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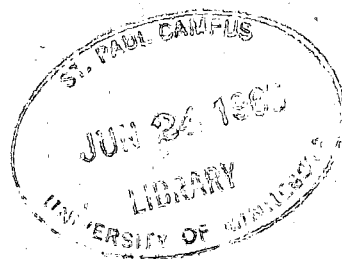
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REGIONAL DISTRIBUTION OF EEC FOOD,  
BEVERAGES, TOBACCO, OILS AND FATS IMPORTS:  
THE FORMATIVE YEARS 1951-9

THIS paper is directed toward an analysis of the regional distribution of the European Economic Community's (EEC) imports of food (SITC Section 0), beverages and tobacco (SITC Section 1), and oils and fats (SITC Section 4) during the formative years 1951-9.<sup>1</sup> This analysis will involve (1) consideration of changes in the magnitude, structure and source of imports and (2) formulation of functional relations that describe the major economic factors affecting the regional pattern of imports of these commodity aggregates.

I. *Origin and Commodity Structure of EEC Imports*

*Regional Pattern of Change*

Table 1 presents on a comparable basis, by principal commodity aggregates, the pattern of changes in the importance of various regions as sources of imports. A glance at these trade flows shows that, while the order of magnitude varied considerably among commodity categories, member countries of EEC and Eastern Europe enlarged their shares in all but oils and fats. An obverse development is discernible in imports from the United States, which suffered reverses in all commodity categories with the sole exception of oils and fats.

With respect to the comparative export performance of other regions, the following generalizations can be made: 1. Continental non-EEC member countries of OEEC improved their position in food, beverages and tobacco, and raw materials, but lost ground in oils and manufactures. 2. South America held its own in foods and sustained losses in the remaining primary commodity categories.

<sup>1</sup> Import classification conform with the commodity code of the Standard International Trade Classification (SITC). The SITC divides commodities into 10 sections (one-digit code), 52 divisions (two-digit code), 150 groups (three-digit code), and 570 items (five-digit code). For a coverage of commodities identifiable with each code, see UN: *Commodity Indexes for the Standard International Trade Classification*, Statistical Papers, Series M, no. 10 (New York, 1953).

TABLE I. *Share of Major Trading Regions in EEC Imports, by SITC Sections 0/8, 1951-9<sup>1</sup>*

SITC sections	Food (0)				Beverages and tobacco (1)				Oils and fats (4)			
	1951		1959		1951		1959		1951		1959	
	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total
Intra-EEC	444	16.6	1,143	23.0	31	10.0	96	15.2	50	12.1	44	0.9
Cont. OEEC excl. EEC	250	9.3	592	11.9	28	9.0	63	10.1	51	12.3	31	7.0
European Sterling Area	38	1.4	63	1.3	4	1.3	11	1.8	12	2.9	9	2.0
Eastern Europe	86	3.2	219	4.4	2	0.6	11	1.8	4	1.0	3	0.7
United States	471	17.6	469	9.4	56	18.1	80	12.8	63	15.2	112	25.2
Canada	128	4.8	134	2.7	..	..	2	0.3	2	0.5	..	..
Central America	119	4.4	181	3.6	3	1.0	7	1.1	4	1.0	..	..
South America	358	13.4	673	13.5	10	3.2	13	2.1	49	11.8	35	7.9
Oceania	62	2.3	71	1.4	..	..	..	..	4	1.0	3	0.7
Asia	33	1.2	47	0.9	1	0.3	2	0.3	41	9.9	7	1.6
Total for regions	1,989	74.2	3,592	72.1	135	43.5	285	45.5	280	67.7	244	55.0
All others	692	25.8	1,388	27.9	175	56.5	338	54.5	134	32.3	200	45.0
Total	2,681	100.0	4,980	100.0	310	100.0	623	100.0	414	100.0	444	100.0

SITC sections	Composite food (0+1+4)				Raw materials (2+3)				Manufactures (5/8)			
	1951		1959		1951		1959		1951		1959	
	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total
Intra-EEC	527	15.5	1,281	21.2	786	12.8	1,651	18.0	1,709	44.3	5,956	51.8
Cont. OEEC excl. EEC	329	10.0	686	11.3	545	8.8	1,034	11.3	522	13.5	958	8.3
European Sterling Area	54	1.6	82	1.4	137	2.2	210	2.3	511	13.3	1,214	10.6
Eastern Europe	92	2.7	233	3.9	97	1.6	404	4.4	46	1.2	208	1.8
United States	588	17.3	662	10.9	990	14.5	844	9.2	550	14.5	1,410	12.3
Canada	130	3.8	136	2.2	67	1.1	115	1.3	27	0.7	108	0.9
Central America	123	3.6	188	3.1	68	1.1	131	1.4	n.a.	..	n.a.	..
South America	417	12.2	721	11.9	428	6.9	544	5.9	n.a.	..	n.a.	..
Oceania	64	1.9	71	1.2	406	8.1	481	5.3	n.a.	..	n.a.	..
Asia	74	2.2	56	0.9	394	6.4	593	6.5	n.a.	..	n.a.	..
Total for regions	2,398	70.8	4,116	68.0	3,914	61.5	6,007	65.6	3,374	87.5	9,854	85.7
All others	1,007	29.2	1,931	32.0	2,247	36.5	3,144	34.4	480	12.5	1,647	14.3
Total	3,405	100.0	6,047	100.0	6,161	100.0	9,151	100.0	3,854	100.0	11,501	100.0

<sup>1</sup> Expressed as a percentage of all imports of respective commodity sections.

Source: OEEC Statistical Bulletin, *Foreign Trade*, Series IV and Series B.

