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ECONOMIC INTEGRATION, INTER– AND
INTRA–INDUSTRY TRADE: The case of
Sweden and the EC

by

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ECONOMIC INTEGRATION, INTER– AND INTRA–INDUSTRY TRADE:
THE CASE OF SWEDEN AND THE EC.

A study of the effects of European trade policy in the 1970s and 1980s on the
structure of Swedish trade and production.

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1. Background

The decision to create the EC Internal Market by 1992 has raised questions in Sweden as well as in other non–member European countries regarding the economic consequences of the European integration process. This process implies the elimination of a number of non–tariff barriers, such as border controls, discrimination against imports in public procurement and technical barriers to trade, as well as a general process of deregulation and promotion of competition.

Regardless if Sweden participates or not, the creation of the internal market will change the volume and structure of Swedish trade with the EC. It is not clear, however, precisely what these effects will be. Would a further integration with the Common Market result in more inter–industry trade and specialization according to comparative advantage, or mainly in increased intra–industry trade, i.e exchange of "the same" products?

This paper uses historical experience to evaluate the 1992 effects by studying changes in Swedish trade during an earlier period of economic integration, namely the 1970s and early 1980s, when tariffs on trade in manufactures among the original EEC member countries (the EC6) and the EFTA countries were eliminated. Of course, the barriers to be eliminated in the 1990s are different from those – mainly tariffs – that were abolished in the 1970s. A basic question for further work is in what sense the creation of the internal market is different, in degree or in kind, from the creation of the EEC or the free trade agreements (FTAs), and what predictions, if any, could be made about the former based on an analysis of the latter. However, an evaluation of the historical integration process should shed at least some light on what to expect in the future. This is the scope of the present paper.

Section 2 gives a brief survey of the predictions obtained from the standard theory of trade under imperfect competition (cf Helpman & Krugman 1985) about the effects on trade and production of the removal of tariffs. These predictions are applied to the evaluation of the free trade agreement for manufactures introduced between Sweden and the original 6 EC members (EC 6) during the 1970s. Section 3 presents the development of Swedish–EC trade and specialization in 1970–84. In sections 4 and 5 the predictions are tested

using data for a cross–section of manufacturing industries.

2. Integration, production and trade.

The effects on inter– and intra–industry trade of eliminating trade barriers may be evaluated using the standard Chamberlin–Heckscher–Ohlin model (Helpman & Krugman 1985 ch. 7, 8). In that model two countries, home and foreign, each endowed with fixed but different amounts of labor and capital, but otherwise identical, are producing two goods, one homogeneous commodity, food, under constant returns, and one differentiated good, manufactures, under increasing returns to scale. If manufacturing is assumed to be capital intensive, and the home country is capital abundant, the home country will become a net exporter of manufactures when free trade is established. It will export manufactures in exchange for manufactures and food, i.e there will be inter– as well as intra–industry trade. Each manufacturing firm will have the same output volume and export half of its production, but the number of firms in manufacturing and thus total manufacturing production will be larger in the home country.

The proportions of inter– and intra–industry trade depends on the variation among countries in factor endowments. If factor endowments were the same, there would be no net trade and only intra–industry trade. The more endowments differ, the larger will be the amount of inter–industry trade.

Let us assume that countries have the same relative factor endowments, but that the foreign country is larger than the home country. If production functions are homothetic, the relative price of manufactures (p), equal to the ratio of unit cost in manufacturing to unit cost in food production, will depend only on ω, the ratio of wages to capital cost, and x, the output of the representative manufacturing firm (Helpman & Krugman 1985 p 143).

$$p = \pi(\omega)/\rho(x) \qquad (1)$$

Consider the case where in autarky, because of the larger market, the foreign country has a larger number of manufacturing firms, each with a higher level of output. Thus, because of economies of scale, the relative price and cost of manufactures in autarky may be lower in the foreign country. This is what

Lancaster (1980) has called "false comparative advantage" − false in the sense that, according to the assumptions, in the free trade position there will be no net trade at all and only intra−industry trade, and thus that pre−trade prices cannot be used to predict trade patterns in the free trade position.

