Finnish Export Performance in 1961–1972
A Constant-Market-Shares Approach

Bank of Finland
Helsinki 1974
This study was published previously in Finnish and Swedish in the Bank of Finland Institute for Economic Research Series A:35. Before the study was translated into English so that it would be available to a wider circle of readers, it was revised and the latest available information was incorporated.
## CONTENTS

### I INTRODUCTION

1.1. Basis for the study 7

1.2. Structural factors and the problem of export performance 7

### II THE THEORETICAL AND STATISTICAL BACKGROUND

2.1. The theoretical background 12

2.2. The constant-market-shares model and export growth 12

2.3. The break-down of changes in exports into components 15

2.4. Problems in applying a constant-market-shares model 16

### III FINNISH EXPORT PERFORMANCE IN WESTERN MARKETS IN 1961 - 1972

3.1. Methods used in the study 24

3.2. The general pattern of export growth 27

3.3. The competitiveness of Finnish exports in 1961 - 1972 43

### IV EXPORT PERFORMANCE BY COUNTRY AND COMMODITY GROUP

4.1. Export performance in the Western market countries 52

4.2. Export performance in the Socialist countries 57

4.3. Export performance by commodity sections and subdivisions 60

### V AN ASSESSMENT OF THE APPLICATION OF CONSTANT-MARKET-SHARES MODEL

5.1. Constant-market-shares model 71

5.2. Application 73
I INTRODUCTION

1.1. Basis for the study

In the 1960s the volume of Finnish commodity exports grew by almost 8 per cent per annum. The growth was not steady but fluctuated relatively sharply in cycles of about five years, during which the growth in the volume of exports varied within a range of some 20 percentage points. These figures which were obtained from the Finnish foreign trade statistics, indicate developments as such, without relating them to anything but previous developments. Yet the actual growth of exports can be assessed and analyzed more purposefully by viewing it in light of export targets which are, in turn, based on the major goals of economic policy, or in light of potential export prospects, defined in one way or other.

Above all, exports help a country to approach its growth and employment goals by allowing it to benefit from the international division of labour, and, in the longer run, to diversify its structure of production. The success of the process of adjusting to changing conditions of international

1. "Foreign Trade", issued monthly in the series the Official Statistics of Finland I A.
trade, which is reflected in the attainment and maintenance of external balance, is dependent on the competitiveness of the economy.  

Three targets of economic policy - rapid economic growth, a high rate of employment and external balance - form the criteria through which a country's export performance can be examined. We may, for example, forecast the size and structure of the expansion in exports needed for reaching certain growth and employment goals, or the share of a country's imports which should be covered by export earnings. If we compare the export targets thus formulated with the actual or the most probable development of exports, we have a yardstick with which to measure the contribution of exports to the attainment of these goals.

Potential export development can be examined either from the point of view of supply, i.e., the growth of domestic production capacity and of domestic absorption, or from the point of view of demand, i.e., the growth and the structural development of foreign markets. In both cases, the relative


2. Other goals such as an equitable distribution of income or stable prices are not examined here. Although these goals are conditioned by the country's foreign trade relations, they cannot easily be used as criteria for evaluating the growth of the country's exports.

competitiveness of the country's exports\(^1\), i.e., the demand for them on international markets, sets limits to actual export developments. In this study, the growth of foreign markets has been used throughout as a yardstick for measuring export performance.

1.2. Structural factors and the problem of export performance

Accordingly, export performance is not measured by the development of the Finnish economy, nor by its growth, employment or balance of payments targets. Rather the growth of markets serves as the measure. Our exports to various market countries are considered in relation to the total imports of these countries. This study does not extend beyond actual (or predicted) imports. The total import flows of individual countries are assumed to be given, and attention is focussed only on changes in their composition.

The average growth of markets (or the growth of world trade) does not necessarily give a true picture of the prospects for our exports. First, the growth rates for imports of individual market countries may differ substantially from

---

1. Relative competitiveness refers here to the relation between the properties of export products which are most essential from the point of view of deciding on a purchase and properties of competing products. In this bundle of properties, the price of the product is most often believed to play the central rôle. Other possible factors of importance are, e.g., the quality of the product, payment conditions, delivery, service and maintenance arrangements, time of delivery, etc. Cf. e.g., J.M. McGeohan: "Competitiveness: A Survey of Recent Literature", The Economic Journal, June 1968, pp. 1 - 18.
each other. Such variation in growth rates may follow certain trends or be a result of differences in the timing and strength of cyclical fluctuations. Since Finland's trade relations do not parallel the general regional structure of world trade because of various geographic, institutional and historical factors, the demand for Finnish products may be stronger or weaker in the markets particularly important for Finnish exports than in the world market as a whole. Thus the pattern of our trade may be favourable or unfavourable with respect to the structure of world trade, either in the long run or in certain phases.

World trade involves innumerable goods, and the commodity break-down of the exports of a single country may differ greatly from the average composition. The demand for individual commodities may develop in ways quite different from average demand. There are products for which the demand in international markets either strengthens or weakens relatively - and in some cases even absolutely. The demand for certain commodities is highly susceptible to fluctuations in economic activity, whereas the demand for others may remain stable throughout the business cycle. Like the market structure of exports, the commodity structure of exports may mean that the measure of potential export growth is biased either upwards or downwards, if the average growth of world trade is taken as the standard.
The term "structural factors affecting exports" is used here to include regional and commodity structure considerations.¹ These factors make it difficult to draw conclusions on export performance and the chances firms have of selling their products on foreign markets, compared with the chances of foreign firms marketing corresponding products. Only after examining changes in the market share of homogeneous groups of exports in individual markets, is it possible to make inferences on export performance and to investigate further the reasons for the changes observed.

In the present study, a method is applied which is designed to separate the effects of both the average growth of world trade and the structural factors affecting export growth from the observed growth rates. The aim was thus to derive an "adjusted" measure of export growth, which would reflect the relative competitiveness of Finnish exports. The study was designed to determine the relative importance of the different elements impinging on the development of exports and to find out the overall pattern of export growth. However, the purpose was not to analyze the factors affecting competitiveness in detail.

¹. For more details on the importance of structural factors, cf., D. Schweckendiek: Die Trennung der Struktur von den Konkurrenzzweckten in der Begründung des unterschiedlichen Exportwachstums einzelner Länder, Tübingen 1967, pp. 7 - 12.
II THE THEORETICAL AND STATISTICAL BACKGROUND

2.1. The theoretical background

The demand for products of a certain exporting country can be seen as resulting from a three-phase choice process implicit in the demand situation. First, some demand in an individual market country will be focussed on domestic products which face no competition from abroad, and the remainder on products - manufactured either at home or abroad - which are objects of international trade. In the second phase, economic units in the market country have to make a choice between domestic and foreign manufactures, and finally, in the last and the most crucial phase, between the products of the exporting country under review and the products of the rest of the world. We shall concentrate here on the last choice. Our attention will thus not involve a closer examination of economic events in the importing country.

If we examine the development of the exports of an individual exporting country in relation to its markets, we are concerned with the distribution of total import demand over the products of competing countries. Special
attention is paid to the market share that falls to the exporting country concerned. Since the commodity structure of world trade is taken into account in the study, we may formulate the problem more precisely by introducing the concepts 'commodity group' and 'commodity'. It seems reasonable to presuppose that the exports of different countries are rarely (particularly in trade between industrial countries) complete substitutes for one another, i.e., fully identical products. It is possible, however, to form commodity groups of products originating in different exporting countries which correspond closely to one another. In the process of choice described above, the last phase implies a choice between the products originating in countries which belong to the same commodity group.