3. Canada, in contrast to the nominal course of transactions in beverages and tobacco and oils and fats, registered some gains in raw materials and manufactures and fell behind in foods. 4. Central America achieved gains in raw materials, retained its position in beverages and tobacco, and exhibited reverses in food and oils and fats. 5. Asia experienced minor advances in beverages and tobacco and raw materials and losses in food and oils and fats. 6. European Sterling Area improved its position to a limited extent in beverages and tobacco and raw materials, held its own in food, and showed losses in both oils and fats and manufactures. 7. Oceania showed losses in all categories except beverages and tobacco and manufactures, for which no data were available.

### *Commodity Pattern of Change*

*Food.* Because, by volume, Section 0 of the SITC represents the most important element of the composite (SITC, Section 0+1+4), there is a close conformity in the pattern of change described by both series. In 1951, the United States, with a magnitude of \$471 million, accounted for close to 18 per cent. of all imports and represented the largest single supplier (Table 1). Imports from within the EEC ranked second in importance and those from South America, third. During the course of the following nine years, the most conspicuous feature of change in the distribution pattern of EEC imports was the declining importance of United States foods and the shift to other sources of supply, notably intra-EEC, other continental OEEC member countries and South America. United States foods predominated in EEC's imports until the early 1950's, but lost ground steadily thereafter. Among the remaining import sources, only Eastern Europe succeeded in enlarging its share in the EEC market, while the position of all others generally weakened.

Although they were not considered separately, the importance of associated overseas territories (AOT) of member countries as suppliers of foodstuffs should not be overlooked.<sup>1</sup> French AOT alone accounted for 15 per cent. of food imports in 1951. Imports, however, tend to concentrate in noncompeting commodities, such as tropical beverages, spices, fruits, vegetables and nuts.<sup>2</sup>

<sup>1</sup> Because changes in the sovereignty status of French Indochina in 1954 and treaties concluded by France with French Morocco and Tunisia in 1956 impair the comparability of trade figures, the AOT were not included among import sources.

<sup>2</sup> For illustration of the share of AOT in EEC imports, see Erik Thorbecke, 'The Impact of European Economic Integration on the Pattern of World Trade', *American Economic Review*, vol. 53 (May 1963), pp. 147-73.

*Beverages and Tobacco.* Imports increased from \$310 million in 1951 to \$623 million in 1959, or a little over 100 per cent. Not all suppliers shared fully in the expanding EEC Market. As in foods, the biggest gains, in terms of market shares, were realized by members of the EEC, which accounted for 15 per cent. of the total requirements in 1959 compared with 10 per cent. in 1951. The advances scored by other European suppliers, however, were only nominal. For instance, the share of Eastern Europe, the European Sterling Area and Continental OEEC countries increased from 0.6, 1.3 and 9.0 per cent. in 1951 to 1.8, 1.8, and 10.0 per cent. respectively in 1959. By contrast and over the same period, the share of the United States dropped from 18 to 13 per cent. and that of South America from 3 to 2 per cent. The representativeness of comparative patterns of change is obscured by the fact that the most prominent suppliers of these commodity categories, French AOT, were not included in the analysis. In the 1950's their contribution to total imports averaged well over 40 per cent.

*Oils and Fats.* Between 1951 and 1959, the overall volume of imports increased by 7 per cent., mainly because of increased purchases from the United States and unspecified sources, chiefly French and Belgian AOT in Africa as well as the Far Eastern countries. Correspondingly, the contribution of the United States to total imports of oils and fats increased from 15 to 25 per cent. and that of unspecified sources advanced from 32 to 45 per cent. About 25 per cent. of all imports came from the African associated territories of member countries. Apart from these two sources, each of the areas under consideration showed a declining trend. Asia sustained the greatest loss. Its contribution by 1959 amounted to less than 2 per cent. compared with about 10 per cent. in 1951.

*Commodity Composition of Imports.* The deficiencies attendant on the use of highly aggregative import flows can be seen when viewed against their commodity structure. Food (SITC, Section 0) embraces thirty-six different groups of commodities compared with four and three groups respectively for beverages and tobacco (SITC, Section 1) and oils and fats (SITC, Section 4). Analytical difficulties also arise from the fact that import aggregates pertaining to various regional sources of origin do not contain the same combination of products. Indeed, it would be highly unlikely that each region would be able to export an identical commodity mix. Consequently, the inferences drawn from commodity aggregates presented in Table 1

should be qualified and supplemented in terms of specific commodity groups. Although it would be desirable, it has not been possible to analyse each individual commodity group comprising the aggregates. The commodity coverage in Table 2 has thus been confined to major temperate zone foodstuffs, such as meats, grains, and oils and fats. On the basis of changes in market shares, the outstanding import changes occurring between 1951 and 1959 may be summarized from Table 2 as follows:

1. The United States realized increases in (a) fresh meats, (b) rice, (c) barley, (d) other cereals and (e) feedingstuffs, and animal and vegetable oils and fats, and registered decreases in prepared meats, wheat and processed oils and fats.

2. EEC countries showed a decrease in (a) live animals, (b) canned meats and (c) rice, retained their position in corn, and realized increases in animal oils and fats as well as in processed oils and fats.

3. Continental OEEC countries, excluding EEC, appeared to have a smaller share of the market for all except (a) live animals, (b) wheat, (c) barley and (d) processed oils and fats.

4. Latin America's market shares increased for (a) prepared meats, (b) corn and (c) processed oils and fats, and stayed the same in live animals, canned meats and miscellaneous feedingstuffs.<sup>1</sup>

5. Canada increased her market share of (a) fresh meats, (b) prepared meats, (c) wheat and (d) corn and oilseeds, and retained her share of live animals.

6. Eastern Europe showed weakness in (a) corn, (b) unclassified cereals and (c) meal and flour of wheat, and appeared to hold a competitive position in vegetable oils.

