Developments in the Commodity Composition, Market Distribution, and Competitiveness of Italy's Foreign Trade, 1955-1963 *

Italy's foreign trade increased spectacularly in the decade ending in 1963. From $1.5 billion in 1953, total exports increased to $5.1 billion in 1963, or by 240 per cent. In volume terms, the increase was somewhat larger, 289 per cent, as the unit value of exports fell from 100 in 1953 to 86 in 1963 (1). Shipments of manufactured goods, of which Italy is an important world exporter, increased in value by 339 per cent. This increase was second only to that of Japan, whose exports of manufactures increased by 371 per cent. In contrast during the same period, exports of manufactures from West Germany increased by 253 per cent, from the United States by 31 per cent, and from the United Kingdom by 60 per cent (2). Italy's imports also increased dramatically from $2.4 billion (c.i.f.) in 1953 to $7.6 billion in 1963, or by 217 per cent. The increase in volume was again larger, 268 per cent, as the unit value of imports fell from 100 in 1953 to 85 in 1963 (3).

The increase in Italy's exports has been a major factor contributing to its rapid economic growth in the past decade. This has been true in relation to gross national product as a whole and parti-

cularly with regard to investment and productivity which were stimulated significantly by the export expansion. The increase in exports also made it possible to finance larger imports, especially of manufactured goods, and the rapidly expanding domestic economy helped to attract sizeable inflows of long-term capital. With a comfortable balance of payments position, at least to the end of 1962, domestic expansionary policies were implemented without serious external constraints.

It became obvious in 1963, however, that a new set of conditions was at work. Wages had increased sharply, bringing about large increases in home consumption and imports with the further result of a substantial deterioration in the balance of payments. In order to correct this situation, the financial authorities took steps to check the expansion in domestic demand and thus in imports. As a consequence of these steps and with a considerable expansion of exports especially in the second half of 1964, the external payments situation was greatly eased.

Since it appears that 1963 perhaps marks a turning point in the rate and pattern of Italy's economic growth, a recapitulation of the major developments which have occurred in her foreign trade in the years preceding may be of some interest. The present paper thus seeks to determine the contributions to changes in total Italian exports which may be attributable to changes in the commodity composition, market distribution, and competitiveness of these exports. In addition, imports will be examined with reference particularly to changes in their commodity composition and regions of origin (4).

I.

In attempting to account for the remarkable increase noted in Italy's exports, consideration must be given to factors on both the demand and the supply sides. Changes in the demand for Italy's

(1) Data on the total value, volume, and unit value of exports are from OECD, Statistical Bulletins, *Foreign Trade, Series A, Overall Trade by Countries.*

(2) Data on manufactured goods exports are from the United Nations, *Monthly Bulletin of Statistics.*

(3) OECD, *op. cit.* Note that with the slightly greater fall in the unit value of imports, Italy's commodity terms of trade increased from 100 in 1953 to 102 in 1963.

(4) For an alternative view of the major development in Italy's foreign trade with reference especially to the annual percentage changes in the values of imports and exports, the ratios of trade to national income, and the balance of trade in total and by major economic categories, see GASTONE MICONI, " Foreign Trade in the Last 10 Years (1954-1963) ", Banco di Roma, *Review of the Economic Conditions in Italy*, Vol. XVIII (March 1964). See also FRANCESCO MASERA, " The Balance of Payments ", *Statist*, April 6, 1962, and " L'evoluzione dell'economia italiana ed in particolare i recenti sviluppi della bilancia dei pagamenti ", *Economia Internazionale*, Vol. XVII (February 1964), esp. pp. 100-04.

exports may have been due, for example, to such factors as: 1) changes in the commodity composition of import demand in a given market due to changes in the level and distribution of real income, tastes, technology, commercial policy, or the competitiveness of import-competing industries in the given market; and 2) changes due to the reasons just mentioned in the market distribution pattern of the different national and regional markets which comprise the total world market for imports from various countries.

Changes on the supply side serving to increase the competitiveness of Italy's exports may have been due to such factors as: 1) differential rates of increase in productivity and the levels of prices; 2) differential rates of improvement in the quality of goods exported and in the development of new exports; 3) differential rates of improvement in the efficiency of marketing or in the terms of improvement in the sale of export goods; and 4) differential changes in financing the sale of export goods; and 4) differential changes in the ability for prompt fulfillment of export orders (5).

While a precise accounting for all the foregoing factors cannot be made, some of them at least are susceptible to quantitative measurement. Thus, in what follows estimates have been made of the changes in the demand for Italy's exports to the extent that these changes are reflected in changes in the total value and pattern of world trade. The portion of the increase in exports remaining after the elimination of these demand factors is thus considered attributable to the role of supply factors which have given rise to increased competitiveness (6).

The procedure adopted to assess the influence of changes in foreign demand is outlined in algebraic form in the Appendix (7).

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(5) For a more extended discussion of these various factors, see J. M. FLEMING and S. C. TSIANG, "Changes in Competitive Strength and Export Shares of Major Industrial Countries", International Monetary Fund, *Staff Papers*, Vol. V (August 1956), esp. pp. 219-22.

