A Constant-Market-Shares Analysis of ASEAN Manufactured Exports to the European Community

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Researchmemorandum 1981-9

Free University
Amsterdam
May 1981

Introduction

This paper is a contribution to a workshop organised by the ASEAN Economic Research Unit (AERU) of the Institute of Southeast Asian Studies. This workshop, to be held in Singapore in August 1981, is part of the ASEAN-EEC Research Programme which focusses on economic an political relations between the ASEAN and the European Community.

This study analyses ASEAN's exports of manufactures to the markets of the European Community within the framework of a Constant-Market-Shares analysis.

The authors like to thank Jeroen Fles for his devotion to the gathering and processing of trade data and Professor Hans Linnemann for his valuable comments.

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I. Summary and Conclusions

1. During the seventies, the world economy has experienced important changes. With respect to world trade in manufactures two post-war trends were reversed. First, the percentage share of developing countries in OECD's manufactured imports started to increase, and second, the developing countries increased the value of their interregional trade in manufactures more than their value of exports of manufactures to developed countries.
Outward looking industrialization strategies gained momentum in a growing number of developing countries and manufactured export performance of these countries far surpassed the average growth rate of world trade in manufactures.

Notwithstanding the present economic recession and the threat of increased protectionism, the markets of developed economies are still the main outlets for manufactured exports from developing countries and will continue to be so throughout the eighties. The share of developing countries in apparent consumption of manufactures in OECD countries is, on the average, still very limited and consequently the opportunities to increase exports to this area seem to be large.

For this reason it is of interest to investigate developing countries' manufactured export performance to developed market economies. By means of a Constant-Market-Shares (CMS) analysis, this study focusses on ASEAN's manufactured exports to countries in the European Community during the period 1970-1977.

2. ASEAN manufactured exports (defined as SITC 5-8) to the EC are dominated (although decreasingly) by tin which is a semi-manufactured product. Because of its importance in the ASEAN-EC trade flows tin exports are included in the first part of the analysis.
In the second part tin exports are excluded to gain a better insight into the 'real' manufactured export performance of ASEAN countries.

3. Within the OECD area the EC is a growing outlet for ASEAN's manufactured exports. In terms of the size of the trade flows Singapore is the leading exporter of the ASEAN. Excluding tin exports, the dominant position of Singapore is even more striking.
The Philippines show the fastest growing exports. The composition of ASEAN manufactured exports to EC markets changed substantially during

the period of investigation. In terms of the one digit SITC classification, SITC 5 (Chemicals) is the least important product group. Exports of SITC 5 accounted for 5 per cent in 1970 and for only 2 per cent in 1977 of total manufactured exports.
SITC 6 (Manufactured goods classified chiefly by material) was by far the most important product group at the end of the sixties. At that time about three quarters of exports of SITC 6 consisted of tin. The share of SITC 6 in total manufactured exports decreased from about 80 per cent to about 45 per cent in 1977. Within SITC 6, the share of tin exports decreased to less than a half.
SITC 7 (Machinery and transport equipment) and SITC 8 (Miscellaneous manufactured articles) increased; at the end of the period, both product groups constituted about a quarter of total manufactured exports to EC markets.
The share of the 'real' manufactured exports in total manufactured exports increased.

4. The CMS analyses which are performed ascribe ASEAN's manufactured export performance on EC markets to four factors: the general increase of OECD imports of manufactures (the standard), the commodity composition of exports, the market distribution of these exports and finally to ASEAN's competitiveness. The last factor is a residual and, although it is a 'catch all' term, mainly refers to the competitiveness of exports.
CMS analyses are performed at different levels of aggregation with respect to country and product group.
In tabel 3 a list of CMS analyses of ASEAN export performance is presented.

5. In the aggregated CMS calculations covering the entire 1970-77 period, about three quarters of ASEAN's export growth is 'explained' by the competitiveness effect and about one quarter is accounted for by the general increase in OECD imports of manufactures. The two other explanatory factors, the commodity composition and market distribution, are both negative but appear to be of minor importance.
The relative contribution of the four explanatory factors does not change much when the community is conceived of as nine separate export markets. Only the market distribution effect changes slightly from just negative to just positive. This implies that within the EC market, ASEAN's manufactured exports are oriented to relatively buoyant markets with above average growth rates of imports.

The analysis of ASEAN export performance at the country level reveals that the Philippines realized the highest growth rates of exports during the period 1970-77. This country also has the highest competitiveness effect, followed - in decreasing order - by Singapore, Thailand, Indonesia and Malaysia.

Clearly negative commodity composition effects are found for Indonesia, Malaysia and Thailand. This negative effect is mainly due to SITC 6, which experienced a below average growth rate during the period 1970-77. Especially in these three countries, SITC 6 accounts for a large share in total manufactured exports. Exports of tin are the main cause of the poor export performance of ASEAN in SITC 6.
World market prices of tin increased moderately from 1970-73, but peaked from 1973-77. However, during the entire period 1970-77, tin experienced a lower growth rate of exports in value terms than the standard growth rate. If tin exports are excluded from the CMS analysis, the ASEAN export performance improves. The competitiveness effect increases, the market distribution effect becomes slightly positive and the negative commodity composition effect diminishes.

As might be expected from the development of world tin prices, the impact of tin exports in the first period differs from that in the second period. The commodity composition effect of tin is highly negative in the first period; in the second period tin had a substantial positive composition effect. In both periods tin experienced a smaller competitiveness effect than total manufactured exports, and this effect was even negative during the first period.

6. To refine the CMS analysis, the period 1970-77 is divided into two subperiods, 1970-73 and 1973-77, and tin exports are excluded from the analysis.
The results in the first period differ considerately from those in the second period. In the second period, the general increase in OECD imports explains a much larger share of ASEAN's export growth than in the first period and the competitiveness effect decreases.
This deterioration in terms of international competition is completely caused by Singapore's performance.
The commodity composition and market distribution effects are of minor importance in both periods the only positive effect being the commodity composition effect in the first period.

7. Finally, a CMS analysis is performed at a disaggregated country and product level for two periods. Country-wise the most important export products were selected.
The sample of selected products differs per country, but for the ASEAN as a whole, textiles, clothing, electronics and wood products are the main manufactures exported to the Community.

Apart from SITC 541 + 551 (Chemicals) from Indonesia, all selected products experienced a positive commodity composition effect during the period 1970-73. Especially wood manufactures scored high. Exports of wood manufactures to the EC increased from 1970 to 1973 by more than 500 per cent. Approximately half of this good performance is accounted for by price increases and half by an increase in volumes exported.

In general, the commodity composition effects were lower for all investigated products during the second period. For wood manufactures the deterioration was dramatic. From 1973 to 1977 exports of wood manufactures stagnated, partly as a result of lower world market prices, but mainly because of the low growth in export volumes. Market prospects for textile exports, too, deteriorated sharply during the second period.

During the first period the EC as a whole was a relatively good market compared with the US and Japan. The main outlets of ASEAN's exports are the larger EC countries France, Italy, United Kingdom and W. Germany. Within the EC, these countries were fast growing import markets during the first period, but - except W. Germany - relatively slow growing markets during the second period. Consequently, ASEAN's exports experienced a negative market distribution effect during the second period. However, the impact of the market distribution of exports is only marginal in both periods.
From the above one should not infer that the distribution of ASEAN's exports over EC markets is stable. On the contrary, from one period to the other, the distribution changed drastically. However, these changes were not always for the good. On balance, in redistributing their exports within the EC, ASEAN exporters have reduced the negative value of the market distribution effect in the second period.

In both periods the competitiveness effect is the main explanatory factor for export growth at the country level. During the first period, Singapore's exports were the most competitive, exports of Indonesia and the Philippines the least.

This situation changed completely during the second period. Four ASEAN countries increased their competitiveness and especially the Philippines' record is impressive. Indonesia increased its competitiveness marginally. Only Singapore's exports became less competitive during the second period and this deterioration occurs in all its main manufactured exports.
As Singapore is by far ASEAN's largest single exporter, the competitiveness effect for the ASEAN as a whole is lower in the second than in the first period. It might be that Singapore's exports suffered more from the economic recession and from protectionist policies in the EC than other ASEAN countries, owing to the substantial values of manufactured exports already realized in 1973.
Moreover, Singapore, which took the lead in manufactured export growth, may experience increasing competition from other ASEAN countries that started to promote export-led growth more recently.
It seems plausible that the high values of competitiveness effects of ASEAN countries have much to do with low initial values of manufactured exports at the start of the two periods of investigation. Nevertheless, it remains true that, although growth in the EC countries declined in the past 1973 era, ASEAN countries managed to realize high export growth rates.

II The Constant-Market -Shares Analysis

The Model

The Constant-Market-Shares (henceforth CMS) analysis is a method to examine a country's or a region's export performance relative to the performance of its competitors. Basically, this model indicates whether or not a country or a region has succeeded in maintaining its market share.

We shall apply the CMS method to analyze the manufactured export performance of the ASEAN countries on the markets of the European Community.

If it is assumed that exports from a country or a region, the focus exports $E_{..}$, compete with all world exports, then the standard CMS model is expressed by the identity[1)]

$$(1) \qquad E'_{..} - E_{..} = rE_{..} + \sum_i (r_i - r)E_{i.} + \sum_i \sum_j (r_{ij} - r_i)E_{ij} + \sum_i \sum_j (E'_{ij} - E_{ij} - r_{ij} E_{ij}) \quad ,$$

where variables to which a (') is attached refer to the last year and variables without a (') refer to the first year of the investigated period, and where

$E_{i.}$ = value of focus exports of commodity i

$E_{.j}$ = value of focus exports to market j

E_{ij} = value of focus exports of commodity i to market j

$E_{..}$ = total value of focus exports

r = percentage increase in world exports from the first to the last year

r_i = percentage increase in world exports of commodity i from the first to the last year

r_{ij} = percentage increase in world exports of commodity i to market j from the first to the last year

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1) We follow the exposition of the CMS analysis of Leamer and Stern, see Leamer, E.E., and Stern, R.M., 1970, pp. 171-76.

Equation (1) shows that the CMS model is limited in its scope in so far as it ascribes, in retrospect, a country or a region's export growth $(E'_{..} - E_{..})$ to four factors, namely:

1. a factor associated with the general growth of world exports, i.e. $rE_{..}$
2. a factor associated with the commodity composition of the focus export, i.e. $\sum_i (r_i - r)E_i$
3. a factor associated with the market distribution of the focus exports, i.e. $\sum_i \sum_j (r_{ij} - r_i)E_{ij}$, and finally
4. a factor which is composed of the sum of the unexplained residuals of the other three factors.

This residual factor, the so-called competitiveness effect, can be attributed to something like the specific record of that country or region in international trade.
In the CMS method of analysis, r performs the function of the standard, the norm which makes it possible to pass relative judgement on a country's or a region's export performance.

The commodity composition effect and the market distribution effect need further explanation.
A specialisation in relatively high-growth commodities and relatively fast growing export markets gives positive values to these effects. However, estimation of both effects start from the actual commodity and merket distribution of exports in year 1 ; the weights applied in equation (1) refer to the first year. Strictly speaking, constant weights would be appropriate only if is assumed that the export structure and the market distribution do not change during the period of investigation. In point of fact, introduction of new export products, which are not yet exported in the first year, or a concentration on new export markets, cannot be dealt with explicitly in the CMS model described in equation (1). The model is thus not only retrospective in character, but also static with respect to these effects.

Equation (1) can legitimately be rewritten by using as weights the export composition and market concentration at the end of the period[1].

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1) Cf. Richardson, J.D., 1971, pp. 234-35

This, however, does not solve the problem. A comparison of the results of two analyses, one applying first year weights and one last year weights, may give insight into a changing export structure. As we will show, some of this information can also be obtained by dividing the period of investigation in two or more periods.

The values of the commodity composition and market distribution effects are influenced by the sequence of both effects in equation (1). There is no legitimate argument not to calculate the market distribution effect first, and thereafter the commodity composition effect. The centre two terms in the right-hand side of equation (1) become

$$(1a) \qquad \sum_j (r_{.j} - r)\, E_{ij} + \sum_i \sum_j (r_{ij} - r_{.j})\, E_{ij} \quad ,$$

where the first term in (1a) denotes the rewritten market distribution effect and the second term the rewritten commodity composition effect. The sum of both terms in eautation (1a) is by definition equal to the sum of the corresponding terms in equation (1). Richardson, however, has shown that the values of both effects separately may differ substantially [1]. As observed already, there is no substantial argument to prefer one specification to the other.

