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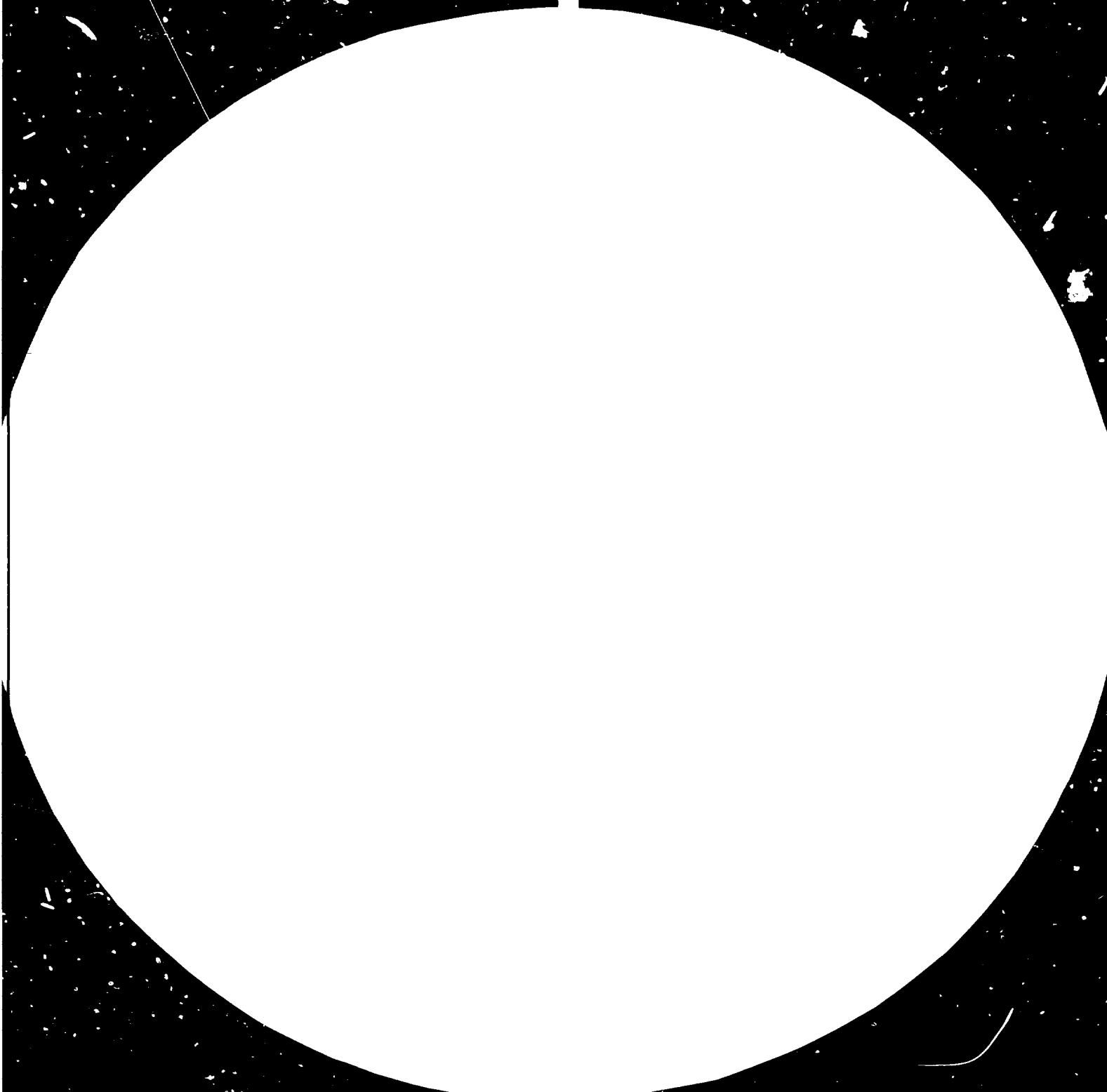
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1990 SCENARIOS FOR THE IRON AND STEEL INDUSTRY
" SPECIAL DOSSIER "

Complementary paper to DOSSIER III
"Markets, product ranges and scale economies"

EVOLUTION OF THE STRUCTURE
OF INTERNATIONAL TRADE FROM 1972 TO 1977
BY MAIN CATEGORIES OF IRON AND STEEL PRODUCTS*

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I. PURPOSE OF THIS NOTE

It is common knowledge that various official statistics (IISI or United Nations) provide highly-detailed information about trade in iron and steel products among countries or regions. It is, nevertheless, quite difficult to make an appraisal of the trade structure due to the fact that these very statistics are either too detailed or, on the contrary, too condensed, as is the case of the Matrix of Foreign Trade supplied by the Economic Commission for Europe (ECE) in Geneva, which is expressed in general terms for all iron and steel products based upon crude steel equivalent.^{1/}

The purpose of this Note is to furnish complementary information on the structure of international trade in iron and steel products divided into main categories which reflect especially their relative production complexities. Four major categories have been distinguished in ascending order of complexity:

1. Primary iron and steel products (ingots, billets, etc.) SITC 672
2. Long iron and steel products (bars, rods, etc.) SITC 673, 676, 677
3. Flat iron and steel products (coarse or fine sheet iron, etc.) SITC 674 and 675
4. Tubes, pipes, fittings, etc. SITC 678

A number of developing countries can boast of substantial production in categories 1 and 2 whereas a smaller number, however, are active in categories 3 and 4, both of which require more advanced technologies and larger production units. On the other hand, it is quite likely that the lag in the developing countries will by 1990 be greater in these latter categories unless there is a great dissemination of the direct reduction process in relation to the production of flat products (see the "Dossiers"). However, most countries will have to resort to imports in order to meet their needs for these complex products. This Note, which limits itself to the years 1972 and 1977, does provide however an initial basis for appraisal of the evolution in the structure of international trade for these major categories of iron and steel products.

^{1/} United Nations Economic Commission for Europe, Statistics of World Trade in Steel.

II. PRESENTATION OF THE TABLES AND DIAGRAMS

For each of these two years, i.e. 1972 and 1977, two series of tables have been set up:

1. Tables on foreign trade have been compiled for the three large economic groupings of countries (market economy developed countries, centrally planned developed countries and developing countries);
2. Summary diagrams describe the main poles representing the eleven major regions and their reciprocal relationships (Who is the main supplier of a region? Who is the main buyer?)

All these tables are based on an examination and consolidation of United Nations statistics on trade by products (1972 and 1977) from detailed tables on foreign trade, which have not been reproduced here in their entirety so as not to render this presentation cumbersome.

III. THE LARGE POLES OF INTERNATIONAL TRADE IN THE MAJOR CATEGORIES OF IRON AND STEEL PRODUCTS FOR THE YEARS 1972 AND 1977

The following comments have been limited to those which complement the analysis presented in Dossier No. III.

1. At the level of the four categories taken together

The tables for 1972 and 1977 confirm the dominant position of the market economy developed countries (approximately 83 per cent) and the relatively weak participation of the developing countries (3 per cent). In addition, that portion made up by trade among countries within the same economic system is by far the most important trade component.

Between 1972 and 1977 significant modifications took place:

- Exports from centrally planned economies did not increase as rapidly as those of market economy developed countries whereby their net increase lay in accelerated trade within their economic community; in contrast, their exports to developing countries stagnated and imports coming from the market economy developed countries (mainly from Europe) witnessed a spectacular increase (approximately 100 per cent);

- This period was also characterized by increased trading on the part of Japan, which consolidated its position within the group of market economy developed countries and doubled its exports to developing and centrally planned economies;
- Lastly, the developing countries witnessed a stagnation in their exports to the market economy developed countries while trade among the developing countries themselves increased by 65 per cent.

An examination of Tables 6 through 16 makes clear that the two main poles in trade in iron and steel products are formed by ECE and Japan (net exporters) on the one hand, and North America (net importer) on the other. At the same time, the centrally planned economies are not involved directly in the commercial flows in iron and steel.

From 1972 to 1977 certain relationships changed; for example, the main buyer for Japan in 1977 was no longer North America but rather the Far East.