(6) Alternatively, changes in the demand for Italy's exports could be studied by means of regression analysis in which the volume of exports might be related to income in the importing countries and to the prices of Italy's exports relative to those of competing countries. Such an analysis would have the advantage of affording a longer time perspective and of providing estimates of the income and price elasticities of demand for Italian exports. By the same token, however, there would arise certain well known difficulties in the availability and interpretation of indexes of relative export prices and in the statistical estimation of time series elasticities. For some preliminary explorations along these lines for Italy in the postwar period, see GUIDO M. REY "Problemi e Prospettive della Bilancia Commerciale Italiana", and GUIDO M. REY and SERGIO SGARBI, "Previsioni del commercio con l'estero", Banca d'Italia, Servizio Studi (processed 1963 and 1964).

(7) This procedure was first suggested in an article by H. TYSZYNSKI, "World Trade in Manufactured Commodities, 1899-1950", *The Manchester School*, Vol. XIX (September

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It consisted of three steps. First calculated was the amount by which Italy's exports would have increased from an initial year if they had grown at the same rate as the total value of world demand, measured here by the total value of world exports to all importing areas excluding Italy.

The second step was to estimate the increases which Italy would have realized if its exports of each major commodity group had risen at the same rate as world exports of the particular commodity group, and then to subtract from these amounts the amounts by which each group would have increased if it had risen at the same rate as total world exports. Thus, if world demand expanded more than proportionately for those commodities in which Italy specialized in the initial year, the effect would be positive. Otherwise, it would be negative.

The third step was to estimate the increase in Italy's exports of each commodity group if Italy had just maintained its share in each major market for that group, and to subtract from these amounts the amounts by which each commodity group would have increased if it had risen at the same rate as world exports of that particular group. Accordingly, if world demand grew more than proportionately in those markets in which Italy was concentrated in the beginning year, the effect would be positive. Otherwise, it would be negative.

1951). It has since been further developed and utilized in a number of other studies, among which may be mentioned: I. SVENNILSON, *Growth and Stagnation in the European Economy* (Geneva, United Nations, 1954); R. E. BALDWIN, "The Commodity Composition of Trade: Selected Industrial Countries, 1900-1954", *Review of Economics and Statistics*, Vol. XL (February 1958, Supplement), and "Implication for Structural Changes in Commodity Trade", in U.S. Congress, Joint Economic Committee, *Factors Affecting the United States Balance of Payments* (Washington: Government Printing Office 1962); STEPHEN SPIEGELGLAS, "World Exports of Manufactures, 1956 vs. 1937", *The Manchester School*, Vol. XXVII (May 1959); "Effets de Structure et Effets de Concurrence", *Etudes et Conjoncture* (May 1960); P. R. NARVEKAR, "The Role of Competitiveness in Japan's Export Performance, 1954-58", International Monetary Fund, *Staff Papers*, Vol. VIII (November 1960); ANNE ROMANIS, "Relative Growth of Exports of Manufactures of United States and Other Industrial Countries", International Monetary Fund, *Staff Papers*, Vol. VIII (May 1961); A. LAMFALUSSY, *The United Kingdom and the Six* (Homewood: Richard D. Irwin, Inc. for the Yale University Economic Growth Center, 1963), esp. pp. 47-58 and pp. 137-40; and S. J. WELLS, *British Export Performance: A Comparative Study* (Cambridge: University Press, 1964), esp. pp. 5-9. See also the references cited and results contained in the study by HELEN B. JUNZ and RUDOLF R. RHOMBERG, "Prices and Export Performance of Industrial Countries, 1953-63", paper presented at a joint session of the American Statistical Association and American Economic Association 1964 Annual Meetings held in Chicago.

Finally the sum of the amounts calculated in the manner just described was deducted from the total increase in Italy's exports in order to arrive at the remainder which can be considered the result of the increased competitiveness of these exports. Now it should be evident that this remainder is an indication of general competitiveness in the sense that it reflects not only price competitiveness, but, as well, the influence of quality variations, the introduction of new exports, promotional expenditures, possible changes in marketing arrangements, and the ability to service export orders promptly (8). It would of course be of great interest to attempt to disaggregate this residual of general competitiveness in order to assess the relative importance of the price and non-price factors. This will not be attempted in the present paper, however, due to the lack of information on these latter factors and the relatively few data points which could be computed for purposes of analysis (9).

II.

The calculations were based upon seven SITC commodity groups and upon ten importing areas, as specified in the Appendix. The classification of manufactured goods in particular into only three groups is far from satisfactory because of the heterogeneity of the components, especially in SITC groups 6 and 8. Time and resources unfortunately precluded both the utilization of data for the few available components of the manufactured goods groups and the expansion of the calculations to cover a significantly larger number of importing areas (10).

(8) Changes in competitiveness can also be thought of as occurring in response to change in the domestic level of income and employment insofar as these latter changes affect the availability of goods for export and thus are reflected in the various price and non-price factors mentioned.