7. Asia achieved increases in (a) canned meats, (b) wheat, (c) rice, (d) feedingstuffs and (e) animal oils and fats, and maintained her share of (a) live animals, (b) fresh meats, (c) prepared meats, (d) miscellaneous cereals and (e) meal and flour of wheat.<sup>1</sup>

8. European Sterling Area experienced decreases in (a) live animals, (b) canned meats and (c) feedingstuffs and increases in vegetable oils.<sup>2</sup>

<sup>1</sup> Latin America includes the combined total of South and Central America, while Asia encompasses both the Middle and the Far Eastern countries and hence is not comparable with Asia in Table 1.

<sup>2</sup> For more details on the pattern of specific agricultural commodity imports, see UN: *Ten Years of Agricultural Trade in Europe, 1951-60*, Geneva, 1962.

TABLE 2. *Share of Major Trading Regions in EEC's Agricultural Imports, by Main Commodity Groups, 1951-9*

Commodity	SITC code	United States		Size of imports in 1951				European	
		Millions of 1953 dollars	Per cent. of total	Intra-EEC		Cont. OEEC excl. EEC		Sterling Area	
				Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total
Live animals . . . . .	001	..	..	21	22.7	47	52.4	5	5.9
Meat: fresh . . . . .	011	2	2.9	17	20.2	29	35.0	0.5	0.7
Meat: dried . . . . .	012	3	24.0	0.5 <sup>1</sup>	9.4 <sup>1</sup>	7	66.4	..	..
Meat: canned . . . . .	013	2	9.5	6	24.9	6	25.2	1	5.5
Wheat . . . . .	041	264	52.7	18	3.6	3	0.6	..	..
Rice . . . . .	042	..	..	16	41.4	0.3	0.9	..	..
Barley . . . . .	043	2	1.9	0.5	0.6	11	12.9	..	..
Corn . . . . .	044	79	60.7	1	0.7	0.8	0.6	..	..
Cereals, other than above	045	56	46.9	0.5	0.4	3	2.7	..	..
Meal and flour of wheat	046	16	30.4	3	5.7	..	..	..	..
Feeding stuffs . . . . .	081	3	4.3	7	9.2	17	23.2	2	3.4
Animal oils and fats . . . . .	411	22	24.5	..	..	37	41.1	9	10.7
Vegetable oils . . . . .	412	36	11.9	..	..	48	16.0	2	0.7
Oils and fats processed . . . . .	413	4	17.5	..	..	13	57.0	0.6	2.5
Oil seeds . . . . .	221	30	7.0	..	..	21	4.9	0.3	0.1
<i>Size of imports in 1959</i>									
Live animals . . . . .	001	0.4	0.2	42	17.8	142	60.1	10	4.1
Meat: fresh . . . . .	011	32	10.3	107	34.2	68	22.0	3	1.0
Meat: dried . . . . .	012	0.8	8.2	4	39.2	0.1	1.3	..	..
Meat: canned . . . . .	013	4	5.3	18	21.5	11	12.9	3	3.3
Wheat . . . . .	041	49	14.9	42	12.8	20	6.2	0.2	0.1
Rice . . . . .	042	11	21.6	7	13.7	..	..	..	..
Barley . . . . .	043	71	39.7	8	4.6	25	14.2	11	6.4
Corn . . . . .	044	91	37.9	1	0.6	0.4	0.2	..	..
Cereals, other than above	045	92	61.5	9	6.0	3	2.3	0.3	0.2
Meal and flour of wheat	046	7	24.3	8	26.7	..	..	..	..
Feeding stuffs . . . . .	081	28	9.1	67	21.6	23	7.5	5	1.6
Animal oils and fats . . . . .	411	54	48.7	10	8.6	18	16.6	2	2.2
Vegetable oils . . . . .	412	57	18.6	21	7.0	6	2.1	5	1.8
Oils and fats processed . . . . .	413	1	4.4	12	46.5	6	24.4	0.7	2.5
Oil seeds . . . . .	221	138	25.0	4	0.8	6	1.1	..	..

<sup>1</sup> Not available; figures refer to 1953 magnitudes.



TABLE 2. *Share of Major Trading Regions in EEC's Agricultural Imports, by Main Commodity Groups, 1951-9 (cont.)*

Commodity	SITC code	Size of imports in 1951							
		Latin America		Eastern Europe		Canada		Asia I	
		Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total	Millions of 1953 dollars	Per cent. of total
Live animals . . . . .	001	..	..	10	11.2	..	..	..	..
Meat: fresh . . . . .	011	26	31.1	3	4.1	0.2	0.3	..	..
Meat: dried . . . . .	012	0.8	7.4	..	..	0.2	1.8	..	..
Meat: canned . . . . .	013	5	22.1	0.7	2.7	..	..	2	9.7
Wheat . . . . .	041	59	11.7	20	3.9	83	16.6	0.6	0.1
Rice . . . . .	042	2	5.5	0.5	1.4	..	..	15	38.1
Barley . . . . .	043	11	12.8	2	2.4	18	21.3	1	1.3
Corn . . . . .	044	23	17.4	3	2.6	0.9	0.7	10	7.9
Cereals, other than above	045	22	18.1	11	9.6	15	12.3	2	2.1
Meal and flour of wheat . . . . .	046	0.5	0.9	1	2.2	4	7.2	..	..
Feeding stuffs . . . . .	081	24	33.2	..	..	0.5	0.7	3	3.9
Animal oils and fats . . . . .	411	6	6.6	..	..	2	1.8	1	1.1
Vegetable oils . . . . .	412	44	14.7	4	1.2	0.5	0.2	42	13.9
Oils and fats processed . . . . .	413	2	9.5	..	..	..	..	0.2	0.9
Oil seeds . . . . .	221	25	5.9	0.7	0.2	6	1.4	191	44.3
Size of imports in 1959									
Live animals . . . . .	001	..	..	44	18.6	..	..	..	..
Meat: fresh . . . . .	011	60	19.1	25	7.9	2	0.5	0.3	0.1
Meat: dried . . . . .	012	3	26.6	0.6	5.9	0.7	7.0	..	..
Meat: canned . . . . .	013	19	23.0	8	10.0	0.3	0.3	11	13.0
Wheat . . . . .	041	25	7.8	44	13.3	113	34.4	2	0.6
Rice . . . . .	042	0.2	0.4	0.7	1.4	..	..	23	46.7
Barley . . . . .	043	12	6.6	9	4.8	1	0.8	2	0.9
Corn . . . . .	044	101	41.9	2	1.0	3	1.1	3	1.4
Cereals, other than above	045	16	10.4	3	2.3	3	2.3	2	1.1
Meal and flour of wheat . . . . .	046	..	..	..	..	..	..	..	..
Feeding stuffs . . . . .	081	100	32.2	14	4.4	0.8	0.3	22	7.2
Animal oils and fats . . . . .	411	2	2.0	..	..	0.4	0.3	11	10.0
Vegetable oils . . . . .	412	28	9.3	3	1.1	..	..	25	8.2
Oils and fats processed . . . . .	413	4	14.0	..	..	..	..	..	..
Oil seeds . . . . .	221	4	0.7	3	0.5	22	4.0	98	17.8

