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Developing Countries' Manufactured Exports to the EU: An Analysis of the Performance of Five Countries

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This article examines the performance of the manufactured exports of developing countries to the market of the European Union (EU). The constant market shares (CMS) method of analysis, a variant of the shift-share analysis technique, is used to evaluate the export performance of five countries in the EU market, namely, Turkey, Tunisia, Thailand, India and Mauritius. The application of this technique to the manufactured exports of these countries to the EU would appear to suggest that a simple indicator of competitive loss or gain in a particular product category is alone insufficient for predicting export composition change or the ability to obtain or retain market share. In particular, for textile and clothing exports, which have been among the most competitive exports from developing countries to the EU market in recent years, the pervasive use of quantitative restrictions in the form of quotas, has greatly restricted market growth in many of these products.

Introduction

This article examines the performance of the manufactured exports of developing countries to the market of the European Union (EU). The constant market shares method (CMS) of analysis, a variant of the shift-share analysis

technique, is used to evaluate the export performance of five particular countries in the EU market, namely, Turkey, Tunisia, Thailand, India and Mauritius. To understand the purpose of this analysis, it nceds to be recognised that the exports of developing countries to the EU can grow (or decline) for different reasons. For instance, if demand in the EU for a particular type of product increases, then this would cause a developing country's exports of that product to the EU to increase, other things being equal. Alternatively, even without an increase in EU demand, a developing country's exports could increase if it gained a larger share of the EU market. Or, in some cases, a developing country might increase its share of the available EU market for a product, but slow or negative growth of EU demand could offset the growth in market share. This would result in relatively slow growth of its exports of that product to the EU. The purpose of the constant market shares (CMS) method of analysis used in this article is to distinguish the effects of these different factors - namely changing market shares and differing rates of growth of demand for different products - which underlie the performance of exports of developing countrics to the EU.

Methodology of study: shift-share analysis

The constant market shares (CMS) method of analysis provides an overview of how developing countries have been performing via the breakdown of each SITC (Standard International Trade Classification) section into its individual sub-divisions for the purpose of analysing the relative effects of changes in competitiveness (or market share) and product composition. With the constant market shares method, hypothetical export values are calculated assuming that market shares are equal to the actual shares of some previous "normal" year. This method is designed to discover the change in total "competitiveness" (due to changes in tastes, reductions in tariff barriers, exchange rate adjustments). In addition to the competitive effect, this article also includes an examination of the "composition" effect on EU-developing couutry trade. This refers to the effect of changes in the product composition of a country's market (due to, say, structural shifts in the economy or some other exogenous influence) on the share of supplier countries in that

country's market. Thus, if the demand for products in which one foreign supplier (e.g one of the five selected developing countries) has a disproportionately large share, expands much faster than all other products, one would expect, *ceteris paribus*, this supplier's share of the total market to increase. Consequently, the supplier's increased share of the recipient country's total market may have nothing to do with changes in competitiveness. The CMS analysis is a decomposition technique used to break down the increase in the exports of a country into different components, a procedure useful from both an analytical and a policy point of view. The idea underlying this decomposition is that the export growth of a country cannot be explained without calling into consideration the specific commodity structure and the particular composition of the export markets in the total exports of a country. If the commodity bundle of a country contains many goods for which world demand increases relatively slowly, for example, primary commodities, then, as a consequence, its total exports will increase relatively slowly and its total market share will be negatively affected. It is critical to realise that this influence acts independently of the terms under which the different products are supplied, since the composition of the total export basket of a country is not related to the competitiveness of the individual suppliers of the different products.

Competitive and composition effects

Before embarking on an analysis of how the individual countries under review have been performing (by means of competitive and composition effects), it is worthwhile examining the competitive and composition effects of developing countries (in total) relative to total EU imports from the world. Two particular years, 1973 and 1987, have been chosen because 1973 is the period just before the effects of the first oil-shock became fully operative and 1987 is a representative year towards the end of the 1980s for the purpose of evaluating progress and performance.

