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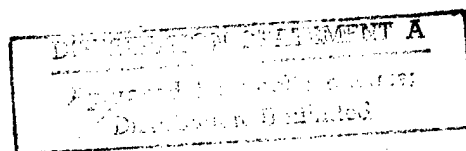
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JAPAN REPORT

No. 177

CONTENTS

ECONOMIC

ECONOMIC

VARIOUS ASPECTS OF NATION'S LABOR FORCE EXAMINED

Characteristics of Labor Market

Tokyo ESP in Japanese May 83 pp 18-24

[Article by Akira Ono: "Characteristics of Japanese Labor Market"]

[Text] 1. Preface

Whether discussing the similarities of the Japanese labor market or its
peculiar characteristics, for our arguments to be persuasive, the following
conditions must be met: first, there must be data available from a number of
countries concerning the subject of discussion, and second, the data with
respect to each of these countries must be reliable.

In a narrow comparison, for example, of Japan and the United States, or Japan
and England, when differences are discerned, there is no way of telling which
of the countries is unique. In the past, when our country was compared with
the early modern English agrarian society, the Japanese wage labor accumula-
tion process was stipulated to be unique. However, if we look at a number of
developing countries and their developmental processes, the unique country was
England rather than Japan. In order not to fall into such error, until such
time as sufficient guideposts are set up, it is more appropriate to talk in
terms of dissimilarity rather than uniqueness based on using one country as a
standard.

The need for an analysis of causes lies in the fact that it is an absolutely
essential step in taking our arguments a step beyond mere superficial compari-
sons. It is known now that there is a covariant relationship between wages and
age (or years of employment) to some extent in some countries; however, on the
basis of such a comparison, to infer and declare that all countries, with
respect to wages, have similar characteristics to Japan's in terms of age
seniority is somewhat dangerous. (Note 1) Haruo Shimada applied identical
wage structure models to a given industry in Japan and in the United States,
and discovered that there was no great difference in the wages of the average
promoted worker the worker hired in midcareers in the United States or in Japan
at the outset. In Japan, however, as the worker grew older, the differential in
wages between these two groups grew accordingly. (Note 2) This indicates that
the apparent noticeable differences do not necessarily reflect a commonality of
stipulated cases. It can be described as an interesting example of analysis.

The two cases pointed out about show that research involving international comparisons heretofore were definitely not satisfactory. If we take into consideration the use of data which incorporates adequate information, the number of countries that can be included in an analysis suddenly drops dramatically. Herein lies the weakness of international comparative research. However, with respect to wage structure comparisons, I believe there is a growing pool of research data that is both accurate and able to withstand critical scrutiny.

Shimada's research above is one example, and we can count the study by Saunders and Marsden analyzing the wage structures of the EC countries as another example. According to these authors, the skills development process of labor in the various EC countries varies, and the wage differential determination factors which respond to them are different in the various countries. (Note 3)

Compared to the research on industrial wage structures, there is less comparative analysis of the structure and function of the labor market. Initially what comes to mind are studies by Shunsaku Nishikawa on unemployment patterns in Japan and the United States (Note 4) and Konosuke Odaka's advanced studies on the structure of labor transfer. (Note 5) The Japan-England comparisons by Hiroshi Hazama are also important. (Note 6) If the author's own work (Note 7) is included, the total is still minimal.

When attempting to analyze the differences in internal labor markets, the comparison of the wage scale structure is certainly one method, but not the only one. Acceptance for employment, promotion, assignment, release, retirement and the customs of different industries with regard to these questions is influenced by the movement and structure of the external markets. Therefore, from the viewpoint of international comparison, the effort to evaluate the seniority system might well make the external markets the object of analysis. In the following I would like to examine Japan's external labor market structure based on two or three actual examples.

2. Potential and Actual Unemployment

Following the first oil crisis, which erupted at the end of 1973, unemployment escalated rapidly and many advanced industrialized nations experienced both inflation and high unemployment at the same time. Our country, of course, was no exception, but the rate of unemployment was so small as not to warrant comparison with the other countries. The arguments that raged surrounding this phenomenon are still fresh in our memories. (Note 8)

The three major causes pointed out previously for the unresponsiveness of the unemployment rate in affecting economic conditions in our country are: the lifetime employment system, the relative labor force, and unemployment policies. Following the oil crisis many European countries implemented a variety of employment policies, so there is little substance to the tentative argument attributing the unresponsiveness of Japan's unemployment rate to the effectiveness of the third factor above. What is of interest is that centered on the decline in the female labor rate, a rise in the unemployment rate was avoided in our country. However, this decline in the female labor rate continued only until 1975, and it has risen since. Concerning this point, it is explained

that with the prolongation of the recession, household incomes came under pressure, causing young and old women to move into the labor market to help with the household finances. (Note 9)

The floating element, which, depending on economic changes (employment opportunities and family income), moves between the labor force and the nonlabor force, is called the relative work force. The genesis of this is found in a U.S. study conducted around 1960. The question is, why is this so conspicuously observable in our country? As can be seen clearly in Table 1, in the post oil crisis period the United States also had an increase in the number of persons who had given up seeking employment (the non labor force, comprising those who had given up looking for work since employment appeared unavailable). The increase in the number of such persons has a tendency to lower the employment rate, but in the U.S. labor force at that time no conspicuous change in the employment rate was observable. This indicates that there was another factor in existence at the time to offset the reduction in the employment rate.

The discouraged employment seekers are called "hidden unemployment," and they can be considered as constituting latent unemployment among the non labor force population. The interesting point is that this type of latent unemployment has a much higher weight factor in Japan than in the United States. In Table 1, along with the data on unemployment is included the proportion of employment seekers among the non labor force, with a further breakdown showing the proportion of discouraged employment seekers in Japan and the United States.

No matter which of the comparative rates is taken, we notice that the rates for Japan are greater. Conversely, the unemployment rate in the United States is higher. The unemployed cited here can be said to be a measure of the size of the unemployment rate. So, in a country such as ours, where the latent unemployment rate is high, the actual unemployment rate is low, and the opposite may be true in the United States.

From the foregoing we can see the differences in the behavior of the labor force in Japan and the United States in the long term labor force structure, beyond short term and cyclical changes. Just what are the factors that give rise to these differences?

(1) No doubt the difference in employment structure has some relevance. In an economy in which a high weight factor is given to small industries, there are many opportunities for employment for part timers, spouses helping in a family business, and homemakers who also work at a cottage industry type job. In a recession, when nearby employment opportunities decrease, these people return to full-time homemaking while at the same time maintaining a desire to hold a job. To them, the convenience of work nearby takes top priority, so a job available far from home is of now use. Therefore, the area of job search is limited in physical terms, and once a job is lost, they are quick to reach the conclusion that it is useless to search.

(2) Second is the difference in employment practices. The United States has a layoff system whereby an individual, even if he is the head of a household, will be laid off during a recession if his length of service is short [sic]. Figure 1 provides a comparison between Japan and the United States in the rate

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of increase by age of male/female unemployed (1975 unemployment against base
year of 1973). The increase in the age group peak differs according to the
country. In the United States it is 35-44 years, and in Japan it is 55-64
years. The reason Japan's peak is off to the right is because the over 50 age
group includes mandatory retirees, and in recessionary times they are the most
likely to become unemployed. I would like to call to your attention the fact
that the U.S. line is positioned much higher than that of Japan. The 25-54 age
group carries the major burden of supporting a family and the fact that this
age group in America has such a high unemployment level means that the impact
on actual family incomes is that much greater.

The latent unemployed who aspire to get a job although they remain within the
ranks of the non labor force population represents a type of unemployment which
exists only when there is a margin of flexibility in livelihood. In a country
such as the United States, where even the main source of family livelihood is
subject to being fired, the behavior of the housewife is also different. She
cannot afford the luxury of a passive search for employment. Her actions are
aimed at actively seeking a job and therefore becoming part of the labor force.
In contrast, in a lifetime employment situation (albeit this is not true 100
percent at all times, and such a lifetime employment system exists only in the
theory of economists) where employment adjustments are made in gradual stages,
the firing of a head of household is rare in comparison to the United States.
Also, the movement of the housewife into the labor force is slower and there
is the luxury of not having to rush to find a job. Therefore, the ratio of
people who desire jobs but are in the non labor force population is higher.

(3) Third is the societal difference. Figure 2, which depicts the Japan/U.S.
rate of unemployment by male/female and by age, shows a great difference between
the two countries in the rate of unemployment of young females. There is a
difference in the rate among males, but it is not as great. I believe that
herein lies a question of the value judgments made by people with respect to
unemployment. In our country there is probably a stronger feeling that young
females before marriage are better off taking lessons than being unemployed
over an estended period of time. In addition, economic conditions exist that
permit them to follow this line of thinking. Under a seniority based pay system,
one's wages rise in proportion to the increases in family, age, and living ex-
penses required up until the time of retirement, so it is relatively easy to
provide one's daughter with cultural education during the relatively few years
before her marriage. Although it is a theory incorporating many indeterminates,
this is a factor that can be included.

As stated before, this relative labor force residing in the non labor force
population, while called latent unemployment, includes fortunate or perhaps
extravagant people. They are people who chose that state on their own volition,
so it would not be improper to call them voluntarily unemployed.

However, I wish to call the reader's attention to the following: First, there
is the assumption, with respect to the question of their having given up job
seeking, that they probably would not be able to find employment nearby which
would allow them to also be homemakers even if they were to settle for lower
wages. Second, there is the certainty that their utility value is lower than
when they were employed. Third, the causes that brought about these results

are external factors such as the stagnation of the level of economic activity. These people must then be categorized separately from the voluntarily unemployed who have given up good paying jobs despite their being available and have chosen to remain in the non labor force.

3. The Class Nature of the Labor Market

Class nature is a term often used to describe the special characteristics of Japan's labor market. It is said that intra industry moves are very active among small industries, but very limited among the large industries. Also, while it is easy to move from a large industry to a small one, the reverse is very difficult. Shojiro Ujihara has said the following regarding this asymmetrical nature of moves within industry. "There is no free movement of labor in the large factory labor market.... As for the relationship between the two labor markets, the flow of labor from large to samll factories is greater than from small to large factories, so in a sense it is not balanced and can be said to be class oriented in nature." (Note 10)

Ujihara's claims are based on live research conducted in the beginning of the 1960's in the Keihin industrial corridor. Since then our country has experienced high growth, and structural changes must have been made in our economy, so there may be some readers who would believe that the foregoing situation is a thing of the past. Actually, the large industries, during the heyday of high growth, resorted to midcareer hiring. According to the Labor Ministry's "Research on 'I'. Trends in Employment," with the exception of the construction industry, of all male employees in all industries surveyed, the average number of transfers among all new employees for the 1970-1973 period was 57.6 percent for industries employing more than 1,000 persons, and 75.3 percent for industries employing 30-99 persons, showing that even the large industries actually included midcareer hiring.

That being the case, can it be said that the labor market's characteristics as indicated by Ujihara have lost their meaning? Table 2 shows the rate of intra industry transfers of nonagrarian laborers during the period 1962-1979. Data from 1959 on intra industry moves can be used, but the breakdowns vary slightly from those of the other years, so they are not included. The rate of moves from the i to j scale is the ratio of M_{ij} divided by L_i [symbol i and j and M and L not explained in text].

(1) Whatever age group is selected, the intra industry movement rate among big industries is lower than it is among small industries. Taking the movement rate above the diagonally stepped line for say 1979 and comparing, we find that in industries employing over 1,000 persons it is 0.42 percent, which is lower than for the 1-29 person scale industry (which is 2.63 percent).

(2) All of the movement rates fell in the post oil crisis recesison period. The drop in the movement rate toward larger industries was greater than the reduction in moves toward smaller industries. Particularly great was the reduction in movement rate to industries employing over 1,000 persons.

(3) The fact that the movement rate from smaller to larger industries was smaller than the opposite rate of movement from larger to smaller industries cannot be seen as a general trend within the scope of Table 2. In 1979, for instance, the ratio of persons in the 1-29 person scale industries moving to industries of 1,000 person scale or larger was not more than 0.21 percent, and the reverse flow from the 1,000 person down to the 1-29 person scale industry was less than 0.91 percent. However, in 1962 and 1965 the opposite phenomenon can be observed, with more people moving from smaller industries to the larger industries. A similar pattern can be seen in the relationship between 1,000 person scale industries and 30-99 person scale industries. The reason the upward movement rate is smaller than the downward movement in these cases is that these were the two recession periods. In all other periods the upward movement rate is greater.

This third fact is incompatible with what Ujihara pointed out when he said that the movement from larger to smaller industries was greater than the movement from smaller to larger industries. Also, in analyzing movement, it is possible that the results may differ when viewing it from the standpoint of numbers of persons as against the rate of movement. However, movement figures tend to rise in proportion to the size of the industry from which the person is moving, so it would be more appropriate to standardize on the basis of numbers of employees to evaluate movement rates. The arguments presented above are based on comparative movement rates of two special categories, so the results may also be affected by the selection of the scale of industry. Now, let us take into consideration all of the upward movement figures as well as the downward movement figures. The results are as shown in Table 3. The upward movement figures herein are the sum total of all the movement shown in the portion above the diagonally stepped line in Table 2, and the downward figures are for all of the figures below the diagonal line. These figures divided by the total employees of the respective sectors from which they move are the movement rates shown in Table 3. According to the scale breakdowns we are currently using (Note 11), the figures since 1968, both in terms of rate and actual figures, agree with Ujihara's statements but show a different behavior than his contentions for the first 2 years.

When considering these points, there is some question regarding the use of terminology such as "class nature," as Ujihara has done, in explaining the difference in the movement from big to small industries compared to small to big industries. This is not a general trend that is observable in any given year. However, there is no doubt that the movement from smaller to larger industries is definitely less than the movement back and forth within the same scale of industry, so in this sense it cannot be denied that upward movement into the big industries does have some restrictions. If the point is to be argued on a "class nature" basis, this point would be the entire argument.

Whether this class nature or characteristic that can be seen in the labor movement between different scales of industry is a peculiarity of the Japanese labor market cannot be determined due to the lack of usable data with which to make comparisons with other countries. In the United States, there has been a growing belief that from the domestic labor market viewpoint there is a need for immobility in the labor market. (Note 12) This has reached the point where

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competitive models have been developed to show the stability of labor market. However, we can assume that our country's labor market is probably much more class oriented. There are two or three bits of evidence pointing toward this.

First, there is a Japan/U.S. difference with respect to wage scale in similar scale industries. Using the industrial census' 1,000 employees or larger average per capita wage as base 100, a computation of 10-19 employee enterprises salary scale is 53 percent for Japan (1978) and 72 percent for the United States (1972). The fact that salaries are quite standardized means that within the same scale industries, labor movement is fairly fluid.

The second indirect bit of evidence is in a comparative analysis of Japan/U.S./ England labor fluidity. (Note 13) According to this, our country's movement rate is low and our redistribution effectiveness is weak as well as our response to loss of employment action pay inequalities. Our redistribution effectiveness is weak because the industries which a great number of workers entered also had a great many leave, so, for the amount of movement that occurred, the net result was not much of a change in assets distribution. Conversely, as seen in Table 2, the movement upward to big industries in our country is generally very difficult, and movement among the small industries is very high. If we keep this fact in mind, the state of the weak redistribution effectiveness becomes clearer. The expected upgrading of labor conditions cannot be seen in movements occurring solely within small industries, so along with a great influx into the market there is a coincident exodus as well. If labor conditions cannot be expected to get better, movement as a whole becomes dull and the response toward wage discrepancies necessarily becomes slow. So to seek remedies to all of these basic causes in the lifetime employment system controlled by big industries becomes a thesis that is not difficult to accept.