Source: OEEC Statistical Bulletin, *Foreign Trade*, Series IV and Series C.

Data in Table 3 show the comparative importance of imports of these commodity groups originating from major regions. While these twelve groups accounted for approximately 93 and 83 per cent. of the total volume of food imports from the United States in 1951 and 1959 respectively, they comprised only about 22 and 28 per cent. of the volume of intra-EEC food trade during the same period. Likewise, these groups represented 95 and 92 per cent. of total food imports obtained from Canada compared with 37 and 39 per cent. from Latin America. Comparable figures for Eastern Europe are 62 and 68 per cent., and those relating to continental OEEC countries, excluding EEC, are 52 and 50 per cent. respectively.

With respect to beverages and tobacco, tobacco dominated the import flows originating from the United States, Latin America and Eastern Europe, and beverages those of the remaining regions. In the oils and fats aggregate, vegetable oils were of greatest importance, followed by animal oils and fats and processed derivatives in that order.

## II. *Factors Affecting EEC Imports*

In spite of the shortcomings of the market share approach as defined and applied in this analysis, it still appears useful for pinpointing emerging structural changes and giving a wide view of import diversion. To attribute shifts in market shares to differences in competitive attributes alone, however, would be to oversimplify economic reality. Competition is influenced and determined by a concatenation of forces, both economic and institutional. Then, too, shifts in the relative importance of alternative markets may arise not only from the side of export supply, but also from changes in import demand. In this context, the most cogent and yet elusive problem is to identify factors that affected the magnitude and area concentration of EEC's imports.

*Trends in Production.* Although the efficiency of agricultural production in the EEC countries has, in general, lagged well behind that of the United States, it made impressive advances during the decade of the 1950's. Total agricultural production, measured in terms of indices of final commodity output, had regained pre-war levels by about 1949-50 and has since continued to increase at an average rate of 2.8 per cent. per year.<sup>1</sup> Between 1952 and 1959 agricultural production

<sup>1</sup> For a discussion and statistical evidence relating to structural changes in EEC's agriculture, see UN: *Economic Survey of Europe in 1960*, Geneva, 1961, chap. iii, and UN, FAO, *European Agriculture in 1965*, Geneva, 1961, pp. 10-15.

TABLE 3. Commodity Composition of EEC's Food Imports (SITC Section 0) from Major Sources of Origin, 1951-9

Commodity	SITC code	Percentage composition of SITC Section 0 imports in 1951 from									Percentage composition of SITC Section 0 imports in 1959 from						
		World	U.S.	Intra-EEC	Cont. OEEC excl. EEC	European Sterling Area	Eastern Europe	Canada	Latin America	World	U.S.	Intra-EEC	Cont. OEEC excl. EEC	European Sterling Area	Europe Eastern	Canada	Latin America
Live animals . . . . .	001	3.4	..	4.6	19.0	14.1	11.8	..	..	4.7	0.1	3.7	24.0	15.4	20.0	..	..
Meat: fresh . . . . .	011	3.1	0.5	3.8	11.6	1.4	4.0	0.2	5.4	6.3	6.9	9.4	11.5	5.2	11.2	1.2	7.0
Meat: dried, etc. . . . .	012	0.4	0.5	..	2.8	..	..	0.1	0.2	0.2	0.2	0.3	..	..	0.3	0.5	0.3
Meat: canned . . . . .	013	0.9	0.5	1.4	2.6	3.7	0.8	0.1	1.2	1.7	0.9	1.5	1.8	4.4	3.7	0.2	2.2
Wheat . . . . .	041	19.0	56.2	4.1	1.3	..	23.0	65.2	12.3	6.6	10.4	3.7	3.4	0.3	20.0	84.3	3.0
Rice . . . . .	042	1.5	..	3.6	0.1	..	0.6	..	0.4	1.0	2.3	0.6	..	..	0.3	..	..
Barley . . . . .	043	3.2	0.3	0.1	4.4	..	2.4	14.2	2.3	3.6	15.1	0.8	4.3	18.1	4.0	1.0	1.4
Corn . . . . .	044	4.8	16.8	0.2	0.3	..	3.9	0.7	4.8	4.8	19.4	0.1	0.1	..	1.1	1.9	11.8
Cereals other than above . . . . .	045	4.4	11.9	0.1	1.3	0.2	13.3	11.4	4.5	3.0	19.7	0.8	0.6	0.5	1.6	2.6	1.8
Meal and flour of wheat . . . . .	046	1.9	3.3	0.7	..	..	1.3	2.9	0.1	0.5	1.5	0.6	..	0.1	..	..	..
Feeding stuff . . . . .	081	2.7	0.7	1.5	6.7	6.4	0.3	0.4	5.0	6.3	6.0	5.9	3.9	7.8	6.3	0.6	11.8
Margarine and shortenings . . . . .	091	0.9	2.1	2.0	1.8	0.1	0.3	..	0.3	0.3	1.0	0.6	0.3	..	0.1	..	..
Total . . . . .		46.2	92.8	22.1	52.0	26.0	61.7	95.2	36.5	39.0	83.1	28.0	50.0	51.8	68.6	92.3	39.3