The competitive effect

Table 1.1(a) provides data relating to the competitive effects for imports from all developing countries relative to total EU

imports from all areas. This table reveals that in each product section, developing countries have incteased their share of EU imports from the world. The extent of the gain has been more significant in particular sections, with manufactured goods classified by material (SITC 6) reporting the largest percentage point increase (an increase of 69.8 pps).[1]

The composition effect

In addition to calculating the competitive effect totals, it is also possible to calculate the composition effects for total developing country exports to the EU relative to total EU imports from the world. Table 1.1(b) provides data relating to the composition effects for EU imports from all developing countries relative to total EU imports from all areas.[2]

As is evident from Table 1.1(b), manufactured goods classified by material (SITC 6) display a large negative composition effect which dominates the positive composition effects in other sections. These data provide a framework for the forthcoming analysis of how each of the individual countries have performed. Referring to Tables 1.1(a&b), the most significant composition effect total took place in manufaetured goods classified by material (SITC 6) which incorporates the textile category. It has a large negative composition effect which results in a negative total effect as calculated in Table 1.1(b). In contrast, miscellaneous manufactured artieles (SITC 8) has a large positive composition effect in association with a positive competitive effect. Machinery and transport equipment (SITC 7) also has positive effects in both cases but the composition effect appears less important than in the case of SITC 8. Chemicals (SITC 5) displays the smallest absolute figure in both tables and again both figures are positive.

Comparing Tables 1.1(a) and 1.1(b), quite different results emerge. Regarding the competitive effect in Table 1.1(a), developing countries appear to be gaining competitiveness in all sections, but particularly in section 7. However, SITC 7 (machinery and transport equipment) displays a much smaller positive composition effect, perhaps due in part to data deficiency in 1973 for divisions 74-79. Examining the composition effect totals, the most interesting result is the poor market growth of SITC 6 despite a positive competitive performance which would tend to restrain the growth of exports. These results appear to suggest that, over the period 1973-87, the shift in the product composition of EU import

Table 1.1(a) Competitive effects (including the Intra-EU Effect) for all developing countries relative to total EU imports of manufactured goods from the world

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
EU imports from developing countries 1973 US$m	EU imports from the world 1973 US$m	(1) as a % of (2)	EU imports from developing countries, 1987 US$m	Imports from all areas to the EU 1987, US$m	(4) as a % of (5)	Hypothetical value, (5)* (3)/100 = (7)	Competitive effect totals (4)-(7)=(8)
SITC 5 452.80	15703.01	2.884	6182.53	96633.88	6.389	2786.92	3395.6
SITC 6 4729.36	45978.45	10.286	21670.41	166201.69	13.039	17095.51	4574.9
SITC 7 898.67	47307.63	1.9	18231.50	289307.65	6.302	5496.85	12734.7
SITC 8 2159.05	19174.02	11.26	25283.41	117292.64	21.556	13207.15	12076.3
8239.88			71367.85				32781.5

Source: Computed from OECD Foreign Trade by Commodity - 1973, 1987

Table 1.1(b) Composition effect totals (including the Intra-EU Effect) for EU imports from all developing countries relative to total EU imports from all areas[3]

(1) EU imports from all developing countries, 1973 US$m	(2) EU imports from all areas, 1973 US$m	(3) (1) divided by sum of column (2)	(4) EU imports from all developing countries, 1987 US$m	(5) EU imports from all areas, 1987 US$m	(6) Hypothetical A, Value assuming constant structure of EU imports, (3)*Σ(5), 1987 US$m	(7) Total effect (4)-(6), US$m	(8) Developing countries' original (1973) share of total imports for each SITC 5-8 (1)/(2)	(9) Hypothetical B Imports from developing countries in 1987 if no competitive effect (8)*(5)	(10) Composition effect Hypothetical A – Hypothetical B (9) - (6)
SITC 5									
452.80	15703.01	0.003533	6182.53	96633.883	2365.12	3817.41	0.02884	2786.92	421.8
SITC 6									
4729.36	45978.45	0.0369	21670.41	166201.69	24702.18	-3031.77	0.10286	17095.51	-7606.7
SITC 7									
898.67	47307.63	0.007	18231.50	298307.65	4686.05	13545.45	0.018996	5495.69	809.6
SITC 8									
2159.05	19174.02	0.01685	25283.41	117292.64	11279.99	14003.42	0.112603	13207.50	1927.5
	128163.11			669435.86					-4447.8