4. Conclusion

I have tried to find the origins of the large numbers of unemployed within the non labor force population and the class nature of the labor market as seen in the movement of labor in the differences in employment structure and practices. When the reason lies in the difference in employment structure, with the passage of time and with the reduction in employees and fmaily employees, this will eliminate itself. However, even in such cases there is still a portion remaining that can be attributed to differences in employment practices. This is because the system tries to maintain the situation even though the circumstances which necessitated it in the first place are no longer present.

The foregoing argument, however, can clearly have only a limited validity in that it is armed at examining the peculiarities of the Japanese labor market. The reason is that such comparisons as are made are only made with the United States. As pointed out at the outset, when considering the conditions necessary for comparative analysis, our present position is that we are only at the threshold of the tremendous work needed to be done in the future. With respect to this type of study, we are constantly faced with the limitations of the availability of usable data, so even if we wanted to render immediate answers it would be impossible to do so. Like many historical studies, the only approach is to continue methodical work and add to our knowledge and from such a stockpile to determine the most valid pieces of information.

(Note 1) Kazuo Koike believes that wages that rise with age and tenure are a seniority type rise. As a result, he believes, seniority type wage increases are not a peculiarity limited to big Japanese industries ("Japan's Maturity," Yubikan, 1981, pp 55-70). We are no longer satisfied with this sort of generalized argument.

(Note 2) H. Shimada, "Earnings Structure and Human Investment," Kogakusha, 1981, Ch IV.

(Note 3) Asao Mizuno, "Overview of Literature Concerning Seniority Wages" (unpublished thesis) 1982. Also, C. Saunders and D. Marsden, "Pay Inequities in the European Communities," Butterworth, 1981.

(Note 4) Shunsaku Nishikawa, "Recent Labor Shifts and Pay Differences Among Factory Workers: A Statistical Examination of Fujibayashi's Tentative Conclusions" in "Economic Analysis" Vol 11, 1963.

(Note 5) K. Odaka, "The Structure of Japanese Labor Markets" in "Quarterly Theoretical Economics," 1967.

(Note 6) Hiroshi Hazama, "English Society and Labor Management Relations," Japan Labor Association, 1974, pp 191-195.

(Note 7) Akira Ono, "Japan's Labor Market," in Toyo Economic News Co, 1981, Ch 9.

(Note 8) Akira Ono, 'op cit" Ch 2.

(Note 9) Haruo Shimada, "Study of the Labor Market Structure," Economic Research Institute, Economic Planning Agency, 1981, pp 139-142.

(Note 10) Shojiro Ujihara, "Study of Japanese Labor Problems," Tokyo University Publishing Group, p 423.

(Note 11) If the scale breakdown is made 1-9 persons, 10-29 persons, 30-99 persons, 100-299 persons, over 300 persons, then the 1959-1974 period upward movement is greater than the downward movement.

(Note 12) Kerr, "The Balkanization of Labor Markets," in E. W. Bakke (ed), Labor Mobility and Economic Opportunity. The Technology Press of M.I.T. and from John Wiley, 1954 and P. B. Doeringer and M. J. Piore," Internal Labor Markets and Manpower Analysis," D. C. Heath, 1971.

(Note 13) Akira Ono, "op cit" Ch 9.

<div align="right">(Akira Ono)</div>

Table 1

Key:

1. The Non Labor Force Population Comprising Unemployed and Those Desiring Employment-- Comparison Between Japan and the United States by Male and Female (Unit: 10,000 persons. %)

2. Labor Force

3. Non Labor Force

4. Unemployed

5. Unemployment rate

6. Those desiring employment

7. Comparative rate

8. Discouraged Unemployed

9. Comparative rate

10. Japan

11. United States

(1) 第1表　失業者と就業希望の非労働力人口、日米比較、男女計

（単位：万人、％）

		労働力人口 (1)	失業者 (2)	失業率 (2)/(1) (3)	非労働力人口 (4)	就業希望者 (5)	比率 (5)/(4) (6)	求職意志喪失者 (7)	比率 (7)/(4) (8)
日本 (10)	1977年	5,343	127	2.4	3,219	758	23.5	243	7.5
	1978	5,424	141	2.6	3,225	900	27.9	287	8.9
	1979	5,477	135	2.5	3,280	935	28.5	283	8.6
	1980	5,537	124	2.2	3,311	929	28.1	235	7.1
	1981	5,618	142	2.5	3,335	909	27.3	—	—
アメリカ (11)	1970年	8,272	409	4.9	5,471	385	7.0	61	1.1
	1971	8,411	499	5.9	5,509	435	7.9	74	1.3
	1972	8,654	484	5.6	5,643	441	7.8	77	1.4
	1973	8,871	430	4.9	5,752	429	7.5	62	1.1
	1974	9,101	508	5.6	5,714	429	7.5	66	1.2
	1975	9,261	783	8.5	5,838	521	8.9	106	1.8
	1976	9,477	729	7.7	5,933	539	9.1	94	1.6
	1977	9,740	686	7.0	5,929	554	9.3	97	1.6
	1978	10,042	605	6.0	5,887	543	9.2	93	1.6
	1979	10,291	596	5.8	5,824	525	9.0	71	1.2
	1980	10,472	745	7.1	5,900	555	9.4	95	1.6
	1981	10,639	808	7.6	5,982	591	9.9	112	1.9

（備考）　日本：総理府統計局『労働力調査特別調査報告』、各年3月の値。
アメリカ：U.S. Dept. of Labor, Bureau of Labor Statistics, *Employment and Earnings*, 各年第1・四半期の値。 (12)

12. (Note) Japan: Statistical Bureau, Prime Minister's Office, "Special Investigation Report on Labor Force" as of March each year. United States: U.S. Dept of Labor, Bureau of Labor Statistics, "Employment and Earnings," 1st and 4th quarters each year.

第1図　男子失業者の年齢別変化倍率 (1)
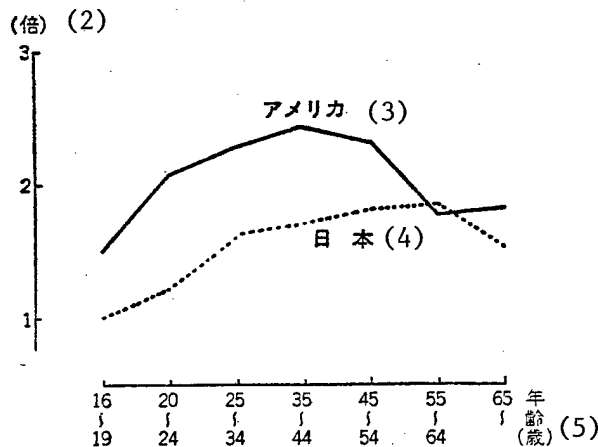
（備考）　1．日本は総理府統計局『労働力調査』、アメリカはU.S. Department of Labor, *Employment an Training Report of the President*, 1976. (6)
2．1975年の失業者数を1973年のそれで除した倍率。

Key:

1. Figure 1. Increase in Unemployment of Males by Age

2. (Multiplier)

3. United States

4. Japan

5. Age

6. Note 1. Japanese figures from "Labor Force Study" of the Statistical Bureau of the Prime Minister's Office. U.S. figures from U.S. Dept of Labor, "Employment and Training Report of the President," 1976

2. Increase rate is 1975 unemployment figures divided by 1973 unemployment figures.

(1) 第2図　年齢別失業率の日米比較，1977年

(2) 女子　(3) 男子　(4) アメリカ　(5) アメリカ　(6) 日本　(7) 日本

(%)20　15　10　5　0　　0　5　10　15　20(%)
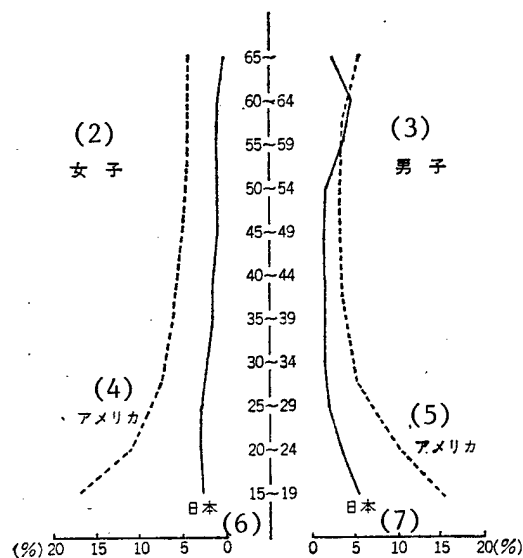
(8) (資料) 労働省『国際比較労働情報総覧』、1980年。

Key:

1. Figure 2．1977 Japan/U.S. Comparison of Unemployment Rate by Age
2. Females　　　5．United States
3. Males　　　　6．Japan
4. United States　7．Japan
8. (Data)：Labor Ministry "Directory of International Comparative Labor Information," 1980.

Key:

1. Table 2．Intra Industry Transfer Rate of Nonagrarian Workers (Unit:　%)

2. Previous employment

3. Present employment

4. Persons

5. Persons

6. (Note)

   1. From "Basic Investigation of Employment Structure," Statistical Bureau, Prime Minister's Office.

   2. Depicts ratio of intra industry shifts against origins of workers.

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(1) 第2表　非農林業雇用者の企業規模間移動率

（単位：％）

(3) 現職 / (2) 前職	1～29人	30～99人	100～299人	300～999人	1,000人～
1962年					
1～29人	2.94	1.06	0.56	0.33	0.60
30～99人	1.73	1.29	0.76	0.44	0.70
100～299人	1.11	1.02	0.80	0.53	0.67
300～999人	1.03	0.60	0.43	0.54	0.70
1,000人～	0.44	0.32	0.24	0.21	0.49
1965年					
1～29人	2.80	1.07	0.52	0.22	0.49
30～99人	1.55	1.37	0.69	0.33	0.59
100～299人	1.26	0.80	0.65	0.38	0.72
300～999人	0.81	0.63	0.45	0.45	0.68
1,000人～	0.47	0.29	0.23	0.16	0.49
1968年					
1～29人	2.98	1.04	0.57	0.34	0.57
30～99人	2.28	1.53	0.70	0.43	0.63
100～299人	1.95	0.99	1.09	0.50	0.73
300～999人	1.65	0.92	0.61	0.73	1.03
1,000人～	0.91	0.51	0.37	0.28	0.72
1971年					
1～29人	2.83	1.00	0.52	0.37	0.46
30～99人	2.17	1.44	0.79	0.45	0.57
100～299人	1.81	1.15	0.95	0.46	0.66
300～999人	1.40	0.80	0.63	0.67	0.73
1,000人～	0.79	0.51	0.43	0.38	0.73
1974年					
1～29人	3.01	1.06	0.54	0.34	0.49
30～99人	2.39	1.53	0.73	0.45	0.73
100～299人	1.76	1.23	0.88	0.45	0.72
300～999人	1.55	0.94	0.71	0.78	0.97
1,000人～	1.07	0.67	0.47	0.34	0.74
1977年					
1～29人	2.28	0.76	0.34	0.21	0.26
30～99人	1.77	1.06	0.48	0.31	0.29
100～299人	1.59	0.88	0.56	0.30	0.33
300～999人	1.31	0.64	0.35	0.35	0.35
1,000人～	0.74	0.46	0.29	0.22	0.38
1979年					
1～29人	2.63	0.79	0.44	0.19	0.21
30～99人	1.84	1.10	0.52	0.22	0.35
100～299人	1.52	0.89	0.59	0.26	0.26
300～999人	1.46	0.62	0.53	0.43	0.43
1,000人～	0.91	0.57	0.40	0.28	0.42

（備考）　1．総理府統計局『就業構造基本調査』による。
(6)　　　2．出身規模の雇用者に対する規模間移動数の割合を示す。

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Key:

1. Table 3. Upward and Downward Movement of Nonagrarian Workers

2. Upward movement

3. Downward movement

4. Year

5. 1-999 employees (thousands of persons)

6. Number moved (thousands of persons)

7. Movement rate (%)

8. Over 30 employees (thousands of persons)

9. Number moved (thousands of persons)

10. Movement rate (%)

11. Note: 1. From "Basic Investigation of Employment Structure" of Statistical Bureau, Prime Minister's Office

    2. Breakdown of scale is same as for Table 2.

第3表　上向移動と下降移動、非農林業雇用者 (1)

(4)年	上　向　移　動 (2)			下　降　移　動 (3)		
	1～999人の雇用者 (5)(千人)	移動数 (6)(千人)	移動率 (7)(%)	30人以上の雇用者 (8)(千人)	移動数 (9)(千人)	移動率 (10)(%)
1962	14,466	283	1.96	13,163	214	1.63
1965	16,463	284	1.73	14,896	228	1.53
1968	19,218	372	1.94	17,174	420	2.45
1971	21,518	387	1.80	19,130	457	2.39
1974	23,435	451	1.92	19,921	536	2.69
1977	25,427	296	1.16	20,557	404	1.97
1979	26,980	321	1.19	21,052	460	2.19

（備考）　1．総理府統計局『就業構造基本調査』による。
(11)　2．規模分類は第2表のそれと同じ。

Trade Friction and Employment Adjustment

Tokyo ESP in Japanese May 83 pp 25-31

[Article by Yoshie Yonezawa: "Trade Friction and Employment Adjustment"]

[Text] Since the latter of the 1970's, the export practices of Japan and of the new industrial countries (NIC's) have come under criticism from the advanced nations of Europe and America and for a variety of reasons. The so-called trade friction between Japan and the United States in the past 2 to 3 years is a classic example of that problem. In this millieau there has been a steady movement toward trade protectionism among the various European countries and the United States. And in our country, certain sectors of industry which have experienced a weakening of their competitive advantage have also begun moving toward protectionism.

The strong indications of movement toward trade protectionism in such import competing industry are a result of demands for such movement from management, of course, but also from the side of labor. The reason such demands are getting stronger is because the expectation that the cost of adjustment (adjusted cost) will outweigh the benefits to be derived from laborers moving to other jobs or for industries to change from those that have limitations in the import-competing industry has been dominant in the economies of the advanced nations since the 1970's. However, this is not limited to European and American advanced nations. It is a move that generally comes to the fore as the economic situation becomes more stagnant. The managers and laborers in import competitive industries who cannot squeeze out adjustment costs rapidly in the face of

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sudden increases in imports are forced into bankruptcy and unemployment. It is an obvious and so-called rational approach to seek a remedy for this by appealing to the government for policy oriented relief measures.

However, when the mandate of government policy levels is to serve the interests of the entire economy of the country as a whole, it is questionable whether they should heed such appeals and officially institute a variety of import restrictions at random. In other words, such steps have to be weighed as to whether they are in the best interest of the entire nation's economy. Also, it is desirable that the government policy levels first of all exert every effort to try to determine whether the affected industries and persons have legitimate demands.

Keeping these problems in mind, in this paper the various economic factors that created the various employment changes in our nation's industries are analyzed, and the results are compared with similar results in the United States. Through this sort of mechanism it is shown that the main cause of employment adjustments (changes) in import competitive industries is actually not increased in imports, but mostly increased productivity. This conclusion then indicates that we cannot unconditionally accept the statement, widely believed to be true, that the reason for the drop in employment in the industries that have lost their competitive advantage lies in increased imports. In the first example the result of an analysis carried out in the United States is introduced, preceded by an explanation of the analysis methodology used, which we followed in this paper as well. In the second example, we introduce and analyze the Japanese experience and we undertake several factfinding efforts. Finally, in the third example, we explain some of the problems relative to interpretation of the factfinding results obtained by the sort of analysis undertaken in this paper.

