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INTRA-INDUSTRY TRADE IN EEC; 1962—1972

YOKO SAZANAMI and NOBORU HAMAGUCHI

The present study is part of the research project carried out in connection with the trade in manufactured goods, particularly in Japan, The authors have found in the previous studies [10] [11] that share of intra-industry trade in Japan is low. We have argued that this is making the proportion of manufactured imports to Japan appreciably lower than the experiences in other industrial countries. In the present study, we have tried to evaluate the common market effect which is not present in Japan.

We wish to thank Mrs. Sumako Matsui of Institute of Developing Economies for her valuable comments and for providing statistical data to us.

1. INTRODUCTION

The importance of intra-industry trade in the expansion of trade among industrial countries has been stressed by Balassa, [1], Grubel and Lloyd [4] and others [8] [9]. The abolition of trade barriers makes countries to specialize in particular product of the industry and to increase imports of products that are manufactured in the same industry. The new development of international trade was most pronounced in trade among EEC countries. Balassa[1] asserts that much of the trade creation by forming common market reflects intra-industry specialization rather than conventional inter-industry specialization. The study by Grubel & Lloyd[2] also found that intra-industry trade took larger proportion in the total trade in case of trade among member counties than with non-members.

The larger share of intra-industry trade in intra-EEC trade can be partly explained by Linder's proposition[3] that there will be more trade in differentiated products among countries with similar level of income since they tend to demand similar types of goods. They will demand products of specific design, style and use. The study by Drèze [3] succeeded to show the importance of domestic market in trade of manufactured goods. As size of domestic market limits the small countries to sepcialize in differentiated products, they tend to export standardized products while countries with large domestic market export differentiated products.[4] The liberalization of international capital movement and trade will enable firms to

[1] see Balassa (1975) page 108, 5.2 Intra-industry versus inter-industry specialization.

[2] see Grubel & Lloyd (1975) chapter 9 Observed Effects of Trade Liberalization.

[3] see Linder (1961)

[4] We found in our previous study that Japan with large population tend to specialize in latter stages of process of production. see Sazanami and Hamaguchi (1976)

choose a suitable location for production across the national border and to specialize in particular products as well as production processes.

In our previous studies, we found very limited cases of intra-industry trade in Japan prior to 1970. Imports taken as a portion of exports was particularly low in industries that were protected.[5] In 1970 there was some increase in imports/exports ratios, reflecting the liberalization measures taken by the government starting 1968. However the ratio were much lower than those in West Germany that imported manufactured goods at various stages of fabrication. There is a strong arguement in Japan that small imports of manufactured goods and small share of intra-industry trade reflect; 1. The poor endowment of natural resources which makes Japan to rely heavily on raw material supply from other countries; 2. Locational characteristics in the world that differ from other industrial countries that makes Japan difficult to form free trade area as in case of EEC. 3. Large domestic market that consists of 100 million people provides enough demand for various manufactured goods.

The purpose of the present paper is to evaluate the importance of abolition of trade barriers in increasing the share of intra-industry trade by analysing the experiences of EEC countries (Belgium-Luxemburg, France, West Germany, Italy, and the Netherlands) between 1962 to 1972. If the free movement of both capital and goods are the prerequisites for intra-industry specialization, trade structure of EEC countries with the members and with other trading partners may differ. And we may be able to get some insight to how the locational characteristics and abolition of trade barriers are related to the imports of manufactured goods.

2. ANALYTICAL FRAMEWORK

We chose 1962 as the initial period of analysis assuming that there is some time-lag between the initiation of intra-area tariff reduction that started in 1959 and the adjustment of production and trade to the change. We took ten years span from 1962 to see the development of intra-industry trade. By 1973, the United Kingdom and others joined the common market and the oil crisis that erupted in the fall of the same year disrupted the normal flow of the world trade. Therefore we decided to exclude 1973 from our analysis and limited the period to 1962–1972, to study the effect of formation of EEC in developing intra-industry trade.

Between 1962–1972, external tariff of EEC was reduced by average 35% as a result of Kennedy Round. Thus one can expect that the share of intra-industry trade in EEC countries increased not only in the trade with member countries but also with other trading partners. In the previous studies[6] difference in shares of intra-industry trade within the common market and those with all the other trading countries was compared. But as intra-industry trade is particularly

[5] see Sazanami (1973)

[6] for example Grubel & Lloyd (1975)

important in trade among countries with similar income levels exchanging manufactured goods, we found it necessary to make comparison between intra-EEC trade and trade with other industrial countries. By comparing the intra-industry trade of five member countries with member countries and with other industrial countries, we have tried to see if the increase in share of intra-industry trade took place in same industries in both cases. We have also tried to examine whether trade creation of EEC is strongly associated with the increase in share of intra-industry trade within the EEC.

The trading partners of the five countries were grouped into following five regions;

Area I: Member countries, Belgium-Luxemburg, France, West Germany, Italy and Netherlands

Area II: Industrial countries excluding member countries; Austria, Denmark, Irland, Norway, Sweden, Switzerland, United Kingdom, United States, Canada and Japan

Area III: Centrally planned countries

Area IV: Countries other than those included in Area I, II, and III.

Area V: World total

To measure the importance of intra-industry trade, we first calculated "the representative ratio $(1/n_i)(|X_i-M_i|/(X_i+M_i))$" developed by Balassa, the formula used in our previous studies (M_i/X_i), $(X_i-M_i)/(X_i+M_i)$ and Grubel-Lloyd formula $\{1-[|X_i-M_i|/(X_i+M_i)]\}\times 100$, which is essentially the share of intra-industry trade in the total trade.[7] But in the following tables we based our analysis on Grubel-Lloyd formula. We thought that since Grubel-Lloyd's study gives intra-industry trade levels for both 1959 and 1967 at various SITC digits in trade within the common market and with other trading partners, by making our estimation formula similar to Grubel-Lloyd's study it will become possible to compare our result with theirs.

We used "OECD Foreign Trade Statistics Series C" to measure intra-industry trade at different levels of aggregation, SITC 1, 2, 3, and 4 digits.

3. MAJOR RESULTS OF THE ANALYSIS

1) Table 1 shows the average level of intra-industry trade for manufactured goods, SITC 5–8 at 3 digit classification. The level is indicated separately for Area I and Area II for years, 1962 and 1972. For all the five member countries, proportions of intra-industry trade in Area I exceed those in Area II for both years, 1962 and 1972. In 1962, Italy was the only country where proportion of intra-industry trade with the member countries was less than 50%. But by 1972 the ratio increased to 51% indicating a substantial increase in intra-industry trade with other member countries.

[7] X_i denotes exports of i industry and M_i, imports of i industry

TABLE 1. INTRA-INDUSTRY TRADE IN EEC FOR MANUFACTURED GOODS, 1962 AND 1972
Average Intra-Industry Trade Index (arithmetic mean) for manufactured goods

	Country									
	Netherlands		France		Belgium-Luxemburg		West Germany		Italy	
Area	I	II	I	II	I	II	I	II	I	II
1962	56.65	55.19	67.02	53.67	60.70	45.15	59.21	58.81	48.84	45.29
1972	65.50	59.88	71.95	59.56	66.07	58.31	71.30	60.56	58.84	51.11
1972–1962	+8.95	+4.69	+4.93	+5.89	+5.37	+13.16	+12.09	+1.75	+10.00	+5.82

$$AI_{ikl}=\frac{1}{101}\sum_{i=1}^{101} I_{ijkl}$$

i=industry $(1\cdots102)$
j=area (1, 2)
k=country $(1\cdots5)$
l=year (1, 2)

Note: Average level of intra-industry trade when $\{1-[|X_i-M_i|/(X_i+M_i)]\}\times100=I_j$, X=exports of i, M=imports of i, for SITC 5–8, 102 industries at 3 digit level.
See Appendix A for the details.