Taken according to the large iron and steel categories, the results can be expressed as follows:

2. Primary iron and steel products (measured in tons, approximately 17 per cent of the products under consideration)

It is seen that most trade originates in or takes place among market economy developed countries (approximately 90 per cent). One of the strongest currents is that of trade with developing countries, especially that of Japan which has almost trippled its volume from 1972 to 1977. The developing countries' portion in this trade is greater than in the other categories (more than 4 per cent) although it is weak in absolute value (approximately 900,000 tons). Table 17 emphasizes the dominance of ECE and, to a certain extent, that of Japan in this type of trade. It should be noted here that the main supplier for the Middle East is the ECE and not Japan.

3. Long iron and steel products (representing approximately 33 per cent of the total)

Within this category the centrally planned economies' portion is higher (around 23 per cent) and stems from the important trade within their

economic community. The exporting role of the market economy developed countries once again occurs here among the market economy developed countries themselves and also with developing countries. In particular, one should note the remarkable surge made by Japan which has tripled its exports to developing countries within this period.

An analysis of Table 18 shows that the two main trading centres are ECE and Japan. With regard to the developing countries, it should be noted that Africa is the only region where ECE is the main supplier.

4. Flat iron and steel products (representing approximately 37 per cent of the total)

The percentage participation in this category of the market economy developed countries is overwhelming (more than 90 per cent) while that of the developing countries is less than at the world level (1.8 per cent). The percentage attained by the centrally planned economies plunged from 13 to 7 per cent, which reflects the drop in trade within their economic community. At the same time, but measured in absolute value, the volume of exports from developing countries to market economy developed countries has been reduced by one-half. The table dealing with interregional relations shows the dominant position of Japan in all regions with the exception of the centrally planned economies and European countries, not members of ECE.

5. Tubes, pipes, fittings (representing approximately 13 per cent of the total)

In this category the percentage participation of the developing countries is higher than the world level, which renders its percentage participation in imports even more important. It is therefore necessary to emphasize here Japan's major role in the exports of market economy developed countries to the developing countries.

The analysis of trade among regions between 1972 and 1977 reveals some important changes:

- On the one hand, Japan became the main supplier for Latin America (replacing North America);

- On the other hand, the main buyer for the Far East became the Middle East (replacing North America) while the main buyer for Oceania became the Far East (replacing North America). A relative contraction in interregional trade can thus be observed in this area. It should also be noted that the main buyer for the centrally planned economies is the Middle East; this, however, is a situation tempered by the weak volume of trade.

Trade in semi-finished and finished iron and steel products^{1/} in 1972

(Thousand metric tons)

Table 1
Tableau 1

Commerce de produits sidérurgiques semi-finis et finis^{1/} en 1972
(Milliers de tonnes métriques)

Destination Origin	Market economy developed countries ^{2/}	Centrally planned developed countries	Developing countries	Unallocated	World	Per centage
Market economy developed countries (Japan)	57 164 (9 681)	3 962 (665)	18 317 (10 576)	284 -	79 727 (20 922)	82.6 (21.7)
Centrally planned developed countries ^{3/}	3 948	7 437	2 118	509	14 012	14.5
Developing countries ^{4/}	1 418	171	1 215	4	2 808	2.9
World	62 530	11 570	21 650	797	96 547	100
Percentage	64.8	12.0	22.4	0.8	100	

Source: Calculated from figures in United Nations Commodity Trade Statistics 1972, New York, several issues, and United Nations Statistics in World Trade in Steel 1972, New York 1973.

- 1/ SITC 672-678. 2/ includes Turkey. 3/ Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR.
4/ Algeria, Congo, Egypt, Libya, Morocco; Argentina, Brazil, Colombia, Mexico, Venezuela, Hong Kong, India, Indonesia, Republic of Korea, Pakistan, Thailand.

Table 2
Tableau 2

Trade in primary forms (semi and ingots)^{1/} of iron and steel in 1972
(Thousand metric tons)
Commerce de produits sidérurgiques sous formes primaires ^{1/} en 1972
(Milliers de tonnes métriques)

Destination Origin	Market economy developed countries ^{2/}	Centrally planned developed countries	Developing countries	Unallocated	World	Per centage
Market economy developed countries (Japan)	9 172 (631)	174 (11)	2 076 (1 137)	4 -	11 426 (1 779)	83.6 (13.0)
Centrally planned developed countries ^{3/}	711	646	504	-	1 860	13.6
Developing countries ^{4/}	65	-	321	1	387	2.8
World	9 947	820	2 901	5	13 673	100
Percentage	72.8	6.0	21.2	0.0	100	

Source: Calculated from figures in United Nations Commodity Trade Statistics 1972, New York, several issues and from United Nations Statistics of World Trade in Steel 1972, New York, 1973.

^{1/} SITC 672. ^{2/} includes Turkey. ^{3/} Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR.

^{4/} Algeria, Congo, Egypt, Libya, Morocco; Argentina, Brazil, Colombia, Mexico, Venezuela; Hong Kong, India, Indonesia, Republic of Korea, Pakistan, Thailand.

Trade in long products^{1/} of iron and steel in 1972
(Thousand metric tons)

Commerce de produits sidérurgiques longs^{1/} en 1972
(Milliers de tonnes métriques)

Table 3
Tableau 3

Destination Origin	Market economy developed countries ^{2/}	Centrally planned developed countries	Developing countries	Unallocated	World	Per centage
Market economy developed countries (Japan)	17 625 (1 791)	807 (144)	4 207 (1 685)	97 (1)	22 736 (3 621)	79.0 (12.6)
Centrally planned developed countries ^{3/}	1 119	2 909	915	291	5 233	18.1
Developing countries ^{4/}	410	85	330	1	827	2.9
World	19 154	3 801	5 452	389	28 796	100
Percentage	66.5	13.2	18.9	1.4	100	

Source: Calculated from figures in United Nations Commodity Trade Statistics 1972, New York, several issues and from United Nations Statistics of World Trade in Steel 1972, New York, 1973.

^{1/} SITC 673 + 676 + 677. ^{2/} includes Turkey. ^{3/} Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR.

^{4/} Algeria, Congo, Egypt, Libya, Morocco; Argentina, Brazil, Colombia, Mexico, Venezuela; Hong Kong, India, Indonesia, Republic of Korea, Pakistan, Thailand.

Trade in flat products of iron and steel^{1/} in 1972

(Thousand metric tons)

Commerce de produits sidérurgiques plats^{1/} en 1972
(Milliers de tonnes métriques)

Table 4
Tableau 4

Destination Origin	Market economy developed countries ^{2/}	Centrally planned developed countries	Developing countries	Unallocated	World	Per centage
Market economy developed countries (Japan)	25 442 (5 929)	1 642 (245)	9 560 (6 349)	159 -	36 802 (12 523)	83.7 (28.3)
Centrally planned developed countries ^{3/}	1 904	3 174	599	153	5 831	13.3
Developing countries ^{4/}	816	82	462	2	1 362	3.0
World	28 162	4 898	10 621	314	43 995	100
Percentage	64.0	11.1	24.2	0.7	100	

Source: Calculated from figures in United Nations Commodity Trade Statistics 1972, New York, several issues and from United Nations Statistics of World Trade in Steel 1972, New York, 1973.

^{1/} SITC 674 + 675. ^{2/} includes Turkey. ^{3/} Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR.

^{4/} Algeria, Congo, Egypt, Libya, Morocco; Argentina, Brazil, Colombia, Mexico, Venezuela; Hong Kong, India, Indonesia, Republic of Korea, Pakistan, Thailand.

Trade in tubes, pipes and fittings of iron and steel^{1/} in 1972
(Thousand metric tons)

Commerce de tubes, tuyaux et raccords en acier et en fer^{1/} en 1972
(Milliers de tonnes métriques)

Table 5
Tableau 5

Destination Origin	Market economy developed countries ^{2/}	Centrally planned developed countries	Developing countries	Unallocated	World	Per centage
Market economy developed countries (Japan)	4 925 (1 315)	1 340 (208)	2 474 (1 368)	25 -	8 761 (2 891)	86.9 (28.7)
Centrally planned developed countries ^{3/}	214	709	101	65	1 089	10.8
Developing countries ^{4/}	127	4	102	0	234	2.3
World	5 266	2 053	2 677	90	10 087	100
Percentage	52.2	20.3	26.5	1.0	100	

Source: Calculated from figures in United Nations Commodity Trade Statistics 1972, New York, several issues and from United Nations Statistics of World Trade in Steel 1972, New York, 1973.