(9) As more data points became available, it would perhaps be worthwhile to undertake some regression analyses of the relations between the calculated residuals of competitiveness and measures of relative export prices by region and for total exports. This is in effect what Fleming and Tsiang, *op. cit.*, attempted to do. There is also the possibility of using a method of analysis in which the commodity composition, market distribution, and world demand influences are approximated by the use of dummy variables. For some preliminary results based upon a procedure of this kind, see ALAN L. GINSBURG and ROBERT M. STERN, " The Determination of the Factors Affecting American and British Exports in the Interwar and Postwar Periods.", *Oxford Economic Papers* (forthcoming).

(10) Less aggregative data comparable to those used in the present study are available in the United Nations, *Monthly Bulletin of Statistics* for the following seven SITC commodity

The results of the detailed calculations which were made for 1955-1963 are summarized in Table 1 (11). It is evident that the increases in the value of world trade explained about 40 per cent of the increase in Italy's exports from 1955 to 1959, about 25 per cent from 1959 to 1962, and close to 60 per cent from 1962 to 1963. The changes due to the commodity composition and the market distribution of the expansion in world trade were comparatively small. Five per cent or less of the increase in Italy's exports from 1959 to 1962 could be attributed to the commodity composition. The overall market distribution was actually slightly unfavorable to Italy from 1955 to 1959, and slightly favorable after that time. The residual portion which measures the increase in Italy's exports due to increased competitiveness can thus be seen to have been substantial. It accounted for nearly 60 per cent of the increase from 1955 to 1959, more than two thirds from 1959 to 1962, and about 40 per cent from 1962 to 1963.

TABLE I

ANALYSIS OF CHANGES IN ITALY'S EXPORTS, 1955-1963

(Millions of dollars)

	1955 to 1959 $	1959 to 1962 $	1955 to 1962 $	1962 to 1963 $	1955 to 1959 %	1959 to 1962 %	1955 to 1962 %	1962 to 1963 %
Change in Total Exports	1,058	1,784	2,842	376	100.0	100.0	100.0	100.0
1. Due to increase in value of world trade	443	473	916	221	41.9	26.5	32.2	58.8
2. Due to commodity composition of increase in word trade	53	61	114	(a)	5.0	3.4	4.0	(a)
3. Due to market distribution of increase in world trade	— 55	53	— 2	2	—5.2	3.0	—0.1	0.5
4. Due to increased competitiveness of Italy's exports	617	1,197	1,814	153	58.3	67.1	63.9	40.7

(a) Included in change due to increased competitiveness.
SOURCE: Based upon Table 2.

subgroups: cereals; textile fibers; metalliferous ores and metal scrap; textile yarn and fabric; base metals; other manufactured metal products; and passenger road vehicles and their parts. A more detailed breakdown according to importing area could be constructed, but only with considerable difficulty, from the United Nations, *Commodity Trade Statistics.*

(11) The year 1955 was chosen as the starting point because world export data for earlier years were arranged in the United Nations, *Monthly Bulletin of Statistics* according to different and non-comparable regions of destination.

The summary data in Table 1 are broken down in Table 2 according to the regions of destination of Italy's exports. It can be seen that the major increases in Italy's exports from 1955 to 1959 were to the industrial countries of North America, EEC, and EFTA, and that a substantial proportion of these increases was attributable to increased competitiveness. This was also the case from 1959 to 1962, in particular as far as exports to the EEC were concerned. That is, $839 million of the $1,784 million increase in exports during these years went to the EEC, and close to $600 million was attributable to increased competitiveness. The proportion of the increase due to the market distribution was relatively minor by contrast, even given the very rapid growth in income which the EEC countries experienced. It would of course be interesting to determine what part, if any, of the increase in Italy's competitiveness between 1959 and 1962 was due to the differential impact of EEC commercial policies which favored Italy. However, since this would require detailed information on changes in tariffs within the EEC, it was considered to be beyond the scope of the present study (12). In any case, there can be no doubt of the pervasiveness of the increase in Italy's competitiveness which was evidenced strongly as well in all of the other importing regions.

Italy's exports from 1962 to 1963 increased to all regions with the exception of EFTA. While the proportion of the increase due to competitiveness declined somewhat in comparison to the earlier years noted, it was nevertheless still relatively substantial (13). The negative figure for the competitiveness of Italy's exports to the EFTA countries is of interest. This might conceivably be attributed in part to the differential impact of EFTA commercial policies unfavorable to Italy. But before this explanation was

(12) For a recent study of the effects of economic integration which gives substantial weight to the influence of tariff reductions in increasing trade among the EEC countries, see P. J. VERDOORN and F. J. M. MEYER ZU SCHLOCHTERN, "Trade Creation and Trade Diversion in the Common Market", in *Intégration Européenne et Réalité Economique (European Integration and Economic Reality)*, (Bruges: de Tempel for the College of Europe, 1964).

