SOME FEATURES OF FOREIGN TRADE IN HOKKAIDO

TETSUYA TOKORO

Contents

1. PREFACE

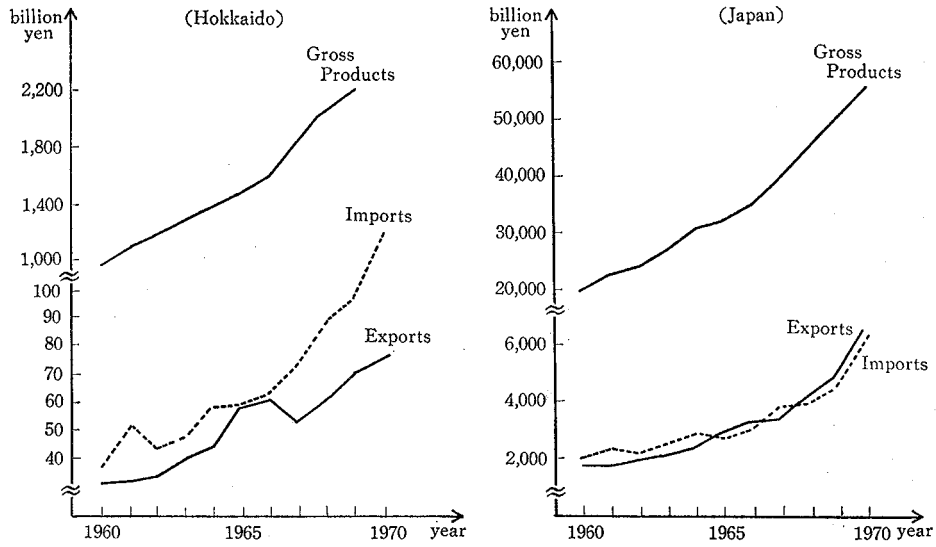
The eyes of the world are now turned on the recent and rapid growth of Japanese foreign trade, and particularly on the growth of its exports. Therefore statistical data and analytical surveys of this topic can be abundantly utilized on a nationwide scale. But, from a viewpoint of local economic units, there is little information and few studies on the export-import structure of our country by prefecture. Accordingly, this paper seeks to provide some detailed information on Hokkaido's export-import structure. It further seeks to investigate Hokkaido's overseas' trade, which occupies an important position in the Japanese economy.

We do not intend to develop any new analytical tools or approaches, but rather to point out some characteristics of Hokkaido's foreign trade.

2. TRENDS IN EXPORTS AND IMPORTS

Chart 1 represents a time series (annual data) of Hokkaido's gross products, exports and imports on the left side and of all of Japan on the right side. (Please note the different scale of the vertical axis in these charts.) This shows us the following similarities and differences between the trade of Hokkaido and that of Japan: (1) The gross product rate increases consistently during the period concerned for both Hokkaido and Japan. Their rates of growth have risen especially rapidly since 1966. (2) On the other hand, both Hokkaido's and Japan's exports and imports

Chart 1. Changes of Gross Products Exports and Imports.
(in billion yen)



Source: Hokkaido Planning Department and, Department of Commerce and Industry. Data is deflated by general price index (1965=100)

Source: Economic Planning Agency, Ministry of International Trade and Industry. Data is deflated by general price index (1965=100)

have changed rather inconsistently. The trend lines tend to rise steadily after 1965 except the trend line of Hokkaido's exports. (3) Hokkaido's balance of visible trade (balance of commodity trade) shows a continuous excess of imports over exports and the excess of imports tends to increase every year. In contrast to this, the Japanese balance of visible trade has shown an excess of exports over imports since 1968.

3. INTENSITY OF HOKKAIDO'S FOREIGN TRADE AND HOKKAIDO'S ECONOMIC SHARE IN THE JAPANESE ECONOMY

Chart 2 shows the percentage of exports and imports to gross products in Hokkaido and Japan. The former is defined here as "Intensity of Exports" (exports/gross products) and the latter "Intensity of Imports" (imports/gross products). Chart 3 shows changes of Hokkaido's share in the Japanese economy, namely, changes in the gross products share (Hokkaido's gross products/Japan's gross products), the exports share (Hokkaido's exports/Japan's exports), and the imports share (Hokkaido's imports/Japan's imports).