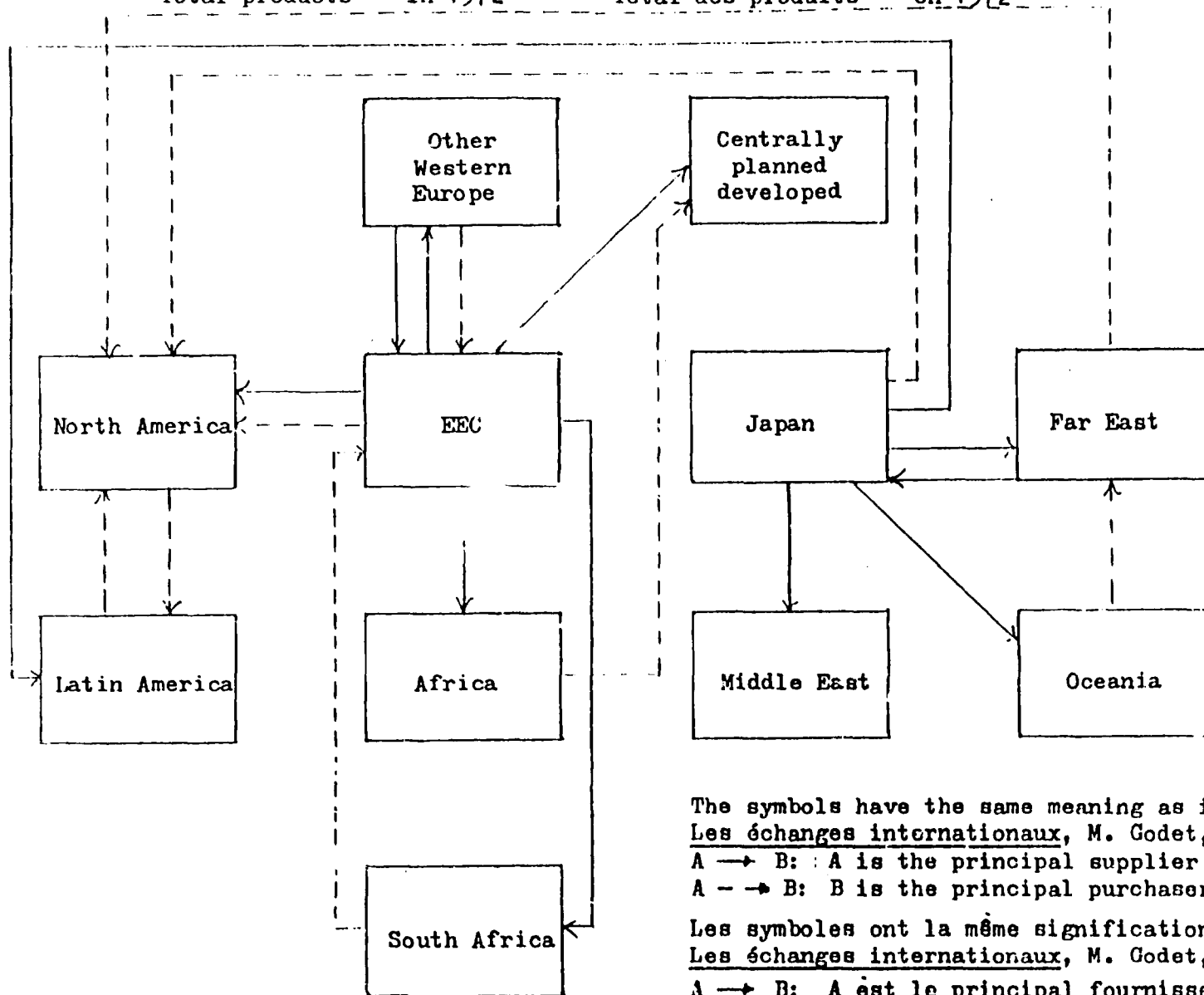
^{1/} SITC 678. ^{2/} includes Turkey. ^{3/} Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR.

^{4/} Algeria, Congo, Egypt, Libya, Morocco; Argentina, Brazil, Colombia, Mexico, Venezuela; Hong Kong, India, Indonesia, Republic of Korea, Pakistan, Thailand.

Diagram
Graphique

Structure of exchanges among regions by broad categories of iron and steel products
Structure des échanges entre régions par grandes catégories de produits sidérurgiques

Total products ^{1/} in 1972 - Total des produits ^{1/} en 1972



The symbols have the same meaning as in
Les échanges internationaux, M. Codet, PUF, 1978.

A → B: A is the principal supplier of B
A - → B: B is the principal purchaser from A

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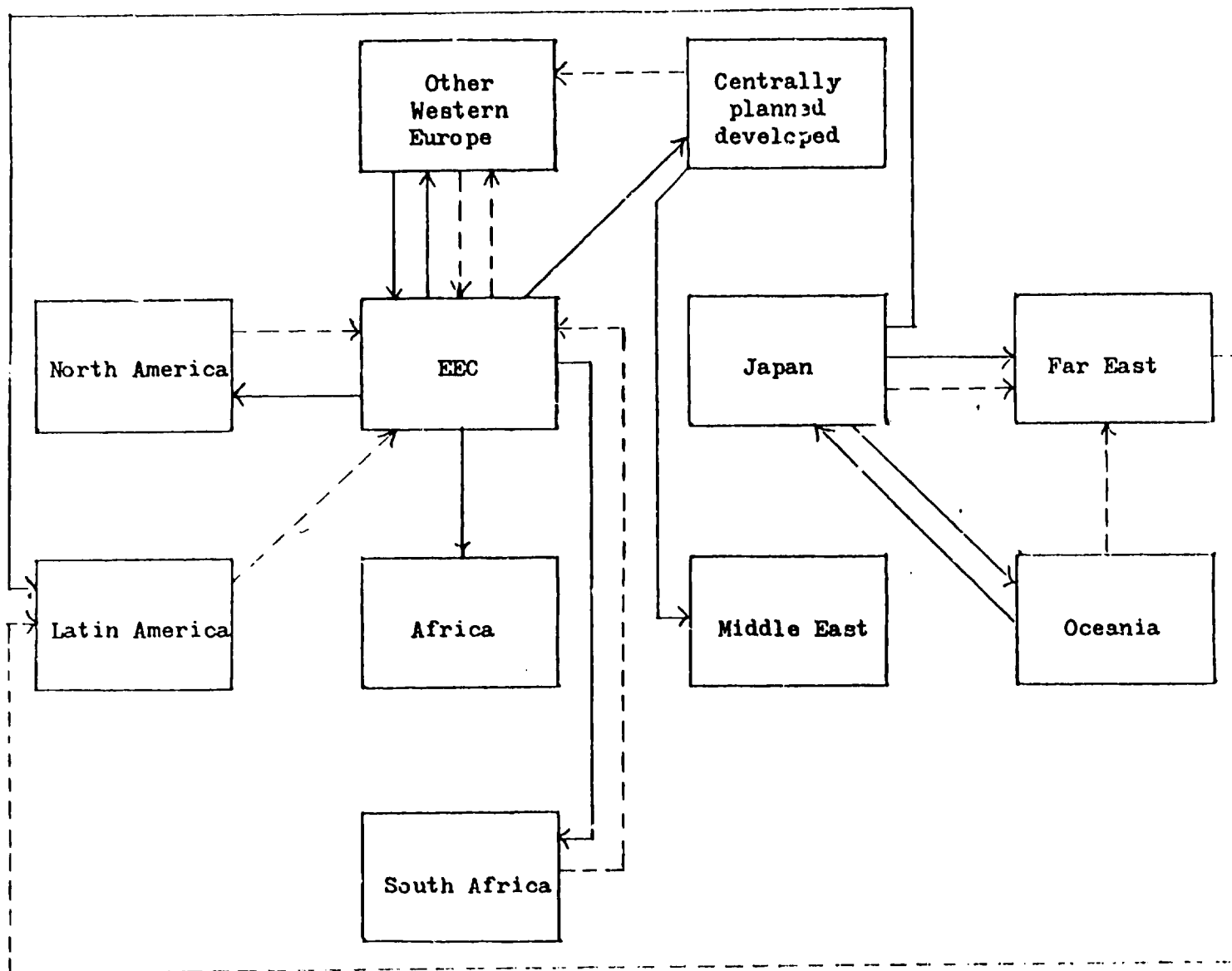
A → B: A est le principal fournisseur de B
A - → B: B est le principal client de A