2) Between 1962 to 1972, there was an increase in level of intra-industry trade in all the five countries for both areas. In France and West Germany, the share exceeded 70% in case of trade with the member countries. The difference between the level in 1962 and in 1972 was the largest in West Germany and in Italy. The gain in both countries was more than 10%.

3) The level of intra-industry trade with other industrial countries also increased between 1962 and 1972. The gain was most pronounced in France and in Italy where the initial level of intra-industry trade was low. Also Belgium-Luxemburg experienced a increase in intra-industry trade with other industrial countries.

4) To examine whether levels of intra-industry trade depend on the type of traded goods such as differentiated products or standardized products thus industries with high proportion of intra-industry trade in the total for Area I also show a similar high proportion for Area II, we calculated a regression equation as follows, taking 102 industries in Appendix A.

$$_1\beta_i=a+b_2\beta_i+u$$

when $_1\beta_i\cdots$ intra-industry trade index for Area I

$_2\beta_i\cdots$ intra-industry trade index for Area II

TABLE 2. REGRESSION ANALYSIS SHOWING THE RELATIONSHIP BETWEEN INTRA-INDUSTRY TRADE WITH MEMBER COUNTRIES AND WITH OTHER INDUSTRIAL COUNTRIES*; 1962 and 1972

	a		*b*		*R*	
Countries	1962	1972	1962	1972	1962	1972
Netherlands	32.62	44.11	.436	.357	.474	.415
	(6.478)	(8.551)	(5.356)	(4.543)		
France	42.64	68.37	.086	.060	.463	.075
	(8.214)	(13.292)	(5.200)	(0.751)		
Belgium-Luxemburg	40.42	35.79	.449	.519	.502	.599
	(9.562)	(7.889)	(5.768)	(7.443)		
West Germany	56.08	64.03	.053	.120	.062	.136
	(10.138)	(11.368)	(0.620)	(1.370)		
Italy	22.13	30.86	.590	.547	.540	.563
	(4.505)	(6.077)	(6.390)	(6.322)		

* *a*, *b*, and *R* are results of regression equation,

$${}_1\beta_i = a + b\ {}_2\beta_i + u_i \qquad R_i$$

when

${}_1\beta_i \cdots$ intra-industry trade index in Area I for industry

${}_2\beta_i \cdots$ intra-industry trade index in Area II for industry

$i \cdots$ SITC 5–8, 3 digit, 102 industries

( ) *t* value

The results are in Table 2. Except for France in 1972 and for West Germany in both years, other seven cases in Table 2 indicate that there is a statistically significant relationsphip between intra-industry trade in two areas. The industries where levels of industry trade were high for Area II also experienced large intra-industry trade for Area I.

The constant "*a*" took a positive value ranging between 22.13 to 44.11, while "*b*" was less than 1 indicating that level of intra-industry trade was higher in Area I than in Area II. Such results show that though it is generally true that industries with high level of intra-industry trade within the common market also experienced high levels with other industrial countries, the absolute level was appreciably higher in case of the former. The results of West Germany may reflect the fact that there was a little difference in level of intra-industry trade in 102 industries for both Areas. Next we will proceed to the examination by industries in more details.

5) Among 102 industries at SITC 3 digit level[8] the following industries showed a large share of intra-industry trade. In West Germany high proportion of intra-

[8] see Appendix A

industry trade in the total was not limited to light manufactures-rubber products, wooden products, paper, textiles—but also it was high in heavy industries— iron & steel, machinery, transport machinery, electrical machinery. In Belgium-Luxemburg, the Netherlands and France industries that generally showed large share of intra-industry trade was metal products, transport machinery, apparels & footware, and furniture. In Italy, share of intra-industry trade was generally higher than the others in metal products, machinery and transport machinery but share was low in apparels, footware and furnitures.

Such difference between Italy and other three countries in the common market may reflect the high initial level of tariffs in 1958 and relatively low income level in the former.

6) Above findings 1) to 5) generally supported Balassa's and Grubel-Lloyd's propositions that expansion of intra-area trade of the common market was accompanied by the increase in intra-industry trade.

Another important finding in Tables 1 and 2 were that between 1962–1972, proportion of intra-industry trade also increased in trade with other industrial countries. In order to examine whether intra-industry trade was strongly associated with trade creation of the EEC, we attempted a detailed study of industries where trade creation was particularly large.

Truman [3] estimated the reallocation in sources of supply in EEC and EFTA between 1960–1968 in eleven subsectors of manufacturing industry. As shown in Table 3, sources of supply were divided into domestic, partners and non-member. By taking the changes in the cyclically adjusted shares between 1960–1968 and then multiplying the domestic consumption in 1968, he got the amount of supply from three sources. Also the ratio between the estimated changes in sources of supply and the potential demand which is the increase in total supply assuming that share in 1960 did not change was estimated as in the parenthesis in the table. Table 3 shows that there was a decline in supply from domestic source and increase in supply from partners in the subsectors of manufacturing industry. Supply from non-members declined in chemical and rubber, wood manufacture, paper manufacture and printing, and transport machinery.

We first picked six industries, clothes & shoes, wood manufacture, textiles, transportation equipment, paper manufacture and printing, and metals as industries where trade creations were large. Then we assumed that products with SITC code number indicated in column 2 of Table 4 are produced in the industries in column 1 of the same table. We also assumed that SITC 4 digits items with same code number at the beginning as SITC code number in column 2 are produced in the corresponding industry in column 1. Column 3 shows the number of items included in each industry.

In the analysis in Fig. 1, we have tried to see whether there is an observable difference in the changes in intra-industry trade at Area I and at Area II in industries where trade creation is large. Since share of intra-industry trade is shown as percent in total trade, it ranges between 0 to 100. If we take the difference

TABLE 3. EEC; CHANGES IN SOURCES OF SUPPLY FROM 1960 TO 1968
million of U.S. dollar, ( ) %

Sub-sectors	Sources of Supply		
	Domestic	Member countries	Non-member countries
Chemicals & rubber	− 528 (− 3%)	1,185 (105%)	−657 (−38%)
Wood manufactures	− 96 (− 3%)	206 (239%)	−110 (−31%)
Paper manufactures and printing	− 208 (− 2%)	356 (140%)	−148 (−16%)
Textiles	− 901 (−15%)	870 (212%)	31 (11%)
Fur and leather goods	− 24 (− 8%)	13 (35%)	11 (38%)
Clothes and shoes	−1,011 (−17%)	776 (340%)	234 (189%)
Non-metal mineral products & glass	− 193 (− 4%)	164 (65%)	29 (27%)
Metals	−1,543 (−14%)	934 (135%)	610 (91%)
Metal manufactures and machinery	−3,507 (−11%)	2,619 (102%)	888 (38%)
Transportation equipment	− 574 (− 7%)	687 (160%)	−113 (−23%)
Miscellaneous manufactures	− 639 (−31%)	376 (138%)	263 (107%)

Source: Truman [1978] p. 36 Table 1–7.