We can find following facts from these charts: (1) Hokkaido's export intensity and import intensity are both very low in comparison to Japan's. (2) All four of these ratios are rather unstable. Only the Japanese export

Chart 2. Intensity of Exports and Imports of Hokkaido and Japan. (in percentages)

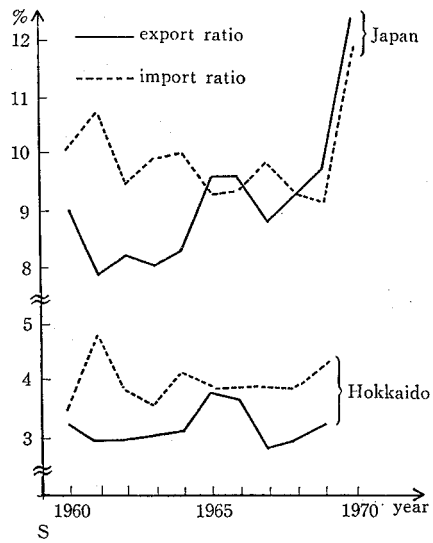
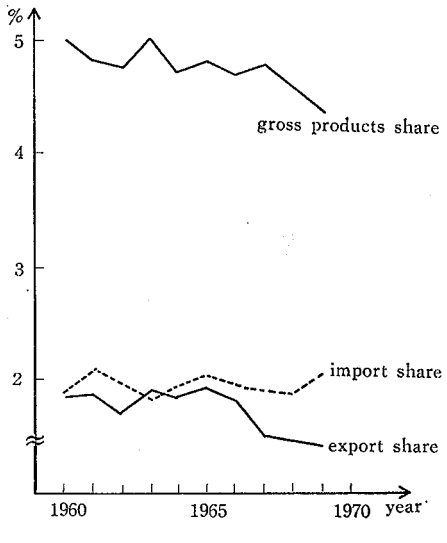


Chart 3. Hokkaido's Share of Japan's Exports, Imports and Gross Products. (in percentages)



Souce: Economic Planning Agency, Ministry of International Trade and Industry, Hokkaido Planning Department, and Department of Commerce and Industry.

ratio follows an upward trend on the whole. This tendency appears conspicuously since 1967. (3) Accordingly, the gap between the Hokkaido's export ratio and that of Japan is gradually increasing. This means that the relative significance of Hokkaido's exports in the Japanese economy has decreased. (4) Hokkaido's shares of both gross products and exports in the Japanese economy have tended to decrease, while its share of imports shows no marked fluctuations. This tells us that the economic growth of Hokkaido is behind that of Japan. This matter should be especially noticed.

4. TRENDS OF EXPORTS AND IMPORTS BY INDUSTRIES

Changes in Hokkaido's exports and imports by industries are represented in Table 1 and 2 (1960, 1965, and 1969). These tables show: (1) Shares of marine products, lumber and furniture, and chemicals (mainly chemical fertilizer) exported have rapidly decreased. (2) On the other hand, shares of iron and steel and machinery exported have remarkably increased. (3) Shares of paper and pulp, and live stock exported have risen slowly. (4) Consequently, it can be said that Hokkaido's export structure has become fairly industrialized during the period concerned. (5) Processed primary products constitutes a large proportion of Hokkaido's exports. For instance,

TABLE 1. PERCENT DISTRIBUTION OF HOKKAIDO'S EXPORTS BY INDUSTRIES (IN PERCENTAGES)

Industries	year		
	1960	1965	1969
Agricultural Products	5.47	1.02	5.66
Livestock	0.17	0.98	1.77
Marine Products	24.68	7.14	9.94
Lumber and Furniture	41.58	21.36	23.19
Mining	0.06	0.17	0.01
Chemicals	11.63	7.95	2.16
Iron and Steel	9.07	41.66	34.12
Machinery	1.06	12.35	16.40
Paper and Pulp	3.10	4.20	4.33
Rubber Products	2.21	1.25	1.25
Others	0.97	1.85	1.16
Total	100.00	100.00	99.99

Source: Customs Statistics (Hakodate custom office)

TABLE 2. PERCENT DISTRIBUTION OF HOKKAIDO'S IMPORTS BY INDUSTRIES (IN PERCENTAGES)

Industries	year		
	1960	1965	1969
Foods and Beverages	16.12	17.01	18.71
Raw Materials (except foodstuffs)	45.69	55.66	50.89
Crude oil, coaking coal and other mineral fuels	27.39	19.29	19.32
Chemicals	2.67	2.61	1.99
Machinery	6.89	4.24	5.08
Other Manufactured Goods	0.14	0.92	3.90
Miscellaneous	1.09	0.24	0.03
Total	99.99	99.97	99.92