1. Trade and Employment Changes in the United States

Frank, Junior, (Note 1) is probably the first to attempt to analyze numerically and point out the origins of changes in trade and employment through such a simple analytical method as is used in this paper. He determined that employment change was caused by changes in four basic factors: internal demand, exports, imports and labor productivity (hereinafter referred to as productivity). This determination was derived from the constant relationship of supply and demand as follows:

$$Q = D + X - M \quad (1)$$

In this, Q, D, X, M represent, respectively, annual production, domestic demand, exports and imports.

However, if we make the average productivity (P) and the number of employees E, then $P = Z/E$. (2)

Now, if we take 2 given years and make the average annual change rate between them r_e, the annual domestic average demand change rate r_d, the annual average export change rate r_x, the annual average import change rate r_m and the annual average productivity change rate r_p, then from (1) and (2) we get the following constant relationship:

$$r_e = r_d(D/Q) + r_x(X/Q) - r_m(M/Q) - r_p \quad (3)$$

D/Q, W/Q, and M/Q all depict the shares of domestic demand, exports and imports relative to domestic production of a base year. (3) reveals in an after the fact way that employment change r_e can be broken down into domestic demand change $r_d(D/Q)$, export demand change $r_x(X/Q)$, import demand change $r_m(M/Q)$ and productivity change r_p.

Krueger (Note 5) also utilizes the constant relationship of (1), but unlike the pattern of (3), he places weight on employment change measurements resulting from changes in productivity and he combines domestic demand and exports as a single figure denoting demand. However, the essence of his system can be considered very nearly the same as that of Frank, Junior. As will be discussed next in this paper, the method of Frank, Junior, is the one the mechanism used, as we find that (3) is the better formula.*

Now, although neither Frank, Junior, nor Kreuger used them, I want to use certain indices in this paper. They are what might be called "export pressure" and "import pressure" indicators. In other words, export pressure is measured as $r_x(X/Q)/r_d(D/Q)$, and import pressure is measured as $r_m(M/Q)/r_p$. The use of export pressure is an attempt to compare the extent of the effectiveness of employment increase with exports and domestic demand. When this value becomes greater, the role of exports in increasing domestic employment increases. Conversely, as import pressure increases, the pressure for a decrease in employment due to imports increases more rapidly than the decrease in employment due to increases in productivity.

In Table 1, Frank, Junior, shows an analysis of factors responsible for employment changes for the years 1963-1971 with respect to import competitive industries in the manufacturing sector in the United States. The results of this analysis of U.S. experience indicate that in this period the employment decrease due to rising productivity was much greater generally than that caused by rising imports. Of course, for example, the employment decrease due to higher imports was especially large in such industries as paper products, primary metal products and electrical appliances.

Table 2 depicts the result of Kreuger's analyses. The results of this table also indicate that in all industry sectors excluding leather products, on the effect on employment of productivity increases was much greater than the effect of imports. By this sort of factfinding conclusion we can say that it is generally the same as the study conducted by Frank, Junior, referred to earlier.

2. Analysis of Japan's Experience

In this section we will consider the extent of the effect that fluctuations of imports and exports have had on various industries by analyzing the experience of our country. In Japan's case, when we think of this type of problem, the first point that comes to mind is whether export-oriented industries were more heavily dependent on exports than on domestic demand at the time employment flatness or increase occurred. In European countries and the United States, it appears that the conviction is held that in the Japanese economy and industry, "export drive" is a characteristic. This issue can be said to have some

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*The Economic Planning Agency (Note 3) (pp 295, 297, 523) has analyzed the U.S. experience (1970-1980) using the same method as Kreuger. An example of West German studies is found in Wolter (Note 8), which uses the same analysis method as Kreuger, and the Shatz-Wolter study (Note 7), which uses the Frank, Junior, analysis method.

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relevance to understanding the problem. The next thing that should be considered is the same as that which was introduced in the previous section regarding U.S. studies; it relates to the extent of the effect of imports and productivity on reducing employment. At some time in the future there is no question that our country will also become less competitive with regard to foreign competition, and industries will be plagued with sudden increases in imports. This is a factor that is amply anticipated even without studying the results of the European and American experiences. For this reason, also, there is a need to have a clear understanding of the effect that imports have on employment.

Table 3 depicts the trends of export and import dependence of various industries for the years 1965, 1970 and 1975 based on data from the related industries. The industries which showed more than 10 percent dependence on exports through-out this period were: primary metal products, electrical machinery, transport equipment (mainly shipping during this period), precision equipment, textiles and other woven goods, leather and leather products, rubber goods, and synthetic fiber materials. The dependence on exports of general machinery and synthetic fibers passed the 10 percent mark after entering the 1970's. On the other hand, the industries dependent on imports by more than 10 percent or which steadily increased their dependence on imports throughout this period generally included all primary products industries as well as other areas such as petroleum pro-ducts, nonferrous primary metal products, precision machinery, dairy products, fisheries products, natural fiber materials, clothing personal products, wood products, and leather and leather products.

Thus, industries associated with heavy chemical industries had a high dependence on exports, and industries related to natural raw materials and food were shown to have a high dependence on imports. This result, when considered in the light of our country's essential conditions and comparative cost structure, can be said to have been naturally expected. Textiles and leather were previously high in export dependence, but in recent years import dependnece has steadily risen in these industries. These revelations of facts illustrate that the increase in imports, mainly from developing countries, of commodities in these sectors, despite various efforts that may be instituted to ameliorate or restrict these trends, probably will not stop because they reflect the difference in compara-tive production cost structures. On the other hand, both import and export dependence has increased in the case of precision machinery. This is a division of activities pattern often seen among advanced countries and suggests perhaps that this sector exhibits the existence of equilibrium in the division of activities.

Now, let us see if we can say to what extent exports affected employment in-crease in export oriented industries. Tables 4 and 5 are examples of evalua-tion data when making this sort of judgment. Table 4 shows the results of analysis factors in employment changes in the late 1960's (1965-1970). Table 5 shows the same for the early 1970's (1970-1975). These results were obtained by applying to Japan the analysis methods used by Frank, Junior, introduced in the previous section.

Now let us first consider the question of export pressure on the industry of our country. By comparing export pressure on the export oriented industries

of the so-called golden era, the late 1960's, to the worst postwar recessionary period, the early 1970's, we cannot completely erase the impression that perhaps export increases were responsible for holding back the downward slide of employment. This pattern of movement was strongly shown in primary products—the iron and steel, electrical machinery, and export machinery industries. If we look at the "export pressure" value changes in each of these industries, we see the following in primary products: iron and steel .15→ - 1.5 (this minus indicates that from 1970 to 1975 in conjunction with the decrease in domestic demand there was an average annual decrease in employment of 1.2 percent, but with increases in exports there was a 1.8 percent increase in employment); electrical machinery 0.12→ 1.00; and transport machinery 0.20 → 1.63. However, it cannot be overlooked that the weight for employment increase in the exprot oriented industries was more in the area of domestic demand than in that of export increase. This means that in such countries as Japan and the United States, where the domestic economy is on a large scale, the general dependence on imports and exports decreases, so it is something that can naturally be anticipated. It is also something that should be reaffirmed by analyses such as this paper.

Next, let us look at the factors relevant to reduction in employment. If we examine the results of the analysis of experiences in Tables 4 and 5, we find that generally in import competitive industries, employment reduction was affected more by productivity increases than by import increases. This trend was the same here as it was in the United States. However, since the late 1970's the "import pressure" index has risen, and in the recession period this analysis shows that import pressures were strengthened with respect to employment.

3. The Meaning of the Results of Factfinding

The facts given in the previous paragraph were the result of an analysis of Japan's experience in comparison with an analysis of U.S. experience. The meaning of the results obtained through this sort of factfinding effort must be considered very seriously. That is, the analysis method employed in this paper has built-in internal pressure type limits. For instance, in terms of the trade friction problem, can we say that the factfinding result—i.e. that the effect of the productivity increase of domestic industries on reducing employment was greater than the effect of increased imports—can be taken as an objective fact at face value? Well, if we consider that the improvement in productivity in industries highly dependent on imports developed in order to counter import competition, the interpretation of the foregoing factfinding results becomes meaningless. But the simple methods employed in this paper cannot measure this sort of indirect result.

What will the truth be like? Figures 1 and 2 were designed to check this sort of question. The horizontal axis gives the annual import dependence level, the vertical axis is the rate of employment decline coincident to an increase in productivity in the target period. Individual industries were plotted to create this graph. As can be understood from a look at these graphs, imports and productivity are generally independent of each other. This way of thinking as stated above is not positively supported by the experience with respect to the

casual effects of each. This indicates that having more innovations and technological breakthroughs in an industry which is in a competitive mode does not indicate more activity.

Therefore, the value of this type of factfinding appears to warrant continuation and should be one of the materials utilized to arrive at an objective evaluation of the question of the influence of trade on employment.

With respect to the experience of American industry during the years 1970-1980 (iron and steel, textiles, automobiles--the eight industries which are the focal point of U.S.-Japan trade friction), the analysis conducted concerning the relationship between trade and employment resulted in generally the same conclusions.

The only thing is that all of the studies mentioned up to now, including this Economic Planning Agency example, are analyses concerned with a specific period of time. They therefore provide insufficient data on which to base a general conclusion concerning how employment adjustments and the relationship of employment to trade will affect changes in the economy as a whole. Also, they do not provide a sufficient data base to consider the problem of how import and export pressures change. Therefore, it is difficult to claim that the meaning of the factfinding results or the interpretations are necessarily substantive.

So, finally, let us consider what would be necessary to make the factfinding results obtained by this method carry more convincing weight. One way probably would be to restrict the time period from the 10-year span such as used in the Economic Planning Agency model to one more responsive to specific changes in the economy in general. Because of the restrictions imposed in obtaining criteria matching data, it would be difficult to be too arbitrary, but nevertheless a 5-year span is believed suitable. Second, an even more important point would be to get even more detailed breakdowns of industry classifications, and furthermore, to obtain data that is matching in criteria, to allow comparisons between different industry classifications from which to make analyses. Generally, as the breakdowns become more finite there is no corresponding loss in comparability of data, but through this sort of examination it would probably be possible to get more objective figures on the relationship of trade and employment.

(This paper was written on the basis of "Trade Friction and Employment Adjustment: An Empirical Study" submitted at the Rokko Conference (13-15 July 1982). On that occasion beneficial comments were received from Keio University Professors Michihiro Oyama and Toshiaki Nakazawa. I should like to express my gratitude to them at this time.)

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Key:

1. Table 1. Analysis of Factors in U.S. Employment Change (1963-71) (Unit: %)

2. Employment

3. Domestic Demand

4. Exports

5. Imports

6. Productivity

7. Net Trade

8. Foodstuffs
   Textiles
   Clothing
   Wood Products
   Furniture
   Paper Products
   Printing-Publishing
   Chemical Products
   Oil-Coal Products
   Rubber-Plastics Products
   Leather Products
   Ceramics Clay
   Primary Metal Products
   Metal Products
   General Machinery
   Electrical Equipment

8. continued
   Transport Equipment
   Precision Equipment
   Other Manufacturing Industries

9. Total

10. (Note) According to Frank, Junior (Note 1).

第1表　米国の雇用変化の要因分析(1963～71年) (1)　（単位：％）

	(2) 雇用	(3) 国内需要	(4) 輸出	(5) 輸入	(6) 生産性	(7) 純貿易
食 (8) 料 品	0.5	3.5	0.1	− 0.4	2.7	− 0.3
繊 維	− 7.5	2.2	0.1	− 0.2	− 9.5	− 0.1
衣 服	− 3.6	3.4	0.0	− 0.8	− 6.2	− 0.8
木 製 品	0.9	1.9	0.1	− 0.6	− 0.5	− 0.5
家 具	3.7	4.8	0.0	− 0.5	− 0.6	− 0.5
紙 製 品	0.3	6.9	1.2	− 4.7	− 3.1	− 3.5
印 刷 ・ 出 版	3.1	5.0	0.1	− 1.5	− 0.4	− 1.5
化 学 製 品	2.0	5.0	0.6	− 0.7	− 2.9	− 0.1
石 油 ・ 石 炭 製 品	10.4	6.4	0.0	− 1.5	− 5.4	− 1.5
ゴム・プラスチック製品	4.2	7.0	− 1.5	− 1.0	− 0.4	− 2.5
皮 革 製 品	− 2.3	1.2	0.0	− 1.8	− 1.7	− 1.8
窯 業 土 石	1.2	3.0	0.3	− 0.6	− 1.6	− 0.2
金 属 1 次 製 品	2.7	1.7	− 0.1	− 1.4	2.5	− 1.5
金 属 製 品	− 0.4	3.2	0.6	− 0.8	− 3.4	− 0.2
一 般 機 械	2.4	3.6	0.7	− 0.9	− 1.0	− 0.2
電 気 機 器	2.8	6.7	0.7	− 1.8	− 2.8	− 1.1
輸 送 機 器	2.4	4.0	1.0	− 0.7	− 1.9	0.3
精 密 機 器	0.9	10.3	1.2	− 1.2	− 9.3	− 0.1
そ の 他 製 造 業	0.8	4.1	0.4	− 1.3	− 2.4	− 0.9
合 (9) 計	0.7	4.0	0.4	− 0.9	− 2.9	− 0.5

（備考）フランクJr. 〔1〕による。
(10)

第2表 米国の雇用変化の要因分析 (1970〜76年)
(単位：%)

	(2) 雇　用	(3) 需　要	(4) 輸　入	(5) 生産性
食　　料　　品	−0.41	1.30	−0.02	−1.68
煙　　　　　草	−0.51	1.32	−0.05	−1.78
繊　　維　　品	−0.58	−0.20	0.09	−0.47
衣　　　服	−0.62	3.03	−0.96	−2.68
木　　製　　品	2.85	−1.16	−0.18	4.29
家　　　具	−0.39	1.41	−0.24	−1.56
紙　・　紙　製　品	−0.45	2.16	−0.13	−2.48
化　学　製　品	0.04	1.80	−0.20	−1.56
石　油　・　石　炭　製　品	0.47	2.68	−0.43	−1.78
ゴム・プラスチック製品	2.37	3.87	−0.30	−1.20
皮　革　製　品	−1.73	−0.60	−1.51	0.38
窯　業　土　石	0.45	0.18	−0.11	0.38
一　次　金　属	−0.92	0.01	−0.23	−0.79
金　属　製　品	2.33	2.32	−0.16	0.17
一　般　機　械	1.95	2.81	−0.32	−0.54
電　気　・　電　子　機　器	−0.82	2.20	−0.90	−2.12
輸　送　機　器	0.48	2.04	−0.64	−0.92
精　密　機　器	5.08	7.75	−0.56	−2.12
そ　の　他　製　造　業	−0.04	2.66	−0.58	−2.12

(備考) 1. クリューガー〔5〕による。
2. ここでの需要は国内需要と輸出の合計したものである。

Key:

1. Table 2. Analysis of Factors in U.S. Employment Change (1970−76) (Unit: %)

2. Employment

3. Demand

4. Imports

5. Productivity

6. Foodstuffs
   Textiles
   Clothing
   Wood Products
   Furniture
   Paper Products
   Printing-Publishing
   Chemical Products
   Oil-Coal Products
   Rubber-Plastics Products
   Leather Goods
   Ceramics Clay
   Metal Products
   General Machinery
   Electrical Equipment
   Transport Equipment
   Precision Equipment
   Other Manufacturing Industries

7. (Note) 1. According to Kreuger (Note 5).