demand away from imports of manufactured goods classified by material (SITC 6), (perhaps due to structural shifts in the EU economy or some other exogenous influence), adversely affected overall developing country export growth.

Analysis of competitive effects for the chosen developing countries

With reference to Table 1.2, this section presents a similar analysis of the competitive effects for each of the chosen developing countries. Some noteworthy results emerge. The method for arriving at these results is similar to that in Table 1.1(a). While calculations for each division of each section for all countries were undertaken, Appendix II displays the most significant positive and negative effects at the 2-digit level (Table 1.2 below provides a summary of Appendix II). The reason for this is that the eliminated divisions displayed only minor or negligible competitive effect changes.

Table 1.2: Total SITC competitive effects for each country as % of total 1987 imports from all areas[4]

	Competitive effect totals SITC 5-8 US$m	Competitive effect, % of 1987 total EU imports from all areas[5]	Competitive effect totals as % of EU imports from each country – 1987
Turkey	2211.9	0.33	77.4%
Tunisia	810.5	0.12	70.5%
Thailand	1079.2	0.16	78.4%
India	806.6	0.12	30.8%
Mauritius	340.0	0.05	92.5%

Source: Compiled on the basis of OECD foreign trade by commodity, 1973 and 1987.

Referring to Appendix II, Turkey displays a positive competitive effect in division 52 (mineral tar and crude chemicals) of US$32.31m and also in division 56 (fertilisers manufactured) and division 58 (plastic materials) of US$32.34m and

US$25.99m respectively. However, in division 55 (oils, perfume materials and cosmetics), Turkey records a negative competitive effect of US$-7.64m. The SITC 6 category displays more remarkable results particularly with regard to division 65 (textiles, yarn, fabrics and made- up articles) and division 66 (non-metallic mineral manufactures not elsewhere specified (NES)). Both display positive competitive effects, the most notable of which emerges from the former with a value of US$476.55m. The division showing the greatest reduction in competitiveness in SITC 6 is 64 (paper, paperboard articles of paper, paper pulp, board), with a value of US$-3.21m. Turkey displays a small positive competitive effect in division 71 (machinery other than electric) of US$12.71m, but a negative effect for division 73 (transport equipment/metal working machinery) of US$-1.52m over the period 1973-87. The statistics recorded for SITC 7 highlight somewhat unrepresentative competitive effects for the five countries simply because, for 1973, divisions 74-79 statistics were not available, therefore, the hypothetical values had the 1973 share been constant are incalculable. However, the most revealing results appear in category 8 (misc. manufactured articles) with Turkey displaying a large positive competitive effect of US$1437.3m for clothing (division 84) and positive, but somewhat smaller, effects in division 83, travel goods, handbags, similar articles and miscellaneous manufactured articles (division 89). If one is to take Turkey's competitive effect totals for each section of SITC 5-8 as a percentage of the value of total manufactured exports from all developing countries (Table 1.1(a)) to the EU market for 1973, some interesting results emerge. Regarding SITC 5-8, performing the above-mentioned steps, relative to total developing country exports of manufactures to the EU, Turkey constituted a 1.134 percentage point share (pps) of exports of SITC 5 (chemicals), resulting in a competitive effect gain. The corresponding figures for SITC 6, 7 and 8 are 7.64 (pps), 0.2 (pps) and 17.9 (pps) respectively. From this analysis, it may be said that Turkey, relative to total developing country manufactured exports to the EU, has displayed the greatest improvement in competitiveness in category 8.

