Effects of Non-tariff Barriers to Trade on Prices, Employment, and Imports: The Case of the Swedish Textile and Clothing Industry

SWP- 429

World Bank Staff Working Paper No. 429
(Revised)

December 1980

Prepared by: Carl Hamilton, Consulant
Economic Analysis and Projections Department

WORLD BANK

Staff Working Paper No. 429

December 1980

EFFECTS OF NON-TARIFF BARRIERS TO TRADE ON PRICES, EMPLOYMENT, AND IMPORTS: THE CASE OF THE SWEDISH TEXTILE AND CLOTHING INDUSTRY

This work in progress report is part of an inquiry being undertaken by the World Bank in conjunction with scholars from twelve industrial countries into the penetration of the markets of industrial countries by exports of manufactures from developing countries. The project seeks to establish the shares of industrial country markets held by the developing countries, changes in such shares in the 1970s, and why they vary among industry groups and countries. The aim is to assist developing and industrial countries to improve their policies through a better understanding of trade patterns and protectionist pressures.

This paper analyzes the effects of "voluntary restraints" imposed on developing country exporters by Sweden, and by Swedish domestic adjustment subsidies on prices, import volumes and employment in the Swedish clothing and textile industries. The impact of a 50 percent increase of imports from countries in which voluntary export restrictions operate on Swedish domestic prices and employment is examined in some detail. It becomes evident that the competitiveness of the products in question from the exporters' and from the importers' points of view is of considerable importance. The effects of subsidies on employment and import volume are then analyzed. It is clear that their marginal effectiveness decreases rapidly as their amount grows.

I am grateful for comments from participants in an Institute for International Economic Studies, Stockholm University, seminar at which this paper was presented, in particular to Lars E.O. Svensson and Lars Heikensten, and to comments from participants in the market penetration workshop in Kiel in December 1979, in particular to Jean Waelbroeck and Jeurgen Donges. I also wish to thank Urban Backstrom and Sven Cele for their assistance with data and calculations.

Prepared by: Carl Hamilton (Consultant)
Economic Analysis and Projections Department

TABLE OF CONTENTS

Tables

Figures

I. INTRODUCTION AND SUMMARY OF RESULTS

During the 1970s a "new protectionism" appears to have emerged. What distinguishes today's protectionism from the "old" is its reliance on non-tariff barriers to trade (NTBs) and its concern for employment and social objectives.

One of the two most important types of NTBs current today consists of government "adjustment" subsidies to import-competing industries and sometimes also to export industries facing fierce international competition (for example, the shipbuilding industry).

The second important kind of NTB consists of various arrangements agreed upon to restrict commodities such as textiles and clothing from penetrating the industrial countries' markets. The most common arrangement is the so-called voluntary export restraint (VER) imposed on selected exporting countries by almost all industrial country governments.

The principal effects on the economic system of these NTBs have been discussed at length. In this paper, however, we address a practical question: what have been the effects of these two types of NTBs on prices, import volume and employment in the Swedish textile and clothing industry? The emphasis of the paper is on developing methods for the analysis of this kind of question.

In section II we analyse the effect on prices and employment of an import increase by 50 percent of commodities from countries under VERs. Assumptions are chosen throughout so as to yield a maximum price fall and a maximum number of jobs potentially "lost". From our analysis it turns out to be important to distinguish between cases in which, from the exporter's point of view, the commodities are perfect or imperfect substitutes in export markets (that is, is the commodity specific to one export market?), and, from

the user's point of view, the commodities are perfect or imperfect substitutes to domestic production. Employing elsewhere estimated elasticities in a derived formula for the potential price change,the maximum price fall is calculated to be very small in the case of a perfect substitute in export markets, provided the import increase is "small" in relation to the world market as would be the case with a small country. For Sweden the fall would be approximately 0.2 percent on average for 1977. However, if all OECD countries increased their imports by 50 percent, the result would be a 12 percent price fall on VER commodities on average for 1977.

A 50 percent increase in value of the VER countries' export of VER-commodities to the OECD area is estimated to increase these countries' export earnings by $1805 million in 1977. Further, a one percent increase in export supply is estimated to result in 0.66 percent increase in VER countries' export earnings. Changing the assumptions and taking VER commodities to be nonsubstitutes in export markets yields average price falls on the Swedish market in the neighborhood of 20 percent on VER textiles and 9 percent on VER clothing. The employment effects of such price falls - overall as well as regionally -are analysed by way of marrying the calculated price falls (by year and industry) to a calculated Salter structure (by year and industry). Imposing the estimated price falls on the Salter structures indicates which plants would have had to close down.