Source: Derived from data given in OEEC Statistical Bulletin, *Foreign Trade*, Series IV.

advanced from an index of 93 to 113, and livestock production from an index of 92 to 118.<sup>1</sup> Livestock and livestock products made up over 60 per cent. of agricultural production and were chiefly responsible for the expansion during this period. Growth in the livestock sector was backed by progress in animal breeding and health control and by greater use of concentrated feed and feed mixtures.

The fact should be stressed that the gains in crop production were achieved without any increase in the area under cultivation and despite a decline in agricultural employment. The main impetus is generally attributed to (1) a widespread trend toward mechanization and improved cultivation practices, (2) application of more and better balanced fertilizer dressings and (3) increased use of improved varieties of seed, including the introduction of hybrid corn. For instance, the number of tractors used on farms increased from 545 thousand in 1952, to 2 million, and the average amount of fertilizer consumed increased by 55 per cent. Concurrently, with the progress in mechanization, manpower employed in agriculture declined. According to UN estimates, in the period 1950-8 agricultural employment in north-western Europe (excluding Italy) dropped more than 20 per cent.<sup>2</sup>

*Trends in Consumption.* By far the most striking change in consumption standards in the EEC countries has been greater diversification in foods and the adoption of better balanced diets. There has been a marked decline in the consumption of cereals and potatoes and a simultaneous rise in the consumption of higher quality foods, such as meats, milk, eggs, cheese, fruits and vegetables. There are still, however, considerable differences in consumption standards between individual member countries.<sup>3</sup> For example, animal protein intake in Italy is well below that in other countries, and consumption of starchy foods is rather high. More potatoes are consumed in the more prosperous north-western countries than in Italy. Except for the Netherlands, all of the Common Market countries showed a large increase in meat consumption; France ranked first, followed by Belgium and Germany in that order. Indications are that consumption of liquid milk in the Netherlands and butter in Belgium may have reached a peak. Consumption levels in other countries still leave

<sup>1</sup> OEEC Statistical Bulletin, *Agriculture, Production and Consumption Figures*, Paris, 1961, p. 9.

<sup>2</sup> UN, FAO, *European Agriculture in 1965*, op. cit., Annex Table 3.

<sup>3</sup> OEEC Statistical Bulletin, *Agriculture, Production and Consumption Figures*, op. cit., p. 45.

room for expansion. By contrast, the intake of other fats and oils has either remained static or increased only moderately. It appears that these two food groups are competitive, and the demand responds to changes in relative prices. It should be noted that there was also a rapid increase in the consumption of tropical or semitropical products, such as coffee, bananas and citrus fruits. All things considered, it appears that the disparity in consumption standards is principally a reflection of climate, traditional attachment to specific foods and level of income.<sup>1</sup>

*Degree of Agricultural Self-sufficiency.* As a corollary to changes in the level and structure of production and consumption, the degree of self-sufficiency varies greatly from one commodity and country to another. For the region as a whole, the overall degree of self-sufficiency increased in bread grains, pork and butter; declined in rice, feed grains and total meat; and remained unchanged in fats and oils, excluding butter.<sup>2</sup> For various reasons, surpluses in one country are not automatically absorbed in another member country. Domestic supplies of bread grains, especially wheat, covered about 93 per cent. of the six countries' requirements in 1959-60 compared with 81 per cent. in the early 1950's. Actually, the deficiency was confined to quality wheat with high protein and high bread-baking strength such as are possessed by northern spring wheats and hard red winter wheats. Despite rising incomes and population growth, per caput wheat consumption has declined in these countries.

For coarse grains other than wheat, the situation is quite different. Although domestic output increased by 41 per cent., the degree of self-sufficiency decreased from 80 per cent. in 1952-3 to 74 per cent. in 1959-60.<sup>1</sup> Corn and barley are the two most important coarse grains. Approximately three-fourths of all coarse grains were used for livestock feeding, the remainder finding outlets in the manufacturing of beverages, food and non-food products.

*Total Meat.* Production of all meats amounted to 8.3 million tons in 1959-60, or 2.1 million tons more than in 1952-3. Unlike the feed grain situation, EEC countries were almost self-sufficient in meat, although since 1956-7 the gap between production and consumption

<sup>1</sup> J. F. Dewhurst, J. D. Coppock and P. L. Yates, *Europe's Needs and Resources*, Twentieth Century Fund, New York, 1961, chaps. 5 and 6; 'EEC, Budgets Familiaux des Ouvriers de la Communauté Européenne du Charbon et de l'acier 1956-7', *Série Statistiques Sociales*, No. 1, 1960, p. 24.

<sup>2</sup> OEEC Statistical Bulletin, *Agriculture, Production and Consumption Figures*, op. cit., p. 37.

has widened. In terms of individual meat categories, the degree of self-sufficiency declined for beef and veal despite a 32 per cent. rise in production during the 1951-9 period. In pork, the area has had a small exportable surplus.<sup>1</sup>

Among the major commodities under consideration, the degree of self-sufficiency was lowest in fats and oils, amounting to about 42 per cent. of requirements.<sup>1</sup> Rapeseed and olives were the only two important indigenous vegetable oil sources. The greatest expansion occurred in the production of animal fats, such as lard and tallow.