Footnote: Changes in sources of supply was calculated by multiplying the change in relevant share between 1960 and 1968 by the 1968 level of expenditure on apparent consumption and summing across subsectors and indicated import markets.

Figure in parentheses is the change in supply expressed as a percentage of the 1960–1968 increase in potential demand which is the relevant share in 1960 times the change in the total expenditure on apparent consumption between 1960 and 1968 summed across subsectors.

TABLE 4. INDUSTRY CLASSIFICATION AND SITC CODE NUMBER

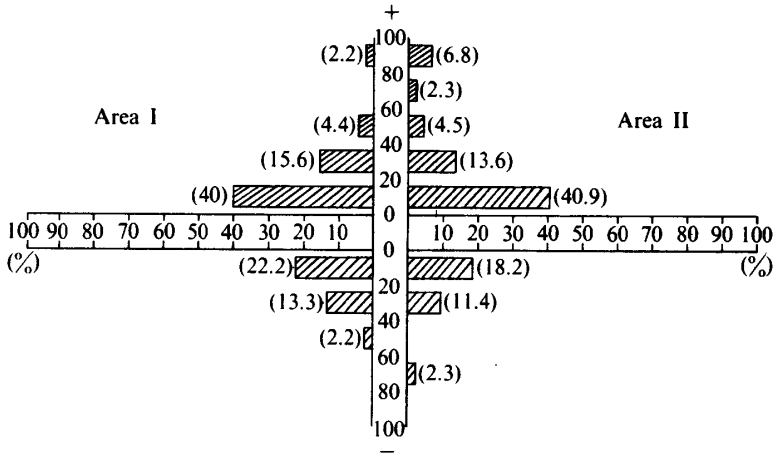
	SITC	Number of items*
Clothes & shoes	84, 85	8
Wood manufactures	63	10
Textiles	65	37
Transportation equipment	73	24
Paper manufactures & printing	64, 892	17
Metals	67, 68	47

* in 4 digit SITC.

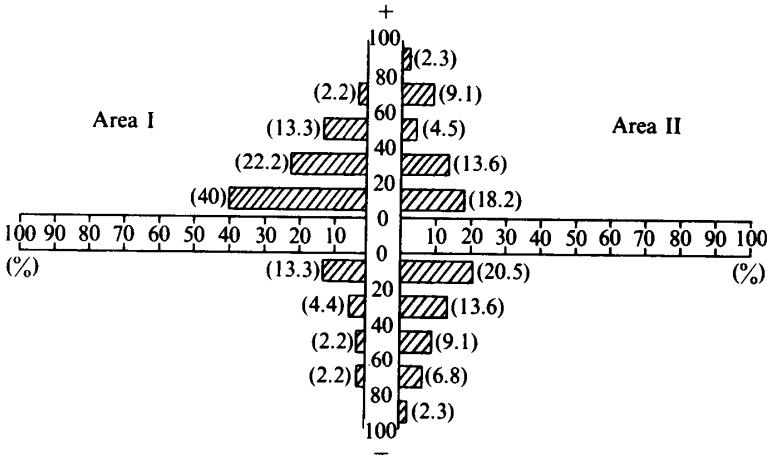
between 1962 and 1972 of such percent as the changes in intra-industry trade, the difference will fall between +100 to −100. Fig. 1 shows the percentage distribution of changes in intra-industry trade in products that belong to textiles, transportation equipment and metals. The vertical axis shows the changes between 1962 to 1972, plus indicating the increase and minus indicating the decrease between the two periods. Horizontal axis shows the percentage distribution of shch changes and the number in the parenthesis being the percent of the product that

Fig. I. CHANGES IN INTRA-INDUSTRY TRADE 1962–1972

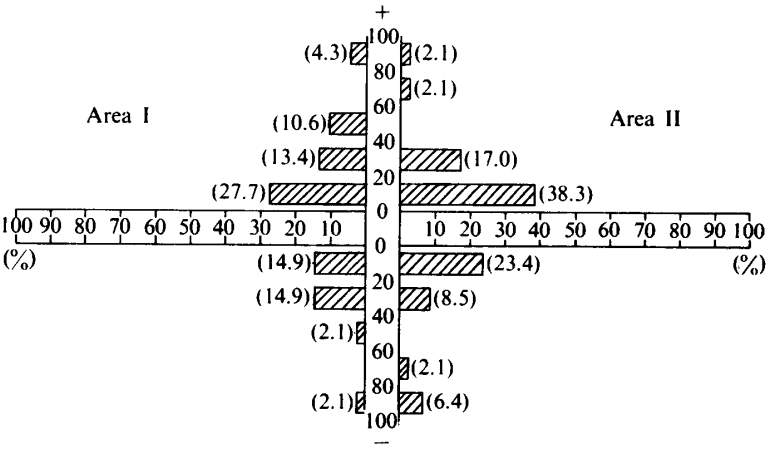
Metals; Belgium-Luxemburg (Area I, 45; Area II, 44)



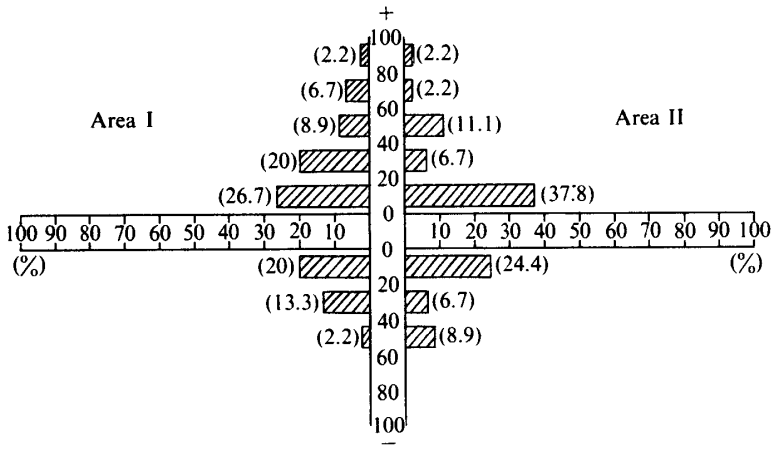
Metals; Netherlands (Area I, 45; Area II, 44)



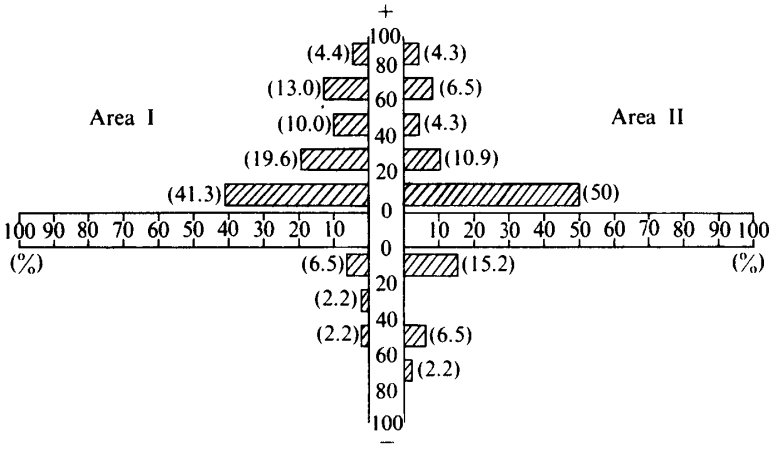
Metals; West Germany (47)