2. Demand in this table is a combination of domestic demand and exports.

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Key:

1. Table 3. Export and Import
   Dependence (Unit: %)
2. Export Dependence
3. Import Dependence
4. Export Dependence
5. Import Dependence
6. Export Dependence
7. Import Dependence
8. Agriculture, Forestry and Fisheries Industry
   Agriculture
   Forestry
   Fisheries
9. Basic Materials Industry
   Coal
   Iron Ore
   Nonferrous Metals
   Crude Oil--Natural Gas
   Other Mining Industries
   Basic Chemical Products
   Other Chemical Products
   Petroleum Products
   Coal Products
   Ceramics Clay
   Pit Iron--Unrefined Copper
   Primary Products of Steel
   Primary Products of Nonferrous Metals
   Metal Products
10. Fabrication Industry
    General Machinery
    Electrical Machinery
    Transport Machinery
    Precision Machinery
11. Livelihood Related Industries
    Slaughterhouses–Meat–Dairy Products
    Seafood
    Milling–Flour
    Other Food Products
    Drinks
    Tobacco
    Natural Fiber Weaving
    Synthetic Fiber Weaving
    Textile, Other Fiber Products
    Clothing, Personal Belongings
    Wood and Wood Products
    Furniture
    Pulp–Paper
    Printing–Publishing
    Leather–Leather Products
    Rubber Products
    Synthetic Fiber Raw Materials
    Other Manufacturing Industries
12. Commerce
13. Service Industries
14. Others
15. Total

第3表　輸出依存度と輸入依存度（1）　　　　　　（単位：%）

	1965年		1970年		1975年	
	輸出依存度 (2)	輸入依存度 (3)	輸出依存度 (4)	輸入依存度 (5)	輸出依存度 (6)	輸入依存度 (7)
(8) 農林水産業	1	12	1	18	0	19
農業	0	14	1	20	0	22
林業	0	14	0	28	1	33
漁業	8	3	3	5	1	8
(9) 基礎資材産業	7	19	6	20	9	18
石炭	0	51	0	73	0	80
鉄鉱石	0	96	0	99	0	100
非鉄金属鉱石	1	72	0	79	2	85
原油・天然ガス	0	87	2	86	0	97
その他の鉱業	1	3	1	19	0	11
基礎化学製品	5	7	6	5	10	3
その他の化学製品	5	7	7	12	8	9
石油製品	5	16	2	15	3	9
石炭製品	0	0	0	0	1	0
窯業土石	8	1	5	1	5	1
銑鉄・粗鋼	0	8	0	5	1	2
鉄鋼1次製品	16	0	14	0	24	0
非鉄金属1次製品	7	18	5	15	8	16
金属製品	8	1	7	1	9	1
(10) 加工組立産業	13	3	12	4	21	4
一般機械	9	5	8	5	14	4
電気機械	11	3	11	3	17	4
輸送機械	15	2	17	3	29	3
精密機械	23	4	23	8	30	15
(11) 生活関連産業	6	4	5	4	5	5
屠殺・肉・酪農品	1	12	1	11	0	11
水産食品	7	6	9	8	7	11
精穀・製粉	0	5	1	4	0	0
その他の食料品	2	9	1	4	0	0
飲料	1	1	0	10	0	4
煙草	0	0	0	0	0	3
天然繊維紡績	5	2	6	8	3	11
化学繊維紡績	5	0	9	0	12	1
織物・その他繊維製品	14	1	12	2	12	5
衣服・身廻品	11	1	7	2	2	4
製材・木製品	3	2	2	6	1	7
家具	1	0	1	0	1	1
パルプ・紙	2	3	2	3	3	3
印刷・出版	1	1	1	1	0	1
皮革・皮革製品	10	2	11	8	12	10
ゴム製品	16	0	15	0	15	3
化学繊維原料	15	6	14	7	21	7
その他の製造業	18	2	12	3	7	4
(12) 商業	3	1	3	1	3	1
(13) サービス業	0	0	0	0	0	1
(14) その他	3	2	5	2	6	4
(15) 合計	4	5	5	6	6	6

（備考）　1. 行政管理庁「昭和40～45～50年接続産業連関表」1980年による。
(16)　　2. 輸出依存度＝輸出額／国内生産額×100（%）
　　　　　　輸入依存度＝輸入額／国内需要額×100（%）。
　　　　　　いずれの項目も1975年価格表示によるものである。
　　　　3. 産業分類は、通産省「80年代の産業構造の展望と課題」（通商産業調査会、1981年）P.317～318を参考にした。

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Key continued:

Key:

1. Table 4. Analysis of Factors in Employment Change (Unit: %)
2. Employment
3. Domestic Demand
4. Exports
5. Imports
6. Productivity
7. Net Trade
8. Agriculture, Forestry and Fisheries Industry
   Agriculture
   Forestry
   Fisheries
9. Basic Materials Industry
   Coal
   Iron Ore
   Nonferrous Metals
   Crude Oil-Natural Gas
   Other Mining Industries
   Basic Chemical Products
   Other Chemical Products
   Petroleum Products
   Coal Products
   Ceramics Clay
   Pig Iron-Unrefined Copper
   Primary Products of Steel
   Primary Products of Nonferrous Metals
   Metal Products
10. Fabrication Industry
    General Machinery
    Electrical Machinery
    Transport Machinery
    Precision Machinery

第4表　雇用変化の要因分析(1965～70年)(1)　(単位：%)

(8)	(2)雇用	(3)国内需要	(4)輸出	(5)輸入	(6)生産性	(7)純貿易
農　林　水　産　業	− 4.6	3.7	0.1	− 1.5	− 6.7	− 1.5
農　　　　　業	− 3.9	1.3	0.2	− 1.4	− 4.0	− 1.2
林　　　　　業	−11.4	2.0	0.0	− 2.6	− 10.8	− 2.6
漁　　　　　業	− 4.5	10.5	− 0.5	− 0.5	− 14.1	− 0.9
(9) 基　礎　資　材　産　業	3.4	14.1	0.9	− 2.9	− 8.7	− 2.0
石　　　　　炭	−11.3	14.1	0.0	− 14.6	− 10.7	− 14.6
鉄　　鉱　　石	−10.6	389.9	0.0	−386.0	− 12.5	−386.0
非　鉄　金　属　鉱　石	− 8.0	32.1	− 0.2	− 28.0	− 11.9	− 28.2
原　油　・　天　然　ガ　ス	− 4.0	743.9	0.0	−640.0	−107.8	−640.0
そ　の　他　の　鉱　業	− 3.6	20.3	0.1	− 3.1	− 20.9	− 2.9
基　礎　化　学　製　品	3.1	19.9	1.3	− 0.9	− 17.3	0.4
そ　の　他　の　化学薬品	2.1	15.3	1.1	− 1.9	− 10.2	− 0.8
石　　油　　製　　品	1.2	15.9	0.1	− 2.4	− 12.4	− 2.3
石　　炭　　製　　品	7.7	17.3	0.0	0.0	− 9.5	0.0
窯　　業　　土　　石	3.8	14.4	0.5	− 0.1	− 10.9	0.4
銑　鉄　・　粗　鋼	2.3	17.7	0.0	− 0.6	− 14.8	− 0.6
鉄　鋼　1　次　製　品	4.4	14.9	2.2	0.0	− 12.7	2.2
非　鉄　金　属　1　次　製　品	3.2	16.5	0.6	− 2.1	− 11.8	− 1.5
(10) 金　　属　　製　　品	5.5	15.5	1.2	− 0.2	− 11.0	1.0
加　工　組　立　産　業	6.7	16.0	2.3	− 0.7	− 10.9	1.6
一　　般　　機　　械	2.9	18.8	1.6	− 0.9	− 16.5	0.7
電　　気　　機　　械	8.3	19.6	2.3	− 0.5	− 13.1	1.8
輸　　送　　機　　械	5.9	12.0	2.4	− 0.5	− 8.0	1.9
精　　密　　機　　械	2.1	12.8	3.5	− 1.1	− 13.1	2.4
(11) 生　活　関　連　産　業	1.6	8.6	0.4	− 0.4	− 6.9	0.0
屠殺・肉・酪農品	2.3	9.6	− 0.1	− 0.8	− 6.4	− 0.9
水　産　食　品	1.1	6.1	0.8	− 0.6	− 5.2	0.2
精　穀　・　製　粉	− 3.5	− 0.7	0.0	2.6	5.5	2.6
そ　の　他　の　食料品	0.4	8.7	− 0.0	− 0.8	− 7.4	− 0.8
飲　　　　料	− 0.1	8.9	− 0.0	− 0.2	− 8.7	− 0.2
煙　　　　草	− 4.1	2.5	0.0	0.0	− 6.6	0.0
天　然　繊　維　紡　績	− 7.2	1.2	0.0	− 0.6	− 7.8	− 0.6
化　学　繊　維　紡　績	4.9	10.6	1.1	0.0	− 6.9	1.1
織物、その他繊維品	1.0	6.9	0.6	− 0.3	− 6.3	0.3
衣　服　、　身　廻　品	5.0	11.6	0.3	0.0	− 7.0	0.3
製　材　・　木　製　品	2.6	9.7	0.0	− 0.7	− 6.4	− 0.7
家　　　　　具	3.7	14.6	0.1	0.0	− 11.0	0.1
パ　ル　プ　・　紙	3.5	12.0	0.3	− 0.4	− 7.8	0.1
印　刷　・　出　版	3.1	6.7	0.1	− 0.1	− 3.6	0.0
皮　革　・　皮　革　製　品	− 0.1	5.1	0.7	− 0.6	− 6.9	0.1
ゴ　　ム　　製　　品	4.8	10.7	1.7	0.0	− 7.6	1.7
化　学　繊　維　原　料	1.0	10.9	1.7	− 0.8	− 10.8	0.9
そ　の　他　の　製　造　業	2.9	16.5	1.7	− 0.5	− 14.8	1.2
商 (12) 業	1.9	13.9	0.5	− 0.1	− 12.4	0.3
サ (13) ビ ス	3.1	9.2	0.0	0.0	− 6.1	0.0
そ (14) の 他	3.1	10.4	0.6	− 0.2	− 7.7	0.4
合 (15) 計	1.4	18.0	0.6	− 0.7	− 16.5	− 0.1

(備考)　1.資料は第3表に同じ。
(16)　2.各数値は四捨五入しているので合計が必ずしも一致しない場合がある。

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Key continued:

11. Livelihood Related Industries
    Slaughterhouses-Meat-Dairy Products
    Seafood
    Milling-Flour
    Other Food Products
    Drinks
    Tobacco
    Natural Fiber Weaving
    Synthetic Fiber Weaving
    Textile, Other Fiber Products
    Clothing, Personal Belongings
    Furniture
    Pulp-Paper
    Printing-Publishing
    Leather-Leather Products
    Rubber Products
    Synthetic Fiber Raw Materials
    Other Manufacturing Industries

12. Commerce
13. Service Industries
14. Others
15. Total
16. (Note) 1. Data source is the same as for Table 3.

      2. All figures are rounded off so they may not always match exactly.

Key:

1. Table 5. Analysis of Factors in Employment (Unit: %)
2. Employment
3. Domestic Demand
4. Exports
5. Imports
6. Productivity
7. Net Trade
8. Agriculture, Forestry and Fisheries Industry
   Agriculture
   Forestry
   Fisheries
9. Basic Materials Industry
   Coal
   Iron Ore
   Nonferrous Metals
   Crude Oil-Natural Gas
   Other Mining Industries
   Basic Chemical Products
   Other Chemical Products
   Petroleum Products
   Coal Products
   Ceramics Clay
   Pig Iron-Unrefined Copper
   Primary Products of Steel
   Primary Products of Nonferrous Metals
   Metal Products

第5表　雇用変化の要因分析(1970~75年)(1)　　（単位：%）

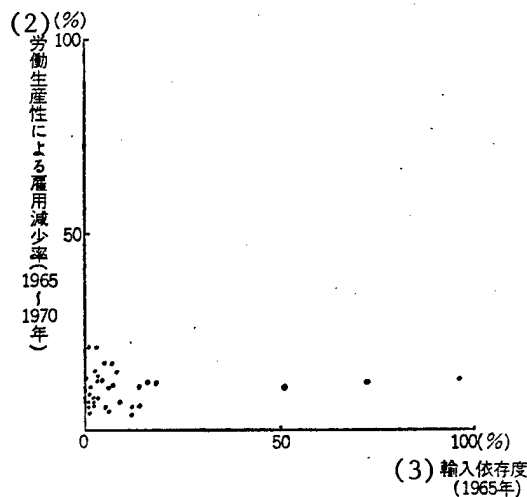| (8)	雇用 (2)	国内需要 (3)	輸出 (4)	輸入 (5)	生産性 (6)	純貿易 (7)
農林水産業	− 5.8	0.7	− 0.2	− 0.3	− 5.9	− 0.5
農業	− 5.5	1.0	− 0.5	− 0.6	− 5.4	− 1.1
林業	− 4.6	− 6.4	0.0	0.7	1.1	0.7
(9) 漁業	− 3.5	6.0	− 0.4	− 0.9	− 8.2	− 1.3
基礎資材産業	− 0.4	5.3	0.7	− 0.6	− 5.7	0.1
石炭	−19.0	0.4	0.0	− 9.2	− 10.2	− 9.2
鉄鉱石	−32.2	336.8	0.0	−351.2	− 17.8	−351.2
非鉄金属鉱石	−14.7	10.3	0.0	− 13.9	− 11.1	− 13.9
原油・天然ガス	7.5	335.0	− 1.4	−468.8	142.7	−470.2
その他の鉱業	− 5.7	2.2	0.0	− 0.3	− 7.6	− 0.3
基礎化学製品	− 0.9	− 0.1	0.6	0.6	− 2.0	1.2
その他の化学薬品	2.9	7.3	0.8	− 0.4	− 4.8	0.4
石油製品	3.3	3.8	0.2	1.2	− 1.9	1.5
石炭製品	− 0.7	3.4	0.0	0.0	− 4.0	0.0
窯業土石	− 1.3	0.3	0.0	− 0.1	− 1.5	− 0.0
銑鉄・粗鋼	− 1.2	2.2	0.0	0.9	− 5.0	0.9
鉄鋼1次製品	1.6	− 1.2	1.8	0.0	1.0	1.8
非鉄金属1次製品	− 0.3	1.2	0.5	− 0.4	− 1.7	0.1
(10) 金属製品	0.5	2.7	0.5	− 0.1	− 2.5	0.4
加工組立産業	− 0.1	1.0	0.2	− 0.1	− 1.2	0.1
一般機械	2.7	− 0.0	1.1	0.2	1.4	1.3
電気機械	− 0.7	1.3	1.3	− 0.3	− 3.0	1.0
輸送機械	− 0.3	1.4	2.6	0.1	− 4.2	2.6
(11) 精密機械	1.1	2.9	2.1	− 1.0	− 2.8	1.1
生活関連産業	− 0.8	2.2	− 0.1	− 0.3	− 2.7	− 0.4
屠殺・肉・酪農品	0.4	5.0	− 0.1	− 0.6	− 3.8	− 0.8
水産食品	0.8	7.0	− 0.1	− 1.0	− 5.1	− 1.1
精穀・製粉	− 6.0	− 0.2	− 0.6	0.0	− 5.1	− 0.6
その他の食料品	0.6	2.1	− 0.0	− 0.0	− 1.4	− 0.1
飲料	− 5.0	5.3	0.0	− 0.3	− 10.0	− 0.3
煙草	− 0.8	6.8	0.0	0.0	− 7.6	0.0
天然繊維紡績	− 4.5	0.2	− 1.0	− 0.7	− 3.0	− 1.6
化学繊維紡績	− 8.8	− 4.2	0.3	− 0.3	− 4.8	0.3
織物、その他繊維製品	− 5.3	− 0.5	0.0	− 0.3	− 4.5	− 0.3
衣服、身廻品	− 3.4	5.6	− 1.5	− 0.3	− 7.3	− 1.9
製材・木製品	− 3.6	− 0.4	− 0.4	0.2	1.2	− 0.5
家具	− 0.5	3.7	− 0.0	0.0	− 4.2	− 0.0
パルプ・紙	− 0.9	0.9	0.1	− 0.1	− 1.8	0.0
印刷・出版	1.0	2.1	− 0.1	− 0.1	− 0.9	− 0.2
皮革・皮革製品	− 2.6	5.9	1.0	− 0.8	− 8.7	0.2
ゴム製品	− 0.6	− 0.1	0.1	0.0	− 0.5	0.1
化学繊維原料	− 2.1	− 0.3	1.2	0.1	− 3.0	1.3
その他の製造業	1.3	3.5	− 0.9	− 0.3	− 0.9	− 1.2
(12) 商業	2.2	4.9	0.1	− 0.1	− 2.7	0.0
(13) サービス	2.7	6.7	0.0	− 0.1	− 3.9	− 0.1
(14) その他	1.9	5.9	0.5	− 0.2	− 4.4	0.3
(15) 合計	1.7	3.5	0.5	− 0.3	− 2.0	0.2