### III. *Statistical analysis applied to EEC imports*<sup>2</sup>

Relations that describe the economic factors affecting the magnitude and regional distribution of EEC imports were formulated and estimated statistically by the traditional single-equation least-squares method of analysis. Because of limited space and the existence of a comprehensive body of literature, no attempt will be made here to review the methodological issues involved in choosing and applying techniques of statistical estimation.<sup>3</sup>

Explanatory variables used in the analyses may, for discussional expediency, be divided into four categories: those that relate to (I) general economic conditions within EEC or a specific sector of its economy, such as national income, indices of agricultural production and indices of production in food, beverage and tobacco manufacturing industries; (II) reciprocity of trade relations and foreign exchange resources as reflected in EEC exports to various regional import sources and gold and foreign exchange reserves; (III) relative prices, both domestic and foreign, as represented by the terms of trade, the ratio of food import prices to the general level of domestic prices, and the ratio of export prices to food import prices; and (IV) level of imports from alternative regional sources of supplies.

<sup>1</sup> OEEC Statistical Bulletin, *Agriculture, Production and Consumption Figures*, op. cit., p. 37.

<sup>2</sup> The regression equations and other statistical coefficients and materials underlying this discussion are presented in S. C. Schmidt, *Commodity Structure and Regional Distribution of EEC Imports: The Formative Years 1951-1959*, Part I—Food, Beverages and Tobacco, and Oils and Fats, Univ. of Ill. Agr. Exp. Sta. Research Report, AERR-70, 1964, available from the author.

<sup>3</sup> For critical evaluation of alternative methods of statistical estimation, see T. Haavelmo, 'The Statistical Implications of a System of Simultaneous Equations', *Econometrica*, vol. 11, 1943, pp. 1-12; and W. C. Hood and T. C. Koopmans, *Studies in Econometric Methods*, Cowles Commission Monograph No. 14, John Wiley and Sons, New York, 1953.

IV. *Composite food imports (SITC, Section 0+1+4)*

The principal forces that appear to have affected composite food imports in general and that of foods (SITC, Section 0) in particular include: (1) a rise in consumer incomes that brought general improvement in dietary standards; (2) governmental price, income and foreign trade policies that stimulated production and conferred a competitive advantage on domestically produced commodities;<sup>1</sup> (3) preferential treatment and protection accorded to associated overseas countries; (4) an increase in agricultural self-sufficiency; (5) random disturbances caused by adverse weather or political-military stresses (i.e. Korea and Suez); (6) terms and availability of competitive third-country supplies; (7) gains in gold and foreign exchange holdings enabling needs to be translated into effective demand, and the liberalization of trade;<sup>2</sup> (8) changes in relative prices, both domestic and international; and (9) emergence of a new and enlarged market resulting from the establishment of the European Coal and Steel Community and the anticipation of a widening scope of integration. Many of these factors proved impervious to quantitative analysis. Thus the implications derived from the estimated relationships have limited validity and are subject to qualifications.

The analyses indicated statistically significant degree of association between variations in imports obtained from (a) world, (b) intra-EEC sources, (c) European Sterling Area and (d) South America and the general economic indicator variables (category I). In a similar vein statistically significant positive association has been found between variations in imports from (a) Continental OEEC countries excluding EEC, (b) Central America and (c) South America, and changes in either the level of exports to these regions or in the overall level of gold and foreign exchange resources (category II variables).

With respect to interrelationships between changes in the regional distribution pattern of imports and relative price movements (category

<sup>1</sup> For a discussion of the nature and scope of agricultural support schemes, see UN, FAO, *National Grain Policies*, Rome, 1959 (and Supplements 1 and 2, 1959 and 1960); and UN, FAO, *Report of the Expert Panel on Agricultural Price Stabilization and Support Policies*, Rome, April 1959. USDA, ERS, *Agricultural Protection by Nontariff Trade Barriers*, ERS-Foreign-60, Washington, D.C., September 1963; USDA, ERS, *Agricultural Policies of Foreign Governments Including Trade Policies Affecting Agriculture*, Agriculture Handbook No. 132, Washington, D.C., March 1964.

<sup>2</sup> OEEC's 'Code for Liberalization' adopted in 1950 set up a programme for the systematic removal of quantitative restrictions on both intra-Western European and dollar trade. For details regarding the progress in trade liberalization, see Eleventh Annual Economic Review of the OEEC: *Europe and the World Economy*, Paris, April 1960, pp. 56 and 73.

III variables) no firm conclusions can be reached. Notwithstanding the fact that estimating relations incorporating relative price variables meet the statistical test of significance, the individual price coefficients frequently carry wrong signs and large standard errors. Major reasons for unsatisfactory price coefficients include (a) a high degree of intercorrelation among the explanatory variables;<sup>1</sup> (b) the singular importance of variables representing general economic indicators (category I) and foreign exchange resources (category II) in accounting for variations in composite food imports which leaves little room for the expression of price effects; and (c) the use of non-representative price variables.

Not much success attended efforts to formulate estimating relations using each of the regional import sources under consideration (category IV variables) as explanatory variables. Disregarding the complexities arising from the level of commodity aggregation and the sharing of a common trend, a positive regression coefficient conceivably could suggest a complementary relationship and a negative regression coefficient a competitive relationship between import flows originating in alternative regional sources. For example, the signs associated with the regression coefficients convey the impression that commodities supplied by continental OEEC countries excluding EEC are a substitute for those obtained from Oceania, and those supplied by Central America are a substitute for those obtained from Asia. However, because neither of these coefficients is statistically significant, no great importance can be attached to their signs. Similar reservations must be made regarding the complementary relationship suggested by the coefficients with respect to EEC imports obtained from continental OEEC countries excluding EEC and Eastern Europe.