Source: Customs Statistics (Hakodate custom office)

in 1969, processed primary products made up 40.6% of Hokkaido's exports. (6) The import structure of Hokkaido, in contrast to its export structure, is very stable. (7) Hokkaido's percentage of food and raw materials imported is overwhelmingly large. This feature is also common to the import structure of all Japan. (3) The proportion of fuels (crude oil, mineral fuels, and coaking coal) imported has declined 8 percent from 1960 to 1965, while the share of other manufactured products has rapidly increased in 1969.

5. PRINCIPAL EXPORTS

Changes in Hokkaido's exports and the exports of Japan are set out in Tables 3 and 4 respectively. These tables show the character of the export structure and throw light upon the differences between Hokkaido's economy and the Japanese one. (1) In Hokkaido's case, while the importance of veneer board, canned goods and timber exported has gradually decreased, the proportion of iron and steel, vessels, machinery and paper exported have steadily risen. (2) These changes reflect the industrialization of the Hokkaido economy as previously stated in section 4. (3) But the

TABLE 3. TOP TEN EXPORTS OF HOKKAIDO (THE TEN PRODUCTS HOKKAIDO EXPORTS MOST) (IN PERCENTAGES)

year	1960		1965		1970	
order	Article	%	Article	%	Article	%
1	Veneer board	25.6	Iron and steel	41.7	Iron and steel	37.9
2	Canned goods	15.6	Veneer board	15.6	Vessels	17.5
3	Timber	13.9	Vessels	9.0	Veneer board	16.0
4	Iron and steel	9.1	Canned goods	6.8	Rice	6.7
5	Urea	8.8	Urea	5.5	Machinery	5.8
6	Marine products	8.0	Timber	5.2	Paper	5.2
7	Pulses	4.0	Paper	4.2	Timber	4.4
8	Paper	3.1	Machinery	2.1	Marine products	2.8
9	Boots and shoes	2.2	Boots and shoes	1.3	Boots and shoes	1.5
10	Ammonium sulphate	2.1	Ammonium sulphate	1.3	Sporting goods	0.6
	Total	84.4		92.7		98.9

Source: Customs Statistics (Hakodate custom office)

proportion of staple goods such as veneer board, rice, timber and marine products exported is fairly large. Thus, we may assert that Hokkaido's exports pattern is a mixed type, having both primary and manufactured goods. (4) Hokkaido's exports lack diversification, for only ten articles exported account for almost 99% (in 1970) of all its exports. It should especially be noted that the share of only the top three constituted about 70% of all exports in 1970 and, moreover, this concentration tends to increase. (5) In contrast to this, the top ten's share of all Japanese exports is relatively small and stable (45.5% on the average). (6) For Japan, as a whole, the exportation of heavy and light industrial products such as motor vehicles, synthetic fibers, optical instruments and radio receivers is increasing, and that of textiles such as cotton fabrics, clothes and rayon is decreasing.

TABLE 4. TOP TEN EXPORT OF JAPAN (IN PERCENTAGES)

year	1960		1965		1970	
order	Article	%	Article	%	Article	%
1	Iron and steel	9.6	Iron and steel	15.3	Iron and steel	14.7
2	Cotton fabrics	8.7	Vessels	8.8	Vessels	7.3
3	Vessels	7.1	Cotton fabrics	3.6	Motor vehicles	6.9
4	Clothes	5.4	Clothes	3.4	Radio receivers	3.9
5	Radio receivers	3.6	Motor vehicles	2.8	Synthtic fibers	3.2
6	Span rayon, fabrics	2.9	Marine products	2.7	Opitcal instruments	2.6
7	Toys	2.2	Radio receivers	2.6	Clothes	2.4
8	Motor vehicles	1.9	Synthetic fibers	2.2	Tape recorders	2.3
9	Boots and shoes	1.8	Optical instruments	2.1	Plastics	2.2
10	Ceramics	1.7	Toys	1.2	TV-sets	2.0
	Total	44.8		44.6		47.2