Taking traditional theory of consumer choice as a basis, Armington developed a theory of demand, which can be used to analyze market shares. In this theory, products are distinguished not only by their physical properties but also by their place of production. After including certain additional assumptions of general demand theory (mainly related to the substitutability of different commodity groups or commodities), Armington derived an equation for determining the growth of a country's exports. The most simplified form for this equation is

\[
\frac{d(P_{ij}X_{ij})}{P_{ij}X_{ij}} = E_i \frac{dD}{D} - (\sigma_i - 1) \left( \frac{dP_{ij}}{P_{ij}} - \frac{dP_i}{P_i} \right)
\]

where

\(i\) = market area,

\(j\) = exporting country,

\(P\) = export price,

\(X\) = quantity of exports,

\(D\) = income variable indicating market demand,

\(E_i\) = income elasticity of demand,

\(\sigma_i\) = elasticity of substitution (constant) between products originating in different countries.

The percentage change in the value of exports is divided into two components; the first - the market expansion factor - illustrates the expansion of general market demand, and the second - the share adjustment factor - reflects changes in relative price-competitiveness. In this simplified model, the impact of structural factors is eliminated by assumption.

Since the purpose of this study is not to use econometric methods to explain the development of exports, there is no reason to treat the theoretical foundation in greater detail. However, it is worthwhile to try to shed light on foundations of the method - which may seem somewhat mechanical.
2.2. The constant-market-shares model and export growth

To cast more light upon this method, we may first simply assume that a country's share in world trade is a function of its relative competitiveness, ignoring structural factors for the time being. Then

\[ s = \frac{X}{x} = f\left(\frac{c}{C}\right), \quad f'\left(\frac{c}{C}\right) > 0 \]

where

- \( s \) = market share,
- \( x \) = exports of a given country,
- \( X \) = foreign markets,
- \( c, C \) = corresponding indicators of competitiveness.

When the matter is looked upon from the point of view of one country, the derivative of the above equation with respect to time can be taken:

\[ \frac{dx}{dt} = s \frac{dX}{dt} + x \frac{ds}{dt} = s \frac{dX}{dt} + x f'\left(\frac{c}{C}\right). \]

A change in exports is here divided into two components, one illustrating the change in exports that would result if the market share of the base period remained unchanged (so-called constant-share exports), and the other reflecting changes in the relative competitiveness of exports. When we take into account the fact that the market share \( s \) is a function of both the structure of exports and their relative
competitiveness, the equation presented can be applied successively to each homogeneous group of exports, and by aggregating these it is possible to indicate the change in total exports. However, in the following no explicit use is made of market shares. Rather the percentage rate of expansion in export markets is used to assess export performance. Exports in the base year are assumed to be given. In this way the a priori concept can be used in empirical testing.

Before moving on to the application of this approach, it should be noted that exports has been examined above as a continuous function of market demand, structural factors and relative competitiveness. Yet in practical statistical research we must deal with time series data with annual or quarterly observations. Since we examine the percentage change in exports between two discrete periods an index problem will rise which is typical of the statistical examination of time series. This problem may make it difficult to interpret the results, particularly if long-range changes are examined.

2.3. The break-down of changes in exports into components

We shall now examine how a percentage change in exports between two periods can be broken down into four components:


2. Cf. e.g., S. Spiegelglas: "World Exports of Manufactures, 1956 vs. 1937", The Manchester School of Economic and Social Studies, XXVII, May 1959, pp. 111 - 139.
the average expansion of the market, the effect of the regional structure of exports, the impact of the commodity structure of exports and the role of market shares (changes in relative competitiveness). To make this approach clearer, we shall first treat exports as a whole and only then take into account their regional and commodity structure. By proceeding this way, it is possible to cast light not only on the basic idea behind the constant-market-shares model but also on its interpretation.¹

It is assumed that market areas \( i (i = 1, 2, \ldots, n) \) are independent economies, and make up the entire world market (excluding the exporting country). Commodity groups \( j (j = 1, 2, \ldots, m) \) consist of homogeneous commodities, and include all tradable goods. The following symbols are used:

\[
\begin{align*}
X_{ijt} &= \text{the focus country's exports of commodity group } j \text{ to market area } i \text{ in year } t, \\
X_{..t} &= \text{the focus country's total exports in year } t, \\
X_{jt} &= \text{the focus country's exports of commodity group } j \text{ in year } t, \\
X_{i..t} &= \text{the focus country's total exports to market area } i \text{ in year } t, \\
M_{ijt} &= \text{imports of commodity group } j \text{ by market area } i \text{ in year } t, \\
M_{..t} &= \text{total world imports in year } t, \\
M_{jt} &= \text{total imports of commodity group } j \text{ by all countries in year } t, \\
M_{i..t} &= \text{total imports of market area } i \text{ in year } t.
\end{align*}
\]

¹ The identity presented below is adopted from a similar equation used by R.M. Stern in Foreign Trade and Economic Growth in Italy, New York 1967, pp. 161 - 163.
In the first phase exports are examined as one whole, without taking into account the regional or the commodity structure of exports. The percentage change in exports can then be divided into two components as follows:

\[
\frac{X_{t} - X_{t-1}}{X_{t-1}} = \frac{M_{t} - M_{t-1}}{M_{t-1}} + \left[ \frac{X_{t} - X_{t-1}}{X_{t-1}} - \left( \frac{M_{t} - M_{t-1}}{M_{t-1}} \right) \right].
\]

One component represents the average growth of world trade, and the other, the residual, shows the deviation of the growth of export from the growth of world trade. This residual is affected both by competitive and structural factors. It is the second sort of factor which should be eliminated before reliable conclusions can be drawn on changes in the relative competitiveness of the focus country's exports. Furthermore, economic policy decisions could be made more easily if we had more detailed information about the relationships between the factors affecting growth.

To take into account structure of exports, the percentage change in exports can be divided into four components:

\[
\begin{align*}
\sum_{ij} X_{ijt} - \sum_{ij} X_{ijt-1} &= \frac{M_{t} - M_{t-1}}{M_{t-1}} \tag{1} \\
\sum_{ij} \left[ \frac{M_{ijt} - M_{ijt-1}}{M_{ijt-1}} - \left( \frac{M_{ijt} - M_{ijt-1}}{M_{ijt-1}} \right) \right] X_{ijt-1} \tag{2} \\
\sum_{ij} \left[ \frac{M_{ijt} - M_{ijt-1}}{M_{ijt-1}} - \left( \frac{M_{ijt} - M_{ijt-1}}{M_{ijt-1}} \right) \right] X_{ijt-1} \tag{3} \\
+ \frac{X_{t} - X_{t-1}}{X_{t-1}} - \left( \frac{\sum_{ij} M_{ijt} X_{ijt-1} - \sum_{ij} X_{ijt-1}}{\sum_{ij} X_{ijt-1}} \right) \tag{4}
\end{align*}
\]
We have not encountered the second term before. This component, which illustrates the impact of the regional structure of exports on the development of exports, is the weighted average of the deviation of regional rates of import growth from the average rate of growth of world trade. The shares of the various market areas in the focus country's total exports in base year $t-1$ are used as weights. If this term has a positive sign, the regional structure can be viewed as promoting the growth of exports.

The third term illustrates the impact of the commodity structure on the development of exports. It is the weighted average of the deviation of import growth rates by market area and by commodity group from the corresponding average import growth rates by market area. The weights used are the shares of the market areas and the commodity groups in the country's total exports in the base year. It should be noted that the values of structural components (2) and (3) depend to a certain extent on which factor is computed first. The discrepancy caused by the asymmetry in the computation of these two structural factors is shown in the calculation above. However, the total impact of the structural factors is independent of the order in which they are calculated so that the size of the competitiveness component, which is obtained as a residual, is unaffected.

