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Finnish Export Performance in 1961-1972

A Constant-Market-Shares Approach

CONTENTS

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[1], 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 inter-
national 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

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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.[1]

Three targets of economic policy - rapid economic growth, a
high rate of employment and external balance[2] - 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.[3]

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

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1. On external balance and other targets of economic policy,
cf. e.g., A.K. Dasgupta and A.J. Hagger: The Objectives of
Macro-Economic Policy, Edinburgh 1971, pp. 15 - 19 and 221 -
222.

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.

3. The Secretariat of the Economic Council used this approach
when examining the conditions for balanced macroeconomic devel-
opment in 1969 - 1973, cf. the Secretariat of the Economic
Council, "Kansantalouden kehitysnäköaloja vuosina 1969 - 1973",
Helsinki 1969, p. 46, and the Economic Planning Centre, "Suomen
kansantalouden kehitysmahdollisuudet vuoteen 1980", Helsinki
1972, p. 16.

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 devel-
opment 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

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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. McGeehan: "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 unfavour-
able 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 indi-
vidual 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, compare
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.

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1. For more details on the importance of structural
factors, cf., D. Schweckendiek: Die Trennung der Structur
von den Konkurrenzeffekten in der Begründung des unter-
schiedlichen Exportwachstums einzälner 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 manu-
factures, 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 at-
tention 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 choise 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.[1] 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

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1. P.S. Armington: "A Theory of Demand for Products Distinguished by Place of Production", IMF Staff Papers XVI, March 1969, pp. 159 - 176.

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

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,

σ_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

$$s = \frac{x}{X} = f(\frac{c}{C}), \qquad f'(\frac{c}{C}) > 0$$

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:

$$\frac{dx}{dt} = s\frac{dX}{dt} + X\frac{ds}{dt} = s\frac{dX}{dt} + X\,f'(\frac{c}{C}).$$

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 suc-
cessively to each homogeneous group of exports, and by
aggregating these it is possible to indicate the change in
total exports.[1] 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 per-
formance. 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]

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:

1. J.D. Richardson: "Constant-Market-Shares Analysis of
Export Growth", Journal of International Economics, Vol. 1,
No 2, May 1971, pp. 228 - 230.

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

X_{ijt} = the focus country's exports of commodity group
j to market area i in year t,

$X_{..t}$ = the focus country's total exports in year t,

$X_{.jt}$ = the focus country's exports of commodity group
j in year t,

$X_{i \cdot t}$ = the focus country's total exports to market area
i in year t,

M_{ijt} = imports of commodity group j by market area i
in year t,

$M_{..t}$ = total world imports in year t,

$M_{.jt}$ = total imports of commodity group j by all
countries in year t,

$M_{i \cdot t}$ = total imports of market area i in year t.

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:

$$\frac{X.._t - X.._{t-1}}{X.._{t-1}} \equiv \frac{M.._t - M.._{t-1}}{M.._{t-1}} + \left[(\frac{X.._t - X.._{t-1}}{X.._{t-1}}) - (\frac{M.._t - M.._{t-1}}{M.._{t-1}}) \right].$$

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:

$$\frac{\underset{ij}{\Sigma} X_{ijt} - \underset{ij}{\Sigma} X_{ijt-1}}{\underset{ij}{\Sigma} X_{ijt-1}} \equiv \frac{M.._t - M.._{t-1}}{M.._{t-1}} \tag{1}$$

$$+ \frac{\underset{ij}{\Sigma} \left[(\frac{M_{i\cdot t} - M_{i\cdot t-1}}{M_{i\cdot t-1}}) - (\frac{M.._t - M.._{t-1}}{M.._{t-1}}) \right] X_{i\cdot t-1}}{\Sigma X_{ijt-1}} \tag{2}$$

$$+ \frac{\underset{ij}{\Sigma} \left[(\frac{M_{ijt} - M_{ijt-1}}{M_{ijt-1}}) - (\frac{M_{i\cdot t} - M_{i\cdot t-1}}{M_{i\cdot t-1}}) \right] X_{ijt-1}}{\underset{ij}{\Sigma} X_{ijt-1}} \tag{3}$$

$$+ \left[(\frac{X.._t - X.._{t-1}}{X.._{t-1}}) - \left(\frac{\underset{ij}{\Sigma} \frac{M_{ijt}}{M_{ijt-1}} X_{ijt-1} - \underset{ij}{\Sigma} X_{ijt-1}}{\Sigma X_{ijt-1}} \right) \right] \tag{4}$$

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 critized 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 defi-
nition 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 pro-
ducer countries to the markets concerned. These are of course
merely two different sides of the same matter, but the dis-
crepancies 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 availa-

1. Cf. "Export och import 1971-1975", Long-term Outlook of
1970, Appendix 5, the State's Official Reports 1971:40 (in
Swedish), p. 17.

bility of the data. This study is based on import statist-
ics, 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 commodi-
ty 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 hypo-
thetical constant-market-shares rests largely on this assump-
tion 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 fulling
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[1] 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[2]
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

1. OECD: "Foreign Trade", Series B and C; UN: "Commodity Trade Sta-
tistics", Statistical Papers, Series D.

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-

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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,[1] and at the time the study was made
no statistics more recent than those from 1972 were avail-
able.[2]

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[3], 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
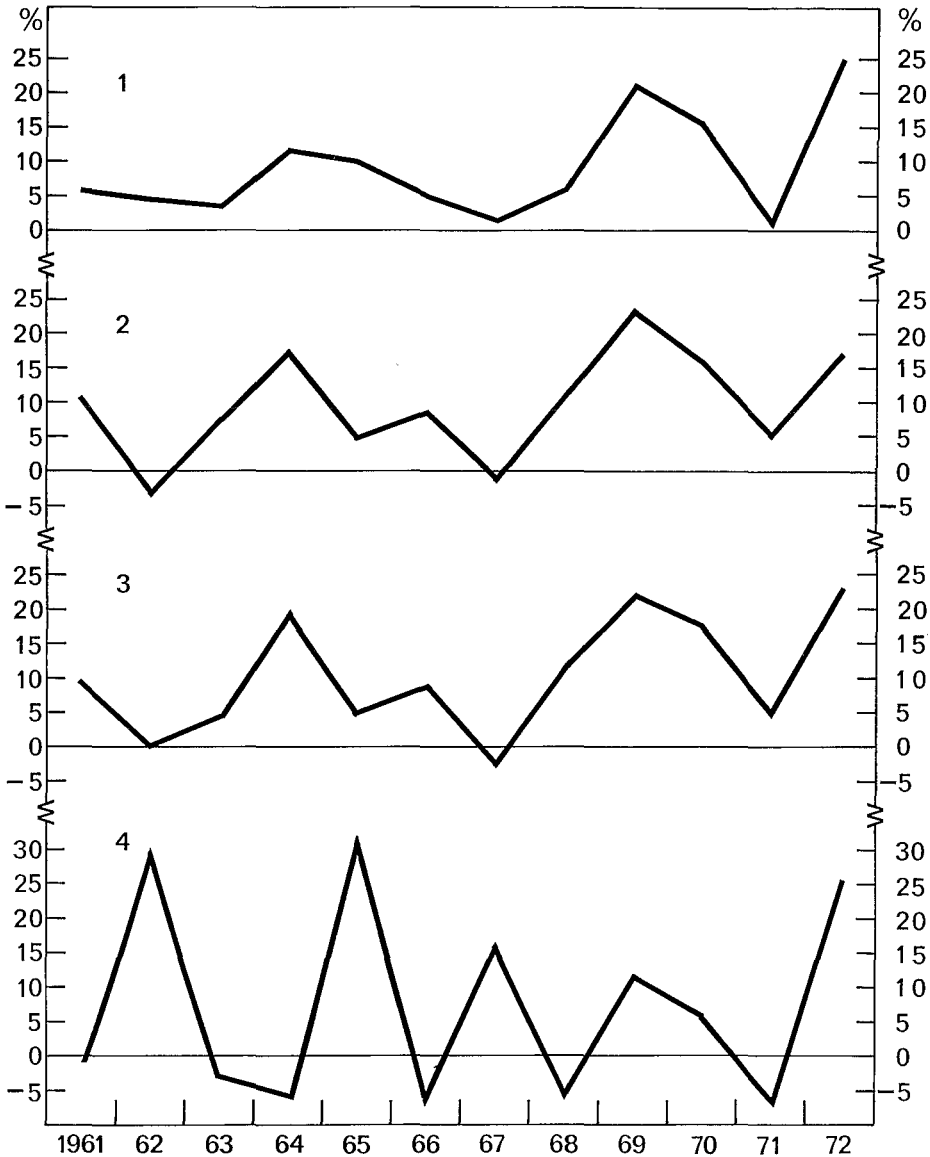period examined.