〔備考〕　同前。(16)

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Key continued:

10. Fabrication Industry
    General Machinery
    Electrical Machinery
    Transport Machinery
    Precision Machinery
11. Livelihood Related Industries
    Slaughterhouses-Meat-Dairy
      Products
    Seafood
    Milling-Flour
    Other Food Products
    Drinks
    Tobacco
    Natural Fiber Weaving
    Synthetic Fiber Weaving
    Textile, Other Fiber Products
    Clothing, Personal Belongings
    Wood and Wood Products
    Furniture
    Pulp-Paper
    Printing-Publishing
    Leather-Leather Products
    Rubber Products
    Synthetic Fiber Raw Materials
    Other Manufacturing Industries

12. Commerce
13. Service Industries
14. Others
15. Total
16. (Note): Same data source as for
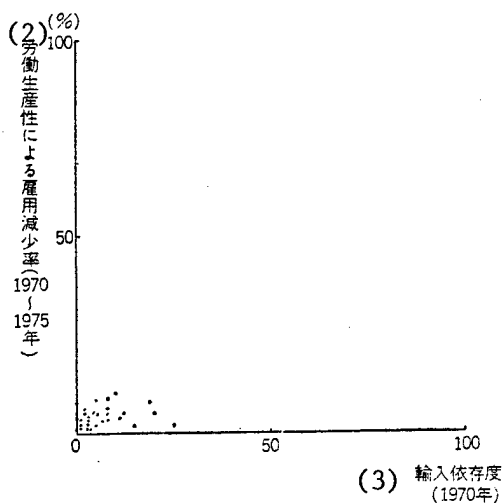   previous Tables 3 and 4.

Key:

1. Figure 1. Imports and Labor
   Productivity (1965-70)

2. Rate of Employment Decrease Due
   to Labor Productivity (1965-70)

3. Rate of Dependence on Imports
   (1965)

第1図　労働生産性と輸入(1965~70年)　(1)

(2)(%)
労働生産性による雇用減少率(1965～1970年)

(3) 輸入依存度
(1965年)

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第2図　労働生産性と輸入(1970~75年)　(1)

(2)

労働生産性による雇用減少率(1970~1975年)

(%)
100

50

0   50   100

(3)　輸入依存度
(1970年)

U.S.-Japan Population, Wage Changes

[Article by Nachiro Ogawa: "U.S.-Japan--Comparison of Population and Wages"]

Tokyo ESP in Japanese May 83 pp 36-42

[Text] 1. Preface

The impact that population aging has on the economy and social security is one of the major policy problems recently confronting advanced industrial countries. If we look at the proportion of people over 65 in the total population, we see that in 1970 Sweden had the highest with 16.9 percent, followed by England with 15.0 percent, Switzerland with 13.7 percent, and West Germany with 12.6 percent. (Note 1) If we look at the United States, which has close economic and political ties with our country, we see that the proportion is 11.0 percent, for our country it is 9.1 percent. However, the projections for the year 2000 are that these figures will be 13.1 percent for the United States and 16.3 percent for our country. (Note 2)

The main reason for this difference in population aging between Japan and the United States lies primarily in the difference between the lower birth patterns in our countries. In the case of the United States, the population has been affected greatly by such events as the great depression which lowered the birth rate, the post-1947 baby boom which lasted for 17 years, and the 1970's baby bust. On the other hand, in Japan the birth rate, which had been experiencing a long-term decline from before World War II, suddenly took a sharp upward turn with the postwar baby boom. However, in comparison to the U.S. baby boom, Japan's baby boom only lasted 3 years, from 1947-1949. Furthermore, following that, Japan's birth rate dropped roughly 50 percent in 10 years. Until the first oil shock, between the late 1950's and 1973, the birth rate changed with the shifting of population, but from then up to the present it has gradually continued to fall.

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This difference in population change between Japan and the United States will certainly impact in different ways on the economy and society of our two countries in the future. (Note 3) In this paper, I shall attempt to analyze the impact that population changes in our two countries will have on the age-wage profile and, with these results, come up with an age-wage profile change based on the anticipated future population.

2. Comparison of the Population Change Pattern With That of the United States

For the main part, we will emphasize the special characteristics of U.S. population changes rather than those of population changes in our country. The 1982 estimated population of the United States was 232 million, or roughly 1.95 times that of our country. It is the fourth largest population in the world after China, India and the USSR. The fact that in 1700 there was only a population of 20,000 in the United States and now it is this large is attributable to high birth rate and a low infant mortality rate, which translates to a low overall death rate, coupled with large-scale immigration from other countries. However, the extent that these population factors contributed to population increases in the various time periods varies greatly. (Note 4) This paper will concern itself with the great impact on population structure changes since World War II caused by the changing birth rate. Figure 1 shows the total fertility rate (hereinafter called TFR) changes from 1917 to 1981. In 1917 the TFR was 3.3, but it showed a diminishing trend after that. In 1936, during the great depression, the TFR was 2.1 and this represented the bottom. In subsequent years the birth rate gradually increased, and by 1947 the TFR had reached 3.2, and it was still higher in 1957 at 3.7. This represented the highest birth rate in the United States during the 20th century. This high birth rate is referred to as a "baby boom," and in the United States it lasted for 17 years, from 1947 to 1964. (Note 5)

Following the very long "baby boom" phenomenon, the birth rate again dropped drastically, to a level even lower than during the era of the great depression. Thus, in 1976 it was 1.8, the lowest birth rate in U.S. history. This lower birth rate which extended over a long period through the late 1970's is referred to as the "baby bust." (Note 6)

Compared to these extended periods of "baby boom" and "baby bust," if we analyze our country's birth rate, as shown in Table 1, our baby boom period was a short 3-year period starting in 1947. The TFR between 1947 and 1955 dropped almost 50 percent. In our country theperiod corresponding to the "baby bust" in the United States was comparatively long. In the years from the late 1950's to the first oil shock in 1973, we see a relatively steady low birth rate period, and subsequently a further drop in the birth rate is becoming apparent.

Next, let us examine the changes in the population structure of Japan and of the United States between 1950 and the year 2000. As summarized in Table 2, the population in 1950, as represented by the median age group, was older in the United States than in Japan. But in 1975, the median age was higher in Japan. The sudden decrease in births in Japan clearly brought about this result. Further-more, compared to Japan's population, between 2000 and 2025 the aging of the U.S. population will definitely be slower. This difference stems mainly from the changes in birth rate pattern, particularly the "baby boom" periods in the two countries having been as divergent as they were.

This completes the analysis of long-term population changes in the United States and Japan in the past, present and future; in the next section let us add to our considerations the impact of these population changes on the labor market and through it on wages.

3. The Trend of Relative Wages

First, I would like to use data obtained from the P-60 series of "Current Population Reports" published annually by the Bureau of the Census of the U.S. Department of Commerce, and examine the changes in relative wages in the United States. What must be noted here is that median income is used rather than average income. The latter includes equity gained from investments. However, the analysis of this paper focuses on the 20-25 and 35-44 age groups, and since it cannot be considered that these age groups would have significant investments affecting their overall earnings, the income can probably be considered as being very close to actual earnings. Furthermore, this paper is focusing on the relative values between the age groups as its analysis target, so if the age groups being compared have equal amounts of income other than wages, it can be said that this determination is a reasonable one.

Figure 2 provides a comparison of the median income of 20-24 year old males working full time with that of other specially selected age groups during 1955-1979. In 1955, compared with the 20-24 year olds, the 25-34 year olds' median income ratio was 1.31, and that of 55-64 year olds was 1.20. This pattern for 1979 rose to 1.46 and 1.75, respectively; compared with the 20-24 year olds, the relative wages of the older age groups rose conspicuously. When looking at these two age groups [25-34 year and 55-64 year olds] with the exception of 1970, with the passage of time, the relative wages of older persons was consistently higher than those of the younger group. This upward shift is particularly noticeable in the 1970-1974 period, and it should be noted that these were the years that the "baby boomers" reached the 20-24 year old age bracket.

Let us compare this conspicuous change in relative wages by age of U.S. workers with the case of Japan. The Japanese data is taken from the "Investigation of Basic Statistics of Wage Scale" undertaken by the Statistical Information Division of the Secretariat of the Ministry of Labor. It consists of the average wage (including bonus), includes the service industries and is broken down by ages. In Figure 3 I have plotted the changes in relative wages of several selected periods between 1965 and 1980 using 20-24 year old males as the base. What is eminently clear is that in comparison to the United States, the range of fluctuation is much smaller. In the background of this result is the extremely short period of Japan's "baby boom," and it must be taken into account that when this group reached 20-24 years old, our country's economy was experiencing an extremely high growth rate.

Furthermore, due to limitations on data gathering between the United States and Japan, there may be some discrepancies in the age groupings. However, the ages and wage relationships of the United States (1979) and Japan (1975) can be said to be very similar. In 1975 in Japan, the wage ratio of the 25-29 age group in relation to the 2024 age group was 1.29, to the 30-34 year olds was 1.59, to the 35-39 year olds was 1.78, to the 40-49 year olds 1.86, and to the over 60 age group was 1.23.

The factors in the background of age and wages in Japan and the United States are known to be widely divergent. Thus, in Japan's case wages rise as a function of age, but in the United States there is a performance-based pay system that is not affected by age to any great extent. Figure 2 shows clearly this age-wage profile in the United States for the period around 1955. But in conjunction with the large change in the supply side in the United States, the age-wage relationship began to change, and while the basic thinking with respect to wages may not have changed, the result has been that the characteristic of the U.S. age-wage profile has now come very close to that of our country.

In the above we have analyzed the relative wage changes of full-time workers in the United States and Japan. Now, if we analyze the U.S. situation including figures for part-time workers, we derive some very interesting results. Figure 4 plots the relative wage changes for male workers in the United States, including part-timers, during the period 1950-1979. If we take into consideration that the number of part-time male workers over 20 years of age is generally less in Japan than in the United States, then the U.S. age-wage profile can be said to almost match that of Japan in the mid-1960's.

Next, we took several selected year periods during 1955-1979 and in Figure 5 charted the relative wage changes for full-time female workers in the United States. It is clear that there is a great difference compared to the same criteria for males as plotted in Figure 2. There was very little differential in relative wages between age groups in 1955, but just as in the case of males, with the passage of time, using the 20-24 year olds as the base group, the relative wage difference with other age groups increased. As the "baby boom" generation reached 20-24 years old in the latter part of the 1960's, the difference became particularly noticeable. In 1979, if we use the 20-24 year olds as the base, the wage ratio of 25-34 year olds and 35-44 year olds was 1.30, while that of 45-54 year olds was 1.28, and that of 55-64 year olds was 1.37.

4. Results of Statistical Analysis

In the previous section we looked at the relative wage differential of males and females by age on the basis of graphs. Here, we will attempt to explain in figures the various factors such as population changes which affect the relative wages of 35-44 year olds compared with 20-24 year olds. The same data will be used as in the previous section. The analysis period focuses on 1956-1981 for the United States (1967 data was unobtainable, so it was eliminated) and 1961-1980 for Japan.

In multiple regression analysis the ratio (RELWG) of 35-44 year old average income to 20-24 year old average income is used as the subordinate variable. The explanatory variable is used to show the impact of the "baby boom" generation, and taking the (RELCOH) which is the relative value of the cohort size of each age group in each of the years and another explanatory variable which is the real GNP growth rate (RGNPR) and represents the labor demand side. These explanatory variables theoretically can all be expected to carry negative signs. Therefore, as the "baby boom" generation approaches 20-24 years old, the RELCOH value decreases and if all other conditions are equal this age group's labor

potential generally increases and at the same time their wages in comparison to the 35-44 year old group generally drops. As a result, the RELWG value increases. If the other explanatory variable, the real GNP growth rate, rises, the general effect on the 35-44 year old group is small. The wages of the younger age groups increase as a result of getting the benefits of this and the RELWG values decrease. Here, we will estimate behavioral equations for males and females respectively. M and F are used to denote male and female. First, let us look at the mathematical results with respect to the United States.

Males (35-44 years/20-24 years)

(1) In MRELWG =

0.5906 - 0.2425 In RELCOH

(0.02)   (0.03)

$\qquad$ - (0.00025 RGNPR)

D.W. = 0.58; R^2 = 0.72

(2) In FRELWG =

0.2673 - 0.2335 In RELCOH

(0.02)   (0.033)

$\qquad$ - 0.0049 RGNPR

$\qquad$ (0.0035)

D.W. = 0.56; R^2 = 0.71

If we look at the results of these computations, the explanatory variables all carry the theoretically anticipated signs. The RELCOH which denotes the labor supply side is statistically advantageous for both males and females, but the other explanatory variable, the RGNPR, does not give any evidence of being statistically advantageous.

Next we will look at the mathematical results for Japan.

Males (35-44 years/20-24 years)

(3) In MRELWG =

0.6271 + 0.0258 In RELCOH

(0.043)   (0.057)

$\qquad$ + 0.0061 RGNPR

$\qquad$ (0.0033)

D.W. = 0.97; R^2 = 0.20

Females (35-44 years/20-24 years)

(4) In FRELWG =

0.2066 - 0.1254 In RELCOH

(0.051)   (0.069)

  - 0.0105 RGNPR

   (0.004)

D.W. = 1.80; R^2 = 0.29

Based on equations (3) and (4) the following can be stated: with respect to
males, in Japan's case, in contrast to that of the United States, the effect
that population structure has on relative wages is completely opposite to what
would be anticipated and, furthermore, no statistical advantage can be seen.
The change in the annual growth rate of real GNP has the opposite effect on
relative wage changes from what would be anticipated theoretically, and the
statistical advantage can be seen. With respect to females, the population
changes affect relative wage changes in consonance with theory. Furthermore,
statistical advantage is noted, and the annual growth rate of real GNP shows
the same results. What should be noted here is that the case of Japanese
females differs from that of U.S. females in that the annual growth rate of
real GNP has a very strong effect on relative wage changes. In addition, when
estimated equations (1) and (2) are compared to (3) and (4), the Japanese case
has much less explanatory power than the U.S. case. In addition to these
equations we included other explanatory variables in the form of trend factors,
as well as changes in the educational structure of the labor force, and under-
took multiple regression analysis with respect to males and females, but we did
not find any major differences in results from the above tested equations.