However, autarky prices may still be used to predict trade patterns at high but not prohibitive tariffs. Consider a marginal and bilateral reduction of tariffs starting from the autarky position. The result will be some two−way trade in manufactures, but also some exports of food from the home country, in exchange for net import of manufactures, since the unit cost for food is initially relatively low in the home country. While for a gradual reduction in tariffs from the prohibitive level **intra**−industry trade will continue to increase up to a maximum at free trade, there will be some point at positive tariff rates where **inter**−industry trade reaches a maximum and thereafter declines towards zero in the free trade situation.

Moreover, it seems possible to construct cases where the pattern of inter−sectoral trade is actually reversed. Consider the case when capital is abundant in the small country, i.e the home country. We have assumed that there are economies of scale in the capital intensive sector, i.e manufacturing. The relative price of manufactures in autarky is determined, according to equation (1), by two factors: wages relative to cost of capital, and the scale effect on unit cost in manufacturing, determined by the size of the market. It is possible that the latter may dominate, so that manufactures actually are cheap in the foreign country before trade, in spite of the fact that capital is scarce in that country.

In that case, a marginal reduction in tariffs would mean that the home country starts exporting food and manufactures, and importing manufactures. We know, however, that in the free trade position the net trade pattern will be reversed, leaving the home country as net exporter of manufactures. Hence, when gradually reducing tariffs from prohibitive levels towards zero, there will be some point where the intersectoral trade pattern is reversed.

According to most models of international trade, a successive and bilateral reduction of tariffs between two countries should lead to increased gross trade among them, to some extent at the expense of trade with third countries. The

observed changes in trade among two countries during a certain period cannot, however, be attributed to trade policy alone. A general reduction in transport costs, due to technical progress in transportation, will have much the same effects as a tariff cut. If rates of accumulation of factor supplies are such as to make countries' relative factor endowments converge, the scope for inter–sectoral specialization and trade will gradually diminish, and trade will become mostly of the intra–industry kind.

In a comparison across industries or products, net exports should increase in industries where Sweden has a comparative advantage when tariffs are eliminated. This holds to the extent that the pattern of comparative advantage is unchanged over time. However, a shift in comparative advantage, which is independent of trade policy changes, and caused by different rates of accumulation of factor endowments in Sweden and the EC, should also be reflected in the pattern of net export changes. Net exports will then increase in industries intensive in factors where Swedish factor supplies have been growing relative to the EC.

Another effect of trade liberalization would be an increase of intra–industry trade in differentiated product groups, i.e where products of individual firms are close but not perfect substitutes, and where there are economies of scale in production. Given the cost difference between foreign and domestic producers in a particular industry, there will be more intra–industry trade as a result of a tariff cut, the lower is the elasticity of substitution in consumption among foreign and domestic brands.

3. Trade and comparative advantage: Sweden and the Common Market.

In a historical perspective, Swedish exports used to be strongly based on the availability of domestic natural resources such as forest land, iron ore and hydro–electric power[1]. To some extent this is still true, in particular for forest based products and energy intensive industries, while the role of domestic ore deposits for the competitiveness of a local steel industry has been much

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[1]For empirical studies of Swedish "revealed" comparative advantage see Carlsson & Ohlsson (1976), Ohlsson (1980), Flam (1981) and Gavelin (1983). For an analysis of comparative advantage in the Nordic countries' trade with the Common Market see Haaland & Norman (1987).

diminished. Compared to Western Europe, prices of roundwood and energy have — up to now — been low in Sweden.

Apart from natural resources, the pattern of comparative advantage is more difficult to establish. Available data for factor endowments (cf Leamer 1984) suggest that the aggregate physical capital stock per employee in 1975 was about the same in the Swedish economy as in the EC(6) countries (except Italy). Skilled labor, as measured by ILO data, seems to be abundant in Sweden, not only compared to the new EC members in Southern Europe but also to e.g the Federal Republic of Germany. However, this does not necessarily mean an abundant supply of technicians to Swedish industry, since a relatively larger proportion of skilled labor according to the ILO definition (professional, technical and related workers) is absorbed in the Swedish public service sector.