Diagram
Graphique

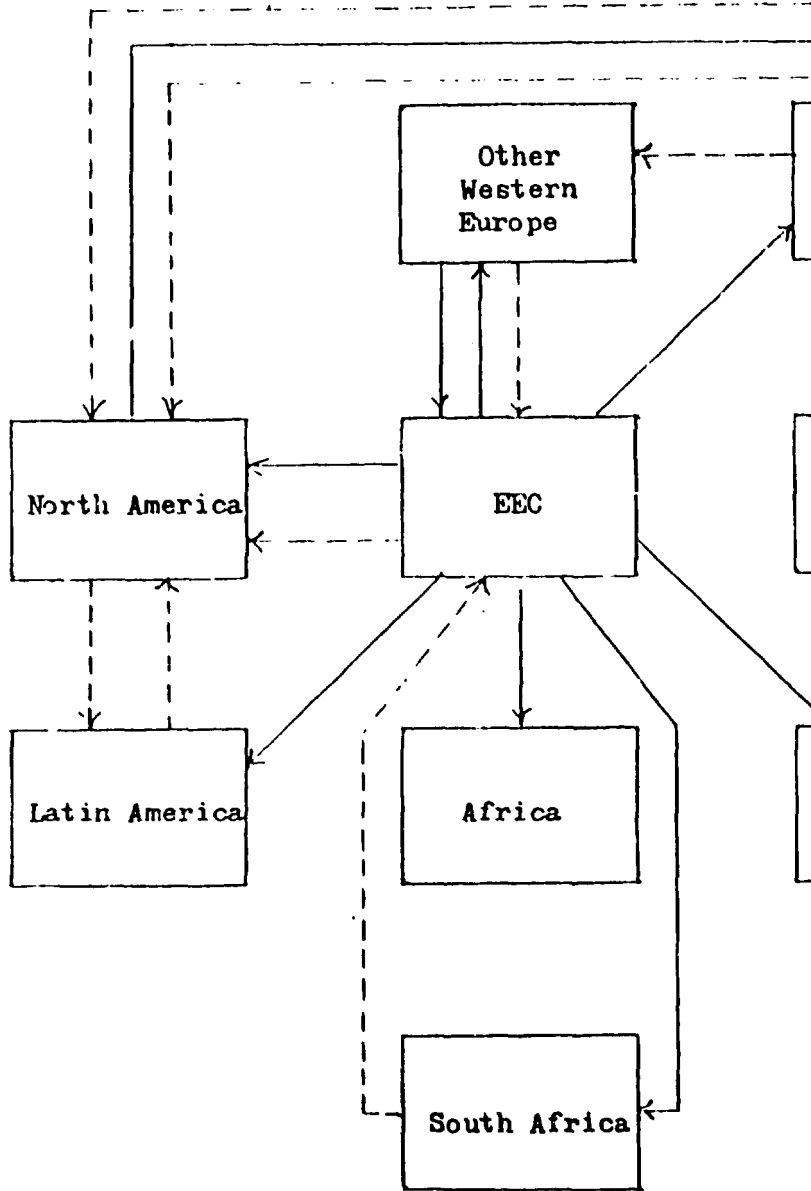
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Primary forms ^{1/} in 1972

Formes primaires ^{1/} en 1972



^{1/} SITC: 672



^{1/} SITC: 673 + 676 + 677

Produits longs ^{1/} en 1972

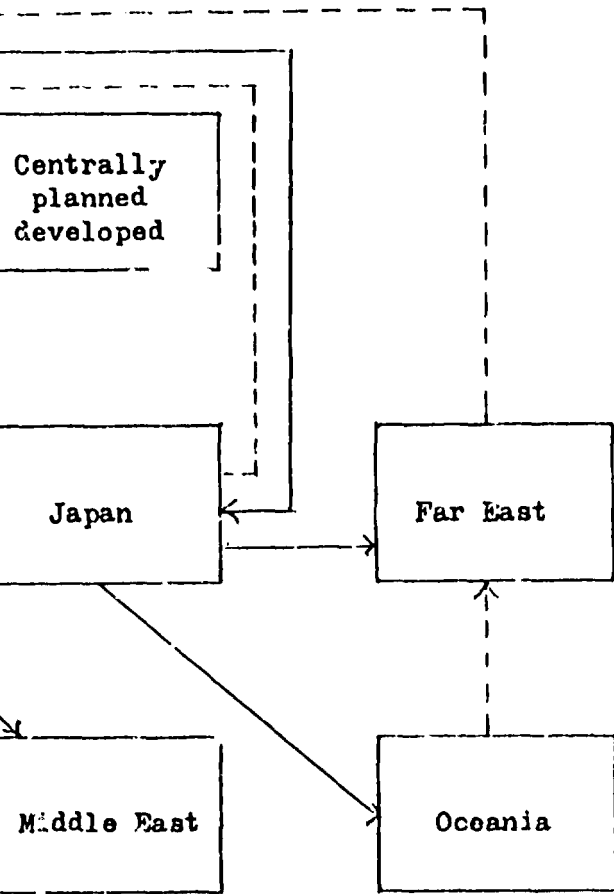
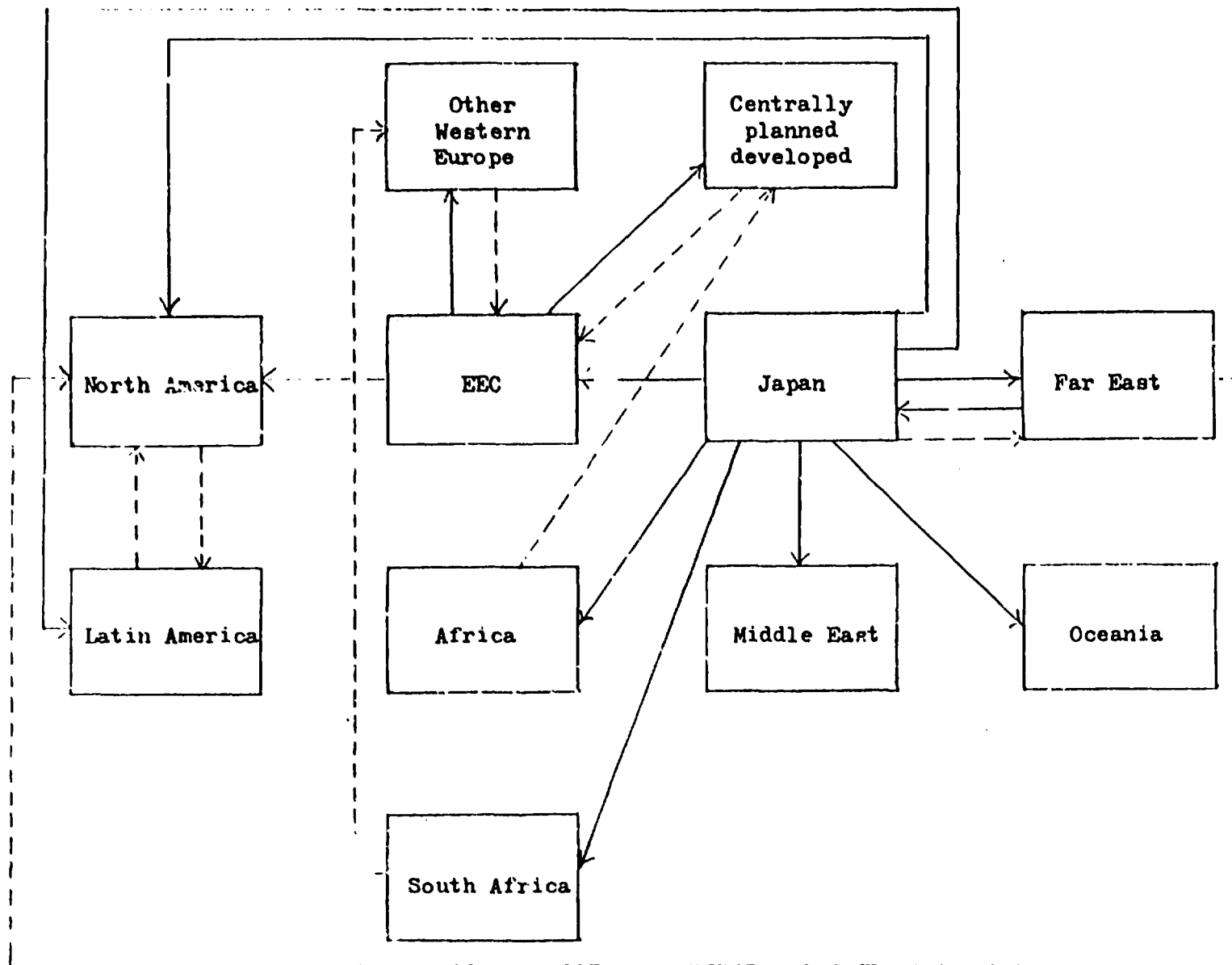