(13) Although no direct information is available, it might be conjectured that the 1963 results possibly reflect in part the relatively lower prices of export deliveries contracted in earlier years. It is perhaps also worth noting that in itself a decline in the proportion of the increase in exports due to increased competitiveness by no means signifies a reduction in competitiveness. If such a reduction did occur, the data would disclose an absolute negative figure, as was the case with Italy's exports to the EFTA countries from 1962 to 1963.

TABLE 2

ANALYSIS OF CHANGES IN EXPORTS BY REGION OF DESTINATION, 1955-1963
(Millions of dollars)

	North America	Latin America	EEC	EFTA	Other W. Europe	Austr., New Zeal. and U.S. Africa	Japan	Other Asia and Africa (a)	Eastern Europe	All Other	Total
Exports in 1955 to	176	190	434	432	181	46	12	288	59	38	1,856
Exports in 1959 to	380	257	797	648	192	55	11	400	120	54	2,914
Exports in 1962 to	490	319	1,636	963	310	87	25	529	242	97	4,698
Exports in 1963 to	527	321	1,802	961	342	99	42	609	271	100	5,074
A. Change in exports from 1955 to 1959	204	67	363	216	11	9	− 1	112	61	16	1,058
1. Due to increase in value of world trade	42	45	104	103	43	11	3	69	14	9	443
2. Due to commodity composition	2	11	36	12	4	− 2	− 5	− 7	5	− 3	53
3. Due to market distribution	16	− 27	21	− 39	− 26	− 12	2	− 5	21	− 6	− 55
4. Due to increased competitiveness	144	38	202	140	− 10	12	− 1	55	21	16	617
B. Change in exports from 1959 to 1962	110	62	839	315	118	32	14	129	122	43	1,784
1. Due to increase in value of world trade	45	49	110	110	46	12	3	73	15	10	473
2. Due to commodity composition	2	7	40	19	− 4	—	− 1	− 2	3	− 3	61
3. Due to market distribution	− 35	− 37	96	4	49	− 7	5	− 31	13	− 4	53
4. Due to increased competitiveness	98	43	593	182	27	27	7	89	91	40	1,197
C. Change in exports from 1962 to 1963	37	2	166	− 2	32	12	17	80	29	3	376
1. Due to increase in value of world trade	21	22	52	52	22	5	1	35	7	4	221
2. Due to market distribution	− 9	− 27	31	− 6	7	3	5	− 2	3	− 3	2
3. Due to combined influence of commodity composition and increased competitiveness (b)	25	7	83	− 48	3	4	11	47	19	2	153

(a) Includes exports to Mainland China.
(b) These influences are shown jointly because of the unavailability for 1963 of world commodity exports by region of destination.

Sources and notes: Italy's exports by region of destination were taken from United Nations, *Yearbook of International Trade Statistics 1958*, Volume II and from the OEEC-OECD sources cited in Table 3. Exports of Union of South Africa for 1959-1963 were taken from OECD, *Foreign Trade, Series C, Trade by Commodities*, and were deducted from the total of Italy's exports to Africa indicated in the OECD Series B source. Data on world exports for 1955-1962 by commodity classes and regions of destination were taken from the United Nations, *Monthly Bulletin of Statistics*, March 1961 and 1964; the data for 1963 were based upon the total values of world exports by provenance and destination given in the *Monthly Bulletin of Statistics*, June 1964. The adjustment made for exports to Italy was as noted in Table 3.

accepted, an examination would be needed of the detailed export returns vis-a-vis the individual EFTA countries in order to determine if the negative figure for competitiveness was due to such factors as the completion by 1963 of special export deliveries or to the reduced availability of export goods on account of increases in Italy's home consumption.

Table 3 contains an analysis of Italy's exports for the period from 1955 to 1962 according to the major SITC commodity classes. The greatest part by far of the increases in exports from 1955 to 1959 was in machinery and transportation equipment and other manufactured goods, and, as would be surmised, a substantial proportion of these increases was attributable to increased competitiveness. It is also clear that the increases from 1959 to 1962 were similarly concentrated in manufactured goods and that the relative importance and absolute magnitudes represented by increased competitiveness were impressive indeed. Although the analysis by commodity classes could not be extended beyond 1962 because data were not yet available at the time of writing, the 1962 to 1963 results given in Table 2 according to region of destination would suggest that increased competitiveness in manufactured goods exports was of considerable importance also in 1963.

In interpreting the statistical results presented in Tables 1-3, one must be cognizant of course of the limitations inherent in the method of calculation, the data and the level of aggregation, and the inability to specify more exactly the components of competitiveness. Thus, it has been assumed in the method of calculation that the various factors specified are independent and additive, and that they can be fully and unambiguously isolated (14). Moreover, the data classifications and levels of aggregation employed cannot be broken down readily to analyze the changes which may have occurred for particular commodities or importing nations within the major commodity and regional groups. Since new and improved lines of manufactured goods may have bulked large

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(14) It may also be noted that there is an index number problem raised by the method of calculation because base year export values are used throughout. For a discussion of this point and of related issues, see GOTTFRIED HABERLER, "Introduction", to the Papers and Abstracts of Papers at a Universities - National Bureau Committee for Economic Research Conference on Problems in International Economics, *Review of Economics and Statistics*, Vol. XL (February 1958, Supplement), esp. pp. 4-5; R. E. BALDWIN, "The Commodity Composition of Trade...", pp. 56-57; and A. LAMFALUSSY, *op. cit.*, esp. pp. 50-52.