With respect to the capacity to produce new and commercially useful knowledge, as measured by industrial R&D in per cent of value added, Swedish industry has advanced in the 1970s and 1980s from an intermediate to a top position among industrial countries (OECD 1986). One might expect this to show up in a shift of comparative advantage towards technology intensive products.

In the case of differentiated products with large economies of scale, a large and protected home market may provide a basis for exports at low costs when trade barriers are reduced, starting from a very high level. In this sense, the "large country", here the EC(6), may initially exhibit a "false" comparative advantage (in Lancaster's (1980) terms) in such products — false in the sense that the cost advantage of a large home market, capable of sustaining larger firms, will disappear when markets become integrated. In this sense, a gradual reduction of barriers to trade may not only increase trade but also shift the pattern of "revealed comparative advantage" in the direction of increasing net exports (decreasing net imports) for the small country (Sweden) in such industries.

According to figure 1, there was already in 1970 a substantial exchange of manufactured products between Sweden and the EC(6); gross trade amounted to 17% of the Swedish consumption of manufactures. During the period when

Figure 1
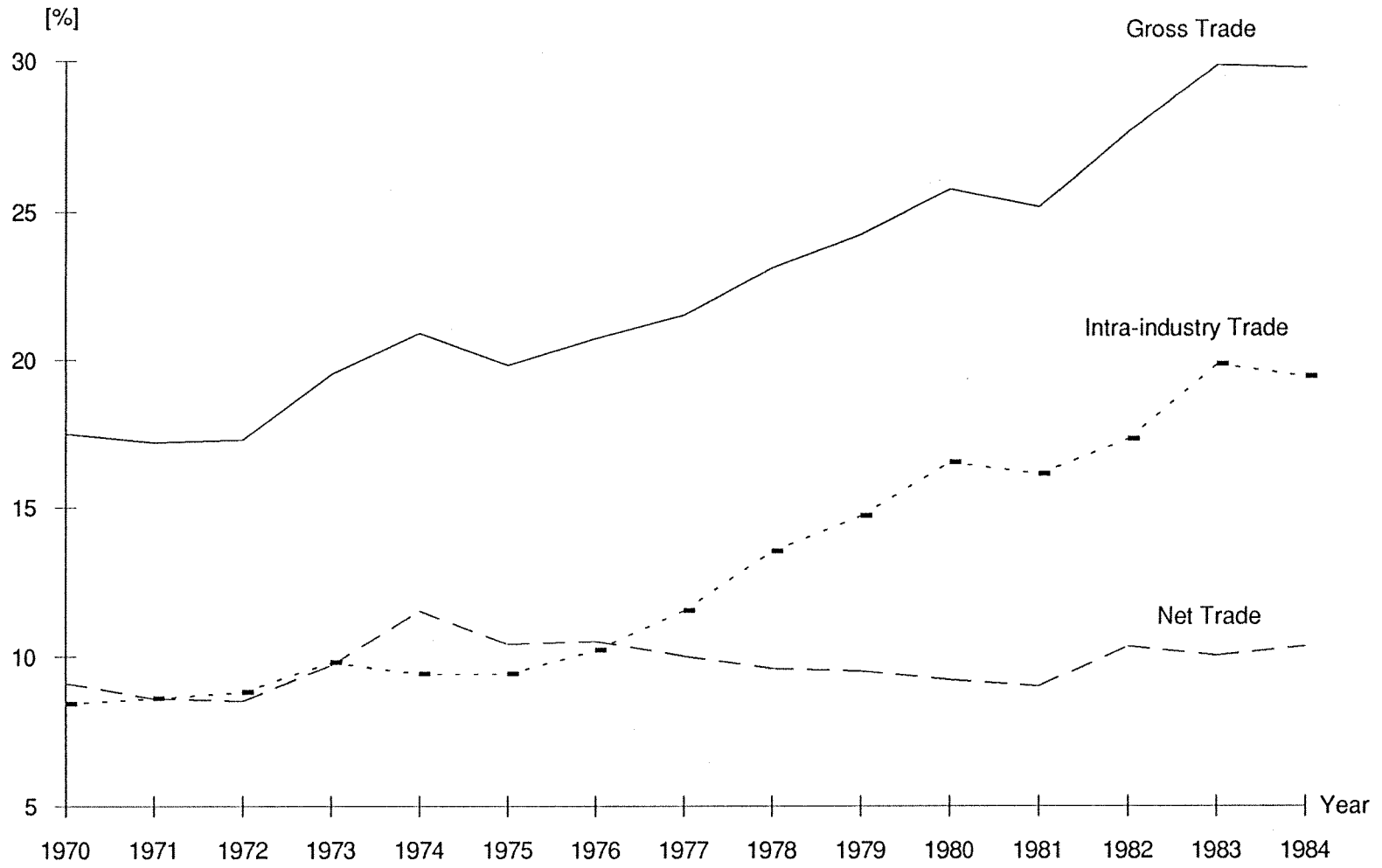
tariffs were eliminated, gross trade increased to almost 30% of consumption. However, almost all of this increase was accounted for by growth of intra–industry trade; the increase in inter–sectoral specialization was very limited.

