



**STATISTICS DIRECTORATE**

**National Accounts and Economic Statistics - Services**

**Recent characteristics of royalties and license fees in Japan's balance of payments**

**Document prepared by Eika Yamaguchi - Bank of Japan**

*OECD-EUROSTAT meeting of Experts in Trade-in-Services Statistics (TIS)*

*Château de la Muette*

*Room 6*

*Beginning on 28 April 2004 - 2:30 pm*

For further information please contact: [eika.yamaguchi@boj.or.jp](mailto:eika.yamaguchi@boj.or.jp)

## RECENT CHARACTERISTICS OF ROYALTIES AND LICENSE FEES IN JAPAN'S BALANCE OF PAYMENTS\*

March 2004  
Eika Yamaguchi

### Abstract

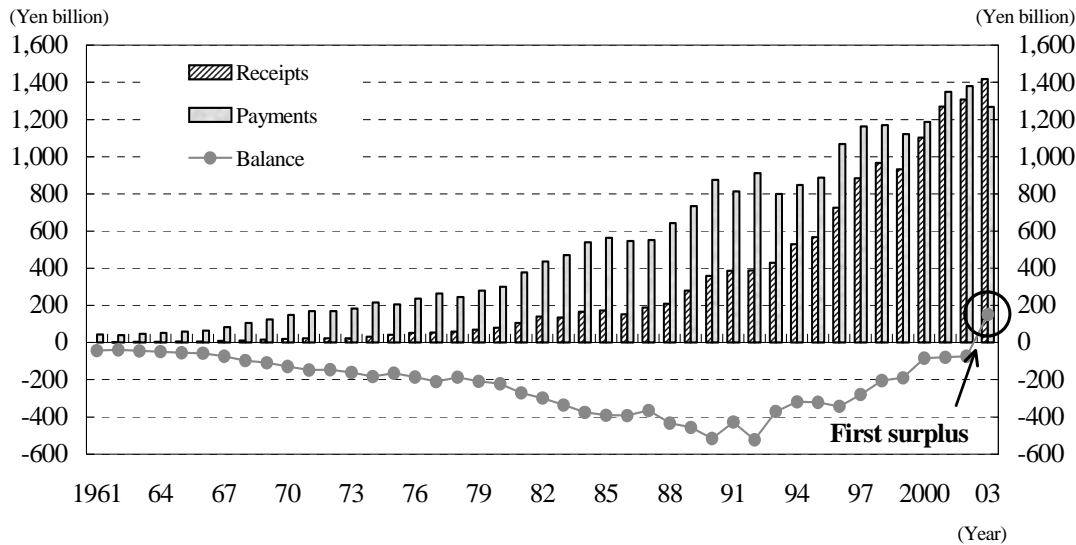
- “Royalties and License Fees” in balance of payments statistics includes payments accruing from patent, trademarks, registered designs, utility models, copyrights and technical instruction. Japan’s balance of royalties and license fees had remained consistently in deficit since statistics were first compiled<sup>1</sup> until a surplus was registered for the first time in 2003<sup>2</sup> (Chart 1). This reflects growth in royalty receipts from the overseas subsidiaries of Japanese companies (non-resident corporations) resulting from the globalization of manufacturing activities, which in turn has been promoted by such developments as the avoidance of trade friction by Japanese manufacturing industries, countermeasures to combat loss of price competitiveness due to the appreciation of the yen, and declining market-entry costs pursuant to expanding WTO membership.
- A review of current developments identifies the following major contributors to the emergence of a surplus. By industry, transportation equipment has played a leading role, and by region, receipts from North America have been critical. Overseas production of automobiles by Japanese companies is expected to increase over the coming years in North America and Europe, while manufacturing in Asia is now taking off. Consequently, the outlook is for the surplus in royalties and license fees to continue growing in the years ahead.
- On the other hand, in the area of software, the competitive position of Japanese companies remains weak (as evidenced by continued deficits in copyright-related payments). Moreover, the recent surplus can be essentially attributed to intra-firm trade in specific industries, such as transportation equipment and electrical machinery. Thus, it cannot be said with any finality that the competitive position of Japanese companies in the area of intellectual property has improved significantly. In its progress toward a truly technology-based economy, it would be a desirable option for Japan to boost receipts from extra-firm transactions in both software and hardware by achieving higher levels of technology and maturity.

---

\* I would like to thank staff members of International Department and Research and Statistics Department of the Bank of Japan for their useful comments received in the writing of this paper. Needless to say, I am responsible for any errors that may remain. The views expressed herein are those of the author and do not reflect those of the Bank of Japan or International Department.

<sup>1</sup> Publication of statistics based on IMF Balance of Payments Manual, Third Edition, began in 1961. The Fourth Edition was adopted in 1979, and the Fifth Edition in 1996.

<sup>2</sup> All balance of payments data contained in this paper for periods ended September 2003 and earlier are final figures; data for Oct.-Dec. 2003 and for periods that include Oct.-Dec. 2003 are provisional figures.