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
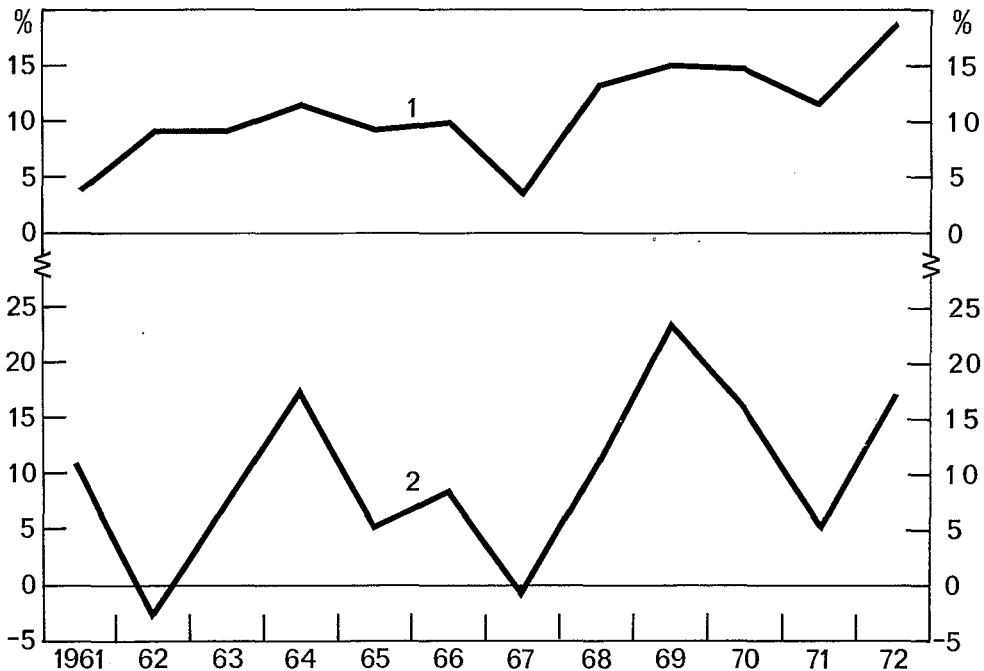of structural factors. The impression of sluggish per-

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
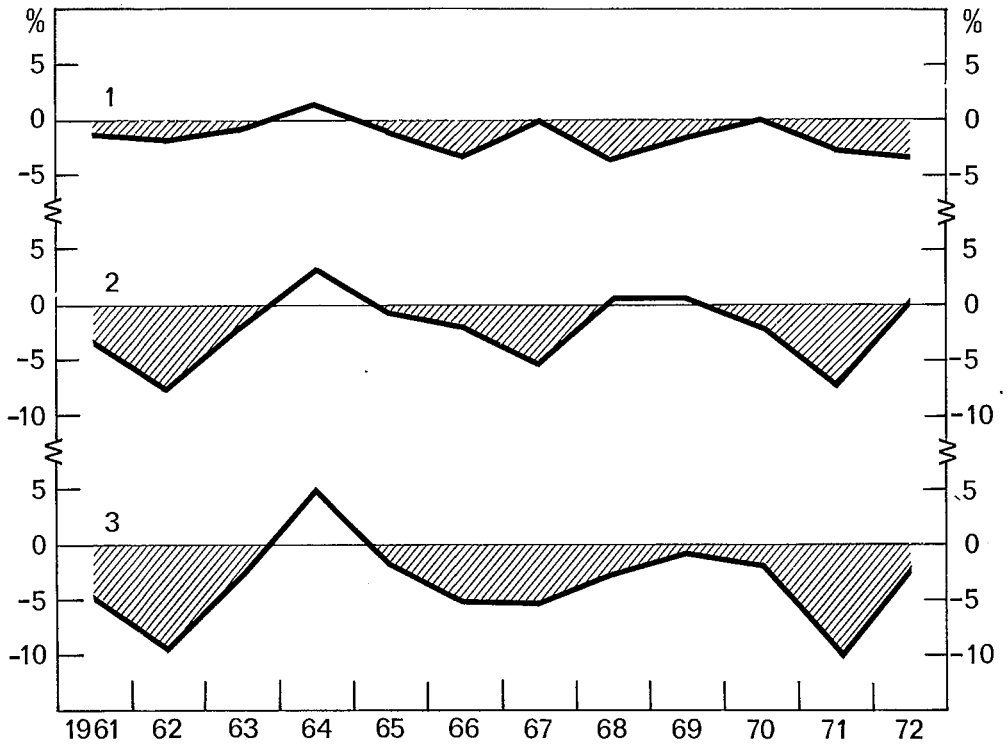2.   Value of Finnish exports to western markets

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 1. FACTORS AFFECTING THE GROWTH OF FINNISH EXPORTS TO WESTERN MARKETS IN 1961 - 1972,
PERCENTAGE UNITS

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1961-1972 average
Overall growth in demand	4.1	9.3	9.3	11.7	9.6	10.2	3.9	13.4	15.3	15.0	11.8	18.9	10.2
Regional structure	- 1.3	- 1.7	- 0.7	1.7	- 0.9	- 3.0	0.0	-3.3	-1.4	0.2	- 2.6	- 2.9	- 1.0
Commodity structure	- 3.2	- 7.4	- 1.7	3.6	- 0.7	- 1.9	- 5.1	0.9	0.8	- 2.0	- 6.8	0.5	- 1.7
Competitiveness	11.4	- 2.7	1.0	0.7	- 2.6	3.4	0.7	0.4	9.1	2.9	3.4	0.7	2.4
Percentage growth in the value of exports	11.0	- 2.5	7.9	17.7	5.4	8.7	- 0.5	11.4	23.8	16.1	5.8	17.2	9.9
Total effect of structural factors	- 4.5	- 9.1	- 2.4	5.3	- 1.6	- 4.9	- 5.1	- 2.4	- 0.6	- 1.8	- 9.4	- 2.4	- 2.7

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 through-
out the decade. This stagnation was a natural consequence of
the slowness of structural change.