#### *Food imports (SITC, Section 0)*

In order to facilitate comparison as well as to meet some of the deficiencies encountered in analyses of composite food imports, an attempt was made to (1) refit estimating relations with the same combination of explanatory variables, (2) exclude intercorrelated variables from estimating relations and (3) formulate new estimating relations. Judged in their entirety, the degree of association (or non-association)

<sup>1</sup> Simple correlation coefficients of  $-0.69$  and  $-0.78$  were obtained for the relationship of national income with food import prices; and for the relationship of terms of trade with indices of production in food, beverage and tobacco manufacturing industries,  $0.79$ . High intercorrelation between explanatory variables frequently results in unreasonable signs and large standard errors and thereby tends to impair the statistical reliability of coefficients.



between food imports and a common set of explanatory variables corresponds closely with that obtained for composite food imports. This phenomenon is explained by the predominance of the food (SITC, Section 0) element in the composite food import (SITC, Sections 0+1+4) aggregate.

The results of the analyses suggest three broad generalizations: First, a high degree of association between food imports and variables representing general economic indicators (category I) and the level of foreign exchange resources (category II) was manifest in all except three regional analyses, viz. Asia, Oceania and the United States.<sup>1</sup> Second, the relationship between food imports and both relative and food import prices either was blurred by the dominance of category I and II variables or was negligible. Third, apart from the interrelationships between food imports from the United States and Oceania, the analyses did not assign statistical significance to other category IV variables describing import flows originating from alternative regional sources.

It seems reasonable to assume that the pronounced parallelism between variations in imports procured from the United States and Oceania, reflects in the main, exposure to and impact of a similar set of causal factors. Indeed, the coincidence of improvement in consumption standards, rise in degree of self-sufficiency and changes in commodity structure of imports suggests a chain of interrelationships. Although there are substantial differences with respect to commodities and also between countries, EEC as a whole has become rather less dependent on temperate-zone food imports over the period under consideration than previously.<sup>2</sup>

Moreover, it must be recognized that variations in import flows may not be confined solely to impulses originating on the side of import demand, but may conceivably be induced by developments in the sphere of import supply. Physical factors (weather) and institutional arrangements may frequently be as important in determining year-to-year changes in the regional distribution pattern of EEC imports as are those acting upon the demand for imports. Variation in these factors appears to be essentially random, and hence their effect is not subject to statistical measurement.

<sup>1</sup> With respect to category II variables, it should be noted that estimates obtained for coefficients associated with exports to European Sterling Area and to Eastern Europe variables were not statistically significant.

<sup>2</sup> OECD Statistical Bulletin, *Agricultural and Food Statistics*, Paris, 1962, pp. 90-91.

*Beverages and tobacco imports (SITC Section 1)*

As was true in foods, consumption and imports of beverages and tobacco have been affected by a variety of factors, both economic and institutional.<sup>1</sup> They include (a) a rise in national income and improvement in the external financial positions of member countries; (b) a shift in consumer tastes in favour of light cigarette tobaccos, such as flue-cured and oriental varieties, as well as for filter-type cigarettes; (c) customs tariffs and quantitative restrictions on imports, including the preferential treatment accorded to commodities from AOT;<sup>2</sup> (d) a revenue form of taxation employed against beverages and tobacco;<sup>2</sup> (e) state monopolies exercising control over the import and manufacture of tobaccos; and (f) competitive attributes as regards price and quality between regional import sources. Only a few of these factors having a bearing on imports are amenable to quantitative specification.

The analyses are based on explanatory variables and estimating relations similar to those formulated for the food import aggregates. The results indicate that, with the exception of two regions, (1) continental OEEC countries excluding EEC, and (2) South America, beverages and tobacco imports were more highly associated with variables representing general economic indicators (category I) and the level of foreign exchange resources (category II) than were food imports.<sup>3</sup> This difference appears to reflect in large part the combined effect of (a) differences in degree of self-sufficiency with respect to commodities making up the two import aggregates, (b) differences in the commodity structure of imports originating from various regions, (c) differences in the nature of demand for these commodities and (d) shifts in consumer preference in favour of foreign-made products.

Inclusion of variables representing terms of trade conditions, relative prices, food import prices and world export prices of beverages and tobacco in the analyses made no significant contribution to

<sup>1</sup> For an elaboration of and statistical evidence pertaining to consumption patterns and trends, see J. F. Dewhurst *et al.*, *Europe's Needs and Resources*, op. cit., chap. 6.

<sup>2</sup> For a discussion of the nature of trade impediments, see James W. Birkhead and Albert B. Davis, *Changes in Import Duties on Tobacco in Free World Countries, 1957-1960*, U.S. Department of Agriculture, Foreign Agricultural Service (FAS-M-116) Washington, July 1961; and James W. Birkhead and Albert B. Davis, *Nontariff Barriers to the Movement of Tobacco in Free World Countries*, U.S. Department of Agriculture, Foreign Agricultural Service (FAS-M-146) Washington, May 1963.

<sup>3</sup> Imports obtained from Asia and Oceania were of inconsequential magnitude and therefore were not included in the analysis.

the explanation of changes in the interregional import pattern. Statistically significant coefficients for these price variables were obtained mainly from simple (two variable) regression analysis whose relevance, like that of other gross coefficients is subject to question.