The issue of the pattern of "revealed" comparative advantage and specialization of Sweden versus the EC can be approached by simply classifying industries according to resource requirements and then compute aggregate net exports or imports for labor intensive, capital intensive, skill intensive and R&D intensive industries. The classification follows that used by Ohlsson & Vinell (1987). Net export ratios are expressed in per cent of domestic consumption of the corresponding products.

According to table 1, Sweden had an export surplus in physical capital intensive industries and in industries intensive in unskilled labor in 1970 in the trade with the original Common Market members. Capital intensive industries are defined as those with a high value of investment in buildings and machinery per employee; it may be observed that this sector covers a number of energy intensive industries processing domestic raw materials. On the other hand, there was a deficit in the trade in skill intensive and R&D intensive products. In 1984 Sweden had a still more pronounced net export position in capital intensive as well as in labor intensive goods, whereas the deficit position in skill and R&D intensive goods was reduced.

Table 1. Net export ratios for Swedish trade with the EC(6) for groups of industries classified with respect to resource requirements. Per cent of domestic consumption of the corresponding goods.

	labor intensive industries	capital intensive industries	skill intensive industries	R&D intensive industries
1970	4.4	5.0	–7.4	–12.1
1984	7.0	12.3	–6.3	–8.5

Source: OECD, COMTAP data base. For the classification of sectors see Ohlsson & Vinell (1987).

4. Integration and trade: data and hypotheses.

Gross (g), net (n) and intra–industry trade (z) in an industry (i) are expressed as ratios to domestic consumption and are defined as follows:

$$g_i = \frac{X_i + M_i}{C_i} \qquad (1)$$

$$n_i = \frac{|X_i - M_i|}{C_i} \qquad (2)$$

$$z_i = g_i - n_i \qquad (3)$$

where X_i and M_i are Swedish exports and imports of product group (i) to (from) the original Common Market members (Belgium–Luxembourg, Germany, France, Italy and Netherlands) and C_i is Swedish consumption, defined as domestic production plus imports minus exports from/to the world. The data for trade and gross production by industry on the 4 digit level of the ISIC in current prices are from an OECD data base (COMTAP).