When the effects of the regional break-down and the com-
modity 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 compo-
nents must be made with circumspection because of the limits
of the method employed.[1] 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 struc-
ture impact fluctuated considerably from year to year, where-
as 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,[1] PER CENT

	Regional break-down of Finnish exports to western countries		Regional break-down of total imports by western markets	
	1960	1972	1960	1972
Belgium-Luxemburg	5.3	2.8	5.9	6.6
The Netherlands	8.6	4.7	6.8	7.3
Federal Republic of Germany	17.1	13.8	14.6	16.9
France	7.6	5.8	9.4	11.2
Italy	3.2	2.4	7.1	8.2
EEC	41.7	29.5	43.8	50.3
United Kingdom	37.0	27.2	19.2	11.9
Norway	1.9	5.8	2.2	1.9
Sweden	5.8	20.7	4.3	3.4
Denmark	5.3	6.3	2.8	2.1
Austria	0.2	1.2	2.1	2.2
Switzerland	0.8	2.5	3.4	3.6
Portugal	0.1	0.4	0.8	0.9
EFTA	51.1	64.1	34.7	26.0
United States	7.2	6.3	21.5	23.7
Total	100.0	100.0	100.0	100.0

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 <u>the regional structure of Finnish exports</u>
<u>to market countries</u> 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 as-
sumed 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 impor-
tance 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 mar-
kets. In spite of rapid structural changes in exports, crude
materials (SITC 2) still play an important rôle in Finnish
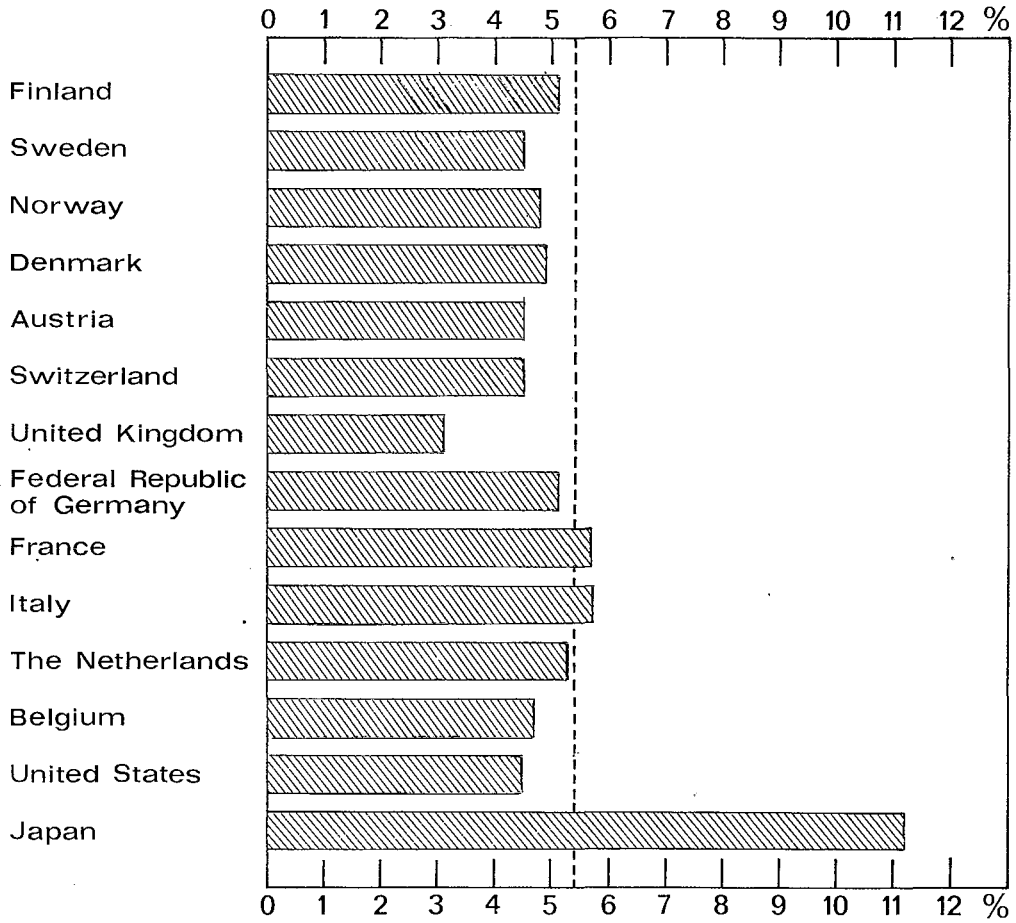exports. During the period under study, the share of manu-

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 1972[1], PERCENTAGE SHARES

	Commodity break-down of Finnish exports to the market countries		Commodity break-down of imports by western markets	
	1960	1972	1960	1972
Food and live animals, beverages and tobacco (SITC 0 + 1)	4.5	4.2	22.0	14.7
Crude materials (SITC 2)	60.3	24.1	19.7	9.0
Mineral fuels, lubricants, etc. (SITC 3)	0.1	0.2	11.4	10.4
Animal and vegetable oils and fats (SITC 4)	0.2	0.0	1.2	0.7
Chemicals (SITC 5)	0.6	2.6	5.2	6.6
Manufactured goods (SITC 6)	31.9	45.0	21.3	20.9
Machinery, transport equipment (SITC 7)	1.8	13.3	14.2	26.0
Miscellaneous manufactured articles (SITC 8 + 9)	0.6	10.6	5.1	11.7
Manufactured articles (SITC 5 - 8)	34.9	71.5	47.0	65.2
Total	100.0	100.0	100.0	100.0

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 coun-
tries 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
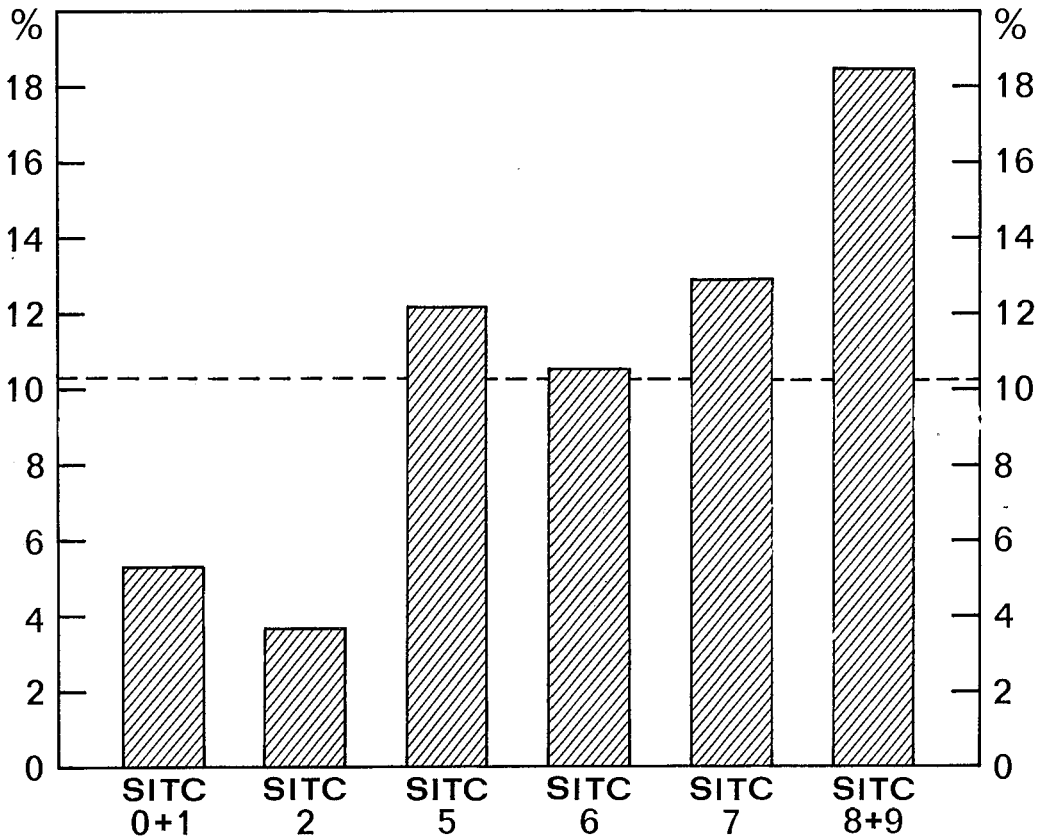of the development of imports of different commodities (Chart 5),