TABLE 3

ANALYSIS OF CHANGES IN ITALY'S EXPORTS BY COMMODITY CLASSES, 1955-1962

(Millions of dollars)

	Food, Beverages and Tobacco	Crude Materials, Oils and Fats	Mineral Fuels and Rel. Materials	Chemicals	Machin. and Transp. Equip.	Other Manufactured Goods	Total
Exports in 1965	412	130	166	127	371	650	1,856
Exports in 1959	536	140	214	208	758	1,058	2,914
Exports in 1962	717	182	263	360	1,432	1,723	4,699 (a)
A. Change in exports from 1955 to 1959	124	10	48	81	387	408	1,058
1. Due to increase in value of world trade . . .	98	31	40	30	89	155	443
2. Due to commodity composition	− 29	− 19	− 11	21	69	16	47
3. Due to market distribution	6	− 9	− 11	—	− 2	− 33	− 49
4. Due to increased competitiveness	49	7	30	30	231	270	617
B. Change in exports from 1959 to 1962	181	42	49	152	674	665	1,785 (a)
1. Due to increase in value of world trade . . .	105	33	42	33	94	165	472
2. Due to commodity composition	− 40	− 25	− 4	13	81	26	51
3. Due to market distribution	− 3	1	− 6	2	41	29	64
4. Due to increased competitiveness	119	33	17	104	458	445	1,198 (a)

(a) Total includes $22 million of transactions and commodities not elsewhere specified (SITC 9).

Sources and notes: Italy's exports in 1955 were taken from OEEC, Statistical Bulletins, *Foreign Trade, Series IV, Italy, Foreign Trade by Commodity and Area of Origin and Destination*, January-June 1958; the 1959 and 1962 exports were taken from OECD, *Foreign Trade, Series B, Italy, Analytical Abstracts*, Jan.-Dec., 1961 and 1963. Data on world exports by commodity classes and regions of destination were taken from United Nations, *Monthly Bulletin of Statistics*, March 1961 and 1964. These data were adjusted to exclude exports to Italy on the basis of the c.i.f. import values shown for Italy in the OEEC and OECD sources just noted. This procedure was necessitated because exports to Italy were not specified separately in the United Nations source.

in the increases in Italy's exports in the period under study, a more disaggregated system of data classification might possibly yield therefore results that would give more weight especially to changes in the commodity composition of exports.

But in any case, the picture which emerges from the present results establishes without doubt the predominant role of increased competitiveness in the remarkable increase in Italy's exports in the past decade. What will be interesting now to watch is how closely this record of the past decade may be matched in the near future, particularly in light of the wage pressures and slowing down in investment which have taken place in Italy since 1962.

III.

Turning next to an examination of imports, it is evident that changes in Italy's demand for imports in total and according to major commodity groups will be determined by changes in such factors mentioned earlier as the level and distribution of income, tastes, technology, commercial policy, or the competitiveness of its import-competing industries (15). And similarly on the supply side, the share of particular regions of origin in Italy's imports will depend upon changes in their relative price competitiveness, quality variations and the introduction of new exports, promotional expenditures and changes in marketing arrangements, and the ability to service exports orders promptly.

Since a detailed examination of the foregoing factors was considered to be beyond the scope of the present undertaking, an attempt was made instead to adapt the procedure used in the analysis of exports to an examination of the changes which have occurred in Italy's imports between 1955 and 1963. This adaptation is set forth in algebraic form in the Appendix.

First calculated were the amounts by which Italy's imports according to each major commodity group and region of origin

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(15) See the references cited in footnotes (4) and (6) above for a treatment of some of the changes which have occurred in Italy's demand for imports. Somewhat more comprehensive results pertaining to Italy's demand for imports in the postwar period can be found in E. VOLPE DI PRIGNANO, *Indagini in tema di elasticità delle importazioni con riferimento alla recente esperienza italiana*, (Rome: Istituto Nazionale per lo Studio della Congiuntura, 1963); this work is summarized in an article by the same author, " L'elasticità delle importazioni nell'economia italiana ", *L'Industria*, no. 3 (1963).

would have increased from an initial year if these imports had increased at the same rate as total imports. The sum of these amounts will be equal by definition to the actual increase in total imports between the initial year and some given year.

The next step was to calculate for each commodity group and region of origin the increase in imports that would have been realized if the share in total imports of each commodity group and region of origin had remained the same as in the initial year, and to subtract from these amounts the amounts by which imports of each commodity group or region of origin would have increased if they had risen at the same rate as total imports. Thus, if Italy's demand for imports increased more than proportionately for those commodity groups which were less important in the beginning year, the effect would be positive. Otherwise, it would be negative. The combined effects should sum to zero since they refer to components of the change in total imports.