For Tunisia, the most striking competitive effects occur in divisions 56 (fertilisers manufactured), 66 (non-metallic mineral manufactures NES) and more especially division 84 (clothing, US$622.156m). Another outstanding feature is the large drop in competitiveness in division 51 (chemical elements and compounds), of US$-54.9m. Taking Tunisia's competitive effect

totals for each of SITC 5-8 as a percentage of the value of manufactured exports from all developing countries (Table 1.1(a)) to the EU market for 1973, the following resulrs appear. Relative to total developing country exports of manufactures ro the EU, Tunisia has lost competitiveness in the chemical category (SITC 5) by -0.043 percentage points, and recorded a positive but negligible improvement in competitiveness with respect to SITC 6 (0.75 pps). The corresponding relative degree of competitiveness for SITC 7 (machinery and transport equipment) is 1.24 pps, while Tunisia again, like Turkey, displayed the greatest relative degree of competitiveness in category 8 (miscellaneous manufactured articles, (7.9 pps).

Thailand also shows some revealing results, however, the figures are not as striking as the other countries. A small but positive competitive effect occurs in SITC 5 in division 58 (plastic materials etc) with a recorded value of US$1.96m. In category 6 (manufactured goods classified by material), particularly division 65 (textiles, yarns, fabrics, made-up articles), Thailand displays a large positive competitive effect of US$172.31m. However, in division 68 (non-ferrous metals), this country has recorded a loss in competitiveness of US$-52.12m. The greatest competitive effects occur in category 8 (miscellaneous manufactured articles), with division 84 (clothing) showing a value of US$417.15m and a somewhat smaller, but, positive effect again in division 83 (travel goods, handbags and similar articles, US$34.26m). Taking the competitive effect totals for each of SITC 5-8 as a percentage of the value of total manufactured exports from all developing countries, it emerges that Thailand, relatively speaking, has displayed the greatest degree of competitiveness in category 8 analagous to Turkey and Tunisia, recording a figure of 8.65 pps. The corresponding figures for categories 5, 6 and 7 were -0.0088 pps, 2.46 pps and 1.00 (pps) respectively.

In India, relatively disappointing results emerge. Positive, but small competitive effects occur in divisions 51 (chemical elements and compounds) and 53 (dyeing, tanning and colouring materials, see Appendix II). While the overall competitive effect for SITC 6 (manufactured goods classified by material) is US$183.86m (which primarily arises in divisions 65, textiles, yarn, fabrics, made-up articles and 66, non-metallic mineral manufactures NES), there is a large negative effect in division 61 (leather, leather manufactures NES and dressed furs) of US$-364.65m. An overall negative competitive effect is recorded in category 7 (machinery and transport equipment)

while within this section, positive, but negligible effects appear, the largest of these occurring in division 71 (machinery other than electric, US$17.16m). With respect to SITC 8 (miscellaneous manufactured articles), the most significant positive competitive effect is in the clothing category (US$500.8m) and a somewhat less but again, a positive effect in the footwear category (division 85). However, negative effects occur in divisions 82 (furniture) and 89 (misc. manufactured articles NES), the latter displaying the greater negative effect. Taking the competitive effect totals for each of SITC 5-8 as a percentage of the value of total manufactured exports from all developing countries, it emerges that India, relatively speaking, has displayed the greatest improvement in competitiveness in category 8, following the trend of Turkey, Tunisia and Thailand with a recorded value of 7.00 pps. The corresponding figures for SITC 5, 6 and 7 were 0.604 pps, 2.23 pps and -0.054 pps respectively.