**Chart 1: Trends in Royalties and License Fees**

## 1. Introduction

- In balance of payments statistics, cross-border transactions in “Royalties and License Fees”<sup>3</sup> are registered as a specific component under the “Current account/Goods and Services account/Services account/Other services account.”<sup>4</sup> As balance of payments is based on the criterion of residence, payments of license fees received by licensors resident in Japan from non-resident overseas licensees are registered as the export of services. Conversely, payments of license fees made by licensees resident in Japan to non-resident overseas licensors are registered as the import of services.<sup>5</sup> A review of recent trends in royalties and license fees shows that this item currently accounts for 16% of total service exports and 10% of total service imports.
- For many years, Japan’s trade in services has remained in deficit (excess of service imports over exports).<sup>6</sup> During the same period, the balance of royalties and license fees similarly registered very substantial deficits (excess of payments over receipts) as Japanese companies remained dependent on foreign technology. However, with the steady postwar improvement in the competitive position of Japanese companies, a gradual shift in the balance began to appear from around 1990. Thereafter, the deficit gradually diminished. (With respect to the competitiveness of Japanese companies, see Chart 2: Comparative Advantage Index.) A review of the yen-dollar exchange rate points to an accelerated appreciation of the yen and depreciation of the dollar after the Plaza Agreement of 1985. Whereas the

<sup>3</sup> The item “Royalties and License Fees” was included in income from assets up through the IMF Balance of Payments Manual, Fourth Edition. It was moved to services in the Fifth Edition for the following reason: “Inclusion of this item under services, rather than under income, is in accordance with the SNA treatment of such items as payments for production of services for intermediate consumption or receipts from sales of output used as intermediate inputs” (para. 260).

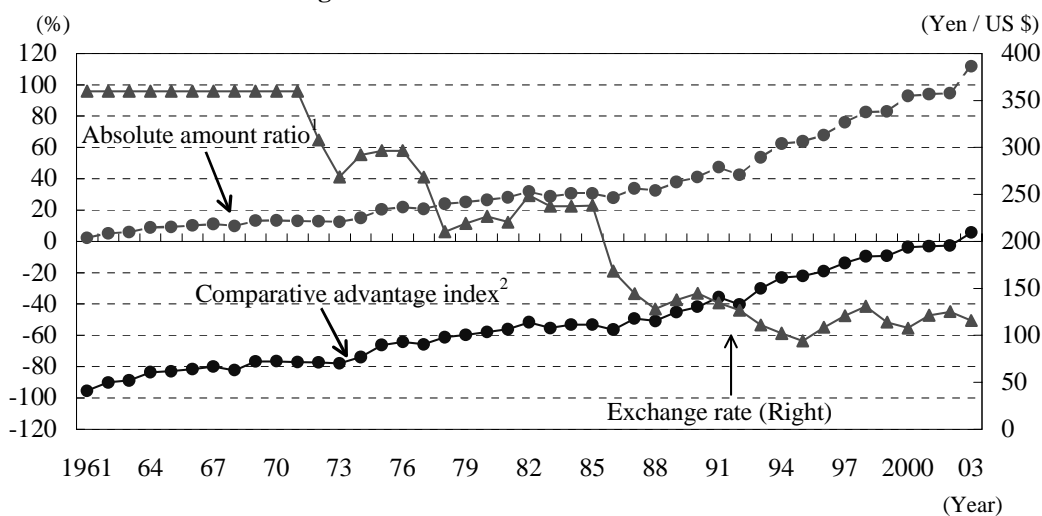
<sup>4</sup> “Other Services” comprises 11 items, such as: “Construction”, “Insurance”, “Financial”, “Merchanting”, and “Miscellaneous Business, Professional, and Technical Services”. “Royalties and License Fees” accounts for a significant portion of “Other Services,” accounting for approx. 29% of total receipts (largest item in 2003) and approximately 23% of total payments (second largest item in 2003).

<sup>5</sup> It should be noted that the purchase and sale of patents, copyrights, trademarks etc. do not come under services but are included in “Capital Account.”

<sup>6</sup> With the exception of “Construction”, “Merchanting”, and “Financial”, principal service items consistently register deficits and offset approximately 40% of the current account surplus (2001-03 average). This is in clear contrast to the United States, a current account deficit country, which registers very large surpluses in trade in services (“Royalties and License Fees” accounted for \$22.3 billion of the \$67.3 billion surplus in services in 2001).

rate stood at roughly 240 yen/dollar immediately before the Plaza Agreement, the yen rose above the 200 yen/dollar mark by the following year. The latter half of the 1980s is also notable for serious trade friction problems which arose in the automobile and other industries. Responding to these developments, Japanese companies gradually shifted their manufacturing facilities overseas. As Japanese manufacturers continued to relocate their facilities overseas, the deficit began to diminish during the 1990s after the lapse of a lag between relocation and the start-up of production. Subsequently, the balance of royalties and license fees registered a surplus for the first time in 2003 as exports (receipts) exceeded imports (payments), and the advantage index turned positive. This paper examines the principal factors contributing to the improvement in competitiveness, first by industry and then by region.

**Chart 2: Trends in Absolute Amount Ratio and Comparative Advantage Index of “Royalties and License Fees” and Exchange rate\***



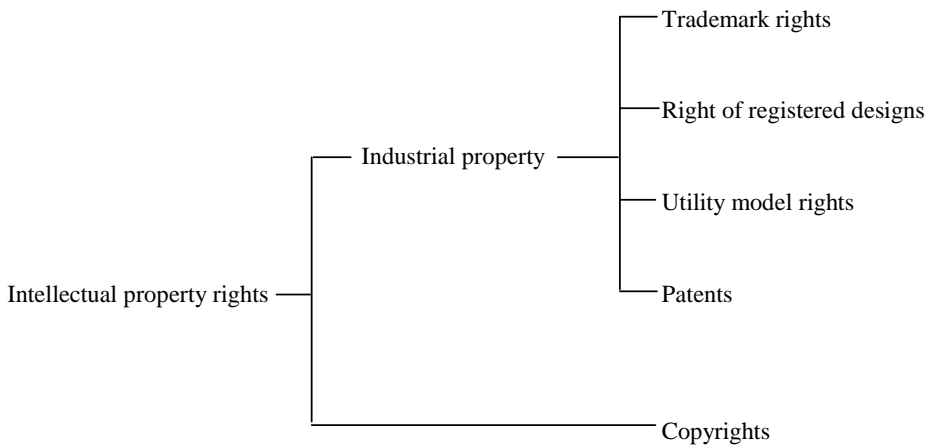
\* Foreign exchange rates used in this paper are as follows: Yen 360/\$ up through 1971; Yen 308/\$ in 1972 (Smithsonian rate); annual average Yen/\$ rate on Tokyo market (monthly average rate at 17:00) for 1973 and after.