Source: Ministry of International Trade and Industry

6. PRINCIPAL IMPORTS

Changes in Hokkaido's principal imports and those of Japan are shown in Table 5 and 6. We can guess the following from these tables: (1) There are not many differences between Hokkaido's imports and those of Japan as a whole. (2) Even so, some differences are to be found. Where raw

TABLE 5. TOP TEN IMPORTS GOODS TO HOKKAIDO (IN PERCENTAGES)

year	1960		1965		1970	
order	Articles	%	Articles	%	Articles	%
1	Iron ore	23.8	Iron ore	27.7	Iron ore	16.5
2	Petroleum	13.8	Coal	8.9	Coal	12.5
3	Coal	12.0	Lumber	7.5	Lumber	10.9
4	Wheat	11.4	Petroleum	7.1	Iron and steel scrap	9.0
5	Iron and steel scrap	9.8	Wheat	7.0	Petroleum	5.1
6	Machinery	6.8	Soy beans	5.9	Wood chip	4.2
7	Lumber	3.6	Iron and steel scrap	5.3	Machinery	4.1
8	Phosphate ore	3.6	Copper ore	3.6	Oil products	3.8
9	Potassium chlorate	2.7	Oil products	3.1	Iron and steel	3.5
10	Rice	2.0	Maize	2.7	Wheat	3.0
	Total	89.5		78.8		63.8

Source: Customs Statistics (Hakodate custom office)

TABLE 6. TOP TEN IMPORT GOODS TO JAPAN (IN PERCENTAGES)

year	1960		1965		1970	
order	Articles	%	Articles	%	Articles	%
1	Petroleum	13.1	Petroleum	16.0	Petroleum	11.8
2	Cotton	9.6	Iron ore	6.4	Lumber	8.3
3	Machinery	9.0	Lumber	6.0	Iron ore	6.4
4	Wool	5.9	Cotton	5.4	Non-ferrous metal ore	5.6
5	Iron and steel scrap	5.1	Wool	4.2	Coal	5.3
6	Phosphate ore	4.8	Non-ferrous metal ore	3.5	Non-ferrous metals	5.0
7	Wheat	3.9	Coal	3.3	Cotton	2.5
8	Lumber	3.8	Wheat	3.0	Soy beans	1.9
9	Non-ferrous metals ore	3.5	Non-ferrous metals	3.0	Wool	1.8
10	Coal	3.1	Maize	2.8	Iron and steel scrap	1.8
	Total	61.8		53.6		50.4

Source: Ministry of International Trade and Industry

materials for textiles, such as cotton, wool, etc, and non-ferrous metals and their ores are imported in large quantities into Japan, such materials are not imported into Hokkaido at all. (3) On the other hand, there is a wide range of similarities between both economie's imports. For example, shares of timber, iron ore, coal and petroleum imported are in both economies large or increasing and the shares of foodstuffs imported are declining rapidly. (4) It is worth observing that the share of top ten articles imported has gradually fallen and therefore, the diversification of import items is fairly advanced in both economies. (5) The concentration of imported articles in Hokkaido, however, is still considerably higher than that of Japan.

7. EXPORT MARKET BY COUNTRIES

Now, let's survey the structure of Hokkaido's foreign trade market by countries. First, the export market is to be considered. Table 7 and 8 show changes in rank and share of the top ten countries to which Hokkaido and Japan export. These tables show us the following facts: (1) The share the United States occupied in the export market is overwhelmingly large in both economies. This aspect is especially dominant in the case of Hokkaido, that is, 38.1% on the average. It is well proven that the Japanese economy absolutely depends on the U.S.A. (2) On the contrary, the weight and ranking of other countries, except for the U.S.A.,

is very small and unstable. (3) Excluding the U.S.A., the structure of the export market by countries shows substantial differences between Hokkaido and Japan. (4) Broadly speaking, while the position of Asia is relatively high in the Japanese export market, the weight of Europe is comparatively large in Hokkaido's exportation. This seems to be because exported articles

TABLE 7. TOP TEN COUNTRIES IN HOKKAIDO'S EXPORT MARKET
(IN PERCENTAGES)

year	1960		1965		1970	
order	Countries	%	Countries	%	Countries	%
1	U.S.A.	35.3	U.S.A.	44.2	U.S.A.	34.8
2	U.K.	16.1	Argentina	6.2	Greece	8.2
3	Korea	7.9	Spain	5.8	Liberia	8.1
4	Australia	5.2	China	5.1	Spain	5.2
5	Sweden	2.4	Hong-Kong	4.6	Korea	4.9
6	India	2.3	Belgium	3.5	Italy	4.7
7	East-Pakistan	2.1	Bulgaria	3.5	Philippines	3.8
8	Hong-Kong	2.1	Liberia	3.1	Belgium	3.3
9	Philippines	1.9	U.K.	3.0	Canada	3.2
10	Canada	1.9	Korea	2.7	East-Germany	1.8
	Total	76.9		82.4		78.0