Finally, in Mauritius, the most striking positive effect occurs in the case of clothing (division 84) displaying a value of US$289.6m, with a smaller, positive effect in division 83 (travel goods, handbags and similar articles). Small losses in competitiveness have been recorded in divisions 72 (electrical machinery apparatus and appliances) and 89 (misc. manufactured articles NES). In terms of the competitive effect for the five countries, categories 6 and 8 have been the most outstanding performers for the countries concerned, particularly clothing (division 84) and also textiles (division 65).

Composition effects for the chosen developing countries

The purpose of this section is to analyse the composition effect totals for each of the five developing countries, namely the composition of each country's exports to the EU market (1973-87) relative to total EU imports from the world. The methodological approach for working out the composition effect, in each case, is analagous to that undertaken for total developing country manufactured exports to the EU, relative to total EU imports of SITC 5-8 from the world. Looking at Turkey (Table 1.3), relatively good growth in demand has taken place in SITC 5 (i.e. a positive composition effect), however, a

relatively poor performance is observed in division 51 (chemical elements and compounds). Regarding SITC 6, very striking negative composition effects occur in division 65 (textiles, yarn, fabrics, made-up articles) with divisions 66-68 also displaying poor performance. Overall, SITC 6 has recorded a relatively large negative composition effect for all five countries, in accordance with the results observed for developing countries in Table 1.1(b). As with the competitive effect, it is difficult in the case of all countries under observation to receive a true picture of the structural composition of SITC 7 due to the unavailability of statistics for divisions 74-79 for 1973. However, from what little data there are available for Turkey, for this product group, it may be concluded that there have been contrasting experiences within this group. Overall, a positive composition effect is recorded, but the three divisions analysed (71, machinery other than electric, 72, electrical machinery apparatus and appliances and 73, transport equipment/metal working machinery) all displayed a relatively poor performance. Obviously, some other division or divisions within this group must have grown much more rapidly than these.[6] In section 8, the composition factor has been favourable to the growth of Turkey's exports, despite the fact that particular divisions display insignificant composition effects.

Regarding SITC 5, 7 and 8, it will be noticed that composition effects are positive while SITC 6 is negative overall for all countries similar to that observed in the case of Turkey (see Table 1.3). Despite the fact that overall the composition effect for a particular SITC category may be favourable, the factor for divisions within that category may be (and in some cases is) unfavourable. However, the most significant changes occur mainly in section 6 despite the fact that positive effects are recorded by each of the countries in sections 5, 7 and 8. These countries have emerged extremely competitive in particular product categories over the period 1973-87. However, when one examines the composition effects for these countries' product groups, the direction of influence of the two effects do not always correspond, particularly in SITC 6 which had positive competitive effects, as had division 71 (machinery other than electric), but displayed negative composition effects. Division 84 (clothing) has significantly large positive effects in both tables. While a positive competitive effect for this product would be expected, the composition effect contrasts with that recorded for a similar type product in division 65 (textiles, yarn, fabrics, made-up articles).

Table 1.3: Composition effect totals for all five developing countries (in each division of each section) compiled over the period 1973-1987, US$m

