

**THE CONSEQUENCES OF THE EC AGRICULTURAL
POLICY FOR SCANDINAVIAN AGRICULTURE**

A trade approach



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ABSTRACT

THE CONSEQUENCES OF THE EC AGRICULTURAL POLICY FOR SCANDINAVIAN AGRICULTURE; A TRADE APPROACH

Kuhmonen, T.

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This study is part of a series of studies on the effects of the EC Common Agricultural Policy (CAP) on third countries. The influence of EC policies on agricultural trade flows between the EC and Scandinavia has been analyzed by means of the Revealed Comparative Advantage (RCA) index. Combining the RCA indices of exports and imports gives the index of Relative Trading Power (RTP). These indices are the basis for the description of the changes in Scandinavian agriculture caused by the Common Agricultural Policy.

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Preface

Several years ago the Agricultural Economics Research Institute LEI started a large research project concerning the international consequences of the agricultural policy of the European Community. Within the project, both importing and exporting countries, developed and developing countries are examined in the context of the external effects of the EC. One of the sub-projects concerns the three Scandinavian countries, Finland, Norway and Sweden, neighbouring the EC in the north. The research for this project was carried out by the author in September-December 1987 at the General Economics and Statistics Division of LEI. The author is a project researcher at the Pellervo Economic Research Institute, Espoo, Finland.

The managing director,



E.C. Zachariasse

The Hague, March 1991

Summary

Agricultural policies in Western Europe all have their roots in the depression of the 1930s, when protectionism and direct market intervention became standard policy in all countries. After the second World War the policies shifted from crisis-reaction to expanding agricultural output and saving foreign exchange. Apart from their historical origins, there are also economic and political forces behind the national policies. Changes in comparative advantage of agriculture, the share of agriculture in the economy and terms of trade between agricultural and manufactured goods are the main forces. When these variables turn against agriculture, the rate of protection is increased. As a result of the protection the agricultural sector is not declining in pace with the effects of Engel's Law of Consumption and the rate of (productivity) increases in production. This results in income disparity between agriculture and the rest of the economy.

The establishment of the European Community in 1957 was the first major step to a free intra-European trade. The most important goals mentioned in the Treaty of Rome were: increased productivity and agricultural incomes, stable markets, guaranteed supplies and reasonable consumer prices. National policies had to be abandoned and were replaced by EC-regulations. Countries with high price levels wanted to retain these levels to avoid problems with farm income and thus the Common Agricultural Policy (CAP) became equally protectionist or even more so than the sum of the previous national policies. Scandinavian agricultural policies have more or less the same goals, although there is some difference in the emphasis that is put on the various parts of the policies. Both the CAP and the Scandinavian policies have led to overproduction. The surpluses can only be disposed of on the world market, where prices are considerably lower, with the aid of export refunds. This puts a heavy burden on the budgets.

The CAP has caused a strong growth in internal trade in agricultural products. Imports from third countries have decreased, while exports to third countries increased. Exporting third countries faced increased competition from the EC on EC-markets, on their domestic markets and on the world market. The increased EC surpluses in temperate zone products have also found their way to Scandinavia, notwithstanding the fact that these products enjoy a high degree of protection in Scandinavia too. Scandinavian exports of temperate zone products to the EC member states have become diverted to other third country markets.

This study tries to analyze the influence of EC policies on the Scandinavian agricultural sector. The trade flows between the

EC and Scandinavia are analyzed by means of the Revealed Comparative Advantage (RCA) index. The RCA for exports is the ratio of a certain commodity group in a country's exports to that commodity group's share in world exports. If the commodity share exceeds the average share, then that country has a "revealed" comparative advantage in that commodity group. When applied to imports, the RCA-index reveals which countries (among the suppliers) have a comparative advantage. When calculated over a time period, the RCA-index monitors shifts in competitiveness. The RCA-indices of exports (RCA_e) and of imports (RCA_i) may be combined in the index of Relative Trading Power (RTP). The RTP-index is calculated by dividing RCA_e by RCA_i and by giving the base period the value 100. This opens the possibility to express changes in trading power over a time period.

The EC has a revealed comparative advantage in the agro-food imports of all three Scandinavian countries for the period 1960-85 in a number of agro-food product groups; dairy products have the highest index. In cereals and animal feedingstuffs, the revealed disadvantage was turned into a revealed advantage. In exports to the EC, the Scandinavian countries do not have the "advantage" in any temperate zone agricultural product group, with the exception of Sweden in meat exports, which is due to the beef arrangement. In all Scandinavian countries the RCA_i -index of the EC in total agro-food products versus total trade has increased considerably. This means that the EC has overcome Scandinavian import restrictions much more successfully in agricultural products than in non-agricultural products. The RCA_e -index of the Scandinavian countries has decreased: the Scandinavian countries were more successful in non-agricultural products than in agricultural products on the EC-market.

The Relative Trading Power index combines the rates of changes in RCA-indices in relation to each other and over a time period. The RTP-index of Scandinavian countries has increased for fish and for fruit and vegetables, while it decreased for dairy, cereals and animal feedingstuffs. When applied to agro-food versus total trade, the Scandinavian countries have lost Relative Trading Power. Finland suffered the largest decrease, followed by Norway and Sweden.

The effects of the CAP and of the enlargement of the Community in 1973 on the RCA- and RTP-indices have been analyzed with regression analysis. Both the CAP and the enlargement have increased the RCA-index of the EC in Scandinavian imports of agro-food versus total imports. The EC has put pressure on Scandinavia to substitute domestic agricultural production by imports from the EC. The same analysis applied to exports (RCA_e) of agro-food versus total trade shows that these countries have suffered much more from the enlargement of the EC than from the CAP. When these effects are combined in the RTP-index, it appears that the Scandinavian trading position in agro-food products has deteriorated on account of the CAP and on account of the enlarge-

ment. Finland suffered most from the CAP, whereas Norway and Sweden suffered most from the enlargement of the Community with Denmark and the United Kingdom. The total impact of CAP and enlargement was largest in Finland, followed by Norway and Sweden.

It took quite some time, in the EC and in Scandinavia, before measures were taken to cut overproduction. In Scandinavian agriculture the first measures to limit production were already taken in the early 1970s, whereas the first major EC measures were not taken until the mid 1980s. The relative size of the surpluses is more or less the same in the two blocks, but the absolute size of the EC surpluses was much bigger. The EC cutback measures came much later because the EC has greater financial resources and because it takes more time to agree on measures as the ten (in some respects very differing) member countries in general have different priorities for their agricultural subsectors. The agricultural pressure of the EC may also have had a positive effect on Scandinavian economies: the work-force has been transferred more rapidly to industrial and service occupations with a higher average productivity and better trade prospects.

If the Uruguay round of GATT talks results in a much freer world trade, it will become increasingly difficult for the EC and Scandinavia to maintain their "national" policies. The interests of the EC and Scandinavia to protect domestic production of basic agricultural products are more or less the same. This may be a ground for much closer cooperation in the future, which is of great interest to the Scandinavian countries and indeed something they are actively striving for.

1. Introduction

The national agricultural policies in the Scandinavian countries - Finland, Norway and Sweden - have been adjusted many times during the past decades. The reasons were often internal matters of production, income or structure in the farm sector. Some pressures and changes originated outside the national boundaries, however.

The external effects of the Common Agricultural Policy (CAP) of the European Communities (EC) have spread more and more as the international trade distortions increased. In most cases, unfortunately, discussion and research was focused on the big and powerful traders or on developing countries. As temperate zone agricultural products are an important part of the Scandinavian trade - like in the EC trade - the external effects of the CAP may be expected to reach these countries too. This view is also supported by the active agricultural trade between Scandinavian countries and the EC.

The subject of this study is the external effects of the CAP on Scandinavian countries. This study tries to analyze the influence of EC policies on the Scandinavian agricultural sector. It is difficult to point out the effects of a policy of one country on another country because of the complexity and dynamics in the policy issues. As Bhagwati (1988:17) says it: "Profound commitments to policies are generally due to a mix of ideological factors (in the form of ideas and examples), interests (as defined by politics and economics), and institutions (as they shape constraints and opportunities)". Because these ingredients of the policy are stated as policy goals and translated into policy measures unique for each country, the visible political and economical actions undertaken by the EC are taken as the basis for the external effects of its policy.

A country has four possible trading positions, namely:

- net exporter of a product/products;
- net importer of a product/products;
- a country in trade balance;
- a country with no trade.

All these positions are partly a result of policy measures at the national level, and all have implications for external trade. The transition of the EC from a net importer to a net exporter of many important agricultural products as a result of the application of the CAP is also well-known (see e.g. BAE 1985). That is why a trade approach is used here to find out the policy effects: changes in trade are seen as a transmitter of the changes in the policy. Changes in trade can also be quantified.

But changes in foreign trade alone are insufficient to explain the implications of the EC policy. National importance of the concerning sector, pattern of trade and external trade balance, as well as position on the markets are also necessary background information to be able to compare the changes in trade with the policy actions.

This analysis starts with combining the EC policy actions with changes in EC trade with Scandinavia, and then, combining these trade changes with changes in policies and sectors in Scandinavian countries. So, this approach stresses the relationship between the production possibilities, policy choices and trade, not trying to explain how the trade flows explicitly should be, but setting the sector-policy trade connections as the basis against which the trade changes are evaluated.

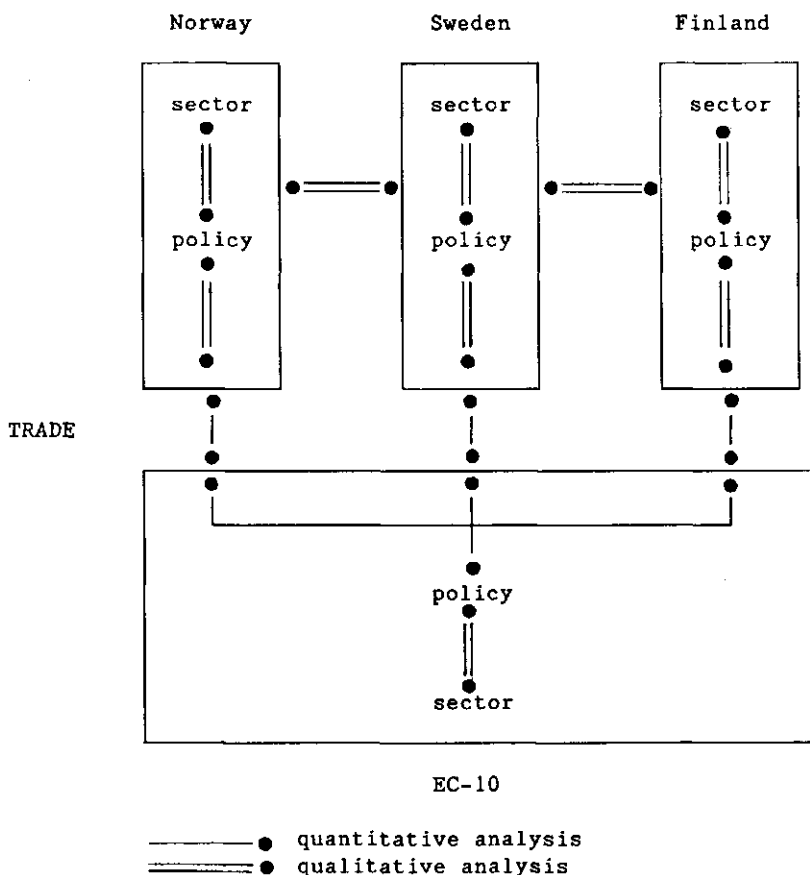


Figure 1.1 Framework of the analysis

This framework of analysis is presented in figure 1.1. The type of analysis is also given in the figure: the trade changes and their connections with the EC agricultural policy actions are analyzed quantitatively, whereas the effects of the trade changes on Scandinavian agricultural policies and sectors are analyzed only qualitatively.

This broad approach is used in this study to reach the following goals:

- to describe the main features of agricultural and trade policies, agricultural sectors and agricultural trade in the EC and Scandinavia in a comparative manner;
- to show and quantitatively analyze the effects of the agricultural policy actions of the EC on its agricultural trade with Scandinavia, and to develop a measure for systematic analysis of these effects among different product groups;
- to qualitatively analyze the effects of the agricultural policy actions of the EC (via mutual trade changes) on agricultural policies and related sectors in Scandinavian countries;

In addition to this the study begins with an explanation of the theoretical framework and the study ends with a discussion on perspectives for the future. It covers the period 1960 to 1985, which includes the creation of the Common Agricultural Policy (CAP) and the enlargement of the Community.

2. Theoretical framework

A wide variety of models has been developed to explain the pattern of international trade, both for positive and normative economics. The classical model explains trade flows in terms of comparative advantage, mainly based on cost differences: a country is expected to export those products that are produced cheaper in that country than in other countries. The country is expected to import other products (of comparative disadvantage) (Johns, 1985: 156-162).

Another classical model, of Heckscher and Ohlin - the endowment model - explains the trade flows starting from differences in production factor endowments. A country is expected to export the commodity that uses its abundant factor of production most intensively (Markusen & Melvin, 1988: 114). Consequently, when the gains from trade are based on differences of production costs in the classical model, the Heckscher and Ohlin model explains these gains in terms of differences in amounts of production factors.

The more recent models of international trade are based mainly on these two classic theorems, but frequently divert from assumptions that are central to these classic models. To name but a few; the specific factor model and increasing returns to scale, differences in tastes and in per capita incomes are all rather new ways of explaining the determination of international trade flows (Markusen & Melvin, 1988).

From the point of view of this study, the sector of trade research which concerns imperfect competition, government intervention and protection, is most interesting. This sector of research, close to political economy, connects the domestic policy actions (like taxes and subsidies and trade barriers) with external trade. Whereas government intervention and protectionism are briefly discussed together with agricultural policy and trade context in the following chapter, the background of trade effects of the EC as a customs union - which is a form of imperfect competition - is elaborated next.

Theoretically, the external trade effects of the EC agricultural policy can be divided into volume effects and price effects.

The volume effects of a customs union - like the EC - are usually described as trade creation, trade diversion and trade displacement. Excluding welfare effects, trade creation means increased imports from (lower-cost) territories inside the union. Trade diversion takes place, when (lower-cost) imports are replaced by (higher-cost) production inside the union. Trade displacement may also occur, when specialization (also in third

countries) is pre-empted by side-effects of the customs union and/or when a customs union imposes specialization (externally in third countries) without regard to the local relative development cost situation (Johns, 1985; Markusen and Melvin, 1988).

Markusen and Melvin also point out the interesting feature of using import protection as export promotion. This argument is based on increasing production and declining marginal costs behind the import barriers, and later on, the competitiveness increases on both internal and external markets. Consequently, market shares of other countries will decline on internal and/or external markets, depending on the trade balance position. From these considerations, the trade diversion effect is taken as an a priori assumption in this study. Also the trade creation effect and the externally directed specialization are partly questioned on the basis of trade shares analysis. The theoretical grounds of price effects of the agricultural policy of the EC are more complicated. The use of import protection as export promotion can lead to such a large production that surpluses start to depress market prices; in view of the huge surpluses of the EC in some products this can be taken for granted to some extent.

Another price effect often examined is the impact of the EC agricultural policy on price instability. The size of the EC as a food importer makes the effects of the applied import systems very notable. As such, the variable import levy system used by the EC tends to increase price instability for exporting countries. This is because the world-market elasticities become smaller and stochastic demand and supply disturbances cause a higher price instability (Bale and Lutz, 1979; Harris et al., 1983; OECD, 1982; Sampson and Yeats, 1977; Schmitz, 1983). But a protective price fixing policy of the EC can also have a stabilizing effect on prices, though only in some cases like non-rational price expectations, multiplicative stochastic disturbances of supply, negative covariance between domestic, and foreign disturbances and stockpiling substitution (Schmitz, 1983). Usually however, the instability is considered to be an overriding effect of the CAP.

Concerning price effects, the basic setting of big and small countries in the theory of international trade (Ritson, 1980) can be taken as an a priori assumption of this study, both when the Scandinavian countries are compared with the EC together or separately. The price effects are not examined in detail in this study, because they are well-known already and also because other countries outside the EC face similar effects. The discussion of price effects is carried out at a general level, although in the chapters on policy and sector effects in Scandinavia attention is given to prices.

3. Agricultural policies and agricultural sectors

3.1 Presentation of agricultural policies and agricultural sectors

3.1.1 Origins of the policies

The agricultural policy of every country has its own history. One of the most distinctive features in agricultural history of developed market economies has been agricultural market intervention. The present pattern of intervention policies in Western Europe, originates in the great depression of the 1930s, when protectionism and direct market intervention got a strong upswing as the second wave of protectionism started (FAO, 1975; Tracy, 1982). Since that time the impetus in agricultural policy has changed from crisis-reaction to expanding agricultural output and saving foreign exchange during the post-war recovery. Later on, inter- and intra-sectoral aspects like the relative income position and income distribution in the farm sector were also included. However, the main reason for governmental intervention in agricultural trade has been to protect the domestic agricultural sector from foreign competition, which implies that the reasons for protection lie in inward-oriented national agricultural policies (FAO, 1975; Koester, 1985; OECD, 1987b).

But the national policies have, apart from their historical origins, also some underlying economic and political forces behind them. An interesting approach to reveal the factors behind the national agricultural policies that function as the root of protectionism was made by Hayami (Anderson and Hayami, 1986). With simple regression analysis he was able to explain about 70% of the variation in the rate of protection. When the comparative advantage of agriculture or the share of agriculture in the economy was declining or the terms of trade between agricultural and manufactured goods turned against agriculture, the rate of protection increased. The analysis also supported the view that as a regional block the EC increased the rate of agricultural protection. The same was observed to be the case for neutral countries - like Finland and Sweden - but mainly for their preference for national security in food supply.

Turning now to the EC and the Scandinavian countries, the three general explaining variables used by Hayami (terms of trade, share in agriculture and comparative advantage) have changed in these countries, in a direction to support agricultural protection. These fundamental changes are, at public and political level, commonly seen as the farm problem in these countries: the agricultural sector is not declining in pace with

the effects of Engel's Law of Consumption and the rate of (productivity) increases in production (see e.g. Bowler, 1985). The result is income disparity between agriculture and other sectors of the economy.

This happened also in the Scandinavian countries. In figure 3.1 the share of the agricultural sector in the Gross Domestic Product (GDP) and in employment are illustrated between 1960 and 1985. In both respects the importance of the sector has declined. Compared with the average of the EC-10, the farm sector of Finland is still relatively large, whereas in Norway and especially in Sweden the relative size of the sector is small.

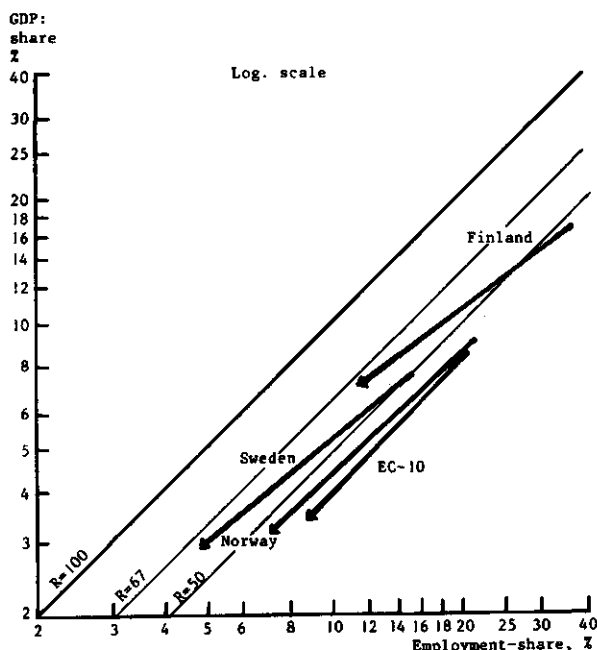


Figure 3.1 Relative size of agriculture in the economy: value added in agriculture as a percentage of GDP, and employment in agriculture as a percentage of total civilian employment between 1960 and 1985. (The employment figures include agriculture, hunting, forestry and fishing. The Swedish GDP-share in 1960 has been estimated by the author)

Sources: OECD, 1983, 1987a.

As can also be seen in the figure, the per capita income in the agricultural sector fall below the average of the economy

(the line $R=100$ roughly indicating income parity). In most countries the agricultural incomes vary between 50% to 70% of the national average, although within the EC great differences do exist. No essential improvement in relative agricultural incomes has occurred during the past decades. Especially not in the EC, where the relative incomes, on average, have gradually fallen below the levels of the Scandinavian countries. This more favourable development of relative incomes in Scandinavian economies can be seen in the context of a much more rapid decrease in sector size (figure 3.1) and, to some extent, greater improvements in farm structure and productivity during the existence of the EC.

From the data of Hayami and Ruttan (1985) it can be calculated that land productivity tends to be higher in the more southern European Community than in the Scandinavian countries, whereas in the case of labour productivity the case is vice versa. So, producing one agricultural output unit in the Scandinavian countries requires some 5 to 40% more land, but some 15 to 40% less labour than the same production in the EC (with the reservation that the calculation method of Hayami and Ruttan is very arbitrary). This means that the EC is more suitable for arable production and that Scandinavia is more suitable for more labour-intensive livestock production, which also makes sense taking into account the risks of production. Also the study of Leamer (1984) supports this view in terms of comparative advantage based on resource endowments.

Figure 3.2 shows the productivity developments in these countries between 1960 and 1980. It shows the pattern of productivity as described above, but it also reveals the enormous differences within the EC. The land productivity (on the vertical axis) as well as the labour productivity (on the horizontal axis) in Benelux-countries, for instance, is four to seven times higher than in Greece. It also gives a picture of the amount of agricultural land per capita (the A/L-lines). This figure is smallest in the EC, where relatively large numbers of people work in agriculture. This is partly due to the short but intensive growing season in the north, which has caused a rapid mechanization of agriculture in Scandinavia.

The rate of increase in agricultural productivity differs only slightly in these countries and, in general, has been rapid. The labour productivity has increased about 6% p.a., the land productivity about 3% p.a., and the per capita operated land about 4% p.a. (calculated using data of Hayami and Ruttan). Turning now to two elements contributing to productivity changes, which are often discussed when speaking about the grounds for agricultural policy - namely farm structure and yield level - the picture becomes somewhat clearer. The best farm structure among these countries is found in Sweden, which has a long tradition of clear-cut structural policy in agriculture. In Finland and Norway the average farm size is below the EC average. The structure of

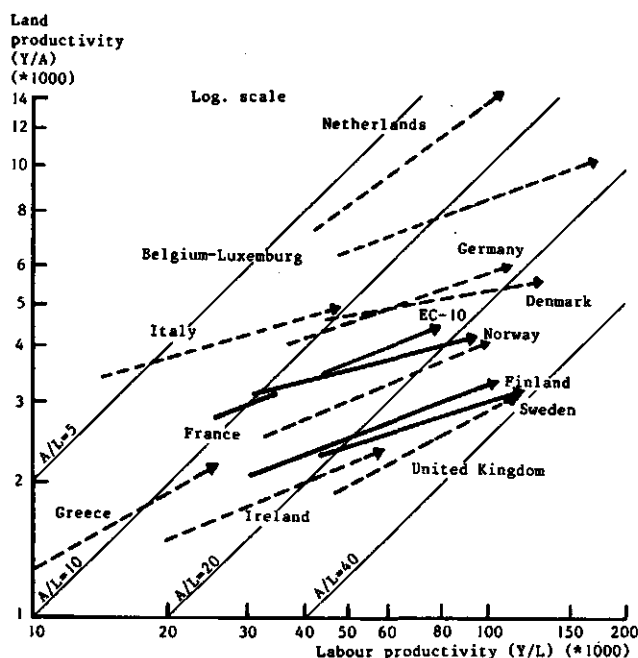


Figure 3.2 Labour and land productivity developments between 1960 and 1980

The labour productivity is calculated as:

$$\log(Y/L) = \log(A/L) + \log(Y/A), \text{ where}$$

Y = output in agriculture in wheat units *)

L = labour force in agriculture in male workers

A = agricultural area in hectares

Source: Partly recalculated from Hayami and Ruttan, 1985.

*) The output measure in wheat units is obtained by relating prices of other products to the wheat price and by expressing the resulting total output in tons of wheat.

the central dairy sector - taking about 20% to 40% of the production value in the farm sector these days - is comparable in the EC and in Sweden, but again more unfavourable in Norway and Finland. These developments are illustrated in figure 3.3.

This disadvantage of a non-optimal farm structure is increased by the low yields especially in the north, where the growing season is short and risky (figure 3.4). Again, Sweden turns out to be the most competitive of the Scandinavian countries due to the more favourable location of her main production areas. The average milk yield per cow in Finland, Norway and Sweden exceeds the average yield in the EC, and also the growth in milk yield in these countries has been more rapid than in the EC.