The present analysis was undertaken using the relative wage change derived from
the ratio of wages of 20-24 year olds over those of 35-44 year olds as the ex-
planatory variable, the labor supply side being shown by the effect of the cohort
size of the "baby boom" and the labor demand side shown by the change in annual
growth rate of the real GNP. Insofar as the United States was concerned, the
"baby boom" effect was clearly detected. However, in the case of Japan, because
of the short period of the "baby boom," the impact it had on relative wages was
extremely small. In addition, by the time the "baby boom" generation was
approaching labor force age, our country was in the midst of a high growth period
in which the labor supply side factor was overwhelmed by pressure from the labor
demand side.

In the next section, based on these findings, we will analyze future fluctuations
of relative wages by artificially injecting future population estimates and
changes in real GNP growth rates.

5. Future Movement of Relative Wages in the United States

Using the movement equations (1) and (2), which were obtained statistically, and
utilizing the Bureau of the Census of the U.S. Department of Commerce's Series
II Estimate of Averages of 1982 Population, we will calculate estimates of rela-

tive wage changes. The estimate period is from 1982 to the year 2010. This is an arbitrary period, but 2010 is the year when the last of the "baby boom" group will begin the transition from the 35-44 year old group to the next age group. Also, the other explanatory variable, the annual growth rate of real GNP, will be assigned an artificial value, but we can make several hypotheses of future changes. In this paper we decided that the 3.04 percent annual real GNP growth rate in the United States during the 10 years from 1972 to 1981 would continue into the future. The results of the estimates by male/female are shown in Table 3. The scale of cohorts in the 20-24 year old group in comparison to the 35-44 year old group will gradually decrease in the future, and as a result in the years 1982-2000 the relative wages of the younger age group will be continually improved. However, after 2001 the second generation of the "baby boom" generation will create an echo effect, which will mean a comparatively big cohort size, so the 20-24 year old age group will again increase, possible causing a decrease in relative wages.

Furthermore, the higher the annual growth rate of real GNP, the greater the improvement in relative wages, with the opposite being true if the real GNP annual growth rate is lower. Due to space limitations, I will reserve this problem for another occasion.

6. Conclusion

This paper has analyzed the impact that changes in relative wage differentials resulting from the "baby boom" and "baby bust" differences in the United States and Japan had on their respective economies. That result, in the case of the United States, where the "baby boom" occurred over a relatively long period of time, revealed clearly that the changes in population structure had a great effect on relative wages. Conversely, because Japan's "baby boom" was relatively brief and because the period when this "baby boom" generation came of labor force age coincided with a high growth period in Japan, the effect of population structure on relative wages was very small. The changes in relative wages in Japan can better be explained through the annual growth rates of real GNP.

Finally, in conjunction with conducting this research I wish to express my deep appreciation to Prof Kenichi Furuya of the Economics Department of Nihon University and to Assistant Prof Linda Martin of the Economics Department of the University of Hawaii for their valuable advice.

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(Note 2)   Information from Bureau of the Census of the U.S. Department of Commerce, "Projections of the Population of the United States: 1982 to 2050 (Advance Report)," Current Population Reports, Series P-25, October 1982, was used concerning population in the United States.

With regard to Japan's population, "Nihon University Population Studies Center, Population Estimate Based on Population Economic Model: Looking Toward the 21st Century," Nihon University Population Research Center, was used.

(Note 3) Ihashi, "Economic Implications of Japan's Aging Population: A Macroeconomic Demographic Modelling Approach," International Labor Review, Vol 121, No 1, January-February 1982, pp 17-33.

(Note 4) Population Refernece Bureau, "U.S. Population: Where We Are; Where We're Going," Population Bulletin, Vol 37, No 2, July 1982.

(Note 5) In the peak year of 1957 the birth rate reached 4.3 million. Compared to the 1909 to 1945 average annual births of 2.7 million, this is a 60 percent increase. There are a number of these from a population studies standpoint which can be put forward regarding the factors that caused this. In this regard you are referred to Ihashi, "Analysis of Relative Wages and Population Changes in the United States," "Industrial Economic Research," Nihon University Economics Department, Industrial Management Research Center, 1982, No 3, pp 222-243.

(Note 6) The factors given as bringing about this sort of long-range low birth rate phenomenon are: (1) the increase in higher education of women, (2) the increase in rate of women working, (3) the advancement of contraceptive measures, (4) the Supreme Court's recognition of abortions, and (5) the increase in the divorce rate.

(Note 7) Same data as (Note 2) was used.

Key:

1. Figure 1. Changes in Total Fertility Rate 1917-1981

2. Persons

3. (Birth rate per individual Female)

4. (Source) Population Reference Bureau, "U.S. Population: Where We Are; Where We're Going," Population Bulletin, Vol 37, No 2, July 1982, p 8.

(1) 第1図　1917～1981年における合計特殊出生率の変動

(2) (人)

(3) 女子一人についての出生数
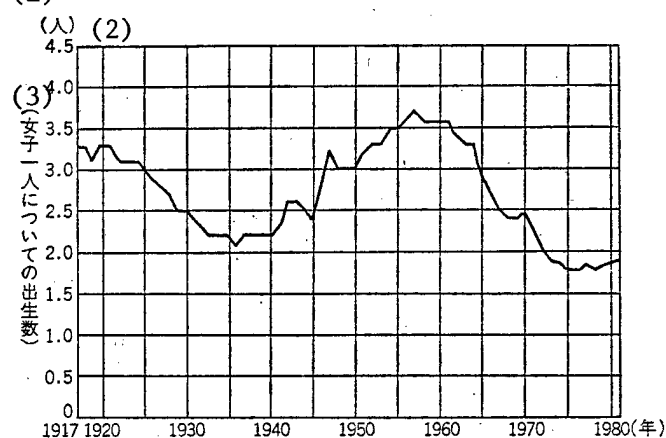
(4) (出所) Population Reference Bureau, "U.S. Population: Where We Are; Where We're Going," Population Bulletin, Vol.37, No.2, July 1982, p.8.

(1)第1表　1940～1978年における日米の合計特殊出生率の比較

年(2)次	米(3) 国	日(4) 本
1940	2.301	4.108
1945	2.491	4.536*
1950	3.091	3.657
1955	3.580	2.377
1960	3.654	2.015
1965	2.928	2.150
1970	2.480	2.095
1975	1.799	1.940
1978	1.800	1.790

* 1947年の値(5)

(出所) Philip M. Hauser, "Population Aging and Its
(6) Implications in the United States :
Future Directions of Policy," Paper Prese-
nted at the international Symposium on
An Aging Society : Strategies for 21st
Century Japan, Tokyo, 1982, mimeographed,
人口問題研究会『日本の人口変動の概観』
人口情報, 昭和55年度第1号。

Key:

1. Table 1. Comparison of Japan-U.S. Total
   Fertility Rate 1940-1978

2. Year

3. United States

4. Japan

5. 1947 values

6. Source:　Philip M. Hauser, "Population
   Aging and Its Implications in
   the United States: Future
   Directions of Policy," Paper
   Presented at the International
   Symposium on an Aging Society:
   Strategies for 21st Century
   Japan, Tokyo. 1982, mimeograph-
   ed. Population Problems Research
   Society, "The Scale of Japan's
   Population Shifts," Population
   Information, 1980, No 1.

Key:

1. Table 2. Changes in Japan-U.S.
   Age Structures 1950-2025

2. United States

3. Japan

4. (Source)　Bureau of the Census
   of the U.S. Depart-
   ment of Commerce,
   "Projections of the
   Population of the
   United States: 1982-
   2050 (Advance Re-
   port)," Current Pop-
   ulation Reports, Ser-
   ies P-25, October
   1982.

   Nihon University
   Population Research
   Center, "Nihon Uni-
   versity Population
   Studies Center,
   Population Estimate
   Based on Population Economic Model: Looking Toward the 21st Century,"
   June 1982.

   Both Japan and U.S. estimates are based on averages.

(1) 第2表　1950～2025年における日米の年齢構成変化　（単位：人，%）

	1950年	1975年	2000年	2025年
（米　　国）(2)				
中位数年齢 (5)	30.2	28.8	36.3	40.0
65歳以上人口の総人口に対する割合(6)	8.1	10.5	13.1	19.5
15～64歳人口の割合 (7)	64.94	64.40	66.07	62.18
0～14歳人口の割合 (8)	26.92	25.11	20.86	18.34
$\frac{65+}{0-14}$	0.30	0.42	0.63	1.06
$\frac{(0-14)+(65+)}{15-64}$	0.54	0.55	0.51	0.61
（日　　本）(3)				
中位数年齢 (9)	26.7	32.5	39.8	45.8
65歳以上人口の総人口に対する割合(10)	4.94	7.92	16.25	23.79
15～64歳人口の割合 (11)	59.69	67.75	66.70	61.75
0～14歳人口の割合 (12)	35.37	24.33	17.06	14.46
$\frac{65+}{0-14}$	0.14	0.33	0.95	1.64
$\frac{(0-14)+(65+)}{15-64}$	0.68	0.48	0.50	0.62

(出所) Bureau of the Census of the U.S. Department of Commerce, "Projections
(4)　of the Population of the United States : 1982 to 2050 (Advance Report),"
Current Population Reports, Series P25, October 1982
日本大学人口研究所『日本大学人口研究所人口推計―人口・経済モデルに基づく
21世紀への展望―』1982年6月。ただし日米両推計とも中位値を使用。

31

Key continued:

5. Average age

6. Ratio between population over 65 years old and total population

7. Ratio of 15-64 years old population

8. Ratio of 0-14 years old population

9. Average age

10. Ratio between population over 65 years old and total population

11. Ratio of 15-64 years old population

12. Ratio of 0-14 years old population

Key:

1. Figure 2. Ratio of Change of Medium Incomes of Male Full-Time Workers in 20-24 Age Group Compared With Other Age Groups During 1955-1979 in the United States.

2. (Multiplier)

3. (Age)

第2図 1955〜1979年における米国の男子フル・タイム労働者20〜24歳の平均中位所得に対する他の年齢グループの中位所得の比の変動
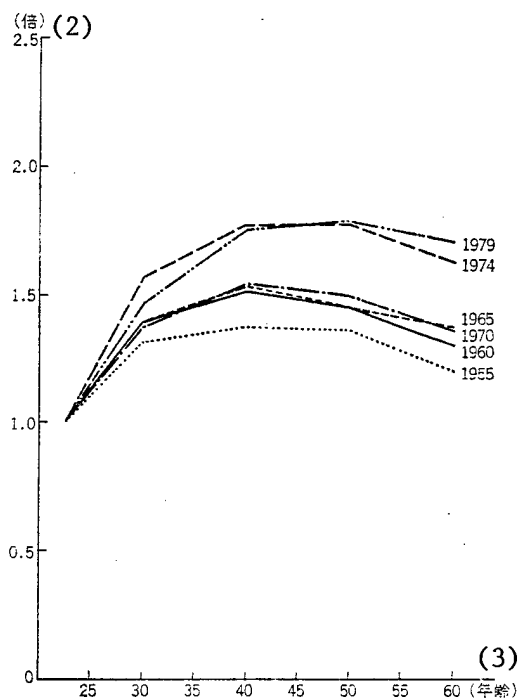
1. Figure 3. Ratio of Change of Average
   Wages of Male Full-Time Workers in
   20-24 Age Group Compared With Other
   Age Groups During 1965-1980 in Japan.

2. (Multiplier)

3. (Age)

(1)
第3図　1965〜1980年における日本の男子常用従
　　　業者20〜24歳の平均賃金に対する他の年
　　　齢グループの平均賃金の比の変動
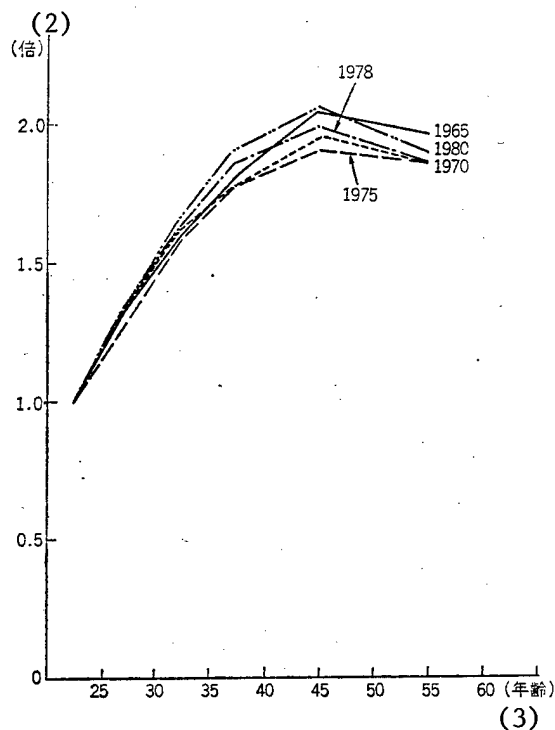
第4図　1950〜1979年における米国の男子労働者
(1)　（パート・タイムも含む）20〜24歳の平均
　　　中位所得に対する他の年齢グループの中
　　　位所得の比の変動
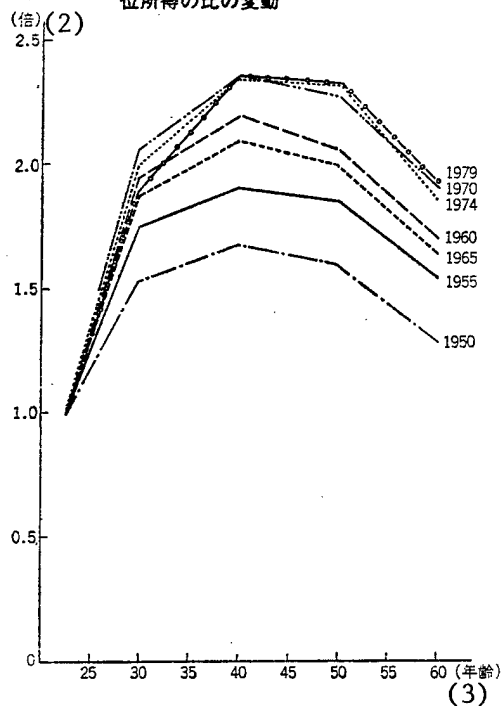
Key:

1. Figure 4. Ratio of Change of Medium
   Incomes of Male Workers (Including Part-
   Timers) in 20-24 Age Group Compared With
   Other Age Groups During 1950-1979 in the
   United States.

2. (Multiplier)

3. (Age)

Key:

1. Figure 5. Ratio of Change of Medium Incomes of Full-Time Female Workers in 20-24 Age Group Compared With Other Age Groups During 1950-1979 in the United States.