SITC	Turkey	Tunisia	Thailand	India	Mauritius
5	6.86	26.65	1.36	8.67	N.A.
51	-3.28	8.53	N.A.	1.47	N.A.
52	0.17	N.A.	N.A.	N.A.	N.A.
53	0.00	N.A.	N.A.	0.13	N.A.
54	0.07	N.A.	0.016	1.27	N.A.
55	2.05	2.73	0.018	2.90	N.A.
56	0.00	-4.00	N.A.	-0.03	N.A.
57	-0.02	N.A.	N.A.	N.A.	N.A.
58	1.07	N.A.	0.002	0.19	N.A.
59	0.02	N.A.	1.16	0.43	N.A.
6	-131.50	-38.48	-109.65	-576.75	-1.41
61	-0.45	-0.08	-0.49	-91.18	N.A.
62	0.05	0.09	0.12	0.55	N.A.
63	-0.17	-1.34	-19.06	-4.65	N.A.
64	0.50	0.13	0.01	0.07	N.A.
65	-100.73	-20.49	-7.85	-195.21	-0.27
66	-6.74	-0.07	-28.98	-95.23	-1.19
67	-11.25	-11.48	-0.07	-5.75	N.A.
68	-2.94	-10.71	-96.73	-0.83	N.A.
69	-0.29	-0.01	-0.36	-2.01	N.A.
7	10.09	0.79	0.49	16.13	0.08
71	-10.54	-0.49	-1.09	-44.86	N.A.
72	-4.94	-0.32	-0.37	-17.43	-0.25
73	-34.19	-3.15	-0.79	-7.65	N.A.
8	33.29	10.09	5.38	49.26	2.79
81	-0.29	N.A.	-0.05	-0.67	N.A.
82	0.03	0.16	0.10	0.41	N.A.
83	1.04	0.24	0.27	2.25	0.15
84	25.88	7.59	1.99	28.28	1.89
85	0.11	N.A.	0.03	5.13	N.A.
86	N.A.	N.A.	N.A.	N.A.	N.A.
87	N.A.	N.A.	N.A.	N.A.	N.A.
88	N.A.	N.A.	N.A.	N.A.	N.A.
89	0.49	0.25	1.19	3.98	0.20

Source: Computed on the basis of OECD foreign trade by commodity, 1973, 1987 (EU imports from developing countries).

Evaluation of the export performance of the five countries in the EU market

Referring back to a point made previously with respect to the negative composition effects observed for textile exports for each of the five countries, an obvious question arises regarding the stringency or otherwise of the Multifibre Arrangement (MFA). The present consensus is that the MFA has a strong impact on developing countries both in the short and long runs regarding their textile and clothing exports to developed country markets, but particularly to the EU market. In the first instance, the MFA has a direct effect on restricted exporters in the form of foregone export revenues and quotas. Secondly, the MFA affects trade patterns. Due to the fact that individual quotas under the MFA are imposed on selected exporting countries, unrestricted, often inefficient, countries may be able to increase their shipments at the expense of restricted, often efficient countries. Thirdly, the MFA discourages new textile and clothing suppliers. Developing countries have reacted to the MFA by becoming very competitive. As a result, and despite the fact that the MFA has restricted total imports from these countries, this has not prevented some from performing quite well, particularly when it is noted that more than half of all textile fibres, textiles and clothing imported from developing countries by industrial nations are subject to MFA quotas.[7] The previous analysis of the competitive effects for each country in each commodity category (SITC 5-8) shows that textile and clothing exports have been among the most competitive exports of the five countries under observation. Over the last decade or so, Turkey and Tunisia have emerged as major textile and clothing exporters. Turkey, for example, has recently replaced Hong Kong as the leading foreign supplier of textiles and clothing to the EU (in volume terms). By 1986, textile and clothing exports from Tunisia had increased by greater than 1000% since the early 1970s. This rapid increase has led to concerns within industrial countries regarding the high level of imports from this source and pressures have grown for the introduction of protectionist measures. It has been stated that the Turkish industry, in particular, has been severely affected by quota restrictions imposed by the EU and the US.[8] However, from the positive competitive effects recorded previously, it is evident that Turkish exports have grown despite the effects of these

protectionist measures (as have these exports from the other four countries) due to a good competitive performance. However, protectionism would appear to be important in explaining why the benefits of this competitiveness have not been more fully exploited.

Concluding remarks

Developing countries in general have exhibited competitive gains in the EU market in recent years, however, export growth has been restrained as shown by the negative composition effects in certain categories. The preceding analysis (of composition effects, in particular) would appear to suggest that developing countries generally, and particularly the five chosen for analysis, are competitive in product categories where demand in the EU has been growing relatively slowly. While the same destination (the EU market) is common to all five developing countries in this analysis, competitive effects and the structural composition of exports vary considerably from country to country and product to product. The results suggest that a simple indicator of competitive loss or gain in a particular category is not sufficient to predict export composition change or the ability to obtain or retain market share. This is most noticeable in SITC 6.