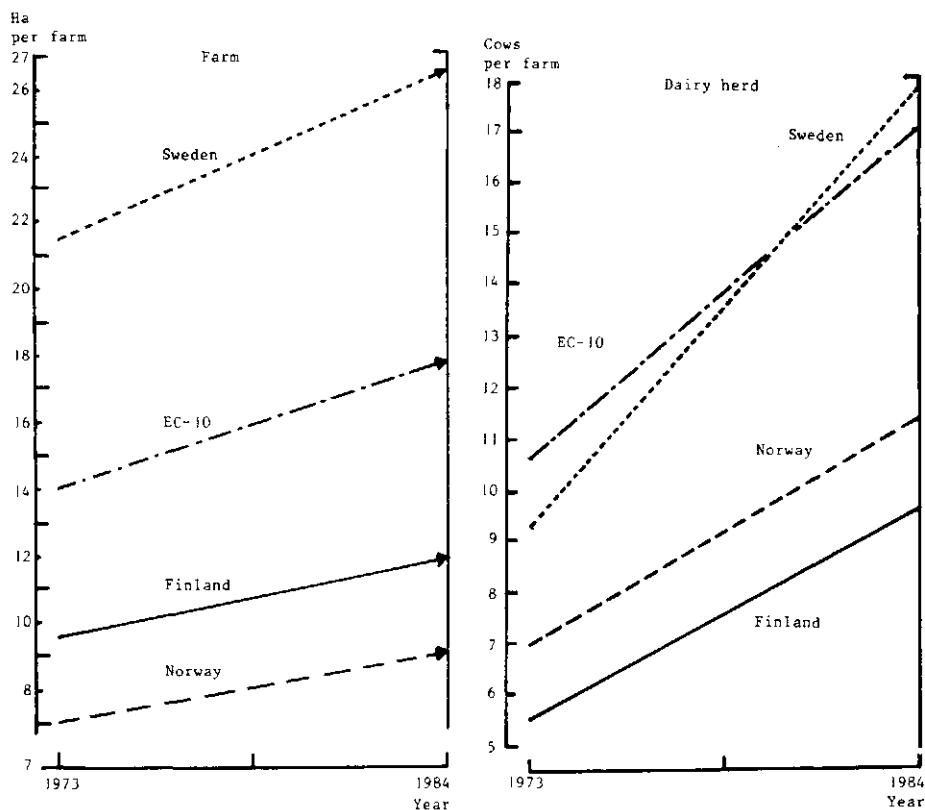


Figure 3.3 The average farm sizes and dairy herd sizes in 1973 and 1984

(The figures for Sweden concern farms over 2 hectares, for the EC and Finland farms over 1 hectare, and for Norway farms over 0.5 hectares. These differences do not remove the comparability of the sizes, because for instance in Finland the average size of farms over 2 ha is only 1 ha in excess over the average size of farms over 1 ha.)

Sources: Commission of the European Communities, 1987; Kettunen, 1987; Maatilahallitus, 1987; Statistiska Centralbyraen, Sverige: Statistiska Aersbok, various issues; Statistisk Sentralbyrae, Norge: Statistisk AErbok, various issues.

In the mutual comparison it would be more natural to put more weight on the labour-intensive and less risky livestock production in Scandinavia, while the EC would have a kind of mutual comparative advantage in arable production. However, on a world

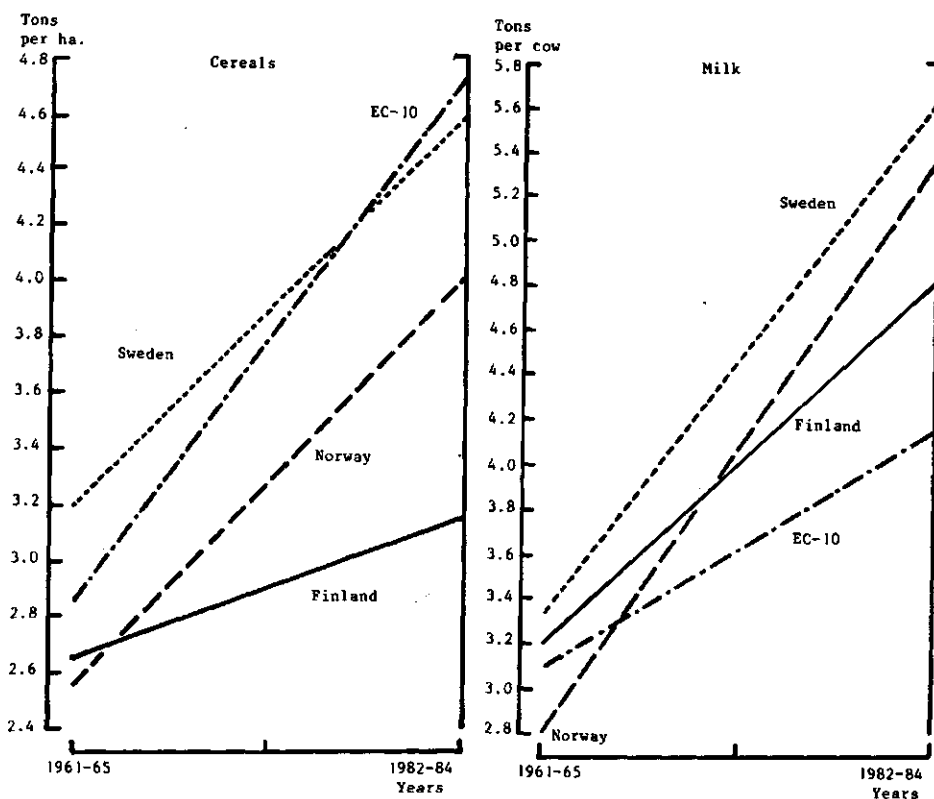


Figure 3.4 The average yield of cereals (the arithmetic average of wheat and barley) and of milk per cow between 1961-65 (average) and 1982-84 (average)

Source: Calculated from FAO Production Yearbook, issues 1976 and 1984.

scale neither of these groups is really competitive on the markets against traditionally exporting countries with a more favourable climate and farm structure and a lower general price level. As such, these more detailed considerations support the views of Hayami presented in the beginning: the grounds for intervention, regulation and protection in agriculture do exist also in these countries. These points are just some aspects of the farm problem, of the too low average productivity of the farm sector and the too slow adjustment of that sector. They do, however, comprise the basis for setting the policy goals and selecting the policy measures and the way to use them. And they do also give the starting point, against which the consequences of the policies, both national and international, can be judged.

3.1.2 Outline of the policies

The sought-after freer intra-European trade took a long leap forward in 1957, when the European Economic Community was established with the Treaty of Rome. The expected great economic advantages were the reason for the creation of a customs union: economies of scale in production, specialization and increased productivity, more efficient allocation of resources, lower production costs and improved competitive position in relation to third parties leading to an improved level of economic welfare for members of the union (Bowler, 1985). Although some hesitation existed, mainly because the national agricultural policies had to be abandoned, the EC was formed by the Six (Strijker, 1986). But agriculture was treated as a special problem in the Treaty of Rome, and working out the Common Agricultural Policy was delayed until the early the 1960s and was not completed, except for minor details, before 1968 (McCalla, 1969).

In 1973 the EC was enlarged with three new northern members: Denmark, Ireland and the United Kingdom. Before this the UK and Denmark were members of the EFTA, as the Scandinavian countries still are. Norway was also about to join the EC, but the membership was rejected in a referendum, mainly because of the EC's fisheries regime allowing free access for vessels of member states to each others' fishing grounds (Tracy, 1982). In 1981 Greece joined the EC, and it became the Ten.

The economic advantages of the customs union as such were also welcomed by the agricultural sector to solve the farm problem. The goals of the Common Agricultural Policy were stated in the Treaty of Rome, Article 39. They were goals for increased productivity and agricultural incomes, stabilized markets, guaranteed supplies and reasonable consumer prices; in fact goals, which are most important in the Scandinavian countries as well. At first the priority of the CAP was to establish the common market through the farm incomes, later on the EC followed a more market-oriented approach (Strijker, 1986). In the Scandinavian countries the farm incomes have always ranked high among the objectives, but as could be seen before, income parity is not obtained there either.

In some respects the goals and their weights do differ in these blocks, however. At first, in the Scandinavian countries the goal of "regular supplies" is more or less directly connected with a desired level of self-sufficiency in general or even per product. This has not been the case in the EC, where until recent years the income goal was dominating and the goal of increased production was more or less open-ended (BAE, 1985; Strijker, 1986).

The second difference is the regional character of Scandinavian agricultural policies. Much attention is given to those policy aspects that preserve the infrastructure and viabi-

lity of remote areas. This also partly explains why the farm structure and yield level in Finland and Norway are relatively unfavourable. As a matter of fact this also means that the Scandinavian policies are much more directed at manipulating the intra-sectoral income distribution. They also have more instruments for this purpose. The EC policy, instead, has been primarily global, not taking into account differences between farmers, sub-sectors and regions to the same extent as in Scandinavia.

A special goal for Norway has been to put a great effort into reclamation and cultivation of new land since the mid 1970s to raise the overall food self-sufficiency from about 36% in the early 1980s up to 44% by 1990. This is to lead to considerable increases especially in grain production in the less-favoured areas (Cohen, 1980).

Far more important for the external effects of the CAP, however, are the three pillars of the CAP:

- 1) free trade within the EC;
- 2) internal preference in trade;
- 3) joint financial responsibility.

Free internal trade and financial solidarity have enabled some small but efficient countries (like Benelux-countries, Denmark and in livestock products Ireland) to expand their production to levels impossible within their own national markets and financial resources. Internal preference can be expected to cause trade creation inside the EC and trade diversion in relation to external suppliers (Bowler, 1985).

The reason why the CAP has been described as so protectionist, originates in the way and measures through which the CAP was implemented. It has been argued that the CAP was more protectionist than the sum of previous national policies (e.g. BAE, 1985; Heidhues, et al., 1978; Koester, 1985). This happened because the high-price member countries wanted to retain high price levels to avoid farm income problems, because the protection of some product groups tended to spread Community-wide, and because supply-control of some exporting member countries was replaced by export stimulating policies to take advantage of the expanded internal markets (Heidhues, et al., 1978). Unfortunately, from the Scandinavian point of view, this increased protection affected the temperate zone agricultural products most of all (Harris et al., 1983). This increase in protection in the EC is shown in table 3.1, for total agriculture and for some important products. But, it should be kept in mind that the protection in Scandinavian countries was even higher because of their parallel policy goals and more disadvantaged production circumstances - this is shown by the Swedish figures, and the figures for Finland and Norway would still be higher. On average, the producer prices have tended to exceed border prices (as defined by the Nominal Rate of Protection) by 30% to 60%.

Table 3.1 *Nominal Rates of agricultural Protection (NRP) in the EC and in Sweden between 1955 and 1980, in %*

Year	1955	1960	1965	1970	1975	1980
EC *)	35	37	45	52	29	38
cereals	33	29	33	47	6	23
livestock prod.	34	37	48	52	40	42
beef	71	61	71	75	63	93
pork	29	31	44	21	19	13
milk	16	29	42	86	58	53
Sweden	34	44	50	65	43	59

*) The EC includes France, Germany, Italy and the Netherlands in 1955-70, plus Denmark and the United Kingdom in 1975-80. The total is a weighted average of 12 commodities.

Source: Anderson and Hayami, 1986.

The protection is realized by keeping the internal prices above external levels, in addition to this there are specific support measures for agriculture. The amount of support in PSE 1), was some 43% of the total receipts in the EC and some 56% in the Nordic countries (including also Iceland and Switzerland) by 1980. The bulk of the support is for the dairy sector, both in the EC and in Scandinavia (OECD, 1987b).

However, the real prices received by farmers have tended to decline in these countries since the early 1970s, as shown in figure 3.5. This increase in cost price has put forward additional pressure to keep up the producer prices.

Careful interpretation of the basic data shows that in recent years the agricultural prices have retained their levels better in the EC than in Scandinavia, especially where the crops are concerned. This is the most remarkable feature of the use of agricultural policy measures concerning national issues in these countries: the prices are not used to control production, because of the conflict with the farm income goal.

The essential criticism against the EC and the Scandinavian countries as "flagships" of protectionism is based on the protected agricultural market and the accompanying trade measures. The national markets are balanced through intervention buying, storage and import/export arrangements. The charges against the EC are especially based on its import regulations.

- 1) The Producer Subsidy Equivalent (PSE) describes the total amount of support to agriculture, including the difference of domestic and world market prices as support, plus direct payments to agriculture (net).

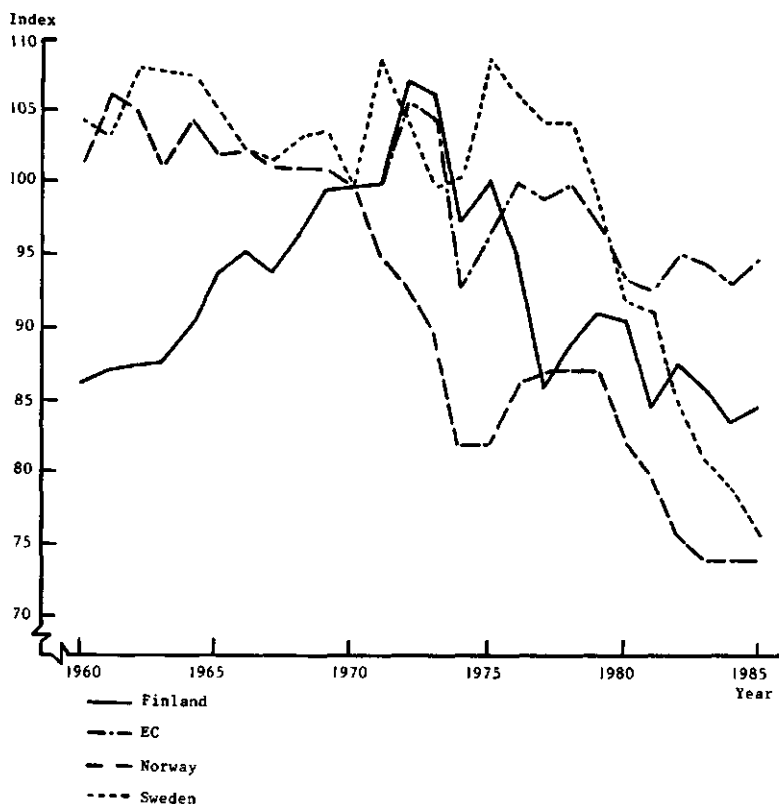


Figure 3.5 *The ratio of producer prices to input prices in agriculture between 1960 (1970 for the EC) and 1985 as index numbers (1970=100) (The index series are not fully comparable due to slightly different bases and linking of time series. The EC-9 in 1970-80, the EC-10 in 1981-85)*

Sources: Commission of the European Communities, 1987; Eurostat, 1976, 1978, 1981; FAO Production Yearbook 1968, 1976, 1978; Kettunen, 1987a; MTTL, 1985; Statistisk Sentralbyrae, Norge, 1978; Statistisk Sentralbyrae, Norge, Statistisk AErbok 1982.

The type and level of frontier protection is adjusted according to the importance a product is felt to have for the EC's domestic producers. The temperate products (cereals, dairy products, meat, sugar and some Mediterranean products), which traditionally have been the core of the CAP, are under the strongest import restrictions, mostly import levies. The bulk of domestic and export regulations and support measures also apply

to these products, with the distinction that surplus sugar has tended to be exported, whereas the surplus of dairy products has tended to be added to intervention stocks or disposed of domestically in various sub-markets at lower prices. This has saturated the EC-markets at least with dairy products. From an external point of view the variable import levies have made it impossible to enter the EC-markets at prices below the administrative threshold price, which means absolute administered protection (BAE, 1985; Harris, et al., 1983).

The products subject to intermediate import regulations in the EC include wine, fruit and vegetables, for which ad valorem duties with minimum import prices are normally used. For the rest of the products covered by the CAP an ad valorem duty is supposed to be enough in most cases (e.g. oilseeds, agricultural raw materials) (Harris, et al., 1983).

These measures are also known in Scandinavia, where the Norwegian scale of import restriction methods can be described as the strongest, and the Swedish one as the most liberal. This dif-

Product	EC	Finland	Norway	Sweden
Imports:				
Dairy	Iv, T	Q, Ld, Iv	B, Q, Ld, I, D	Iv
Meat	Q, Iv, D, Sp+Is	Iv	B, Ld, I	L, Iv
Cereals	Iv, T	Ld, Iv, D, M	I, D, M	L, I, D
Sugar	Iv, T	Ld, Iv, D	D	La, I
Exports:				
Dairy	E	E, A	E, A	E, A
Meat	E	E, A	E, A	E, A
Cereals	E	E, M	M	E
Sugar	E	E		

Figure 3.6 A schematic list *) of the main border measures by products (The list may not be complete and indicates only the variety of measures used without priorities)

Sources: Anon. 1984b, 1985a, 1985b; BAE, 1985; Bowler, 1985; Cohen, 1980, 1982; Ministry of agriculture, Norway, 1983; OECD, 1974, 1975a, 1975b, 1987b.

*) Codes: B = Import ban
Q = Import quota
L = Import licence
I = Import levy
D = Customs duty
M = State monopoly trading
Sp = Sluice-gate price
T = Threshold price
E = Export subsidy
A = Agreement in exports
v = variable
d = discretionary
a = automatic
s = supplementary

ference is in line with the differences in competitiveness, in farm structures and yields (chapter 2.1.1). The incidence of Non-Tariff Barriers (NTBs) is largest in Finland, however, where almost half the value of agricultural imports was subject to NTBs in 1983 - compared with 33% in Norway and 40% in the Community. Surplus products are exported with the aid of export subsidies or restitutions (as they are called in the EC). Also some special agreements are used in exports.

These border measures used in imports and exports for some important temperate zone products are summarized in figure 3.6. It gives an impression of how important protection is in each country and it also gives a clue to the effects of this protection (by the necessity of export measures).

3.1.3 Outcome of the policies

The outcome of these policies and policy measures can now be compared with the goals of, for instance, the CAP. The goal of productivity increases and reasonable consumer prices has been reached to a fair extent. A reasonable farm income has not been reached in most countries. Norway, with plenty of oil-dollars since the 1970s, is the only exception. The large and efficient producers have benefitted most from the price support measures and this stimulated the production strongly (BAE, 1985; OECD, 1987b). So, the production increased faster than effective demand, self-sufficiency increased, and the situation has turned to overproduction of most temperate zone products in these countries (in Norway however, only of some livestock products). This implies that the goal of guaranteed supplies has well been reached, but markets are not stable. A critical aspect of the CAP is that the support measures have favoured the temperate zone commodities produced in the north of the EC rather than the Mediterranean products (BAE, 1985). The high prices have also been very advantageous for the efficient northern producers in the EC, where the level of productivity is not comparable with that in more southern member countries (figure 3.2). The result is a very similar structure of production and surpluses in the northern countries of the EC and Scandinavia.

These developments of overproduction are illustrated in table 3.2 by means of the self-sufficiency ratios for some products (for details, see annex 2) since the birth of the CAP. In the early 1980s the EC had massive surpluses of sugar, many dairy products and some cereals (wheat and barley). The situation has changed remarkably since the early 1960s. Among the Scandinavian countries the situation is worst in Finland with a large overproduction of dairy products, meat, coarse grains and eggs. In Sweden the surpluses are relatively smaller and consist mainly of cereals, meat and some dairy products. The only remarkable surplus sector in Norway is dairy produce. On the other hand there is a large shortage of domestic cereals and no domestic sugar production at all in Norway.

Table 3.2 Self-sufficiency ratios of some products in 1960-64 (A) and in 1980-84 (B), production volume as a percentage of consumption volume per period

Product	EC-9		Finland		Norway		Sweden	
	A	B	A	B	A	B	A	B
Cereals	71	94	91	103	52	68	104	122
Sugar	80	136	28	61	0	0	78	96
Meat	94	101	98	112	109	100	105	113
Cheese	96	98	220	196	140	136	95	94
Butter	79	126	124	132	143	120	116	124
Eggs	97	103	124	155	100	101	106	107

Source: Annex 2.

Before turning to trade issues, the costs of these policies will be reviewed. The budgetary problem in the EC has changed structurally as the import levies have maintained their level, but costs of balancing the markets have quadrupled during a decade (Meester, 1984). Still, the budget costs related to agriculture in the EC and Sweden are relatively much smaller than in Norway or Finland as shown in table 3.3. The agricultural costs comprise some 2% of the GDP in Finland and Norway, but only just over half a per cent in the EC and in Sweden. If one tries to also take into account the national contributions to agriculture (as approximated by the Commission, 1984), the GDP-share in the EC would be some 1.5 per cents. In the consumer expenditures the share of food in these countries is about one fifth on average, which can be described as normal.

Table 3.3 Cost indicators of agricultural policy

	CE *)	SB *)	GDP *)
EC	14-35	0.3-1.8	0.7
Finland	20	7.8	2.2
Norway	21	8.3	2.0
Sweden	19	1.3	0.6

*) CE = The share of food in consumption expenditures in 1984

SB = The share of agriculture in total state budget 1985; the EC refers to EC-6 in 1983

GDP = The share of agricultural budget in GDP in 1985; the EC refers to EAGGF-expenditures.

Sources: Anon. 1986; Commission of European Communities, 1987; IMF, 1986; OECD, 1987d; Statistiska Centralbyraen, Sverige: Stat. AErskbok; Statistisk Sentralbyrae, Norge: Statistisk AErskbok.

The increased self-sufficiency and surpluses have caused trade changes in these countries. At first, the relative importance of agricultural imports has tended to decline, whereas the relative importance of agricultural exports has been maintained or increased - with the exception of Norway because of her rapidly expanding oil economy. In general, the share of agriculture in total trade is still marginal and relatively smaller

The other effect is the change in the structure of agricultural trade. In imports the main product group these days is tropical products (fruit, coffee etc.), whereas in the past these countries used to import more temperate zone products. Now however, they export these products in great quantities. A notable exception is the dominance of fish products in the Norwegian agro-food exports, as shown in figure 3.8 (definition of agro-food trade is given in annex 11).

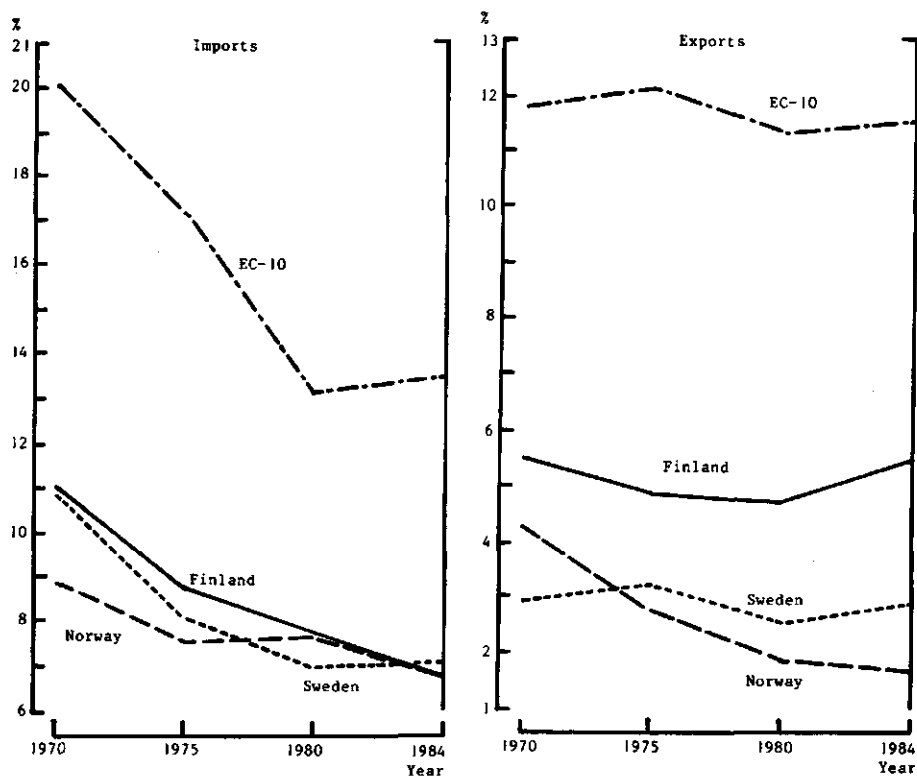


Figure 3.7 The percentage share of agriculture in total merchandise trade value in 1970-84

Source: Calculated from FAO Trade Yearbook, various issues.