The residual term in eauation (1), the competitiveness effect, equals zero if the increase in exports $(E'_{..} - E_{..})$ is completely 'explained' by the sum of the three growth impulses. A positive residue indicates that a country or a region has a better market performance than its competitors, a negative residue reflects a relatively weak export performance.

The Competitiveness Residual

The CMS model 'explains' the export performance from the demand side. Only the competitiveness residual, which comprises the unexplained share in the export performance, includes factors at the supply side of the economy as will be elucidated below.

To be correct, the CMS analysis should be performed in volume terms in stead of values. The use of prices may cause distortions in all components by which trade is explained.

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1) See Richardson, J.D., 1971, p. 233

Products may have experienced price increases which may have caused increases in the exported value that exceed the 'normal' increase while, at the same time, demand in volume terms lags behind the 'normal' increase. Oil is a case in point at the end of the seventies.
In the same way, the market distribution effect may be biased because of inflation and other imperfections.
Differences in the overall level of protection, caused by trade policies and exchange rate policies, may influence the distribution effect.
Price effects within the competitiveness residual will be dealt with later. According to Richardson, who dealt comprehensively with problems related to the definition and theoretical foundations of the constant-market-share analysis, "if we could perform CMS analysis on both export values and export quantities, we should not be surprised to find cases where the commodity, market, and competitive effects were of opposite sign depending on the use of values or quantities" [1].

The fourth term of the formula presented in the above is the competitiveness residual: strictly speaking a positive term indicates that a country is more competitive than rivaling suppliers, a negative term indicates at the opposite. A large number of factors may influence a country's competitiveness in world trade. First, we mention factors at the level of the individual firm (micro economic level) such as efficiency and the scale of production. Second, there are macro economic factors that are data for the individual firm such as the level of remuneration of factors of production, the availability of primary and intermediate inputs and the prices at which they are available. Third, government policies may influence the international competitiveness of producers via its industrialization strategy, its trade policy and its exchange-rate-policy.
The competitiveness residual includes price and non-price-factors.
Leamer and Stern point at differences between competitors in quality improvements and the development of new varieties, in rates of improvement in the efficiency of marketing or in the terms of export financing, and in the ability for prompt fulfillment of export orders[2].
These and other factors can also be found in Kravis' and Lipsey's study of U.S. firm's competitiveness in world trade[3].
Monopolisation in distribution and technological leadership may reduce the role of competition in internationally traded products.

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1) Richardson, J.D., 1971, p. 23
2) Leamer, E.E., and Stern, R.N., 1970, p. 175
3) Kravis, I.B., and Lipsy, R.E., 1971. This study is partly based on a questionnaire

The value of the competitiveness residual is not only influenced by the above mentioned price and non-price factors that are related to competition in international trade, but also by factors that are beyond the influence of the exporting trade partner.
Trade arrangements and regulations may strongly influence a country's position in importing markets vis à vis competing suppliers when these arrangements are discriminating between trade partners. For example, EC countries tend to discriminate positively ACP countries and discriminate negatively the so-called 'Newly Industrializing Countries' in its General Scheme of Preferences and in its bilateral trade arrangements that fall under its Multi Fibre Arrangement.
So-called voluntary export restrictions have a negative impact on the competitiveness residual. On the other hand, re-exports may have a positive impact on the residual and such re-exports may be generated by trade arrangements. Recently, the EC-commission has pointed to manufactures from Hong Kong and the Republic of Korea, that entered EC markets as re-exports of ASEAN countries.
Finally, differences in the relative impact of changes in transportation costs may influence a country's ability to compete internationally.

The competitiveness residual may be interpreted as being a direct result of differences in price inflation between competing suppliers. The basic relations between prices and quantities is as follows:

$$\frac{q_1}{q_2} = f\left(\frac{p_1}{p_2}\right) \quad .$$

Changes in price ratios between suppliers cause changes in market shares via the elasticity of substitution in international trade:

$$\frac{\partial\ (q_1/q_2)}{q_1/q_2} \Big/ \frac{\partial\ (p_1/p_2)}{p_1/p_2} \quad .$$

However, most constant-market-share analyses are performed in value terms instead of volume terms, because of lack of reliable data in volume terms. Consequently, the basic relation is one between values and prices

$$\frac{p_1\ q_1}{p_2\ q_2} = f\left(\frac{p_1}{p_2}\right) \quad .$$

From this it follows that in case the elasticity of substitution in international trade is $< |1|$, a relative decrease (that is to say increasing competitiveness) results in a decreasing market share in value terms. In case the elasticity is $|1|$, changes in competitiveness do not result in changes in the residual term, while in case of an inelastic demand situation decreasing competitiveness results in an increasing residual term[1].

Investigations in the price-quantity relation in international trade have not been conclusive. Theoretically, in case of price differences between producers the most competitive producer should supply the whole of the market. However, because of market imperfections, product differentiation, consumer preferences, supply constraints, transport costs and the like, this is not the case in reality. But the more standardized and homogeneous products are, the more decisive price differences will be and thus the higher will be the elasticity of substitution.
In a classical study, MacDougall estimated the price-quantity relation for a large number of products exported from the U.K. and the U.S.A. to third markets during the period 1922-1938. All estimated elasticities were in the range -1.8 to -3.2 [2]. It followed from MacDougall's cross section estimates that the larger is the price difference with a competing supplier, the larger is the difference in market shares.
Another important conclusion that can be drawn from MacDougall's investigation is that an average price difference over a range of (four) years has a pronounced stronger effect on the relative quantities sold than a one year price difference has[3].

Karis and Lipsey present a survey of results from some other studies that focussed on the price-quantity relation in international trade and made estimations based on specially compiled international price-indices[4]. However, as all these studies differ in methodology, level of aggregation and the data base, their conclusions are hardly comparable.
In a study on trade effects of tariff reductions in OECD countries, Cline et. al., after having reviewed available estimates, chose a single substitution elasticity for all countries and all products, the value of which is -2.5 [5].

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1) See also Richardson, J.D., 1971, pp. 230-31
2) Estimations were based on the equation: $\ln \frac{q_1}{q_2} = a_1 + a_2 \ln \frac{p_1}{p_2}$. See MacDougall, G., 1975, p. 569
3) See MacDougall, G., 1975, p. 571
4) See Kravis, I.B., and Lipsey, R.E., 1971, chapter 6
5) Cline, W.R., Kawanabe, N. Kronsjö, T.O.M. Williams, T., 1978, p. 60.

Summarizing, we may state that the residual is a catch-all term: factors that refer to differences in competitiveness as well as other factors that have virtually nothing to do with competition influence its value. Nevertheless, we will stick to the general practice in CMS analysis and refer to this term as the 'competitiveness residual'.

Implementation of the CMS model

In implementing the CMS model of equation (1), a number of decisions, based on specific assumptions, has to be made.

First of all, the absence of appropriate price deflators prevented us from performing the ASEAN-EC CMS analysis in terms of quantities. To prevent a misleading interpretation of the CMS results, the possible occurance of relatively excessive increases or decreases in export prices should therefore be taken into account.
For this reason ASEAN's exports of tin and wood manufactures will be treated separately.

Second, a proper norm has to be found. In many studies, the development of total world exports is used as the standard. But, following Richardson " In so doing, these studies have ignored the fact that if we are examining competitiveness, the appropriate standard is the sum of all competitors of the country in question. This is certainly not the world in most cases" [1].
For obvious reasons, trade in primary products should not enter in the standards or norms to be used, as both on the supply side and on the demand side market conditions differ from those pertaining to trade in manufactures.
In our case, where ASEAN manufactured export performance on EC markets is object of investigation, we should focus on ASEAN's competitors in manufactured products in EC markets. Given the need for selecting a standard more extended than the focus trade flows, the appropriate standard (norm) seems to be the OECD world imports of manufactured products, inclusive mutual trade between OECD countries.

Third, it is to be decided at what levels of aggregation the CMS analysis must be performed. Disaggragation by products as well as by countries

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1) See Richardson, J.D., 1971, pp. 331-32

affects the results.
Basically, the EC is a free trade area. Ther are, however, several arguments to conceive of the EC as a group of separate submarkets. In case of trade between EC member states and non-member states, the EC is a market with as many different submarkets as there are member states. With respect to EC imports of textiles and clothing under the Multi Fibre Arrangement, for instance, the common market is explicitly subdivided into (nine) separate country markets, each of which has its own subquotum out of the total EC quotum of admitted imports. Moreover, growth rates of national incomes and of imports are not the same in the various member states. The EC has relatively expanding and relatively stagnating economies, and consequently it does matter to which country exports are directed. Finally, in 1973 the EC was enlarged by the entry of Denmark, Ireland and the United Kingdom. Considering the EC as nine separate markets may give some insight into the the effect of the EC membership of these countries, especially with respect to the United Kingdom, on ASEAN manufactured export performance.

At the supply side, the ASEAN consists of five member states which differ in natural endowment, trade performance and trade policies. The ASEAN will therefore be subdivided into the five constituting countries.
To elucidate the difference between treating the EC and ASEAN as blocs and as groups of separate countries, CMS analyses are performed at aggregated bloc levels as well as at disaggregated country levels.
In this study, we shall apply two levels of product aggregation: one digit level with four product groups of manufactures corresponding with SITC 5, 6, 7 and 8, and a two and three digit level of analysis.
It should be noted that in this short-cut definition of manufactured exports (SITC 5-8) a number of processed products from SITC 0-4 is omitted, while on the other hand a number of semi-manufactured products is included in SITC 6. Some of the omitted products may be labelled as manufactured. The included products, expecially SITC 67 (Iron and Steel) and SITC 68 (Non-ferrous metals) are, although they may be processed, often not far removed from the primary stage. For three ASEAN countries, SITC 687 (Tin) is an important export product. The primary character of tin and the impact of tin exports on the CMS analysis will therefore be analysed in more detail.

The fourth and final decision relates to the period of investigation. The base year of the analysis is 1970, and the end of the period is 1977. The international economic situation in both years was not exceptional relative to the two different economic eras they were taken from: a boom period and a period of economic stagnation in Western industrialized countries.

The CMS analysis will be refined by dividing the 1970-1977 period into two periods: 1970-73 and 1973-77. The year 1973 is regarded as the end of the era of rapid economic development and the beginning of stagnation and/or recession in developed economies.

III ASEAN Exports in Perspective

The main part of world trade in manufactures is concentrated within the group of OECD countries. For non-OECD market economies the markets of high income countries are the main outlet for their exported manufactures. During more than two and a half decades in the post-war era, up to 1973, the OECD countries experienced high rates of growth of per capita income. Growth, international specialization and international trade were stimulated by successive rounds of trade liberalization measures. Indeed, the share of imports in domestic demand and the share of exports in production increased gradually, especially in EC member states.
During this period that Herman Kahn labelled 'La Deuxième Belle Epoque', the developing countries, too, experienced a steady growth in their exports of manufactures to OECD countries in spite of the fact that the trade liberalization rounds had favoured intra OECD trade over imports from developing countries. General Schemes of Preference were not yet in force before the seventies. Although OECD imports from developing countries during the sixties increased by about 15 per cent a year, the share of these countries in total OECD imports decreased during this period.

After 1973, the international economic situation changed drastically and many a trend was reversed. Per capita income growth in developing countries, and especially in middle income countries, exceeded the growth performance of OECD countries.
The export growth performance of especially some so-called 'Newly Industrializing Countries' far surpassed the average growth rate of manufactures in world trade, and consequently the share of developing countries in world trade in manufactures increased and so did the share of developing countries in OECD imports of manufactures.
Governments and economic agents in these countries became increasingly reluctant towards further liberalization attempts, especially with respect to 'sensitive industries' that faced strong competition from new competitors on the world market.

Notwithstandig the deterioration of the economic situation in OECD countries since 1973 and the reversals in the trends mentioned above, it still holds that OECD markets are the main outlets for developing countries' exports in the seventies, and will continue to be so throughout the eighties.

Analysis of developing countries' export performance clearly shows that the number of items in which these countries have a revealed comparative advantage has been increasing substantially during the past decade. The share of these countries in apparent consumption in OECD countries is low but increasing in nearly all sectors of production. Their share in the entire markets for manufactures of EC countries, Canade, the United States of America and Japan together increased form a 1.1 percents level in 1970 tot 1.3 percent in 1972/73 and 1.7 percent in 1974/75. For the EC, these shares are, respectively, 1.4 percent, 1.5 percent and 1.7 percent [1].