CHART 5.   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 symmetric-
ally at different phases of the cycle, i.e. offset each
other during one business cycle, or whether they accumu-
late 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 develop-
ments, 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
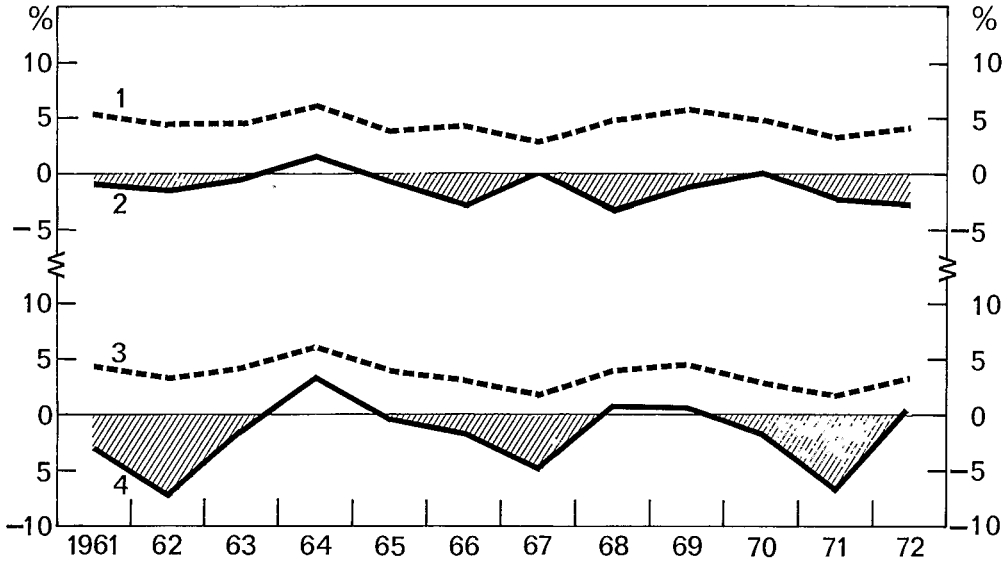
CHART 6. STRUCTURAL FACTORS AFFECTING FINNISH EXPORTS TO THE
MARKET COUNTRIES AND INTERNATIONAL CYCLICAL DEVELOPMENTS IN
1961 - 1972

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 fluctu-
ations and that reverse effects do not fully offset each
other over one business cycle. The structural factors sup-
port each other, and their total impact tends to curb ex-
port development steadily.

When the total impact of factors on the demand side - the
growth of general demand and structural factors - is ex-
amined, 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
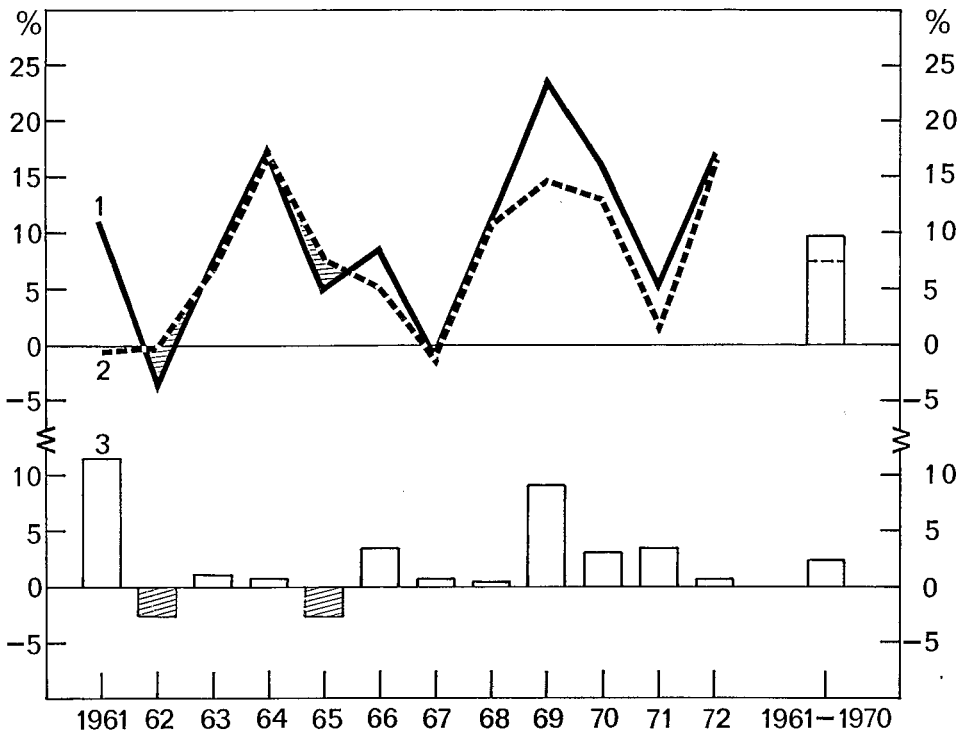merely maintained her market share. We may thus claim that

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 stead-
ily, but rather at the beginning and the end of the period.
We shall now consider some of the reasons why the competi-
tiveness 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 com-
petitiveness 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-

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1. Factors affecting the relative competitiveness have been discussed in detail, e.g., in following publications: J.M. McGeehan: op.cit.; E. Rohwedder: Die Entwicklung des Aussenhandels zwischen den Vereinigten Staaten und der Europäischen Wirtschaftsgemeinschaft von 1955 bis 1963 und ihre Bestimmungsgründe, Tübingen 1967, pp. 34 - 100; I.B. Kravis and R.E. Lipsey: Price Competitiveness in World Trade, 1971, pp. 39 - 61 and 151 - 168.