Term (4) is the adjusted competitiveness component, and the one which the preceding examination was designed
to single out. In it, the hypothetical change in exports (based on the assumption of constant regional and commodity market shares) is subtracted from the actual change in exports.

2.4. Problems in applying a constant-market-shares model

If we try to apply the method described above empirically, we shall encounter certain problems, the most important of which should be mentioned briefly. These problems are partly conceptual, i.e., related to the justification of the method, and partly statistical and technical. However, this study is confined to relatively practical problems, and we shall not examine in detail the theoretical basis of this model referred to above.¹

A key conceptual problem in the examination of the constant-market-shares model is the choice of the basis of comparison or the market. We must decide whether it is relevant to compare a country's exports to the exports of the rest of the countries, or whether some other benchmark might be more meaningful. After all, the final aim of this study is to shed light on potential market demand and changes in a country's relative competitiveness. In the preceding theoretical discussion, imports from the whole world were considered a relevant standard, particularly since the aim was to examine export developments by taking into account the effects of the regional and commodity structure of trade. If it were possible to divide the market homogeneously both with respect to regions and to commodities, this problem would naturally be much smaller. However, in

¹. The theoretical and statistical foundation of the constant-market-shares model has been criticized particularly by Richardson in his article mentioned above. On the theoretical basis, cf., also E.E. Leamer and R.M. Stern: Quantitative International Economics, Boston 1970, pp. 171 - 183.
practical research we are forced to content ourselves with a relatively rough regional and commodity break-down, so that this problem should not be overlooked. It might be thought, for example, that the imports of the markets concerned from Nordic countries other than Finland, or from small but fairly industrialized countries, might be a more meaningful basis for measuring Finnish export performance than world trade. This problem is empirical, and it must be approached case by case. Moreover, the statistical data also set limits. It is essential to keep in mind the definition of the market when examining final results. The choice of the yardstick is of course decisive, when the purpose is to investigate potential export outlets by relating actual export developments to some standard.

A problem related to the definition of the concepts and the choice of the approach but above all to the availability of the data, is the question whether export developments should be measured using imports of market countries from mutually competitive producer countries, or using exports of the producer countries to the markets concerned. These are of course merely two different sides of the same matter, but the discrepancies in statistical practices and in the timing of identical import and export flows may lead to divergent results. These differences do not necessarily disappear, even if changes in the trade flows are examined, as is done below.¹ This problem is also closely linked with the availability

bility of the data. This study is based on import statistics, since in principle only data compiled on a commensurate basis should be used.

When examining the regional and commodity structure, mention was made of the problem of disaggregation. Theoretically it is desirable to divide markets both by region and by commodity into as homogeneous units as possible. The validity of conclusions drawn about changes in a country's relative competitiveness on the basis of differences between the actual development of exports and the development of hypothetical constant-market-shares rests largely on this assumption of homogeneity. It is thus important to choose a level of aggregation where the structural factors have been eliminated so that the residual represents the competitive component accurately. We again face an empirical problem and must reconcile theoretical targets and the statistical data. Once a certain basic division of total exports, has be used, it is then possible to assess the reliability of the results by examining more disaggregated commodity groups.

No mention was made above to whether we should be concerned with the development of the value or the volume of exports. In theory it would be desirable to use volume figures because only then would it be possible to make reliable inferences about real changes in market shares or changes
in competitiveness. If attempts were subsequently made to explain changes in market shares using econometric methods, quantity market shares should be used so that changes in relative prices and changes in other competitive factors, could be used as legitimate independent variables. However, it is difficult, if not impossible, to construct volume series for exports of particular commodities to particular markets. Only if the competitiveness of a few homogeneous export product groups were to be examined, could such series be used.
III FINNISH EXPORT PERFORMANCE IN WESTERN MARKETS IN 1961 - 1972

3.1. Methods used in the study

The theory behind the so-called constant-market-shares model and the statistical difficulties related to using it have been examined fairly extensively. In this chapter the constant-market-shares model is used to analyze the share of Finnish exports in imports of major western countries during 1961-1972. Exports of goods falling into 8 commodity groups and 13 market countries, are studied so that the data comprise 12 annual changes in 104 market variables and the corresponding export variables. The definitions and methods are explained in this section. Attention will be first focussed on the sub-components which contribute to a change in total exports, their mutual relations and the factors affecting them. The development of exports will then be discussed more thoroughly, first by country and trade grouping, then by commodity group.
The data available set strict limits on the methods that could be used in the present study. It was necessary to use data on the imports of market countries since no acceptable alternative figures are published. Thus, the imports of the 13 western market countries from Finland are taken as equivalent to Finnish exports examined. Similarly, the imports of the countries concerned from the total world are used as the basis for judging the actual development of exports. This market concept was chosen because it would not have been possible to take a more meaningful aggregate directly from the statistics concerned. On the other hand, strong arguments can be presented in favour of this broad concept of market. Since the commodity break-down of the present study was based on the major SITC sections, potential competitors could thus be classed according to the 8 different commodity sections and the 13 market areas, weighted by the structure of Finnish exports. Moreover, when we take into account the importance in these markets of the countries, which may be regarded as Finland's potential competitors, we see that this market concept serves its purpose well enough. On the other hand, as the examination was performed at a relatively high level of aggregation - in view of the biased structure of Finnish exports - special attention was paid to the major export sub-sections, which might


2. There are in fact 10 major SITC sections, but it was thought useful to combine major sections 0 (Food and live animals) and 1 (Beverages and tobacco), as well as major sections 8 (Miscellaneous manufactured articles) and 9 (Other commodities).
have been overlooked in the general examination. Although these sub-sections make up only a small share of total imports in the market countries concerned, they play a dominant rôle in Finnish exports.

The market area, henceforth refined to as western markets, consists of the EEC and EFTA countries (excluding Iceland\(^1\)) and the United States. According to foreign trade statistics, these countries took between 68 and 74 per cent of Finland’s total commodity exports in the 1960s. The Socialist countries, which bought between 14 and 23 per cent of Finland’s total exports in the period concerned, constitute the major group not covered in the present study. The 13 countries selected take almost 90 per cent of Finland’s total exports to all western countries. Since the data on the Socialist countries were inadequate, they could not be included in the overall constant-market-shares analysis. However, because of their importance as markets for Finnish goods, a general assessment was made. It was thought necessary to link this examination, inadequate as it may be, with the present study, so as to obtain an overall picture of Finnish export performance. However, different statistical data and slightly different definitions had to be used in this part of the study.

The choice of the period also depended on the availability of suitable statistical data. As we were particularly inter-

---

1. Iceland signed the European Free Trade Agreement in March, 1970.
ested in how Finnish exports performed when subject to competitive pressures resulting from the liberalization of trade and the formation of various customs unions at the end of 1950s and in the early 1960s, we selected a relevant period. Internationally comparable data is available from 1960, and at the time the study was made no statistics more recent than those from 1972 were available.

The various indicators defined above were calculated using the procedures set forth in section 2.3. It should be noted that since this study covered annual changes in exports over a period of twelve years, it was possible to escape the danger that the years examined would have been somehow exceptional. Furthermore, severe index number problems were not encountered because changes in export structure were dealt with by altering the weights. As indicated above, the weights were determined by the export structure of the previous year.

3.2. The general pattern of export growth

During the period 1961 - 1970, the average annual growth in the total value of Finnish commodity exports (in U.S. dollars)

1. Data for 1961 were taken from the UN publication "Commodity Trade Statistics", op. cit., while data for later years were taken from the OECD's "Foreign Trade", Series C.