A third notable impact is the change in the agro-food trade balance in these countries. When the total agro-food trade is considered, Norway - surprisingly - is the only net exporter: the steadily increased self-sufficiency has gradually balanced the trade. In 1985 the trade balance of Norway was about 30% positive, whereas the balances of the EC and Finland were some 10% to 15% negative, and the balance of Sweden was even more than 50% negative, calculated as exports value (f.o.b.) as a percentage of imports value (c.i.f.).

When only the temperate zone products (i.e. live animals, meat, dairy products, cereals and sugar) are considered, the situation is very different however. Finland scores the highest relative net exports, with an export value of more than five times the value of imports in 1984. For Sweden this ratio is about 2, for the EC about 1.2, and for Norway only about 0.4. This means that Norway is a great importer of temperate zone products, as the self-sufficiency figures already indicated. The development of these trade balances is given in figure 3.9.

The EC's transition from a major importer of temperate zone agricultural products to a large net exporter (as also indicated above) has been described as one of the main developments in the global agricultural trade since the early 1970s (e.g. BAE, 1985). This phenomenon is very clear in cereals, sugar, beef and dairy products. The EC nowadays is the largest exporter in the world for butter, milk powder, condensed milk, cheese, egg products, poultry meat and wheat flour. It also exports almost as much sugar as Cuba and more beef than the "traditional" exporters Argentina and Australia (Commission, 1987).

However, there is a fundamental difference between the EC and Scandinavian countries with respect to their trade volume in temperate zone products. The production volumes of Scandinavian countries comprise only 1% to 4% of the EC production volumes for most common products (see annex 3). But from FAO data it can be calculated that the value of EC surpluses in temperate zone products is some 20 to 30 times higher than the value of surpluses in Finland or Sweden in the mid 1980s. Furthermore, the share of the EC in the agricultural world trade nowadays is about 35%; the Scandinavian share is some 1% - 2%. This implies that the EC position on the markets is not comparable with the position of Scandinavian countries, in accordance with the role of big and small countries in the theory of trade.

The result of these developments has been that in the 1980s these parties meet at the same export markets with mainly similar products. Both parties place a great majority of their exports on the markets of developed market economies (roughly 3/4); developing market economies and centrally planned economies (not for Finland) are only marginal export destinations (United States 1986a and national statistics). The build-up of the surpluses has resulted in an increased export orientation of these countries in the 1980s, whereas the trend in the world as a whole has been

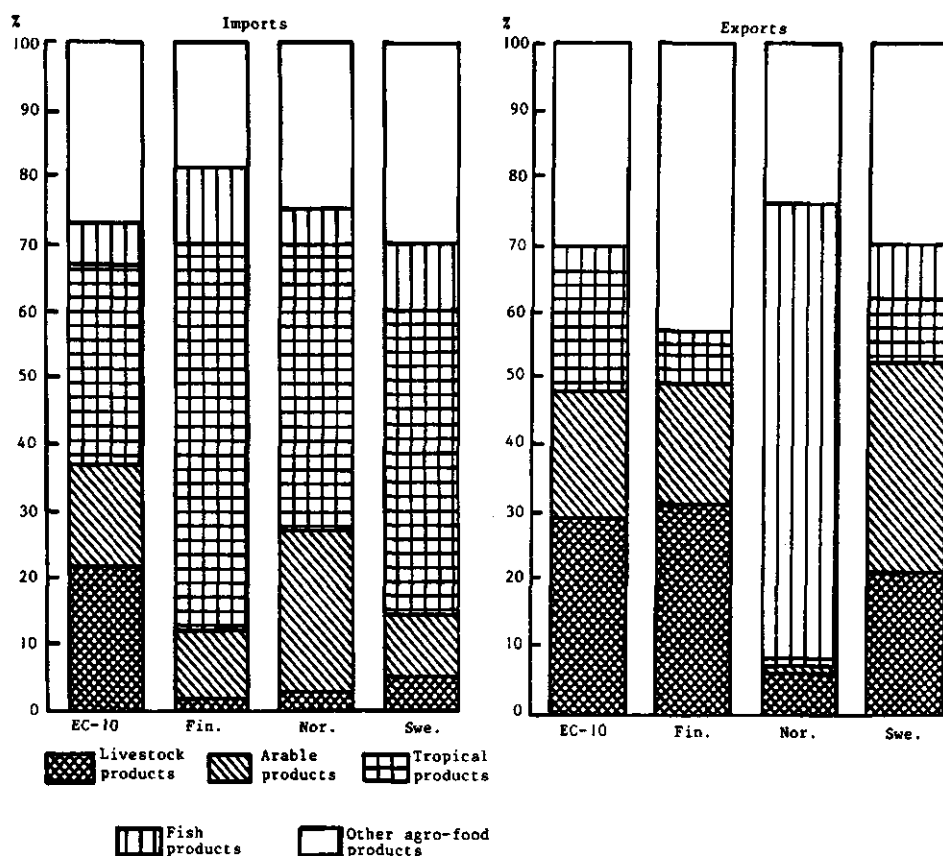


Figure 3.8 The percentage value structures of agro-food imports and exports in 1985

Sources: Eurostat/LEI; Annex 6.

vice versa (FAO Trade Yearbook, various issues). The concomitant increase in competition on disturbed export markets is likely to have some effects on Scandinavia, too.

These effects become even more evident, when the importance of the EC as a trading partner of the Scandinavian countries is considered. In 1985 the EC had a share of 20% to 40% in the value of agro-food trade of Scandinavia; the intra-Scandinavian share ranged between 2% to 15% (national statistical yearbooks). The power of the EC is also felt in the north.

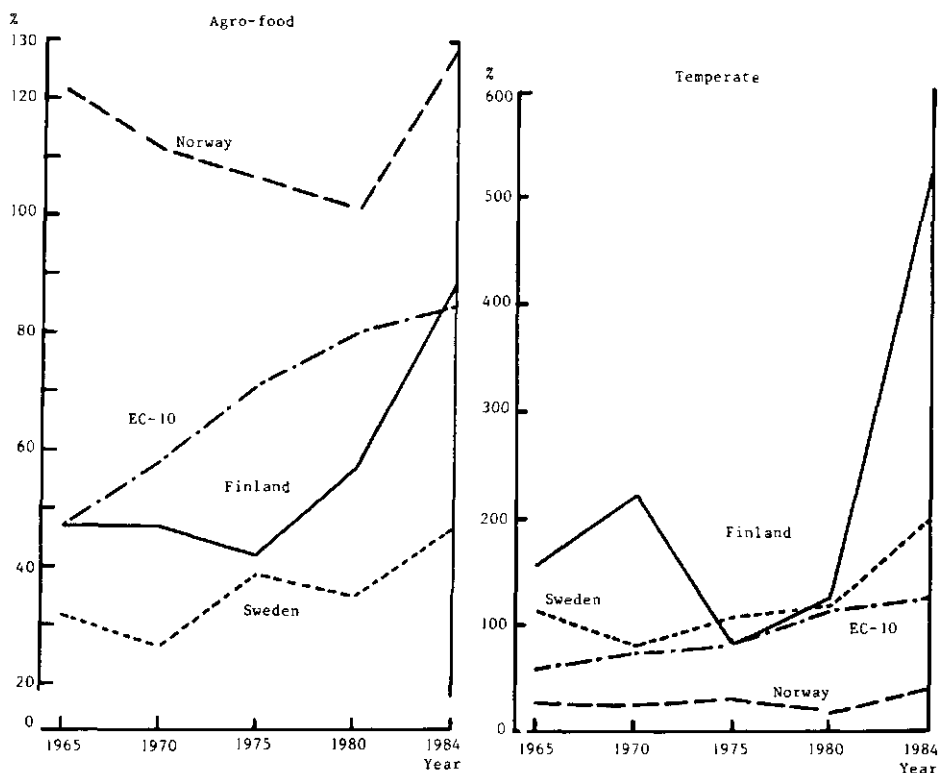


Figure 3.9 The agro-food and temperate zone agricultural products trade balances in 1965-84/85, exports value as a percentage of imports value

Source: Calculated from FAO Trade Yearbook, various issues.

3.2 Spill-over effects of EC agricultural policy in perspective

Bearing in mind all the above considerations, it is logical to conclude that the EC policy choice is by no means optimal (Meester, 1984; Strijker, 1986). When the EC was a net importer of temperate zone products the import levy system did function satisfactorily, as the levies contributed to the financing of temporary exports. Import-substitution (increased self-sufficiency) reduced the levy revenues, but the levy per unit increased as the price gap increased in imports (indicated e.g. by NRP-coefficient). When the EC became a net exporter, an export subsidy was required to bridge the price gap. This resulted in an increased price gap and volume of exports. Market intervention in the EC got a more permanent character and gradually the limit of

the EC budget and the absorption limit of the world market were reached. A change in EC policy has become inevitable. This change in policy comes very late as in third countries the effects of the EC policy have been felt for a long time already.

An interesting point is that this kind of trade distorting policy is against the principles of the CAP itself. In Article 110 of the Treaty of Rome a goal is laid down to support the harmonious development of world trade (Bowler, 1985). A more public arena of criticism against the CAP has been the GATT (General Agreement on Tariffs and Trade) and related Multilateral Trade Negotiations. According to the GATT Article XI the quantitative import restrictions should be eliminated. This places a heavier burden on the Scandinavian countries than on the EC (see chapter 3.1.2).

However, when export subsidies are concerned the EC is more to blame than the Scandinavian countries. Given that both parties subsidize domestic temperate zone agricultural surplus production to a high degree, the main distinction between them can be found in Article XVI of the GATT. There a ban is laid down on using export subsidies in a way "which results in that contracting party having more than an equitable share of world export trade in that product" when a previous representative period and any special factors are taken into consideration. Without doubt the EC share in temperate zone agricultural products is not equitable any more, even though the GATT treaty does not state precisely the notion of "equitable share", "representative period" or "special factors".

4. Trade effects of the EC agricultural policy

4.1 General effects

Some evidence of the trade creation effect of the CAP can be found in the rapid increase in internal trade: between 1958 and 1977 the internal trade has increased tenfold: considerably more than the internal production growth.

From the external point of view, however, the trade diversion effect of the CAP is more important. The share of internal imports has increased continuously in the EC at the expense of external suppliers and around the mid 1970s the value of internal

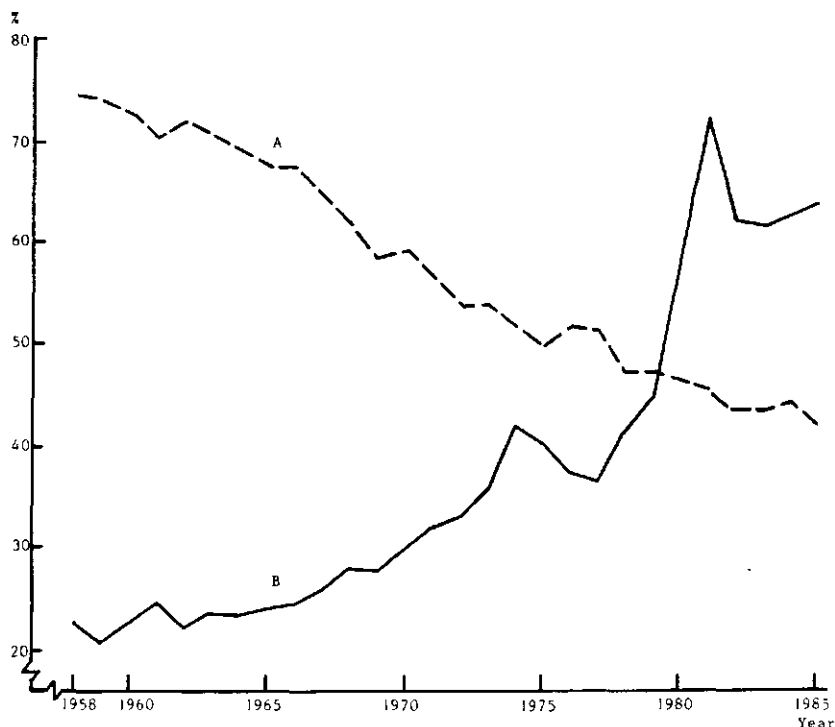


Figure 4.1 External food imports as a percentage of total food imports (A), and external food exports as a percentage of external food imports (B) in 1958-1985, based on current ECU-values

Source: Annex 4.

food imports passed the value of external food imports. The share of external food imports has declined from over 70% to 40% since the CAP was established (figure 4.1).

At the same time the ratio between external food exports and external food imports has grown from about 20% to 60% (figure 4.1). This implies that exporting third countries meet with increased competition from the EC on EC-markets, on their domestic markets and on the markets of other importing countries.

The figure clearly shows that the protection and internal preference regimes have been effective. As the rate of protection (table 3.1) as well as the means of import restrictions (figure 3.6) do differ per product, the trade diversion effect also varies for the various products. As can be expected, the most dramatic diversion takes place in imports of temperate zone agricultural products. Some 50% to 90% of the import volume of these

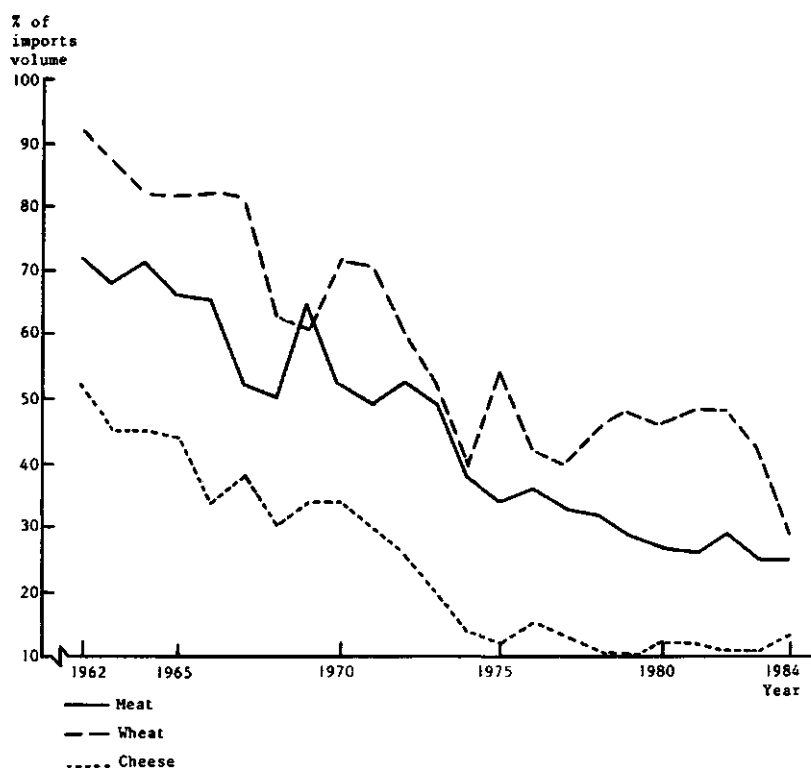


Figure 4.2 *External imports of some temperate zone agricultural products as a percentage of total imports of the EC in 1962-84, based on quantities*

Source: Annex 5.

products came from outside the Community in 1962 when the first regulations were introduced; in 1984 the respective shares amounted to only some 10% to 30%. This effect of the CAP is shown for some products in figure 4.2 (some more products are covered in the list of annex 5).

There are two important exceptions to this trade diversion, namely the cereal substitutes and the preferential trade arrangements. Cereal substitutes and stock-feeding supplements like manioc and corn gluten enter the EC either duty-free or at a low rate of duty. This has resulted in large imports of these products, notably in Northern European member countries of the EC, with a highly positive effect on production in especially the Netherlands. The substitution effect also increases the surplus of cereals in the EC (BAE, 1985). This has decreased the relative competitiveness of the Scandinavian producers.

In general, the trade concessions of the EC are preferential to developing countries, which means that in these cases the Scandinavian disadvantage at the EC-markets is institutionalized. The special concession for New Zealand in butter exports to the United Kingdom can also be seen as negative for Scandinavian exporters. Apart from these schemes other trade arrangements of the EC member countries have also influenced the size of the markets open for Scandinavian exports.

The Scandinavian arrangements mostly concern trans-ocean markets or are working within the EFTA-frame, but Finland has a special long-term trade agreement with the Soviet Union. Each of the Scandinavian countries still enjoys a preferential trade position in respect to the EC: Finland and Norway in cheese and Sweden in meat. However, in general agricultural products are excluded from free trade both within EFTA and within the bilateral free trade agreements of these countries and the EC. As such, the exceptions are small.

The price depressing effects of the CAP have been examined widely by simulating the outcomes of EC trade liberalization (in various forms and degrees). Most trade models suggest this effect to be between 3% to 16% in cereals and sugar, and between 9% and 30% in most livestock products (Anderson and Tyers, 1984; Koester and Bale, 1980; Sampson and Snape, 1980; Schmitz, 1983). An extensive IIASA-model (1986) supports these results: the effect was estimated to be 6% to 7% on prices of cereals (in 1990), and 5% to 19% on livestock product prices. For the agricultural products as a whole the price would go up by 6.2% if the EC trade were liberalized.

Trade liberalization by the EC would also decrease world market price instability: according to the findings of Schmitz (1983) the price variability would be reduced by 10% in wheat, by 16% in sugar, by 12% in beef, and by 25% in butter.

Although the impact of Scandinavian protection and surpluses runs parallel to that of the EC, its size is still much smaller. This can be seen, for instance, in the study by the OECD (1987b).

4.2 Trade effects on Finland

The share of EC-10 in agro-food imports (for definition, see annex 11) of Finland has increased from 13% in 1960 to 23% in 1985, but there has been a large variation in the imports share of the EC. The share of the Continental Community has increased steadily from 9% to 14% during the period, and also the British share in imports has increased (from 2% to 5%). Instead, the share of Denmark has remained at 3% to 5%. These developments are illustrated in figure 4.3 1). The commodity structure of Finnish agro-food trade is given in annex 6.

Also the shares of EFTA-countries and the United States have tended to increase, whereas the main "loser" of markets has been the Soviet Union (see annex 7). Relatively, the penetration of the EC into the Finnish markets has been somewhat less distinctive than the increase in intra-EFTA trade in this case.

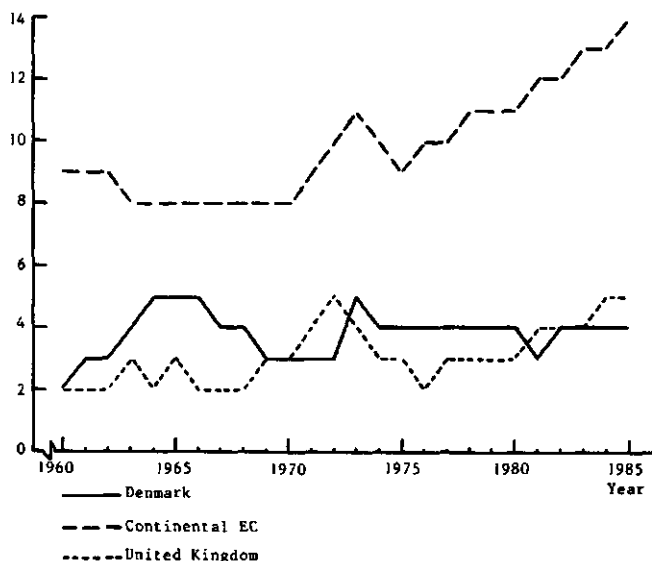


Figure 4.3 The shares of EC-countries in total agro-food imports of Finland in 1960-85, based on current FMk-values

Source: Tullihallitus: Ulkomaankauppa I A, various issues.

- 1) All the trade shares used in this study ignore the shares of Ireland up to 1973 and of Greece up to 1981 for statistical reasons. However, these shares are very small and quite similar in all these countries and therefore do not limit comparability or interpretation of the results.

In the total agro-food exports of Finland the developments with respect to the EC are very clear. Finland used to place some 65% of her agro-food exports on the EC-market in 1960 before the CAP; the share in 1985 was only some 22%. The share of the Continental EC did not decline remarkably before the 1980s, whereas exports to the United Kingdom did collapse when its membership was established in 1973. Surprisingly, the exports share of Denmark has increased slightly from 1% to 3% over the period (see figure 4.4).

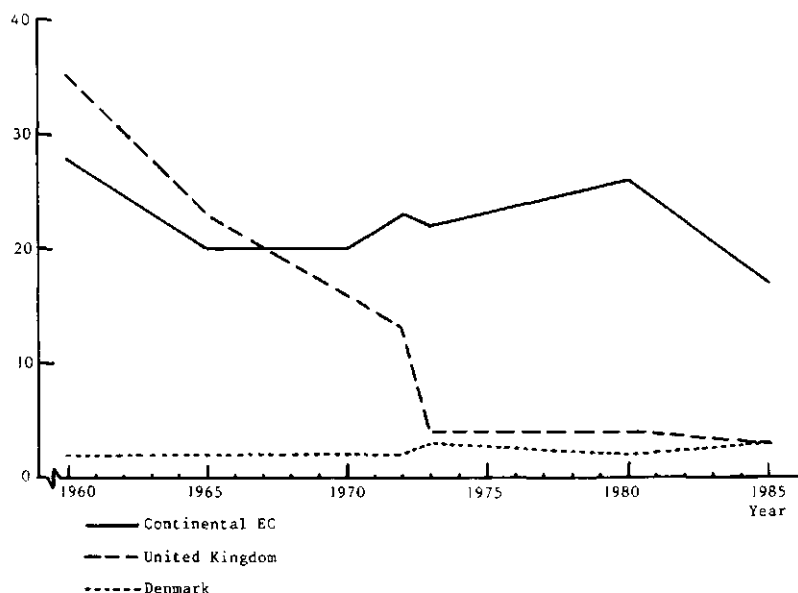


Figure 4.4 The shares of EC-countries in total agro-food exports of Finland in 1960-85, based on current FMk-values

Source: Tullihallitus: Ulkomaankauppa I A, various issues.

In reaction to the gradual closure of EC-markets Finland increased its exports to EFTA-countries (mainly Norway and Sweden) and to the Soviet Union in the 1960s, whereas in the 1970s and 1980s an increasing share of the exports is placed on trans-ocean markets (see annex 7).

No doubt, the closure of the British food markets in 1973 was shocking for Finland, which had exported a lot of dairy products to the open commercial food markets of the world (Knox, 1986). When the UK joined the EC, Finland saw one of her main markets closed: the value of agro-food exports declined by more than 75% in 1972-73 in real terms, as shown in figure 4.5.

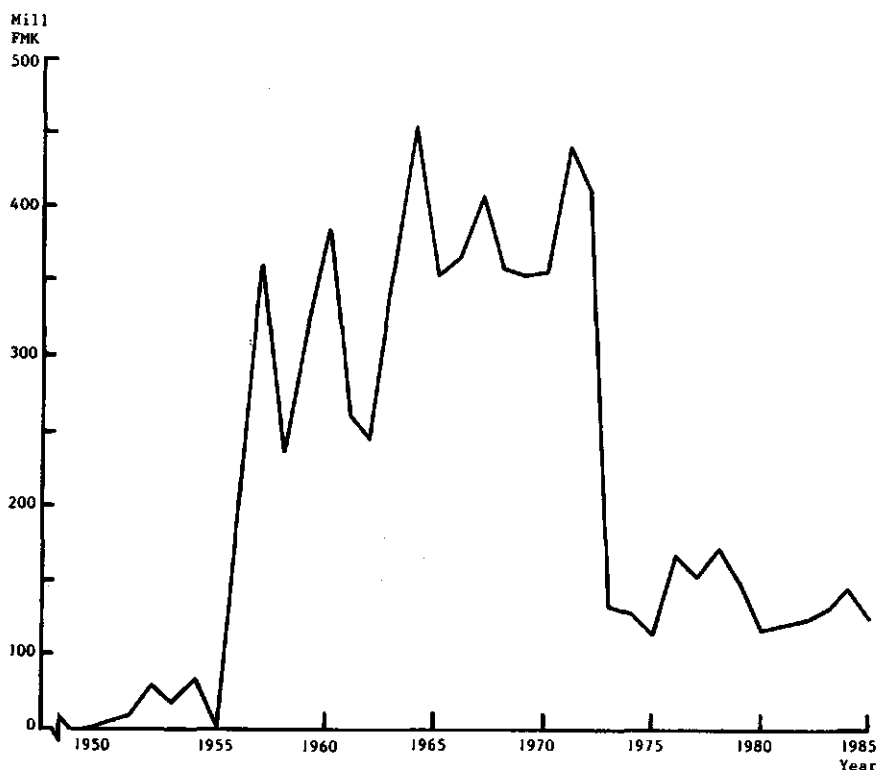


Figure 4.5 *The value of Finnish agro-food exports to the United Kingdom in 1950-85, at constant 1982 prices in mill. Fmk (Deflated by the price index of food exports)*

Sources: Kotilainen, 1985.