With information on each plant's location and number of employees, the overall and regional employment effect can then be calculated. Given some additional assumptions, we arrive at an upper limit figure of just over 2200 jobs "lost" in 1974 and a lower limit figure of just below 400 jobs "lost" in 1976 by increasing VER imports by 50 percent. (Given that the VER commodities are non-substitutes in export markets and perfect substitutes to domestic

production.) This means a 4 percent reduction of the industry's labor force in 1974. More than 50 percent of the potential unemployment would have been concentrated in one county, Alvsborg.

Section II analyses the import reducing and job "saving" effect of government subsidies on the textile and clothing industry during 1973-77. A disaggregated import demand function is estimated, and the data on subsidies are used to simulate the import volume in the absence of subsidies. In 1976 and 1977 particularly imports would have been substantially higher without subsidies. The employment effect of subsidies is again analysed through a Salter approach. We estimate that approximately 28,900 man-years were "saved" during 1973-77 through the government subsidies. The marginal effectiveness of the subsidies decreases rapidly as the amount grows; it is high in boom years, when subsidies are small and low when macroeconomic conditions force the government to increase their level. The subsidies postpone the fall in actual employemnt below its predicted level by between one and two and a half years.

Sweden's textile and clothing industry is highly concentrated regionally, and approximately 50 percent of the man-years "saved" would originate in Alvsborg: the regional unemployment rate would increase by 2.5 percent and the stock of unemployed by 90 percent. However, even in this very county, the potentially unemployed would at no time constitute more than 0.25 percent of the employed labour force. Of the potentially unemployed, around 60 percent were women and at least 25 percent were non-Swedes, mainly from Finland, the single largest exporter to Sweden of textiles and clothing. Finally, we use the estimated import volume in an alternative approach to estimate the number of jobs "lost" to check the robustness of our method.

Compared to other studies of the impact of increased developing country exports on industrial economies, our approach has at least three advantages. First, it explicitly brings prices into the picture, opening up the possibility of estimating the gain to consumers of increased imports and to developing countries of increased exports. Second, in our analysis we consider employment in the marginal plants facing potential close down. In fact we derive a demand for labor curve specific to the industry. In other studies average labor-output ratios have frequently been used as an approximation. In this case, the difference in approach results in a 20 percent difference in the estimated number of jobs potentially lost. A marginal plant is more labour intensive than an average plant. Third, we calculate new Salter structures for each year, thus avoiding working with outdated labor-output coefficients.

Our analysis is based on a partial equilibrium approach, and it is important to be careful when drawing conclusions about the overall employment effects. Would the subsidies have a greater employment impact had they been used in other activities? Will developing countries hit by the Swedish non-tariff barriers import less from Sweden reducing employment in export industries? Would a differently pursued macroeconomic policy on the part of the government have been a more efficient way of creating jobs? We disregard these issues.

II. VOLUNTARY EXPORT RESTRAINTS

The Institutional Structure and Policy Statements

Sweden has succeeded in negotiating bilateral agreements with each exporting country to restrict exports to Sweden and places the onus for

enforcement on the exporting countries. The restrictions are euphemistically labelled "voluntary" export restraints. Each agreement usually runs for approximately one year. The exporting countries concerned are 1/ Portugal (1968), Yugoslavia (1968), Malta 2/ (1975), Mauritius 1/ (1977), Pakistan (1975), India (1973), Sri Lanka (1977), Thailand (1976), Malaysia (1973), Singapore (1972), Philippines (1978), The Republic of Korea (1967), Taiwan 1/ (1968), Hong Kong (1968) and Macau (1970). 3/ These countries took only 24 percent of the total 1977 textile and clothing imports. In 1977, state-trading countries took 4 percent, and other unrestricted countries, notably Finland and the UK, took 72 percent.

In addition to VERs, since 1976 there has been an import-licensing system covering all countries except those belonging to the European Community (EC) or the European Free Trade Area (EFTA) but excluding Portugal. This system is said to have been designed only to improve "supervision" of imports. 4/

VERS are usually stated in volume terms for each CCC category 5/ as number of shirts, tons of towels, and so on. However, for some countries there have also been since 1976 volume and value quotas within which the country is free to some extent to choose its own mix of export commodities to Sweden.

1/ The year of introduction of the VER is given in parenthesis.

2/ For Malta and Mauritius, imports to Sweden are, in addition to VERs, also formally restricted by quantitative restriction (QR). Imports from Taiwan are subject to a unilateral Swedish QR.