2. Indeed, the OECD's "Foreign Trade", Series C, had not yet been published for 1972, so that it was necessary to use Series B and to make some estimates.

3. To take account of the cyclical movements averages are here calculated over the years 1961 - 1970 and not over the whole period examined.
CHART 1. PERCENTAGE CHANGES IN THE VALUE OF FINNISH EXPORTS IN 1961 - 1972

1. Total exports
2. Imports of EEC and EFTA countries and of the U.S. from Finland
3. Finnish exports to EEC and EFTA countries and to the U.S.
4. Exports to the Socialist countries
was 9 per cent. Exports to western industrial countries increased by about 10 per cent per annum and those to the Socialist countries by less than 8 per cent per annum. Chart 1 shows the growth paths of exports during the period under study and illustrates annual changes in the total imports of the 13 western market countries (EEC, EFTA and the U.S.) from Finland. In the following examination these changes are treated as changes in Finnish exports to the markets concerned. Differences between annual changes in export and import figures can be explained on statistical and definitional grounds.

Finnish exports to the markets examined grew by an annual average of 9.9 per cent during the period 1961 - 1970, i.e. clearly faster than total exports. The value of exports fell in two years, 1962 and 1967. Annual changes fluctuated within a fairly wide range - between 2.5 per cent and 23.8 per cent. During the corresponding period total imports of market countries increased by an annual average of 10.2 per cent. As Chart 2 indicates, the overall growth of markets was much more stable than the development of Finnish exports. Markets continued to expand at a steadily accelerating rate - except in 1967 when they grew by an annual average of only 4 per cent as a result of an international down-swing.

Against the background of the general growth in total imports of market countries, the actual performance of Finnish exports
appears somewhat weak. In fact, the value of exports fell short of the overall expansion of imports in the market countries by an average of 0.3 percentage units per annum. Cumulated over the decade, this development would entail an obvious loss of potential export earnings. However, the situation is quite different when account is taken of structural factors. The impression of sluggish per-

CHART 2. GROWTH OF FINNISH EXPORTS TO WESTERN MARKETS AND THE AVERAGE GROWTH OF WESTERN MARKETS, PER CENT

1. Value of total imports of the market countries
2. Value of Finnish exports to western markets
CHART 3. THE EFFECT OF STRUCTURAL FACTORS ON THE EXPANSION OF FINNISH EXPORTS TO WESTERN MARKETS, PERCENTAGE UNITS

1. Effect of regional structure
2. Effect of commodity structure
3. Total effect of structural factors
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall growth in demand</td>
<td>4.1</td>
<td>9.3</td>
<td>9.3</td>
<td>11.7</td>
<td>9.6</td>
<td>10.2</td>
<td>3.9</td>
<td>13.4</td>
<td>15.3</td>
<td>15.0</td>
<td>11.8</td>
<td>18.9</td>
<td>10.2</td>
</tr>
<tr>
<td>Regional structure</td>
<td>-1.3</td>
<td>-1.7</td>
<td>-0.7</td>
<td>-1.7</td>
<td>-0.9</td>
<td>-3.0</td>
<td>0.0</td>
<td>-3.3</td>
<td>-1.4</td>
<td>0.2</td>
<td>-2.6</td>
<td>-2.9</td>
<td>-1.0</td>
</tr>
<tr>
<td>Commodity structure</td>
<td>-3.2</td>
<td>-7.4</td>
<td>-1.7</td>
<td>3.6</td>
<td>-0.7</td>
<td>-1.9</td>
<td>5.1</td>
<td>0.9</td>
<td>0.8</td>
<td>-2.0</td>
<td>-6.8</td>
<td>0.5</td>
<td>-1.7</td>
</tr>
<tr>
<td>Competitiveness</td>
<td>11.4</td>
<td>2.7</td>
<td>1.0</td>
<td>0.7</td>
<td>-2.6</td>
<td>3.4</td>
<td>0.7</td>
<td>0.4</td>
<td>9.1</td>
<td>2.9</td>
<td>3.4</td>
<td>0.7</td>
<td>2.4</td>
</tr>
<tr>
<td>Percentage growth in the value of exports</td>
<td>11.0</td>
<td>-2.5</td>
<td>7.9</td>
<td>17.7</td>
<td>5.4</td>
<td>8.7</td>
<td>-0.5</td>
<td>11.4</td>
<td>23.8</td>
<td>16.1</td>
<td>5.8</td>
<td>17.2</td>
<td>9.9</td>
</tr>
<tr>
<td>Total effect of structural factors</td>
<td>-4.5</td>
<td>-9.1</td>
<td>-2.4</td>
<td>5.3</td>
<td>-1.6</td>
<td>-4.9</td>
<td>-5.1</td>
<td>-2.4</td>
<td>-0.6</td>
<td>-1.8</td>
<td>-9.4</td>
<td>-2.4</td>
<td>-2.7</td>
</tr>
</tbody>
</table>
formance of Finnish exports in western markets which is given by merely examining the average growth of the markets is changed fully, if Finnish exports are studied in terms of country and commodity markets. During the decade 1961 - 1970, the growth of Finnish export markets - both by country and commodity grouping - was on average 2.7 percentage units slower than the corresponding overall growth of markets. With only a few exceptions, the impact of structural factors on the development of Finnish exports was unfavourable throughout the decade. This stagnation was a natural consequence of the slowness of structural change.

When the effects of the regional break-down and the commodity break-down were separated from each other, we came to the conclusion that both commodity and regional factors clearly dampened the growth of exports.

Chart 3 shows the effect of structural factors both as a whole and broken down into regional and commodity effects. All inferences on the relationship between these two components must be made with circumspection because of the limits of the method employed. However, it seems justified to conclude that the commodity structure has had a greater impact on export performance. The average impact of the commodity structure was almost double that of the regional structure (Table 1). On the other hand, the commodity structure impact fluctuated considerably from year to year, whereas the regional structure impact was rather steady.

1. Cf., Section II.
TABLE 2. THE REGIONAL STRUCTURE OF FINNISH EXPORTS TO WESTERN COUNTRIES IN 1960 AND 1972, PER CENT

<table>
<thead>
<tr>
<th>Region</th>
<th>Regional break-down of Finnish exports to western countries</th>
<th>Regional break-down of total imports by western markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium-Luxemburg</td>
<td>5.3</td>
<td>2.8</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>8.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Federal Republic of Germany</td>
<td>17.1</td>
<td>13.8</td>
</tr>
<tr>
<td>France</td>
<td>7.6</td>
<td>5.8</td>
</tr>
<tr>
<td>Italy</td>
<td>3.2</td>
<td>2.4</td>
</tr>
<tr>
<td>EEC</td>
<td>41.7</td>
<td>29.5</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>37.0</td>
<td>27.2</td>
</tr>
<tr>
<td>Norway</td>
<td>1.9</td>
<td>5.8</td>
</tr>
<tr>
<td>Sweden</td>
<td>5.8</td>
<td>20.7</td>
</tr>
<tr>
<td>Denmark</td>
<td>5.3</td>
<td>6.3</td>
</tr>
<tr>
<td>Austria</td>
<td>0.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Portugal</td>
<td>0.1</td>
<td>0.4</td>
</tr>
<tr>
<td>EFTA</td>
<td>51.1</td>
<td>64.1</td>
</tr>
<tr>
<td>United States</td>
<td>7.2</td>
<td>6.3</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

1. Finnish exports to western countries are represented by imports of EEC and EFTA countries and the United States from Finland, while the regional break-down in western markets are represented by imports from the whole world.
Table 2 presents the regional structure of Finnish exports to market countries in 1960 and 1972. It also shows the shares of various countries in total world exports to the corresponding countries. Throughout the 1960s the United Kingdom was the main market for Finnish exports, but towards the end of the decade, Nordic countries, chiefly Sweden assumed this position. The relative shares of the United States, France and Italy in Finnish exports were less significant. Comparing the regional structure of exports with the GDP growth rates of the major western industrial countries in the 1960s (Chart 4) allows us to identify the markets which were responsible for the growth-dampening effect of the regional structure of Finnish exports. The slow growth of the United Kingdom is most striking in this respect, and it has been further accentuated by the importance of this country as a market for Finnish exports. On the other hand, the sharp rise in demand in France and Italy did not have a major impact on the development of Finnish exports, because of the less prominent rôle these markets play in Finnish exports.