Metals; France (45)



Metals; Italy (46)



Textiles; Belgium-Luxemburg (37)

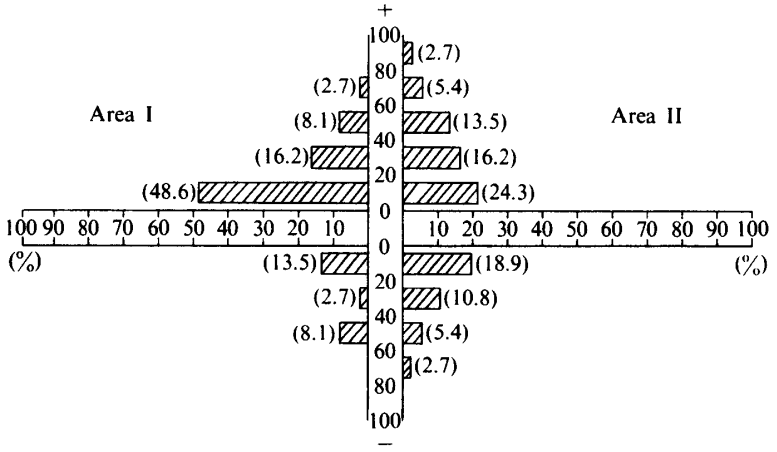
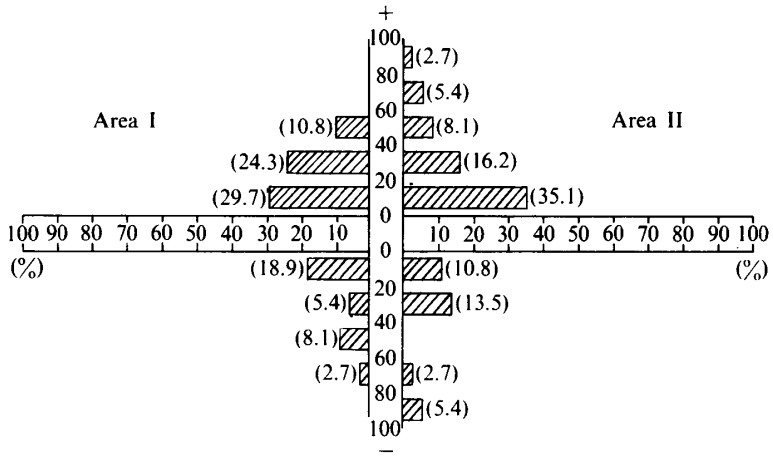
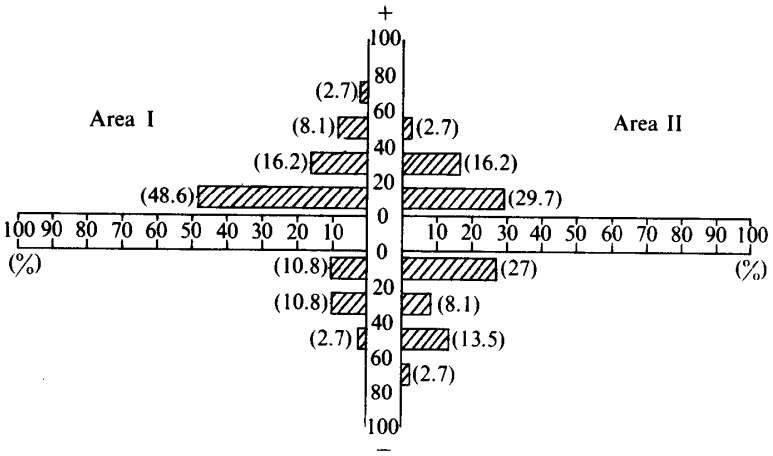


Fig. I. (Continued)

Textiles; Netherlands (37)



Textiles; West Germany (37)



Textiles; France (Area I, 33; Area II, 37)

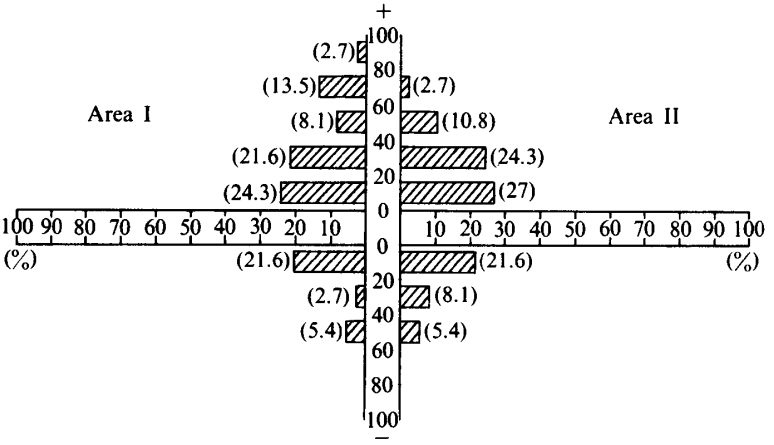
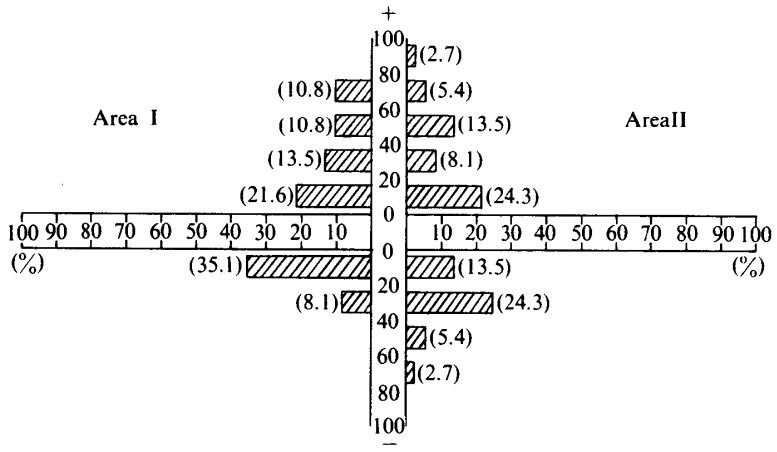
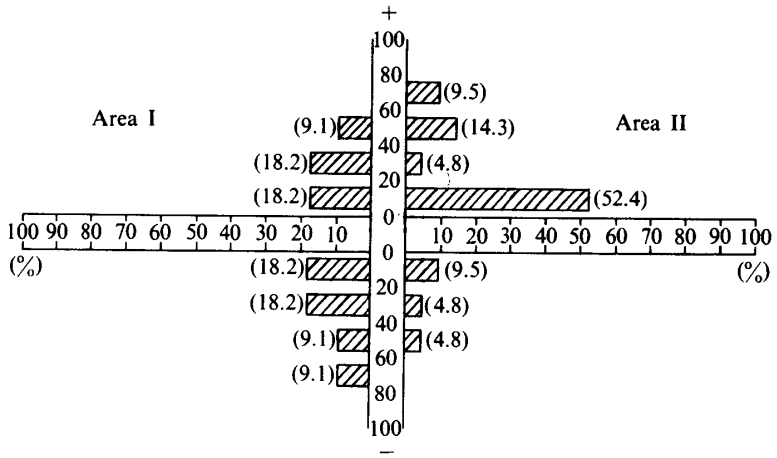


Fig. I. (Continued)

Textiles; Italy (37)