Industry characteristics are mainly from the Swedish industrial statistics in 1978[2]. The resource requirement variables used in the regressions to indicate comparative advantage are the effect of machinery per employee (e) and the share of technicians of the labor force (t) as measures of energy intensity and skill intensity. The role of domestic natural resources is reflected by a dummy (r) for forest based industries, and the capacity to produce new knowledge (f) by R&D intensity from OECD data.[3]

Product differentiation is interpreted here as the elasticity of substitution

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[2]In the absence of factor reversals, the ranking of industries with respect to e.g capital intensity will be independent of factor prices. Interpreted in a strict sense, a change of the relative factor price would change the capital intensity in all sectors in the same proportion. Hence, if this is the case it does not matter whether one uses home or foreign data on capital intensities, or data from the beginning or end of the period under analysis.

[3]R&D data were only available on a rather aggregated level (OECD 1986). The average R&D intensity for an industry group has been assumed to hold for all corresponding subgroups on the 4 digit ISIC level.

among products from different firms in the same industry. The variable used to capture product substitutability in demand in an industry is the (absolute value of the) coefficient (d) in a regression for each product group of the volume of imports of different origin on import price, i.e unit value of imports from that country, performed on Swedish imports in 1983 (cf Hansson 1989, 1990). If in a product group imports from different sources are close substitutes, i.e the good is relatively homogeneous, there should be little imports from countries with a higher than average price; the coefficient d (in fact the elasticity, since regressions were estimated in log–linear form) would then take on a high value.[4]

However, product differentiation may be reflected by other variables as well. The effect of machinery per employee (e) tends to be high in raw material processing industries with a homogenous output, such as paper and steel. Moreover, it may be argued that products in an early stage of the life cycle are more differentiated than the output of mature industries, and that such "new" products are characterized by a high rate of growth of demand, as well as by a high rate of turnover of knowledge, i.e a high rate of product and process innovation.[5] Market growth (m) was measured by an index of total OECD production, in current prices, for 1984 with 1970 as base year, and innovation activity (f) by R&D expenditure as above.

One might argue that the intensity of advertising would reflect the degree of product differentiation, since for a seller of an homogeneous commodity in perfect competition there would be little gain from advertising. However, as pointed out by Caves (1981) and Lancaster (1979), advertising could be an attempt to create "pseudo–differentiation" of products that actually are very similar to consumers (cf also Hansson 1989). According to Caves (1981) such markets would be characterized by horizontal direct investment, to exploit firm specific assets such as brand names, rather than intra–industry trade. Thus, though the relationship is ambigous, the intensity of advertising or sales promotion in general (s), as measured by the share of sales personnel in total

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[4]The variable most often used in empirical studies to capture the concept of product differentiation is the dispersion in unit value of exports to different destinations (Hufbauer 1970); for a critique of this measure see Greenaway (1984).

[5]Cf Caves (1981), Greenaway & Milner (1984) and Balassa (1986).

employment, was included in the analysis.

The following regressions were estimated for net exports and intra–industry trade, both in per cent of domestic consumption, in 1970 and 1984, as well as for changes in these variables 1970–1984, for a cross–section of all manufacturing industries on the 4 digit level of the ISIC, a total of 80 industries:

$$n = \alpha_0 + \underset{+}{\alpha_1} e + \alpha_2 t + \underset{+}{\alpha_3} r + \alpha_4 f + \alpha_5 d + \alpha_6 m + \epsilon_1 \qquad (4)$$

$$z = \beta_0 + \underset{-}{\beta_1} d + \underset{+}{\beta_2} m + \underset{+}{\beta_3} f + \beta_4 s + \epsilon_2 \qquad (5)$$

$$\Delta n = \gamma_0 + \underset{+}{\gamma_1} e + \gamma_2 t + \underset{+}{\gamma_3} r + \gamma_4 f + \gamma_5 d + \gamma_6 m + \epsilon_3 \qquad (6)$$

$$\Delta z = \varphi_0 + \underset{-}{\varphi_1} d + \underset{+}{\varphi_2} m + \underset{+}{\varphi_3} f + \varphi_4 s + \epsilon_4 \qquad (7)$$

where the ϵ:s are stochastic variables. According to our hypotheses, β_2 and β_3 as well as φ_2 and φ_3, the coefficients for the variables indicating market growth and high rate of turnover of technology, should all be positive. β_1 and φ_1, the coefficients for the variable intended to measure the elasticity of substitution among products in an industry, will be negative. β_4 and φ_4 for the sales promotion variable could be positive or negative.