Source: Customs Statistics (Hakodate custom office)

TABLE 8. TOP TEN COUNTRIES IN JAPAN'S EXPORT MARKET
(IN PERCENTAGES)

year	1960		1965		1970	
order	Countries	%	Countries	%	Countries	%
1	U.S.A.	26.7	U.S.A.	29.4	U.S.A.	30.7
2	Hong-Kong	3.8	Arabia	4.4	Korea	4.2
3	Philippines	3.8	Australia	3.7	Formosa	3.6
4	Australia	3.6	Hong-Kong	3.4	Hong-Kong	3.6
5	U.K.	3.0	China	2.9	Australia	3.0
6	Canada	2.9	Philippines	2.8	Liberia	3.0
7	Thailand	2.9	Thailand	2.6	China	2.9
8	Indonesia	2.7	Formosa	2.6	Canada	2.9
9	India	2.7	West-Germany	2.5	West-Germany	2.8
10	Formosa	2.5	Canada	2.5	U.K.	2.5
	Total	51.7		56.8		59.2

Source: Ministry of International Trade and Industry

in Hokkaido consist mainly of high class staple goods for advanced countries, such as quality veneer board, tinned salmon, canned crab and tinned asparagus for the U.S.A., the U.K. and other European countries. (5) It is another characteristic of Hokkaido's exports that it has relatively few trade partners compared to the large number of markets for Japanese exports. In Hokkaido's economy, the top three's share of the export market was 59.3% in 1960, 56.2% in 1965, and 56.1% in 1970. But in the Japanese economy, the top three's share of the export market was 34.3% in 1960, 37.5% in 1965, and 38.5% in 1970. (6) Such a situation was also common to the top ten's share; the top ten's share of the export market was, on the average, 79.1% in Hokkaido and 55.9% in Japan respectively. But it should be noticed that top ten's share in Japan is tending to increase.

8. IMPORT MARKET BY COUNTRIES

Secondly, changes of import market by countries are to be examined. The following facts can be found in Table 9 (Hokkaido) and Table 10 (All Japan): (1) The U.S.A.'s share of imports, as in the case of exports, is extraordinary large in both Hokkaido and Japan. (2) But the other countries and their rankings listed in these tables, unlike the case of exports, are fairly fixed in both economies. Such a situation can be especially perceived in Japan. (3) Contrary to the export market, the proportion which South-East Asia occupies in the import market is very small in both Hok-

TABLE 9. TOP TEN COUNTRIES IN HOKKAIDO'S IMPORT MARKET
(IN PERCENTAGES)

year	1960		1965		1970	
order	Countries	%	Countries	%	Countries	%
1	U.S.A.	33.6	U.S.A.	26.4	U.S.A.	29.7
2	Canada	12.0	U.S.S.R.	9.3	Australia	10.5
3	Malaysia	7.1	Peru	6.3	U.S.S.R.	8.5
4	Iraq	6.1	Chili	6.2	Canada	4.5
5	Saudi-Arabia	4.0	Canada	5.8	India	4.0
6	India	3.9	Australia	4.4	Philippines	3.7
7	West-Germany	2.9	Philippines	3.8	Iran	2.9
8	U.S.S.R.	2.9	India	3.4	Peru	2.4
9	Philippines	2.6	Saudi-Arabia	3.2	U.K.	2.2
10	Indonesia	2.5	Malaysia	3.1	New Zea land	2.2
	Total	77.6		71.9		70.8

Source: Customs Statistics (Hakodate custom office)