Transportation equipment; Belgium-Luxemburg (Area I, 22; Area II, 21)



Transportation equipment; Netherlands (Area I, 19; Area II, 20)

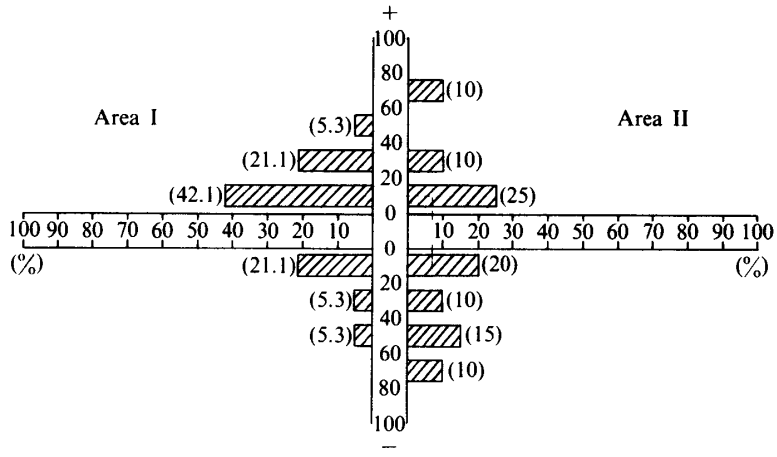
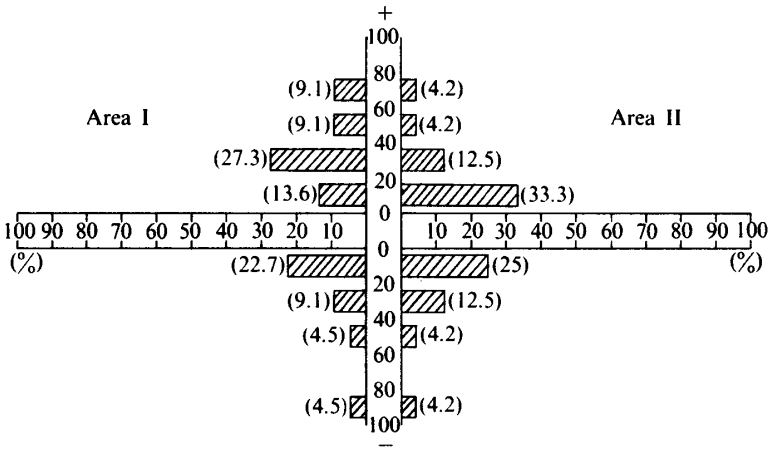
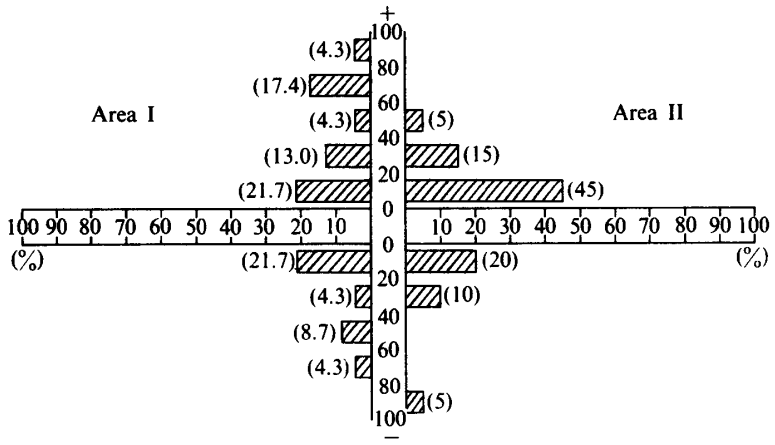


Fig. I. (Continued)

Transportation equipment; West Germany (Area I, 22; Area II, 24)



Transportation equipment; France (Area I, 23; Area II, 20)



Transportation equipment; Italy (Area I, 20; Area II, 21)

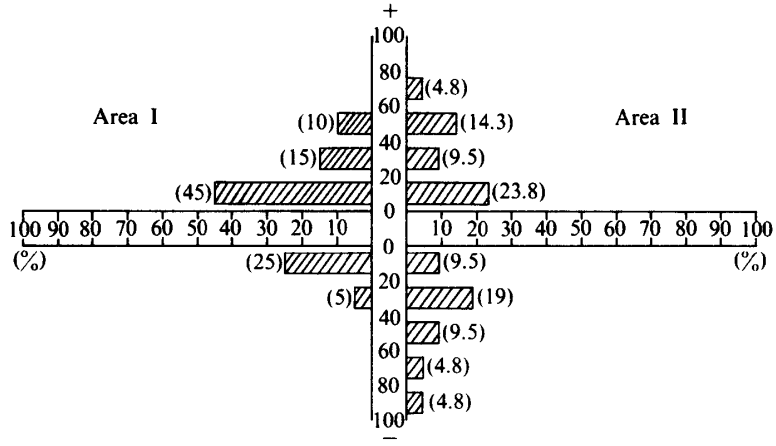


Fig. I. (Continued)

fall in each range of changes. Number in the parenthesis that follows the name of countries is the number of products analysed in each industry. We had to exclude apparels and shoes, wood products, paper and publishing from the analysis in Fig. 1 since number of items in SITC 4 digits as defined previously did not seem to be sufficiently large for the analysis. Percentage distribution in the left, shows the changes within the EEC while the right shows the changes in trade with other industrial countries.

As shown in Fig. 1 in all the industries studied, proportion of intra-industry trade in the total increased between 1962 to 1972. For both Area I and Area II increase of 0 to 20% took the largest percentages in the total cases studied.

As for textiles, the countries where share of intra-industry trade showed larger increase in Area I than in Area II were West Germany, and Belgium-Luxemburg. But for other three countries, Netherlands, France and Italy, the difference in changes in Area I and Area II was not observable. In case of transport equipment, intra-industry trade increased in all the five countries for both Areas. The share of intra-industry trade in Area 1 made a larger increase in Netherlands and in Italy. But in Belgium-Luxemburg and in France share of intra-industry trade increased more in Area II than in Area I. There was no observable difference between both Areas in case of West Germany. As for metals, the difference in percentage distribution of changes in intra-industry trade between two Areas was still smaller than in textiles and in transport equipment. The Netherlands was the only country that apparently experienced larger increase in share of intra-industry trade in Area I than in Area II.

7) By examining the percentage distribution of changes in intra-industry trade between 1962 to 1972, we found that cases of increase in intra-industry trade at SITC 4 digit level took larger proprtions than the cases of decrease in trade within the common market as well as with other industrial countries. Therefore it was not quite clear whether the trade creation as defined in Table 3 was particularly associated with the intra-industry trade within EEC. The proportion of intra-industry trade increased also with the other industrial countries. It may be more plausible to conclude that shift in the sources of supply from the domestic to imports after the formation of EEC proceeded with the increase in shares of intra-industry trade not only with the member countries but also with the other industrial countries.

8) In the present study we have tried to see whether there was a marked difference between intra-industry trade within the common market and with the other industrial countries. Although share of intra-industry trade within the common market is generally higher than the trade with the other industrial countries, there was a substantial increase in shares of intra-industry trade with the latter in 1962–1972 period. This increase in share of intra-industry trade with other industrial countries may reflect the fact that reduction of external tariff of the common market went pari pasu with the abolition of tariff and other trade barriers within the common market during the period 1962–1972. The difference in two

areas was much smaller than what we had expected when we started our present study.