The signs of α_1, α_2, α_3 and α_4 show the structure of Swedish "revealed" comparative advantage versus EC (6) producers in 1970 and 1984, reflecting relative factor endowments − the α coefficients may change size or even sign over time. From the evidence in section 3 we expect α_1 and α_3 to be positive in both years. The variables d and m in equations 4 and 6 are included in order to test the hypothesis of "false" comparative advantage in differentiated goods with economies of scale. α_5 and α_6 may be of either sign.

The γ coefficients may reflect three things. First, tariff liberalization should increase specialization according to comparative advantage, if the latter is constant during the period, and thus reflect the (initial) pattern of Swedish resource endowments relative to the EC. Other things equal, γ_1, γ_2, γ_3 and γ_4

should have the same signs as the corresponding α coefficients[6].

Second, the γ coefficients will also reflect the **changes** in factor endowments in Sweden and the EC during the period. Thus, if human capital was initially scarce in Sweden, but increased faster than in the EC, Swedish production and exports will tend to increase in human capital intensive industries. There will be a positive correlation across industries between the change in net exports and the level of human capital intensity (Ethier 1984). Because of this effect, γ_2 may be positive even if α_2 is negative. And third, to the extent that economic integration eroded the "false" comparative disadvantage of a small domestic market, γ_5 and γ_6 (possibly also γ_4) should be positive. In that case, the absolute values of α_4, α_5 and α_6 should increase from 1970 to 1984.

5. Results: the pattern of net exports and Swedish "revealed" comparative advantage.

The equations for net exports in table 2 indicate a strong Swedish "revealed" comparative advantage in 1970 as well as in 1984 for energy intensive and forest based industries. The coefficients for these variables are positive and strongly significant in both years. Moreover, Swedish specialization in these products seems to have increased in 1970–84, since both coefficients were higher in the 1984 equation than in the equation for 1970, and the coefficients for both e and r are positive and significant in the equation for the change of the net export ratio (though the energy variable only on the 10% level). This increased inter–sectoral specialization according to initial comparative advantage confirms the predictions for the effects of tariff liberalization obtained from the "traditional" theory.

An interpretation of the large Swedish export surplus in capital intensive products in table 1 might be that Swedish comparative advantage actually lies

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[6]If the liberalization process was to take the economy from autarky to completely free trade, equation (6) would be identical with equation (4) estimated in the free trade position, so that the α:s and the γ:s would be identical, ceteris paribus. For the case of a change from restricted to free trade, the initial level of tariffs would influence the vector Δn too. However, to the extent that tariffs are correlated with factor intensities, as suggested by theory as well as by several empirical studies, the latter effect will be taken up by variables measuring comparative advantage.

in energy intensive and forest based products, and not in capital intensive products per se, though these groups tend to overlap.

There is no clear evidence of a Swedish comparative advantage or disadvantage versus the EC(6) either in 1970 or 1984 for skill intensive or R&D intensive products. The coefficients are mostly insignificant, in spite of the fact that Sweden, according to table 1, was a net importer of both types of products in both years. In fact, the R&D coefficient in 1970 was actually positive. The coefficient for skilled labor is negative but not significant.

Table 2. Determinants of net export shares in the trade with the original Common Market countries (EC6) in Swedish manufacturing industries. OLS estimates.

const.	techn. intens. (t)	energy intens. (e)	product subst. (d)	natural resource (r)	R&D intens. (f)	market growth (m)	R^2
net export share n_i 1970							
−.056 (−1.09)	−.479 (−1.64)	.0035 (4.18) ***	.0132 (.99)	.179 (3.96) ***	.0088 (1.74) *	−.0002 (−1.46)	.386
net export share n_i 1984							
−.185 (−2.50) **	−.416 (−.98)	.0049 (3.99) ***	.0100 (.51)	.280 (4.25) ***	.0084 (1.15)	.00010 (.58)	.368
change in net export share Δn_i 1970–84							
−.130 (−2.80) ***	.0627 (.24)	.0014 (1.79) *	−.0032 (−.27)	.102 (2.48) **	−.0030 (−.07)	.00030 (2.53) **	.166
−.196 (−4.40) ***		.0014 (1.81) *		.109 (2.44) **		.00051 (3.82) ***	.234

t–values in brackets. *** significant on the 1%, ** on the 5% and * on the 10% level.