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 indi-
cators for major competitor countries[1] 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 con-
sistent 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
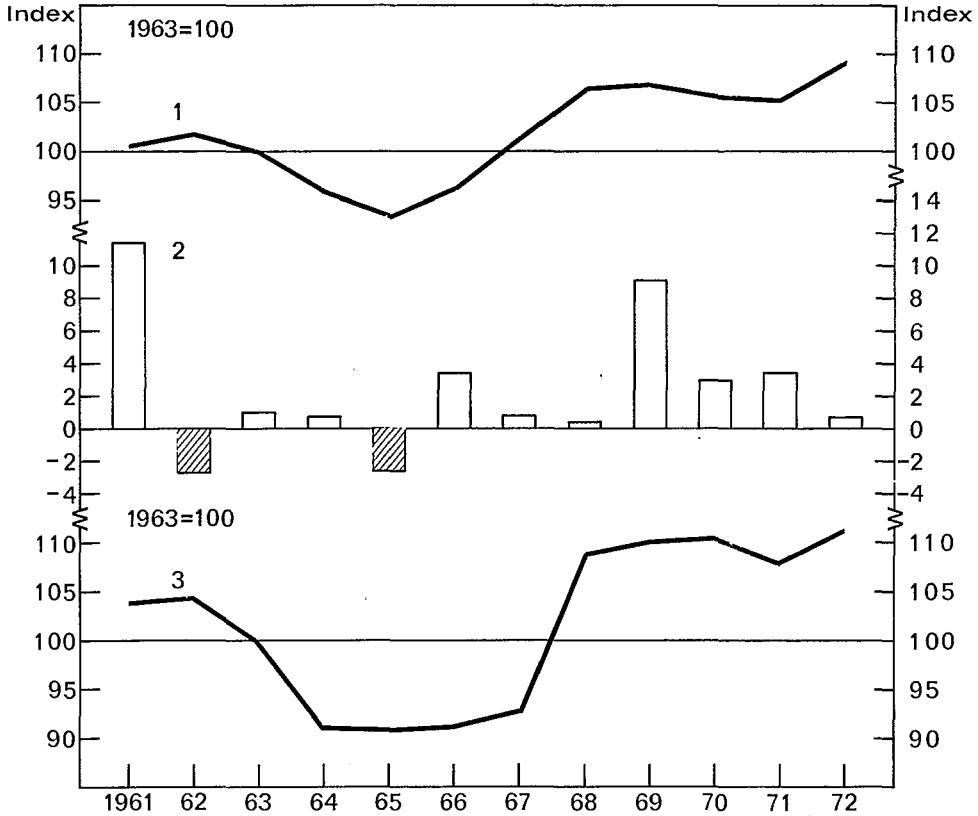Finnish exports are regarded as her major competitors.

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
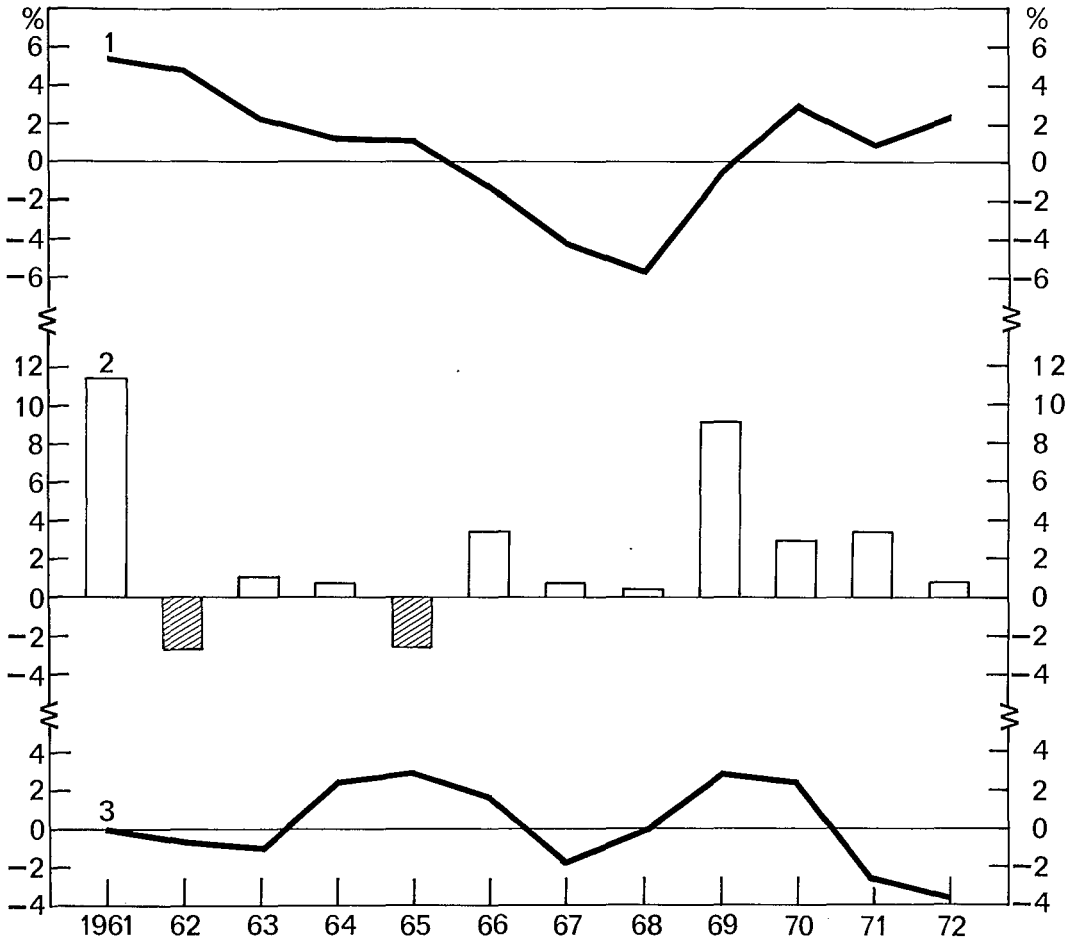in the home market. Macroeconomic indicators are generally

CHART 9. EXPORT PERFORMANCE AND DEMAND PRESSURE IN 1961 - 1972

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.[1]

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 oc-
curred 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

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1. The effects of fluctuating domestic demand pressure on
export supply have been examined extensively in recent years.
See R.J. Ball et al.: "The Relationship between United
Kingdom Export Performance in Manufactures and the Internal
Pressure of Demand", Economic Journal, Vol. LXXVI, September
1966, pp. 501 - 518, and J.R. Artus: "The Short-Run Effects
of Domestic Demand Pressure on British Export Performance",
IMF Staff Papers, Vol. XVII:2, July 1970, pp. 247-276. The
indicators of demand pressure used here were taken from a
study carried out at the Bank of Finland Institute for Economic
Research concerning the seasonal adjustment of Finland's current
account. See T. Hämäläinen: "Cyclical Developments and the
Current Account", Publications of the Bank of Finland Institute
for Economic Research, Series A:35, 1972, pp. 48 - 67 (in
Finnish).

devaluation of 1967 was increased considerably by the low domestic demand pressure prevailing at the time. The domestic 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 competitor 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 countries are of vital importance.