Finally, the calculated increase in imports that would have been realized by each region of origin if its share in Italy's total imports of each commodity group had remained unchanged was subtracted from the total amount of imports in a given year in order to arrive at a remainder which can be taken as indicative of the change in competitiveness of individual regions of origin. Consequently, if Italy's demand for imports expanded proportionately more with respect to regions of origin that were less important in the initial year, the effect could be positive. Otherwise, it would be negative. Here again the combined effects should sum to zero since they refer to the components of the change in total imports. Note further that for the individual regions the change in competitiveness must be interpreted broadly, as in the analysis of exports, to comprehend both price and non-price factors.

The calculations were based upon the same commodity groups and regions as utilized in the analysis of exports. The same drawbacks that were mentioned earlier with respect particularly to the heterogeneity of the components for manufactured goods are thus applicable here as well. The results of the detailed calculations made for 1955-1963 are presented in Table 4 according to commodity class and in Table 5 according to region of origin. The small positive or negative figures indicated in the Total column in each table are the consequence of rounding.

The results in Table 4 indicate that from 1955 to 1959 the commodity composition, which reflects the changes in Italy's demand for imports brought about by changes in the level and structure of domestic income and output, was roughly neutral for foodstuffs, negative for crude materials and mineral fuels, and positive for chemicals and manufactured goods. With a near doubling of total imports in the subsequent period from 1959 to 1962, the commodity composition revealed that imports of foodstuffs, crude materials, and mineral fuels lost substantially in relative importance compared to the very sizeable increases in the imports of the two categories of manufactured goods. Finally, from 1962 to 1963, it can be seen that the commodity composition of the $1.5 billion increase in imports was concentrated particularly upon foodstuffs and manufactured goods as compared to crude materials, mineral fuels, and chemicals.

The results in Table 5 provide an indication of the factors which have influenced the shares in Italy's imports of the individual regions of origin. Thus, the total increase shown in Italy's imports from each region is broken down into the portion due to the increase in the value of imports from all regions, the portion due to changes in the commodity composition of imports by region, and a residual portion due to changes in competitiveness.

From 1955 to 1959, Italy's imports increased from all regions except North America and Australia, New Zealand, and the Union of South Africa, which exhibited negative influences for commodity composition and competitiveness. The EFTA countries had a small negative influence due to reduced competitiveness, while the commodity composition was unfavorable for the less developed countries of Asia and Africa. The substantial increase in imports from 1959 to 1962 was concentrated in large part on the industrial countries. The commodity composition can be seen to have been unfavorable to all of the non-industrial regions, especially Other Asia and Africa. As far as competitiveness was concerned, the chief increases noted were for North America, the other EEC countries, Other Western Europe, and Eastern Europe, while there were substantial decreases evident for EFTA and Other Asia and Africa. Here again it would be of interest to determine what part, if any, of the EFTA decline in competitiveness might be due to the differential impact of changes in Italy's commercial policy with respect to the EEC. This cannot be assessed unfortunately

TABLE 4

ANALYSIS OF CHANGES IN ITALY'S IMPORTS (C.I.F.) BY COMMODITY CLASSES, 1955-1963

(Millions of dollars)

	Food, Beverages and Tobacco	Crude Materials, Oils and Fats	Mineral Fuels and Rel. Materials	Chemicals	Machin. and Transp. Equip.	Other Manufactured Goods	Total (a)
Imports in 1955	451	841	532	141	299	441	2,706
Imports in 1959	561	1,007	586	232	379	582	3,351
Imports in 1962	846	1,535	814	393	1,207	1,292	6,101
Imports in 1963	1,331	1,680	928	435	1,572	1,596	7,581
A. Change in imports from 1955 to 1959	110	166	54	91	80	141	645
1. Due to increase in value of total imports . . .	107	199	126	33	71	105	641
2. Due to commodity composition	3	− 33	− 72	58	9	36	4
B. Change in imports from 1959 to 1962	285	528	228	161	828	710	2,750
1. Due to increase in value of total imports . . .	459	856	541	144	304	448	2,753
2. Due to commodity composition	− 174	− 328	− 313	17	524	262	− 3
C. Change in imports from 1962 to 1963	485	145	114	42	365	304	1,480
1. Due to increase in value of total imports . . .	247	460	292	77	164	242	1,483
2. Due to commodity composition	238	− 315	− 178	− 35	201	62	− 3

(a) Includes transactions and commodities not elsewhere specified (SITC 9).

Sources: OEEC, Statistical Bulletins, *Foreign Trade, Series IV, Italy, Foreign Trade by Commodity and Area of Origin and Destination*, January-June, 1958; OECD, Statistical Bulletins, *Foreign Trade, Series B, Italy, Analytical Abstracts*, Jan.-Dec., 1961 and 1963.