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APPENDIX A. INTRA-INDUSTRY TRADE IN EEC, BY INDUSTRIES AND BY REGION, 1962 AND 1972

1962

	Area I					Area II				
SITC	BELG-LUX	FRANCE	ITALY	NETHE RLND	W-GER MANY	BELG-LUX	FRANCE	ITALY	NETHE RLND	W-GER MANY
512	65.47	91.47	72.90	98.16	61.82	78.28	89.52	46.21	77.37	80 47
513	96.49	97.40	81.36	46.26	64.36	84.07	94.54	86.48	67.24	57 38
514	74.98	59.78	35.73	34.39	80.60	45.66	69.85	93.51	73.67	44 18
515	85.07	81.89	10.26	90.77	76.06	0.00	82.89	0.32	0.00	13 13
521	96.77	52.31	23.38	96.76	87.07	30.54	50.65	5 07	88.67	98 60
531	1.74	49.23	17.04	47.80	9.86	0.52	34.74	11 13	0 00	63 10
532	90.00	86.03	74.01	67.60	75.89	80.65	19.47	33 66	31 49	7.90
533	62.43	47.14	15.08	58.52	52.69	49.22	28.87	15 52	96 97	50.89
541	44.16	93.50	63.61	68.54	67.73	30.35	57.08	45 12	75 13	76.37
551	27.04	76.73	68.98	78.25	23.20	28.39	31.52	46 70	71 19	54.33
553	62.03	18.72	27.21	69.27	87.38	5 21	7.54	29 21	45 20	96.04
554	75.11	69.12	4.60	63.91	55.39	79 50	58.03	18 29	70.26	62 51
561	93.29	39.12	97.12	56.91	53.96	2 81	9.63	67 88	40.03	1 35
571	64.12	92.30	55.06	20.89	76.29	50 85	98.86	66 10	13.17	64 31
581	58.93	85 61	93.57	64.94	54.16	54 17	66.06	89 76	90.79	61 33
599	47.52	76 40	23.22	74.96	72.23	60 06	93.27	19 19	87.80	93 11
611	93.40	19 28	79.62	81.56	39.66	65 67	45.15	96 81	54.87	94 35
612	99.70	68 43	44.97	56.31	82.72	68 65	80 64	12 60	92 23	32 13
613	91.84	98 12	12.04	40.16	77.05	74.00	99 66	39 53	32 23	95 77
621	60.92	91.31	95.27	67.30	59.76	18.51	54 60	55 36	29 80	49 64
629	76.16	71.56	96.32	96.04	81.74	80.92	64 59	73 48	88 97	97 64
631	57.30	33.19	38.50	40.23	54.19	19 60	8 77	14 04	49 02	80 91
632	56.48	77.92	35 27	46 94	84.69	84 32	65 87	22 97	88 78	86 99
633	16.75	15.70	3 37	38 33	19.44	1 83	26 88	4 25	69 89	81 48
641	94.69	79.92	47 38	90 49	86.97	21 86	23 36	18 78	49 20	35 15
642	65.37	88.78	75 80	82 26	78.38	58 71	72 66	44 56	53 64	85 79
651	62.52	30.96	33 95	68 77	27.14	40.81	29 66	29 14	61 94	75 08
652	79.80	46.60	89 64	95 84	68.66	17.50	54 52	52 65	38 09	56 16
653	78.85	63.65	24 67	77 55	45.05	37.19	62 86	31 68	80 01	96 79
654	77.52	9.14	19.41	56.64	55.11	29.45	51 51	55 84	38 58	59 51
655	75.53	93.25	86.87	61.64	78.02	97.01	91 94	85 68	94 35	78 06
656	36.03	93.84	45.06	81.27	48.64	13.01	37 51	36 97	62 75	81 18
657	32.94	67.19	72.68	96.56	22.02	11.12	23 31	52 71	79 15	83 00
661	27.30	59.22	65.70	7.10	94 94	11.10	22 38	3 68	9 93	74 15
662	98.55	53.94	94.11	81 37	73 39	51.03	68 71	84 41	3 82	78 44
663	82.32	68.32	65.81	97 79	84 50	37 20	41 72	44 48	15 35	91 57
664	33.04	62.64	7.60	57 77	76 74	4 45	29 37	69 04	90 49	21 84
665	77.41	89.80	95 14	20 83	67 76	36 58	42 66	29 41	53 32	41 15
666	42.43	63 78	47 30	67 63	29 62	44 06	35 89	42 56	85 82	34 64
667	43.13	39 45	11 43	11 32	76 77	92 14	85 14	36 19	21 28	91 85
671	44.34	42 76	5 55	8 23	84 51	50 05	27 82	13 82	15 41	98 06
672	34.60	38 77	3 61	68 06	47 97	20 9	80 58	30 84	50 45	56 14
673	34.37	88 35	7 50	17 92	84 73	8 10	20 39	18 17	54 96	28 56
674	22.07	89 59	15 16	87 74	84 56	27 26	37 76	16 70	58 06	98 56
675	17.95	80.23	2 00	42 70	98 11	8 25	84 48	7 26	90 85	46 00
676	19.26	59.03	0 00	4 74	5 91	15 88	27 32	10 86	25 00	4 27
677	16.47	34.55	5 03	13.19	68 03	6 69	76 49	18 12	57 17	36 09
678	96.18	69.16	19 83	41.51	43 58	54 78	52 41	78 09	84 06	30 34
679	31.26	84 21	39 70	27 98	76 74	10 29	90 91	89 81	32 44	35 97
681	80.44	47 35	10 45	50 88	59 00	47 2	44 83	16 00	72 03	82 81
682	20.36	34 22	5 40	31 85	82 40	94 82	25 41	6 56	26 11	87 19
683	40.50	52 22	6 15	46 33	59 54	1 45	39 72	0 40	17 99	34 23
684	60.07	26 88	24 62	61 46	92 72	66 88	43 72	28 02	82 53	66 92
685	27.38	14 14	4 98	58.92	84 06	73 48	11 23	4 56	85 52	49 24
686	6.34	61 94	5 62	72.31	23 99	17 15	5 94	49 97	61 03	93 74
687	27.23	0 79	14 47	22.44	34 72	20 89	6 86	60 29	71 68	97 97
688	0.00	0 00	0 00	——	94 21	0 00	0 00	0 00	——	0 00
689	50 10	42.91	89 13	65 65	55 26	10 86	55 90	37 84	26 19	45 10
691	95 12	92 54	87 86	52 65	70 48	94 19	76 67	43 99	63 37	53 23
692	93 00	98 56	79 38	72 93	70 89	80 04	67 08	62 79	99 43	46 76
693	30 91	61 29	81 22	20 56	64 26	6 53	47 77	62 97	39 85	5 97
694	84 54	63 99	51 51	41 04	27 44	51 11	82 92	90 14	63 79	52 23
695	64 24	77 30	36 94	54 09	29 90	40 71	33 87	27 11	36 80	64 23
696	12 55	98 16	88 17	97 70	55 34	3 39	78 24	86 33	96 56	41 90
697	90 30	70 32	85 13	91 75	47 41	91 00	65 49	29 25	94 04	46 60
698	84 56	85 95	73 41	51 56	41 10	77 13	67 56	92 81	65 90	40 55
711	89 96	95 16	82 46	49 87	50 78	31 04	45 20	42 91	52 12	97 94
712	98.76	57 97	97 06	51 07	46 47	99 35	34 35	35 04	50 94	66 82
714	25.40	92 92	74.54	90 29	93 12	9 33	47 03	62 15	96 66	87 75
715	90.66	56 48	50 94	51 60	35 27	54 79	58 90	42 89	43 48	61 98
717	90.54	59 15	71 63	41 59	40 85	66 38	43 36	81 49	24 73	72 57
718	57.31	61 23	70 52	59 76	30 76	20 73	43 58	56 75	54 28	62 43
719	66.57	69 02	56 71	53 54	35 37	63 66	46 58	56.08	44 76	61 00
722.	71.32	92.47	37 23	56 93	43 21	33 61	42 13	33 37	48 85	51 15
723	92.85	72 95	64 35	10 77	93 30	66 15	78 30	52 29	9 34	55 04
724	69.19	86 50	96 77	0 00	91.40	93 14	67 56	42 67	0 00	51 22
725	26 92	69 33	54 94	51 59	42 71	35 09	57 22	80 60	49 47	47 18
726	54 34	33 44	63 32	0.00	40 56	50 65	46 66	60 91	0 00	25 50
729	72 34	99 98	47 56	42 27	64 12	11 56	45 52	35 72	30 25	71 99
731	83 37	88 19	3.48	22 32	38 43	91 64	83 27	78 08	23 13	30 76
732	68 32	72 94	76 82	25 11	64 55	57 99	58 06	67 70	26 61	8.72
733	75 20	48.90	61 19	67 53	80.04	84 70	53 25	18 17	75 24	32 09
734	61 64	33.42	62 56	86 36	38 62	36 15	77 71	44 51	27 24	9 73
735	89 34	83.34	81 50	70 47	38 39	3 56	24 03	90 96	40 21	18 77
812	78 94	98.06	43 49	94.08	60 80	58 22	63.08	57 42	89 14	89 19
821	92.22	41.78	89 58	96.10	65 66	73 61	82 53	26 41	90 44	75 41
831	33.89	80.08	35.07	93.63	89 07	88 58	15 13	2 61	64 41	14 52
841	82.56	85.55	13.18	61.22	54 81	69 01	26 36	11 49	98 68	94 33
842	79.45	2 50	40.54	63.14	30 80	81 82	3 72	24 47	98 29	42 95
851	67.68	77 47	0.86	63.00	22 75	45 24	33 90	1 17	61 43	92 07
861	31.55	73 95	49.38	82.58	28 00	16 79	72 54	54 19	50.86	50 17
862	25.49	91 42	65.08	44.10	78.60	13 14	98 81	98 74	77 88	48 45
863	42.00	99 84	68.76	31.68	40.10	36.58	88 95	87 65	20 31	62 41
864	8.52	95 08	46.79	22.01	34.26	8.92	93 85	37 66	20 95	78 44
891	83.37	71.45	82.37	16.67	42.80	83.14	60 01	88 26	40 54	80 85
892	94.17	74.19	50.55	75.07	67.36	82.25	65 98	77 56	65 47	58 90
893	82.62	94.45	66.40	65.99	78.25	86.92	89 50	66 56	70 69	47 00
894	40.61	96.98	50.55	59.74	81.07	49.61	92.91	76 88	37 25	63 21
895	24.43	77.07	77.86	43.98	17.75	11.22	45.59	85 07	67 39	34 53
896	91.35	32.52	51.92	85.54	58.64	87.50	24.21	86.43	94.57	79 54
897	49.10	91.94	9.15	56.66	77.44	65.78	57.34	10.86	46.43	15 91
899	48.82	93.71	43.43	71.90	79.92	84.87	65.58	28.16	71.14	47 94