It is difficult to find any consistent relationship between fluctuations in foreign demand pressure and Finland's export 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 de-
mand 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
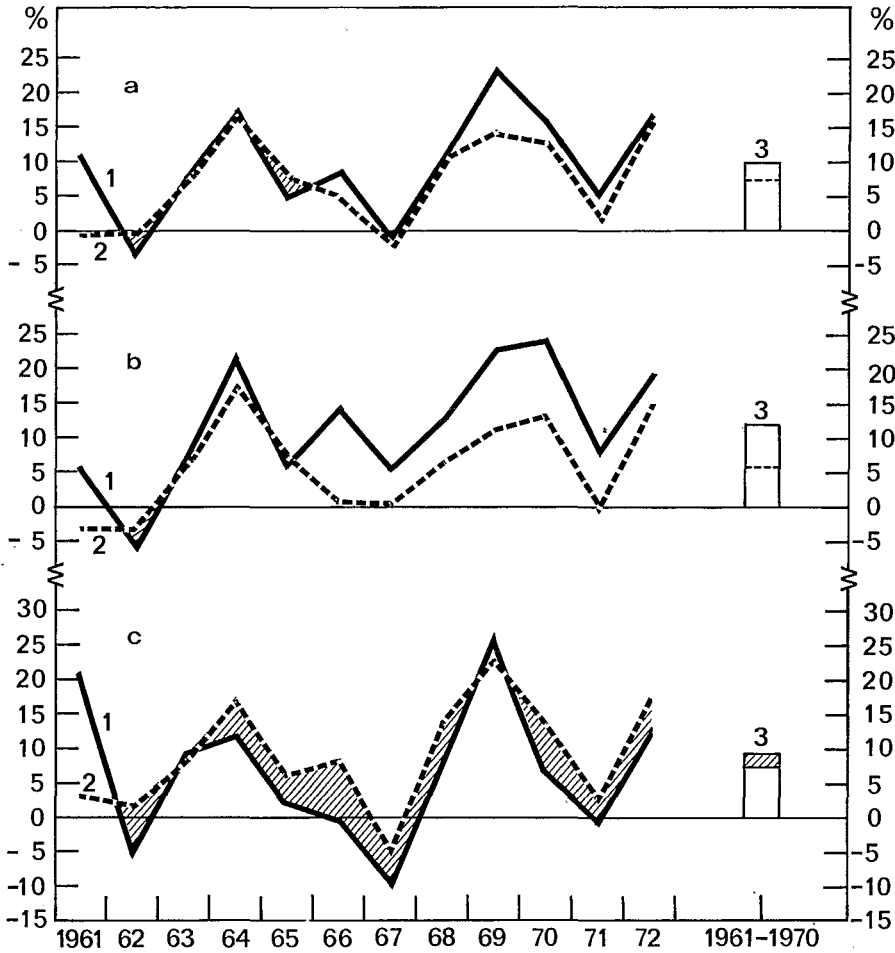
CHART 10.   THE GROWTH OF FINNISH EXPORTS TO WESTERN COUN-
TRIES AND OF THE WESTERN MARKETS IN 1961 - 1972, PER CENT

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

1.   Growth of exports
2.   Growth of markets
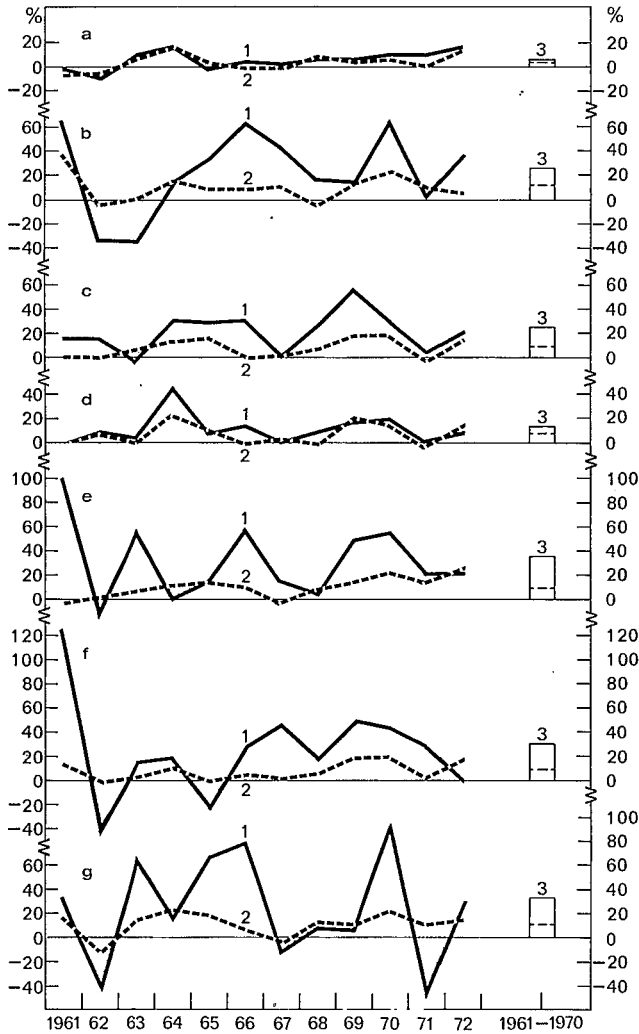3.   Average growth in 1961 - 1970

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
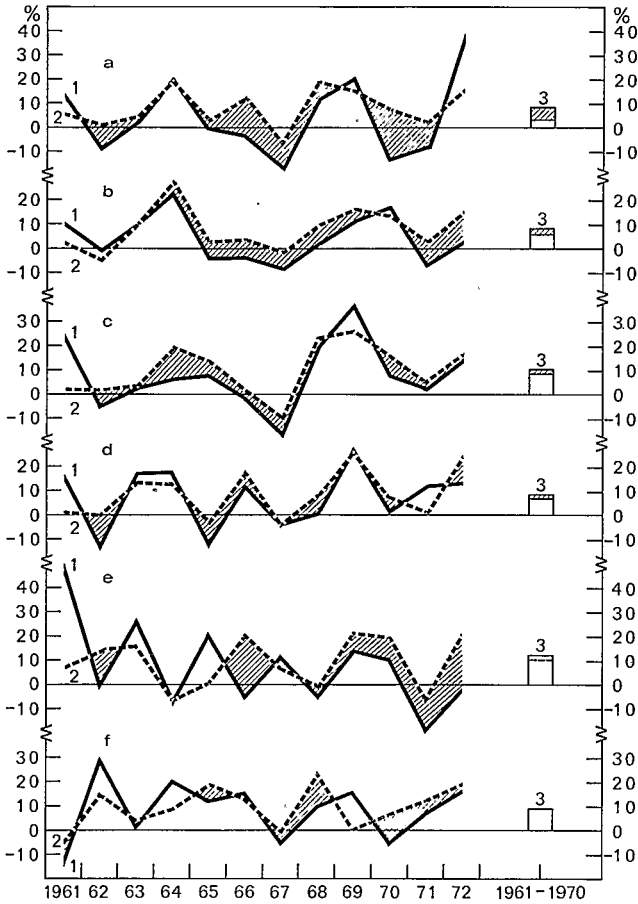3.   Average growth in 1961 - 1970