The number of developing countries aiming at enlarging export income from the sale of manufactures on world markets has increased. This has caused more or less comprehensive changes in industrialization and trade policies in these countries in order to strengthen the international competitiveness of domestic industries or to attract foreign firms in export sectors.
Now that growth in demand in OECD countries is slowing down and the reluctance to trade liberalization in sensitive industries is increasing, while, moreover, a growing number of developing countries produces manufactures for world markets, strong international competitiveness and favorable trade arrangements are of utmost importance to stimulate further growth of manufactured exports in developing countries.

We shall now discuss the growth record of trade in manufactures between OECD countries and developing countries in general, and that of the ASEAN-EC trade flows in particular, for the period 1968-1977.
The yearly growth rate of OECD imports of manufactures from the world (including intra OECD trade) in the period 1968-1977 was 18.3 percent in current values, on the average[2].
EC imports from the world, including intra EC trade, increased by 18.9 percent a year during this period, as a consequence of which the share of EC imports in total OECD imports of manufactures increased from slightly less to slightly more than 50 percents (see figure 1 and 3).

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1) UNCTAD, 1979, table 7.1 pp. 596-601

2) Manufactures comprise SITC 5-8

FIGURE 1

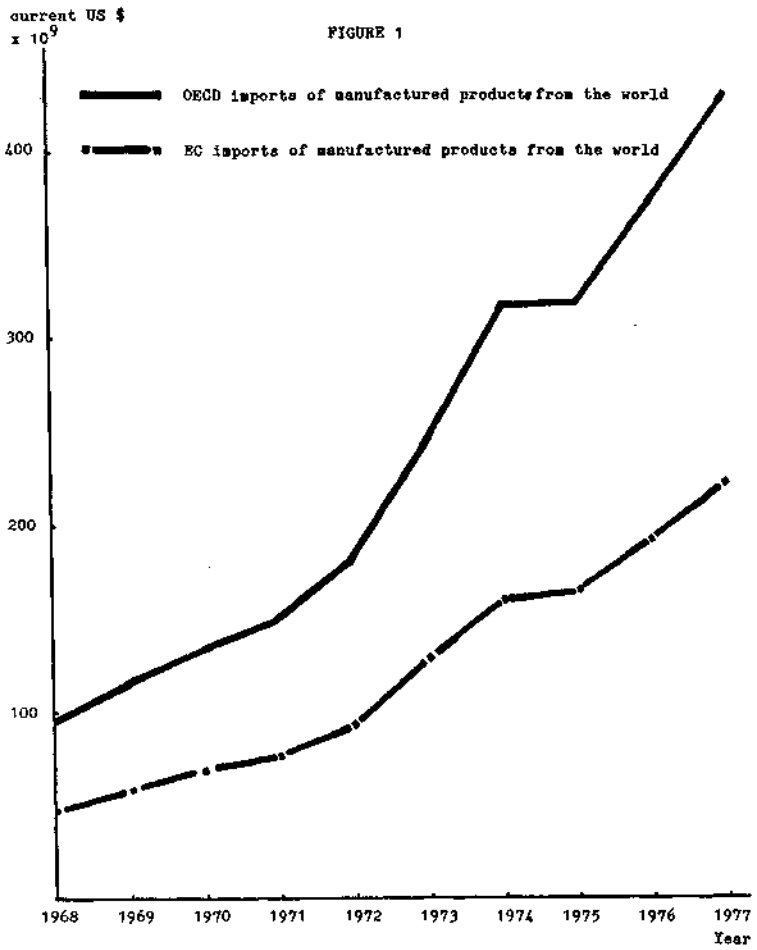
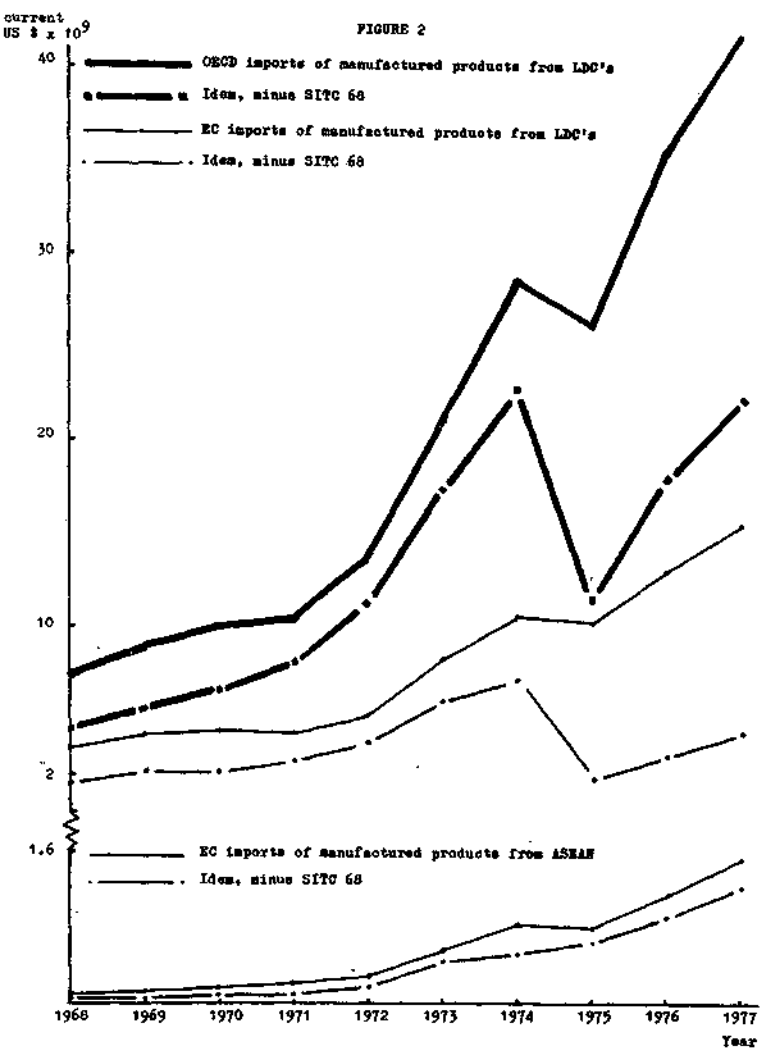
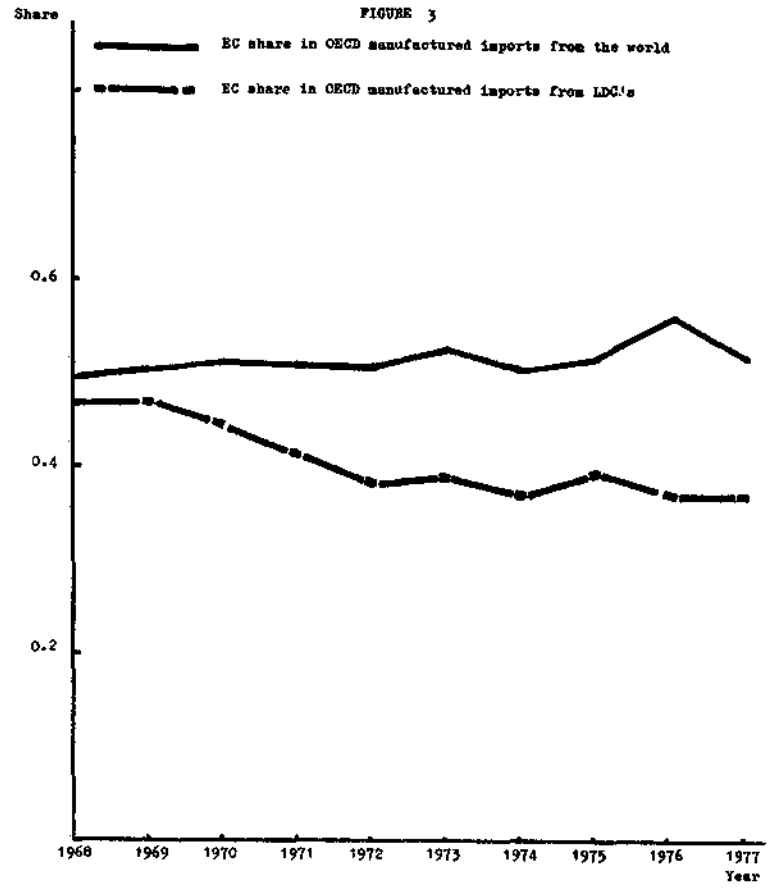


FIGURE 2





The yearly growth rate of OECD imports of manufactures from developing countries during the period was 21.2 percent , and for the EC 18.0 percent. So, while the share of developing countries in OECD imports increased, this was not the case in EC; the share of EC in OECD imports from developing countries decreased somewhat (see figure 2 and 3).

In figure 2 the value of manufactured imports in OECD countries from developing countries and from the ASEAN is presented, and it is clear that the ASEAN share in EC imports of manufactured products (excl. SITC 68) has increased.

Shifting our focus to the supply side of the ASEAN-EC trade link, we first present a breakdown of ASEAN manufactured exports by destination in OECD market.

Table 1

ASEAN manufactured exports by destination in OECD markets

(in percent of manufactured exports to OECD)

	E C			U S A			J A P A N			R E S T			total
	70	73	77	70	73	77	70	73	77	70	73	77	
Thailand	23.8	28.5	39.7	59.3	30.8	28.9	14.2	35.7	21.1	2.7	4.9	10.3	100
Malaysia	22.6	27.7	27.4	40.5	38.6	47.5	31.3	26.9	17.5	5.5	6.8	7.6	100
Singapore	33.6	35.6	36.4	57.4	53.1	40.0	2.5	6.3	7.8	6.5	5.0	15.8	100
Indonesia	57.7	43.7	45.6	20.2	22.5	23.8	19.8	31.5	27.2	2.3	2.2	3.4	100
Philippines	6.0	9.0	23.0	82.5	70.1	57.1	7.5	16.1	9.2	4.0	4.8	10.7	100
ASEAN	23.9	29.7	33.0	51.1	45.9	41.9	20.2	19.0	14.2	4.8	5.3	10.9	100

Data source for all tables and figures: OECD, Trade by commodities, market summaries: imports, Serie C, various issues.
For sake of clarity in the presentation all data are rounded off.
The exact data are available on request.

For all ASEAN countries togehter, the EC became more important as an importer of manufactured exports in the period under review, while the relative importance of the USA and JAPAN declined. However, as Table 1 shows, there are important differences in this respect between individual countries; also, due to the sometimes low absolute amounts involved, the percentages may change considerably form one year to the other.

Table 2, presented below, indicates that there were major changes in the shares of individual ASEAN member states in total ASEAN manufactured exports to the EC. While the shares of Thailand and Indonesia were rather stable, Malaysia's share virtually was halved over the period 1970-1977 and Singapore's share doubled. The Philippines experiences nearly a threefold increase in its ASEAN share.

Table 2

SHARE of ASEAN countries in total ASEAN manufactured exports to EC markets (in percentages)

	EC		
	70	73	77
Thailand	15.7	13.6	17.3
Malaysia	46.3	27.0	24.5
Singapore	20.6	47.4	37.5
Indonesia	13.7	8.5	10.5
Philippines	3.7	3.5	10.2
ASEAN	100	100	100

Finally, we shall deal with the composition of ASEAN supply of manufactures to EC markets. According to traditional trade theories, it might be expected that ASEAN will have a comparative advantage in resource-based goods (so-called Ricardo goods) and labour-intensive products. Here we will not focus on the factor intensities of ASEAN manufactured exports, and product characteristics will be analysed only to reveal peculiarities in the export performance. This goes especially for some resource-based products that experienced large fluctuations in prices in world markets during the period of investigation. So, although no systematic analysis has been made of factor intensities of exported products it might be useful to focus on changes in revealed comparative advantage that ASEAN countries experienced during the past decade. For ASEAN supply to EC as a whole, changes in the composition of manufactured exports are revealed in figure 4.

By far the most important product group in ASEAN exports was SITC 6 (Manufactured goods classified chiefly by material). The performance of this highly aggregated product group is dominated by SITC 687 (Tin), which is a semi-manufactured product. In part V this resource-based product will be analysed in more detail. The share of SITC 6 in manufactured exports decreased drastically within an eight year time span. At the end of the sixties, SITC 6 accounted for about 80 per cent of total ASEAN manufactured exports to EC countries; in 1977, this was only about 45 per cent. SITC 5 (Chemicals), which is the least important of the four one-digit product groups, also experienced a downward trend; its share decreased from 5 per cent to 2 per cent.
The other two product groups, SITC 7 (Machinery and transport equipment) and SITC 8 (Miscellaneous manufactured articles) both increased their share and at the end of the period both constituted about one quarter of total manufactured exports to EC countries.