Tilastokeskus: Suomen tilastollinen vuosik. 1987.

Dairy exports were very important to Finland during the early days of the CAP: it constituted even two thirds of agro-food exports in the early 1960s, and still one third when the UK joined the EC (see annex 6). In this context, the decrease in exports to EC-markets put a strong pressure on Finnish dairy exports - and the dairy markets of the EC did close in the course of the CAP-creation. In 1960 the share of the EC was still 76%, in 1970 38%, in 1980 21% and in 1985 only 18%. In the early 1960s the destination of almost one half of the dairy exports of Finland was the United Kingdom - in 1973 the share was only 1.3% and has remained below 1% ever since.

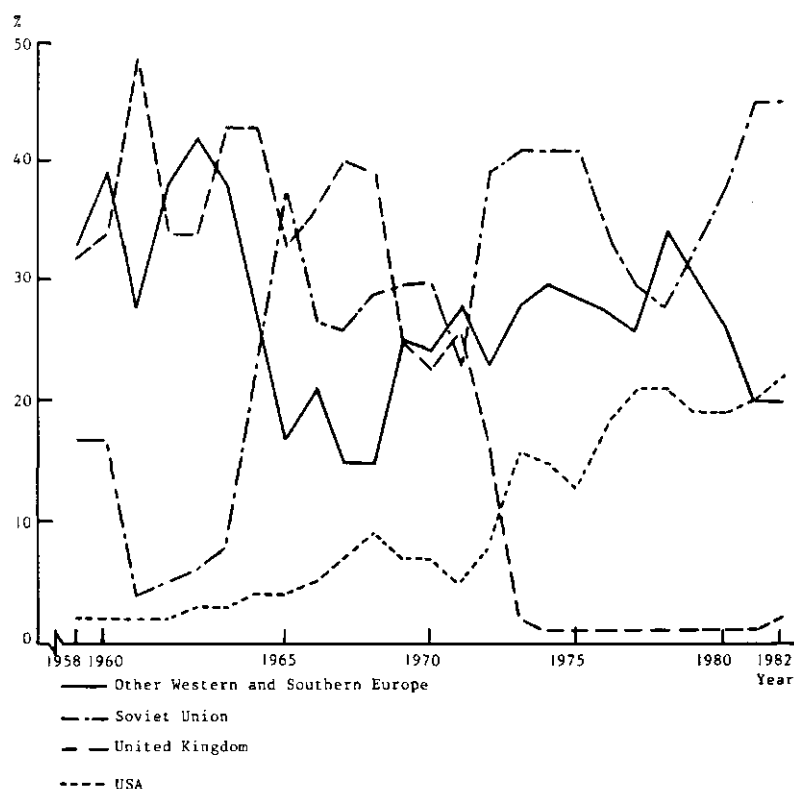


Figure 4.6 *The shares of some countries/country groups in total dairy products exports value of Finland in 1958-82, based on current FMk-values*

Source: Tullihallitus: Ulkomaankauppa I A, various issues.

The reason why Finland has managed to preserve some market share in the EC, is a mutual agreement on export quota for cheese. The quota in the mid 1980s is 7,750 tons (Anon., 1987). The lost EC-markets were replaced by increased exports to the Soviet Union in the 1960s, whereas exports to the British market were replaced by increased exports to the United States (a cheese quota of 10,500 tons).

4.3 Trade effects on Norway

The influence of the EC's increased need to export is more evident in Norwegian than in Finnish agro-food imports. The share of the whole EC in Norwegian markets has increased from 19% in 1960 to 34% in 1985, and the major shift did happen in the 1960s as the first CAP-regulations were introduced. The share of both

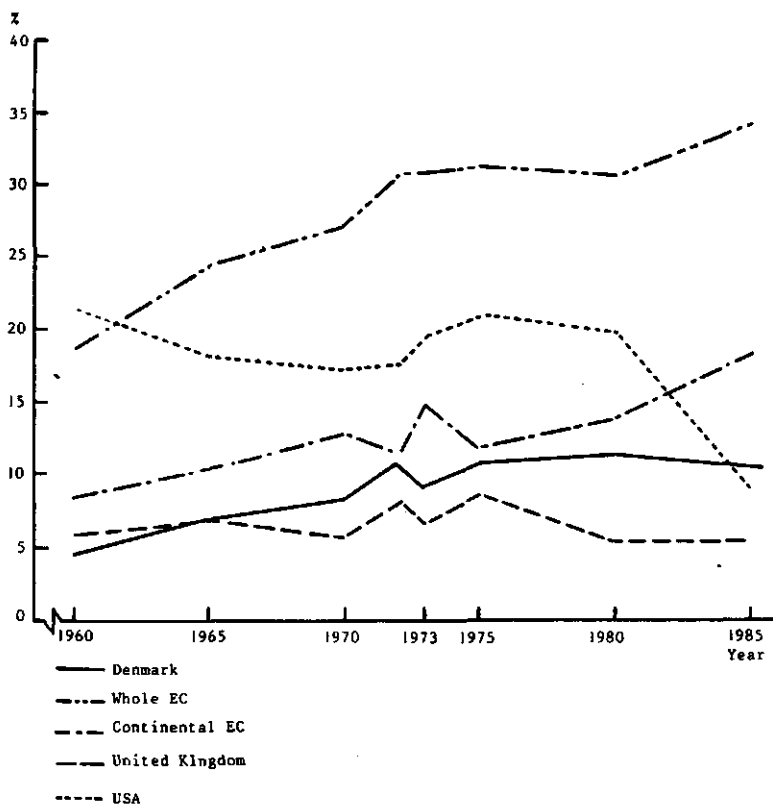


Figure 4.7 The shares of EC-countries in total agro-food imports of Norway in 1960-85, based on current NKr-values

Source: Statistisk Sentralbyrae, Norway: Statistisk AErbok, various issues.

the Continental Community and Denmark have increased, the former from 8% to 18%, the latter from 5% to 11%. The United Kingdom has had a stable share of 5%, as shown in figure 4.7. The commodity structure of Norwegian agro-food trade is given in annex 6.

The strengthened market position of European exporters (EC and EFTA) on Norwegian markets decreased the share of the United States from 21% to 9% over the period (see annex 7).

The two most important temperate zone commodities that Norway has imported continuously are cereals and sugar (annex 6). Cereals have been imported mainly from the American, Swedish and EC-markets. The increase in the share of The Six from about 4% in 1960-61 to about 20% in the late 1960s can be seen in the context of the introduced regulations for cereals. The United Kingdom and Denmark have both increased their shares too after the membership in 1973. Sweden and the United States have both lost some market shares especially in the early 1980s, when the EC as a whole has increased its share to over 40%. The western European share has increased from 11% to 67% over the period.

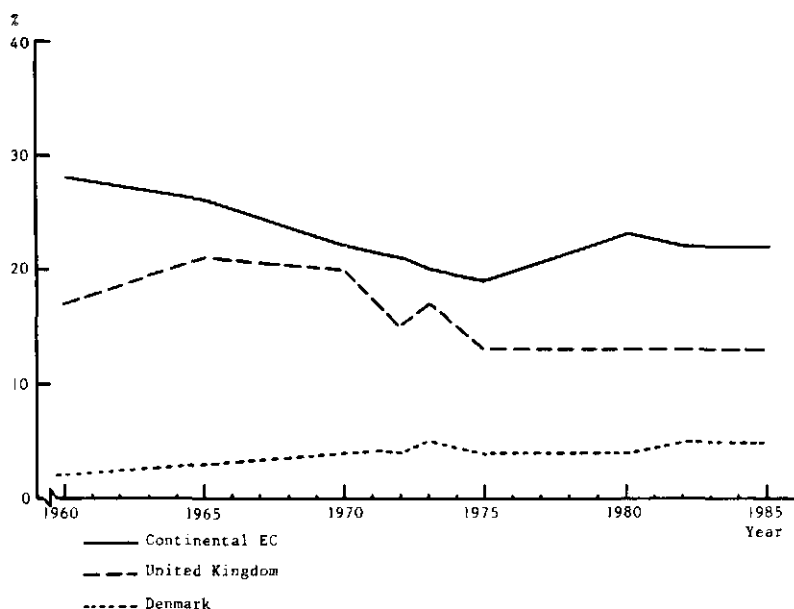


Figure 4.8 *The shares of EC-countries in total agro-food exports of Norway in 1960-85, based on current Nkr-values*

Source: Statistisk Sentralbyrae, Norway: Statistisk AErbok, various issues.

Norway has also imported her sugar increasingly from Western Europe. The share of the Continental Community has doubled from under 10% to 20% over the period. British exporters have lost market shares from about 40% to under 20%, whereas Denmark has taken over the markets with an increase in share from some 10% to

40%. As a whole, the EC-share has increased from 55% to 79%, again in line with the increased sugar surpluses and export efforts of the EC.

As to agro-food exports of Norway, the developments are totally different from those in Finland. The share of the whole EC has declined only slightly from 47% to 40% over the period. The Continental Community and the United Kingdom show a declining tendency, whereas the share of Denmark has increased (see figure 4.8).

The main compensation of the lost EC-markets is found on EFTA-markets in the 1960s and 1970s, and on Japanese markets in the 1980s (annex 7).

The reason for this less unfavourable position of Norway on EC-markets is due to the fish exports (with a share of more than 50%, see annex 6). The share of the whole EC has increased from 33% in 1960 to 46% in 1985. The shares of the Continental Community and Denmark have increased, whereas the British share has been quite stable (see figure 4.9).

Fishery products can be described as trade products of only marginal importance at Community-level, when compared with temperate zone products which are important for all member countries. This difference also shows up when comparing figure

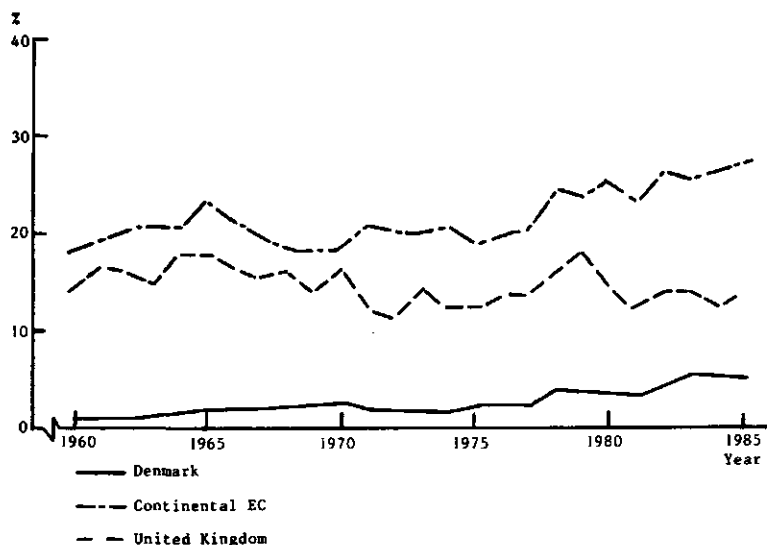


Figure 4.9 *The shares of EC-countries in total fish products exports value of Norway in 1960-85, based on current NKR-values*

Source: Statistisk Sentralbyrae, Norway: Statistisk AErbok, various issues.

4.9 with the following figure 4.10, in which the country structure of Norwegian exports of temperate zone products is given. In this sector the share of the Continental EC has declined from 39% to only 5% between 1960 and 1985. The influence of the entrance of new members in 1973 is identical with the Finnish experiences: negative for the exports to the United Kingdom (a drop from 41% to 5%), and positive for exports to Denmark (a rise from 1% to

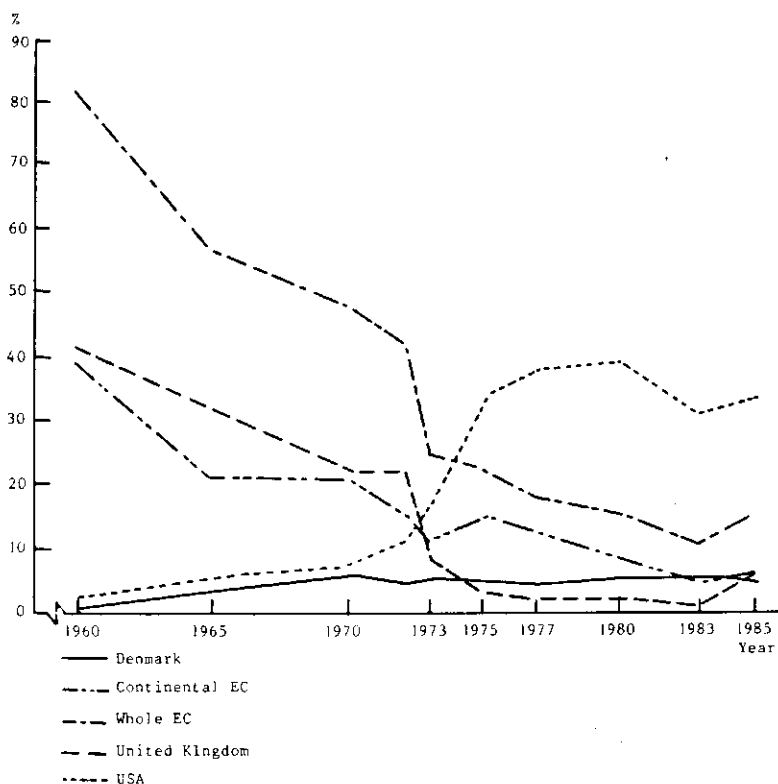


Figure 4.10 The shares of some countries/country groups in total temperate zone agricultural exports of Norway in 1960-85, based on current Nkr-values

Source: Statistisk Sentralbyrå, Norway: Statistisk AErbok, various issues.

4%). This trade diversion effect has pushed some 40% of the temperate zone Norwegian exports to the markets of the United States.

The only remarkable temperate zone surplus sector of Norway is dairy produce. Exports of these products increasingly had to be directed outside the EC-markets. In the early 1960s the share of the Continental Community was more than 40%, in 1965 13%, and in 1985 only 5%. Even more dramatic was the effect of the membership of the UK: in 1960 her share was 51%, but after the transition period after 1973 it was only 1% to 2%. As a whole, the share of the EC did drop from 89% to 9% over the period.

The bulk of the exports in this product group is cheese (90%), and with the help of a bilateral cheese arrangement with the United States, the American share in exports has increased from 3% in 1960-62 to about 50% in the 1980s. The effect of the bilateral arrangement with the EC can hardly be noticed in the statistics.

4.4 Trade effects on Sweden

The structure of the Swedish agro-food trade differs from Finnish and Norwegian structures. Cereals and sugar play only a marginal role in imports with a share of under 10%. Instead, the strategic decision of Sweden, to allow surpluses mainly in the grain sector, has contributed to a share in agro-food exports of 20% to 40% for cereals. The commodity structure of imports has also been very stable over the years, unlike in Finland or Norway.

The agricultural and trade policies of the EC have had their expected consequences on Swedish agro-food imports. The Continental Community has reached an import share of 22% in 1985, after a steady growth since the early 1970s. Denmark has lost some market share after leaving the EFTA and directing her exports increasingly to the EC-markets. The Danish share in 1985 was 10%. Still, the share of the whole EC has increased from 27% to 36% over the period (figure 4.11). The commodity structure of Swedish agro-food trade is given in annex 6.

Even though Sweden is more than self-sufficient in meat, the imports of meat products are quite considerable within the Scandinavian context (some 3% to 5% of agro-food imports). The most distinctive change in these import shares has been that the share of Denmark has dropped from 50% to 60% in the 1960s to around 20% in the 1980s. This is probably due to Denmark's access to the EC-markets, where Danish meat exports won some market shares from Italian exports, especially in Northern Germany. The Continental Community has increased its share since 1980, when the EC-9 became self-sufficient in meat. But still the share of the Continental Community is only some 10% in the early 1980s. These developments are illustrated in figure 4.12.

Fruit and vegetables are an example of "medium-regulated" products in the EC. The share of the Continental Community in Swedish imports has decreased slightly from about 30% in the

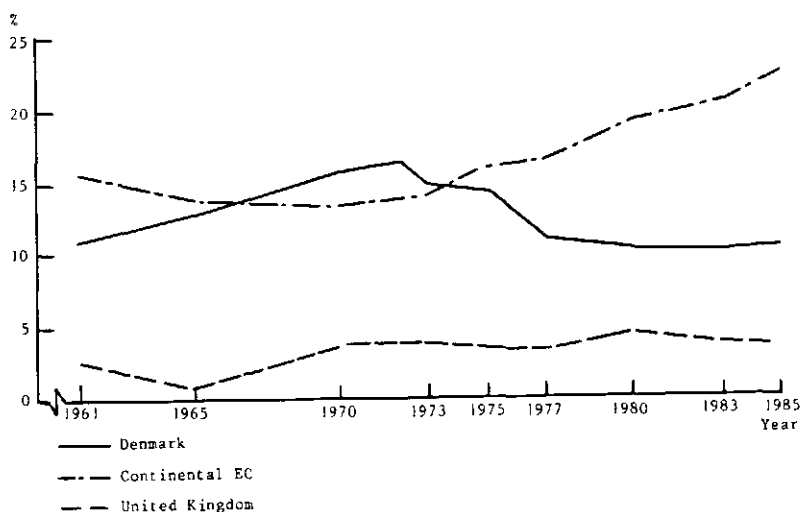


Figure 4.11 *The shares of EC-countries in total agro-food imports of Sweden in 1961-85, based on current SKr-values*

Source: Statistiska Centralbyraen, Sweden: Statistisk Åersbok, various issues.

early 1960s to 22%-25% in the 1980s. The share of the EC as a whole has decreased from about 32% to 28% over the period. This might be explained by quite "free competition" or by changed Swedish preferences not favouring the EC-products.

The development of Swedish agro-food exports to the Continental Community reveals a strong protection, with a drop in share from 35% to 20% between 1960 and 1985. The British share has dropped from about 17% in 1970-72 to 4%-5% in 1977-85. The share of Denmark, in turn, has increased continuously to 13% in 1985. The EC markets became more and more closed and the EC share in exports dropped from 62 to 36 per cents over the period, as shown in figure 4.13.

Since Sweden is the most important Scandinavian exporter of temperate zone products to the EC in the mid 1980s from both national (annex 6) and EC point of view (Eurostat/LEI), some product groups - meat, dairy products and cereals - in Swedish exports will be examined in more detail.

In the Swedish exports of meat, the share of the Continental Community was dominating in the mid 1960s, but collapsed from two-thirds in those days to one-tenth in 1976. Since then developments have been more favourable for Sweden, probably due to the beef arrangement with the EC (Anon. 1984a). The British markets were lost in two stages: a drop from a share of over 50%

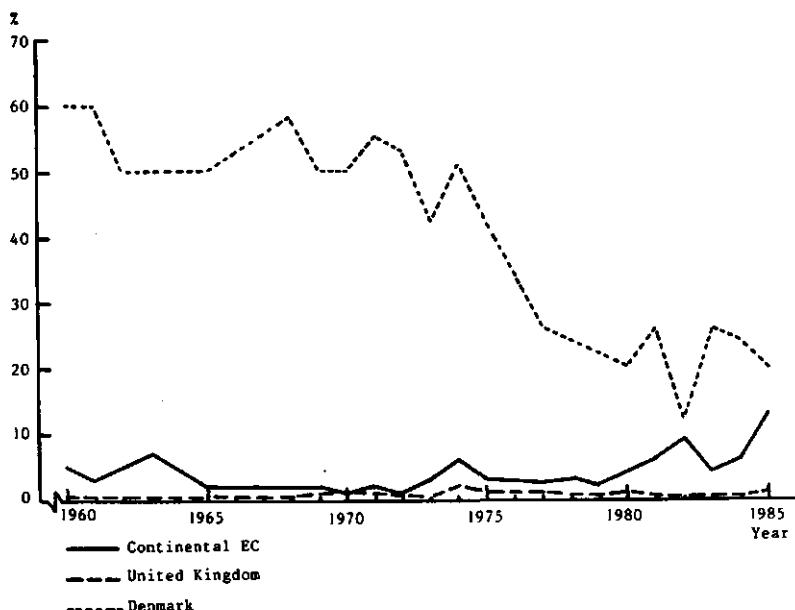


Figure 4.12 *The shares of EC-countries in the total meat products import value of Sweden in 1960-85, based on current SKr-values*

Source: Statistisk Centralbyråen, Sweden: Statistisk Åersbok, various issues.

in the early 1960s to just over 20% in the late 1960s, and gradually to a few per cents after the transition period of EC-membership. As a whole the share of the EC has decreased from 88% in 1960 to 45% in 1985. The most important new markets are Japan (with a share of even 30% to 40% in some years), and since 1984 also the United States.

In 1960 Sweden directed 61% of its dairy exports to EC-markets, whereas in 1985 this share was only 10%. The Continental markets became closed in the early 1960s, and the British markets in 1973.

More than half the strategic surpluses of Swedish cereals were exported to the Continental Community up to the year 1967. The share dropped to just over 30% between 1968 and 1975 and the last few years it fluctuated around 10%. When the effects of reduced export shares of the United Kingdom and Denmark are incorporated in these effects, the share of the whole EC has declined from 79%-85% in 1960-62 to 16%-20% in 1983-85. New export markets have been found in Norway, Poland and the Soviet Union (figure 4.14).

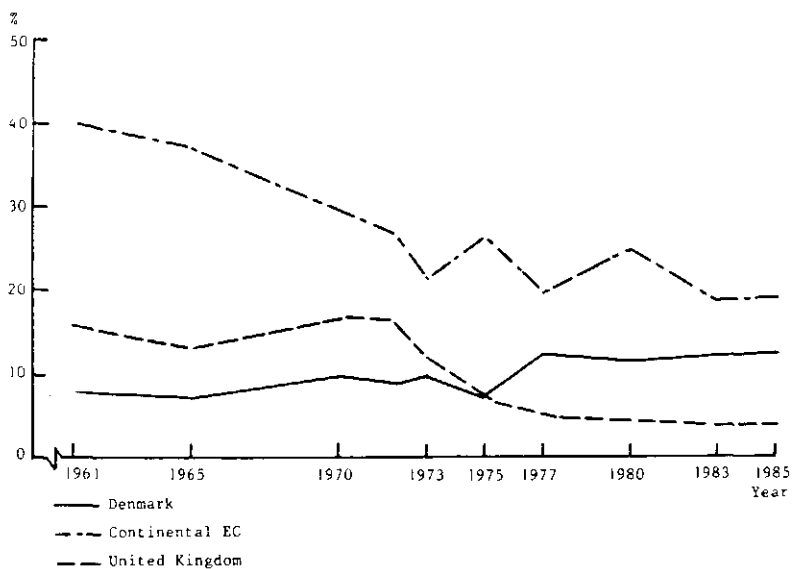


Figure 4.13 *The shares of EC-countries in total agro-food exports of Sweden in 1961-85, based on current SKr-values*

Source: Statistiska Centralbyraen, Sweden: Statistiska Aersbok, various issues.

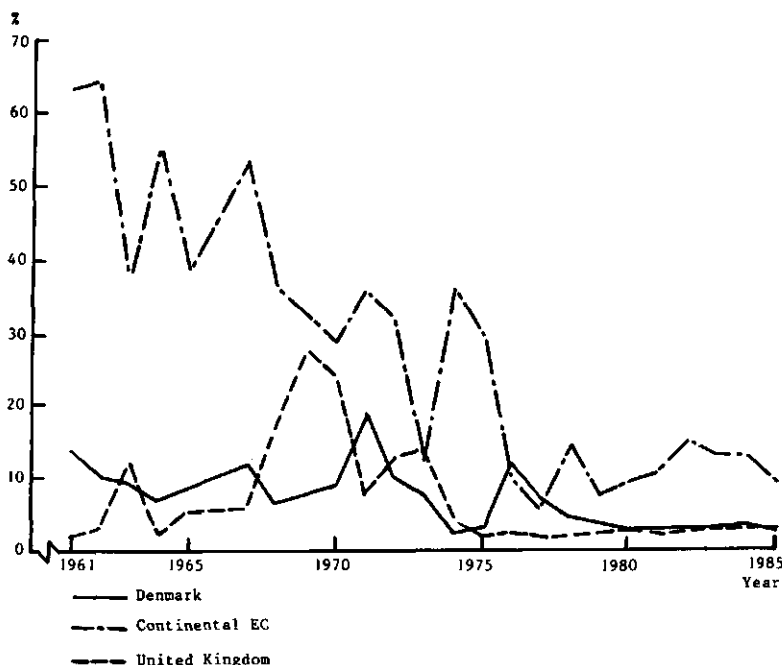


Figure 4.14 *The shares of some countries/country groups in total cereal products exports value of Sweden in 1961-85, based on current SKr-values*

Source: Statistiska Centralbyraen, Sweden: Statistisk Årsbok, various issues.