The effect of the product differentiation variable is positive but the estimates are not significant in any equation for net exports (a positive value indicates high net exports for industries where products are close substitutes, i.e a weak

export position for differentiated goods). However, table 2 shows that Swedish net exports tended to **increase** (or net imports to decrease) in products with a fast growing market — the market growth coefficient is strongly significant. This may be interpreted as some evidence for the hypothesis that tariff elimination did reduce the initial "false" comparative advantage of the EC(6) versus Sweden in differentiated products in the early stages of the life cycle provided by a large home market.

According to table 3, intra—industry trade in 1984 between Sweden and the EC(6) was important in differentiated products, if product differentiation is defined by the elasticity of substitution among products in an industry, as measured by (d). There was a large amount of intra—industry trade in R&D intensive industries as well. The effect of the sales personnel variable was actually negative and significant; this seems to confirm the claim of Caves (1981) referred to above.

The coefficient for the market growth variable was not significant in the equations for the level of intra—industry trade in 1970 and 1984. However, the **increase** in intra—industry trade seems to have been strongest in products with a high rate of market growth. The coefficient for R&D was positive but not significant. Although the coefficients of all the explanatory variables have the expected signs (except sales personnel) their levels of significance are rather low, as are the explanatory values of the regressions.

Table 3. Determinants of intra–industry shares in the trade with the original 6 Common Market countries in Swedish manufacturing industries.

const.	sales intens. (s)	product substit. (d)	R&D intens (f)	market growth (m)	R^2

intra–industry trade share z_i 1970

| .085 (1.699 | −1.03 (−2.00) ** | −.018 (−1.56) | .0043 (1.09) | .0001 (.65) | .087 |

intra–industry trade share z_i 1984

| .145 (1.83) * | −.1.89 (−2.36) ** | −.043 (−2.39) ** | .012 (1.94) * | .0003 (1.58) | .223 |

change in intra–industry trade share Δz_i 1970–84

| .059 (.99) | −.862 (−1.42) | −.025 (−1.84) * | .0077 (1.65) | .0002 (1.54) | .132 |

| −.005 (−.06) | | −.0315 (−1.83) * | | .00042 (2.18) ** | .065 |

6. Effects of European trade policies on the structure of Swedish trade: some conclusions.

During the 1970s and early 1980s, when tariffs on trade in manufactures were eliminated between Sweden and the original Common Market members, there was a substantial increase in trade. This increase probably reflects not only trade policy effects but also reduced transport costs and possibly also increased economies of scale in manufacturing.

With respect to the structure of trade, there was some increase in inter–sectoral specialization, mostly by increased net exports of energy intensive industries processing domestic natural resources. It seems unlikely that this change, which reinforced the initial pattern of specialization, could be an effect of changes in relative factor endowments; if anything, relative factor endowments in Sweden and the EC(6) have probably become more similar.

The observed changes in net export patterns thus confirm the predictions of the "traditional" trade theory regarding the effects of trade liberalization.

The Swedish net export position tended to improve in industries with a high rate of market growth. This may be interpreted as a providing some evidence for the hypothesis that tariff liberalization to some extent diminished the "false" comparative disadvantage for Swedish producers in "new" product cycle goods, created by a combination of economies of scale in production and a small home market.

However, most of the increase in trade between Sweden and the EC(6) was intra–industry trade. This increase was concentrated to R&D intensive industries selling differentiated products with a high rate of market growth, i.e "new" industries in product cycle terms. Thus it appears that the reallocation of labor and human and physical capital among activities that occurred within Swedish manufacturing as a result of abolishing industrial tariffs took place mostly within rather than between industries.