TABLE 5

ANALYSIS OF CHANGES IN ITALY'S IMPORTS (C.I.F.) BY REGION OF ORIGIN, 1955-1963

(Millions of dollars)

	North America	Latin America	EEC	EFTA	Other W. Europe	Austr., New Zeal. and U.S. Africa	Japan	Other Asia and Africa	Eastern Europe	All Other	Total
Imports in 1955 from . . .	434	180	648	471	117	143	6	627	68	12	2,706
Imports in 1959 from . . .	405	232	895	598	141	139	15	765	155	6	3,351
Imports in 1962 from . . .	960	355	1,899	901	346	229	49	1,019	333	10	6,101
Imports in 1963 from . . .	1,108	498	2,489	1,174	369	235	90	1,173	426	19	7,581
A. Change in imports from 1955 to 1959	− 29	52	247	127	24	− 4	9	138	87	− 6	645
1. Due to increase in value of total imports . . .	103	43	154	112	28	34	1	149	16	3	643
2. Due to commodity composition	− 4	5	31	22	− 4	− 6	1	− 50	− 1	1	− 5
3. Due to increased competitiveness	− 128	4	62	− 7	—	− 32	7	39	72	− 10	7
B. Change in imports from 1959 to 1962	555	123	1,004	303	205	90	34	254	178	4	2,750
1. Due to increase in value of total imports . . .	441	183	659	479	119	145	7	637	69	12	2,751
2. Due to commodity composition	30	− 56	233	131	− 16	− 39	—	− 279	− 9	11	6
3. Due to increased competitiveness	84	− 4	112	− 307	102	− 16	27	− 104	118	− 19	—
C. Change in imports from 1962 to 1963	148	143	590	273	23	6	41	154	93	9	1,480
1. Due to increase in value of total imports . . .	238	98	355	258	64	79	3	344	38	7	1,484
2. Due to commodity composition	− 40	48	85	57	− 3	− 43	− 1	− 131	—	24	− 4
3. Due to increased competitiveness	− 50	− 3	150	− 42	− 38	− 30	39	− 59	55	− 22	—

Sources and notes: Same sources as Table 4, with adjustments to make the regions comparable with the United Nations classification shown in Table 2 above.

without detailed information on tariffs and other changes. However, the increased competitiveness noted for regions other than the EEC might suggest that changes in commercial policy may not have been decisive with respect to altering EFTA's share of Italy's imports (16).

From 1962 to 1963, imports from North America were subject, as from 1955 to 1959, to the negative influences of commodity composition and competitiveness, while imports from the other countries of the EEC continued to reflect strong positive influences in these respects. Interestingly enough, the EFTA countries exhibited a further decline in competitiveness, as did Australia, New Zealand, and the Union of South Africa and Other Asia and Africa. Imports from these latter regions were also subject to a pronounced negative influence due to commodity composition.

When we consider Tables 4 and 5 together, it is thus clear that changes in the commodity composition of Italy's imports from 1955 to 1963 were concentrated in favor of manufactured goods in comparison to crude materials and mineral fuels. The pattern of change was also against foodstuffs from 1959 to 1962, but was reversed in 1963 when imports of foodstuffs rose significantly. The chief beneficiaries of the increase in Italy's imports were the industrial countries, particularly the other members of the EEC that benefited both from the commodity pattern of the increase and from their increased competitiveness. The EFTA countries especially and, to some extent, North America were adversely affected by reduced competitiveness. Finally, the primary producing regions, in particular the less developed nations of Asia and Africa, fared relatively poorly in the increase in Italy's imports due to an unfavorable commodity composition and also to some reduction in their competitiveness.

What will happen to the commodity composition of Italy's imports after 1963 will depend upon the changes in the demand factors mentioned earlier. The tendency for imports of crude materials and mineral fuels to increase proportionately less than imports of manufactures seems fairly well entrenched. Future imports of foodstuffs will depend largely upon changes in income

(16) The results presented in the aforementioned paper by Verdoorn and Meyer Zu Schlochtern would suggest that the decline noted for EFTA may in fact have been attributable to reduced competitiveness rather than to changes in Common Market commercial policies.

in relation to the ability of domestic producers to expand, stabilize and diversify their output, particularly of protein type foodstuffs. As noted, manufactured goods imports will continue to expand rapidly as domestic incomes and output rise, although there will probably be significant changes in the composition of these imports if domestic production of import substitutes is efficiently expanded and diversified.

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APPENDIX

I. The statistical procedure adopted for the analysis of changes in Italy's exports was as follows:

X = Italy's total exports in 1955;

X' = Italy's total exports in 1959 (1962 or 1963);

r = percentage increase in world exports to all importing areas other than Italy from 1955 to 1959 (1962 or 1963);

i = subscripts (1, 2, 3, ... 7) denoting one of the following commodity groups: Food, Beverages, and Tobacco (SITC 0 and 1); Crude Materials, Oils and Fats (SITC 2 and 4); Mineral Fuels and Related Materials (SITC 3); Chemicals (SITC 5); Machinery and Transportation Equipment (SITC 7); Other Manufactured Goods (SITC 6 and 8); All Other Goods (SITC 9);

j = subscripts (1, 2, 3, ... 10) denoting one of the following importing areas: North America; Latin America; EEC (excluding Italy); EFTA; Other Western Europe; Australia, New Zealand, and Union of South Africa; Japan; Other Asia and Africa; Eastern Europe; and All Other Countries.