TABLE 10. TOP TEN COUNTRIES IN JAPAN'S IMPORT MARKET
(IN PERCENTAGES)

year	1960		1965		1970	
order	Countries	%	Countries	%	Countries	%
1	U.S.A.	34.4	U.S.A.	29.0	U.S.A.	29.4
2	Australia	7.7	Australia	6.8	Australia	8.0
3	Kuwait	4.6	Canada	4.4	Iran	5.3
4	Canada	4.5	Kuwait	3.7	Canada	4.9
5	Malaysia	4.3	Philippines	3.1	Indonesia	3.4
6	West-Germany	2.7	Iran	3.0	West-Germany	3.3
7	Saudi-Arabia	2.3	U.S.S.R.	2.9	Philippines	2.8
8	Mexico	2.3	Saudi-Arabia	2.8	U.S.S.R.	2.5
9	India	2.2	China	2.8	Saudi-Arabia	2.3
10	U.K.	1.8	West-Germany	2.7	Malaysia	2.2
	Total	66.8		61.2		64.1

Source: Ministry of International Trade and Industry

kaido and Japan. Instead of South-East Asia, petroleum producing countries in the Middle East, such as Iraq, Kuqait, Saudi-Arabia, Iran etc., have a higher position. (4) There are some similarities between Hokkaido and Japan in the composition of the import market. The number of countries listed simultaneously in these two tables was 5 countries in 1960, 6 in 1965, and 6 in 1970. (5) Moreover, the concentration of the import market—namely the aspect that the top ten has large proportion—presents similar properties. For example, top three share was, on the average, 47.8% in Hokkaido and 43.2% in Japan. This feature also can be seen in top ten market share; on the average, 73.4% in Hokkaido and 64.0% in Japan. (6) But we need take notice that the top ten market share in Hokkaido is decreasing. We can regard this as a decentralization of the import market in Hokkaido.

9. STRUCTURE OF COMPARATIVE ADVANTAGE

Given a foreign exchange rate, a commodity is to be exported because of its superiority to other goods from the viewpoint of comparative costs. Then the problem with which we are very interested is any factor that brings such a comparative advantage to a certain industry. A number of experimental studies on Ricardian theorem (the theory of international division of labor) have been presented hitherto, for example: many studies by G. D. A. MacDougall, R. M. Stern, B. Balassa, K. Forchheimer, I. B.

Kravis, and C. Tsukuda, etc. The conclusions of these studies are roughly as follows: There are two factors that affect a state of comparative advantage, namely, productivity differences and money wage differences among industries. It is certain that these differences determine the relative superiority of export industries, but it is difficult to say which difference is dominant. The phase varies with the nation and the period concerned.

In conclusion, this paper intends to treat this topic and to analyse the comparative advantages of Hokkaido's export industries. The present study, however, owing to limitations of data, is not a genuine analysis of comparative costs but rather an inquiry into the relative predominance of the export industry in Hokkaido.

The statistical materials are composed of cross section data by industries in 1969. These materials are based on the Report of Research on the Actual Condition of Foreign Trade in Hokkaido provided by Hokkaido Boeki Bussan Shinkokai (the Hokkaido Association for Promotion of Trade and Commodity) in 1970. The industrial classification and notation are indicated below. The numerical value of the variables given represents the mean value of samples by industries. There are some difficulties with these data; (a) the small size of sample (there are 12 samples only); (b) less-homogeneity of sample

"Notation"

E = Exports
Y = Outputs (gross products)
K = Capital Fund
L = Employee (full time job)
W = Money Wage (average annual revenue)
Ls = Labor Shortage Index (percentage of firms being labor shortage)
E/Y = Export-Output Ratio
K/L = Capital-Labor Ratio
Y/L = Productivity of Labor

"Industrial classification"

1. Agricultural products
2. Live stock
3. Marin products
4. Lumber and Furniture
5. Iron and Steel
6. Machinery
7. Paper and Pulp
8. Chemicals

9. Rubber products
10. Others

The problem to be solved here is to find the variables which cause the industrial differences of the export-output ratio E/Y (export intensity by indutries). The results of regression analysis which have a direct relation to this problem follow in equations 1 to 5. The remaining five equations, from 6 to 10, are simply for reference. They show whether or not there are any correlations among the variables.