Notes 1: Computed as Exports / Imports  
 2: Computed as (Exports – Imports) / (Exports + Imports)

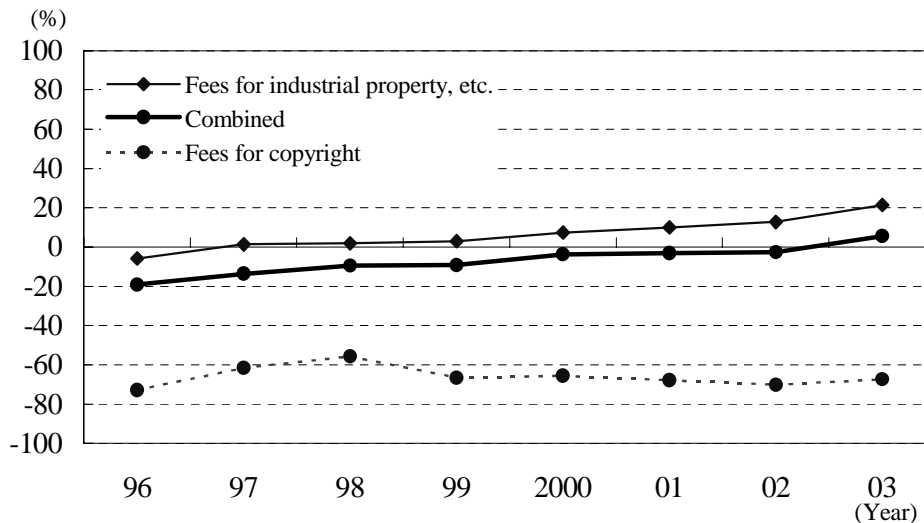
**2. Differential in the Competitiveness of Industrial Property and Copyright**

- As outlined in Chart 3, intellectual property rights can be divided into two major categories, industrial property and copyright. In this context, industrial property covers rights of trademarks, registered designs, utility models, and patents.
- Similarly, royalties and license fees can be divided into the two components of “fees for industrial property, etc.” and “copyright fees” (data traceable back to 1996). A very clear differential in the competitiveness of these two categories becomes apparent when their comparative advantage indices are compared in Chart 4.

**Chart 3: Categories of Intellectual Property Rights**



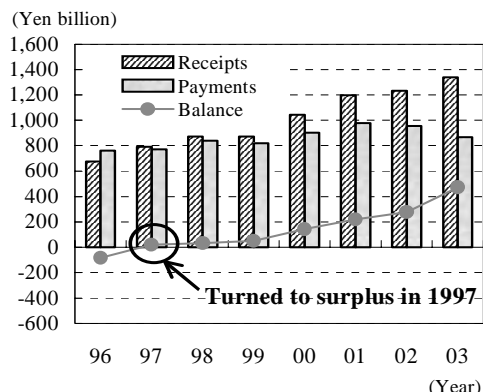
**Chart 4: Comparative Advantage Indices of Components of Royalties and License Fees**



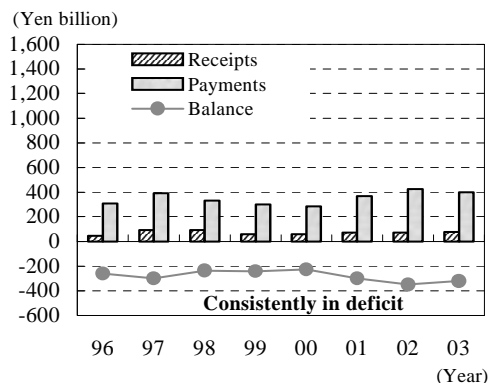
Note : As in Chart 2, comparative advantage indices are computed as (Exports – Imports) / (Exports + Imports).

- While Japan’s balance of royalties and license fees had always shown a deficit, the balance of payments for industrial property, etc. registered its first surplus in 1997. The surplus of exports (receipts) over imports (payments) has since increased to exceed one trillion yen in 2000 (Chart 5). During the past five years, receipts have grown at an average rate of more than 10% per year, while payments have been increasing at a sluggish pace of 1% per year. These figures indicate that the growth in receipts of fees for industrial property has been responsible for the overall surplus in the royalties and license fees account.
- On the other hand, the balance of copyright has remained generally unchanged in recent years and has been registering deficits in the range of 200-300 billion yen per year (Chart 6).

**Chart 5: Fees for Industrial Property, Etc**



**Chart 6: Fees for Copyrights**



**3. Trends by Industry**

- Conventionally, copyright payments have been made on creative works, including literature, art, and music. But this conventional sector (roughly 10% share<sup>7</sup>) has been far outdistanced by the importance of software-related royalties which now account for the bulk of copyright payments.<sup>8</sup> As shown in Chart 6, Japan’s balance of copyright payments has remained consistently in deficit, revealing Japan’s weakness in the area of software.<sup>9</sup> As the United States maintains a position of overwhelming technological strength in the area of computer programs, roughly 60-70% of Japan’s total deficit in its balance of copyright payments is accounted for by its deficit vis-à-vis the United States (see page 11 for detailed description).
- On the other hand, an industry-by-industry review of Japan’s growing receipts of fees for industrial property reveals that receipts of royalty payments by Japanese automobile manufacturers have consistently made a positive contribution to the balance (see Chart 7 based on data traceable back to 1996). Moreover, the automobile industry has maintained the highest contribution rate over the last three years (Chart 8).