4.5 Trade effects and EC agricultural policy

4.5.1 Method of analysis

The study of trade effects on Scandinavian countries reveals very similar changes in trade shares for a number of selected commodities. In agro-food imports the share of the EC as a whole has increased from roughly one-sixth in Finland and Norway and one-fourth in Sweden in 1960, to almost one-fourth in Finland and over one-third in Norway and Sweden in 1985. The Continental Community has doubled its market share in Norway, and also in Finland and Sweden the increase has been some 50%. Denmark could win some market share when it was still a member of the EFTA up to 1972, and ever since its share has been unchanged. Denmark has more than doubled its market share on the Norwegian market partly due to the sugar trade. The British market penetration in the Nordic countries has been most evident in Finland.

Without doubt these changes can be connected with the EC policy. As was illustrated by table 3.2, the CAP has created surpluses of various products. It became increasingly difficult to sell the mountains of dairy products, cereals and sugar on the world market. The common financing of exports and high producer prices have caused a rapidly increased production in former importers (the UK) and by small and/or specialized efficient producers. For instance, the United Kingdom has tripled her self-sufficiency ratio in butter between 1972 and 1984, and doubled that figure in total cereals.

The trade diversion effects in Scandinavian agro-food exports to the EC-markets are large. In Finland and Sweden the export share of the whole EC has declined from almost two-thirds in 1960 to only one-fifth in Finland and just over one-third in Sweden in 1985. Norwegian exports have also been diverted, but not to the same extent. The shares of the Continental Community and, especially, the United Kingdom have decreased dramatically, but the share of Denmark has at least doubled in all these countries. This is probably due to increased imports of raw materials to be processed in Denmark and exported to Common Markets, or direct re-export of agro-food products.

These changes are quantitatively described by means of regression analysis (Ordinary Least Squares). This technique is commonly used in literature to show the causal connection between phenomena. The policy actions analyzed are the introduction of the CAP and the enlargement of the Community. To describe the shifts in trade shares caused by these two factors, the share of the EC in imports or exports of Scandinavian countries is used as a dependent variable. The two dummy-variables are used to describe the effects of the CAP (DCAP) and the enlargement of the Community (DDKUK), in 1965 and 1973 respectively. The year 1965 is used to represent the average of the transition period in 1962-68, when most of the CAP regulations were introduced. Thus the estimated equations will be:

$$\text{EC-import share} = \text{Constant} + a \text{ DCAP} + b \text{ DDKUK} + e$$

$$\text{EC-export share} = \text{Constant} + c \text{ DCAP} + d \text{ DDKUK} + e$$

The obtained estimates of dummy-variables will then approximate the shifts in trade shares caused by these two factors. As no scale-factors have been included, low explanatory power (R-squared) and auto-correlation can be expected to show up as the trade changes are always lagging behind. Apart from this the trade changes are quite volatile due to, for instance, changing harvests or a need to trade.

4.5.2 Results of the analysis

The following regression analysis indicates that both the establishment of the CAP (with its following consequences), and the membership of the United Kingdom and Denmark had increased the share of the EC in the Scandinavian agro-food markets.

The analysis indicates that the impact of the CAP was largest in Swedish imports, and smallest in Finnish imports. The impact of the new member countries is highest in Norway, but hardly noticeable in Sweden. The increase in market share originating from these two sources together has been some 8 percentage points in Norway, and around 4 percentage points in Finland and in Sweden - as shown in table 4.1. The explanatory power is quite low. This is caused by the use of only two dummy-variables to show the shifts in trade shares and by the lagging behind and slow adjustment of trade (which both are valid notions also in the later analysis tables).

Table 4.1 Regression analysis results: Scandinavian agro-food imports in 1960-85 (Dependent variable: EC share (% value) in Scandinavian imports)

Country	Constant (t-value)	DCAP (t)	DDKUK (t)	R ²	Stand. error	Durbin- Watson a)
Finland	14.3 d) (12.0)	2.9 b) (1.9)	1.5 (1.2)	0.304	2.7	1.13
Norway	22.6 d) (17.6)	3.1 (1.9)	4.8 c) (3.7)	0.582	2.9	1.25
Sweden	29.4 d) (51.0)	3.6 d) (4.9)	0.2 (0.3)	0.588	1.3	1.24

a) The Durbin-Watson test checks on auto-correlation between the residues. The outcome of the test indicates whether the number of observational data is sufficient for a reliable application of a regression analysis (Ekonometrische Statistiek, 1975: 184-188). b) significance: $p < 1.0\%$; c) significance: $p < 0.5\%$; d) significance: $p < 0.1\%$.

DCAP = dummy-variable: the effect of the CAP (1965)

DDKUK = dummy-variable: the effect of the new member countries Denmark and United Kingdom (1973).

The regression analysis indicates that the trade diversion has been strongest in Finnish exports (a decrease of 28 percentage points), followed by Sweden (23 percentage points) and Norway (5 percentage points). In Finland the CAP and the new

member states have an equal share in this change, whereas in Sweden and Norway the change is mainly caused by the new members.

Most of the coefficients are very significant ($p < 0.001$). The R-squared also indicates a satisfactory explanatory power of the equations, which can explain some 63% to 91% of variations in export shares. The estimated results for the Scandinavian agro-food exports are shown in table 4.2:

Table 4.2 Regression analysis results: Scandinavian agro-food exports in 1960-85 (Dependent variable: EC share (% value) in Scandinavian exports)

Country	Constant (t-value)	DCAP (t)	DDKUK (t)	R ²	Stand. error	Durbin- Watson
Finland	57.8 a) (25.4)	-13.9 a) (-4.8)	-14.5 a) (-6.4)	0.842	5.1	1.03
Norway	44.0 a) (47.3)	0.6 (0.5)	-5.3 a) (-5.7)	0.632	2.1	1.81
Sweden	61.9 a) (40.7)	-3.1 (-1.6)	-19.4 a) (-12.7)	0.913	3.4	1.47

a) significance: $p < 0.1\%$.

DCAP = dummy-variable: the effect of the CAP (1965)

DDKUK = dummy-variable: the effect of the new member countries Denmark and United Kingdom (1973).

This kind of spill-over effect of the CAP on nearby Scandinavia is quite logical, when compared with the general outcomes and effects of the CAP. The strongest impact on Norwegian imports (with the largest share of temperate zone imports) and weakest impact on Norwegian exports (with the smallest share of temperate zone exports) indicates that the influence of the EC is larger in temperate zone agricultural trade than in agro-food trade on average. This view is also supported by the selected temperate commodity analysis carried out in the previous chapter.

The regression analysis with dairy products exports of Scandinavian countries indicates clear evidence about the diversion caused by the CAP-regulations and the membership of the UK and Denmark. The dummy-variable for established CAP-regulations on milk accounts for about half the reduction in exports share, in Norway somewhat more, in Finland and in Sweden somewhat less. Together the effect of the CAP and the expansion of the EC in 1973 have reduced the share of the EC as a whole by some 46 percentage points in Finland, by 54 percentage points in Sweden, and

by 62 percentage points in Norway. So, the EC-markets for dairy products have become closed for Scandinavian exports very clearly in two phases. The R-squared becomes high, indicating an explanatory power of 84% to 93%.

Table 4.3 Regression analysis results: Scandinavian dairy products exports in 1960-85 (Dependent variable: EC share (% value) in Scandinavian exports)

Country	Constant (t-value)	DCAP (t)	DDKUK (t)	R ²	Stand. error	Durbin- Watson
Finland	65.3 b) (23.1)	-21.1 b) (-5.5)	-25.3 b) (-7.8)	0.895	6.9	1.55
Norway	72.0 b) (23.5)	-32.8 b) (-7.9)	-29.4 b) (-8.4)	0.927	7.5	1.26
Sweden	70.7 b) (16.0)	-18.3 a) (-3.0)	-35.6 b) (-7.0)	0.836	10.8	1.52

a) significance: $p < 1.0\%$; b) significance: $p < 0.1\%$.

DCAP = dummy-variable: the effect of the CAP (1965)

DDKUK = dummy-variable: the effect of the new member countries Denmark and United Kingdom (1973)

Another strongly regulated agricultural sub-sector in the EC is cereals production. A regression analysis with the same dummy-variables applied to the Norwegian imports of cereals, shows that the CAP has increased the EC's share by 17 percentage points ($p < 0.001$), but the expansion of 1973 has decreased the share by 3 percentage points (not significant). This is due to the fact that the United Kingdom was a large net importer of cereals. R-squared of the equation is 0.656.

Turning now to Swedish exports of cereals, the diversion caused by the CAP was some 8 percentage points (not significant), and the new members decreased the share by 38 percentage points ($p < 0.001$). This is logical, as the UK started to import her cereals from the Continental markets inside the customs union. In this case R-squared was high: 0.866.

The same remarks can be made about Swedish exports of meat products to the EC. In that case the CAP has not decreased its exports share in Sweden, but increased it by 5 percentage points (not significant). This might be due to the fact that the CAP did not cause a rise in self-sufficiency in meat until the end of the 1970s, while the self-sufficiency ratio of pork did even decrease from about 120% to about 100% during the 1960s. The expansion in 1973, instead, did divert Swedish meat exports by decreasing the

exports share by 36 percentage points ($p < 0.001$). The R-squared is 0.751.

Fruit and vegetables can be mentioned as an example of a less regulated sector. With R-squared at 0.604 the analysis indicates that both the CAP (not significant) and the expansion ($p < 0.005$) have slightly decreased the share of the EC in Swedish imports. Though many objections can be made to this analysis, it is clear that the CAP has not disturbed the Swedish market in this product group.

These selected commodity studies indicate that the impact of the increased surpluses of the EC in temperate zone products is felt in Scandinavian imports, although these products enjoy a high degree of frontier protection in Scandinavia too. The same can be said to apply to Scandinavian exports to the EC: most important temperate zone products of the CAP have become strongly diverted to other markets. These aspects will be elaborated further in the next chapter with RCA- and RTP-indices.

5. Revealed comparative advantage and relative trading power

5.1 The concepts

The concept of Revealed Comparative Advantage (RCA) was introduced by Balassa (1965) as the ratio of the share of a certain commodity group in a country's exports to that commodity group's share in world exports. Simply, if the commodity-share exceeds the average-share then the country is assumed to have a "revealed" comparative advantage in that commodity group; in the opposite case the disadvantage is assumed to be "revealed". The RCA-index is best applied over time to monitor shifts in competitiveness (Johns, 1985:235).

By assuming a more or less linear connection between the abundance of specialized resources and the respective output, this concept can approximately and roughly be attached to the framework of the Heckscher-Ohlin theory (chapter 2).

In this study the RCA-index is applied to mutual trade between the EC as a whole and the Scandinavian countries, on imports and exports separately. The analysis is carried out on two levels: first, inside the agro-food products to show the "revealed" changes in mutual competitiveness of different agro-food products, and second, inside the total mutual trade to show the "revealed" changes in mutual competitiveness of agro-food versus all products. The previous chapters indicate that the EC has increased its revealed advantage in especially temperate zone agricultural products by the "heavy" regulations under the CAP. It is also worth questioning if this has resulted in changes of competitiveness between the agro-food and other products (manufactured products and non-food raw materials).

The index of RCA in Scandinavian agro-food imports is constructed as follows:

$$RCA_i = 100 * \frac{(I_{jec} / I_{jt})}{(I_{ec} / I_t)}, \text{ where}$$

(I_{jec}/I_{jt}) is the share of the EC in total imports of commodity group j , and (I_{ec}/I_t) is the share of the EC in total imports of agro-food products (on value basis). Then the index numbers over 100 indicate that the EC has a "revealed comparative advantage" in the imports of that commodity group (j), because the share is bigger than the average share in agro-food products. As such, this is a rough index as it does not correct for all the trade barriers, export subsidies etc. of both parties, and therefore should be interpreted with care.

When applied to agro-food exports of Scandinavian countries, the index becomes:

$$RCA_e = 100 * \frac{(E_{jec} / E_{jt})}{(E_{ec} / E_t)}, \text{ where}$$

(E_{jec}/E_{jt}) is the share of the EC in total exports of commodity group j , and (E_{ec}/E_t) is the share of the EC in total exports of agro-food products (on value basis). When the index numbers now exceed 100 they indicate that the Scandinavian country has a "revealed comparative advantage" in the exports of that commodity group (j). When applied to total trade, the same formulas concern the share of the EC in total imports/exports of agro-food products, related to the share of the EC in imports/exports of all products.

The index of Relative Trading Power (RTP) is constructed to combine the considerations of imports and exports and to express both in a single figure. The RTP-index is simply calculated by dividing the exports index (RCA_e) by the imports index (RCA_i), and by giving the value 100 for the base period. Now, if the "revealed comparative advantage" of a Scandinavian country increases in relation to the "revealed comparative advantage" of the EC in a certain product group, then the RTP-index numbers do increase and are bigger than 100 - and vice versa. This offers a possibility to express the changes in trading power over time in a compact form.

It should be emphasized, however, that there are many reservations concerning the use of this kind of determination (e.g. the products are substitutes or not, different grades and qualities of products, transportation-cost aspects, differing and changing prices, substitution of member-countries in trade share changes), but when very similar trading parties with close location are considered, the indices still can be used as descriptive tools.

5.2 Revealed Comparative Advantage (RCA)

The EC has a "revealed comparative advantage" in the agro-food imports of all three Scandinavian countries in live animals, dairy products, cereals, feedingstuffs, miscellaneous food products, and beverages and tobacco, among all the agro-food products in 1985 (see annex 8). The index numbers are highest in dairy products. In the imports of all these countries the EC has transformed its "revealed disadvantage" into "revealed advantage" in cereals and in feedingstuffs over the period (in Sweden the EC maintained its revealed advantage). Some of these developments concerning mostly temperate zone products are summarized in table 5.1.

Table 5.1 The index of "Revealed Comparative Advantage" in Scandinavian agro-food imports from the EC between 1960 and 1965 (average = A), and 1980 and 1985 (average = B)

Product group	SITC code	Finland		Norway		Sweden	
		A	B	A	B	A	B
Meat	01	470	177	192	152	213	84
Dairy and eggs	02	357	447	343	237	256	187
Cereals	04	53	126	60	106	90	168
Sugar	06	17	93	297	217	139	195
Feedingstuffs	08	44	180	50	106	150	116

Source: Annex 8.

In the mid 1980s the EC has a clear "revealed disadvantage" in the imports of fish products, fruit and vegetables, oilseeds, and tea and coffee. In the imports of oilseeds the "disadvantage" is strongest, and in fish products imports the "revealed advantage" has changed into "revealed disadvantage" (see annex 8).

The RCAi-index of the EC has tended to increase in cereals, coffee and tea, sugar products, feedingstuffs, oilseeds, and hides and skins in at least two out of the three countries. Also

Table 5.2 The trends in change in RCA-index of Scandinavian agro-food imports from the EC in 1960-85 (+ increasing; - decreasing; . not available)

Product group	SITC	Finland	Norway	Sweden
Live animals	00	-	.	-
Meat	01	-	-	-
Dairy and eggs	02	+	-	-
Fish	03	-	-	-
Cereals	04	+	+	+
Fruit and vegetables	05	-	-	-
Sugar	06	+	-	+
Coffee and tea	07	+	+	+
Feedingstuffs	08	+	+	-
Miscellaneous food	09	-	.	+
Beverages and tobacco	1	-	-	+
Hides and skins	21	+	-	+
Oilseeds	22	-	+	+
Oils and fats	4	-	-	+

Source: Annex 8.

in at least two out of the three countries the trend of index numbers has been declining in live animals, meat, fish, dairy products, fruit and vegetables, miscellaneous food, beverages and tobacco, and oils and fats. So, among basic temperate zone agricultural products the EC has increased its "revealed comparative advantage" in arable products, but decreased that in animal products, as shown in table 5.2.

All the Scandinavian countries have a "revealed comparative advantage" in the exports to the EC in fish products, coffee and tea etc., oilseeds, and oils and fats. Finland and Sweden also have the "advantage" in fruit and vegetables, and hides and skins exports to the EC. As might be expected, not a single basic temperate zone product group is included. However, Sweden has maintained the advantage in meat exports due to the beef arrangement, and Norway due to extensive re-exports of sugar products especially to Denmark. The Scandinavian "revealed disadvantage", instead, concerns live animals, dairy products, cereals, feedingstuffs, miscellaneous food products, beverages and tobacco, and meat products (not for Sweden). In the early 1960s these countries still had a "revealed advantage" in the exports of dairy products and feedingstuffs, and Sweden also in cereals. Some temperate zone product figures are presented in table 5.3.

Table 5.3 The index of "Revealed Comparative Advantage" in Scandinavian agro-food exports to the EC between 1960 and 1965 (average = A), and 1980 and 1985 (average = B)

Product group	SITC code	Finland		Norway		Sweden	
		A	B	A	B	A	B
Meat	01	51	10	133	75	146	170
Dairy and eggs	02	111	73	150	22	102	36
Cereals	04	58	65	55	60	115	40
Sugar	06	32	73	117	156	15	58
Feedingstuffs	08	163	21	157	70	73	34

Source: Annex 8.

In table 5.4 the directions of trends are summarized for individual product groups. At least in two out of the three countries the change in RCAe-index has been positive in fish products, fruit and vegetables, sugar products, coffee and tea etc., beverages and tobacco, hides and skins, oilseeds, and oils and fats. Again, basic temperate zone product groups are excluded, but more "manufactured" food products, non-food products and more raw-material oriented product groups are included in this list.

The negative trend in change, for at least two of the three countries, applies to meat products, dairy products, cereals, feedingstuffs, and miscellaneous food products, which are typically temperate and domestically important products in the EC.

Table 5.4 The trend in change in RCA-index of Scandinavian agro-food exports to the EC in 1960-85 (+ increasing; - decreasing; . not available)

Product group	SITC	Finland	Norway	Sweden
Live animals	00	+	.	-
Meat	01	-	-	+
Dairy and eggs	02	-	-	-
Fish	03	+	+	+
Cereals	04	-	+	-
Fruit and vegetables	05	-	+	+
Sugar	06	+	+	+
Coffee and tea	07	+	+	-
Feedingstuffs	08	-	-	-
Miscellaneous food	09	-	.	+
Beverages and tobacco	1	+	+	-
Hides and skins	21	+	-	+
Oilseeds	22	+	+	+
Oils and fats	4	+	-	+

Source: Annex 8.

The RCA-index applied to total mutual trade would imply, at first, that the share of the EC in agro-food imports of the Scandinavian countries has not been as high as the EC-share in total imports of these countries. Apart from this "revealed disadvantage", the index numbers have increased remarkably since the early 1960s in all Scandinavian countries. This means that the EC has been able to penetrate the Scandinavian import restrictions of agro-food products much more successfully than it has been able to perform in the quite free mutual trade of manufactured products and raw-materials.

In the days before the CAP, Finland and Sweden had a "revealed comparative advantage" in the exports of agro-food products as compared with their total exports to the EC. In all these countries the RCA-index has decreased over time: the Scandinavian countries have managed relatively better in the exports of other than agro-food products. As such, both these indices refer to the deteriorating mutual competition position of the Scandinavian agricultural sector in relation to that sector of the EC, as shown by table 5.5.

Table 5.5 The indices of "Revealed Comparative Advantage" in Scandinavian agro-food versus total imports and exports from/to the EC between 1960-65 (average = A), and 1980-85 (average = B)

Country	Imports		Exports	
	A	B	A	B
Finland	30	61	102	68
Norway	45	69	84	55
Sweden	51	66	113	81

Source: Annex 8.

5.3 Relative Trading Power (RTP)

The concept of "Relative Trading Power" gives the opportunity to examine the rates of changes in RCA-indices in relation to each other and over time. The indices for agro-food product groups are given in table 5.6, and the index expresses the change in Scandinavian trading power in relation to the EC between the early 1960s and 1980s.

Table 5.6 The index of "Relative Trading Power" in Scandinavian agro-food trade with the EC in 1980 and 1985 (average), where 1960/65 = 100

Product group	SITC	Finland	Norway	Sweden
Live animals	00	1.350	.	71
Meat	01	55	62	311
Dairy, eggs	02	47	21	48
Fish	03	3.236	450	351
Cereals	04	45	57	19
Fruit, vegetables	05	116	137	159
Sugar	06	37	180	333
Coffee, tea	07	402	84	38
Feedingstuffs	08	3	14	67
Misc. food	09	73	48	86
Beverages, tobacco	1	400	152	39
Hides, skins	21	132	3	131
Oilseeds	22			42
Oils, fats	4	591	127	67

Source: Annex 9.

The "relative trading power" of all Scandinavian countries has increased most strongly in fish, and fruit and vegetables. Two out of the three countries have increased their indices in sugar, beverages and tobacco, hides and skins, oilseeds, and oils and fats. The "relative trading power" of all Scandinavian countries has decreased in dairy products and eggs, cereals, feedingstuffs and miscellaneous food. The index of Finland and Norway has decreased in meat products too. As such, these results largely confirm the earlier findings.

The RTP-index can also be applied to agro-food versus total trade. The strong increase of the EC in agro-food imports of Scandinavian countries, and the poor results of the Scandinavian countries in the Common Market have decreased the index of Scandinavian "relative trading power" over time. The decrease has been largest in Finland, followed by Norway and Sweden, as shown in table 5.7.

Table 5.7 The index of "Relative Trading Power" in agro-food versus total trade between Scandinavia and the EC in 1960-85 (1960 = 100)

Year	Finland	Norway	Sweden
1960	100	100	100
1965	60	94	88
1970	58	65	83
1975	44	47	62
1980	35	44	53
1985	23	37	53

Source: Annex 9.

This implies that the Scandinavian countries have managed a lot better in raw-materials and manufactured products than in agro-food products in their trade with the EC.

5.4 RCA, RTP and EC agricultural policy

5.4.1 Method of analysis

The effects of the agricultural policy of the EC on the values of these indices are analyzed quantitatively in the same way as the effects on trade shares (chapter 4.5.1). So, the value of the index is taken as a dependent variable, and the two dummy-variables representing the establishment of the CAP (1965) and enlargement of the Community (1973) are used as independent variables. The estimated equations for the different product groups are (in general form):

$$RCA_i = \text{Constant} + f \text{ DCAP} + g \text{ DDKUK} + e$$

$$RCA_e = \text{Constant} + h \text{ DCAP} + i \text{ DDKUK} + e$$

$$RTP = \text{Constant} + j \text{ DCAP} + k \text{ DDKUK} + e$$

Again, reservations about the limitations of the indexes (chapter 5.1) and about the method of analysis (chapter 4.5.1) apply to this analysis too.

5.4.2 Results of the analysis

The trade shares analysis, the RCA- and RTP-indices support the view that the trade effects of the CAP on Scandinavia vary according to the degree of regulations and support in the EC for the concerning product group. The EC surpluses have found their way to the nearby Scandinavian markets, especially in temperate zone (arable) products, though the parallel developments in Scandinavia have slightly reduced this effect in meat and dairy products. The CAP has caused a clear trade diversion from Scandinavian origins in these same products - despite the respective degree of regulations, surpluses and support. This indicates that the difference in size and resources has influenced the different trading positions, while the principle of relative comparative advantage in international trade still holds.

Another very interesting question about the influence of the CAP on agro-food versus total mutual trade can also be analyzed

Table 5.8 Regression analysis results: RCA-index in Scandinavian agro-food versus total imports from the EC in 1960-85 (Dependent variable: RCA-index, agro-food versus total imports)

Country	Constant (t-value)	DCAP (t)	DDKUK (t)	R ²	Stand. error	Durbin- Watson
Finland	29.3 b) (8.8)	10.1 (2.4)	13.7 b) (4.1)	0.645	7.4	0.99
Norway	44.4 b) (15.2)	12.7 a) (3.4)	10.6 b) (2.6)	0.675	6.6	1.11
Sweden	50.0 b) (36.3)	8.8 b) (5.0)	5.2 b) (3.7)	0.766	3.1	1.39

a) significance: $p < 0.5\%$; b) significance: $p < 0.1\%$.

DCAP = dummy-variable: the effect of the CAP (1965)

DDKUK = dummy-variable: the effect of the new member countries Denmark and United Kingdom (1973).

statistically. In table 5.8 the regression analysis results of the RCA-index in imports are given. The results indicate that both the CAP and the enlargement of the EC have clearly increased the index numbers of the EC in Scandinavian imports. So, it can be argued that the agricultural policy of the EC has put an increased pressure on the Scandinavian agricultural sector to substitute domestic production by imports from the EC - despite strong import regulations in agro-food products and very liberal mutual trade in manufactured products.