3/ In addition to these countries, imports from state trading countries are also restricted. Previously imports from Japan were also subject to VER type restrictions.

4/ The effect on the exporting country of this kind of "supervision" is taken up in Bhagwati and Srinivasan (1976).

5/ Customs Cooperation Council Nomenclature, formerly the Brussels Nomenclature (BTN).

For example, the Philippines can export within a given set of optional commodities for $400,000 and India likewise (within a different set) up to 140 tons (1979).

The normal procedure has been to "freeze" exports to Sweden (usually in volume terms 1/) at the same level as the preceding 12-month period 2/ or to allow for an increase of one to two percent annually. This is less than the six percent recommended in the Multifibre Agreement (MFA). The low rate of increase is allowed by the so-called "Nordic clause" of the MFA. The clause states that "special regard should be given to importing countries with small markets, an exceptionally high level of imports and a correspondingly low level of domestic production.... Even if the interpretation of the clause has been a matter of dispute, Sweden has with its help been able to reduce annual increases in the restricted import levels "(i.e. VERs) have been reduced to, at present, one to two percent and even less in some instances" (The Conservative Minister of Commerce 3/ in Proposition 1977/78:82, p. 65).

In the bill it is also stated that "provided the Multifibre Agreement can be prolonged according to the conditions [agreed upon in the summer of 1977] it should imply improved possibilities for Sweden to curtail disturbing

---

1/ For state trading countries, quotas are always defined in value terms but adjusted for inflation from one year to another.

2/ Counted from the date Sweden demands negotiations with the exporting country: Negotiations have to start within three months of this date.

3/ The present author's translation. Incidentally, the Minister at the time was Professor Staffan Burenstam Linder, father of the "Linder hypothesis" in trade theory.

low-price imports given that [VERs] can be agreed upon.... We have also been assured of an improved application of the Nordic clause" (p. 66). Sweden joined the prolonged MFA later, in April 1978. "To achieve a better protective effect than we have had so far, we also have to reckon upon [VERs] with a larger number of low-price countries than before. In these cases, one should try to take special note of the fact that restrictions hit different countries with different severity, depending on their degree of development" (p. 67).

In a later bill [under a new Liberal Minister; Proposition 1978/79: 145] it was stated that, "One should thus be able to conclude that within the framework of the MFA we have obtained significantly improved possibilities for effective restrictions of market disturbing low-price imports. This conclusion also speaks in favor of a continuation of the present system" (p. 49). Yet a few pages earlier, the same Minister had stated that "protectionism in different forms must be fought against". The Minister, however, reiterated that "the poorest countries are often hit in a particularly severe way which is taken into account whenever possible" (p. 38).

In spite of these statements, the distribution of VERs clashes with Swedish foreign aid policy. Thus India, Pakistan, Sri Lanka, and Portugal have long been given the status of high priority countries for foreign aid. In 1979/80 they received 22 percent of the bilateral aid budget. The Minister of Foreign Aid has been aware of the ambiguity in Swedish policy toward developing countries: "[Sweden's] policy towards developing countries must not be passive or unaware but should represent a consistent policy in different fields so as to consciously take into account the legitimate interests of

the developing countries and coordinate them with our own more immediate interests. If we disregard [the coordination] there is even a risk that the effects in the field of foreign aid can be undermined or neutralized." (Proposition 1977/78:135, p. 75).

It is worth noting that the VER system was introduced and administered by Social Democratic governments from 1965 to 1976 and prolonged and extended to a larger number of developing countries under later Conservative and Liberal Ministers of Commerce. The various parties have taken similar stands on the issue of VERs.

Import of textiles and clothing have nevertheless increased, with the import share of apparent consumption (home demand) rising from below 30 percent in 1960 to more than 80 percent in 1978/9. The textile and clothing industry is a declining industry measured in number of employees and plants (Table 1). Of the total industrial labour force it employed 7.4 percent in 1970 but only 4.8 percent in 1977. In numbers this means a reduction between 1970 and 1977 of 25,000 persons or 30 percent of the industry's labor force. The share of women in the labour force is two to three times the average for manufacturing industry, and the share of immigrant labor is also much higher than the average (Table 1).

Effects on Domestic Prices

Suppose the home country, such as Sweden, relaxes a VER on the foreign country's exports to the home country. How will this action influence the price of an import competing commodity in the home country?