A number of other factors would need to be included. On the demand side, the relatively poor performance of each country under observation in the textile sector could in part be attributed to trading policies of the EU which do not affect the competitiveness of the producing countries but, through imposing quotas, limit demand. When this occurs, price competitiveness does not ensure export growth. On the supply side, the strong performance (in terms of competitiveness/market share) of Mauritius and the weaker performance of India (see Table 1.2) would appear to indicate the success of a strategy aimed at identifying and promoting certain sectors in contrast to simply relying on price competitiveness to gain market share. The shift-share analysis technique used, therefore, would appear to indicate that while competitive gain is not a sufficient factor to ensure success in penetrating the EU market, it is a necessary pre-requisite for export-led growth.

Developing countries' exports to the EU have been concentrated in particular traditional product groups which have

not grown as strongly in recent years as others. The main manufactured exports of these countries reflects the role of relatively simple, labour-intensive manufacturing and assembly operations. As this study has shown, textile and clothing exports have been among the most competitive exports from developing countries to the EU in recent years, and especially in the case of the chosen five countries. However, the increasing resort by the EU to non-tariff barriers and the pervasive use of quantitative restrictions in the form of quotas, particularly in the textiles and clothing categories (legalised by the Multifibre Arrangement) have greatly restricted market growth in many of these products. Clothing, however, (division 84) is a clear exception and the main reason for this is a subject for further research. Regarding preferential arrangements, the prognosis is that, despite their limitations, they are here to stay, and proposals to mitigate their restrictive clauses continue to play a vital role. The EU remains a very important outlet for the exports of developing countries in general (particularly their manufactured exports), and it is indeed their vital partner in development. It is in the EU's best interests to avoid increasing their economic and social difficulties which may only encourage destabilisation. The EU should therefore display itself to the developing countries as a reliable partner whose "trade and aid" policies can be depended on in the long-run.

Footnotes

1. See Appendix I for a full list of product classifications.
2. This Table includes the Intra-EU effect.
3. The convention of using the same number of decimal places throughout is not adopted in Table 1.1 to ensure accuracy, since in some cases it is necessary to multiply a very large number, e.g. column (5) above, by a very small number, e.g. column (3). Where this happens, rounding the small number will cause an unacceptably large error in the product.
4. See Appendix II
5. 1987 Total Imports = 669435.86m.
6. See Siobhan M. Kenny, (1992), Unpublished M. Litt Thesis, *Developing Countries' Manufactured Exports to the European Union.* Thesis submitted for M. Litt (Econ.), University of Dublin, Trinity College, Department of Economics (September, 1992). In this study, a more in-depth look is taken at SITC 7 (machinery and transport equipment) for each of the countries over the period 1983-87. 1983 was the first year for which data were available for all of SITC 7.
7. R. Erzan, J. Goto, and P. Holmes, (1990), "Effect of the Multifibre Arrangement on Developing Countries' Trade: An Empirical Investigation", in Hamilton, C., (ed) 1990, The Uruguay Round – *Textiles Trade and the Developing Countries – Eliminating the Multifibre Arrangement in the 1990s*, World Bank (1990), pp.46-62
8. ITS Textile Leader, June 1990

Appendix I Product Categories: (Standard International Trade Classification 5-8)