Table 3 shows how the commodity structure of Finnish exports differs from the normal commodity structure of western markets. In spite of rapid structural changes in exports, crude materials (SITC 2) still play an important rôle in Finnish exports. During the period under study, the share of manu-
CHART 4. AVERAGE GROWTH OF THE VOLUME OF GDP IN CERTAIN OECD COUNTRIES IN THE 1960s, PERCENTAGE CHANGES

-------- Total OECD
TABLE 3. THE COMMODITY STRUCTURE OF FINNISH EXPORTS TO THE MARKET COUNTRIES IN 1960 and 1972¹, PERCENTAGE SHARES

<table>
<thead>
<tr>
<th>Commodity break-down of Finnish exports to the market countries</th>
<th>Commodity break-down of imports by western markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and live animals, beverages and tobacco (SITC 0 + 1)</td>
<td>4.5</td>
</tr>
<tr>
<td>Crude materials (SITC 2)</td>
<td>60.3</td>
</tr>
<tr>
<td>Mineral fuels, lubricants, etc. (SITC 3)</td>
<td>0.1</td>
</tr>
<tr>
<td>Animal and vegetable oils and fats (SITC 4)</td>
<td>0.2</td>
</tr>
<tr>
<td>Chemicals (SITC 5)</td>
<td>0.6</td>
</tr>
<tr>
<td>Manufactured goods (SITC 6)</td>
<td>31.9</td>
</tr>
<tr>
<td>Machinery, transport equipment (SITC 7)</td>
<td>1.8</td>
</tr>
<tr>
<td>Miscellaneous manufactured articles (SITC 8 + 9)</td>
<td>0.6</td>
</tr>
<tr>
<td>Manufactured articles (SITC 5 - 8)</td>
<td>34.9</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

¹. Finnish exports to the market countries are represented by the imports of the EEC and EFTA countries and of the United States from Finland, and western markets by the imports of these countries from total world.
factured goods (SITC 6, and particularly paper manufactures) in Finnish exports assumed a dominant position. The shares of Finnish exports of food and live animals (SITC 0) and of beverages and tobacco (SITC 1), and of machinery and transport equipment (SITC 7) are clearly smaller than the average shares. When the commodity structure of exports is examined in light of the development of imports of different commodities (Chart 5),

![Chart 5](image)

**Chart 5. Average growth in the value of imports of Western market countries by major SITC sections in 1961–1970, percentage changes**

---------------- Total imports
the impact of each commodity section can be seen. Of the slowly expanding sections, food and live animals, and beverages and tobacco are of minor importance in Finnish exports. However, this positive structural aspect is offset by the dominant rôle of the slowly expanding crude materials group. Irrespective of the structural changes that have taken place, exports of manufactures of metal and of other manufactured articles are not yet up to the level of other countries, so that it has not been possible to fully benefit from the brisk growth in demand for these goods.

It is worthwhile examining the structural factors at different phases of an international business cycle. For example we can see whether these effects appear symmetrically at different phases of the cycle, i.e. offset each other during one business cycle, or whether they accumulate over several cyclical phases and benefit or harm the economy in the longer run.

Chart 6 shows the impact of the regional and commodity structure of Finnish exports to the market countries against the background of international cyclical developments, which are illustrated by average changes in GNP volume in the market countries. When the years of rapid or slow growth are examined in light of the actual effects
CHART 6. STRUCTURAL FACTORS AFFECTING FINNISH EXPORTS TO THE MARKET COUNTRIES AND INTERNATIONAL CYCLICAL DEVELOPMENTS IN 1961 - 1972

1. Percentage changes in the volume of GNP in the European OECD countries

2. Impact of the regional structure of exports, in percentage units

3. Weighted percentage changes in the GNP (volume) of the market countries most important for Finnish exports

4. Impact of the commodity structure of exports, in percentage units
of the regional structure of exports in the corresponding years, it can be seen that the sharp negative effects occurred in years of slow or decelerating growth, i.e. at times when the growth of demand fell more than on average.

Moreover, the growth-dampening effects of the commodity structure were also strongest in the years of slow or decelerating growth, while the greatest advantage was gained in years of rapid or accelerating growth. It should be noted that in Chart 6 international cyclical developments are represented by changes in the gross national products of the market countries weighted by shares of Finnish exports in their imports. The impact of the regional structure has thus been taken into account. It can be claimed that in general the commodity structure of Finnish exports tends to strengthen the effects of international cyclical fluctuations and that reverse effects do not fully offset each other over one business cycle. The structural factors support each other, and their total impact tends to curb export development steadily.

When the total impact of factors on the demand side - the growth of general demand and structural factors - is examined, it can be seen that on average Finland has succeeded each year in increasing her exports to the markets concerned by 2.4 percentage units more than she would have, had she merely maintained her market share. We may thus claim that
CHART 7. FINNISH EXPORT PERFORMANCE IN THE MARKET COUNTRIES IN 1961 - 1972

1. The growth of exports, per cent
2. The growth of the markets, per cent
3. The development of the market share, percentage units
4. On average in 1961 - 1970
the relative competitiveness of Finnish exports improved substantially during the period examined. Chart 7 indicates that this increase in market shares did not take place steadily, but rather at the beginning and the end of the period. We shall now consider some of the reasons why the competitiveness of Finnish exports did not improve throughout the major part of the 1960s, but did so subsequently.

3.3. The competitiveness of Finnish exports in 1961 - 1972

Although the concept of competitiveness was discussed above, there is reason to sketch the main features of this concept once more. First, a relative concept is implied - Finnish export performance is compared with the performance of the competing countries. Second, changes in this relative competitiveness are examined expressly; no attempt is made to assess the overall competitiveness of Finnish exports. Changes in relative competitiveness are here measured - taking into account the regional and commodity structure of exports - by changes in shares in export markets. An increase in market shares thus means that the competitiveness of Finnish exports strengthens with regard to competing countries, and the loss of shares that relative competitiveness weakens. When treating the market shares of Finnish exporters in this study, the concept 'competitiveness' is thought also to imply the shifting desire of entrepreneurs to market their products in various stages of the domestic business cycle. It is hard to distinguish the effect of an increase or
reduction in domestic demand pressure on Finnish export performance from the effect of changes in the preferences of foreign buyers.

Relative competitiveness is affected both by product prices and production costs and by non-price factors such as the quality of the products, payment arrangements, delivery times, ancillary services.¹ These factors are not easily distinguishable; e.g., increasing domestic demand pressure is often reflected in the lengthening of delivery times. It is important that attention be focussed on changes in all these factors, compared with changes in the corresponding factors in the competing countries. Mainly because suitable statistical data were not available, only relative price and cost developments as well as domestic and foreign demand pressure were examined.

The importance of the price of export products in determining competitiveness varies according to the type of product. For standardized products - such as raw materials - small-scale producers have only limited opportunities to change prices relative to their competitors. For such products it can be presumed that relative production costs and particularly relative labour costs reflect changes in competitiveness since small countries are price takers in these markets. However, it can be assumed that the prices of highly spe-

cialized products will reflect relative competitiveness. In Finland both indicators of competitiveness — relative export prices and unit labour costs — showed a tendency to move together during the period studied.