What conclusions could be drawn from the experiences in the 1970s and 1980s with regard to the potential effects of a Swedish participation in the creation of a European internal market in the 1990s? This process implies the elimination of extra costs for transports and administration when goods cross national borders by abolishing frontier controls between the EC countries, as well as the elimination of restrictions on entry and competition by a process of general deregulation and harmonization of rules.

The most important items here are technical barriers to trade – different national product standards that hamper international trade – discrimination against imports in public procurement and legal barriers to entry. Such obstacles have been shown to be very important in certain sectors (The economics of 1992). Technologically advanced industries producing differentiated investment goods and requiring large inputs of skilled labor and R&D are likely to be most affected by this step, in particular when economies of scale are important and public purchases a large part of the market.

In some industries it is possible that if markets become perfectly integrated, in the sense that firms will be unable to segment national markets, the effect

might actually be a decline in intra–industry trade. In concentrated industries with a strong oligopolistic rivalry, and under certain assumptions about firm behaviour, firms will engage in "reciprocal dumping", in the sense that they accept a lower price on exports than on sales to the domestic market; this reflects a higher perceived elasticity of demand for the firm's sales on the export market.

However, market segmentation is a precondition for this kind of pricing. If markets become perfectly integrated, so that price differences cannot exceed transport costs, firms will shift sales from markets with initially low prices, i.e from exports to the home market. Such results have been obtained by Smith & Venables (1988) for the EC countries. Evaluating the effects of EFTA participation in the European integration process, and using the same type of simulation model, Norman (1989) has arrived at similar conclusions.

However, this requires a fundamental change in the competitive behaviour of firms. It is hard to see that a non–segmented market will be the automatic outcome of merely eliminating non–tariff barriers according to the 1992 program. Such barriers may facilitate market segmentation by hampering direct imports by consumers, but they are neither necessary nor sufficient for firms that want to restrict competition. A strategic factor seems to be the degree of control of the producer over the distribution channels. This means that in order to create a true common market, free from obstacles imposed either by public or private agents, an active competion policy will be needed.

If Sweden was to participate in the process of deregulation and elimination of non–tariff barriers leading to the internal European market in 1992, the traditional pattern of inter–industry trade and specialization, i.e Swedish exports of energy intensive products based on domestic natural resources, might to some extent be reinforced (cf Haaland & Norman 1987 and Norman 1989). However, one may argue that the most important increases in trade and specialization following upon European economic integration are likely to be of the **intra**–industry kind. This conclusion is based on the historical experiences in the 1970s. Moreover, the results in section 6 indicate that product differentiation in combination with a "taste for variety" is an important explanation of intra–industry trade. It is hard to see that the 1992 program per se should imply that consumer preferences will become more standardized (cf

Geroski 1989).

If the prediction that the increase in trade and specialization between the Nordic countries and the EC following upon a deepening of economic integration will be of the intra–industry kind is true, it has important implications for the expected gains from integration, as well as for the costs of adjustment. There will be some efficiency gains from reallocation of resources among industries according to comparative advantage. However, the most important welfare effects will be found in the utilization of economies of scale through concentration of production, increased variety of products on the market, and more intense competition. Increased competition could have two beneficial effects. First, consumers will gain from lower prices. Second, competition may put pressure on firms to reduce slacks, thus increasing efficiency and reducing costs.

If specialization would be of the intra–industry kind, the adjustment problems connected with integration and structural change would probably be reduced. Adjustment costs occur chiefly because factors of production – labor and human and physical capital – are specific to the activity where they are used, and cannot be used in other activities without transformation (retraining), or are not mobile among sectors or regions. Intra–industry specialization means that some firms or products expand, while others contract or disappear. It will probably be easier to transfer workers among firms in the same industry, or even among product lines within the same firm, than to transfer them among industries with widely different skill requirements.

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