The impact has been strongest in Finland and Norway, and weakest in Sweden, where the index of the EC is highest, and the degree of agro-food protection and import barriers is lowest.

The same analysis applied to Scandinavian exports indicates that the introduction of the CAP had only a reduced effect on trade, when compared with the enlargement of the EC. The coefficient of the CAP-dummy becomes negative only in Finland, which suffered most of the CAP in the 1960s. This was probably because of the strongly diverted dairy exports, which took some 60% of the Finnish agro-food exports value in those days, compared with some 5% in Norway and Sweden (annex 6). The weakened position of agro-food products in relation to all products exported to the EC as a consequence of the enlargement in 1973 was most evident in Sweden, followed by Norway and Finland. The total effect of the EC on the RCAe-index has been largest in Sweden and Finland, and smallest in Norway with the smallest share of temperate zone products in agro-food exports. The equation explains best the developments in Sweden, where the external agro-food trade is most

Table 5.9 Regression analysis results: RCA-index in Scandinavian agro-food versus total exports to the EC in 1960-85
(Dependent variable: RCA-index, agro-food versus total exports)

Country	Constant (t-value)	DCAP (t)	DDKUK (t)	R ²	Stand. error	Durbin- Watson
Finland	105.7 b) (20.8)	-13.0 (-2.0)	-16.0 a) (-3.1)	0.532	11.4	0.93
Norway	82.9 b) (20.5)	4.2 (0.8)	-22.1 b) (-5.4)	0.597	9.0	0.83
Sweden	114.1 b) (36.7)	1.6 (0.4)	-33.0 b) (-10.6)	0.860	6.9	1.63

a) significance: $p < 0.5\%$; b) significance: $p < 0.1\%$.
DCAP = dummy-variable: the effect of the CAP (1965)
DDKUK = dummy-variable: the effect of the new member countries Denmark and United Kingdom (1973).

liberal and the level of protection lowest of the Scandinavian countries. The estimation results are given in table 5.9.

When these effects are combined in the RTP-index (table 5.10), the deteriorated Scandinavian trading position in agro-food products can be connected with the establishment of the CAP and the enlargement of the Community. The position of Finland suffered most from the CAP-introduction, whereas Norway and Sweden suffered most from the membership of Denmark and the United Kingdom. The total impact has been largest in Finland, followed by Norway; in Sweden the impact was relatively smallest. This can also be seen in the context of mutual competitiveness in temperate zone agricultural production, in which Finland is the weakest and Sweden the strongest of the Scandinavian countries. At the same time, however, the Finnish exportable surpluses were relatively the largest.

Table 5.10 Regression analysis results: RTP-index in Scandinavian agro-food versus total mutual trade with the EC 1960-85 (1960 = 100) (Dependent variable: RTP-index, agro-food versus total trade)

Country	Constant (t-value)	DCAP (t)	DDKUK (t)	R ²	Stand. error	Durbin- Watson
Finland	84.3 b) (17.1)	-29.9 b) (-4.8)	-19.6 b) (-4.0)	0.765	11.0	1.33
Norway	93.7 b) (16.2)	-16.3 (-2.2)	-30.1 b) (-5.2)	0.709	13.0	1.03
Sweden	98.2 b) (33.6)	-13.3 a) (-3.6)	-29.2 b) (-10.0)	0.893	6.5	1.47

a) significance: $p < 0.5\%$; b) significance: $p < 0.1\%$.
 DCAP = dummy-variable: the effect of the CAP (1965)
 DDKUK = dummy-variable: the effect of the new member countries Denmark and United Kingdom (1973).

These considerations would support the view that the EC agricultural policy (and areal enlargement) have put a pressure on Scandinavian agricultural policies and agricultural sectors to a larger degree in temperate zone agricultural products than in highly processed or raw-material type of agricultural products. The massive regulations and support by the EC in these products has also increased the mutual trading power of the Community in agro-food products as compared to all products. These pressures caused by the structural changes in mutual trade will be discussed in the next chapter.

6. Policy and sectoral effects of the EC agricultural policy

The pressure of the structural trade changes caused by the EC apparently did not bring a fundamental change in the agricultural policy in Scandinavia. In the first phase new export markets for Scandinavian outlets were searched and found, there was no strong cut in prices (figure 6) or production (annex 2) nor a fundamental change in production (partly annex 3) and trade structures (annex 6) that could be linked to the EC. The surpluses kept on growing.

In the 1980s the price effects of the CAP began to be felt on the world market. In Scandinavia, the price gap between domestic and export markets grew rapidly, and the budget costs escalated. The financial burden and awareness of the disturbed markets also turned "public opinion" more against domestic surpluses and the related farm sector. As a solution, more radical actions to control and cut production had to be implemented.

The first large production cutback measures were introduced by Finland in the early 1970s (Land Reserve Program, slaughter premiums). More measures were introduced in the late 1970s, including agreements on reduced production, marketing levies, establishment control and fallowing agreements. Norway now also started trying to cut livestock production (milk-bonus system). Sweden did not start to draw resources out of livestock production before 1982-83, when a variety of cutback measures were applied (investment ban in livestock sector, compensations for production termination, slaughter premiums etc.). Simultaneously the variety of measures in Finland and Norway was expanded, mainly in the direction of voluntary compensation systems (bonuses, premiums, agreements). In 1983 Norway introduced a quota (two price) system for milk production, followed by Finland and Sweden in 1985. In 1986 Finland started to regulate egg-production with a quota system. In the mid 1980s development of the Scandinavian livestock sector stagnated because of the cutback and control measures.

In crop production too Finland was the first to start a production cutback by means of the Land Reserve Program in 1969-74. Fallowing agreements have also been used temporarily (1977-80, 1984, 1986-). The production potential became absolutely reduced in 1987, when a tax on clearing new land was introduced. Sweden did not start to reduce crop production actively until 1986 by means of fallowing premiums (See annex 10).

Apart from these measures the farmers have to share in the costs of surplus disposal. In Finland this is only a partial responsibility. In Sweden it is only partial in cereals. Turning to the EC, the first production cutback and control measures were

introduced in 1977 (co-responsibility levies, premiums for reduced supplies and for changing from milk to meat production). The first major measures did not arrive until the mid 1980s. In 1984 the EC introduced a quota (super-levy) system for milk production. Set-aside programs, extensification and readjustment allowances have also been discussed in the EC.

The EC seems to follow the Scandinavian path in reducing surplus production, but it started taking measures later than the Scandinavian countries did. The ten (in some respects very differing) member countries have different priorities for their agricultural sub-sectors and therefore they need more time to agree on a policy. The relative size of temperate zone product surpluses was quite similar, but the absolute size much bigger in the EC than in Scandinavia. This, again, is due to the difference in size and resources of the two blocks. The small exporting countries had to respond to livestock surpluses earlier and more radically than their "big brother".

The pressure for a change has been largest in Finland, where the trade pressure caused by the EC, the size of the agricultural sector and the size of the temperate zone products surpluses have been largest in Scandinavia. For a long time the agricultural policy of Sweden has been more directed at modernization and rationalization of the farm sector in order to make it more competitive, and as such Sweden was better prepared for the pressure than Finland or Norway. The Swedish farm sector also can stand the lower prices better than the Finnish or Norwegian sectors. However, the strategic decision of Sweden to allow surpluses mainly in the cereals sector had no favourable effects on the mutual trade developments with the EC.

Norway can swap resources to the production of bread-grain, which is a large deficit sector in Norway. In fact, Norway has decided to increase the area of arable land by up to 1 million ha by 1990, and to use 60% of the increase in area for bread-grain production and the rest for feed-grains. Part of the southern livestock production is to be transferred to northern areas to set the better lands free for bread-grain production (Anon. 1984a; Cohen, 1980).

As such, not even Norway has been willing to rely on imports from the nearby supply sources, but has started to aim at a higher degree of self-sufficiency. Also in Sweden and in Finland the goal of food security has become more pronounced: in Sweden it has even become the main goal of the agricultural policy since 1983 (Lagerroth, 1985). This emphasis, combined with the regional objectives, has meant that the important sectors have been well protected against external competition. As the stagnating domestic and exports demand and increasing productivity have rapidly reduced the number of farms, relatively more attention has had to be given to the preservation of the settlement and

infrastructure of remote areas in Scandinavia. Especially in Finland and Norway but also in Sweden this has meant a gradual shift from general price- and production support towards specific help for certain farmers, sub-sectors or regions. Most of the price supplements, interest and investment subsidies and direct income supplements are nowadays differentiated according to the size of the farm and the region, and differ among sub-sectors (Anon., 1985b; Anon., 1989).

As a consequence of these measures, the regional income differences have not grown essentially, but the regional differences in profitability have been maintained. The production has not been concentrated in the best areas to be more competitive against external pressures. The more labour intensive livestock production has been moved, with the help of prices and support measures, to the least competitive northern areas of these countries, and the crop production now takes place in the southern parts. As such, the sector that has been pushed towards the less-favoured areas in these countries has faced the hardest external pressures from the EC. In the 1980s when the surpluses in this subsector had to be cut strongly for financial reasons, the effects on rural areas were purely negative. The financial responsibility of the farm sector for export costs, as a result of the artificially low export prices, has further widened the income gap in Scandinavian societies, which has accelerated the transfer of resources to other than agricultural and rural occupations. This conflicts strongly with the regional goals of the agricultural policy in Scandinavia, but also reveals the role of the EC-pressure in structural changes in Scandinavian agriculture. This role is revealed by imagining the markets without the EC-surpluses and trade pressures; then the export prices would be higher, the Scandinavian surpluses would grow faster to become even larger, but still the limits of growth would be met sometime (at the latest in the GATT-negotiations of 1990). As such, the CAP has been an "Early Warning System" for Scandinavian surplus sectors, while accelerating the balancing of production and consumption.

A question worth asking is whether this "forced" structural change has been too rapid and too strong. The "public opinion" on agriculture has become negative because of the very visible trade problems, though in fact the costs of surpluses have only been nominal for Scandinavian societies, bringing extra income for rural areas and supporting employment in several sectors. When the surpluses of a number of developed countries flooded the world markets in the mid 1980s, a very considerable cut in production had to be made in Scandinavia. New employment opportunities for mainly elderly farmers were not developed in time, which increased social costs and problems in the countryside. Another problem is the fact that there are not enough youngsters who are willing to continue the family farm.

From another point of view the "forced" specialization process can also be said to originate partly in EC-trade pressure. The Scandinavian countries have responded to the lost EC-markets and increased import competition from the EC by switching exports and production towards raw-material types or more manufactured types of agro-food products. It is also worth asking whether the large trading partner partly dictated the direction of specialization for these countries via trade. At least the EC itself did not have to transform its basic agricultural production as strongly as the Scandinavian countries did, despite the parallel increase in surpluses and related costs.

At the policy level this gradual and quite invisible change has lagged behind the trade and sector changes. As a consequence, the traditional concept of "pure agricultural policy" relying on one type of measure (price) has broadened to "food policy" or "rural policy" to include a wider scale of agricultural type of economic activities and a large variety of measures. In case of the regional policy goal, for instance, this has implied including many rural by-occupations within the sphere of the former "agricultural policy", and less sectoral support for rural economic activities 1).

The trade analysis also supports the view that Scandinavian countries have managed relatively well in the mutual trade of manufactured and other products outside the agro-food chain. So, the agricultural pressure of the EC could also have had a positive effect on the Scandinavian economies: the work-force has been transferred more rapidly to industrial and service occupations with a higher average productivity and better trade prospects in the future. Especially in Finland (and Norway) this change has been very rapid during the period 1960-85, and the Finnish economy has managed quite well as a whole, not suffering from labour shortages. The transfer gains in Scandinavian societies have no doubt been high, when compared with those in the EC, where - from a Scandinavian point of view - the agricultural sector has been very stagnant during the past two decades.

This kind of division of labour as such is logical and reasonable - the more southern EC producing more agro-food products and the more disadvantaged Scandinavia concentrating more rapidly on the production of raw materials, manufactured products

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- 1) In June 1990 Sweden made a strategic decision to change the food policy. The old policy goals are to be achieved with more direct means, without giving up frontier protection. During a transition period 1990/91 - 1994/95 most internal price supports, etc. are to be withdrawn; special supports to north Sweden being the main exception. The costs of transition will be about 13,600 million Skr.

and services. Also within the agro-food products the strongly diminished trading power of Scandinavia in arable products is reasonable as such, but the strong pressure in livestock products is a problem. Because of the regional character of Scandinavian agriculture the labour-intensive livestock production would be very important in the north, making the policy interests conflicting. More cereals and less livestock products in the EC and vice versa in Scandinavia - with increased trade in surpluses - is not a probable solution, since Scandinavia plays only a marginal role in the external trade of the EC. The small Scandinavian countries find it impossible to fight against large traders, and difficult to even cooperatively gain remarkable trade concessions - adaptation to markets on external terms has become actual as own resources are turning too scarce.

7. Future perspectives

The first problem for Scandinavia and the EC is to get rid of the surpluses and the financial burdens that go with them. In Scandinavia the internal markets have become more balanced in the late 1980s. The EC has been able to dispose of most of its surplus stocks, but the structural surplus problem has not yet been solved definitively. Therefore it is probable that the EC will further follow the "Scandinavian path" in production cutback and control systems, trying to take resources out of production. Also a distinction between "price" and "income roles" of agricultural policy, a general cut in agricultural prices and direct support on incomes and a kind of "devolution" development towards increased nationality, for instance, have been proposed as supportive solutions (Bowler, 1985; Butler, 1984; Meester, 1984; Schmidt, 1982; Strijker, 1987; Tanner & Swinbank, 1987).

The fear of "free trade" evidently causes - especially for the Scandinavian countries - an increasing pressure towards cooperation between these quite similar parties - both to gain more negotiation power, more resources and more room for internal manoeuvres. Between the EC and Scandinavia this agricultural integration is however, in terms of economic welfare, less profitable and more complicated than within Scandinavia. Between Finland, Sweden and Norway many items for complementary trade still exist and some inter-Scandinavian re-allocation of production could be possible as the general frames of policies are fundamentally similar, aiming at a high external independence in food supply. This choice still has not been discussed seriously in Scandinavia, but it might become one of the choices in the long run as the external pressures to give up "national agriculture" are increased by the main food exporters of the world.

However, there are good reasons to doubt the future of Scandinavian agriculture in its present form. If the GATT reorganizes world trade fundamentally, then the role of the Scandinavian countries as traders in raw-material and highly manufactured types of agro-food products ('specialties') probably will become more important as the tendency in trade changes with the EC already suggests. Fortunately for the Scandinavian countries, the interests of the EC and Scandinavia in the protection of domestic production of basic agricultural products - milk, meat and temperate zone cereals - are the same against "the rest of the world".

But if a strong obliged cut in prices and supports will come, will the change (that started in the 1970s in Scandinavia, fuelled by the EC) lead to a domestic production below self-sufficiency levels, to dependency on food imports, to con-

centration of production on few large farms in the southern parts of the countries, and to depopulation of the countryside in Scandinavia? Sweden has already decided to change the agricultural policy: price support will be reduced and old policy goals are to be achieved by direct means. However, it remains to be seen what the effects will be on production and dependency on food imports.

8. Conclusions

The agricultural policies of the three Scandinavian countries - Finland, Norway and Sweden - have been very similar to those of the EC. They were farm income oriented policies with high internal prices and supports, and strict border measures for imports from third countries. The created surpluses have been placed in third markets with the aid of export subsidies. The massive surpluses of the EC have been partly responsible for the low market prices of many temperate zone agricultural products, which are also produced in surpluses in Scandinavian countries. Thus, Scandinavia and the EC both have the same nationally/internally important sub-sectors in agriculture, and mutual trade conflicts are a natural phenomenon.

The introduction of internal trade preferences, as a part of the Common Agricultural Policy (CAP), transmitted the first trade shock to Scandinavia in the mid 1960s. The temperate zone Scandinavian (especially Finnish) exports became strongly diverted from the EC-markets. Another trade shock arose, when the EC expanded in 1973 to include the United Kingdom, which was an important export market for Scandinavian agro-food exports. As a whole, Finland has suffered most of these two developments, followed by Sweden. Norway is a net importer of temperate zone agricultural products (especially bread-grains), and therefore it has suffered from the EC agricultural policy only slightly, because her main agro-food export product is fish, which is not important at Community-level in the EC. However, the trade diversion effect is evident in Scandinavian agro-food exports. New export markets have been found in EFTA-markets, and later on in trans-ocean and Eastern European markets. But when these markets also became saturated by the increased self-sufficiency and the steady supply of surpluses, the depressive price effect of the EC agricultural policy on these countries has increased. Simultaneously, the EC has increased its import share in Scandinavian agro-food imports - especially in Norway because of the necessity to import sugar and bread-grains.

The systematic analysis by means of the RCA- and RTP-indices reveals that the Scandinavian countries have tended to lose their advantage or trading power in respect to the EC in most temperate zone agricultural products. This especially holds true for meat products, dairy products, cereals and feedingstuffs. Instead, the Scandinavian trading power has been transferred from temperate zone products to fish, fruit and vegetables, beverages and tobacco, hides and skins, oilseeds, and oils and fats; products, which are not in the centre of the CAP. The heavy support for the EC-agriculture has even increased the trading power of the EC in

agro-food products as compared to all products, although trade in these other products is almost free. All these changes can be explained rather well statistically as depending on the applied Common Agricultural Policy of the EC with its consequences on production and trade.

These changes imply that the EC has put pressure on Scandinavian agricultural sectors to transform from the production of temperate zone surplus products towards other directions of production. As the export prices became low, the budget costs in these small countries met their limits earlier than in the EC. As a result, the Scandinavian countries started to apply production control and cutback measures somewhat earlier and/or more radically than the EC with larger resources and internal flexibility. The pressure to change has been largest in Finland, where the trade pressures caused by the EC, the size of the agricultural sector and the size of the temperate zone surpluses were largest in Scandinavia. Sweden is the most competitive of the Scandinavian countries and can stand the trade shocks best of these countries, whereas Norway can switch some resources to production of deficit items.

However, the goal of food security has become more pronounced in Scandinavia as a result of the increased disturbances on world markets. The most important agricultural sub-sectors have been well protected in Scandinavia. However, as the production has been cut, relatively more attention has been given to remote areas to preserve settlement and infrastructure there. As a result, a gradual shift has occurred from general price and production support towards more specific support for certain farmers, sub-sectors or regions. So, the Scandinavian agricultural policy is more directed at intra-sectoral income distribution than the EC agricultural policy and it has more instruments available for this purpose. Both in production control and cutback, and in specification of agricultural policy the EC seems to follow the Scandinavian path with a delay.

At the policy level, the concept of "pure agricultural policy" relying on one type of measure (price) has widened to "food policy" and "countryside policy" to include a wider scale of agricultural type of economic activities and a larger variety of measures. This is logical as the temperate zone agricultural export possibilities have become limited.

The trade pressure, originating mainly from the EC, necessitated the concentration of the needed temperate zone agricultural production in fewer and larger farms in the best production areas of the Scandinavian countries, which is contradictory to the regional and food security goals of the Scandinavian countries.

Some positive aspects can also be presented, however. The Scandinavian countries have had transfer gains, when work-force has shifted to non-agricultural occupations with higher average productivity. Besides, the trade prospects for these products are

better than for agricultural products, and from this point of view the EC has functioned as an "Early Warning System" accelerating the balancing of production. Still, the question remains whether the structural change has not been too rapid, especially in Finland. The market disturbances can be only temporary - and now a process of reducing agricultural resources has been put into motion in Scandinavia, mainly because the EC has disturbed the markets.

The most natural solution for the continuation of the present kind of agricultural policies in these countries would be to establish a common-Scandinavian agricultural policy in the way it has been done in the EC. For the small countries there are not many choices besides adaptation, autarchy and unification against the giants.

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Annex 1. Basic data on Scandinavia and the EC

	EC-10	Finland	Norway	Sweden
Population 1985, mill.	273.3	4.9	4.1	8.4
GDP, bill. constant USD				
in 1960 *)	1,357	23	24	65
in 1985 *)	2,998	59	67	136
annual growth, %	3.2	3.9	4.2	3.0
GDP per capita 1985, USD	8,271	11,024	13,960	12,006
Unemployment 1985, %	9.4	4.8	2.5	2.8
Share of the EC-10 in imports, %				
in 1960	..	50	52	58
in 1985	..	37	47	54
Share of the EC-10 in exports, %				
in 1960	..	57	55	55
in 1985	..	36	69	47
Farms 1985, (x 1000)	6,359	200	105	109
Agric. area 1980, mill. ha	97.3	2.7	0.9	3.7
Economically active population in agriculture 1985, mill.	7.77	0.23	0.14	0.2
Exchange rates 1985	1 ECU = FMk	4.70 NKr	6.53 SKr	6.54

Notes:

*) At the exchange rates and price levels of 1980.

Sources: Commission of European Communities: The agricultural situation in the Community, various issues.

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Annex 2. Self-sufficiency ratios

A2.1 The self-sufficiency ratios of the EC-9 in 1960-84

Product	1960-64	1965-69	1970-74	1975-79	1980-84
Wheat	85	93	99	106	129
Rye	92	94	98	102	102
Barley	97	101	102	107	119
Oats	95	96	96	95	98
Total cereals(not rice)	71	72	75	76	94
Sugar (refined value)	80	81	89	113	136
Potatoes	100	103	99	99	101
Total vegetables a)	99	97	94	93	95
Total fruit a)	n.a.	n.a.	71 b)	67	67
Beef and veal	95	97 c)	90	97	104
Pigmeat	120	115	102	99	101
Mutton and lamb	59	57	58	65	72
Total meat (incl.offals)	94	94	94	96	101
Eggs	97	99	100	100	103
Milk powder	n.a.	n.a.	n.a.	134	159
Cheese	96	99	103	105	98
Butter (prod. weight)	79	86 d)	93 e)	107	126
Vegetable oils (fat)	n.a.	n.a.	19 e)	21	48

Notes: The self-sufficiency ratio is calculated as:

$$100 * \frac{\text{production volume}}{\text{consumption volume}} \text{ for the five-year period}$$

a) An aggregated volume; b) Consumption of citrus fruit in Ireland in 1971 an estimate (average of 1970 and 1972); c) Production in Belgium-Luxemburg and in the Netherlands in 1968 an estimate (average of 1967 and 1969); d) Consumption in Italy in 1969 an estimate (average of 1968 and 1970); e) Production and consumption in the Netherlands in 1972 an estimate (average of 1971 and 1973).

Sources: Calculated from Schuerman and Kuhmonen, 1987; OECD, 1988.

A2.2 The self-sufficiency ratios of Finland in 1955-84

Product	1955-59	60-64	65-69	70-74	75-79	80-84
Wheat	45	83	101	116	87	88
Rye	58	74	83	99	82	71
Barley	99	99	100	104	121	109
Oats	97	100	102	105	110	110
Total cereals(n.rice)	77	91	99	104	108	103
Sugar (ref.val.)	18	28	22	33	45	61
Potatoes	100	100	100	99	99	98
Total vegetables a)	95 b)	86	78	83	76	79
Total fruit a)	42 c)	37	24	27	31	29
Beef and veal	100	98	101	106	101	111
Pigmeat	100	98	106	114	110	121
Mutton and lamb	[100]	[100]	[100]	[100]	[100]	[100]
Total meat (i.off.)	101	98	103	109	104	112
Eggs	113	124	131	149	153	155
Dried skim milk	100	100	106	102	104	110
Dried whole milk	In most years all exported					
Cheese	227	220	212	196	207	196
Butter (pr.weight)	123	124	127	126	125	132

Notes: a) An aggregated volume; b) Canned vegetables not included; 2) Canned and dried fruit not included; [] Uncertain: very small quantities.

Sources: Calculated from OECD, 1975c, 1985, 1986a, 1987c, 1988.

A2.3 The self-sufficiency ratios of Norway in 1955-84

Product	1955-59	60-64	65-69	70-74	75-79	80-84
Wheat	9	6	3	6	18	22
Rye	2	6	7	8	11	7
Barley	89	94	87	79	90	98
Oats	100	105	98	107	108	105
Total cereals(n.rice)	45	52	49	56	60	68
Sugar (ref.val.)	0	0	0	0	0	0
Potatoes	100	100	99	99	95	97
Total vegetables a)	[91] b)	[90] b)	[93] b)	88	84	86
Total fruit a)	51	48	40	39	38	36
Beef and veal	100	100	97	95	88	102
Pigmeat	96	98	97	97	92	102
Mutton and lamb	100	100	94	89	81	96
Total meat (i.off.)	98	109	102	97	90	100
Eggs	107	100	100	100	98	101
Dried skim milk	100	100	100	129	125	98
Dried whole milk	[100]	[100]	[100]	[100]	[100]	[100]
Cheese	121	140	142	149	140	136
Butter (pr.weight)	138	143	117	95	105	120

Notes: a) An aggregated volume; b) Canned vegetables and tomatoes not included; [] Uncertain: very small quantities.