Chart 8 compares Finnish export performance with relative export prices (unit values of exports) and relative unit labour costs (calculated in dollar terms). These indicators of competitiveness were calculated by comparing the indicators for major competitor countries¹ with corresponding Finnish indicators. In these series, an improvement in Finland's price- (cost-) competitiveness is shown as a positive change, and deterioration as a negative change. Since both series have been constructed using U.S. dollars, the final result is strongly influenced by changes in exchange rates against the dollar. Both indicators show fairly similar developments. Finnish export prices and unit labour costs rose faster than those of her competitors until 1965. Subsequently Finland's competitive position seems to have clearly improved. The devaluation of 1967 had a strong impact on this improvement in competitiveness, and the stabilization policy pursued after the devaluation also affected underlying price developments.

When we compare the development of these indicators of competitiveness with actual export performance, no consistent relationship can be found during the early years.

¹. The countries with the largest shares in the markets for the commodities accounting for an important share of Finnish exports are regarded as her major competitors.
CHART 8. EXPORT PERFORMANCE, AND RELATIVE PRICES AND COSTS IN 1961 - 1972

1. Ratio of competing countries' export prices to Finnish export prices (calculated in dollars)

2. Growth of Finland's market share, in percentage units

3. Ratio of competing countries' unit labour costs to Finnish unit labour costs (calculated in dollars)
of the 1960s. In 1965 market shares were lost after a period of weakening relative price-competitiveness. On the other hand, during this period Finland succeeded in increasing her market shares in two successive years (1963 and 1964). There seems to have been a closer relationship between price-competitiveness and market shares since 1966. Changes in relative competitiveness seem to precede changes in market shares. It is difficult to draw conclusions on the length of the lag on the basis of annual data.

When explaining the effect of domestic demand pressure on the supply of Finnish exports, account should be taken of a number of factors. Since a substantial part of industrial output is exported, one should be cautious in interpreting the extent to which fluctuations in domestic economic activity are mirrored in changes in the intensity of export supply. According to the traditional point of view, an increase in domestic demand pressure tends to reduce the supply of exports, since the domestic market then absorbs a greater share of production. Delivery times extended, financial difficulties increase and the general willingness to export falls off. The mirror image of this export pull effect caused by increasing domestic demand is the export push effect, which is a result of decreasing domestic demand. Producers take new interest in exporting as demand weakens in the home market. Macroeconomic indicators are generally
1. Internal demand pressure, per cent
2. Changes in market shares, percentage units
3. External demand pressure, per cent
used to measure domestic demand pressure. However, these indicators also reflect fluctuations in export activity which are caused by cyclical developments abroad. This is natural particularly in a country like Finland where production for export is of major importance.  

The internal demand pressure indicator (deviation of industrial production from trend) is compared with the actual export performance in Chart 9. It can be seen that the loss of market shares of the early 1960s occurred at a time when internal demand pressure was fairly strong and increasing continuously. Market shares were recaptured in 1963 and 1964, just as domestic demand pressure weakened. The loss of markets in 1965 coincided with a temporary revival in domestic activity. Domestic demand pressure continued to fall sharply until 1968, while market shares grew. It seems obvious that the impact of the improvement in price competitiveness resulting from the

devaluation of 1967 was increased considerably by the low
domestic demand pressure prevailing at the time. The do­
mestic demand pressure indicator shows a sharply rising
trend after 1968, which may largely be a consequence of
a general rise in foreign demand and a subsequent growth
in exports. An indicator which does not directly reflect
changes in export demand would be needed to net out the
effect of internal demand pressure at this phase.

It was not possible to obtain proper time series which
would have illustrated internal demand pressure in com­
petitor countries. It was thus necessary to be content
with an indicator (Chart 9) which mainly reflected
fluctuations in demand pressure in the market countries.
Although it is unlikely that this indicator would differ
much from one showing demand in competitor countries, it
still should be used with circumspection. From the point
of view of Finland’s relative export performance, changes
in domestic demand pressure in different competitor coun­
tries are of vital importance.

It is difficult to find any consistent relationship between
fluctuations in foreign demand pressure and Finland’s ex­
port performance in the early 1960s. In 1962 market shares
were lost when foreign demand pressure fell, but in the
following two years part of the share was regained. When
demand pressure strengthened in market countries in 1964 and 1965, Finland's market shares, first increased and then decreased. Subsequently weakening in foreign activity coincided with improved export performance. Competition should then have increased in the market, but our export products obviously held their own even in the face of stronger competition, which was further increased by a decline in Finnish price-competitiveness in 1966 and 1967. On the other hand, internal demand pressure began to fall off, and this recession lasted longer than the corresponding one in other countries. Foreign demand pressure increased again after 1967, at a time when Finland, by virtue of her improved price-competitiveness and a certain amount of unused capacity, was well poised to take advantage of this rapid growth in export markets. By 1972, the internal demand pressure had again fallen off and export industries were able to benefit from the international upswing.
IV EXPORT PERFORMANCE BY COUNTRY AND COMMODITY GROUP

4.1. Export performance in the Western market countries

During the entire period of the study, Finnish exports to the EFTA countries grew faster than total imports of these countries, taking into account the regional pattern and the commodity structure of Finnish exports. The growth path was just the reverse for the EEC countries. Finland increased her market shares in the EFTA countries in every year except 1962, whereas her market shares in the EEC countries fell in every year except 1961, 1963 and 1969. The average annual improvement in the country's competitive position was six percentage units in the EFTA countries, whereas the corresponding loss in the EEC countries was nearly two percentage units. If the time paths of the components of competitiveness are examined (Chart 10), a rising trend can be observed for the EFTA countries, even though there were strong fluctuations in the mid-1960s. Market shares were lost relatively steadily in the EEC countries from 1962 onwards. As a whole, Finland's share in the U.S. market remained fairly constant during the period examined (Chart 12).
Generally Finnish exports to various EFTA countries performed very well, with the exception of the U.K. (Chart 11). Exports to Denmark followed changes in the growth of demand, however, on a clearly higher level. Exports to Sweden and Norway grew very sharply from 1964 onwards, except in 1967 and 1971 for Sweden and in 1971 for Norway. Exports to the U.K. did not, however, perform so well, although market shares were increased slightly. The growth of exports to the other EFTA countries fluctuated widely but on the whole, Finland was able to hold the export markets she had gained in years of fast growth and to expand them again vigorously when growth resumed its pace. On the whole, exports to the EFTA area were characterized by uneven and divergent growth paths from one country to another. This might perhaps be explained by the timing of different export campaigns.

Unlike exports to the EFTA countries, Finnish exports to the EEC countries followed import demand rather closely, even if a slight loss of market shares was experienced constantly (Chart 12). Italy was a partial exception from this general picture. In 1969, the year of her best export performance during the period examined, Finland succeeded in increasing her market shares only in Belgium and the Federal Republic of Germany.