"Results estimated"

1. $E/Y = 63.89 - 0.9794\,W + 0.1647\,Y/L$ $\quad S = 81.11 \quad R^2 = 0.5405$
   $\qquad\qquad\qquad\quad (0.4240) \quad (0.1591)$
2. $E/Y = 58.57 - 0.7526\,W + 0.0724\,K/L$ $\quad S = 88.10 \quad R^2 = 0.5416$
   $\qquad\qquad\qquad\quad (0.2656) \quad (0.0694)$
3. $E/Y = 51.85 - 0.6093\,W$ $\quad S = 81.47 \quad r^2 = 0.4702$
   $\qquad\qquad\qquad\quad (0.2287)$
4. $E/Y = 24.12 - 0.1455\,Y/L$ $\quad S = 10.07 \quad r^2 = 0.1902$
   $\qquad\qquad\qquad\quad (0.1061)$
5. $E/Y = 15.73 - 0.0291\,K/L$ $\quad S = 11.10 \quad r^2 = 0.1577$
   $\qquad\qquad\qquad\quad (0.0814)$
6. $Y/L = 48.67 + 0.5298\,K/L$ $\quad S = 21.75 \quad r^2 = 0.5800$
   $\qquad\qquad\qquad\quad (0.1594)$
7. $Y/L = 132.64 - 1.1698\,Ls$ $\quad S = 17.08 \quad r^2 = 0.7409$
   $\qquad\qquad\qquad\quad (0.2446)$
8. $W = 88.51 - 0.4699\,Ls$ $\quad S = 4.91 \quad r^2 = 0.8483$
   $\qquad\qquad\qquad\quad (0.0702)$
9. $W = 40.60 + 0.3167\,Y/L$ $\quad S = 6.76 \quad r^2 = 0.7117$
   $\qquad\qquad\qquad\quad (0.0713)$
10. $W = 56.91 + 0.1350\,K/L$ $\quad S = 10.78 \quad r^2 = 0.2671$
    $\qquad\qquad\qquad\quad (0.0790)$

S = Standard Errors of Estimated Value
R^2 = Determinant Coefficient (multiple correlation coefficient)
r^2 = Determinant Coefficient (single correlation coefficient)

We can point out the following facts from the results of our regression analysis. (1) Judging from figures of deteriminant coefficients, the three equations of 4, 5 and 10 must be excluded from the consideration below. (2) Export-output ratio E/Y is largely influenced by the money wage W, but is hardly affected by both capital-labor ratio K/L and productivity of Labor Y/L. (3) And, sign condition of parameter on the wage rate is theoretically proper: the lower the wage rate, the higher the export-output

ratio. Then it may be said that exportation in Hokkaido consists mainly of low wage rate industries. (4) Productivity of labor has a positive corelation to labor shortage. High capital per man is related to high productivity of labor and large labor shortage goes with low productivity of labor. But the latter causal relationship seems to be inverse. Namely, labor shortage is acute because of low productivity. (5) Wage rate is correlated to labor's productivity positively and to labor shortage negatively: the higher productivity, the higher the wage rate and the lower the wage rate, the greater is the labor shortage.

10. SUMMARY AND CONCLUSION

Summarizing the above points, we arrive at the following facts:

(1) The foreign trade of the Hokkaido district has undergone a chronic excess of imports over exports during the period under review.

(2) Both the export ratio and the import ratio to gross production in Hokkaido are very small in comparison to those of all Japan.

(3) The gap of export intensity between Hokkaido and Japan tends to increase whereas the gap, in the case of import intensity, tends to decrease.

(4) The export share of Hokkaido compared to the whole country tends to decrease, but the import share remains almost changeless.

(5) Although the class of export commodities in Hokkaido has rather rapidly industrialized, the share of processing primary goods is still rather large. As a result, the pattern of export goods in Hokkaido is, the so-called "mixed" type of industrial and staple products.

(6) The structure of import by commodities is fairly stable during the period considered and also is rather similar to that of all Japan.

(7) The top ten's share of export goods in Hokkaido occupies over 90 per cent of all its exports. This means that Hokkaido's exports are not diversified.

(8) The concentration of particular imports, in contrast to exports, tends to decrease gradually: in a few word, the kinds of imported commodities have increased.

(9) In both exports and imports of Hokkaido, the market share of the United State is overwhelmingly large.

(10) Concerning the export market by countries, the share of the top ten is very high and the relative importance of the European market is fairly prominent.

(11) Concerning the import market by countries, however, the line-up and ranking of top ten countries is rather fixed and its share is very low.

The proportion occupied by Europe and the Near Middle East is large and the share of South-East Asia is small.

(12) The relative advantage of export industries in Hokkaido seems to be influenced by industrial differences of the wage rate rather than by the productivity of labor.

(13) Namely, the lower the wage rate is, the higher the export-output ratio (export intensity) is.

(14) Export industries whose wages were low suffered from labor shortages and in turn low productivity.