Thus, for example, X_i represents Italy's exports in 1955 of commodity group i to all markets, and X_{ij}, the exports of commodity group i to market j. r_i and r_{ij} represent the percentage increases from 1955 to 1959 (1962 or 1963) in world exports of commodity group i to all markets and to market j, respectively. X'_i and X'_{ij} represent Italy's actual exports in 1959 (1962 or 1963) of commodity i to all markets and to market j, respectively.

The effect of the increase in total world trade on Italy's exports is:

$$\sum_{i=1}^{7} r \, X_i - X_i \qquad (1)$$

The effect of the commodity composition of the increase in world trade on Italy's exports is:

$$\sum_{i=1}^{7} r_i \, X_i - r X_i \qquad (2)$$

The effect of the market distribution of the increase in world trade on Italy's exports is:

$$\left(\sum_{j=1}^{10} r_{1j} X_{1j} - r_1 X_1 \right) + \left(\sum_{j=1}^{10} r_{2j} X_{2j} - r_2 X_2 \right) \cdots$$

$$= \sum_{i=1}^{7} \sum_{j=1}^{10} r_{ij} X_{ij} - \sum_{i=1}^{7} r_i X_i \qquad (3)$$

The effect of the increased competitiveness of Italy's exports is:

$$\sum_{i=1}^{7} \sum_{j=1}^{10} X'_{ij} - \sum_{i=1}^{7} \sum_{j=1}^{10} r_{ij} X_{ij} \qquad (4)$$

Thus, the increase in Italy's exports between 1955 and 1959 (1962 or 1963) is due to the combined influence of the four preceding factors:

$$X' - X = \left(\sum_{i=1}^{7} r \, X_i - X_i \right) + \left(\sum_{i=1}^{7} r_i X_i - r X_i \right)$$

$$+ \left(\sum_{i=1}^{7} \sum_{j=1}^{10} r_{ij} X_{ij} - \sum_{i=1}^{7} r_i X_i \right)$$

$$+ \left(\sum_{j=1}^{7} \sum_{j=1}^{10} X'_{ij} - \sum_{i=1}^{7} \sum_{j=1}^{10} r_{ij} X_{ij} \right) \qquad (5)$$

Note that the effects of the increase in total world trade on Italy's exports could also be measured by $\sum_{j=1}^{10} r \, X_j - X_j$. Similarly, the effect of the market distribution could be measured by $\sum_{j=1}^{10} r_j X_j - r X_j$, in which case the effect of the commodity composition would be

$$\sum_{i=1}^{7} \sum_{j=1}^{10} r_{ij} X_{ij} - \sum_{j=1}^{10} r_j X_j.$$

As will be evident from a comparison of Tables 2 and 3, this latter formulation gives somewhat, but not very, different overall results.

II. The statistical procedure adopted for the analysis of changes in Italy's imports was as follows:

M = Italy's total imports (c.i.f.) in 1955;

M' = Italy's total imports (c.i.f.) in 1959 (1962 or 1963);

r = percentage increase in Italy's imports (c.i.f.) from all regions from 1955 to 1959 (1962 or 1963);

i = subscripts (1, 2, 3, ... 7) denoting the main commodity groups as used in the analysis of exports;

j = subscripts (1, 2, 3, ... 10) denoting the regions of origin of Italy's imports as used in the analysis of exports.

The effects of the increase in Italy's total imports broken down by commodity class and by region of origin are:

$$\sum_{i=1}^{7} r M_i - M_i \quad \text{and} \quad \sum_{j=1}^{10} r M_j - M_j \qquad (6)$$

The effects of the increase by commodity class and by region of origin with respect to the increase in total imports are:

$$\sum_{i=1}^{7} \sum_{j=1}^{10} r_{ij} M_{ij} - \sum_{i=1}^{7} r M_i \quad \text{and}$$

$$\sum_{i=1}^{7} \sum_{j=1}^{10} r_{ij} M_{ij} - \sum_{j=1}^{10} r M_j \qquad (7)$$

The effects of the changes in competitiveness by region of origin are:

$$\sum_{i=1}^{7} \sum_{j=1}^{10} M'_{ij} - \sum_{i=1}^{7} \sum_{j=1}^{10} r_{ij} M_{ij} \qquad (8)$$

Examination of the expressions in (6) will reveal that they should sum to the actual increase in imports for a given year, M', with respect to the initial year, M. Expressions (7) and (8) should, accordingly, sum to zero since they refer to the increases in imports of all commodities from all regions, or, what is the same thing, the imports from all regions of all commodities.