*Oils and fats imports (SITC, Section 4)*<sup>1</sup>

Imports of these commodities were conditioned by (1) changes in the degree of self-sufficiency in both animal and vegetable fats and oils, (2) the scope of protection extended to domestic producers of oils and fats,<sup>2</sup> (3) the maintenance of preferential trade arrangements with associated overseas countries and territories, (4) the pattern of price relationships between competing domestic as well as foreign fats and oils,<sup>3</sup> (5) terms and availability of alternative foreign supplies, (6) the shift toward synthetic raw materials in the detergent and paint industries and (7) the interaction of a host of factors identified under category I to IV variables, elaborated earlier. In formulating estimating relations, however, it was not possible to allow for the influence transmitted by many of these factors especially for those which are institutional and transitory in nature. There is reason to believe that much of the variation which the analyses failed to explain can be attributed to the influence of these factors. Indeed, imports of oils and fats from all sources of origin followed a highly volatile course and without any major underlying trend. Apart from the results obtained for the United States the analyses failed to provide statistically significant and reliable evidence as to which economic factors have been most influential in affecting imports. Moreover, it should be noted that coefficients for terms of trade and international market prices of all fats and oils variables were not consistent with *a priori* hypotheses as to the direction of the influences. It appears that a parallel study of subsumed individual commodity components is indispensable for gaining a better understanding and explanation of the course described by this import aggregate.

<sup>1</sup> Among the three commodity groups comprising SITC, Section 4, vegetable oils 412 were of greatest importance followed by animal oils and fats 411, and oils and fats processed 413, in that order.

<sup>2</sup> On the scope and nature of existing and contemplated policies of major import countries, see OEEC, *Les Productions Principales des Territoires d'Outre-mer: Les Oleagineux*, Paris, 1957; Political and Economic Planning, *Trade Diversion in Western Europe*, Occasional Paper No. 9, London, 1960, pp. 26-28.

<sup>3</sup> Owing to a high degree of interchangeability among the major oils and fats in manufactured food and non-food products any disproportionate movement in prices may result in a higher consumption of the lower priced substitute.

*Validity and limitations*

Apart from the methodological questions pertaining to the choice of the method of statistical estimation, differences in commodity structure between regional import flows attenuate the veracity of derived relationships. Thus, comparability of behaviour pattern and responsiveness to specific categories of explanatory variables is less meaningful than those involving individual commodities.

It must be recognized that none of the major economic indicator variables applied in the analyses can be regarded as being truly independent. Causal interdependence is discernible between national income, gold and foreign exchange reserves, total exports and trends in agricultural production or in the processing industries. Considering that in the period 1951-9 the value of EEC exports averaged around 14 per cent. of national income, it is easy to see that variations in one magnitude may also be reflected in the other.<sup>1</sup> In a similar way the incidence of change emanating from agricultural production and the level of production in the processing industries may be readily traced out in terms of their relative contribution to national income.<sup>2</sup>

There is also a complex chain of interrelationship between gold and foreign exchange reserves and the factors affecting the balance of payments.<sup>3</sup> The scope of import expansion allowed by the size of gold and foreign exchange reserves will hinge, *inter alia*, on the magnitude of monetary commitments, such as those relating to the backing of national currencies and intervention in foreign exchange markets.

The estimating efficacy of price variables, in addition to considerations voiced with respect to composite food imports, is considerably vitiated by the diversity of subsumed individual commodity components. Attention must be called also to the fact that food import prices refer and apply to Western Europe (OEEC countries) as a whole and as such embody the effect of import demand and export supplies of other non-EEC countries. In addition, no comparable import price series exist for beverages and tobacco, and oils and fats, and the closest approximation which may be obtained is that from world export and international market price series respectively.

<sup>1</sup> For an analysis of the changes in the income stream that may arise from the export and import sides, see J. J. Polak, *An International Economic System*, The University of Chicago Press, Chicago, 1953.

<sup>2</sup> The processing industries are linked with the rest of the economy in two major ways: first, as users of raw materials, both domestic and imported, as well as other resources and, second, as suppliers of processed consumer goods.

<sup>3</sup> For further information on this topic, refer to U.S. Congress, Joint Economic Committee, *Factors Affecting the United States Balance of Payments*, Washington, 1962.

*Summary and Conclusions*

A comparison of changes in the regional distribution pattern of market shares by principal commodity aggregates reveals that:

1. In all commodities exchanged, except oils and fats, member countries of EEC achieved gains compared with Third countries.
2. The United States suffered setbacks in all commodities but oils and fats.
3. With respect to the comparative performance of other regions three broad generalizations can be made: First, Asia, Canada, Oceania, European Sterling Area and Central America experienced a decrease in their relative contribution to EEC's food imports; second, apart from Oceania and South America the remaining regions have achieved either increases or held their own in the distributive shares of EEC's raw material imports; and third, disregarding the fractional gains realized by Canada and Eastern Europe, and notwithstanding rising sales, the principal export regions registered contraction in their share of EEC's imports of manufactures.

Owing to the degree of aggregation the analyses and conclusions derived thereof cannot provide valid explanations of the pattern and regional distribution of subsumed individual commodity components. Thus, on the basis of selected individual commodities the outstanding feature of changes with respect to imports from the United States and intra-EEC sources was:

1. EEC countries were at a disadvantage with respect to (a) live animals, (b) canned meats and (c) rice; retained their position in corn; and realized gains in animal oils and fats as well as in processed oils and fats.
2. The United States realized gains in (a) fresh meats, (b) rice, (c) barley, (d) other cereals, (e) feeding stuffs, and (f) animal and vegetable oils and fats, but fell behind in wheat and processed oils and fats.

Changes in the regional distribution pattern of EEC imports reflect the combined influence of economic, institutional and transitory forces. Because of the heterogeneous commodity structure of import flows on the one hand and the inability to measure the effect of institutional and transitory forces on the other, the estimated relationships

and conclusions derived thereof are subject to qualifications. They can give only a broad approximation of the direction which developments in major commodity aggregates have taken in the period under consideration. Any assessment of the extent which the economic forces shaping the aggregate are directly relevant to its constituent parts would need to be based on a parallel study of individual commodities.<sup>1</sup>

<sup>1</sup> A further presentation of this discussion including an analysis of EEC Import Expenditure Elasticities is contained in Professor Schmidt's article in *Illinois Agricultural Economics*, vol. 5, no. 1.