We may conclude that the share of semi-manufactured resource-based products decreased and that increasingly 'real' manufactures are exported from ASEAN to EC markets.

Analysis at the country level reveals that SITC 6 is in particular of importance in three ASEAN countries' exports: Indonesia, Malaysia and Thailand (see figures 5-9).
SITC 5, the least important export product group in ASEAN, was of significance in Indonesia's exports only.
The share of SITC 8 increases in all ASEAN countries, but in the Philippines the increase was the most dramatic.
SITC 7 shows a pronouned increase only in Malaysia and Singapore.
Thus, there are large differences between ASEAN countries with respect to their export performance in EC market in total values, in composition and in the change in their revealed comparative advantage during the seventies.

FIGURE 4

ASEAN exports of SITC 5,6,7 and 8 in percentages of total manufactured exports of ASEAN to EC (two year moving average)

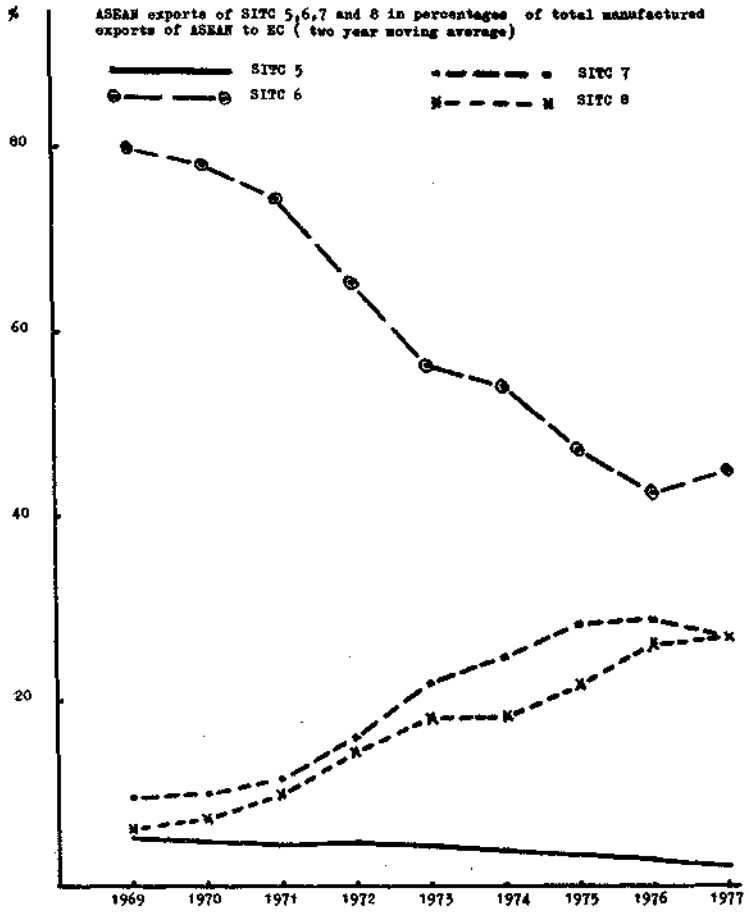


FIGURE 5

Thailand exports to EC of SITC 5,6,7 and 8 in percentages of total manufactured exports from Thailand to EC

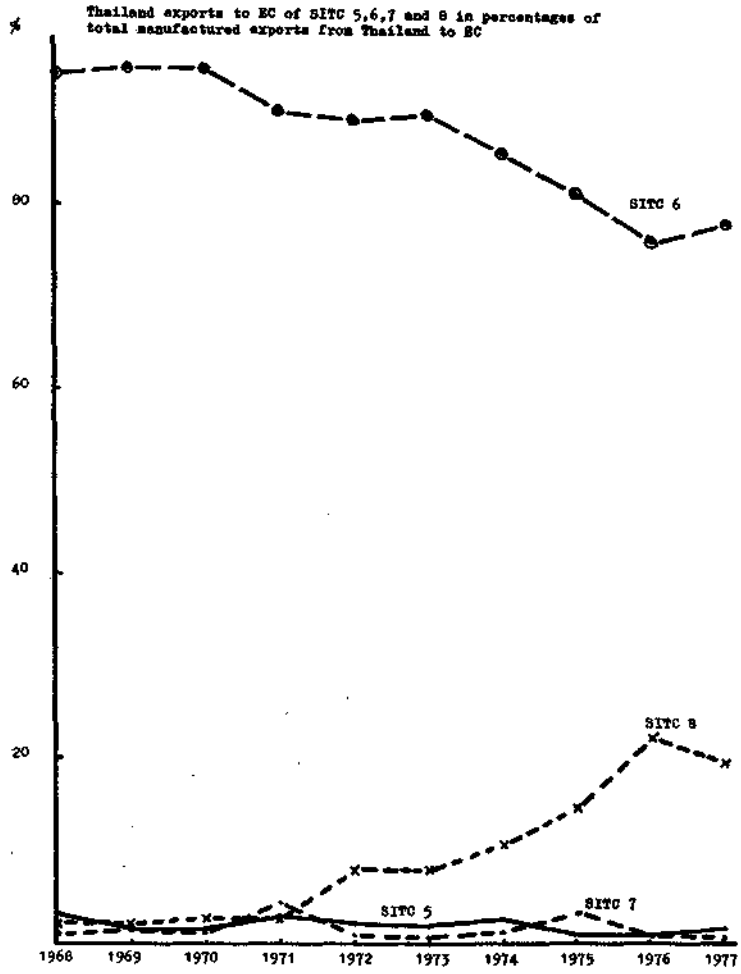


FIGURE 6

Malaysian exports to EC of SITC 5, 6, 7 and 8 in percentages of total manufactured exports from Malaysia to EC

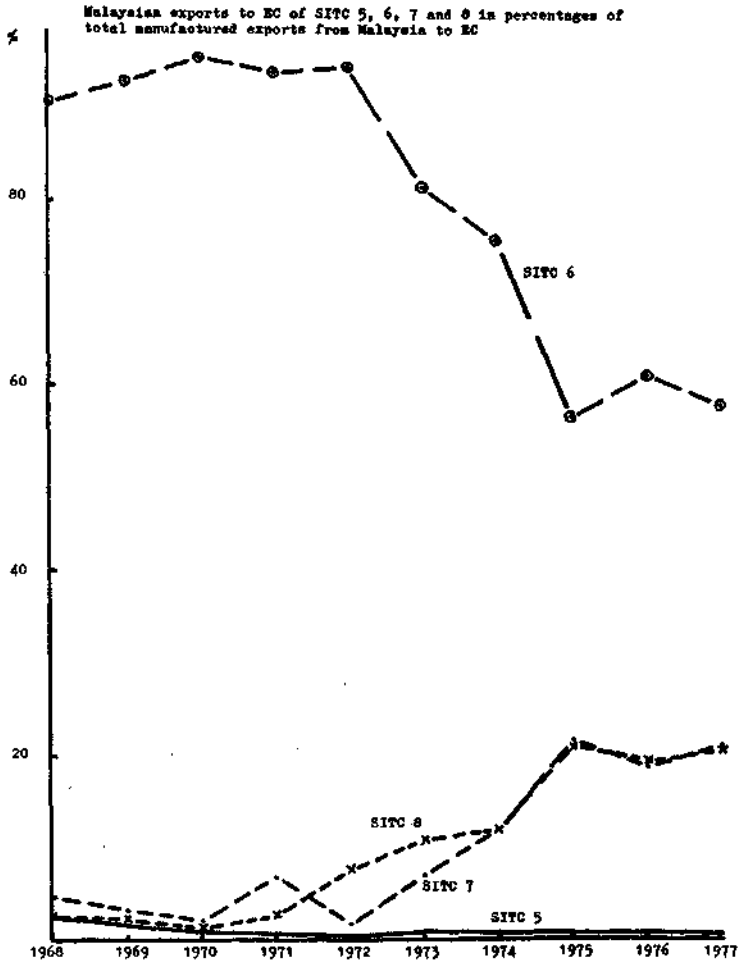


FIGURE 7

Singapore exports to EC of SITC 5, 6, 7 and 8 in percentages of total manufactured exports from Singapore to EC

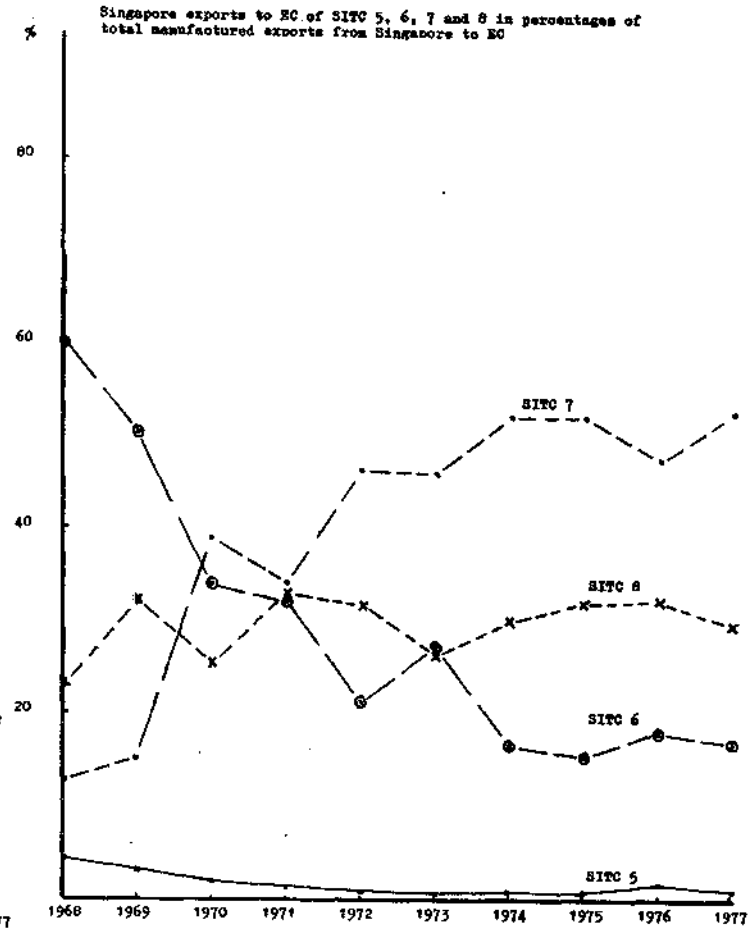


FIGURE 8

Indonesian exports to EC of SITC 5,6,7 and 8 in percentages of total manufactured exports from Indonesia to EC