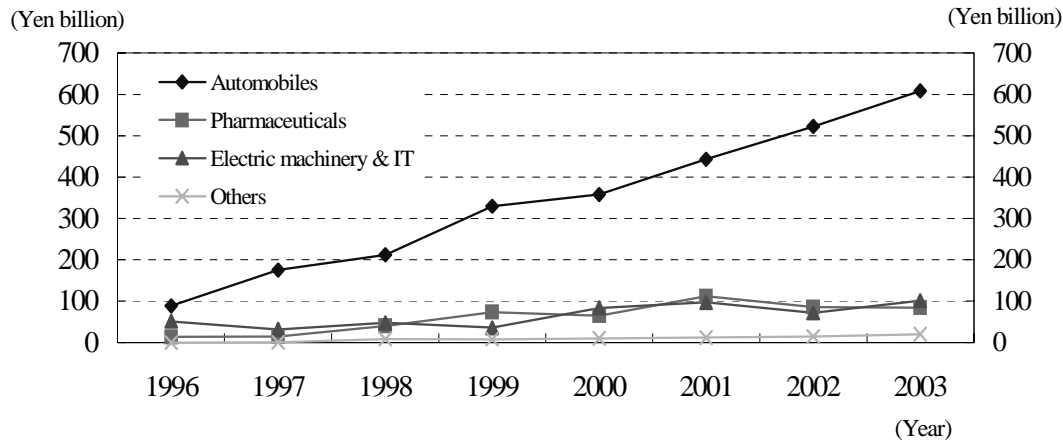
*Industrial breakdown data are obtained by selecting and tallying large payments exceeding one billion yen from among reports submitted to the Bank of Japan. Values for periods for which reports on large payments were unavailable (Dec. 1996, Jan. 1997) were estimated based on the growth rate of receipts of royalties and license fees. Therefore, it should be noted that there is a difference in coverage between industry data appearing in this paper and published balance of payments statistics.*

<sup>7</sup> Obtained by selecting and tallying payments exceeding Yen 500 million from among reports submitted to the Bank of Japan (from Apr. to Dec. 2003).

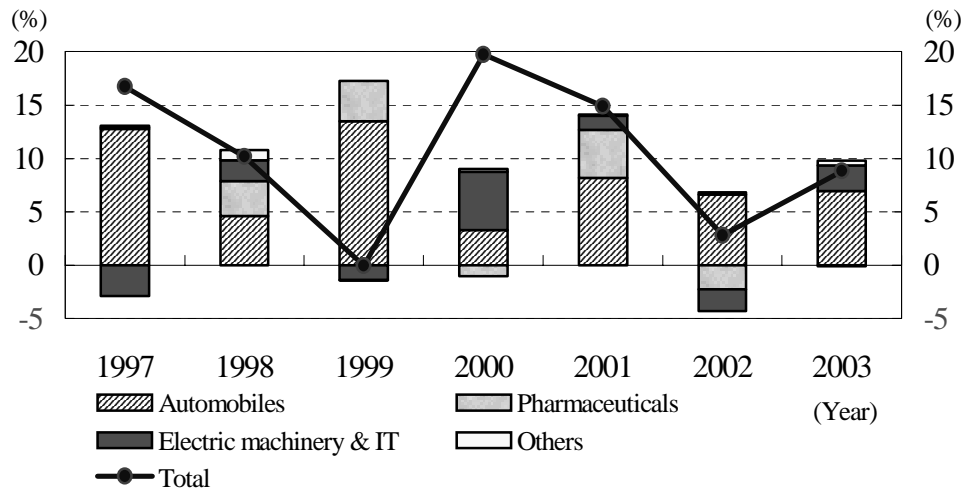
<sup>8</sup> In Japan, developed/completed software (programs) is protected from unauthorized use under the Copyright Law (1985 revision). Some have argued against including software in literary work. For instance, in the United States, it has been allowed to protect computer software under the Patent Act since March 1996.

<sup>9</sup> Operating systems developed by US companies have become the de facto standard in Japan in such areas as mainframes (IBM), servers (Sun, HP), and personal computers (Microsoft). Market shares of Japanese companies are also very low in such areas as database management software (IBM, Oracle) and general application software (Office, etc.).

**Chart 7: Receipts of Fees for Industry Property, etc. by Industry**



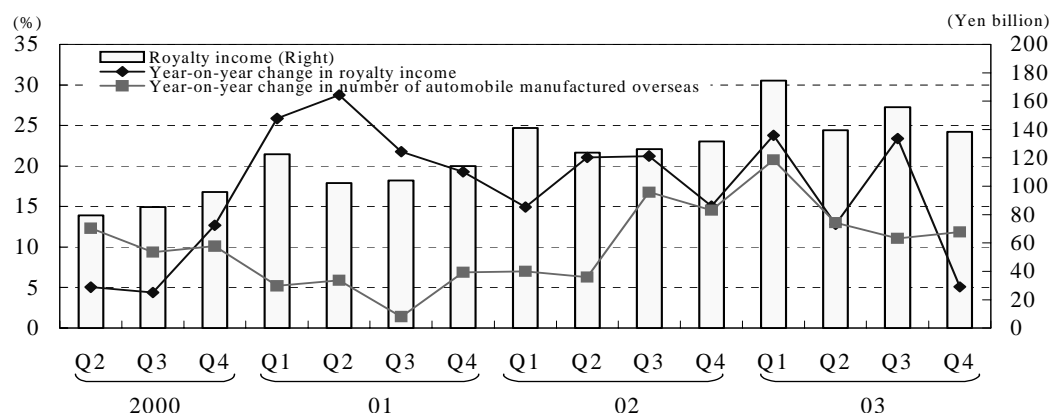
**Chart 8: Change in Contribution of Receipts of Fees for Industry Property, etc. by Industry**



Note: Year-on-year change in contribution to total industrial property payments as noted above.