Intra-industry Trade index $\cdots \{1-[|X_i-M_i|/(X_i+M_i)]\} \times 100$.

APPENDIX A. INTRA-INDUSTRY TRADE IN EEC, BY INDUSTRIES AND BY REGION, 1962 AND 1972

1972

	Area I					Area II				
SITC	BELG-LUX	FRANCE	ITALY	NETHE RLND	W-GER MANY	BELG-LUX	FRANCE	ITALY	NETHE RLND	W-GER MANY
512	88.76	66 73	50.81	6.529	99.73	75 76	57.95	84.04	69 70	76 43
513	78.51	75 44	30 77	73.94	88.50	51 28	96 36	82 22	51 34	54 78
514	83.03	90 24	54 26	74.59	97.46	69 12	77 49	84 02	93 91	44 94
515	0.12	88 68	62 42	39.52	47.63	0 02	34 36	18 57	9 27	36 52
521	91.17	60 90	58 21	53.08	49.61	32 22	41 91	26 73	90 22	96 62
531	61.68	74 77	13 30	60 32	24.45	18 38	76 62	17 25	19 68	39 80
532	83.65	90.49	20 74	25 26	36.27	99 38	34 20	68 14	7 92	19 13
533	94.52	80.91	18 91	77 62	64 99	79 45	65 13	32 16	98 32	52 62
541	80.20	94.15	83 50	86 83	78 32	49 18	43 58	76 91	57 86	64 85
551	28.61	64.88	93.54	50 79	45 00	24 14	47 70	58 36	91 26	56 15
553	89.69	27 63	32 47	54 30	93 62	63 20	20 79	70 51	37 60	68 59
554	96.69	59 47	19 99	89.83	47 61	88 87	79 74	36 81	43 70	53 26
561	46 95	42 75	43 53	74.38	95 32	18.65	90 79	6 14	16 93	23 51
571	68 67	62 41	76 95	52 07	98 27	84 05	90 65	96 09	6.33	47 08
581	87 28	71 70	78 87	67 02	94 67	92 14	91 79	89 72	79 65	46 69
599	89 42	92 40	34 38	83 42	67 50	88 27	87 75	54 77	88 01	68 67
611	83 19	48.40	66 24	91 88	40 10	97 50	29 20	74 08	76 22	68 82
612	91.96	57.07	17 88	95 91	79 20	82 33	51 35	18 50	84 33	45 31
613	37.31	44.36	84 68	60 64	55 82	77 14	88 43	59 87	73 38	93 48
621	82.64	99.04	85 54	36 14	94 70	80 59	86 99	71 29	71 98	63 60
629	84.08	76.58	92 21	91 71	93.21	83 38	30 23	26 03	99 60	66 90
631	52.50	74 65	16 60	36 02	58.37	39.06	62 93	38 12	80 59	84 42
632	91.68	81 67	23 25	73 94	58.43	85 16	59 26	29 77	75 17	90 02
633	28.68	51 55	55 98	51 43	66.52	7 69	60 09	71 22	87 39	48 46
641	86.17	85 05	95 97	87 74	94.44	35 75	16 61	16 20	35.25	37 87
642	92.43	71 40	97 54	86 53	80.27	73 37	99 18	65 18	63.83	87 93
651	93.70	89 74	71 51	94.43	76.83	94 51	43 53	39 71	56.03	47 41
652	97.54	95.68	80 54	95.22	94.77	99 71	86 07	64 27	44.86	69 03
653	82.28	87.67	38 81	90.19	74.50	32 67	57.11	23 90	76.80	65 48
654	96.21	43.42	83 04	86.46	63.04	57.93	41 60	44 98	3 60	69 20
655	73.62	93.23	77 99	96.34	91.98	62.63	83 39	70 80	92 86	52 90
656	58.05	94.84	71 28	69.97	83.77	25.22	53 39	71 87	85 16	94 91
657	25.26	40.62	59 56	98.76	49.81	19.64	51 60	78 87	88 81	59 1
661	39.25	99.40	7.27	11 32	51 16	36.46	51 78	4 35	25 78	71.09
662	70.31	50.02	31 88	84 64	99 30	38.20	67 57	39 35	42 13	96 20
663	89 79	97.70	98 75	91 15	94 47	82 61	56 36	98 69	70 97	79 54
664	43 08	65.94	99 71	71 21	65 13	10 23	67 57	61 27	95 21	46 23
665	91 92	69.28	98 39	29 38	98 53	44 01	26 78	21 45	38 43	63 33
666	57 20	67.83	99 52	47 05	52 97	82 98	67.55	38 41	58 77	51 11
667	40 25	49.06	10 44	92 53	86 70	94 95	82 07	14 10	42 90	88 76
671	81.56	61.73	26 88	61 41	80 71	55 20	32 55	50 29	31 99	54 89
672	59.69	47.36	32 19	45 71	81 23	80 17	61 37	26 45	35 90	96 74
673	27 35	67.29	76 07	39 39	74 78	15.53	22 95	96 95	42 25	54 24
674	23 80	72.47	67 39	80 33	72 97	36.22	42 70	91 80	26 52	68 07
675	29 41	84 22	42 08	66.75	89 56	13.02	35 77	51 96	88 94	58 98
676	41 63	66 36	3 40	17.82	37 03	18.65	99 40	70.54	41 20	21 46
677	21 79	61 75	23 03	42.85	91 05	5.53	73 69	57 97	81 05	53 39
678	90.00	82 73	78.69	54.12	62 17	96.36	71 16	66 52	61 03	42 90
679	63.81	82 10	99 73	83 02	67.92	11.72	38 48	69 39	71 43	24.04