Diagram 4
Graphique

Flat products ^{1/} in 1972

Produits plats ^{1/} en 1972



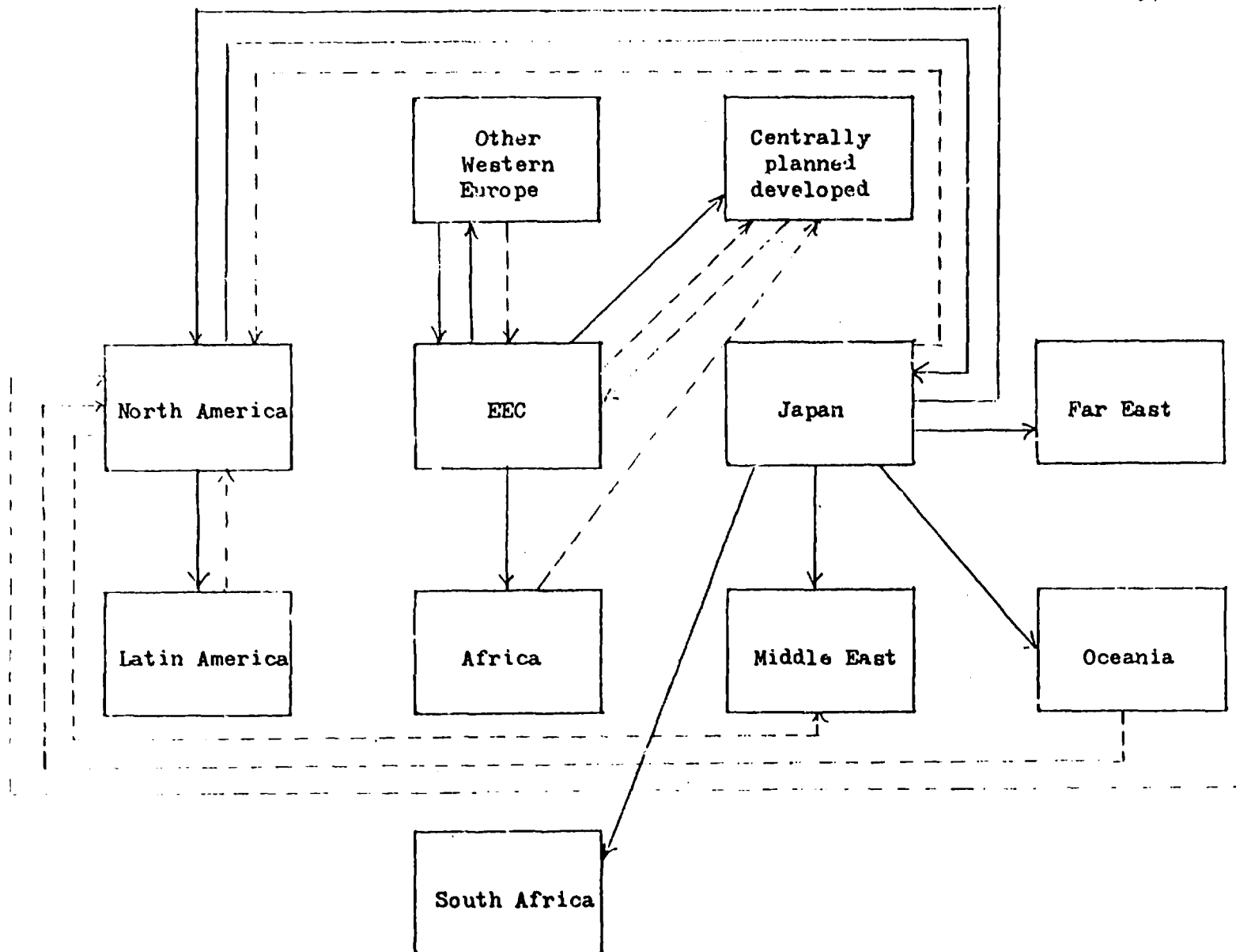
^{1/} SITC: 674 + 675

Diagram
Graphique

5

Tubes, pipes and fittings ^{1/} in 1972

Tubes, tuyaux et raccords ^{1/} en 1972



^{1/} SITC: 678

Trade in semi-finished and finished iron and steel products^{1/} in 1977
(Thousand metric tons)

Table 6
Tableau

Commerce de produits sidérurgiques semi-finis et finis^{1/} en 1977
(Milliers de tonnes métriques)

Destination Origin	Market economy developed countries ^{2/}	Centrally planned developed countries	Developing countries	Unallocated	World	Per centage
Market economy developed countries (Japan)	62104 (11547)	7623 (1450)	33101 (20630)	613 -	103441 (33627)	84.4 (27.4)
Centrally planned developed countries ^{3/}	4705	8541	2182	109	15537	12.7
Developing countries ^{4/}	1422	102	2056	1	3581	2.9
World	68231	16266	37339	723	122559	100
Percentage	55.7	13.3	30.5	0.5	100	

Notes: 1/ SITC 672-678; 2/ includes Turkey; 3/ Hungary, Bulgaria, Czechoslovakia, Poland, Romania, USSR. Figures for USSR refer to 1976. 4/ Algeria, Congo, Egypt, Libya, Morocco, Argentina, Brazil, Colombia, Mexico, Venezuela, Hong Kong, India, Indonesia, Republic of Korea, Pakistan, Thailand. Figures for Venezuela refer to 1976.

Source: Calculated from figures in United Nations Commodity Trade Statistics 1976 and 1977, New York, several issues, and United Nations Statistics in World Trade in Steel 1975 and 1977, New York 1977 and 1978.

Trade in primary forms^{1/} (ingots and semis) of iron and steel in 1977
(Thousand metric tons)

Table 7
Tableau

Commerce de produits sidérurgiques sous formes primaires^{1/} en 1977
(Milliers de tonnes métriques)

Destination Origin	Market economy developed countries ^{2/}	Centrally planned developed countries	Developing countries	Unallocated	World	Per centage
Market economy developed countries (Japan)	12624 (1650)	99 (1)	5404 (3018)	220 -	18347 (4669)	89.2 (22.7)
Centrally planned developed countries ^{3/ 5/}	934	267	133	16	1350	6.6
Developing countries ^{4/}	408	18	443	-	869	4.2
World	13966	384	5980	236	20566	100
Percentage	67.9	1.9	29.1	1.1	100	

- 17 -

Notes: 1/ SITC 672. 2/ Includes Turkey. 3/ Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR, figures for USSR refer to 1976. 4/ Algeria, Congo, Egypt, Libya, Morocco, Argentina, Brazil, Colombia, Mexico, Venezuela, Hong Kong, India, Indonesia, Republic of Korea, Pakistan, Thailand. 5/ Exports of USSR are included in other products.

Source: Calculated from figures in United Nations Commodity Trade Statistics 1976 and 1977, New York, several issues, and from United Nations Statistics of World Trade in Steel in 1976 and 1977, New York 1978 and 1979

Table 8
Tableau 8

Trade in flat products of iron and steel^{1/} in 1977
(Thousand metric tons)
Commerce de produits sidérurgiques plats^{1/} en 1977
(Milliers de tonnes métriques)

Destination Origin	Market economy developed countries	Centrally planned developed countries	Developing countries	Unallocated	World	Per centage
Market economy developed countries (Japan)	25 796 (5 623)	2 999 (344)	12 667 (9 529)	162 -	41 624 (15 496)	91.1 (33.9)
Centrally planned developed countries ^{3/}	1 917	718	594	31	3 261	7.1
Developing countries ^{4/}	446	-	340	0	786	1.8
World	28 159	3 717	13 601	194	45 671	100
Percentage	61.7	8.1	29.8	0.4	100	

Source: Calculated from figures in United Nations Commodity Trade Statistics 1976 and 1977, New York, several issues, and from United Nations Statistics of World Trade in Steel in 1976 and 1977, New York, 1978 and 1979

^{1/} SITC 674 and 675. ^{2/} includes Turkey. ^{3/} Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR, figures for USSR refer to 1976. ^{4/} Algeria, Congo, Egypt, Libya, Morocco, Argentina, Brazil, Colombia, Venezuela, Hong Kong, India, Indonesia, Republic of Korea, Pakistan, Thailand.