- Generally, royalty payments made to automobile manufacturers by their overseas manufacturing subsidiaries are computed by multiplying the value of output by a fixed rate. In other words, royalty income depends not on the number of Japanese automobiles sold overseas or exported but on the number manufactured overseas. Chart 9 shows that royalty income has actually been increasing in line with the number of automobiles manufactured overseas in recent years. The rate charged differs, even within the same company, according to the model manufactured and the location of the subsidiary. The rate is frequently raised for purposes of recovering R&D expenditures etc.

**Chart 9: Royalty Income of Japanese Automobile Manufacturers and Number of Automobiles Manufactured Overseas \***



\* Royalty income of Japanese Automobile Manufacturers is derived from industrial breakdown data mentioned on the previous page.

Source of number of automobiles manufactured overseas is the Japan Automobile Manufacturers Association. Manufacturing data lags by one term so as to synchronize with royalty cash flow.

According to press releases, major Japanese automobile manufacturers projected record overseas production levels during calendar 2003 as follows: Toyota (2,558,000 units <up 18.7% from the previous year for a 12th consecutive year of increase>); Honda (1,797,000 units <up 18.8% for a 7th consecutive year of increase>); Nissan (1,486,000 units <up 14.2%>).

A review of overseas manufacturing by Japanese automobile manufacturers by region indicates that, with the exception of the Middle East, output was up in all regions during 2003 (based on actual figures for Jan.-Sept. from the Japan Automobile Manufacturers Association). While North America remains the top overseas center for Japanese automobile manufacturing, the annual rate of growth of manufacturing in North America has eased to 1.7% and is now far below the pace of expansion in Asia (up 28.8%) and Europe (up 12.8%). As a result, the North American share in Japan's total overseas automobile manufacturing (40.1%) has declined from the previous year (44.1%), and the number of Japanese automobiles manufactured in Asia (2,213,000 units) has for the first time surpassed the output of Japanese automobiles in the United States (2,053,000 units).<sup>10</sup>

#### 4. Changes in Industrial Structure

- Going back in history to gain a better medium- to long-term perspective, Japanese manufacturing industries suffered a marked deterioration in profitability during the first half of the 1970s as a result of the steep appreciation of the yen that followed the “Nixon shock.” However, responding to diminished cost competitiveness, Japan’s exporting industries were able to boost labor productivity by transferring their manufacturing facilities overseas (Chart 10). Among such industries, the transportation equipment industry took the lead in transferring its production overseas because of the need to avoid trade friction (Chart 11). This development generated growth in royalty receipts from group companies which ultimately resulted in the payment surplus of 2003. Two factors were at play here. First, previously established overseas manufacturing subsidiaries gradually came on line (volume factor). Second, royalty rates were gradually raised as local content ratios increased and subsidiaries generated more profits (price factor). Therefore, the payment surplus does not represent a

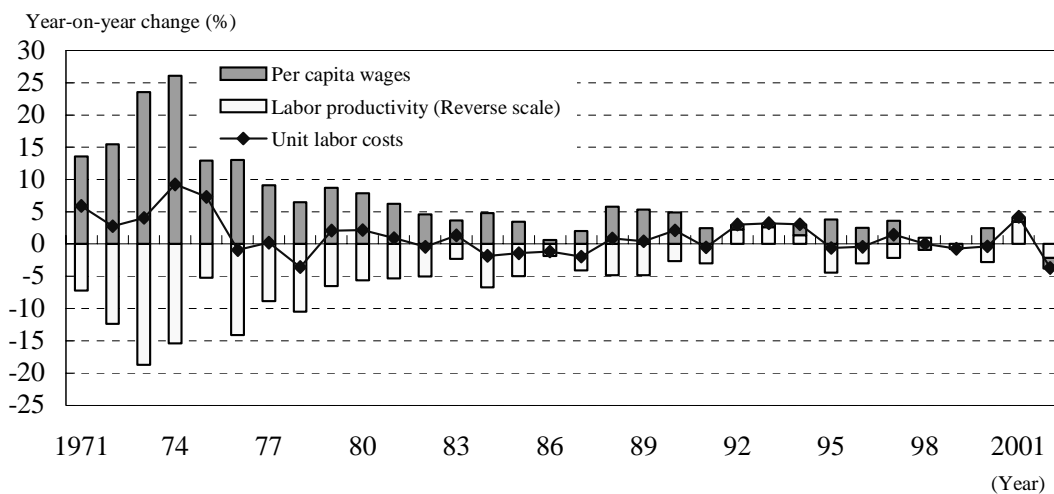
<sup>10</sup> Although Asia has surpassed the United States in the output of Japanese automobiles, the United States continues to exceed Asia in royalty payments to Japan. This is because, compared to Asia where local production is a relatively recent phenomenon, a relatively higher royalty rate is charged to North America which is already established as a major manufacturing center for Japanese automobiles.

temporary phenomenon. Rather, the surplus is the by-product of the structural changes that have accompanied globalization in manufacturing. Furthermore, judging from the fact that the overseas output of Japanese automobiles is projected to reach a record-high figure in 2004,<sup>11</sup> the balance of royalties and license fees can be expected to remain in surplus in the immediate future.

While the yen has been appreciating since October 2003,<sup>12</sup> the foreign-currency denomination ratio of royalties and license fees<sup>13</sup> is higher for imports (50%) than for exports (35%). Likewise, the value of foreign-currency denominated imports slightly exceeds the value of foreign-currency denominated exports. Consequently, the recent upward trend in the value of the yen can be expected to contribute to the growth of the surplus.