When we compare Finnish export performance in the EEC countries with that in the EFTA countries, it is striking
CHART 10. THE GROWTH OF FINNISH EXPORTS TO WESTERN COUNTRIES AND OF THE WESTERN MARKETS IN 1961 - 1972, PER CENT

a. OECD countries  b. EFTA countries  c. EEC countries

1. Growth of exports
2. Growth of markets
3. Average growth in 1961 - 1970
CHART 11. FINNISH EXPORT PERFORMANCE IN THE EFTA COUNTRIES
IN 1961 - 1972, PER CENT

a. United Kingdom  b. Norway  c. Sweden  d. Denmark
e. Austria  f. Switzerland  g. Portugal

1. Growth of exports
2. Growth of markets
3. Average growth in 1961 - 1970
CHART 12. FINNISH EXPORT PERFORMANCE IN THE EEC COUNTRIES AND THE UNITED STATES IN 1961 - 1972, PER CENT

d. France  e. Italy  f. United States

1. Growth of exports
2. Growth of markets
3. Average growth in 1961 - 1970
how evenly Finland lost her markets in the EEC countries - both in the total area as in individual countries. On the whole, Finnish exports to the EFTA countries followed the growth of markets fairly closely, although not at all as closely as her exports to the EEC countries. On the other hand, exports to individual EFTA countries developed very unsteadily. This might suggest that the impact of changes in EEC barriers (particularly effective duties) on Finnish exports was distributed evenly over the years studied, whereas Finnish exports to EFTA countries were boosted by both the reduction of barriers to trade and by other factors such as the attempt to make up for the loss of EEC market shares through intense marketing campaigns in the EFTA countries.

4.2. Export performance in the Socialist countries

When examining Finnish export performance in the Socialist countries, it is not sensible to use a market concept similar to the one used to examine exports to western countries. During the period of the study, the bulk of the foreign trade of the Socialist countries was on a bilateral basis which presumes compensating trade flows. Exports from countries outside this grouping and particularly from the western industrial countries were chosen as the basis for comparison, largely because Finland has to compete with these countries for orders placed by the Socialist countries with
CHART 13. FINNISH EXPORT PERFORMANCE IN THE SOCIALIST COUNTRIES IN 1961 - 1972, PERCENTAGE CHANGES

1. Growth of exports
2. Growth of markets
3. Developments in market shares
4. Average changes in 1961 - 1970

Loss of market shares → Markets
Exports

Gain in market shares
producers outside the Socialist grouping. When examining exports to the Socialist countries, we are also faced with another problem: at the beginning of the period trade between Eastern and Western countries was not highly developed. Finland, however, had established trading relations with the East before other western countries, so that changes in market shares meant in a certain sense an approach to a normal state, and the loss of market shares suffered by Finland was natural in view of her favourable initial position.

Statistical data on the imports of the Socialist countries from western countries are rather inadequate, particularly if we want information on imports by country and commodity group. In this study we examined Finnish export performance on the basis of western statistical data. The results are thus not fully comparable with those of the previous sections because of the different market concept and the different data base.¹

Chart 13 shows the extent to which the exports from western industrial countries and from Finland to the Socialist countries increased in 1961 - 1972. It can be clearly seen that the markets expanded quite vigorously, i.e., more than ten

¹. "Direction of Trade", published by the IMF and the IBRD, for the years 1958 - 1962, 1962 - 1966, and 1966 - 1970, was used as the source.
per cent per annum and relatively smoothly. On the other hand, Finnish exports grew more slowly than the average, and fluctuated very sharply. The latter phenomenon was a direct consequence of the nature of the Finnish trade with the Socialist countries, particularly the long-term trade agreements on the basis of which Finnish exports may vary very sharply from year to year, depending on the timing of the deliveries. During the decade 1961 - 1970, Finland’s loss of market shares was on average 4.6 percentage units per annum. If trade is examined over a period longer than one year, which is natural in view of the special nature of this trade, the picture is the same.

Because the bases of the estimates are different, it would be bold to compare Finnish exports to western countries with the performance of Finnish exports to the Socialist countries. However, we can claim that, on average, Finland lost a market shares in the Socialist countries and gained market shares in western countries, when the relative importance of the different trading blocks for Finnish exports are taken into account.

4.3. Export performance by commodity sections and subdivisions

The question of the growth potential of various export industries is of great interest for policy-makers. When
structural and industrial policy decisions are taken, attention should be paid to the competitiveness of various lines of production in export markets. With this in view, Finnish export performance was also examined by sections of the Standard International Trade Classification (SITC). In addition, certain sub-divisions were selected to represent major Finnish export lines. Attention was focussed not only on the performance of different lines of production but also on that of different degrees of processing. However, the deficiencies and heterogeneity of the statistical data for earlier years of the period made it necessary to confine this detailed examination to a shorter period.

The expansion of export markets for food and live animals, beverages and tobacco (SITC 0 and 1) decelerated steadily over the major part of the 1960s (Chart 14). The development of exports of goods in this category reflects problems of excess production in Finnish agriculture and the policies of providing subsidies which have been used to promote exports of agricultural products. Although exports fluctuated sharply, on average Finland increased her market shares. This was mainly the result of increased exports to the EFTA countries (Chart 15). In most of the years examined Finland lost market shares in the EEC countries. The trade in agricultural products between industrial countries is so largely dependent on the agricultural support
CHART 14. FINNISH EXPORT PERFORMANCE IN WESTERN MARKETS
IN 1961 - 1972, BY SITC SECTIONS, PERCENTAGE CHANGES

a. Food and live animals, beverages and tobacco  b. Crude material, excl. fuels  c. Chemicals  d. Manufactured goods  
e. Machinery, transport equipment  f. Miscellaneous manufactured articles


* Finnish exports consist mainly of products of the wood and paper industries
CHART 15. FINNISH EXPORT PERFORMANCE IN THE EEC AND EFTA COUNTRIES IN 1961-1972, BY SITC SECTIONS, PERCENTAGE CHANGES

a. Food and live animals, beverages and tobacco  
b. Crude materials excl. fuels  
c. Chemicals  
d. Manufactured goods  
e. Machinery and transport equipment  
f. Miscellaneous manufactured articles

1. Growth of exports  
2. Growth of markets  
3. Average changes in 1961 - 1970
CHART 16. EXPORT PERFORMANCE OF FINNISH PROCESSED LUMBER PRODUCTS IN WESTERN MARKETS IN 1962 - 1972, PERCENTAGE CHANGES

a. Sawn and planed conifer lumber  b. Pulp and waste paper  
c. Newsprint paper  d. Other machine-made printing and writing paper  
e. Paper bags, paperboard boxes and other containers

1. Growth of exports

2. Growth of markets
policies pursued that it is impossible, on the basis of changes in market shares, to make any meaningful inferences about the competitiveness of this sector.

Exports of crude materials (SITC 2) followed very closely fluctuations in demand for imports during the period under study. Finnish exports in this category comprise mainly timber and pulp. Market shares were steadily lost for these products. As might well be expected, these losses were largely suffered in EEC markets, but even in the EFTA countries Finnish market shares did not grow. Losses of export market shares were most significant for sawn and planed conifer lumber (SITC 243.2, Chart 16). This might be explained by the increasing sales of Soviet sawn timber in western markets. There is a clear difference in export performance of Finnish pulp between the first and the last part of the decade: until the middle of the decade Finnish market shares increased, but thereafter they declined. Exports of pulp and timber were affected as the country gradually approached the limits of her forest resources and attempted to turn to articles requiring greater processing such as paper products. It is thus difficult to tell whether a loss of interest in exporting or changes in relative competitiveness proper are more important in explaining market share developments.
Of the manufactures with bright export prospects, chemicals (SITC 5) are examined first. Exports of goods falling in this commodity group developed successfully throughout the period. In the early 1960s, when exports were really started, market shares grew quite vigorously. Later on chemical exports followed fluctuations in the growth of markets, though on a slightly higher level. In the mid-1960s Finnish chemical exports to the EEC countries ran into considerable difficulties, but subsequently, part of the lost ground was regained. As a result of good performance in EFTA markets, Finnish export performance for total period proved to be estimable.

