source: Trade Statistics (Ministry of Finance)
Out of import expansion of electric machinery from Asia, we survey the influence of export for Japan by Japanese subsidiaries. In terms of the sales amount by Japanese subsidiaries since 1998, it declined in the fourth quarter of 1998 due to Asian currency crisis, and then, shifted to uptrend until the third quarter of 2000. Thereafter, it leveled off until the fourth quarter of 2001. However, it has increased since the first quarter of 2002.

The export amount for Japan by Japanese subsidiaries in Asia was about 1.3 trillion yen in 1998 and occupied 60% of Japanese imports of electric machinery from Asia (FY 1998: about 2.3 trillion yen). On the other hand, the export amount for Japan in 2001 was about 1.8 trillion yen, so it diminished to about 50% of Japanese imports of electric machinery from Asia. From these points, the increase of Japanese imports of electric machinery from Asia is caused not only by direct imports from Japanese subsidiaries but also the increase of non-direct imports from Japanese subsidiaries in Asian countries.

**Changes in sales amount by Japanese subsidiaries in Asia, and export amount for Japan and the ratio of export for Japan**

![Graph showing changes in sales amount and export ratio](image)

**Note:** We categorized the following three regions into Asia

- NIES3: Singapore, Taiwan, Korea
- ASEAN4: Indonesia, Thailand, Philippines, Malaysia,
- China/Other Asian countries: China (Including Hong Kong), India, Vietnam, Sri Lanka, Pakistan, Bangladesh

**Source:** Quarterly Survey of Japanese Business Activities (The Behavior of Overseas Subsidiaries)

**Import of electrical machinery from Asia**

![Graph showing import of electrical machinery](image)

**Note:** Here, the amount of direct import by Japanese subsidiaries is the amount by those researched and this figure does not mean the total amount for all Japanese subsidiaries in Asia.