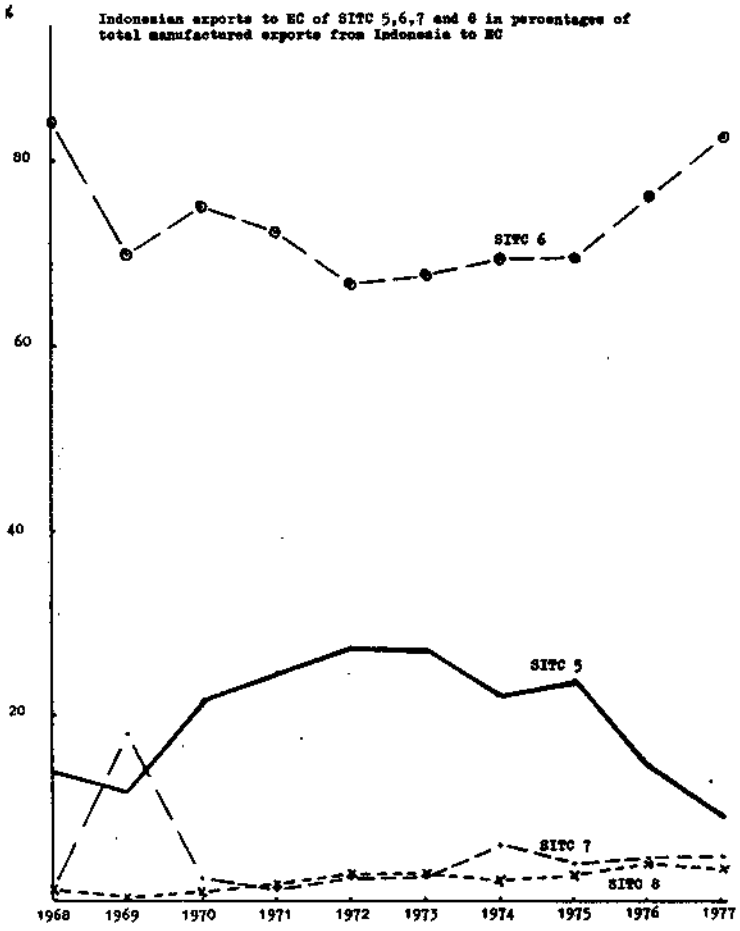
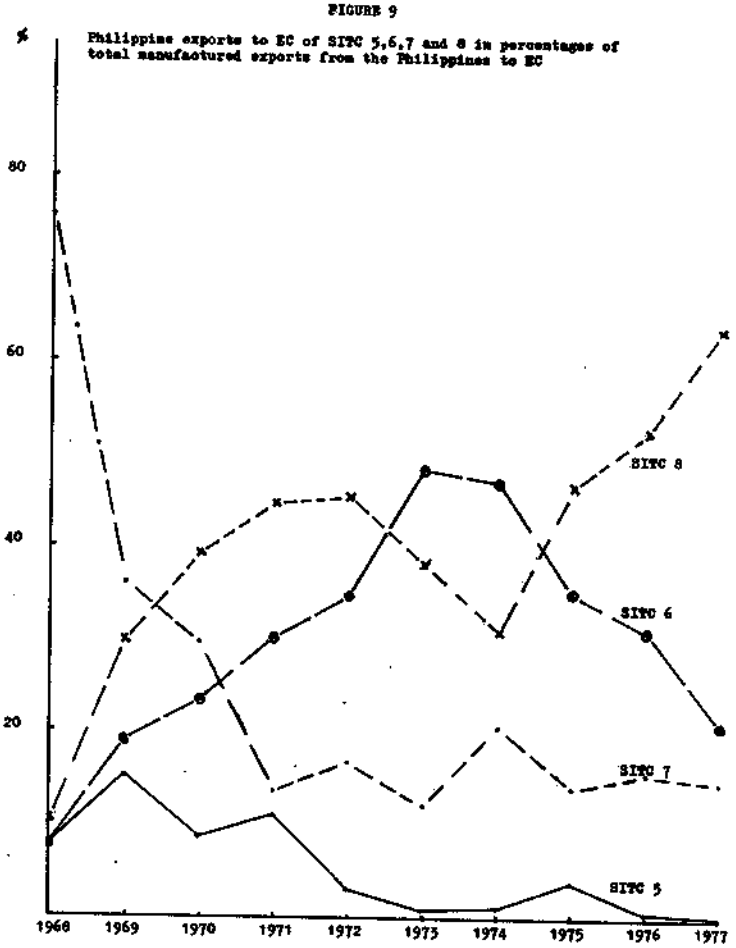


FIGURE 9

Philippine exports to EC of SITC 5,6,7 and 8 in percentages of total manufactured exports from the Philippines to EC



IV Application of the CMS Model (1970-1977)

By means of a CMS analysis we shall now focus on the causes of differences in market performance between ASEAN and competing suppliers as well as between individual ASEAN member countries among themselves.
Table 3 gives a systematic overview of all CMS analyses that were performed, their level of aggregation with respect to exporting and importing countries, the level of product aggregation, the choice of the 'standard' (the co-called world trade effect) and the period under investigation.

Table 3

List of CMS analyses

No.	aggregation level of product groups	aggregation level of country groups		standard	period
		ASEAN	EC		
I	SITC 1 digit	bloc	bloc	SITC 5-8 OECD imports minus intra EC trade	1970-77
II	SITC 1 digit	bloc	country-level	SITC 5-8 OECD imports	1970-77
III	SITC 1 digit	country-level	country-level	SITC 5-8 OECD imports	1970-77
IV	SITC 1 digit	bloc	bloc	SITC 5-8 minus 687 OECD imports minus intra EC trade	1970-77
V	SITC 1 digit	bloc	bloc	SITC 5-8 OECD imports minus intra EC trade	1970-73; 1973-77
VI	SITC 1 digit	bloc	bloc	SITC 5-8 minus 687 OECD imports minus intra EC trade	1970-73; 1973-77
VII	SITC 2-3 digit	country-level	country-level	SITC 5-8 minus 68 OECD imports	1970-73; 1973-77
VIII	SITC 2-3 digit	country-level	country-level	SITC 5-8 minus 68 OECD imports	1970-73; 1973-77

CMS analysis I

We start with an analysis at the highest level of aggregation for the entire period 1970-1977.
ASEAN an EC are both taken as country blocs. Consequently, intra EC trade is excluded from the analysis and thus excluded from the standard computed. Thus, the standard pattern is that of OECD imports of manufactures less EC imports from other EC countries.
All countries that were EC member states in 1977 are considered to be member states in 1970 as well. Thus, trade creation and trade diversion effects of United Kingdom's, Ireland's and Denmark's entrance to the European Community are interwoven with all other effects that influenced ASEAN's position vis à vis competing suppliers on EC markets. Especially United Kingdom's entry into the EC in 1973 caused changes in competitive positions of developing countries and in preferential treatment of groups of countries. In 1974, the United Kingdom as well as Denmark and Ireland adopted the EC Generalised System of Preferences, that had been at force for the EC of the six since July 1971.
The results of the aggregated analysis are presented in table 4.

Table 4

CMS analysis I, ASEAN (bloc) - EC (bloc), SITC 1 digit, 1970-1977

	current US $ x 10^6	percentage
ASEAN exports in 1977	1,572	
ASEAN exports in 1970	161	
Change 1970-77	1,411	100
Due to:		
1. increase in OECD imports	350	24.8
2. commodity composition	- 57	- 4.0
3. market distribution	- 3	- 0.2
4. competitiveness	1,121	79.5

It is striking that the two main explanatory factors are the general rise in OECD imports from the world and ASEAN's competitiveness. The negative commodity composition effect is due to SITC 6: the growth factor of SITC 6 exports is lower than the overall growth factor of the

focus world exports, i.e. the standard[1].
The negative market distribution effect indicates that the EC, conceived of as one market, is a less favorable market outlet than the OECD as a whole[2].
From the analysis it follows that ASEAN has a very large residual, indicating that the competitiveness effect explains a large part of its market performance.

CMS analysis II

The analysis will now be continued by analyzing ASEAN's performance on nine separate EC markets. ASEAN is still conceived of as one single supplier. It should be noted that the values of the standard change as intra EC trade in manufactures is now included in the analysis; as intra EC trade is rather buoyant, the general rise in OECD imports will be somewhat higher and consequently this factor may be expected to explain more now than it did in the previous analysis.

Table 5

CMS analysis II, ASEAN(bloc) - EC , SITC 1 digit, 1970-1977

	current US $ × 10^6	percentage
ASEAN exports in 1977	1,572	
ASEAN exports in 1970	161	
Change 1970-77	1,411	100
Due to:		
1. increase in OECD imports	355	25.2
2. commodity composition	- 51	- 3.6
3. market distribution	4	0.3
4. competitiveness	1,103	78.2

Compared with the results of CMS I there are only slight differences: the commodity composition effect is still negative but the market distribution effect changed from negative to slightly positive. This implies that the EC market, as a whole, is less favorable than OECD

1) Growth factors are defined as $\frac{\text{import value in last year}}{\text{import value in first year}} - 1$.

2) A more detailed analysis revealed that EC is a less favorable market outlet than OECD 'rest markets', i.e. OECD less EC less USA less Japan.

'rest markets' but that, within the EC region, ASEAN's manufactured exports are, on the whole, oriented to relatively buoyant markets with above average growth rates of imports. The effect is, however, marginal only. The average growth factor of EC imports of manufactures during the period 1970-1977 was 2.2 . Above average markets were Belgium and Luxemmbourg (BLEU), France, Ireland, United Kingdom and Germany. The Netherlands,Italy and Denmark were below average. The most important ASEAN market outlets in the EC region in 1977 were, in decreasing order, Germany, United Kingdom, Italy, France the Netherlands, Denmark, BLEU and Ireland.

CMS analysis III

The next step is to analyze export flows at the one digit level from 5 separated ASEAN countries to nine EC countries.

Table 6

CMS analysis III, ASEAN - EC , SITC 1 digit , 1970-1977

	Indonesia		Malaysia		Philippines		Singapore		Thailiand	
	US$ x 10^6	%	US$ x 10^6	%	US$ x 10^6	%	US$ x 10^6	%	US$ x 10^6	%
Exports in 1977	164		385		160		589		272	
Exports in 1970	22		74		6		33		25	
Change in 1970-77	142	100	311	100	154	100	556	100	247	100
Due to:										
1.increase in OECD imports	49	34.2	164	52.9	13	8.5	73	13.1	56	22.5
2.commodity composition	- 6	- 4.4	- 35	-11.2	1	0.6	1	0.1	-11	- 4.6
3.market distribution	2	1.3	- 5	- 1.6	2	1.4	7	1.2	- 2	- 0.7
4.competitiveness	98	68.9	186	60.0	138	89.4	476	85.6	205	82.7

To the extent a country's exports grow faster (relative to the standard of 'world' trade), the relative contribution of the 'world' trade effect decreases. All ASEAN countries have manufactured export growth rates surpassing the standard, the Philippines most strongly so, followed - in decreasing order - by Singapore, Thailand, Indonesia and Malaysia. Thus, in the CMS explanation of their export performance the relative contribution of the 'world' trade effect decreases in the same order.

In preceeding CMS analyses we found a negative commodity composition effect for ASEAN as a whole. At the country level this negative commodity composition effect can be traced to Indonesia, Malaysia and Thailand. As was already stated, this negative effect is mainly due to SITC 6. The computations underlying Table 6 show in all five ASEAN countries, SITC 6 is consistently the only product group that has a negative impact on the commodity composition effect during the overall period 1970-1977.
In Singapore and the Philippines this negative effect is compensated sufficiently for their overall commodity composition effect to be positive. This is not the case in the other three ASEAN countries, in which SITC 6 has a larger share in total manufactured exports to EC countries (see figures 5-9).

As was noted before the share of SITC 6 decreased in all ASEAN countries, except Indonesia and the Philippines.
SITC 8 had the best commodity composition effect. The share of SITC 8 in total manufactured exports from all ASEAN countries to the EC markets increased, especially in the Philippines.
In CMS analysis III we find an overall negative market distribution effect for Malaysian and Thai exports to the EC region.

At the demand side of the trade matrix we selected for all product groups that had a negative market distribution effect the two or three main market outlets within the EC region. An asterix indicates that growth of demand for the selected product group in that country was below average growth of demand for that group in the OECD-area (the standard area). The share of the main markets in the total value of exports of the selected products from the selected exporting country is given between brackets.

Table 7

ASEAN exports by destination

Exporting country	SITC product group	Main importing EC countries
Indonesia	SITC 8	Germany (21%), Italy* (27%), the Netherlands* (21%)
Malaysia	SITC 5	France (16%), United Kingdom* (51%)
Malaysia	SITC 6	Germany* (28%), Italy* (31%)
Philippines	SITC 6	Germany* (40%), United Kingdom (35%)
Singapore	SITC 5	France (13%), United Kingdom* (62%)
Thailand	SITC 5	the Netherlands* (54%), United Kingdom* (40%)
Thailand	SITC 6	Germany* (30%), the Netherlands* (40%)

V Application of the CMS Model (1970 - 73; 1973 - 77)

The period 1970 - 1977 witnessed some far reaching events that shocked the world economy. After a long period of high economic growth and prosperity, the developed countries economies experienced a slow down in growth of production and demand and increasing levels of unemployment: 1973 was the watershed between "la Deuxième Belle Epoque" and a period of relative stagnation. The growth of world trade decreased since 1973 compared to the pre 1973 era.

Moreover in the period 1972 - 1974 prices of (processed) primary products were booming. These major changes in economic conditions affect the trade relations between ASEAN and EC in our analysis. And apart from these economic disruptions, a major political event, too, influences our analysis since the entrance of the United Kingdom to the EC had major consequences for developing countries' trade position with respect to the Community.

For all these reasons it seems only logical to make two separate analyses for the sub-periods 1970 - 1973 and 1973 - 1977.

As part of ASEAN exported manufactures to EC countries consists of processed primary products we shall first analyze their role in ASEAN's export performance and their impact on the overall analysis. This seems to be of particular importance here as SITC 6, which includes processed primary products,is one of the main products in the ASEAN - EC trade link;SITC 6, too, was the only group with a negative commodity composition effect during the overall-period 1970 - 1977.