Some automobile manufacturers compute per unit royalty amounts by subtracting the value of parts and components supplied (sold) internally from the per unit production price and multiplying this by a fixed rate. Typically in such companies, royalty payments grow when there is an increase in the local content ratio (equivalent to a decrease in the ratio of internally supplied parts).

**Chart 10: Unit Labor Costs of Japanese Manufacturing Industries \***



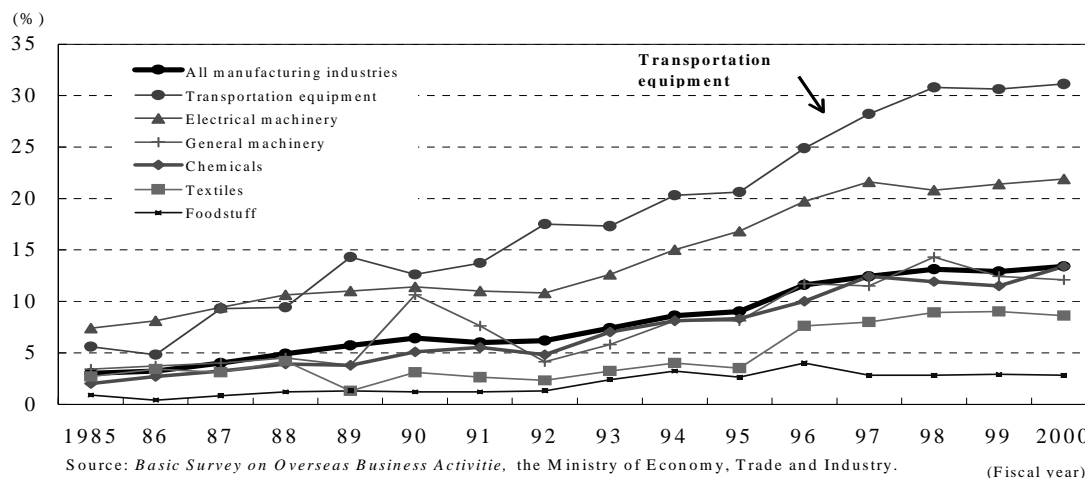
\* Rate of increase in unit labor cost = (Rate of increase of per capita wage) – (Rate of increase of labor productivity). Compiled from: “Total cash earnings”(manufacturers with 500 or more employees) in *Monthly Labour Survey*, Ministry of Health, Labour and Welfare; “Employees in manufacturing” in *Labour Force Survey*, Ministry of Public Management, Home Affairs, Posts and Telecommunications; *Gross Domestic Product by Economic Activity* (manufacturing industries, nominal), Cabinet Office.

<sup>11</sup> According to 2004 plans, Toyota expects to increase its overseas output by 15%. Honda plans a 15.4% increase for motorcycles and an 8.9% increase for automobiles.

<sup>12</sup> Annual average Yen/\$ rate on the Tokyo market (monthly average daily rate at 17: 00) for 2003 is Yen 115.9/\$. This represents a 7.5% appreciation of the yen compared to 2002 (Yen 125.3/\$).

<sup>13</sup> Ratios for both exports and imports based on averages for Mar.-May 2003 (final figures).

**Chart 11: Overseas Manufacturing Ratios by Industry**



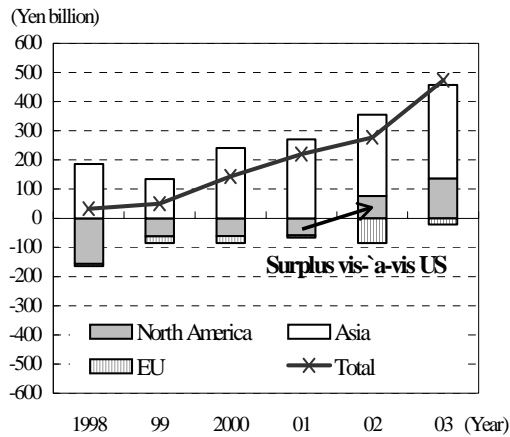
### 5. Trends in Payment Balances by Region<sup>14</sup>

- Next, a review of the regional breakdown of payment balances reveals that industrial property royalties, which include the automobile, electrical machinery, and IT industries, and copyright royalties, which include software, are moving in two contrasting directions.
- The balance of industrial property royalties (Chart 12) is characterized by the steady increase in receipts from North America, culminating in the emergence of a surplus in 2002. Because Japanese automobile manufacturers are recovering their profits from the North American region<sup>15</sup> where per unit gross profits are relatively high, the surplus vis-à-vis North America increased further in 2003 (up 61.5 billion yen from the previous year). Consequently, the North American share in total industrial property royalty receipts climbed above 50% (Chart 14). While the growing surplus vis-à-vis Asia (up 41.2 billion yen from the previous year) has contributed to the emergence of an overall surplus, it should be noted that this increase is attributable in large part to cyclical factors, namely a recovery in local production in Asia of the electrical machinery and IT industries.

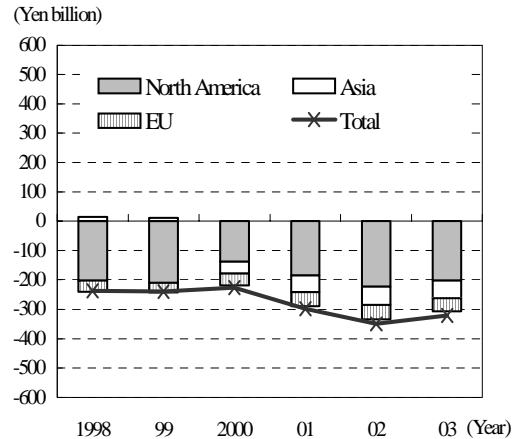
<sup>14</sup> Regional figures for the first half of 2003 are published figures. Second-half figures are provisional figures based on a tally of reports on hand. In accordance with the “Appendix 2: Ministerial Ordinance Concerning Reporting of Foreign Exchange Transactions,” India and Pakistan are included in Asia, and the United States and Canada in North America (Mexico is included in Latin America). EU in charts excludes Poland, Hungary, Czech Republic, and Slovakia which are scheduled to join the EU in May 2004.