2. (Multiplier)

3. (Age)

第5図　1955～1979年における米国の女子フルタイム労働者20～24歳の平均中位所得の他の年齢グループの平均中位所得に対する比の変動

(倍)(2)

第3表　1977～2010年における米国の相対賃金（35～44歳／20～24歳）の変動推計

年　次	相対賃金変動パ(3)ン		コーホートの相対比
(2)	男子(4)	女子(5)	(6)
1982	1.859	1.312	1.284
1983	1.839	1.299	1.347
1984	1.819	1.285	1.417
1985	1.795	1.268	1.504
1986	1.771	1.252	1.599
1987	1.747	1.235	1.700
1988	1.724	1.219	1.807
1989	1.701	1.203	1.919
1990	1.679	1.188	2.038
1991	1.665	1.179	2.116
1992	1.652	1.169	2.196
1993	1.638	1.160	2.278
1994	1.625	1.151	2.363
1995	1.612	1.142	2.452
1996	1.609	1.140	2.472
1997	1.606	1.138	2.492
1998	1.604	1.136	2.512
1999	1.601	1.134	2.532
2000	1.598	1.132	2.553
2001	1.600	1.134	2.538
2002	1.602	1.135	2.523
2003	1.604	1.136	2.509
2004	1.606	1.138	2.495
2005	1.608	1.139	2.480
2006	1.610	1.141	2.466
2007	1.612	1.142	2.452
2008	1.614	1.143	2.438
2009	1.616	1.145	2.423
2010	1.618	1.146	2.409
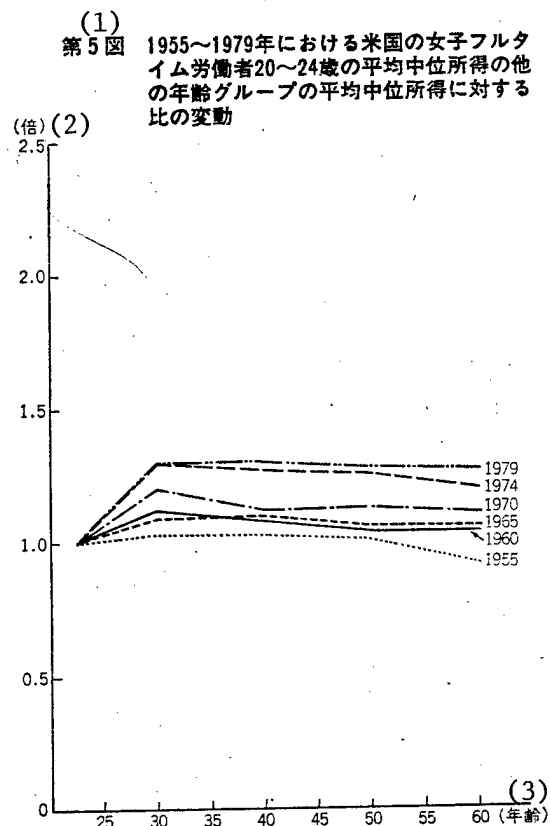
Key:

1. Table 3. Estimate of Changes in Relative Wages in the United States During 1977-2010

2. Year

3. Relative Wage Change Pattern

4. Male

5. Female

6. Ratio of Cohorts

9980
CSO: 4105/230

34

ECONOMIC

BALANCE OF INTERNATIONAL PAYMENTS THROUGH FEB 83

Tokyo KEIZAI GEPPO in Japanese Apr 83 pp 18-23

[Text] The February international payments balance position (expedited figures) was $1,281,000,000 (seasonally adjusted), an increase in black ink compared to the previous month. This was caused by an improved balance in the long-term capital account, resulting in smaller payments, as well as receipts exceeding payments in short-term capital and errors and omissions account balance, in spite of diminished surplus margin in the current transaction account balance (seasonally adjusted) in comparison to the previous month.
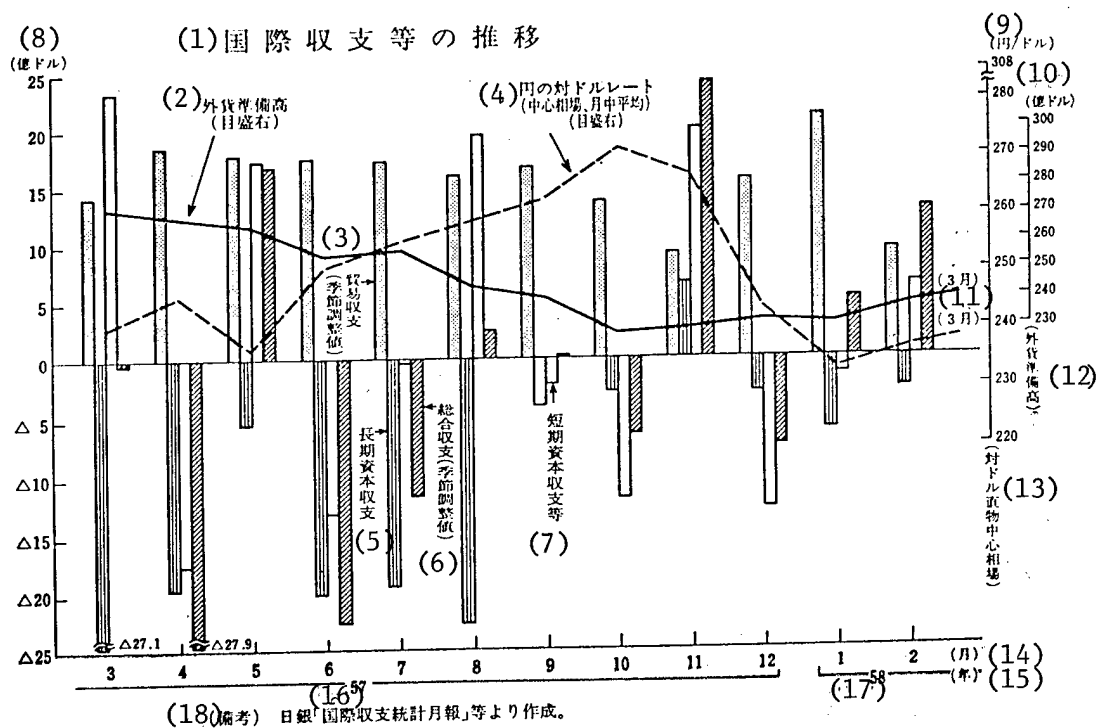
The February trade balance (seasonally adjusted) was in the black at $2,114,000,000, approximately the same as in the previous month, although exports were lower by 8.1 percent, but imports were even lower, 9.8 percent less. The invisible transaction and transfer account balance, however, recorded an increase in the red at $1,199,000,000. As a result, the current transaction account balance was $915 million (seasonally adjusted) in the black, a smaller surplus compared to last month.

The balance of the long-term capital account was $265 million in the red, a smaller figure than previously recorded. This is due to a sharp increase in foreign capital inflow centering on the increased foreign bond issues floated by Japanese industries, offsetting the effect of an increase in the outflow of Japanese capital, chiefly in the form of stock investments and loans.

The balance of the short-term capital and errors and omissions account was a surplus inflow of $613 million.

The figure of $1,281,000,000 (seasonally adjusted) in the black in overall balance was obtained as the result of accounting as stated above.

The March exchange rate for yen in the foreign-exchange market (in terms of American dollars, at the interbank transaction rate, settlement for which takes place mostly the following day) was 238.95 yen per dollar at the beginning of the month, and moved with a strengthening trend during the first third of the month, however, with settlement at 239.4 yen to a dollar, going into next month with a weakening trend.

(1)国際収支等の推移

Key:

(1)   Changes in balance of international payments
(2)   Foreign-currency reserve (scales to right)
(3)   Trade balance (seasonally adjusted)
(4)   Exchange rate of yen against dollar (settlement of exchange computed at the central rate, monthly average) (scales to right)
(5)   Long-term capital balance
(6)   Overall balance (seasonally adjusted)
(7)   Short-term capital balance, etc.
(8)   ($100 million)
(9)   (yen/dollar)
(10) ($100 million)
(11) March
(12) Foreign-currency reserve
(13) Spot rate against dollar
(14) (month)
(15) (year)
(16) 1982
(17) 1983
(18) (Note) Based on KOKUSAI SHUSHI TOKEI GEPPO [Monthly Report on the International balance of payments], the Bank of Japan, and other sources.

(1)国際収支（IMF方式）

(2)単位：百万ドル

	(3)経常収支 (4)計	(5)貿易収支 (6)小計	(7)輸出	(8)輸入	(9)貿易外収支	(10)移転収支	(11)長期資本収支	(12)基礎的収支	(13)短期資本収支等	(14)総合収支	(15)外貨準備高
(16) 55年度	△7,012	6,766	134,942	128,176	△12,199	△1,579	4,377	△2,635	2,255	△380	27,020
(17) 56年度	5,934	20,358	149,592	129,234	△12,876	△1,548	△14,846	8,912	1,053	7,859	27,231
(18) 56年 10〜12月	1,860 (956)	5,685 (4,781)	39,122 (37,471)	33,437 (32,690)	△3,352	473	3,063	△1,203 (△2,107)	△170	△1,373 (△2,277)	28,403
(19) 57年 1〜3月	912 (1,423)	2,439 (4,774)	34,994 (37,502)	32,555 (32,728)	△2,883	468	5,805	6,717 (4,382)	3,426	3,291 (△956)	27,231
4〜6月	2,582 (2,568)	5,312 (5,298)	35,216 (35,196)	29,904 (29,898)	△2,495	235	4,569	1,987 (2,001)	△1,393	3,380 (△3,394)	25,487
7〜9月	2,924 (2,071)	5,760 (4,907)	33,964 (33,720)	28,204 (28,813)	△2,538	298	4,652	1,728 (2,581)	1,655	73 (△926)	24,009
10〜12月	2,256 (1,482)	4,568 (3,794)	33,489 (31,993)	28,921 (28,199)	△1,932	380	57	2,313 (1,539)	△540	1,773 (999)	23,262
(20) 57年 2月	3 (△100)	1,276 (1,173)	11,543 (12,019)	10,267 (10,846)	△1,186	△87	△1,493	1,490 (△1,593)	288	△1,202 (△1,305)	28,122
3月	977 (353)	2,022 (1,398)	13,205 (11,861)	11,183 (10,463)	△799	246	△2,707	1,730 (2,354)	2,309	579 (△45)	27,231
4月	562 (953)	1,431 (1,822)	12,138 (12,165)	10,707 (10,343)	△754	115	△1,976	1,414 (△1,023)	△1,769	3,183 (△2,792)	26,807
5月	147 (540)	1,363 (1,756)	11,408 (11,654)	10,045 (9,898)	△1,154	△62	△571	424 (31)	1,695	1,271 (1,664)	26,543
6月	1,873 (1,075)	2,518 (1,720)	11,670 (11,377)	9,152 (9,657)	△587	58	△2,022	149 (△947)	△1,319	1,468 (△2,266)	25,487
7月	1,496 (811)	2,370 (1,685)	11,922 (11,236)	9,552 (9,551)	△762	△112	△1,956	460 (△1,145)	39	499 (△1,184)	25,669
8月	△40 (593)	950 (1,583)	10,379 (11,259)	9,429 (9,676)	△924	66	△2,281	2,321 (1,688)	1,924	397 (236)	24,416
9月	1,468 (667)	2,440 (1,639)	11,663 (11,225)	9,223 (9,586)	△852	120	△415	1,053 (252)	△230	823 (22)	24,009
10月	1,433 (846)	1,939 (1,352)	11,062 (10,791)	9,123 (9,439)	△396	△110	△292	1,141 (554)	△1,214	73 (△660)	22,840
11月	△1,021 (△226)	117 (912)	9,982 (10,640)	9,865 (9,728)	△982	156	△646	375 (420)	1,985	1,610 (2,405)	22,976
12月	1,844 (862)	2,512 (1,530)	12,445 (10,562)	9,933 (9,032)	△554	114	△297	1,547 (565)	△1,311	236 (△746)	23,262
(21) 58年(P)1月	△1,444 (1,284)	618 (2,110)	9,324 (12,494)	9,942 (10,384)	△703	123	△621	2,065 (663)	△153	2,218 (510)	23,593
(P)2月	947 (915)	2,146 (2,114)	10,028 (11,479)	8,882 (9,365)	△1,087	112	△265	682 (650)	631	1,313 (1,281)	23,754
3月											24,015

(22)（備考）
1 日銀「国際収支統計月報」による。
2 短期資本収支には現先取引を含み、金融勘定に属するものを除く。
3 (P)は速報値を示す。
4 （ ）内は季節調整値。

Key:

(1)   Balance of international payments (IMF system)
(2)   (Unit: $1 million)
(3)   Balance of current transactions
(4)   Total
(5)   Trade balance
(6)   Subtotal
(7)   Exports
(8)   Imports
(9)   Balance of invisible transactions account
(10)   Balance of transfer account
(11)   Balance of long-term account
(12)   Basic balance
(13)   Balance of short-term capital account, and others
(14)   Overall balance
(15)   Foreign currency reserve
(16)   FY 1980
(17)   FY 1981
(18)   1981, October–December
(19)   1982, January–March
               April–June
               July–September
               October–December
(20)   1982, February

                   •
                   •
                   •
               December
(21)   1983 (P) January
             (P) February
               March
(22)   (Note) 1 From KOKUSAI SHUSHI TOKEI GEPPO, the Bank of Japan
                2 Short–term capital balance includes deals in future and deals
                   on spot, but does not include transactions that belong to
                   financial figure
                3 (P) indicates expedited figure
                4 Figures in ( ) seasonally adjusted

The foreign-currency reserve was $24,015,000,000 at the end of March, an increase of $261 million during the month.

The monetary value of exports that cleared customs in February was $11,036,000,000, a decrease of 5.4 percent compared to the same month in the previous year; compared to the previous month, using seasonally adjusted figures, a decrease of 6.0 percent. In terms of quantity, a decrease of 4.3 percent compared to the previous month, and an increase of 1.1 percent compared to the same month of the previous year.

Comparison of February to January important export products, on dollar base, were: Increases were noted in general machinery (1.7 percent), and tape recorders (1.3 percent), while decreases were found in iron and steel (4.9 percent), textiles and textile products (11.2 percent), automobiles (11.7 percent), chemical products (16.7 percent), and ships (22.4 percent).

Comparison of February to January areas of export were: Increases were observed in exports to communist countries (11.4 percent) and Middle East (2.5 percent), while decreases were found to Southeast Asian countries (5.1 percent), Western Europe (15.5 percent), and Latin America (38.5 percent).

Export letters of credit received totaled $8,535,000,000 (seasonally adjusted) [in Table 2, the same figure is listed as that of seasonally unadjusted] in March, a decrease by 0.2 percent compared to the previous month, and a decrease of 0.8 percent compared to the same month of the previous year.

February export price index (1980=100) was 98.8, a decrease of 0.1 percent compared to the previous month (a decrease of 5.5 percent compared to the same month of the previous year). By product, the index for vehicles was 0.9 percent higher compared to the previous month due to increases in exports of motorbikes and subcompact automobiles. The index also was higher for chemical products (up 0.7 percent) compared to the previous month, while for metals and metal products, it was lower (1.4 percent) due to decreases in exports of electric cables and oil well steel pipes. The index was lower for electric equipment and machinery (0.5 percent) and textiles (0.3 percent) compared to the previous month.

The monetary value of imports that cleared customs in February was $9,633,000,000, a decrease of 15.1 percent compared to the same month in the previous year, and a decrease of 10.3 percent compared to the previous month, using seasonally adjusted figures. On the quantity base, a decrease of 7.1 percent compared to the previous month, and 10.8 percent, compared to the same month of the previous year.

Trends in prices of important commodities and products traced by comparing current prices to the same month of the previous year on dollar base, decreases were recorded in everything: food (4.7 percent), metal raw materials (4.7 percent), wood (7.7 percent), machinery and instruments (13.7 percent), and crude oil (17.6 percent).