CHART 12.   FINNISH EXPORT PERFORMANCE IN THE EEC COUNTRIES

AND THE UNITED STATES IN 1961 - 1972, PER CENT

a.   Belgium   b.   Netherlands   c.   Federal Republic of Germany
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 un-
steadily. 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 simi-
lar 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 coun-
tries outside this grouping and particularly from the west-
ern industrial countries were chosen as the basis for com-
parison, largely because Finland has to compete with these
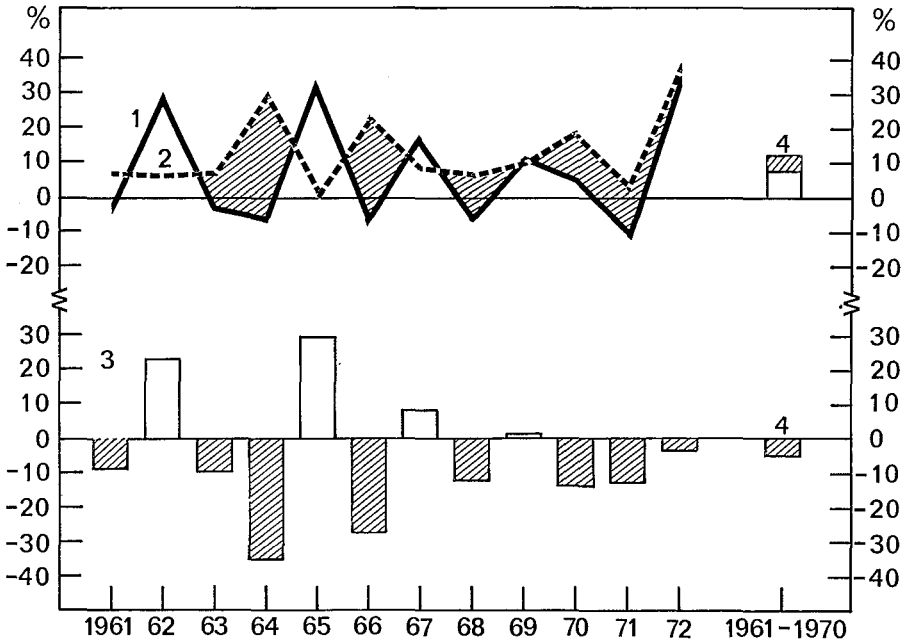countries for orders placed by the Socialist countries with

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

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 po-
sition.

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 coun-
tries increased in 1961 - 1972. It can be clearly seen that
the markets expanded quite vigorously, i.e., more than ten

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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 impor-
tance of the different trading blocks for Finnish exports
are taken into account.

4.3. Export performance by commodity sections and sub-
divisions

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 vari-
ous lines of production in export markets. With this in
view, Finnish export performance was also examined by
sections of the Standard International Trade Classifica-
tion (SITC). In addition, certain sub-divisions were
selected to represent major Finnish export lines. Atten-
tion 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 fluctu-
ated 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 coun-
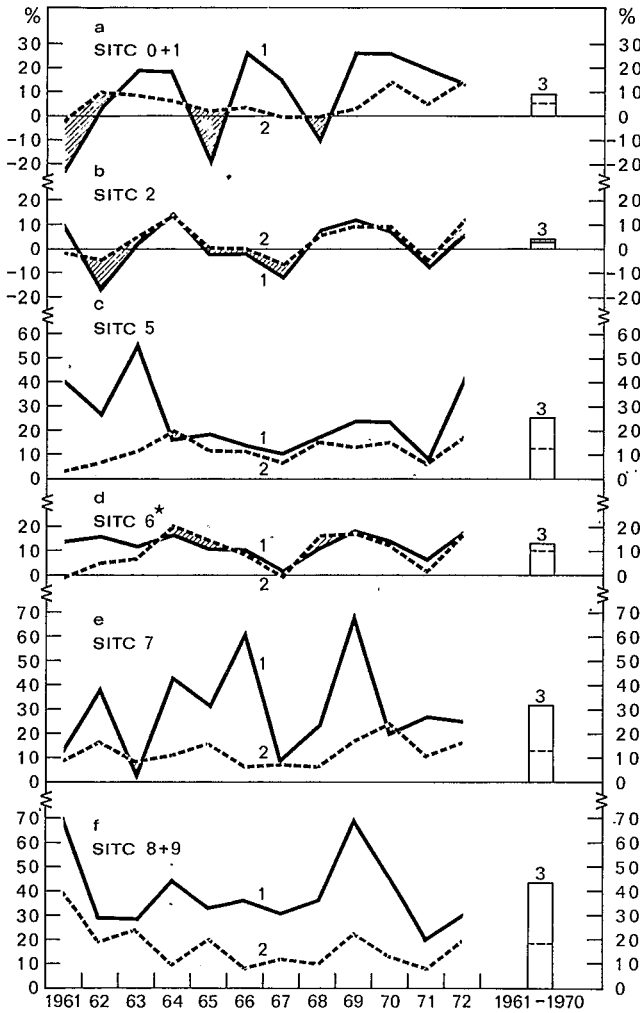tries is so largely dependent on the agricultural support

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 manu-
factured articles

1. Growth of export
2. Growth of markets
3. Average changes in 1961 - 1970

*
Finnish exports consist mainly of products of the wood and
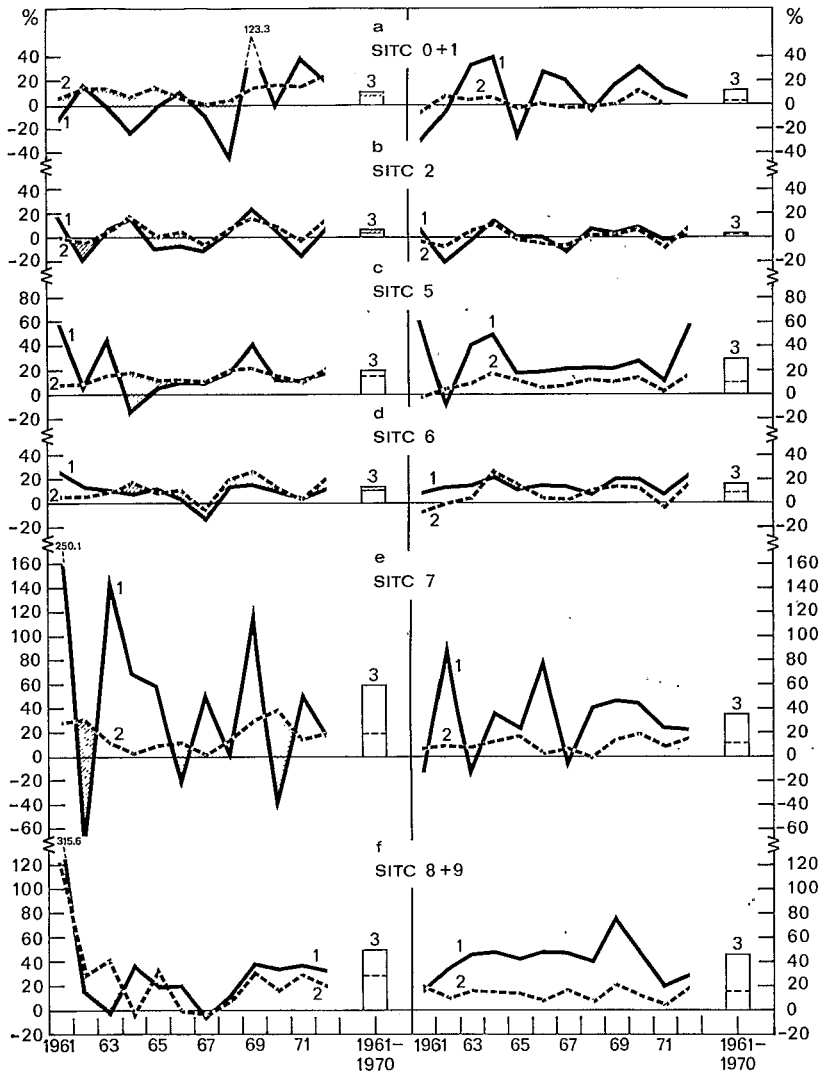paper industries