Table 1 The Swedish textile and clothing industry: number of employees, value added per employee, number of plants, 1970 and 1977; and share of non-Swedes in the labour force, 1977

ISIC Code	Description	Number of employees[1]					Value added per employee, 1,000 Skr, 1974 prices		Number of plants	
				of which women, %		of which non-Swedes, %				
		1970	1977	1970	1977	1977	1970	1977[2]	1970	1977
321	Textile industry	33,700	23,600	56	50	25	53.5	118.1	527	398
322	Clothing industry (wearing apparel)	33,900	19,100	74	76		41.6	85.2	805	471
3	Manufacturing industry	907,700	890,900	23	23	11	70.1	148.8	13,352	11,383

1) Includes white collar workers.

2) Government subsidies are included in these figures.

Source: SOS, Industri, 1970 and 1977, AKU.

Depending on the characteristics of the market and of the commodity, four outcomes appear to be possible.

(i) If the commodity is the same regardless of the export market in which it is sold, we say that the commodity is a perfect substitute in export markets. For example, Indian shirts exported to West Germany are just the same Indian shirts exported to Sweden as well as to all other countries on the world market. This case is characterised by the existence of a world market for the commodity in question.

(ii) However, if the commodity is differentiated by export markets, we say that the commodity is an imperfect substitute in export markets. Then in the extreme case, there is one different commodity assigned to each market. For instance, the Swedish market is the only market for a particular type of Indian shirt. Thus, this case is characterized by the home country market being equal to the world market for the commodity. Increasing the supply of imports by a given quantity, one will expect the price fall to be greater in case (ii) than in case (i) as the market to which the given quantity is added is smaller in case (ii) than in (i).

(iii) Looking at the commodity from the point of view of its user, it can be a perfect substitute to a domestically produced commodity. In this case, the "law of one price" prevails, implying that the price of the imported commodity is the same as the domestically produced one.

(iv) The imported can have a domestically produced imperfect substitute and then the "law of one price" does not hold. A price increase for the imported commodity, Δp, will result in a price increase, $\mu\Delta p$ of the imperfect substitute, where $0 \leq \mu < 1$. The more imperfect as a substitute the domestic commodity is, the smaller μ will be. The four cases are shown in the matrix below:

Price change of the domestically produced commodity

Substitute to domestic production?	Substitute in export markets?	Perfect substitute	Non-substitute
	Perfect substitute	Δp	Δp_{max}
	Imperfect substitute	$\mu\Delta p = \Delta p_{min}$ $0 \leq \mu < 1$	$\mu\Delta p_{max}$ $0 \leq \mu < 1$

The rankings of price changes are:

$\Delta p_{max} > \mu\Delta p_{max} > \mu\Delta p = \Delta p_{min}$ and

$\Delta p_{max} > \Delta p > \mu\Delta p = \Delta p_{min}$.

Throughout the analysis we want to assess the maximum influence of a change in VERs on the price of the domestically produced commodity so as to arrive at upper limit estimates of the price effect and the employment effect. In the following we choose our assumptions accordingly. Hence, we will concentrate on the two northern quadrants in the matrix although we are well aware that the southern ones may be applicable in some cases. In fact, the southwest case, producing the smallest price changes of all four in the matrix, may be a common one with regard to consumer goods such as clothing.

Perfect Substitute in Export Markets and the Perfect Substitute in Domestic Production (the Northwest case)

The foreign country can either be under VERs on all its export markets or it may have free access to some export markets. In the latter case, the VER may only change the country composition of exports. The foreign country will expand exports in non-restrained markets and take over market shares from other exporting countries which, in their turn, expand their export to the VER-imposing home country. For example, India expands its exports to West Germany where it takes market shares from, say, Indonesia, which expands its export to Sweden, taking over the former Indian market share. This market switch effect presupposes, of course, that Indonesia unlike India in our example, is not under VERs on the Swedish market, and that its short run export supply elasticity is high. Thus, there will be no effect on the world market price if this kind of adjustment is possible. In the calculations below, we may for this reason tend to overestimate the price change.

Regarding our two assumptions in the matrix, one would think that the assumption about perfect substitutes in export markets is quite reasonable for industrial countries, in particular for textile products which are inputs in industrial country clothing industries. However, as almost all industrial countries restrict imports from developing countries, there has been for some time (e.g. in Hong Kong, Taiwan, S. Korea and Thailand; see Jenkins, 1980) a market for "entrance tickets" (licences) to industrial country markets. When and if there is such trade it means that there are different price tags on exports to different industrial countries and the assumption about perfect substitutability in export markets is not fufilled. In this section we analyze the case of perfect substitutability in export markets and return to the case of imperfect substitutability in the next section.