<sup>15</sup> Operating profit/total revenue ratios for North America and Europe, respectively: Honda (first-half 2003) 7.1% and 3.7%; Toyota (FY2002) 4.6% and 0.2%.

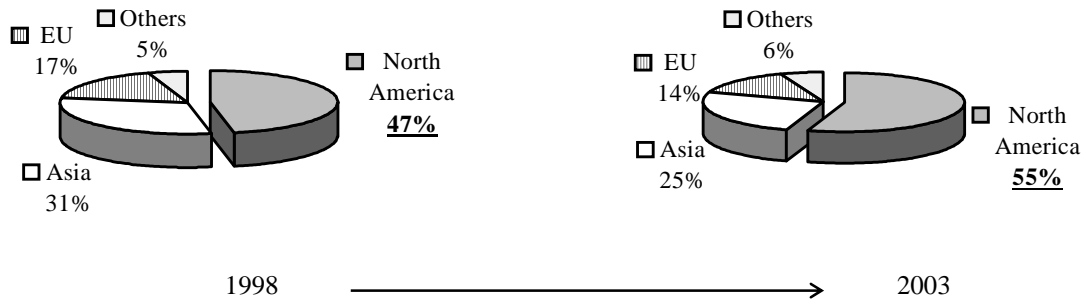
**Chart 12: Balance of Industrial Property Right Royalties by Region**



**Chart 13: Balance of Copyright Royalties by Region**



**Chart 14: Regional Breakdown of Industrial Property Royalty Receipts**

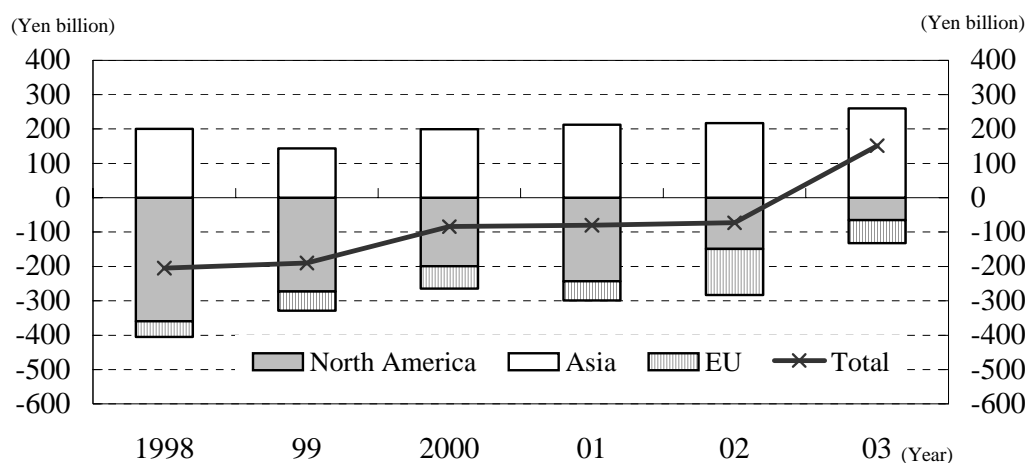


- In stark contrast to this, the balance of payments of copyright royalties has consistently remained in deficit, with North America accounting for the preponderant share (Chart 13). The share of North America in Japan's total deficit rose to the 80-90% range during 1998-99. When Japan began to register deficits vis-à-vis Asia in 2000, the North American share of the deficit was somewhat reduced, but still remains at the 60-70% level.<sup>16</sup> These observations underscore the overwhelming competitive advantage of the technologies of US companies in the software field.
- Having examined recent trends in the royalty income of automobile-related manufacturing industries and the payment of software royalties, let us now turn to the regional breakdown of the balance of overall royalty and license fees.<sup>17</sup> As shown in Chart 15, the deficit vis-à-vis North America is gradually diminishing. In particular, the deficit sharply decreased in 2003.

<sup>16</sup> The growth in deficits in payments to Asia is due to the fact that portions of royalties paid to US-affiliated software companies by major Japanese corporate customers are remitted to Asian branches of US companies. Currently, the preponderant share of royalty and license fee payments to Asia consist of payments made to US-affiliated software companies.

<sup>17</sup> Second-half 2003 figures are estimates (see footnote 14).

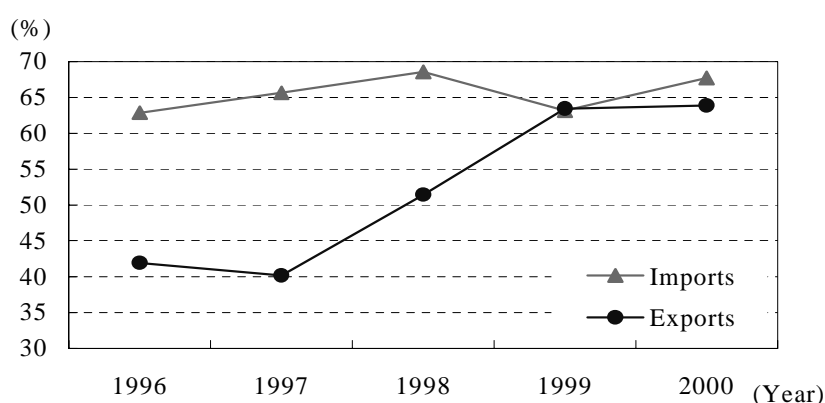
**Chart 15: Balance of Payments of Royalty and License Fees by Region  
(Aggregate of industrial property and copyright royalties)**