ASEAN exports of tin

The ASEAN countries are the world's main suppliers of tin-in-concentrates and tin metal. Over 50 per cent of the world production of tin is taking place in Malaysia, Thailand and Indonesia[1]. Exports of these countries are, although decreasingly, dominated by tin products. This goes also for ASEAN exports to the EC, which is the world's main tin import market. See table 8.

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1) Chabra, J., Grilli, E., Pollak, P., 1978, table I, p. 2.

Table 8

ASEAN exports of tin (SITC 687) to the EC as percentage of total manufactured exports (SITC 5-8) and of exports of SITC 6 to the EC, 1970 - 1977.

	Share in SITC 5-8		Share in SITC 6	
	1970	1977	1970	1977
ASEAN	56.9	21.1	73.7	47.2
Indonesia	72.9	73.9	97.0	89.3
Malaysia	76.9	34.9	80.4	60.4
Philippines	-	-	-	-
Singapore	0.7	-	2.1	0.2
Thailand	71.3	27.8	75.3	35.7

Two distinct methods of tin mining are predominant in the ASEAN, gravel pump mining and dredging. Gravel pump mining is a relatively labour-intensive small scale process, while dredging is a highly capital-intensive mining method.

Malaysia and Thailand have sufficient domestic smelting capacity to process tin ore. Indonesia has to sell part of its tin ore to foreign smelters.

As a traded product tin is classified under SITC 687.1 (Tin, and alloys,unwrought) and SITC 687.2 (Tin and his alloys, worked). According to the UN link between the International Trade Classification and the International Industrial Classification[1], both tin items are assigned to manufacturing industries. However, in most definitions of traded manufatured products, the entire SITC - division 68 (Non ferrous metals) is excluded because of its resource-based character. This may be misleading as the further industrial processing of primary products is one of the outstanding ways for developing countries to industrialize and generate manufactured exports.For instance, since 1975 Indonesia's exports of tin consist largely of worked tin products, like tin bars and wire.

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1) See United Nations, 1971.

Nevertheless, the following reasons can be put forward to exclude tin exports from the analysis. First, ASEAN's exports of tin are largely unwrought; second, the share of tin exports in total manufactured exports is dominant in the base year of the CMS analysis and third, in character tin is a typical primary product.

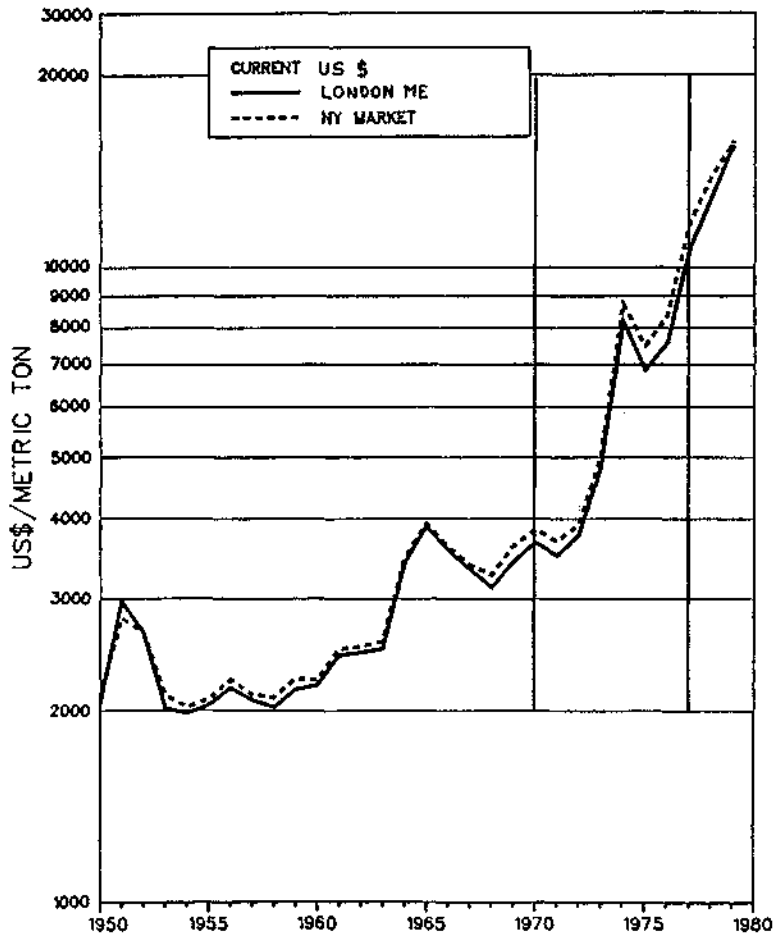
The typical primary-product character of tin follows from its inelastic supply, its limited market prospects in terms of demand increases and its substantial price fluctuations.

Sice 1968, world tin production remained at a fairly constant level. World demand for tin stagnates due to tin saving technical innovations and the application of tin substitutes.

Despite price stabilizing actions of the International Tin Agreement since 1956, international tin prices fluctuated considerably after World War II for a number of reasons.
As is illustrated by figure 10 tin prices increased moderately from 1970 to 1973.

TIN FIGURE 10

(YEARLY AVERAGE)



Source: World Bank, Commodity Trade and Price Trends, 1980, p. 105.

From 1973 to 1977, however, the world market price for tin increased sharply. The incidental price falls in 1971 and 1975 reflect economic recessions in the industrialized countries. Between 1970, the base-year of CMS analysis, and 1977, the last year of the analysis, tin prices increased approximately threefold.

Summarizing, there are good reasons to fear that inclusion of tin products in a CMS analysis of ASEAN manufactured exports would yield misleading results with respect to ASEAN's 'real' manufactured export performance. Therefore, to analyse the exact impact of tin on the results of our market share analysis we compare the results of our first aggregated analysis with a CMS IV analysis from which tin is excluded.

Table 9

CMS analysis IV, ASEAN (bloc) - EC (bloc), SITC 1 digit, exclusive SITC 687(Tin), 1970 - 77.

	current US $ x 10^6	percentage
ASEAN exports in 1977	1,240	
ASEAN exports in 1970	69	
	1,171	100
Due to		
1. increase in OECD imports	151	12.9
2. commodity composition	- 6	- 0.5
3. market distribution	10	0.8
4. competitiveness	1,016	86.8

It should be noted that the 'world' standard is changed since tin is excluded from the analysis. Of course, the influence of the exclusion on the standard is very small as tin is of minor importance in total OECD imports of manufactures. In CMS analysis I the value of r, the growth factor of OECD imports was 2.174 over the period 1970 - 1977 while its new value is 2.176, which indicates that tin had a relatively weak overall growth performance; the growth factor of tin exports

was only 1.77. However, as follows from table 10, the growth of OECD imports of tin was higher than the import growth of all SITC 6 items, indicating that within SITC 6, tin 'scored' relatively well.

Table 10

Growth factors of OECD imports of manufactures 1970 - 1977	
Growth factor of OECD imports of SITC 5-8	2.174
Growth factor of OECD imports of SITC 5-8 excl. SITC 687	2.176
Growth factor of OECD imports	1.611
Growth factor of OECD imports of SITC 6 excl. SITC 687	1.609
Growth factor of OECD imports of SITC 687	1.770

The effects of the exclusion of tin on the results of the analysis are the following.

First, as tin influences the standard only marginally its exclusion strongly upgrades the overall ASEAN exports growth rate to the EC country bloc, the general increase in 'world' exports explains less in CMS analysis IV as compared with CMS analysis I. Growth in OECD imports now only explains 12.9 per cent compared with 24.8 per cent in CMS analysis I.

Second, the negative commodity composition effect that was found in the first aggregated analysis decreases strongly as its major cause is eliminated: its value is now only - 0.5 per cent, compared with - 4.0 per cent in the first analysis.

Third, the impact of the exclusion is also positive on the market distribution effect. In the first and second analysis, this effect is negative for SITC 5 and SITC 6, but the impact of a negative distribution effect for these product groupes is now strongly reduced by the exclusion of SITC 687. Now the positive distribution effects of other product groups compensate for this reduced negative effect in SITC 5 and SITC 6, and consequently the overall market distribution effect is + 0.8 per cent in stead of - 0.2 per cent.

Fourth, the unexplained part, the competitiveness effect, increases

as the share of ASEAN exports growth that is explained by the growth of OECD imports has decreased.

We may conclude that the exclusion of tin from our analysis has resulted in a better commodity composition effect, a better market distribution effect and a better competitiveness effect, compared with the analysis in which tin was included.

From a theoretical point of view it is worth noting that because of the large difference between the composition of EC and OECD imports and the composition of ASEAN exports, the selection of products as well as the aggregation level of the analysis strongly influence the magnitude of the four effects that are distinguished.

Because of large changes in tin prices it might be expected that the impact of tin on our analysis differs in the first period (1970 - 1973) from its impact in the second period (1973 - 1977). It is striking that tin, compared to the average growth of OECD imports of manufactures, had the lowest growth factor in the first period (0.311 vs 0.773) and the highest growth factor in the second period (1.113 vs 0.790), which is caused by price increases. However, the effect of tin on the standard is only marginal: in 1970 the share of SITC 687 in OECD imports of SITC 6 was only 1.5 per cent while, on the other hand, its share in ASEAN exports of SITC 6 was 73.7 per cent.

The impact of tin on ASEAN's export performance will now be studied by comparing the results of a two-period analysis that inculdes tin with those of a two-period analysis excluding tin (table 11).

Table 11 CMS analysis V, ASEAN (bloc) - EC (bloc), SITC 1 digit, 1970 - 73, 1973 - 77, inclusive of SITC 687 (Tin).

	1970 - 73			1973 - 77		
	current US $ x 10^6		percentage	current US $ x 10^6		percentage
ASEAN exports	1973	562		1977	1572	
ASEAN exports	1970	161		1973	562	
	1970 - 1973	401	100		1010	100
Due to						
1. increase in OECD imports		124	31.0		434	43.0
2. commodity composition		- 43	- 10.8		43	4.3
3. market distribution		18	4.6		3	0.3
4. competitiveness		302	75.3		530	52.5

CMS analysis VI, ASEAN (bloc),EC (bloc), SITC 1 digit, 1970 - 73, 1973 - 77, exclusive of SITC 687 (Tin).

	1970 - 73			1973 - 77		
	current US $ x 10^6		percent--age	current US $ x 10^6		percent--age
ASEAN exports	1973	427		1977	1240	
ASEAN exports	1970	69		1973	427	
	1970-1973	358	100	1973-1977	813	100
Due to						
1. increase in OECD imports		54	14.0		337	41.5
2. commodity composition		- 1	- 0.3		- 10	- 1.2
3. market distribution		4	0.9		- 3	- 0.3
4. competitiveness		302	78.4		488	60.1

The negative commodity composition effect in the first period is much more pronounced in the analysis that includes tin than in the analysis excluding tin.
In the second period, tin had a strong positive impact on the commodity composition effect. In both periods the inclusion of tin had a negative impact on the comptitiveness effect.

Now that the impact of tin on the results of the market share analysis has been investigated in some depth, we shall exclude this product from our further study of the ASEAN-EC trade link. Before embarking on a detailed analysis we first have to add some comments on the results of the two-period analysis just presented, viz. CMS analysis VI (Table 11).

CMS analysis VI

The differences between the results of the first period and the second period analysis can be summarized as follows.

First, the general increase in OECD imports explains a much larger share of ASEAN's export performance in the second period than in the first period.

Second, the negative commodity composition effect becomes slightly stronger during the second period. The cause of a negative commodity composition effect was rooted in SITC 5 and SITC 6 (excl. 68) during the first period and in SITC 6 (excl. 68) during the second period.

Third, the market distribution effect becomes slightly negative in the second period. SITC 5 and SITC 6 (excl. 68) had a negative market distribution effect both in the first and in the second period.

Finally, the competitiveness effect decreases during the second period, which is caused by Singapore's export performance. Summarizing, the ASEAN experienced a deterioration of its export performance to EC markets in the second period.

VI Application of the CMS Model at a Disaggregated Level (1970 - 73; 1973 - 77)

The final part of our CMS analysis of ASEAN's export performance on EC markets is a detailed assessment of the magnitude of all effects involved at the two and three SITC digit level over two periods at the country level.

Selection of products was based on their relative importance for individual ASEAN member countries' exports to EC countries. Because of large differences in the composition of exports between ASEAN countries, the sample of selected products is composed countrywise.

Table 12 shows the percentage of the selected products in each country's total manufactured exports to EC countries.

Table 12

Shares of main products in ASEAN countries' manufactured exports to EC, 1977, in percentages.