Trade in long products^{1/} of iron and steel in 1977

(Thousand metric tons)

Commerce de produits sidérurgiques longs^{1/} en 1977

(Milliers de tonnes métriques)

Table 9
Tableau 9

Destination Origin	Market economy developed countries ^{2/}	Centrally planned developed countries	Developing countries	Unallocated	World	Per centage
Market economy developed countries (Japan)	17 997 (2 647)	1 622 (339)	10 325 (5 258)	222 -	30 166 (8 244)	74.3 (20.3)
Centrally planned developed countries ^{3/}	1 629	6 581	1 040	44	9 294	22.9
Developing ^{4/} countries	183	63	907	0	1 153	2.8
World	19 809	8 266	12 272	266	40 613	100
Percentage	48.8	20.3	30.2	0.7	100	

Source: Calculated from figures in United Nations Commodity Trade Statistics 1976 and 1977, New York, several issues, and from United Nations Statistics of World Trade in Steel in 1976 and 1977, New York, 1978 and 1979

1/ SITC 673 + 676 + 677. 2/ includes Turkey. 3/ Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR, figures for USSR refer to 1976. 4/ Algeria, Congo, Egypt, Libya, Morocco, Argentina, Brazil, Colombia, Mexico, Venezuela, Hong Kong, India, Indonesia, Republic of Korea, Pakistan, Thailand.

Trade in tubes, pipes and fittings of iron and steel^{1/} in 1977

(Thousand metric tons)

Commerce de tubes, tuyaux et raccords en acier et en fer^{1/} en 1977
(Milliers de tonnes métriques)

Table 10
Tableau

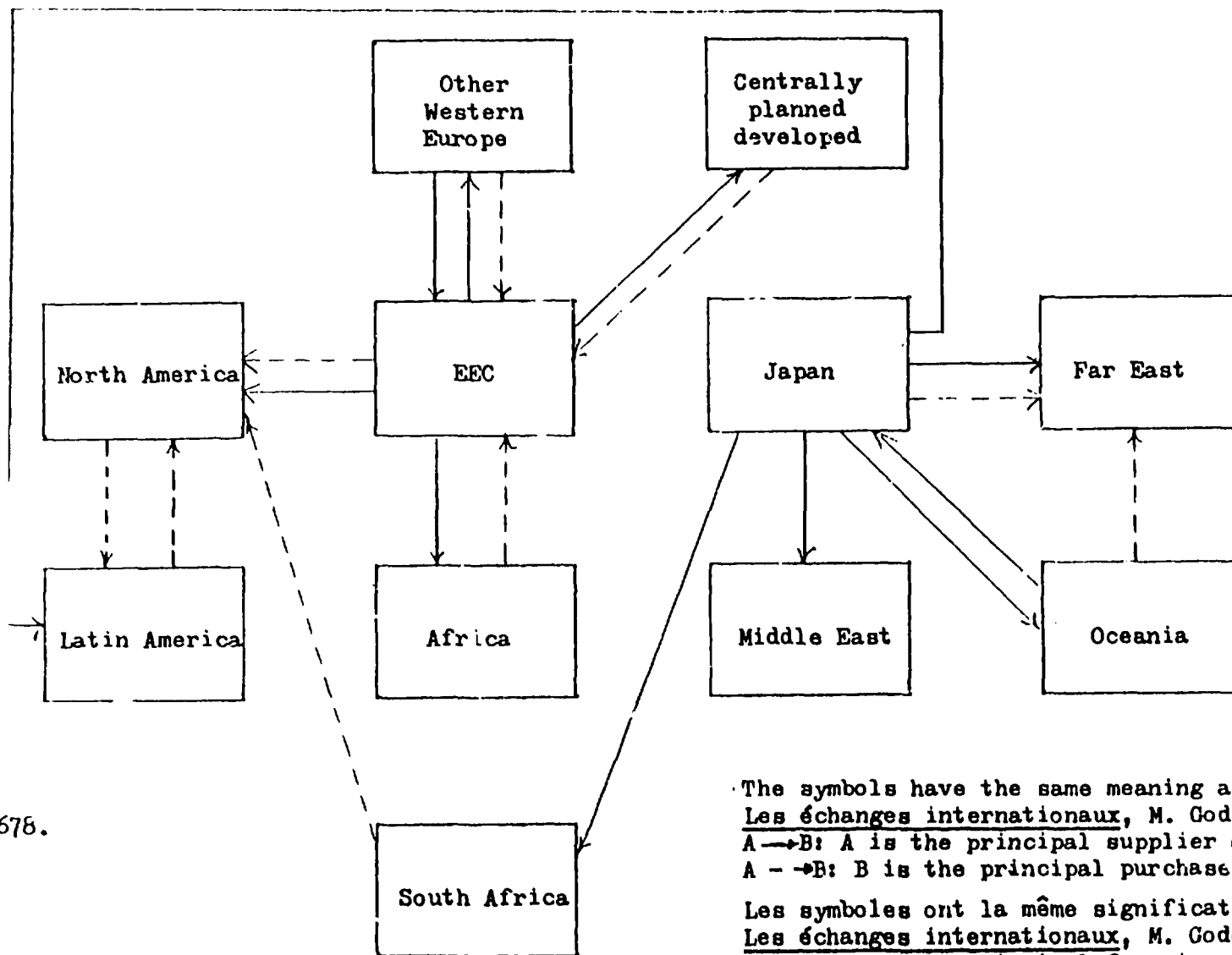
Destination Origin	Market economy developed countries ^{2/}	Centrally planned developed countries	Developing countries	Unallocated	World	Per centage
Market economy developed countries (Japan)	5 687 (1 581)	2 902 (766)	4 705 (2 820)	11 -	13 305 (5 167)	84.7 (32.9)
Centrally planned developed countries ^{3/}	225	975	415	18	1 632	10.4
Developing countries ^{4/}	386	22	366	0.0	773	4.9
World	6 297	3 899	5 486	28	15 710	100
Percentage	40.1	24.8	34.9	0.2	100	

Source: Calculated from figures in United Nations Commodity Trade Statistics 1976 and 1977, New York, several issues, and from United Nations Statistics of World Trade in Steel in 1976 and 1977, New York, 1976 and 1979.

1/ SITC 678. 2/ includes Turkey. 3/ Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR, figures for USSR refer to 1976. 4/ Algeria, Congo, Egypt, Libya, Morocco, Argentina, Brazil, Colombia, Mexico, Venezuela, Hong Kong, India, Indonesia, Republic of Korea, Pakistan, Thailand.

Diagram 6
Graphique

Structure of exchanges among regions by broad categories of iron and steel products
Structure des échanges entre régions par grandes catégories de produits sidérurgiques
Total products ^{1/} in 1977 - Total des produits ^{1/} en 1977