## 6. Conclusion

- I have explained that the overseas transfer of manufacturing facilities by Japanese companies has been an important factor in the emergence of a surplus in the balance of royalty and license fees. This finding suggests that the share of intra-firm trading with respect to royalties and license fees has been increasing. Unfortunately, Japanese statistics do not differentiate between intra-group and extra-group transactions. As an alternative, published data of the US Bureau of Economic Analysis<sup>18</sup>, Department of Commerce, was used to arrive at some estimates. The data confirm the following regarding transactions between Japan and the United States. While there have been no major recent changes in imports (payments), there has indeed been a sharp increase in the share of intra-firm transactions in the area of exports (receipts). This finding underscores the growth in intra-group royalty income (Chart 16).

**Chart 16: Share of Intra-Firm Transactions in Royalties and License Fees  
(Estimated for Japan-US transactions)**



- Japan's balance of royalties and license fees registered a deficit of 83.8 billion yen in 2000. In the

<sup>18</sup> A major survey of trade in goods and services and capital transactions between parent companies and their subsidiaries is conducted every five years.

same year, Germany registered a large deficit (283.4 billion yen), while Britain (130.4 billion yen) and France (28.0 billion yen) represented relatively small surpluses. As opposed to this, the United States registered an extremely large surplus (2,362.7 billion yen), a testimony to its overwhelming strength in this area. A breakdown of US exports of royalties and license fees shows that intra-firm transactions accounted for 70% of exports in 2000. This indicates that the extremely large US surplus is being generated by the payment of royalties by overseas subsidiaries to US parent companies. It is said that this reflects the well-established US corporate practice and custom of extracting fair remuneration from subsidiaries. The fact that Japan's balance of royalties and license fees registered a surplus for the first time in 2003 points to the adoption of the US style of business by Japanese companies. Taking local subsidiaries in China as an example, notwithstanding the peculiarities of Chinese laws,<sup>19</sup> Japanese and US multilateral corporations share the same strategy of retaining control of modifications and new inventions in the hands of the parent company.

- What is the outlook for Japan's balance of royalties and license fees? As it is unlikely US companies will easily lose their superiority in the area of software,<sup>20</sup> Japan's deficit in its balance of copyright royalties can be expected to remain basically unchanged for the time being. On the other hand, some significant changes can be expected with regard to China, which currently accounts for only 3.5% (first half of 2003) of Japanese exports (receipts) of royalties and license fees. As the Chinese authorities have eliminated their previous general restrictions<sup>21</sup> on royalty amounts, once the manufacturing subsidiaries established during recent years of extremely active foreign direct investment in China begin to show profits, the flow of royalty payments from China can be expected to rise sharply. The royalty incomes of Japanese automobile manufacturers can also be expected to increase steadily as a result of a continued growth of local output in North America and Southeast Asia centered on Thailand.<sup>22</sup> Royalty income will also be boosted by the continued rise in local content ratios. Therefore, we conclude that Japan's total balance of payments of royalties and license fees will continue to move in the direction of larger surpluses.
- However, a closer look at Japan's balance of payments of royalties and license fees reveals that the current surplus is not the result of an increase in income from licensing intellectual property to non-residents (third parties). Rather, the bulk of the increase is due to payments for trademark and technical instruction received from non-residents (overseas subsidiaries) reflecting both the overseas shift of manufacturing facilities (structural factors) and the increase in overseas output resulting from buoyant economic conditions (cyclical factors). It is also necessary to keep in mind that, in the case of intra-firm trade, the policies of the parent company regarding the recovery of R&D expenditures etc. can significantly affect royalty income (size of surplus). Reviewing the US balance of payments of royalties and license fees from this perspective, it is notable that the US intra-firm trading ratio peaked over a decade ago<sup>23</sup> and has been following a downward trend in recent years. In light of this trend, US companies have maintained their royalty income by licensing software and other core technologies

---

<sup>19</sup> Article 27 of China's Ordinance on Import and Export of Technology states: "Modifications and inventions made by a licensee shall belong to the licensee." Article 20 of China's Patent Law contains the following restriction: "Chinese corporations or individuals intending to apply for a foreign patent for an invention must first apply for a patent in China."

<sup>20</sup> It should be noted that software packages sold retail constitute goods that have been imported into Japan. These appear under imports, and not royalties and license fees.

<sup>21</sup> In the past, China had such restrictions on royalty payments as "maximum \$5 million per year" and "maximum 5% of sales."

<sup>22</sup> Isuzu has held the top share in the Thai pick-up truck market since 1996 and has decided to make Thailand its center for the pick-up truck business. Since 2003, Isuzu has been transferring and concentrating the production base of pick-up trucks for export markets from Japan to Thailand.

<sup>23</sup> Peaked at 79.7% in 1990.

to non-group companies. In its progress toward a truly technology-based economy<sup>24</sup>, it will be desirable for Japan to boost receipts from extra-firm transactions in both software and hardware by achieving higher levels of technology and maturity.

---

<sup>24</sup> Rival companies compete in the patent process by volunteering information that is detrimental to the inventor or filing protests. Hence, companies may opt for alternative strategies. For instance, competing companies may cooperate in concentrating their patents and establishing dominant licenses before foreign companies enter the market. Or, companies may choose to monopolize a patent by refusing to license it. In such instances, Japan's receipt of royalties and license fees may not necessarily increase even if the technological capabilities of Japanese companies are improved.