Sources: Calculated from OECD, 1975c, 1985, 1986a, 1987c, 1988.

A2.4 The self-sufficiency ratios of Sweden in 1955-84

Product	1955-59	60-64	65-69	70-74	75-79	80-84
Wheat	104	116	126	164	175	161
Rye	85	73	102	152	133	119
Barley	94	107	111	116	109	109
Oats	95	107	111	123	110	126
Total cereals(n.rice)	94	104	110	125	120	122
Sugar (ref.val.)	79	78	63	72	89	96
Potatoes	95	97	94	97	97	99
Total vegetables *)	85	83	73	72	70	70
Total fruit *)	56	49	45	46	45	42
Beef and veal	94	99	109	102	94	112
Pigmeat	112	113	112	115	108	117
Mutton and lamb	[50]	[50]	[100]	[75]	[83]	[89]
Total meat (i.off.)	101	105	99	107	105	113
Eggs	109	106	104	102	105	107
Dried skim milk	133	122	113	118	150	165
Dried whole milk	[100]	[100]	[100]	[100]	[100]	[100]
Cheese	95	95	91	87	87	94
Butter (pr.weight)	120	116	113	113	120	124

Notes: *) An aggregated volume; [] Uncertain: very small quantities.

Sources: Calculated from OECD, 1975c, 1985, 1986a, 1987c, 1988.

Annex 3. Trends in agricultural production

Trends in agricultural production between 1961-65 (average=A) and 1983-85 (average=B), and the Scandinavian production volumes as a percentage share in the EC production volumes

	Finland		Norway		Sweden		EC-10	
	A	B	A	B	A	B	A	B
Cereals, mill. MT	1.9	3.7	0.6	1.3	4.0	6.0	79.4	139.0
Change p.a., %	3.4		3.6		2.0		2.7	
% of the EC-10	2.4	2.7	0.8	0.9	5.0	4.3		
Wheat, mill. MT	0.5	0.5	0.0	0.1	0.9	1.6	33.6	67.1
Change p.a., %	0.5		10.1		2.8		3.3	
% of the EC-10	1.3	0.7	0.1	0.2	2.7	2.4		
Barley, mill. MT	0.4	1.8	0.4	0.7	1.2	2.4	22.2	40.4
Change p.a., %	7.4		1.9		3.5		2.9	
% of the EC-10	1.8	4.4	2.0	1.6	5.3	5.9		
Sugarbeet, m. MT	0.4	0.8	0.0	0.0	1.6	2.2	50.5	84.7
Change p.a., %	3.3		0.0		1.5		2.5	
% of the EC-10	0.8	1.0	0.0	0.0	3.2	2.6		
Beef & veal, m.MT	0.1	0.1	0.1	0.1	0.2	0.2	5.0	7.3
Change p.a., %	1.7		1.6		0.3		1.8	
% of the EC-10	1.7	1.7	1.1	1.1	3.0	2.2		
Pigmeat, mill. MT	0.1	0.2	0.1	0.1	0.1	0.3	5.8	10.6
Change p.a., %	4.7		2.0		4.0		2.9	
% of the EC-10	1.1	1.6	1.0	0.8	2.5	3.0		
Hen eggs, m. MT	0.1	0.1	0.0	0.1	0.1	0.1	3.0	4.2
Change p.a., %	2.9		2.2		1.0		1.6	
% of the EC-10	1.6	2.0	1.1	1.2	3.1	2.8		
Cow milk, m. MT	3.7	3.2	1.6	2.0	3.8	3.7	86.7	116.2
Change p.a., %	-0.8		1.0		-0.1		1.4	
% of the EC-10	4.3	2.7	1.9	1.7	4.4	3.2		
Cheese, mill. MT	0.0	0.1	0.1	0.1	0.1	0.2	1.9	4.1
Change p.a., %	3.9		2.2		3.4		3.8	
% of the EC-10	1.8	1.8	2.3	1.7	3.0	2.8		
Butter+ghes, m.MT	0.1	0.1	0.0	0.0	0.1	0.1	1.4	2.1
Change p.a., %	-1.1		1.0		-0.5		1.8	
% of the EC-10	6.9	3.8	1.4	1.2	5.8	3.6		

Sources: Calculated from FAO Production Yearbook 1976, 1985.

Annex 4. The food trade changes of the EC-10 in 1958-85

Year	External imports, mill.ECU	Internal imports, mill.ECU	External exports, mill.ECU	Internal exports, mill.ECU	External imports % of tot. imports	External exports % of ext imports
1958	6,288	2,148	1,432	2,040	75	23
1959	6,555	2,304	1,352	2,237	74	21
1960	6,640	2,489	1,497	2,413	73	23
1961	6,482	2,714	1,591	2,635	70	25
1962	7,393	2,905	1,637	2,795	72	22
1963	7,817	3,278	1,834	3,199	70	23
1964	8,377	3,716	1,952	3,600	69	23
1965	8,829	4,229	2,118	4,105	68	23
1966	9,104	4,429	2,220	4,244	67	24
1967	8,805	4,781	2,264	4,552	65	26
1968	8,465	5,250	2,348	5,083	62	28
1969	8,988	6,341	2,483	6,201	59	28
1970	10,025	7,009	2,979	6,881	59	30
1971	10,361	7,987	3,305	7,810	56	32
1972	10,851	9,392	3,572	9,275	54	33
1973	13,578	11,763	4,834	11,784	54	36
1974	14,755	13,855	6,179	14,065	52	42
1975	15,721	15,840	6,314	16,501	50	40
1976	19,661	18,655	7,327	19,463	51	37
1977	22,516	21,482	8,165	21,748	51	36
1978	21,337	23,643	8,772	23,703	47	41
1979	22,762	25,639	10,193	26,119	47	45
1980	24,156	27,938	13,951	28,090	46	58
1981	26,399	31,922	18,937	32,028	45	72
1982	28,382	36,733	17,672	36,478	44	62
1983	29,884	38,904	18,394	38,602	43	62
1984	33,644	42,503	21,115	43,373	44	63
1985	34,457	47,234	22,002	45,902	42	64

Source: Eurostat, 1984, 1985, 1986.

Annex 5. Trade diversion in temperate agricultural products in the EC in 1962-84

The percentage share of the imports from outside the EC-9 in the total imports of the EC-9 of some commodities in 1962-84 (also given for the United Kingdom in butter and cheese), based on metric tons

Product	Wheat	Barley	Maize	Animal f-stuff	Oilcake etc.	Raw sugar	Oil- seed	Soya beans
SITC-c.	041	043	044	081	081.3	061.1	222	22.2
1962	92	74	96	n.a.	87	98	99	100
1963	87	59	95	81 a)	89	99	98	100
1964	82	57	92	78	87 b)	99	97	100
1965	81	58	89	80	87	98	96	100
1966	82	45	89	85 a)	86	100	97	100
1967	81	34	87	78 a)	88 a)	98	96	98 b)
1968	63	31	89	77 a)	88	93	96	98
1969	60	32	84	75 a)	80	98	95	100 b)
1970	71	55	91	75 a)	85	97	95	99
1971	70	67	74	74 a)	86	95	94 c)	97
1972	60	64	72	71 a)	84	93	92 a)	95
1973	52	49	76	69	81 d)	93	91	94
1974	40	22	73	65	73 d)	91	94	96
1975	53	25	80	66	80	92	94	95
1976	42	48	81	69	83	86	92	93
1977	40	49	91	70	83	94	68	96
1978	45	15	81	69	81	97	97	98
1979	48	16	76	70	81	98	96	100
1980	46	9	73	73	82	98	93	n.a.
1981	48	14	76	70	80	79	86	93
1982	48	10	64	69	79	98	87	94
1983	42	5	52	72	75	96	85	98
1984	29	9	46	67	78	100	87	100

Annex 5. (continued)

Product	b) b) b) b)				Poul. meat	Butter	Cheese	United Kingdom	
	All meat	Bov. meat	Sheep meat	Pig meat				Butter	Cheese
	011	011.1	011.2	011.3	011.4	023	024		
SITC-c.	011	011.1	011.2	011.3	011.4	023	024	023	024
1962	72	74	90	22	48	65	52	69	82
1963	68	72	98	26	34	65	45	69	78
1964	71	74	95	31	36	71	45	72	78
1965	66	70	93	19	31	63	44	66	76
1966	65	74	96	34 c)	25	65	34	67	69
1967	52	57	93	39	22	34	38	33	67
1968	50	30	95	16	18	28	30	30	45
1969	65	55	92	26	17	58	34	67	67
1970	52	51	91	14	15	48	34	64	66
1971	49	47	89	14	17	49	30	63	60
1972	52	55	89	20	15	46	26	61	57
1973	49	53	85	35	20	28	20	45	39
1974	38	23	81	14	17	23	14	29	18
1975	34	9	81	22	19	18	12	25	22
1976	36	17	81	16	19	21	15	31	22
1977	33	14	78	11	16	24	13	41	13
1978	32	13	78	12	16	21	11	43	5
1979	29	15	77	5	16	21	10	49	2
1980	27	13	75	7	18	18	12	51	12
1981	26	13	74	6	17	n.a.	12	n.a.	12
1982	29	17	80	6	8	19	11	54	5
1983	25	17	74	4	14	20	11	51	13
1984	25	16	68	7	18	18	13	56	10

Notes:

a) The EC-8: Belgium, Denmark, France, Germany, Italy, Luxembourg, the Netherlands, the United Kingdom; b) The EC-7; The EC-8 excl. Denmark; c) The EC-6; The EC-7 excl. the United Kingdom; d) Denmark, Ireland, the United Kingdom.
Source: Calculated from Knox, 1986.

Annex 6. Structure in Scandinavian imports and exports of agro-food products in 1960-85

A6.1 The structure of agro-food (SITC 0, 1, 21, 22, 4) imports in Finland in 1960-85, percentage shares in imports value

Year SITC-group	1960	1965	1970	1975	1980	1985
Live a. (00)	0.0	0.1	0.2	0.3	0.2	0.6
Meat (01)	3.1	1.2	0.2	1.8	0.5	0.1
Dairy+eggs(02)	0.1	0.1	0.1	0.1	0.1	0.6
Fish (03)	2.9	4.1	4.4	4.1	4.6	5.9
Cereals (04)	15.7	11.1	3.4	8.5	7.8	5.5
Fruit+veg.(05)	18.9	21.7	18.3	21.0	22.3	25.5
Sugar (06)	9.8	6.5	9.0	19.9	11.2	3.6
Coffee (07)	20.9	27.5	39.6	18.8	29.3	28.0
Feedings. (08)	7.1	5.9	3.5	3.7	5.6	6.7
Misc.food (09)	0.4	1.4	2.9	3.7	3.2	4.5
Bev.+tob. (1)	8.3	9.5	7.3	7.4	5.7	7.0
Hides+skin(21)	3.6	3.8	3.3	2.9	4.3	5.3
Oilseeds (22)	4.6	5.4	6.3	5.5	3.4	4.2
Oils+fats (4)	4.6	1.7	1.5	2.3	1.8	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

A6.2 The structure of agro-food (SITC 0,1,21,22,4) exports in Finland in 1960-85, percentage shares in exports value

Year SITC-group	1960	1965	1970	1975	1980	1985
Live a. (00)	0.1	0.8	0.1	0.5	0.3	0.3
Meat (01)	0.7	3.2	9.6	2.1	9.0	9.9
Dairy+eggs(02)	66.4	57.9	36.1	31.0	25.2	20.4
Fish (03)	0.2	0.1	0.4	0.4	1.1	2.3
Cereals (04)	3.9	0.4	9.8	7.0	3.6	11.8
Fruit+veg.(05)	1.2	1.0	4.4	1.6	4.8	0.9
Sugar (06)	0.3	1.0	5.7	15.6	4.8	1.5
Coffee (07)	0.1	1.1	3.5	4.9	6.1	4.8
Feedings.(08)	2.5	0.0	0.8	0.2	0.5	1.1
Misc.food (09)	0.0	0.1	0.1	0.3	0.3	3.6
Bev.+tob. (1)	0.2	0.4	3.4	5.7	7.8	4.1
Hides+skin(21)	20.8	30.5	21.7	27.7	34.2	36.1
Oilseeds (22)	..	..	0.0	0.0	0.0	0.0
Oils+fats (4)	3.6	3.5	4.4	3.0	2.3	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated from: Tullihallitus: Ulkomaankauppa, SVT I A, various issues.

A6.3 Finnish imports and exports of agro-food products in million US dollars in 1968 (= average 1967-69) and in 1985 (= average 1984-86)

	Imports		Exports	
	1968	1985	1968	1985
total	196.3	875.1	94.8	731.2
live animals	0.4	4.8	0.3	2.9
meat/-prep.	1.3	0.9	6.9	61.6
dairy and eggs	0.1	6.0	36.8	149.4
fish/-prep.	8.8	93.4	0.2	11.4
cereals	10.8	39.8	3.4	92.5
fruit and veg.	45.6	217.8	1.9	7.4
sugar	17.6	30.8	4.8	14.0
coffee, tea, etc.	57.3	274.7	2.8	35.9
animal feedstuff	8.8	18.7	0.6	8.6
misc. food prep.	5.3	40.0	0.1	24.3
beverages/tobac.	18.0	60.8	3.2	30.3
hides and skins	7.3	37.2	30.1	271.3
oilseeds	12.7	31.6	-	-
animal/veg. fat/oil	2.3	18.6	3.7	21.6

Source: FAO.

A6.4 The structure of agro-food (SITC 0, 1, 21, 22, 4) imports in Norway in 1960-85, percentage shares in imports value

Year SITC-group	1960	1965	1970	1975	1980	1985
Live a. (00)	0.0	0.1	0.1	0.1	0.1	0.3
Meat (01)	2.8	1.9	2.2	4.2	3.9	1.7
Dairy+eggs(02)	0.2	0.4	1.0	0.4	0.9	0.8
Fish (03)	1.4	2.8	3.0	2.1	4.0	5.3
Cereals (04)	19.4	18.3	16.6	16.1	14.3	9.0
Fruit+veg.(05)	19.1	22.5	20.0	19.1	19.6	22.4
Sugar (06)	9.4	10.0	7.3	14.8	10.0	6.6
Coffee (07)	15.5	15.1	18.8	14.3	20.1	20.8
Feedings.(08)	5.0	6.1	5.0	2.4	3.8	3.7
Misc.food (09)	0.2	0.9	1.4	1.8	2.6	4.8
Bev.+tob. (1)	9.1	6.9	9.1	8.1	8.1	10.1
Hides+skin(21)	1.7	2.1	1.3	0.8	1.0	1.8
Oilseeds (22)	8.7	9.2	9.3	13.6	8.6	8.9
Oils+fats (4)	7.5	3.7	4.9	2.2	3.0	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

A6.5 The structure of agro-food (SITC 0, 1, 21, 22, 4) exports in Norway in 1960-85, percentage shares in exports value

Year SITC-group	1960	1965	1970	1975	1980	1985
Live a. (00)	0.0	0.0	0.0	0.0	0.0	0.0
Meat (01)	1.7	2.6	1.4	0.2	0.4	1.2
Dairy+eggs(02)	6.0	3.6	3.5	4.6	4.0	4.2
Fish (03)	56.1	47.5	53.0	56.4	60.9	67.5
Cereals (04)	0.3	0.4	0.9	1.6	0.9	1.0
Fruit+veg.(05)	0.3	0.3	0.4	0.3	0.5	0.4
Sugar (06)	0.1	0.1	0.2	0.2	0.2	0.2
Coffee (07)	0.1	0.3	0.9	0.9	0.8	0.7
Feedings.(08)	7.1	16.4	16.2	15.2	15.2	8.6
Misc.food (09)	1.3	1.5	1.9	2.5	1.5	1.2
Bev.+tob. (1)	0.4	0.9	1.0	1.0	0.7	1.0
Hides+skin(21)	9.4	11.1	8.1	6.1	6.1	7.0
Oilseeds (22)	0.0	..	0.0	..	0.0	0.0
Oils+fats (4)	17.2	15.3	12.5	11.0	8.0	7.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated from: Statistisk Sentralbyrå, Norge: Statistisk Arbok, various issues.

A6.6 Norwegian imports and exports of agro-food products in million US dollars in 1968 (= average 1967-69) and in 1985 (= average 1984-86)

	Imports		Exports	
	1968	1985	1968	1985
total	263.1	1065.8	319.4	1322.3
live animals	0.3	3.1	0.1	42.3
meat/-prep.	5.8	16.9	5.6	11.2
dairy and eggs	1.2	9.0	11.3	53.7
fish/-prep.	7.8	74.1	147.3	998.8
cereals	48.2	104.6	1.8	11.5
fruit and veg.	58.7	240.0	1.3	5.0
sugar	18.5	70.4	0.5	3.0
coffee, tea, etc.	42.8	231.5	1.6	10.3
animal feedstuff	15.4	42.2	67.1	45.8
misc. food prep.	3.3	48.1	5.5	15.7
beverages/tobac.	25.2	103.7	3.6	12.4
hides and skins	4.3	20.5	35.6	77.4
oilseeds	24.4	84.4	0.2	0.1
animal/veg. fat/oil	7.2	17.3	37.9	35.1

Source: FAO.

A6.7 The structure of agro-food (SITC 0, 1, 21, 22, 4) imports in Sweden in 1960-85, percentage shares in imports value

Year	1960	1965	1970	1975	1980	1985
SITC-group						
Live a. (00)	0.3	0.4	0.2	0.3	0.2	0.3
Meat (01)	3.4	5.6	7.1	6.6	4.0	2.7
Dairy+eggs(02)	1.3	1.6	2.0	1.9	1.7	1.8
Fish (03)	5.6	8.3	9.7	9.7	11.0	10.1
Cereals (04)	8.3	4.9	4.3	4.6	4.7	4.9
Fruit+veg.(05)	24.6	25.2	25.1	24.0	25.2	25.0
Sugar (06)	1.9	2.0	2.7	6.9	3.2	2.5
Coffee (07)	20.3	20.6	19.7	16.4	21.7	21.2
Feedings.(08)	8.8	9.3	7.5	6.8	8.6	6.7
Misc.food(09)	1.1	1.8	2.4	3.2	3.0	3.9
Bev.+tob. (1)	10.4	9.1	10.4	10.6	9.3	11.2
Hides+skin(21)	4.2	3.6	2.4	2.6	2.4	3.0
Oilseeds (22)	4.3	3.2	1.5	1.3	1.1	1.3
Oils+fats (4)	5.5	4.4	5.0	5.1	3.9	5.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

A6.8 The structure of agro-food (SITC 0, 1, 21, 22, 4) exports in Sweden in 1960-85, percentage shares in exports value

Year SITC-group	1960	1965	1970	1975	1980	1985
Live a. (00)	5.9	0.9	0.5	0.3	0.4	0.8
Meat (01)	14.8	17.9	23.1	9.9	11.1	15.0
Dairy+eggs(02)	16.2	6.8	3.3	4.1	4.2	5.1
Fish (03)	9.6	5.5	4.5	4.7	10.7	7.6
Cereals (04)	10.8	25.6	23.8	40.5	24.7	26.2
Fruit+veg.(05)	5.8	4.2	5.8	4.1	4.9	4.2
Sugar (06)	0.9	0.8	3.0	2.2	6.3	3.1
Coffee (07)	1.2	1.7	3.2	4.9	6.2	6.4
Feedings.(08)	0.2	0.1	0.4	0.6	1.2	1.2
Misc.food(09)	1.7	1.7	3.1	3.2	3.8	4.7
Bev.+tob. (1)	0.5	1.4	2.8	2.8	2.8	4.0
Hides+skin(21)	22.2	20.9	14.4	6.9	11.4	10.1
Oilseeds (22)	3.2	4.9	3.6	6.7	3.3	2.5
Oils+fats (4)	7.0	7.6	8.5	9.1	9.0	9.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated from: Statistiska Centralbyran, Sverige: Statistiska Arsbok, various issues.

A6.9 Swedish imports and exports of agro-food products in million US dollars in 1968 (= average 1967-69) and in 1985 (= average 1984-86)

	Imports		Exports	
	1968	1985	1968	1985
total	620.4	2115.6	179.2	951.6
live animals	2.3	9.2	1.1	6.5
meat/-prep.	40.3	55.3	43.4	135.2
dairy and eggs	9.4	37.0	10.1	49.2
fish/-prep.	55.3	278.8	7.9	88.1
cereals	29.7	101.5	42.9	214.1
fruit and veg.	161.7	526.5	8.8	47.3
sugar	15.8	51.5	3.9	36.8
coffee, tea, etc.	115.2	470.7	3.6	70.1
animal feedstuff	51.3	94.5	0.8	14.0
misc. food prep.	15.1	79.9	3.7	44.1
beverages/tobac.	69.8	232.7	2.2	40.9
hides and skins	19.9	65.1	31.7	101.1
oilseeds	12.1	24.6	5.8	20.3
animal/veg. fat/oil	22.5	88.3	13.3	83.9

Source: FAO.

Annex 7. Country structures of Scandinavian agro-food imports and exports

A7.1 The country structure of Finnish agro-food imports (SITC 0, 1, 21, 22, 4) in 1960-85, percentage shares in imports value

Year	1960	1965	1970	1972	1973	1975	1980	1985
EC(6-8)	8.8	8.7	8.6	10.5	11.1	9.2	10.9	13.5
Denmark	3.2	4.2	2.6	3.6	5.2	3.8	3.7	4.6
United K.	1.5	2.6	3.2	3.8	3.7	2.7	3.3	4.6
EC(8-10)	13.5	15.5	14.4	17.9	20.0	15.7	17.9	22.7
EFTA(5-6)	3.3	6.2	8.9	12.2	12.7	12.8	13.9	16.4
Norway	1.1	2.9	3.4	4.6	5.2	5.2	5.1	5.3
Sweden	2.0	2.7	3.4	4.8	4.3	5.3	5.2	6.5
USA	7.5	11.8	6.4	8.9	8.9	14.5	12.7	10.1
USSR	25.8	9.1	9.3	1.8	1.3	0.8	0.8	0.8
Develop.c.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	42.1	36.1
Other c.	49.9	57.4	61.0	59.2	57.1	56.2	12.6	13.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

A7.2 The country structure of Finnish agro-food exports (SITC 0, 1, 21, 22, 4) in 1960-85, percentage shares in exports value

Year	1960	1965	1970	1972	1973	1975	1980	1985
EC(6-8)	28.9	20.4	19.6	23.2	21.5	23.5	26.0	16.6
Denmark	1.3	1.0	2.0	1.5	2.1	1.8	1.5	2.7
United K.	35.3	23.1	16.8	14.0	4.8	3.5	3.9	3.0
EC(8-10)	65.5	44.5	38.4	38.7	28.4	28.8	31.4	22.3
EFTA(5-6)	7.7	10.2	29.2	23.5	30.1	33.4	20.7	13.5
Norway	0.2	0.7	4.4	3.1	5.9	7.5	4.2	2.3
Sweden	5.3	6.9	19.4	13.2	14.6	18.4	10.0	5.6
USA	7.8	10.4	7.1	7.6	11.8	9.3	9.2	12.3
USSR	3.6	24.4	13.9	19.0	15.4	17.4	25.2	22.9
Japan	0.0	0.2	0.1	0.3	0.7	0.5	2.5	6.0
Developing	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.4	11.8
Other c.	15.4	10.3	11.3	10.9	13.6	10.6	4.6	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes:

EC(6-8) = Belgium, France, Germany, Italy, Luxemburg and the Netherlands in 1960-72, plus Ireland since 1973, plus Greece in 1985; EC(8-10) = the countries above, plus Denmark and the United Kingdom; EFTA(5-6) = Austria, Norway, Portugal, Sweden and Switzerland in 1960-65, plus Iceland since 1970.

Sources: Calculated from: Tullihallitus: Ulkomaankauppa, SVT I A, various issues.