681	97.54	86 94	37 57	41 07	87 36	30 80	8 16	7 39	5 10	55 80
682	27.91	47.28	59 69	47 98	80 76	68 28	47 88	21 05	82 33	99 90
683	42.75	75.42	27 76	89 10	62 96	13 07	42 43	0 34	94 39	38 37
684	88.89	94.49	64 54	69.33	96 59	96 09	76 63	54 58	69 82	59 50
685	50.95	54.37	0 24	94.07	65 94	77 50	73 52	0 19	44 01	43 55
686	20.86	89.00	0 90	71.20	55.32	13 93	16 86	8 09	1 80	39 50
687	29.62	29.46	15.12	46.14	85.98	78 35	6 67	15 60	27 88	30 43
688	—	14.58	0 00	—	46.73	—	0 00	0 00	—	23 53
689	41.65	94.38	81 30	69.24	62.89	13 80	80 50	18 12	15.76	42 22
691	97.67	96.05	44 87	94.00	97.69	93 62	71 44	10 26	63.95	80 26
692	97.69	81.00	97 54	75.82	86.59	86 48	47 40	39 46	81.20	54 48
693	24.25	99.47	57 66	31.14	81 94	5 23	58 96	43 85	82 60	9 25
694	77.70	57.20	66 44	73.11	61 87	69 30	46.01	96 00	78 64	73 45
695	65.83	77.71	59.87	80.99	51 92	51 03	38.65	62 56	44 64	77 45
696	37.09	36.55	82.29	83 72	45 18	9.93	92.22	50 78	84 35	69 23
697	60.78	75.95	30 93	81 07	93.30	94.74	46.01	27 46	94 74	50 47
698	81.42	70.22	75 06	65 42	56.93	64.59	74 08	68 96	68 87	49 52
711	35.15	76.81	88 23	63 41	53.62	36.42	48 08	56 15	75.46	83.60
712	66.17	65.53	88 48	80.22	62 87	76 28	66 94	77 03	87 82	39 18
714	63.14	98.19	95 79	93 67	84 27	60 53	63 31	99 64	77 03	99 22
715	76.66	42.71	88.39	59 47	41 19	75 52	42.43	94 29	65 30	58 21
717	65.79	52.83	73.10	71 79	39.73	65 45	87 21	85 03	75 30	39 45
718	77.73	77.65	77.40	77 70	60.09	97 98	81 58	91 48	87 05	47 89
719	68.45	67.78	99.34	72 84	56.01	58 01	55 08	96.44	62 88	60.78
722	87.52	98.73	55.35	71 38	66.41	70.59	81 99	64 40	73 31	69 90
723	82.15	91.49	94.27	7 24	82.10	43.19	96 43	73 94	6 63	73 00
724	85.31	66.83	68.70	12 41	75.48	89.07	49 36	76 66	45 46	75 04
725	30.36	59.35	30.99	38.89	82.88	46.37	86 69	12 03	82 75	35 15
726	95.85	56.81	77.49	0.00	62.09	92.71	89 91	77 47	0 00	35 76
729	79.60	89.85	73.60	77.50	79.60	41.44	63 11	54 80	58 50	85 23
731	44.97	53.93	46.05	20.31	60 50	71.30	15 91	48 47	34.94	43 96
732	94.01	84.90	87.97	38.69	87 19	88.33	43 79	23 85	64.51	11 60
733	78.94	91.66	67.69	76.77	81 24	75.76	30 01	10 60	51.73	32 31
734	86.49	89.15	61.59	79.57	93 28	29.59	59 22	53 08	41.22	24 93
735	32.45	40.91	91.53	37.60	58.78	24.65	33 79	44 97	24.29	43 82
812	96.87	60.80	57.79	72.25	79 16	64.78	84 51	37 49	73.66	79 71
821	60.98	42.03	32.38	57 13	81 40	56.68	83.56	12 32	92.69	55 00
831	48.63	99.88	13.90	77 36	57 86	78.37	29.12	3 04	54.75	40 86
841	92.09	77.56	17.80	66 44	53 81	73 74	39.13	13 63	84.09	80 07
842	84 00	18 95	84.44	58 40	75 26	57 82	31.71	26 46	60.71	99.02
851	38 27	81 86	2.51	45 46	24 16	97 73	20.95	0 58	43.60	74 83
861	52 77	64 32	68.10	68 40	58 32	28 33	64.32	74 23	28.94	84 58
862	50 60	98 39	44.56	96.90	94.45	31 71	49.24	64 65	73.10	99 35
863	62 43	75 16	54.83	43.88	25.56	55 53	91.35	81 66	25.12	52.00
864	18.08	87 45	93.00	29.22	75.10	12 41	87.03	61 07	22.87	80.78
891	83.14	60.01	88.26	40.54	80.85	61.51	58.22	88.79	50.25	95.59
892	86.70	56.11	50.07	78.44	69.16	87.45	97.84	46.18	69.28	49.88
893	90.70	78.35	49.34	67.40	78.45	81.40	93.69	48.61	96.38	54.12
894	71.32	82.34	47.90	74.18	98.88	77.21	85.67	53.78	48.89	99.85
895	29.44	76.03	96.55	64.37	48.71	67.98	73.37	87.07	91.88	60 41
896	93.89	41.67	86.76	83.16	65.05	88.18	28.44	86.63	98.03	65 70
897	53.43	95.79	6.23	60.49	57.68	72.35	41.77	7.07	78.32	58 51
899	69.49	97.30	94.23	88.68	85.97	76.42	98.11	77.15	56.28	87.50