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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 manu-
factured articles

1.   Growth of exports
2.   Growth of markets
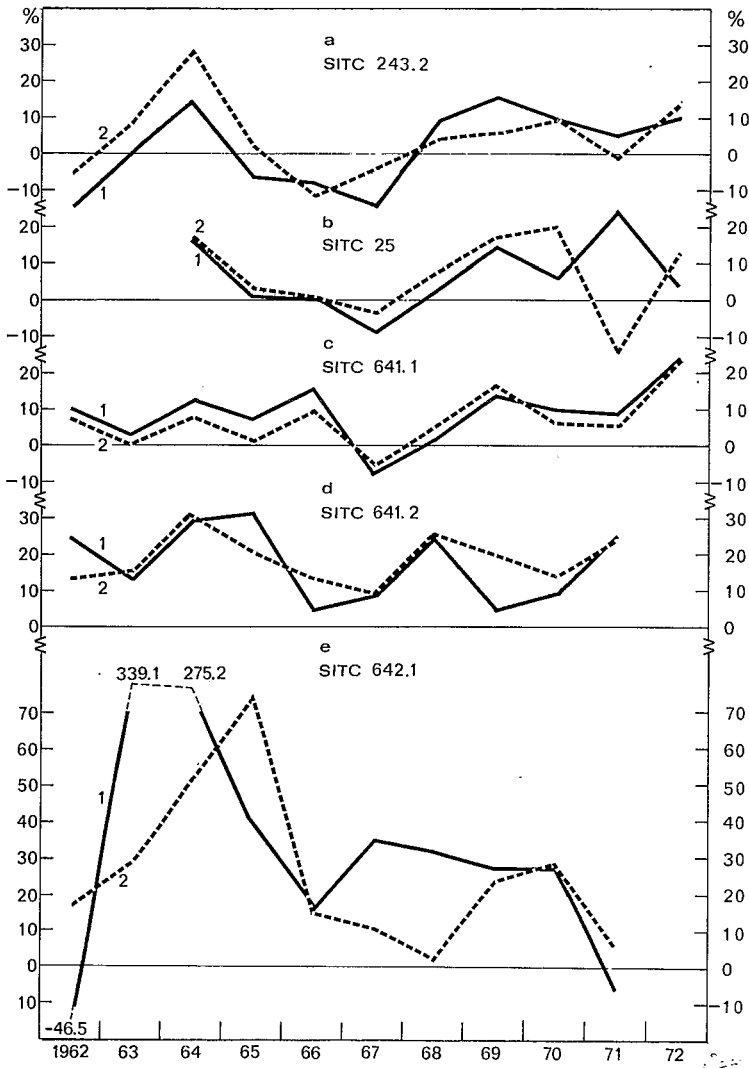3.   Average changes in 1961 - 1970

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. Ex-
ports of pulp and timber were affected as the country gradu-
ally approached the limits of her forest resources and at-
tempted 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 com-
petitiveness 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 ex-
ports followed fluctuations in the growth of markets, though
on a slightly higher level. In the mid-1960s Finnish chemi-
cal exports to the EEC countries ran into considerable diffi-
culties, but subsequently, part of the lost ground was re-
gained. 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 manufac-
tures of paper. On the whole, Finnish exporters were able
to hold their positions in markets of these products. Ex-
ports 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, paper-
board 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 phenomen is
reflected in exports of pulp and waste paper. The weak per-
formance of traditional export products could thus be offset
only by the very successful marketing of other, newer ex-
port 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 ex-
ports 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
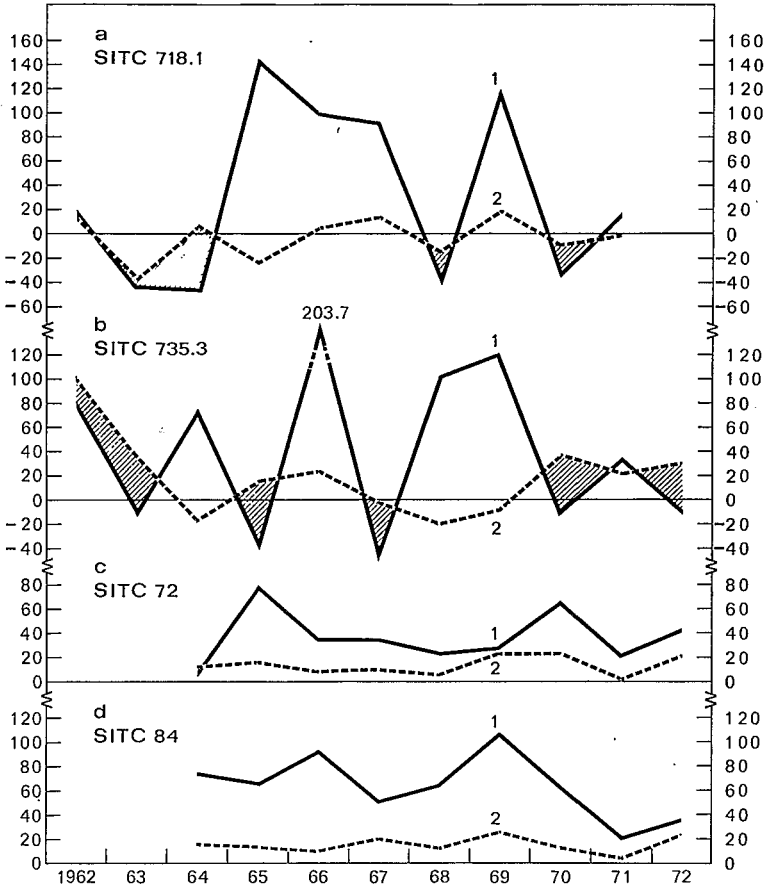of both trade groupings grew rapidly and fluctuated sharply;

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

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 manu-
factured articles (SITC 8) expanded most rapidly. The vigor-
ous growth of more than 30 per cent per annum was naturally
reflected in substantial gains in market shares. The expan-
sion 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 hetero-
geneous 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 focussing 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.[1]

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.

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1. On the use of the constant-market-shares model for forecasting see P.S. Armington: op.cit., pp. 170 - 171, and O. De La Grandville, E. Fontela and A. Gabus: "A Note on European Projections on Foreign Trade", Economia Internazionale XXI:4, November 1968, pp. 593 - 609.

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 struc-
ture 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 com-
petitor countries also contributed to this development.

As might have been expected, the examination of export per-
formance 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 af-
fected by changes in effective duties. Finnish exports to
EFTA markets grew by leaps and bounds, which may be par-
tially 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, par-
ticularly in the late 1960s. However, these losses were off-
set by gaining markets for newer export products. It is worth
noting that, for exports of machinery, appliances and trans-
port 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.