SITC 5	**Chemicals**
Division 51	Chemical elements and compounds
Division 52	Mineral tar and crude chemicals
Division 53	Dyeing, tanning and colouring materials
Division 54	Medicinal, pharmaceutical goods
Division 55	Oils, perfume materials, cosmetics etc
Division 56	Fertilizers manufactured
Division 57	Explosives and pyrotechnic products
Division 58	Plastic materials etc
Division 59	Chemical materials and products NES
SITC 6	**Manufactured Goods Classified by Material**
Division 61	Leather, leather manufactures NES and dressed furs
Division 62	Rubber manufactures
Division 63	Cork and wood manufactures excluding furniture
Division 64	Paper, paperboard articles of paper, paper-pulp, board
Division 65	Textiles, yarn, fabrics, made-up articles
Division 66	Non-metallic mineral manufactures NES
Division 67	Iron and steel
Division 68	Non-ferrous metals
Division 69	Manufactures of metal
SITC 7	**Machinery and Transport Equipment**
Division 71	Machinery other than electric
Division 72	Electrical machinery apparatus and appliances
Division 73	Transport equipment/metal working machinery
Division 74	General industrial machinery and equipment
Division 75	Office machines and automatic data processing equipment
Division 76	Telecommunications and sound recording equipment
Division 77	Electrical machinery apparatus and appliances NES
Division 78	Road vehicles including air cushion vehicles
Division 79	Other transport equipment

SITC 8	**Miscellaneous Manufactured Articles**
Division 81	Sanitary, plumbing, heating and lighting fixtures
Division 82	Furniture
Division 83	Travel goods, handbags and similar articles
Division 84	Clothing
Division 85	Footwear
Division 86	Scientific and control instruments
Division 87	Professional, scientific and controlling instruments
Division 88	Photographic appliances, optical goods, watches
Division 89	Miscellaneous manufactured articles NES

Appendix II Competitive effects at section and division level for each country under observation, 1973-87, values US$m (See Table 1.2)

Turkey SITC/Div 5-8	Competitive Effects	Tunisia SITC/Div 5-8	Competitive Effects	Thailand SITC/Div 5-8	Competitive Effects	India SITC/Div 5-8	Competitive Effects	Mauritius SITC/Div 5-8	Competitive Effects
SITC 5	93.408075	SITC 5	-3.513670	SITC 5	-0.729050	SITC 5	49.792670	SITC 5	0.046
Div 52	32.312803	Div 51	-54.890336	Div 58	1.959366	Div 51	30.751751	SITC 6	19.807966
Div 55	-7.641554	Div 56	68.194985	Div 59	-5.612138	Div 53	22.884125	Div 65	5.223097
Div 56	32.344047	SITC 6	61.918121	SITC 6	202.893460	Div 55	-6.706831	Div 66	12.956311
Div 58	25.988708	Div 61	29.277663	Div 61	45.866640	SITC 6	183.861800	SITC 7	0.105385
SITC 6	629.434990	Div 65	20.732894	Div 65	172.309900	Div 61	-364.648690	Div 72	-0.123344
Div 62	21.691643	Div 66	32.517120	Div 66	47.189493	Div 65	171.174560	SITC 8	320.093470
Div 64	-3.205660	Div 67	-13.780975	Div 68	-52.123638	Div 66	163.650480	Div 83	2.057499
Div 65	476.551890	Div 68	-8.209589	SITC 7	164.472310	SITC 7	-4.476060	Div 84	289.575460
Div 66	68.132699	SITC 7	101.917850	Div 72	0.410602	Div 71	17.159426	Div 89	-0.346326
SITC 7	16.697166	Div 73	-0.010646	Div 73	0.042298	Div 72	-7.617722		
Div 71	12.713945	SITC 8	650.196410	SITC 8	712.401210	Div 73	3.273886		
Div 73	-1.515572	Div 82	0.928643	Div 81	0.479666	SITC 8	577.448340		
SITC 8	1472.394500	Div 83	6.223249	Div 82	48.006586	Div 82	-1.599952		
Div 83	10.189244	Div 84	622.155970	Div 83	34.257998	Div 83	42.339987		
Div 84	1437.313700	Div 89	2.420564	Div 84	417.150160	Div 84	500.783700		
Div 89	13.515156			Div 85	60.747791	Div 85	40.656474		
						Div 89	-7.938412		