As to changes in areas imports came from, in comparison to the previous month, increases were found from communist countries (2.1 percent), while decreases

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(1) 輸 出 の 動 向（季節調整値、3か月移動平均値）
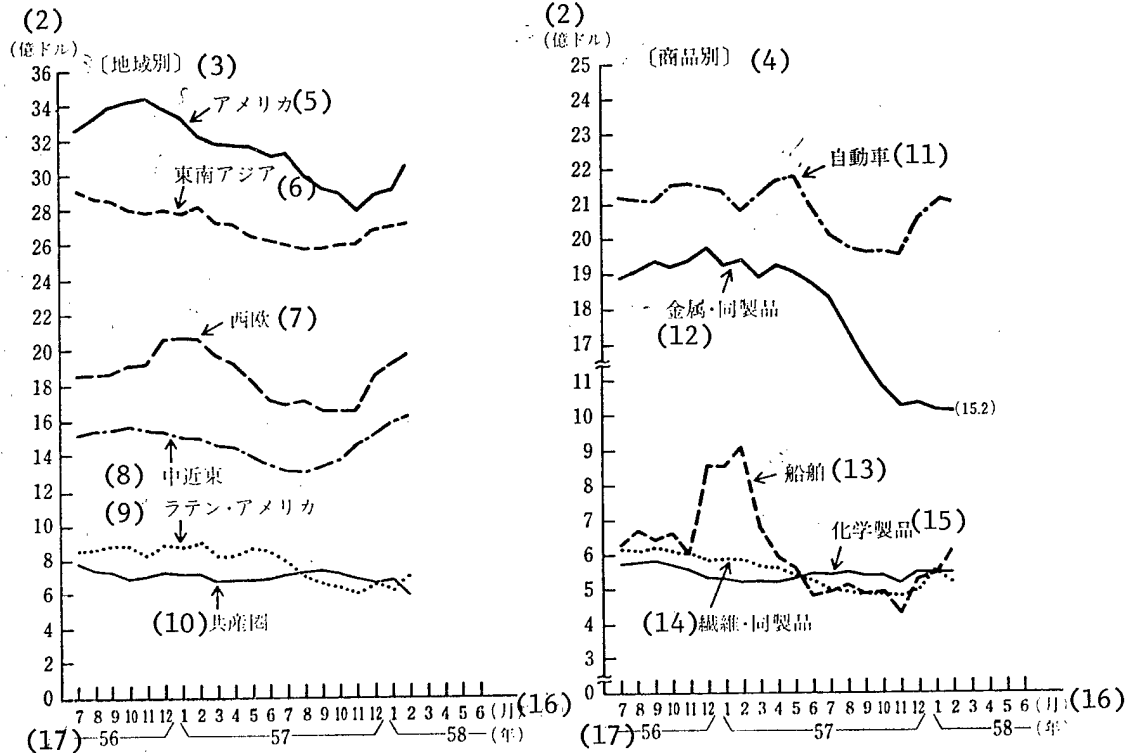
Key:

(1)　Export trends (3-month moving average of seasonally adjusted figures)
(2)　($100 million)
(3)　[By areas]
(4)　[By products]
(5)　United States
(6)　Southeast Asia
(7)　Western Europe
(8)　Middle East
(9)　Latin America
(10)　Communist countries
(11)　Automobiles
(12)　Metals and metal products
(13)　Ships
(14)　Textiles and textile products
(15)　Chemical products
(16)　(month)
(17)　1981　　1982　　1983　(year)

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(1) 輸 出

(2)（単位：百万ドル、％）

		通関 (3)		額 (4) 数量指数			信用状接受高 (5)			(6) 輸出物価指数 (55年=100)	(7) 交易条件指数 (50年=100)
		(8) 原数値	(9) 季節調整値	(10) 前期(月)比増減率	(11) 前年同期(月)比増減率	(12) 前期(月)比増減率	(13) 原数値	(14) 季節調整値	(15) 前年同期(月)比増減率		
(16)	56年度	151,938	—	10.1	8.3	—	97,904	—	3.6	103.0	79.4
(17)	57年度	(P)136,641	—	△10.1	(P)△4.1	—	92,790	—	△5.2	—(P)	80.4
(18)	57年1～3月	11,815 (△0.3)	12,685	△0.1	3.7	2.5	7,832 (△6.8)	7,919	△2.0	104.1	81.8
	4～6月	11,879 (△6.8)	11,810	△6.9	△3.7	△4.9	8,088 (△6.8)	7,843	△1.0	105.2	83.6
	7～9月	11,335 (△11.8)	11,217	△5.0	△7.9	△1.1	7,435 (△6.8)	7,647	△2.5	106.5	80.0
	10～12月	11,249 (△15.0)	10,781	△3.9	△4.0	△0.2	7,726 (△5.2)	7,679	0.4	104.6	77.5
	58年1～3月	(P)11,084 (△6.2)	11,843	9.8	(P)△0.3	5.9	7,681 (△1.9)	7,755	1.0	—(P)	80.6
(19)	57年 2月	11,670 (△3.6)	12,200	△10.1	0.3	△8.9	7,489 (△4.4)	7,898	△2.1	104.5	80.9
	3月	13,471 (△3.6)	12,148	△0.4	0.9	0.3	8,551 (△6.6)	7,789	△1.4	105.4	80.6
	4月	12,317 (△4.0)	12,249	0.8	△0.5	0.8	7,852 (△9.5)	7,736	△0.7	105.9	82.6
	5月	11,590 (△8.3)	11,655	△4.9	△7.2	△5.9	8,311 (△4.3)	8,059	4.2	103.5	85.2
	6月	11,729 (△8.0)	11,525	△1.1	△3.7	3.7	8,111 (△6.6)	7,734	△4.0	106.2	82.9
	7月	11,953 (△12.1)	11,339	△1.6	△6.0	0.2	8,043 (△7.9)	7,730	△0.1	106.8	79.0
	8月	10,422 (△11.6)	11,148	△1.7	△9.9	△3.3	7,051 (△5.9)	7,577	△2.0	106.2	80.8
	9月	11,630 (△11.6)	11,163	0.1	△8.1	1.7	7,210 (△6.6)	7,634	0.8	106.5	80.2
	10月	11,103 (△17.8)	10,899	△2.4	△3.8	2.6	7,655 (△7.8)	7,604	△0.4	107.2	77.2
	11月	10,059 (△14.0)	10,758	△1.3	△2.9	△2.3	7,124 (△2.1)	7,698	1.2	105.4	75.9
	12月	12,583 (△13.3)	10,687	△0.7	△5.2	△3.5	8,399 (△5.2)	7,736	0.5	101.2	79.5
	58年 1月	9,227 (△10.4)	12,265	14.8	△4.0	12.4	7,272 (△2.5)	7,878	1.8	98.9	81.6
	2月	11,036 (△5.4)	11,535	△6.0	1.1	△4.3	7,237 (△3.4)	7,632	△3.1	98.8	79.4
	3月	(P)12,992 (△3.6)	11,729	1.7	(P)1.0	0.5	8,535 (△0.2)	7,756	1.6	—(P)	80.7

(20)（備考）
1　大蔵省「外国貿易概況」、日銀「輸出信用状統計」、「物価指数月報」その他による。
2　原数値の（　）内は前年同期（月）比増減率。四半期の値は月平均。
3　数量指数の前期（月）比増減率は季節調整済の値。
4　交易条件＝$\frac{\text{通関ベースの 輸出価格指数（50年＝100）}}{\text{通関ベースの 輸入価格指数（50年＝100）}}×100$、ともに原数値。
5　輸出信用状接受高は、市場実勢相場による為替換算方法変更後の値。

Key:

(1)   Export
(2)   (Unit: $1 million, percent)
(3)   Custom cleared value
(4)   Quantity index
(5)   Letters of credit received
(6)   Export price index (1980=100)
(7)   Trade condition index (1975=100)
(8)   Unadjusted [original] figures
(9)   Seasonally adjusted figures
(10)   Percent of decrease or increase [of seasonally adjusted figures] compared to the previous quarter (or month)
(11)   Percent of increase or decrease compared to the same quarter (or month) of the previous year
(12)   Percent of increase or decrease compared to the previous quarter (month)
(13)   Unadjusted figures
(14)   Seasonally adjusted figures
(15)   Percent of increase or decrease compared to the previous quarter (month)
(16)   FY 1981
(17)   FY 1982
(18)   1982, January-March
           April-June
           July-September
           October-December
     1983, January-March
(19)   1982 February
         .
         .
         .
         .
         December
     1983, January
           February
           March
(20)   (Note) 1 Based on GAIKOKU BOEKI GAIKYO [OUTLINE OF FOREIGN TRADE], Ministry of Finance; YUSHUTSU SHINYOJO TOKEI [LETTERS OF CREDIT STATISTICS], The Bank of Japan; BUKKA SHISU GEPPO [PRICE INDEX MONTHLY REPORT), etc.

                2 Figures in ( ) in the unadjusted figures column indicates the percentage of increase or decrease compared to the same quarter (or month) of the previous year. Quarterly figures are the average of 3 months.

                3 In the quantity-index column, index of increase or decrease compared to the previous quarter (month) is derived from seasonally adjusted figures.

                4 Trade condition=

$$\text{Trade condition} = \frac{\text{export price index (1975=100)}^{*} \text{ on custom clearance base}}{\text{import price index (1975=100)} \text{ on custom clearance base}} \times 100$$

[*in the table, given as (1980=100)]

                5 Values of letters of credit received is calculated according to a conversion system using spot market rates.

were seen from Western Europe (5.2 percent), Middle and Near East (7.3 percent), United States (10.7 percent), Southeast Asia (15.6 percent), and Latin America (39.9 percent).

The February import price index (1980=100) was 105.2, an increase of 0.3 percent compared to the previous month (a decrease of 0.3 percent compared to the same month of the previous year). By commodities and products, the index was slightly lower for wood and wood products (0.4 percent), and food and feeds (0.2 percent) compared to the previous month, while it was higher for metals (3.2 percent, compared to the previous month) due to higher prices of steel ores and aluminum ore.

(1) 輸 入 の 動 向 (季節調整値、3か月移動平均値)

(13)(備考) 大蔵省「外国貿易概況」、通産省「輸入原材料統計」により作成。

Key:
(1) Import trends (3-month moving average of seasonally adjusted figures)
(2) ($100 million)
(3) Customs clearance base
(4) The rate of imported raw materials in stock (scales to right)
(5) (1975=100)
(6) Crude oil
(7) Food
(8) Metal raw materials
(9) Wood
(10) Textile raw materials
(11) (month)
(12) 1981   1982   1983 (year)
(13) (Note) Based on GAIKOKU BOEKI GAIKYO, The Ministry of Finance; YUNYU GENRYO TOKEI, (Imported Materials Statistics), the Ministry of International Trade and Industry

(1) <u>輸　　　　　　　入</u>

(2) (単位：百万ドル、%)

		(3) 通　関　額			(7) 数量指数		(10) 原油輸入量	(11) 報告統計額	(12) 輸入原材料在庫率（季節調整値）（50年=100）	(13) 輸入物価指数（55年=100）
		(4) 原数値	(5) 季節調整値	(6) 同前期（月）比増減率	(8) 前年同期（月）比増減	(9) 前期（月）比増減率	(1,000 kl)			
(14)	55 年 度	143,976	—	19.5	▲4.8	—	248,164	—	103.0	98.5
(15)	56 年 度	142,734	—	▲0.9	▲0.6	—	227,757	129,834	113.2	103.7
(16)	57年 1～3月	12,044 (▲1.5)	12,004	0.2	5.5	2.9	61,344	10,558 (—)	114.5	104.9
	4～6月	11,014 (▲9.1)	10,968	▲8.6	1.6	▲4.9	48,259	10,056 (▲13.0)	115.7	107.8
	7～9月	10,393 (▲8.3)	10,563	▲3.7	▲0.5	▲2.7	47,519	9,419 (▲8.0)	111.9	112.5
	10～12月	10,527 (▲12.9)	10,440	▲1.2	▲6.6	▲1.9	55,135	9,957 (▲8.8)	114.6	113.2
	58年 1～3月	(P) 10,502 (▲12.8)	10,456	▲0.2	(P)▲8.4	0.8	(P) 54,214	9,559 (▲9.5)	114.3	—
(17)	57年2月	11,346 (▲3.9)	11,745	▲5.0	3.2	▲1.5	20,025	9,543 (—)	116.1	105.5
	3月	12,625 (▲2.4)	11,910	1.4	7.2	2.5	21,139	11,675 (—)	119.3	107.1
	4月	11,832 (▲4.6)	11,507	▲3.4	5.9	▲2.2	18,466	10,324 (▲5.8)	118.9	108.4
	5月	11,140 (▲11.9)	10,765	▲6.5	▲1.1	▲5.6	17,017	9,903 (▲23.4)	115.2	106.0
	6月	10,071 (▲10.8)	10,633	▲1.2	0.0	▲0.3	12,776	9,939 (▲8.0)	113.1	108.9
	7月	10,677 (▲11.7)	10,570	▲0.6	▲2.5	▲0.6	15,485	9,947 (▲12.4)	113.7	111.3
	8月	10,457 (▲5.3)	10,568	▲0.0	1.4	0.5	16,524	8,753 (▲2.9)	111.1	112.4
	9月	10,044 (▲7.4)	10,552	▲0.2	▲0.2	▲0.7	15,510	9,557 (▲7.7)	110.9	113.7
	10月	10,127 (▲11.0)	10,457	▲0.9	▲3.4	▲0.6	16,772	8,844 (▲11.7)	112.8	116.0
	11月	10,473 (▲11.6)	10,544	0.8	▲6.3	▲0.7	19,473	10,075 (▲5.2)	113.3	114.9
	12月	10,980 (▲15.8)	10,317	▲2.2	▲9.6	▲1.6	18,890	10,953 (▲9.6)	117.6	108.6
(18)	58年1月	10,925 (▲10.2)	11,099	7.6	▲5.5	5.6	19,579	9,381 (▲10.3)	110.7	104.9
	2月	9,633 (▲15.1)	9,955	▲10.3	▲10.8	▲7.1	16,536	8,853 (▲7.2)	114.7	105.2
	3月	(P) 10,948 (▲12.8)	10,313	3.6	(P)▲9.1	4.4	(P) 18,099	10,443 (▲10.5)	—	—

(19)（備考）　1　大蔵省「外国貿易概況」、通産省「輸入報告統計」、その他による。

　　　　　2　原数値の（　）内は前年同期（月）比増減率。四半期の値は月平均（除、原油輸入量）。

　　　　　3　数量指数の前期（月）比増減率は季節調整済の値。

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Key:

(1)   Import
(2)   (Unit: $100 million, percent)
(3)   Custom cleared value
(4)   Unadjusted [original] figures
(5)   Seasonally adjusted figures
(6)   Percent of increase or decrease [of seasonally adjusted figures] compared
        to the previous quarter (month)
(7)   Quantity index
(8)   Percent of increase or decrease compared to the same quarter (month) of
        the previous year
(9)   Percent of increase or decrease compared to the previous quarter (month)
(10)   Amount of crude oil import (1,000 kl)
(11)   Statistics based on reports
(12)   Rate of imported raw materials in stock (seasonally adjusted figures)
        (1976=100)
(13)   Import price index (1980=100)
(14)   FY 1980
(15)   FY 1981
(16)   1982, January-March
              April-June
              October-December
        1983, January-March
(17)   1982, February
              .
              .
              .
              December
(18)   1983, January
              February
              March
(19)   (Note) 1   Based on GAIKOKU BOEKI GAIKYO, the Ministry of Finance;
                    YUNYU TOKEI HOKOKU, the Ministry of International Trade
                    and Industry, and others.
                2   Figures in ( ) in the unadjusted figures column indicates
                    the percent of increase or decrease compared to the same
                    quarter (month) in the previous year. Quarterly figures
                    are the average of 3 months (excepting the amount of
                    imported crude oil).
                3   In the quantity-index column, percent of increase or de-
                    crease compared to the previous quarter (month) is derived
                    from seasonally adjusted figures.

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