SITC	TH	MA	SI	IN	PH
541 + 551 medical products and essential oils				32.2	
63 wood and cork manufactures	14.5	14.9	9.5	8.9	13.9
65 textile yarn, fabrics, made-up articles	34.8	16.2			
667 pearls and (semi) precious stones	10.7				
671 pig iron etc.				17.9	
724 telecommunications apparatus		8.4	18.5	8.9	
729 other electrical machinery and apparatus		18.0	14.0		8.4
841 clothing (except fur clothing)	19.9	17.9	17.1	8.8	44.0
rest	20.1	24.4	40.9	23.4	33.7
total	100	100	100	100	100

Note: manufactured exports is SITC 5-8 excl. 68.

Textiles, clothing and wood products are the main manufactures exported to EC countries. Wood products, which is an important export item in all ASEAN countries, are processed primary products and we shall first deal with this product separately before proceeding with the detailed analysis of the four effects of the market share analysis.

ASEAN exports of wood products

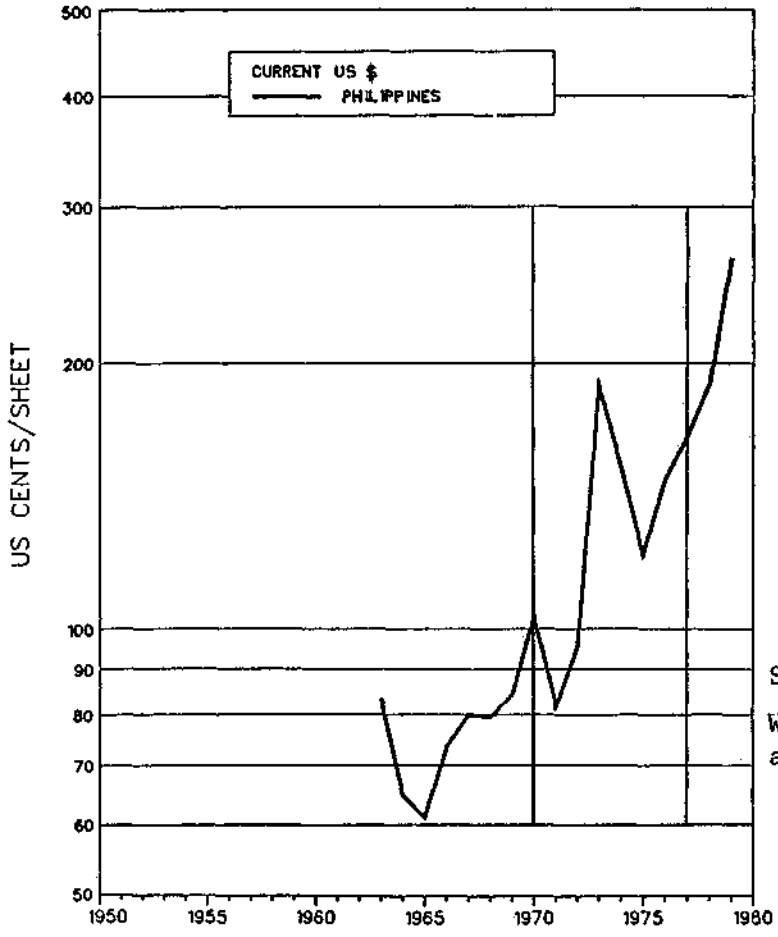
It should be noted that SITC 63 (wood and cork manufactures) is not the only SITC category of processed wood. SITC 82 (furniture) is wood-based too, but is only of minor importance in ASEAN's exports.

SITC 63 comprises in 1977 respectively 8.9. 15.0, 13.9, 9.5 and 14.5 per cent of total manufactured exports (SITC 5-8 excl. 68) to EC countries in Indonesia, Malaysia, Philippines, Singapore and Thailand respectively. Within SITC 63, SITC 6312 (Plywood) is the main product exported to EC countries.

World market prices of plywood fluctuated greatly during the eight years period under investigation, as can be seen in the figure below.

PLYWOOD FIGURE 11

(YEARLY AVERAGE)



Source:

World Bank, Commodity Trade and Price Trends, 1980, p.87.

In current US dollars the price of plywood increased by over 83 per cent between 1970 and 1973. The price of plywood experienced a sharp fall in 1975. After a recovery in subsequent years, it was nearly 13 per cent lower in 1977 than in 1973.

The present CMS analysis is performed in value terms. Consequently, the price increases during the first period have a positive impact on the growth factor of trade in wood manufactures, while the fall in price during the second period affects this growth factor adversely - assuming inelastic demand.

During the first period, in which total EC imports of SITC 63 increased by 148 per cent in value terms, ASEAN exports of wood manufactures to the EC increased by more than 500 per cent.

Approximately half of this tremendous increase is accounted for by price increases and consequently less than half of the value increase can be attributed to an increase in volumes exported.

From 1973 to 1977 ASEAN exports of wood manufactures increased by only 17 per cent in value terms. This near-stagnation of export proceeds is not primarily due to the lower price level in 1977.

The poor performance of the ASEAN countries during the second period is mainly due to a relatively low growth in wood manufactures export volume.
In volume terms the growth factor of total EC imports of wood manufactures exceeded the growth factor of EC imports from the ASEAN countries. ASEAN exporters were not able to compensate for the unfavourable price development.

Summarizing, that the ASEAN countries experienced very favourable prices and vast increases in export volumes during the first period, while during the second period prices declined and export volumes stagnated increased only moderately.

CMS analysis VII : commodity composition effect

The commodity composition effect compares the growth of imports of a specific product on the 'world' (OECD) market with the average growth of import of the OECD market. Consequently the sign of the effect should be the same for all exporting countries, except in the case of negative export growth at the country level.
In general the commodity composition effect is only of minor importance in explaining a country's export performance. See tables 13 and 14.

During the period 1970 - 1973 the commodity composition effect was positive in all cases except for SITC 541 + 551 (chemical products) exported only by Indonesia. A rather high and positive composition effect was found for SITC 63 in the Philippines and Singapore and especially in Malaysia and Indonesia.

SITC 667 from Thailand, too, experienced a high commodity composition effect. As follows from the preceding analysis the commodity composition effect of wood manufactures changed dramatically: while SITC 63 experienced the highest growth factor during the first period (1.4) and the highest commodity composition effect, it experienced the lowest growth factor (0.4) and the largest negative commodity composition effect in the second period.

SITC 667 from Thailand was in both periods the best but one product, in terms of composition effects.
The sign of the composition effect of SITC 65 (textile products) is reversed from positive to negative in the second period;SITC 541 became more negative in the second period than it was in the first period.

In general we may conclude that the commodity composition effect deteriorated for all products that are focussed on in our analysis, and that there are more products with a negative composition effect in the second period than there were in the first period.

Finally we compare the growth of ASEAN's main manufactured exports to EC markets with the average growth of OECD imports in both periods. Note that the growth of ASEAN's exports results not only from its commodity composition effect but from all effects. See table 15.

Table 13

CMS analysis VII, ASEAN - EC, SITC 2/3 digit, 1970 - 73, 1973 - 77,
EFFECTS AT THE COUNTRY LEVEL (exclusive of SITC 68).

	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	US$ × 10^6	%	US$ × 10^6	%	US$ × 10^6	%	US$ × 10^6	%	US$ × 10^6	%
Exports in 1973	17		82		19		265		42	
Exports in 1970	6		17		6		33		7	
Change 1970 - 73	11	100	65	100	13	100	232	100	35	100
Due to										
1. increase in OECD imports	5	47.1	15	22.7	5	36.9	28	12.1	6	17.4
2. commodity composition	- 0	- 1.9	6	9.5	0	3.2	6	2.6	2	6.7
3. market distribution	1	6.6	- 0	- 0.3	1	5.0	5	2.2	- 1	- 2.3
4. competitiveness	5	48.2	44	68.0	7	55.0	193	83.1	27	78.2
Exports in 1977	43		251		156		589		197	
Exports in 1973	17		82		19		265		42	
Change 1973 - 77	26	100	169	100	137	100	324	100	155	100
Due to										
1. increase in OECD imports	13	50.9	64	38.1	15	11.1	208	64.1	33	21.3
2. commodity compostion	- 1	- 2.9	- 19	-11.4	- 3	- 2.3	- 16	- 4.8	- 3	- 2.2
3.market distribution	- 1	- 3.9	- 17	- 9.9	- 0	- 0.1	- 11	- 3.5	- 5	- 3.1
4. competitiveness	14	55.9	141	83.2	125	91.3	143	44.2	130	84.0

Table 14

CMS analysis VII, ASEAN-EC, SITC 2/3 digit, 1970 - 73, 1973 - 77, EFFECTS AT THE PRODUCT LEVEL(exclusive of SITC 68)

SITC	541 + 551		63		65		667		724		729		841	
Indonesia	US$ x 10^6	%	US$ x 10^6	%	US$ x 10^6	%	US$ x 10^6	%	US$ x 10^6	%	US$ x 10^6	%	US$ x 10^6	%
Exports in 1973	12		.3						.15				.19	
Exports in 1970	4		.1						.19				.02	
Change 1970 - 73	8	100	.2	100					- .04	-100			.17	100
Due to														
1. increase in OECD imports	4	44.9	.1	43.3					.17	377.3			.02	9.5
2. commodity composition	- 0	- 3.6	.1	28.6					.05	411.4			.01	3.0
3. market distribution	0	3.8	.0	11.4					.33	745.5			.00	- 1.8
4. competitiveness	4	54.9	.0	16.7					- .59	-1334.1			.15	89.4
Exports in 1977	14		3.8						3.83				3.71	
Exports in 1973	12		.3						.15				.19	
Change 1973 - 77	1	100	3.5	100					3.68	100			3.52	100
Due to														
1. increase in OECD imports	10	661.3	.2	7.1					.12	3.2			.15	4.2
2. commodity composition	- 1	- 45.5	- .1	-3.8					.02	0.4			.03	0.8
3.market distribution	- 1	- 55.4	.0	1.3					- .04	- 1.0			.02	0.5
4. competitiveness	- 7	-460.4	3.3	95.4					3.59	97.4			3.33	94.6

(continued)

Malaysia										
Exports in 1973	49		2			1.1		7.4		7.0	
Exports in 1970	11		1			.2		.5		.1	
Change 1970 - 73	38	100	1	100		.9	100	6.9	100	6.9	100
Due to											
1. increase in OECD imports	9	25.1	1	78.3		.2	17.6	.4	6.3	.1	1.2
2. commodity composition	6	16.4	.8	6.5		.1	5.2	.0	0.3	.0	0.4
3.market distribution	- 1	- 3.6	.1	10.8		.2	27.6	.1	1.2	.0	0.2
4. competitiveness	23	62.1	.1	4.4		.4	49.6	6.4	92.2	6.7	98.2
Exports in 1977	38		41			21		45		45	
Exports in 1973	49		2			1		7		7	
Change 1973 - 77	- 11	-100	38	100		20	100	38	100	38	100
Due to											
1. increase in OECD imports	38	341.2	2	5.0		1	4.2	6	15.4	5	14.4
2. commodity composition	- 20	-181.9	- 1	- 2.1		0	0.6	0	1.3	1	2.6
3. market distribution	-18	-159.3	0	0.6		0	1.0	- 0	- 0.5	1	2.4
4. competitiveness	-11	-100.0	37	96.6		19	94.3	32	83.9	31	80.6

Philippines								
Exports in 1973	8				1.23		1.00	
Exports in 1970	1				.05		.05	
Change 1970 -73	7	100			1.19	100	.95	100
Due to								
1. increase in OECD imports	1	11.1			.04	3.3	.04	4.1
2. commodity composition	1	7.2			.00	0.2	.01	1.2
3. market distribution	0	1.5			.01	0.7	.00	0.4
competitiveness	6	80.3			1.14	95.9	.90	94.3
Exports in 1977	22				13		69	
Exports in 1973	8				1		1	
Change 1973 - 77	14	100			12	100	68	100
Due to								
1. increase in OECD imports	6	45.7			1	8.1	1	1.2
2. commodity composition	- 3	24.3			0	0.7	0	0.2
3. market distribution	- 0	1.2			0	0.1	- 0	- 0.2
4. competitiveness	11	79.9			11	91.1	67	98.8

(continued)