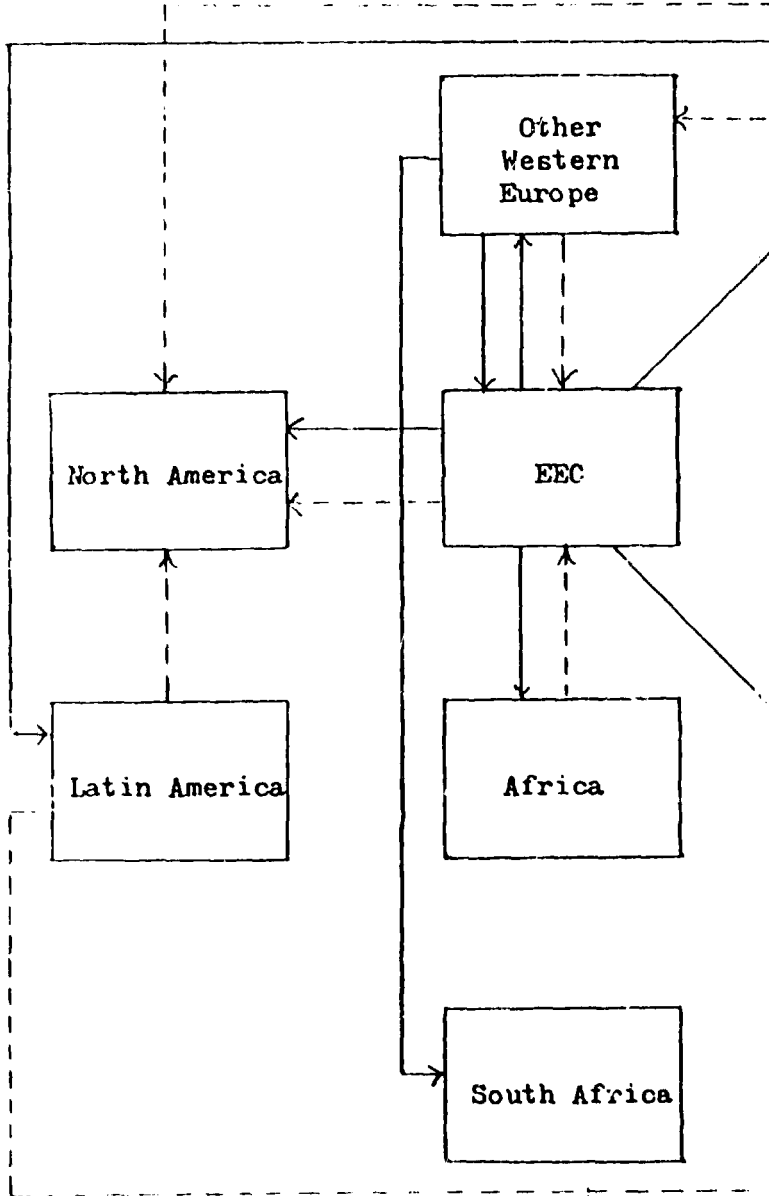
^{1/} SITC 672-678.

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A - -> B: B est le principal client de A

Diagram
Graphique

7

Primary forms ^{1/} in 1977



^{1/} SITC: 672

Formes primaires ^{1/} en 1977

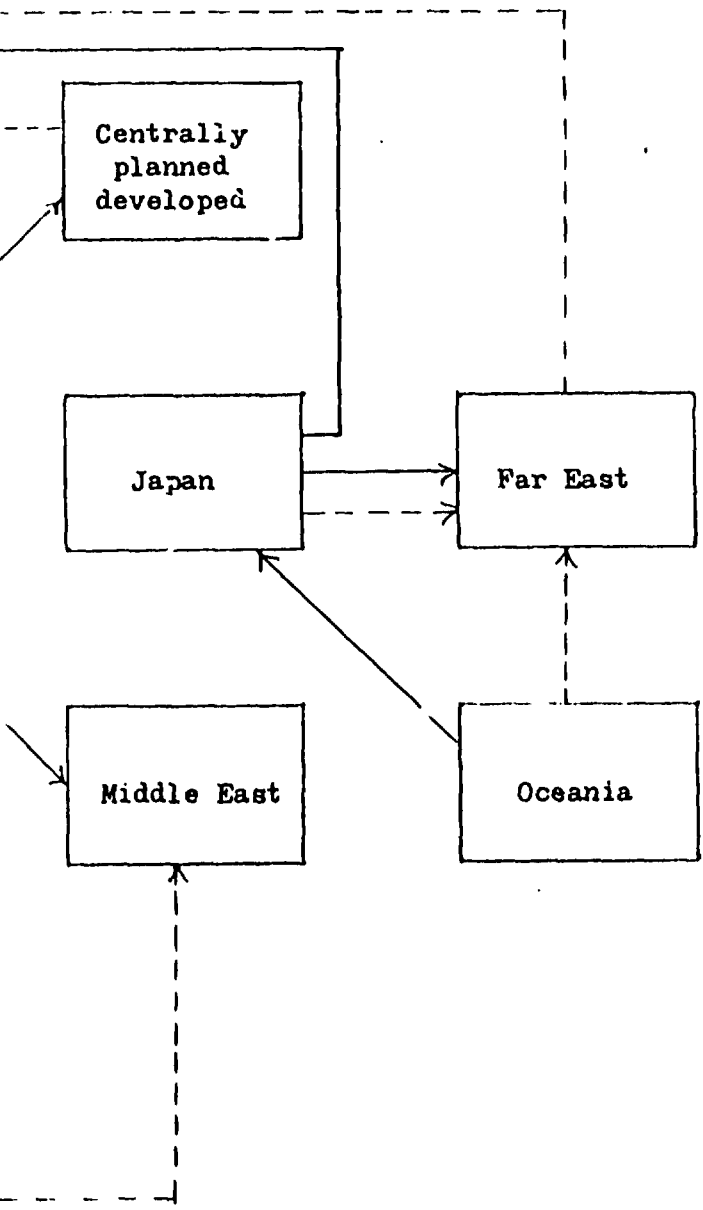
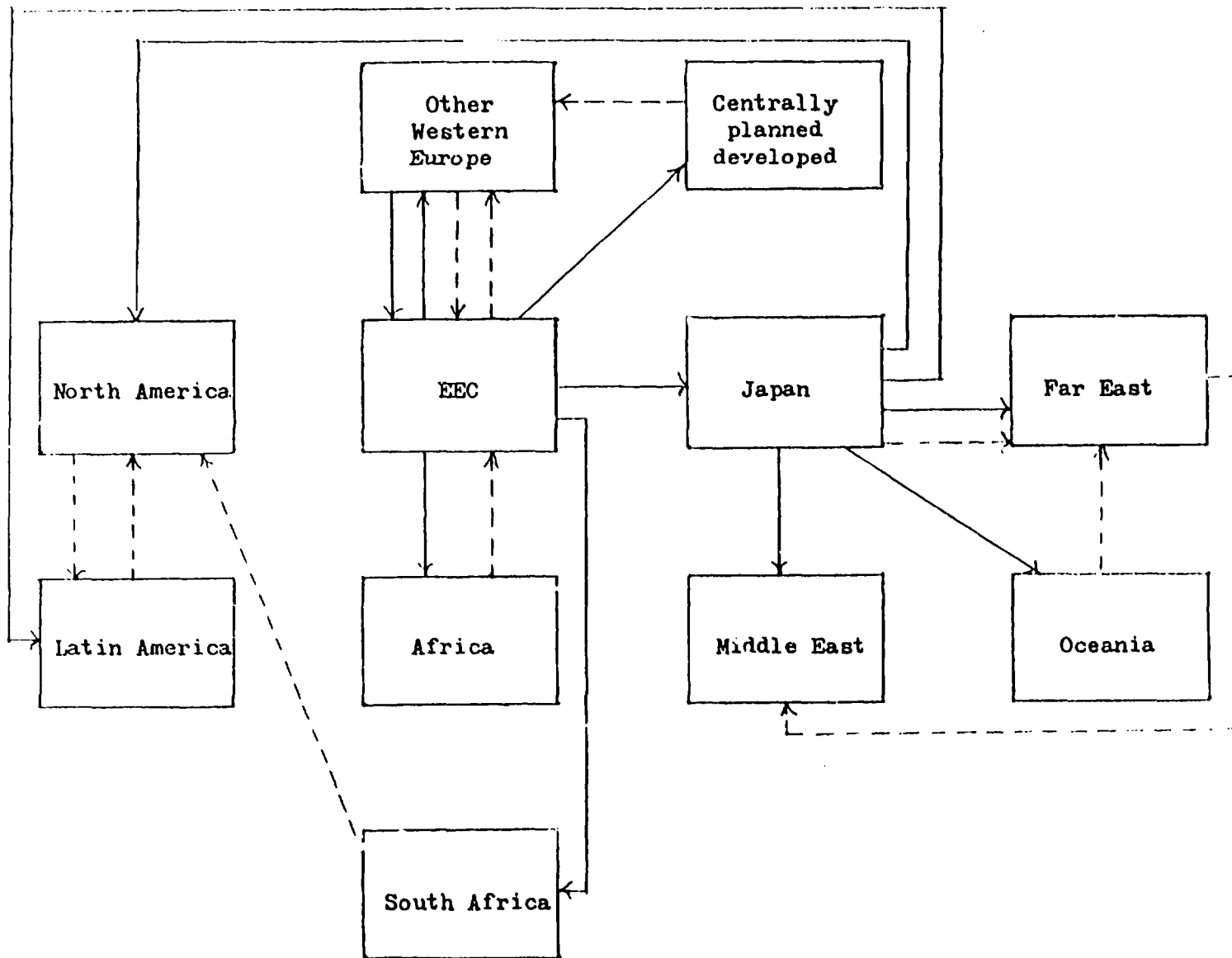