A7.3 The country structure of Norwegian agro-food imports (SITC 0, 1, 21, 22, 4) in 1960-85, percentage shares in imports value

Year	1960	1965	1970	1972	1973	1975	1980	1985
EC(6-8)	8.4	10.4	12.9	11.6	14.7	11.8	13.9	18.0
Denmark	4.5	6.8	8.4	10.8	9.3	10.8	11.3	10.5
United K.	5.8	7.0	5.9	8.1	6.7	8.7	5.4	5.5
EC(8-10)	18.7	24.2	27.2	30.5	30.7	31.3	30.6	34.0
EFTA(5-6)	3.1	5.9	9.5	10.8	12.2	15.8	14.8	17.6
Finland	0.1	0.3	1.7	1.6	2.6	3.2	2.5	3.2
Sweden	1.7	4.7	5.6	6.4	6.5	9.6	7.5	9.6
USA	21.4	18.2	17.3	17.6	19.5	20.9	19.7	9.0
USSR	5.2	1.4	0.7	0.3	0.2	0.2	0.4	1.1
Japan	n.a.	n.a.	0.2	0.2	0.2	0.4	0.1	0.3
Developing c.	n.a.	n.a.	29.1	24.5	22.6	18.9	23.2	29.4
Other c.	51.6	50.3	16.0	16.1	14.6	12.5	11.2	8.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

A7.4 The country structure of Norwegian agro-food exports (SITC 0, 1, 21, 22, 4) in 1960-85, percentage shares in exports value

Year	1960	1965	1970	1972	1973	1975	1980	1985
EC(6-8)	27.6	25.9	21.5	21.0	20.2	19.3	22.7	21.7
Denmark	1.7	2.8	4.4	3.7	4.6	3.2	4.7	5.7
United K.	18.0	20.4	19.5	15.5	17.0	12.7	13.1	12.5
EC(8-10)	47.3	49.1	45.4	40.2	41.8	35.2	40.5	39.9
EFTA(5-6)	14.4	15.0	18.5	21.7	20.7	24.7	23.2	24.4
Finland	0.8	1.7	2.5	2.5	3.0	4.2	4.1	6.1
Sweden	7.9	9.7	13.0	13.2	13.9	14.8	15.8	13.5
USA	10.3	10.2	13.1	14.6	10.9	13.0	8.7	13.9
USSR	5.1	4.8	1.0	0.0	0.0	0.0	0.1	0.2
Japan	n.a.	n.a.	1.3	1.6	2.7	1.5	3.4	6.3
Developing c.	n.a.	n.a.	11.4	9.7	10.5	16.0	17.3	10.2
Other c.	22.9	20.9	9.3	12.2	13.4	9.0	6.8	5.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes:

EC(6-8) = Belgium, France, Germany, Italy, Luxemburg and the Netherlands in 1960-72, plus Ireland since 1973, plus Greece in 1985; EC(8-10) = the countries above, plus Denmark and the United Kingdom; EFTA(5-6) = Austria, Finland, Portugal, Sweden and Switzerland in 1960-65, plus Iceland in 1970-85.

Sources: Calculated from Statistisk Sentralbyrå, Norge: Statistisk Arbok, various issues.

A7.5 The country structure of Swedish agro-food imports (SITC 0, 1, 21, 22, 4) in 1960-85, percentage shares in imports value

Year	1960	1965	1970	1972	1973	1975	1980	1985
EC(6-8)	15.4	14.0	13.4	13.8	14.0	15.8	19.0	22.3
Denmark	9.3	12.7	15.7	16.5	14.7	14.4	10.2	10.4
United K.	2.7	0.9	3.7	3.9	3.8	3.5	4.3	3.5
EC(8-10)	27.4	27.6	32.8	34.2	32.5	33.7	33.5	36.2
EFTA(3-6)	5.4	7.2	13.7	14.6	15.3	14.9	15.1	14.8
Finland	0.7	1.1	3.5	3.3	3.0	3.8	2.4	2.2
Norway	4.1	5.3	6.4	7.8	9.1	7.6	8.7	8.6
USA	13.7	10.0	9.9	9.4	9.2	9.2	8.2	7.4
USSR	3.9	0.9	1.1	0.7	0.7	0.5	0.3	0.3
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.2	0.9
Other c.	49.6	61.5	42.5	41.1	42.3	41.7	41.7	40.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

A7.6 The country structure of Swedish agro-food exports (SITC 0, 1, 21, 22, 4) in 1960-85, percentage shares in exports value

Year	1960	1965	1970	1972	1973	1975	1980	1985
EC(6-8)	35.3	37.4	30.2	26.5	21.7	26.5	24.8	19.5
Denmark	5.0	7.0	9.8	9.0	9.8	7.2	11.5	12.8
United K.	21.3	13.3	17.0	16.7	12.5	7.2	4.5	4.1
EC(8-10)	61.6	57.7	57.0	52.2	44.0	40.9	40.8	36.4
EFTA(3-6)	6.9	11.7	18.9	20.0	24.1	22.7	23.5	19.8
Finland	2.7	3.2	5.6	5.2	5.7	6.5	8.4	6.2
Norway	2.8	6.8	10.3	8.8	9.7	12.6	11.5	9.4
USA	11.2	8.8	5.2	5.5	5.3	3.6	3.5	11.0
USSR	0.0	0.6	1.9	3.0	3.3	0.9	11.6	8.5
Japan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.5	3.7
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	9.7	2.3
Other c.	20.3	21.2	17.0	19.3	23.3	31.9	16.8	18.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes:

EC(6-8) = Belgium, France, Germany, Italy, and the Netherlands in 1960-72, plus Ireland since 1973, plus Greece in 1985; EC(8-10) = the countries above, plus Denmark and the United Kingdom; EFTA(3-6) = Finland, Norway and Switzerland in 1960-65, plus Austria, Iceland and Portugal in 1970-85.

Sources: Calculated from Statistiska Centralbyran, Sverige: Statistiska Arsbok, various issues.

Annex 8. Indices of Revealed Comparative Advantage in Scandinavian imports and exports of agro-food products

A8.1 The index of "Revealed Comparative Advantage" of the EC(8-10) in the Finnish agro-food imports (SITC 0, 1, 21, 22, 4) in 1960-85

Year SITC-group	1960	1965	1970	1975	1980	1985	Slope p.a.	R ²
Live anim.(00)	743	92	189	218	153	138	-16.1	0.384
Meat (01)	459	480	85	371	221	133	-12.1	0.451
Dairy+eggs (02)	233	480	597	519	492	401	4.6	0.116
Fish (03)	78	69	56	34	35	36	-1.9*	0.863
Cereals (04)	35	70	113	28	120	132	3.1	0.425
Fruit+ veg.(05)	120	130	159	140	96	86	-1.7	0.324
Sugar (06)	9	25	83	30	89	96	3.3x	0.648
Coffee+tea (07)	38	41	26	66	54	63	1.2	0.488
Feedingst. (08)	55	32	214	200	177	182	6.0	0.513
Misc.food (09)	331	361	296	251	241	180	-6.6**	0.885
Bever.+tob.(1)	193	225	245	192	151	112	-3.9x	0.560
Hides+skins(21)	160	141	145	83	218	218	2.6	0.227
Oilseeds (22)	9	29	8	5	20	5	-0.3	0.075
Oils+fats (4)	416	400	413	314	212	173	-10.7*	0.875

A8.2 The index of "Revealed Comparative Advantage" of Finland in the agro-food exports (SITC 0, 1, 21, 22, 4) to the EC(8-10) in 1960-85

Year SITC-group	1960	1965	1970	1975	1980	1985	Slope p.a.	R ²
Live anim. (00)	2	3	5	1	75	6	1.3	0.179
Meat (01)	77	25	105	3	7	12	-2.7	0.366
Dairy+eggs (02)	115	107	100	71	66	80	-1.9o	0.745
Fish (03)	2	14	2	14	44	211	6.6x	0.567
Cereals (04)	46	70	124	53	79	51	-0.1	0.001
Fruit+veg. (05)	114	123	65	76	63	132	-0.5	0.019
Sugar (06)	22	42	17	29	26	119	2.6	0.390
Coffee+tea (07)	19	23	79	119	93	160	5.5*	0.867
Feedings. (08)	106	219	140	1	36	6	-6.8x	0.543
Misc.food (09)	38	68	15	44	50	4	-1.1	0.197
Bever.+tob.(1)	1	14	5	32	6	22	0.6	0.238
Hides+skins(21)	65	104	147	232	188	140	4.1	0.413
Oilseeds (22)	-	-	0	185	237	440	17.7*	0.855
Oils+fats (4)	94	85	47	311	192	293	9.0x	0.561

Notes:

see A8.6.

Sources: Calculated from Tullihallitus: Ulkomaankauppa, SVT I A, various issues.

A8.3 The index of "Revealed Comparative Advantage" of the EC(8-10) in the Norwegian agro-food imports (SITC 0, 1, 21, 22, 4) in 1960-85

Year SITC-group	1960	1965	1970	1975	1980	1985	Slope p.a.	R ²
Live a. etc(00,09)	225	264	238	190	227	181	-2.2	0.432
Meat (01)	273	112	206	165	193	110	-3.5	0.280
Dairy+eggs (02)	384	303	277	268	226	247	-5.3o	0.794
Fish (03)	370	200	172	159	88	70	-10.6*	0.849
Cereals (04)	46	74	131	72	93	119	2.1	0.373
Fruit+veget. (05)	93	70	71	79	80	77	-0.2	0.073
Sugar (06)	310	285	221	240	215	218	-3.7o	0.757
Coffee etc. (07)	28	43	38	52	54	56	1.1*	0.843
Feedingstuffs (08)	20	80	60	111	81	131	3.5o	0.701
Bever.+tobacco (1)	92	180	161	107	133	128	-0.1	0.001
Hides+skins (21)	208	117	117	122	146	58	-3.8	0.520
Oilseeds (22)	3	5	9	2	3	6	0.0	0.002
Oils+fats (4)	168	110	97	133	133	94	-1.5	0.257

A8.4 The index of "Revealed Comparative Advantage" of Norway in the agro-food exports (SITC 0, 1, 21, 22, 4) to the EC(8-10) in 1960-85

Year SITC-group	1960	1965	1970	1975	1980	1985	Slope p.a.	R ²
Live a. etc(00,09)	58	44	24	14	24	18	-1.5o	0.718
Meat (01)	140	127	170	138	87	62	-3.1x	0.543
Dairy+eggs (02)	187	113	83	22	21	22	-6.6*	0.854
Fish (03)	71	89	82	93	107	116	1.7**	0.893
Cereals (04)	62	48	76	153	63	56	0.5	0.016
Fruit+veget. (05)	90	54	30	22	106	82	0.6	0.029
Sugar (06)	72	162	170	219	186	125	2.2	0.162
Coffee etc. (07)	n.d.	127	107	141	131	143	1.1	0.378
Feedingstuffs (08)	172	142	137	123	78	62	-4.3***	0.949
Bever.+tobacco (1)	41	40	42	60	84	48	1.1	0.333
Hides+skins (21)	100	87	112	126	131	42	-0.8	0.056
Oilseeds (22)	0	..	..	..	12	225	n.d.	n.d.
Oils+fats (4)	137	103	134	43	116	129	-0.5	0.019

Notes:

See A8.6.

Sources: Calculated from Statistisk Sentralbyrå, Norge: Statistisk Arbok, various issues.

A8.5 The index of "Revealed Comparative Advantage" of the EC(8-10) in the Swedish agro-food imports (SITC 0, 1, 21, 22, 4) in 1960-85

Year SITC-group	1960	1965	1970	1975	1980	1985	Slope p.a.	R ²
Live animals (00)	204	121	203	122	125	122	-2.7	0.374
Meat (01)	235	191	160	134	76	92	-6.2**	0.932
Dairy+eggs (02)	273	239	171	199	184	191	-3.1x	0.571
Fish (03)	111	150	100	111	90	82	-1.8	0.495
Cereals (04)	90	89	175	158	172	165	3.5x	0.635
Fruit+veget. (05)	117	109	97	89	82	78	-1.6***	0.979
Sugar (06)	163	115	114	52	204	186	1.8	0.093
Coffee etc. (07)	20	18	20	34	46	52	1.5*	0.878
Feedingstuffs (08)	163	137	126	131	126	106	-1.8o	0.807
Misc. food (09)	125	94	148	144	151	147	1.6	0.451
Bever.+tobacco (1)	133	138	138	144	148	133	0.2	0.103
Hides+skins (21)	46	80	79	90	108	167	4.0*	0.847
Oilseeds (22)	3	4	16	18	15	21	0.7o	0.789
Oils+fats (4)	123	105	139	142	165	168	2.3o	0.812

A8.6 The index of "Revealed Comparative Advantage" of Sweden in the agro-food exports (SITC 0, 1, 21, 22, 4) to the EC(8-10) in 1960-85

Year SITC-group	1960	1965	1970	1975	1980	1985	Slope p.a.	R ²
Live animals (00)	154	108	70	70	75	69	-3.1o	0.703
Meat (01)	143	148	127	103	153	187	1.2	0.162
Dairy+eggs (02)	98	105	99	51	46	26	-3.3*	0.855
Fish (03)	70	71	80	137	178	155	4.6o	0.820
Cereals (04)	138	92	108	85	39	42	-3.8*	0.852
Fruit+veget. (05)	133	114	108	109	132	145	0.7	0.162
Sugar (06)	29	0	24	48	36	80	2.2x	0.600
Coffee etc. (07)	128	92	74	127	102	109	-0.1	0.001
Feedingstuffs (08)	146	0	88	81	28	40	-2.6	0.216
Misc. food (09)	83	58	64	98	88	76	0.5	0.101
Bever.+tobacco (1)	125	120	85	38	47	50	-3.7o	0.797
Hides+skins (21)	56	66	90	128	153	210	6.1***	0.954
Oilseeds (22)	43	150	100	186	228	143	4.7	0.458
Oils+fats (4)	92	102	85	97	79	116	0.4	0.066

Notes:

The index is calculated as the share of the EC in the imports/exports of product group j, divided by the share of the EC in the total agro-food imports/exports, multiplied by 100; The slope of the regression line per year is given after the index numbers. The significance is given as *** p < 0.1%, ** p < 0.5%, * p < 1.0%, o p < 5.0% and x p < 10.0%.

Sources: Calculated from Statistiska Centralbyran, Sverige: Statistiska Årsbok, various issues.

A8.7 The index of "Revealed Comparative Advantage" in Finnish, Norwegian and Swedish mutual agro-food versus total trade with the EC(8-10) in 1960-85

Year	RCA in imports			RCA in exports		
	Finland	Norway	Sweden	Finland	Norway	Sweden
1960	27.07	38.85	47.99	118.32	78.94	111.67
1961	36.89	38.47	49.59	98.80	85.69	111.13
1962	30.80	40.99	48.94	111.92	83.61	117.84
1963	25.61 a)	56.06	50.29	110.55 a)	82.33	117.65
1964	25.89	47.85	53.30	89.11	83.96	112.26
1965	32.89	46.55 b)	53.27	85.65	88.54 b)	109.13
1966	37.32	45.23	54.87 c)	93.82	93.39	120.16 c)
1967	38.55	49.84	56.54	100.00	95.96	132.02
1968	41.51	58.44	60.51	96.66	92.72	114.09
1969	41.30	57.54	62.49	95.67	84.60	119.96
1970	33.57	62.78	59.20	85.75	82.78	114.09
1971	47.22	68.13	61.19	94.05	78.27	111.41
1972	42.44	67.98	62.80	90.28	80.51	104.97
1973	48.99	67.86	58.82	61.39	89.41	87.24
1974	51.53	68.30	63.64	75.28	81.48	97.46
1975	42.40	71.73	64.06	81.06	69.11	91.74
1976	40.67	65.48	59.80	93.80	70.31	74.45
1977	43.63	69.00	60.94	99.31	73.20	77.43
1978	44.75	63.80	62.97	95.28	64.25	81.06
1979	50.67	62.68	63.96	84.82	64.86	80.62
1980	53.57	64.07	67.93	81.23	56.93	83.29
1981	70.99	71.86	69.60	61.16	52.93	87.00
1982	56.35	67.56	66.27	67.46	55.27	80.97
1983	64.06	66.95	65.48	62.87	53.82	72.17
1984	60.12	64.70	65.64	72.10	55.40	84.35
1985	61.42	76.62	63.06	62.13	58.01	78.25

Notes:

a) Based on January-November figures; b) Average of 1964 and 1966; c) Average of 1965 and 1967.

Calculated from: Statistiska Centralbyran, Sverige: Statistiska Årsbok, various issues; Statistisk Sentralbyrå, Norge: Statistisk Årbok, various issues; Tullihallitus: Ulkomaankauppa, SVT I A, various issues.

Annex 9. Indices of Relative Trading Power in Scandinavian trade in agro-food products

A9.1 The index of "Relative Trading Power" in mutual agro-food (SITC 0, 1, 21, 22, 4) trade of Finland and the EC(8-10) in 1960-85, (1960 = 100)

Year SITC-group	1960	1965	1970	1975	1980	1985
Live a. (00)	100	1100	867	167	16333	1433
Meat (01)	100	31	735	5	19	54
Dairy+eggs(02)	100	45	34	28	27	40
Fish (03)	100	781	138	1585	4835	22542
Cereals (04)	100	76	83	144	50	29
Fruit+veg.(05)	100	100	43	57	69	162
Sugar (06)	100	69	8	40	12	51
Coffee (07)	100	112	608	361	344	508
Feedings.(08)	100	355	34	0	11	2
Misc.food(09)	100	164	44	197	180	19
Bev.+tob. (1)	100	1240	400	3340	800	3920
Hides+skin(21)	100	182	250	688	212	158
Oilseeds (22)	..	..	..	-	-	-
Oils+fats (4)	100	94	50	438	401	750

Note:

The index is calculated by dividing the RCA-index in exports by the RCA-index in imports, giving the value 100 for the base year.

Source: Calculated from annex 8.

A9.2 The index of "Relative Trading Power" in mutual agro-food (SITC 0, 1, 21, 22, 4) trade of Norway and the EC(8-10) in 1960-85, (1960=100)

Year SITC-group	1960	1965	1970	1975	1980	1985
Live a. (00)	.	.	.	.	.	.
Meat (01)	100	221	161	163	88	119
Dairy+eggs(02)	100	77	62	17	19	74
Fish (03)	100	232	248	305	633	329
Cereals (04)	100	48	43	158	50	215
Fruit+veg.(05)	100	80	44	29	137	117
Sugar (06)	100	245	331	394	373	77
Coffee (07)	n.d.	(100)	(95)	(92)	(82)	(217)
Feedings.(08)	100	21	27	13	11	10
Misc.food(09)	100	65	39	29	41	257
Bev.+tob. (1)	100	50	59	126	142	211
Hides+skin(21)	100	155	199	215	186	253
Oilseeds (22)	100	..	..	..	-	-
Oils+fats (4)	100	115	169	40	107	92

Notes and sources: see A9.1.

A9.3 The index of "Relative Trading Power" in mutual agro-food (SITC 0, 1, 21, 22, 4) trade of Sweden and the EC(8-10) in 1960-85 (1960=100)

Year SITC-group	1960	1965	1970	1975	1980	1985
Live a. (00)	100	118	46	76	79	75
Meat (01)	100	127	130	126	331	334
Dairy+eggs(02)	100	122	161	71	70	38
Fish (03)	100	75	127	196	313	300
Cereals (04)	100	67	40	35	15	17
Fruit+veg.(05)	100	92	98	108	142	164
Sugar (06)	100	0	119	519	99	242
Coffee (07)	100	80	58	58	35	33
Feedings.(08)	100	0	78	69	25	42
Misc.food(09)	100	93	65	103	88	78
Bev.+tob. (1)	100	93	66	28	34	40
Hides+skin(21)	100	68	94	117	116	103
Oilseeds (22)	100	262	44	72	106	48
Oils+fats (4)	100	130	82	91	64	92

Notes and sources: see A9.1.

A9.4 The index of "Relative Trading Power" in Finnish, Norwegian and Swedish agro-food versus total mutual trade with the EC in 1960-85, (1960 = 100)

Year	Finland	Norway	Sweden
1960	100.00	100.00	100.00
1961	61.27	109.62	96.31
1962	83.14	100.39	103.48
1963	98.76	72.28	100.54
1964	78.47	86.35	90.51
1965	59.58	93.61	88.04
1966	57.52	101.62	94.11
1967	59.35	94.76	100.35
1968	53.28	77.50	81.03
1969	53.00	72.36	82.50
1970	58.44	64.89	82.82
1971	45.57	56.54	78.25
1972	48.67	58.29	71.83
1973	28.67	64.84	63.74
1974	33.42	58.71	65.81
1975	43.74	47.42	61.54
1976	52.77	52.84	53.50
1977	52.08	52.21	54.60
1978	48.71	49.56	55.32
1979	38.30	50.93	54.17
1980	34.69	43.73	52.69
1981	19.71	36.25	53.72
1982	27.39	40.26	52.51
1983	22.45	39.56	47.37
1984	27.44	42.14	55.22
1985	23.14	37.26	53.33

Source: Calculated from annex A8.7.

Annex 10. Production control and cut-back measures in Scandinavian agriculture

A schematic list of the measures applied during the 1970s and 1980s (in brackets the year of introduction or use)

Country	Subsector: Milk
Finland	<ul style="list-style-type: none">*Land Reserve System (1969-74)*Slaughter premium for dairy cows (1969-70)*Agricultural production reduction agreem. (1977)*Marketing levy (1977)*Establishment permission (1979-84)*Livestock production reduction agreement (1980)*Premium for beef production based on agr. (1980)*Slaughter premium for udder-damaged cows (1980)*Milk bonus system (1981)*Two-price (quota) system (1985)
Norway	<ul style="list-style-type: none">*Milk bonus system (1977)*Slaughter premium for dairy cows (1981)*Slaughter premium for young calves (1982)*Two-price (quota) system (1983)*Establishment control*Import fees on concentrates
Sweden	<ul style="list-style-type: none">*Removal of price supplement from pensioners(1982)*Increase of import levy on oil-concentrates(1982)*Milk production termination compensation (1983)*Investment ban (1983-85)*Two-price (quota) system (1985)
Country	Subsector: Beef and pigmeat
Finland	<ul style="list-style-type: none">*Marketing levy for large pig-farms(1972-74,1978-)*Establishment permission (1975)*General marketing levy for pig-farms(1976,1981-84)*Pigmeat bonus system (1983)*Livestock production reduction agreement (1984)
Norway	<ul style="list-style-type: none">*Slaughter premium for young calves (1982)*Castration premium for calves*Establishment control*Pigmeat production reduction agreement*Price differentiation in favour of lower slaughter weight carcasses
Sweden	<ul style="list-style-type: none">*Slaughter premium for small pigs (temporary, 1972)*Slaughter premium for pregnant sows (1982)*Increase of import levy on oil-concentrates (1982)*Slaughter premium for young female calves (1983)*Investment ban (1983-85)*Slaughter animal levies*Information and price differentiation to lower the average slaughter weights of cattle

Subsector: Eggs	

Finland	*Marketing levy for large egg-farms (1972-73, 1976-) *Establishment permission (1975) *Slaughter agreements (1976, 1981-84) *Incubate reductions (1977) *Establishment permission for breeding-hens (1977) *Livestock production reduction agreement (1984) *Two-price (quota) system (1986)
Norway	*Production agreements (1983)
Sweden	*Investment ban (1983-85)

Country	Other

Finland	*Land Reserve Program (1969-74) *Fallowing agreem./premiums (1977-80, 1984, 1986-) *Afforestation premiums (trippled in 1987) *Tax on clearing new field (1987) *Establishment permission in livestock production *Partial cost responsibility of farmers in surplus disposal (export/ production ceilings)
Norway	*Establishment permission in poultry production *Cost responsibility of farmers in surplus disposal
Sweden	*Investment ban in livestock production (1983-85) *Fallowing premiums (1986) *Cost responsibility of farmers in surplus disposal (in cereals partial)

Also taken in account in decisions concerning prices and capital supply/sup- ports.	

Note:	
The list may not be complete.	
Sources: Lagerroth, 1985; Seren, 1987; Sumelius, 1987; Toivanen, 1985.	

Annex 11. Definition of agro-food trade

The following product groups of the Standard International Trade Classification (SITC) are included:

- 0 - Food and live animals
 - 00 - Live animals
 - 01 - Meat and meat preparations
 - 02 - Dairy products and eggs
 - 03 - Fish and fishery products
 - 04 - Cereals and cereal preparations
 - 05 - Fruit and vegetables
 - 06 - Sugar, sugar preparations and honey
 - 07 - Coffee, tea, cocoa, spices and manufacturers thereof
 - 08 - Feedstuffs for animals (excluding unmilled cereals)
 - 09 - Miscellaneous food preparations
- 1 - Beverages and tobacco
 - 11 - Beverages
 - 12 - Tobacco
- 2 - Crude materials
 - 21 - Hides, skins and fur skins
 - 22 - Oilseeds and oil kernels
 - (23-29 excluded)
- 4 - Animal and vegetable oils, fats and waxes
 - 41 - Animal fats
 - 42 - Fixed vegetable oils
 - 43 - Processed oils and fats; waxes

"Temperate agricultural products" include live animals (00), meat (01), dairy products and eggs (02), cereals (04) and sugar (06)

In imports c.i.f. prices and in exports f.o.b. prices are used