Singapore										
Exports in 1973		60			26		54		26	
Exports in 1970		8			2		9		2	
Change 1970 - 73		51	100		24	100	45	100	23	100
Due to										
1. increase in OECD imports		7	14.3		2	8.5	7	16.4	2	8.9
2. commodity composition		5	9.3		1	2.5	0	0.8	1	2.7
3. market distribution		- 1	- 2.0		3	13.6	1	1.3	1	3.7
4. competitiveness		40	78.4		18	75.4	37	81.5	20	84.4
Exports in 1977		56			109		83		101	
Exports in 1973		60			26		54		26	
Change 1973 - 77		- 4	-100		83	100	29	100	75	100
Due to										
1. increase in OECD imports		47	1255.2		20	24.6	42	146.4	20	26.7
2. commodity composition		- 25	-669.2		3	3.3	3	12.1	4	4.9
3. market distribution		- 17	-456.7		4	5.2	- 4	- 13.7	3	3.7
4. competitiveness		- 9	-229.2		56	67.0	-13	- 44.8	49	64.7

(continued)

Thailand												
Exports in 1973		9.0			5.3			16			2.7	
Exports in 1970		.2			.5			5			.1	
Change 1970 - 73		8.8	100		4.8	100		12	100		2.7	100
Due to												
1. increase in OECD imports		.2	2.1		.4	8.2		4	34.3		.1	2.0
2. commodity composition		.1	1.4		.0	0.7		2	19.1		.0	0.6
3. market distribution		.0	0.2		.0	0.9	-	1	- 8.0		- .0	- 0.1
4. competitiveness		8.4	96.3		4.4	90.2		6	54.7		2.6	97.6
Exports in 1977		29			68			21			39	
Exports in 1973		9			9			16			3	
Change 1973 - 77		20	100		59	100		5	100		36	100
Due to												
1. increase in OECD imports		7	36.0		4	7.0		13	277.0		2	5.9
2. commodity composition		- 4	-19.2	-	2	3.0		2	34.3		0	1.0
3. market distribution		- 1	- 4.1		0	0.5		- 4	-91.5		0	0.3
4. competitiveness		17	87.3		57	95.6		- 6	119.7		34	92.8

Table 15

Growth of ASEAN exports to EC countries as percentage of average growth of 'world' trade.

SITC	description	period 70 - 73	period 73 - 77
SITC 541 + 551	medical products and essential oils	92	93
SITC 63	wood and cork manufactures	165	47
SITC 65	textile yarn, fabrics, made-up articles	108	57
SITC 667	pearls and (semi)-precious stones	156	112
SITC 724	telecommunications apparatus	130	113
SITC 729	other electrical machinery and apparatus	105	108
SITC 841	clothing (except fur clothing)	130	118

The observed changes are rather dramatic, all the more so because of the decline in the average growth rate of'world'imports.
In all but two marginal cases, the relative ASEAN growth rate decreased. Wood manufactures and textiles, two major ASEAN export products, turned into relatively low growth products during the second period. This is of major importance, especially in Thailand and Malaysia as the share of SITC 63 and 65, put together, in the total value of exported manufactures to EC countries in 1977 was 8.9 per cent in Indonesia, 31.1 per cent in Malaysia, 13.9 per cent in the Philippines, 9.5 per cent in Singapore and 49.3 per cent in Thailand.

CMS analysis VII: market distribution effect

ASEAN exports to the EC are concentrated on the largest markets of the Community. In most cases, over 50 per cent of exports are directed to only two markets. The major importing markets of ASEAN manufactures are W. Germany, the United Kingdom and France.

In most cases the market distribution effect during the first period

is positive indicating that, within the EC area, ASEAN exports are concentrated on relatively fast growing markets.
The EC as a whole is, during the first period, a relatively good market compared with the OECD, but it should be noted that intra EC trade is included now that we are engaged in a CMS at the country level. In the first period, the EC is a relatively stagnant outlet for SITC 671 and SITC 729 only (SITC 671 is of no importance in our analysis) However, in the second period the EC is relatively lagging behind OECD imports in SITC 724, 729 and 841, but the differences in import growth factors between OECD and EC are only marginal.

In table 16 we compare growth factors of imports of selected product groups from ASEAN countries in the main EC importing countries with the growth factors of imports of these products in the Community as a whole and in the OECD.
The share of the main importing markets in the total value of ASEAN countries' exports of the selected items to Community markets is given in the second column. A dot indicates that the market has the highest growth factor of imports of the selected item within the Community.

Tabel 16

Growth rates of imports in main Community markets from ASEAN countries

1970-73	SITC 541+551			SITC 63			SITC 65			SITC 667			SITC 724			SITC 729			SITC 841		
exporting countries	main markets	market shares	growth rates	main markets	market shares	growth rates	main markets	market shares	growth rates	main markets	market shares	growth rates	main markets	market shares	growth rates	main markets	market shares	growth rates	main markets	market shares	growth rates
TH				GE	27	1.8	GE	39	1.0	GE	63	1.0							DE	32	0.7
				NE	39	1.1	BL	16	1.1	FR	21	1.1							UK*	15	1.6
MA				UK	90	1.3	UK	84	1.1				UK*	73	2.9	UK*	95	1.1	GE	40	1.4
				IR	5	1.2	NE	7	0.6				GE	24	1.3	IT	4	0.8	UK*	21	1.6
SI				UK	89	1.3							UK*	74	2.9	UK*	42	1.1	UK*	68	1.6
				NE	8	1.1							FR	9	1.4	IT	26	0.8	GE	12	1.4
IN	FR	72	0.8	FR	38	1.3							UK*	96	2.9				IT	63	1.0
	NE	13	0.8	IT*	30	2.3													NE	37	0.8
PH				GE	37	1.8										UK*	100	1.1	FR	49	1.2
				UK	35	1.3													IT	29	1.0
world	EC		0.9	EC		1.5	EC		1.0	EC		1.5	EC		1.4	EC		0.9	EC		1.3
world	OECD		0.8	OECD		1.4	OECD		0.9	OECD		1.3	OECD		1.1	OECD		0.9	OECD		1.1

1973-77	SITC 541+551			SITC 63			SITC 65			SITC 667			SITC 724			SITC 729			SITC 841		
exporting countries	main markets	market shares	growth rates	main markets	market shares	growth rates	main markets	market shares	growth rates	main markets	market shares	growth rates	main markets	market shares	growth rates	main markets	market shares	growth rates	main markets	market shares	growth rates
TH				UK	36	-0.1	UK	47	0.5	GE	45	0.5							DE	51	1.0
				GE	32	0.4	GE	14	0.5	UK	29	0.8							GE	27	0.8
MA				UK	87	-0.1	UK	48	0.5				GE	27	1.2	GE	50	0.9	FR	43	1.2
				GE	4	0.4	GE	22	0.5				FR*	32	1.5	UK	47	0.8	DE	25	1.0
SI				UK	75	-0.1							FR*	48	1.5	UK	38	0.8	FR	48	1.2
				NE	8	1.0							UK	21	0.1	GE	31	0.9	GE	21	0.8
IN	FR	35	0.5	UK	31	-0.1							IT	48	1.1				NE	32	1.1
	NE	32	0.7	NE	21	1.0							UK	46	0.1				FR	31	1.2
PH				UK	41	-0.1										GE	72	0.9	GE	58	0.8
				GE	29	0.4										UK	23	0.8	UK	23	0.6
world	EC		0.9	EC		0.4	EC		0.5	EC		0.9	EC		0.8	EC		0.8	EC		0.9
world	OECD		0.7	OECD		0.4	OECD		0.4	OECD		0.9	OECD		0.9	OECD		0.8	OECD		0.9

In general terms, Denmark, Ireland, Italy and the Netherlands are relatively slow growth markets for the selected imports during the first period, but, except Italy, these countries are of minor importance only as outlets for ASEAN products.
The United Kingdom was a major fast growing import market for ASEAN. During the second period three important markets for ASEAN exports, France, Italy and the United Kingdom had a rather poor import performance, while W.-Germany, another major ASEAN outlet, experienced relatively fast growing imports.

Now ,as ASEAN exports are mainly focussed on the larger EC sub-markets it follows that during the second period under investigation ASEAN exports experienced a decline in the value of the market distribution effect because of the poor importance of these importing countries in the 1973 - 1977 period.

In Thailand the negative effect observed for the first period became even more pronounced negative in the second period. The same goes for Malaysia. Singapore, Indonesia and the Philippines all had a positive distribution effect in the first period and a negative effect in the second period. This also applies to the ASEAN as a whole.

However, in both periods the impact of the market distribution effect on the overall ASEAN trade performance in EC countries was limited.

A striking feature of ASEAN's export performance in EC markets is the rather pronounced change in the ranking of markets of destination, according to their market share in ASEAN exports at the product level. As exports were rather concentrated, as has been pointed out above, this implies that the changes were considerable indeed. In fact, these changes were not always for the good, just as with regard to other destinations the absence of change was not always for the good.
But it follows clearly from our analysis that ASEAN exporters were successful in reducing the negative value of the market distribution effect in the second period by redistributing their market shares within the EC area.

CMS analysis VII : competitiveness effect

Finally we deal with the most important effect of all, the competitiviness effect. As has been pointed out in Ch. II. this effect is actually a "catch all" terms, the value of which is the outcome of many factors, that are not all directly related to the free working of market force only.
First we examine the value of the residual term for all countries in both periods. See table 17, last columns.

The most striking feature of the ranking of countries with respect to the value of their overall competitiveness effect is the change in the relative positions of Singapore and the Philippines. In the first period Singapore had the largest and the Philippines had the smallest but one residual; in the second period Singapore had the smallest and the Philippines the largest residual.
Except for Singapore all ASEAN countries experienced an increase in the value of their competitiveness effect.

Because of the many factors involved the changes in effects between both periods and the differences between Singapore and the rest of ASEAN are hard to explain.
It might be that Singapore lost its competitiveness vis à vis rivaling supliers inside and outside ASEAN in extremely labour-intensive sectors of production with standardized technologies, because of possible shortage in supply of labour, in that country.
It might also be that Singapore expansion on the EC market was hampered by import limitations and 'voluntary' export restrictions.
To reveal some of the factors at work we compare competitiveness effects for four main product groups: SITC 63 (wood manufactors), SITC 724 (telecommunications apparatus), SITC 729 (electrical machinery), SITC 841 (textiles).

Tabel 17

Competitiveness effects for main product groups, 1970-73; 1973-77.

	SITC 541+551		SITC 63		SITC 65		SITC 667		SITC 724		SITC 729		SITC 841		Over-all	
	70-73	73-77	70-73	73-77	70-73	73-77	70-73	73-77	70-73	73-77	70-73	73-77	70-73	73-77	70-73	73-77
Singapore	----		78.4	-229.2	----		----		75.4	67.0	81.5	-44.8	84.8	64.7	83.1	44.2
Indonesia	54.9	-460.4	16.7	95.4	----		----		-1334.1	97.4	----		89.4	94.6	48.2	55.9
Malaysia	----		62.1	-100.0	4.4	96.6	----		49.6	94.3	92.2	83.9	98.2	80.6	68.0	83.2
Philippines	----		80.3	79.9	----		----		----		95.9	91.1	94.3	98.8	55.0	91.3
Thailand	----		96.3	87.3	90.2	95.6	54.7	-119.7	----		----		97.6	92.8	78.2	84.0

As table 17 shows, the decline in Singapore's competitiveness is a phenomenon, occuring in all its main manufactoring export sectors. Decreasing competitiveness in wood manufactures is a general phenemenon for all ASEAN countries except Indonesia. In the latter country, the initial 1970 value of wood exports was extremely low which helps to explain why the country experienced a very high growth factor compared to others.

Is seems plausible that the very high values of the competitiveness effects in all ASEAN countries, except Singapore, in the second period, are caused by the low initial levels of manufactured exports in 1970. Singapore, too, experienced a very high competitive effect in the first period but as the country was an early starter compared to other ASEAN countries, the effect started to decline in the second period while the other ASEAN countries were still in the initial phase of high growth from low levels.

Within the ASEAN region, Singapore was an early starter indeed. In 1970 the value of its manufactured exports to E.C. countries was 3.63 times the average value of the other four ASEAN member countries. This ratio increased up to a 6.61 level in 1973. In the second period sustained high growth rates in the other four countries caused this ratio to drop to its 1970 level, 3.64.

The export performance of Indonesia is the least pronounced of all ASEAN countries. Although the country started at low levels, in 1970 its overall competitiveness effects is relatively small.

Although growth in the world economy diminished in the post 1973 era and international trade in manufactures lost a great deal of its dynamics, ASEAN countries managed to advance at high growth rates by increasing their competitiveness in world trade.

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