Diagram
Graphique

8

Long products ^{1/} in 1977

Produits longs ^{1/} en 1977



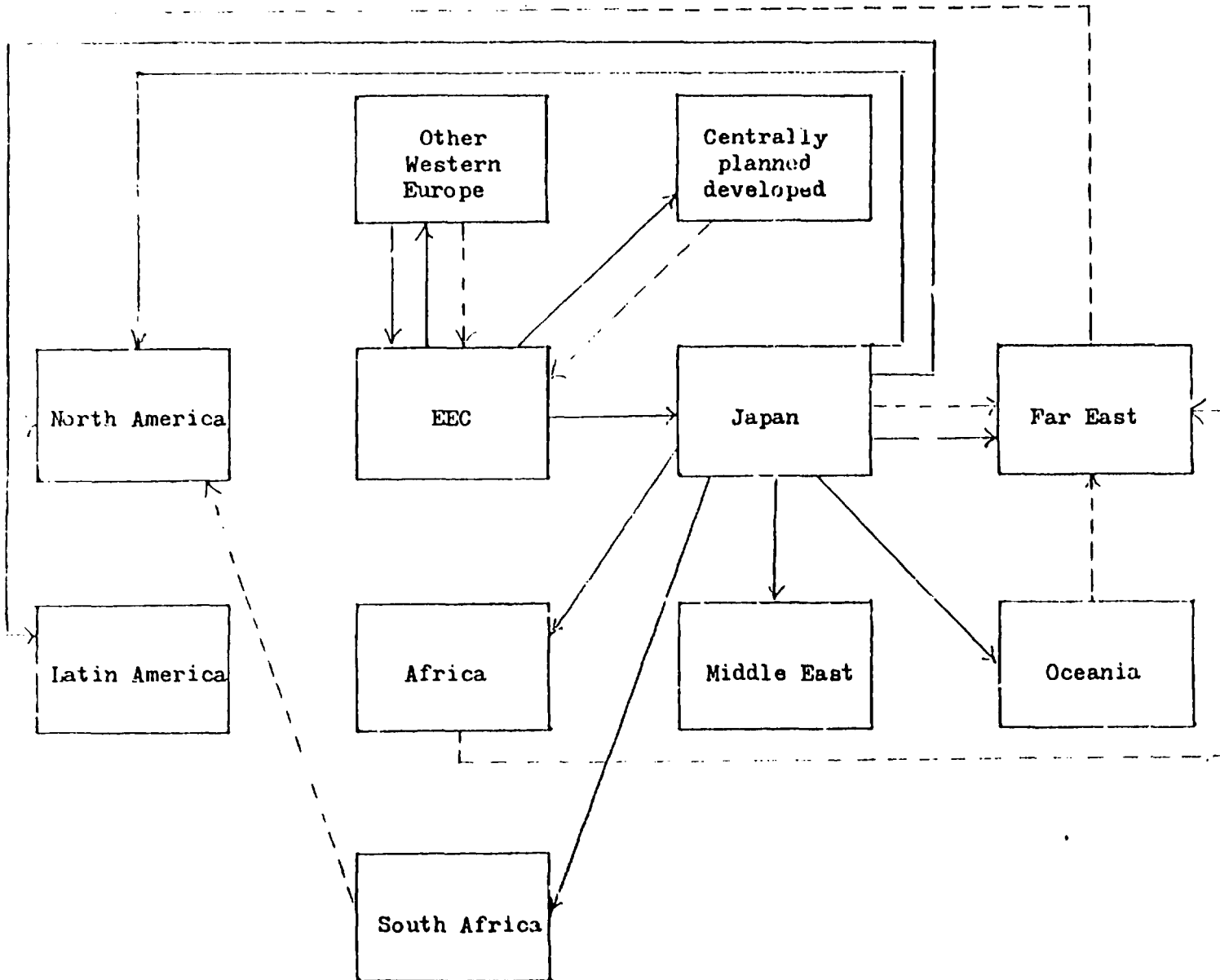
^{1/} SITC: 673 + 676 + 677

Diagram
Graphique

9

Flat products ^{1/} in 1977

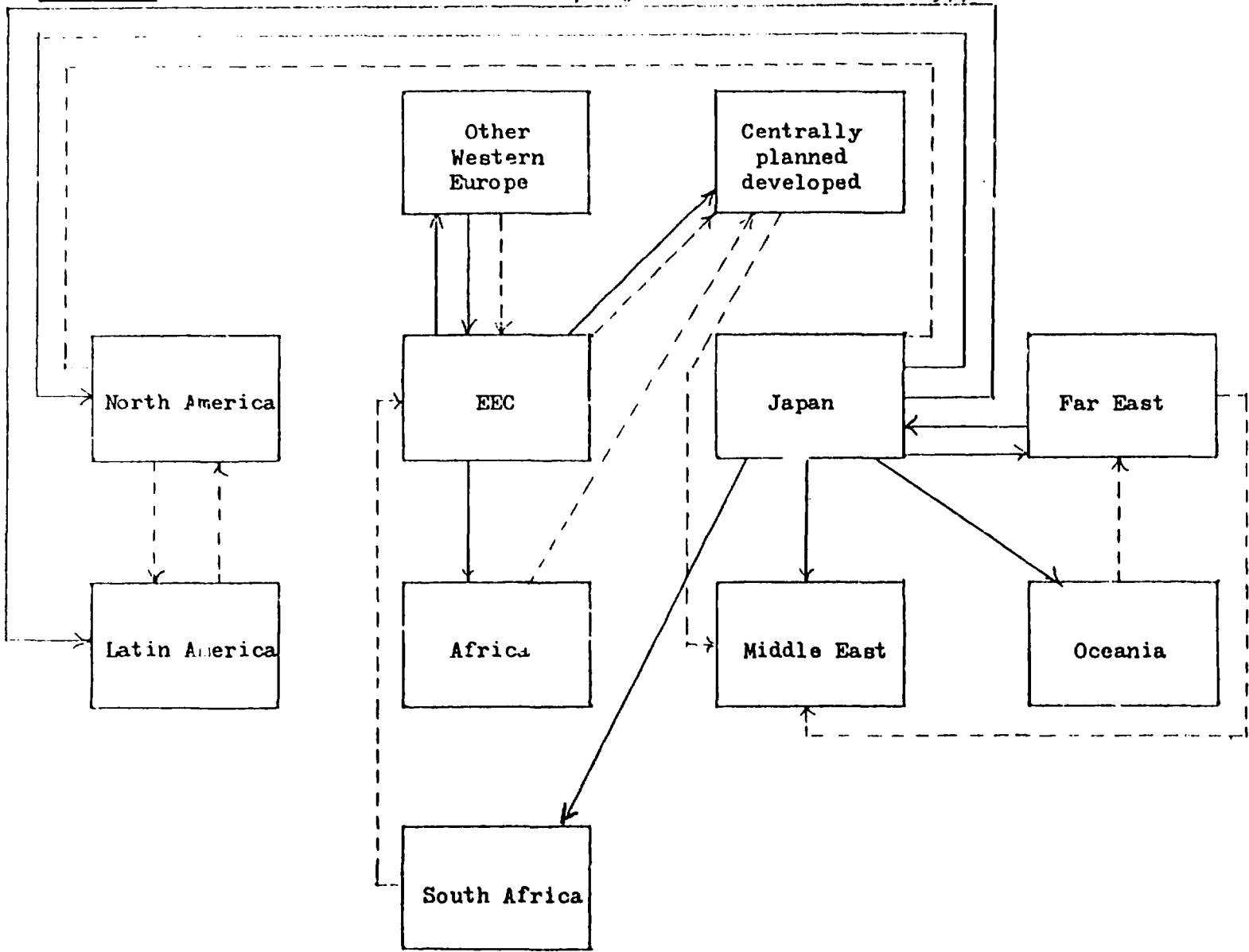
Produits plats ^{1/} en 1977



^{1/} SITC: 674 + 675

Diagram 10
Graphique 10

Tubes, pipes and fittings ^{1/} in 1977
Tubes, tuyaux et raccords ^{1/} en 1977



^{1/} SITC: 678