Finland's most important exports during the period of the study were manufactured goods (SITC 6), and particularly manufactures of paper. On the whole, Finnish exporters were able to hold their positions in markets of these products. Exports to EEC markets followed fluctuations in market demand, while market shares were constantly lost. These losses were made up in the EFTA countries, where markets were gained. Exports grew fairly steadily at a rate of about 15 per cent annually throughout the total period of the study, in spite of sharp fluctuations in market demand.

Of the various paper products examined, paper bags, paperboard boxes and other containers (SITC 642.1) put in the best performance. On the whole, newsprint paper (SITC 641.1),
as well as other machine-made printing and writing papers (SITC 641.2) held their positions in the market. For these commodities it should be noted that losses of markets were concentrated particularly in the latter part of the 1960s, i.e., at a time when total Finnish market shares in western markets increased quite vigorously. A similar phenomenon is reflected in exports of pulp and waste paper. The weak performance of traditional export products could thus be offset only by the very successful marketing of other, newer export products.

The most prominent increase in market shares during the 1960s was recorded for exports of machinery and transport equipment (SITC 7). While market demand grew steadily at a rate of about 15 per cent annually, exports increased on average by slightly less than 35 per cent per annum. The growth in exports fluctuated strongly, since exports in this category consist of a relatively few, large individual items, such as ships and machinery. The slowest growth was recorded in 1963, when a slight loss in market shares was recorded. When the period is examined as a whole, a clear difference between export performance in the EEC and the EFTA countries can be observed, and in contrast to other commodity sections, in favour of EEC markets. The fluctuation in the growth of demand was slightly greater in the EEC than in the EFTA countries. However, Finnish exports to the member countries of both trade groupings grew rapidly and fluctuated sharply;
CHART 17. EXPORT PERFORMANCE OF CERTAIN METAL INDUSTRY PRODUCTS AND CLOTHING IN WESTERN MARKETS IN 1962 - 1972, PERCENTAGE CHANGES

a. Paper mill and pulp mill machinery  b. Ships and boats
   c. Electric machinery and appliances  d. Clothing

1. Growth of exports
2. Growth of markets

Loss of market shares → Markets
Exports ← Gain in market shares
growth was faster for exports to EEC countries. Fluctuations in the growth of exports to these trade groupings were timed so that they offset each other. This also seems to hold true for exports to the Socialist countries, for these products made up the bulk of their imports from Finland.

Of the various metal industry products, ships and boats (SITC 735.3), paper mill and pulp mill machinery (SITC 718.1), as well as electric machinery and appliances (SITC 72) were examined (Chart 17). Particularly towards the end of the 1960s, Finnish ships and boats gained markets in western trade groupings. This happened at a time when import demand for ships and boats was decelerating, and even declining. Finnish producers of paper mill and pulp mill machinery lost their market shares in the early 1960s but clearly regained them later. Import demand and exports fluctuated sharply from year to year, except in 1965 - 1967 when the value of exports rose by some 100 per cent annually. Throughout the whole decade, new markets were rapidly and steadily gained for electrical machinery and appliances.

Of all commodity sections, exports of miscellaneous manufactured articles (SITC 8) expanded most rapidly. The vigorous growth of more than 30 per cent per annum was naturally reflected in substantial gains in market shares. The expansion was not only strong but even strengthened steadily. The trend shown is misleading to a certain degree, as markets
were lost in the EEC countries in the early 1960s, while later it was possible to offset these losses by keeping pace with demand and by increasing market shares. However, on the whole, Finnish export performance was best and most stable in EFTA markets. Of the products of this most heterogeneous commodity section, exports of clothing (SITC 84) were taken as an example (Chart 17). They grew at an annual rate of about 75 per cent, while markets grew by 25 per cent. It should be noted that the growth of export markets for clothing accelerated in keeping with the trend; in the commodity sections examined here, only chemicals showed similar developments.
V AN ASSESSMENT OF THE APPLICATION OF CONSTANT-MARKET-SHARES MODEL

5.1. Constant-market-shares model

In this study the so-called constant-market-shares model was used to examine Finnish exports to western markets. The basic idea behind this method is to compare changes in exports of one country with changes in exports of competitor countries, to the markets concerned. In this approach an attempt is made to eliminate the impact of structural factors (exceptional regional or commodity structures) on the actual growth of exports. This is done by focusing attention on markets which are as homogeneous as possible in terms of the regional and commodity structure by presuming that the market share held in a certain base year will be retained in the future. It is possible to treat any other development as a consequence of a change in the country's relative competitiveness. If adequate material is available, it might be possible to explain this competitiveness component in terms of factors affecting the demand for export products, such as relative prices, costs, times of delivery, quality, credit arrangements, or by internal and external demand pressures, etc.
The constant-market-shares model can be used as to forecast future developments by first preparing preliminary estimates of the growth of markets from national or international data. With this information it is possible to use the market shares matrix to calculate hypothetical exports for a given period. By adjusting this estimate with data on the probable development of factors affecting market shares, we obtain a final estimate of exports. This method has a number of advantages, e.g., consistency, clearly specified assumptions about the effects of different variables, concentration on what is most essential from the point of view of the exporting country, etc.  

Apart from the ex post analysis of factors affecting the competitiveness of exports and for forecasting, the constant-market-shares model can be used in the planning of economic policy. It is of course essential to obtain a clear picture of the rôle the four factors (the general growth of markets, the regional breakdown of exports, the commodity structure of exports and relative competitiveness), and how they shape the future prospects for exports. This is particularly important, since the elimination of structural flaws requires measures different from those used to increase relative competitiveness.

5.2. Application

In this study the constant-market-shares model was used to examine Finnish exports to western countries in 1961 - 1972. The following conclusions can be drawn:

As might be expected, the development of market demand played an essential rôle in the determination of exports. The regional and commodity structure of exports, for their part, tended to restrain export growth. The negative impact of the commodity structure was on average stronger and more uneven throughout the period of study. Cyclical developments in the market countries seemed to be linked with the commodity structure of Finnish exports in such a way that the impact of variations in growth in demand were amplified by the structure of exports. No clear trend could be observed in changes of competitiveness. The gains and losses of market shares in 1962 - 1968 more or less offset each other, and subsequently, Finland's market shares increased. This phenomenon was a result of an improvement in price-competitiveness brought about by the devaluation and by domestic economic policy measures. Furthermore, the fact that domestic demand pressure was first fairly weak and remained weak longer than in competitor countries also contributed to this development.

As might have been expected, the examination of export performance by country revealed a clear difference between the EEC and EFTA markets. The average annual growth rate for ex-
ports to the EFTA market was six percentage units higher than the growth of rate the market in the 1960s. However, market shares were lost in the EEC markets at an annual rate of almost two percentage units. The study suggests that Finnish export performance in EEC countries was affected by changes in effective duties. Finnish exports to EFTA markets grew by leaps and bounds, which may be partially a result of an attempt to gain markets by means of intensified export campaigns, so as to make up for losses suffered in EEC markets. When examining individual commodity sections, it could be seen that traditional products, i.e., processed wood products, performed relatively poorly, particularly in the late 1960s. However, these losses were offset by gaining markets for newer export products. It is worth noting that, for exports of machinery, appliances and transport equipment, Finland performed on average better in EEC markets than in EFTA markets. This suggests that for these products the effects of integration were insignificant.

To make the study more comprehensive, exports to the Socialist countries were examined for the same period, although using slightly different bases. This examination showed that Finnish exporters were not able to keep up with the growth of the market and saw the growth of their exports to the Socialist countries lag behind the growth of exports of other western industrial countries by an average of 4.6 percentage units per annum. However, when examining the factors affecting this development, the bilateral nature of this trade should be kept in mind, i.e. the dependence of the growth of exports on the growth of imports.