The second assumption about the imported commodity being a perfect substitute to a domestically produced commodity may well be a reasonable one. In this analysis we are only considering commodities which are under Swedish VERs or licenses, and which have been identified at the most disaggregated level possible,the five digit level, in the Standard International Trade Classification (SITC). The commodities in question are shown in Table 2. These commodities may be very close to perfect substitutes. First, at this low level of aggregation one would expect the included commodities to be quite similar to each other from the user's point of view. Secondly, and more importantly, the selection of commodities to be put under VERs or licences is certainly not a choice taken at random. On the contrary, it reveals the preferences on the part of the Swedish government for precisely those textile and clothing commodities which appear to most threaten import competing firms. These firms must be expected to produce perfect or very close substitutes to the VER-commodities. If not, their non-perfect substitutes would have been under a more normal degree of foreign competition. The government's choice of commodity groups is, of course, strongly influenced by the advice of the industry and the trade union. Thus Table 2 demonstrates the revealed preferences of the people in the industry and the union for close substitutes to domestically produced commodities.

Under the two assumptions of perfect substitutability and also making the restrictive assumption that the foreign country is under VERs on all its export markets, we analyse the effects on price and output in Figure 1. This Figure shows four interrelated markets. Under our assumptions the home market price is equal to that in the world market.

Table 2 Price changes in the case of perfect substitute in export markets and perfect substitute for domestic production

(1) SITC Code[2]	(2) Description	(3) Maximum price fall (percent) with a 50 % export increase from VER-countries: To the OECD area 1977[3]	(4) Maximum price fall (percent) with a 50 % export increase from VER-countries: To Sweden 1977[3]	(5) Imports from VER-countries[3] 1977, 1000 US ($): To the OECD area	(6) Imports from VER-countries[3] 1977, 1000 US ($): To Sweden	(7) Sweden's share of OECD's import (percent) [(6)/(5)] x 100
65142	Cotton yarn and thread put up for retail sale	0.6	0.02	62,205	7,013	11.3
65212	Terry fabrics of cotton, unbleached	3.0	0.22	5,030	113	2.3
65222	Terry fabrics or cotton, bleached, dyed, etc.	5.6	0.54	24,824	1,462	5.9
65223	Pile and chenille fabrics of cotton	1.2	0.10	551,622	19,639	3.6
65229	Other cotton fabrics, woven,bleached,dyed,etc.	0.6	0.20	1,698,008	51,645	3.0
65321	Fabrics,woven,of wool or of fine animal hair, other than pile and chenille fabrics	0.8	0.00	869,512	19,469	2.2
65331	Fabrics,woven,of flax or of ramie	0.0	0.00	75,121	4,695	6.3
65351	Fabrics,woven,of continuous synthetic fibres,other than pile or chenille fabrics	2.0	0.02	903,262	19,717	2.2
65352	Fabrics,woven,of discontinuous synthetic fibres, other than pile or chenille fabrics	4.6	0.14	1,564,202	42,828	2.7
65361	Fabrics,woven,of continuous regenerated fibres,other than pile or chenille fibres	1.0	0.00	259,335	5,770	2.2
65401	Narrow fabrics other than woven labels,badges,etc.	4.6	0.02	133,561	5,989	4.5
65404	Tulle and other net fabrics, plain	3.6	0.16	11,801	297	2.5
65550	Elastic fabrics and trimmings of elastic (excluding knitted or crocheted goods)	0.6	0.00	41,406	786	1.9
65561	Cordage,cable,rope,twine	7.2	0.20	227,344	7,050	3.1
65562	Nets and netting of cordage, etc.	7.2	0.24	60,163	2,407	4.0
65661	Blankets and travelling rugs of wool	0.2	0.00	23,666	683	2.9
65662	Blankets and travelling rugs of cotton	6.6	0.12	15,730	235	1.5
65669	Blankets and travelling rugs, n.e.s.	0.8	0.28	59,738	4,435	7.4
65691	Linen and other furnishing articles of textile fabrics	9.8	0.58	944,396	53,828	5.7
84111	Men's and boys' outer garments,not knitted or crocheted	14.2	0.26	3,755,315	200,340	5.3
84112	Women's,girls' and infants' outer garments,not knitted or crocheted	14.0	0.24	4,444,137	207,674	4.7
84113	Men's and boys' under garments,not knitted or crocheted	35.2	0.38	1,274,718	40,087	3.1
84114	Women's,girls' and infants' under garments,not knitted or crocheted	20.6	0.08	156,221	1,952	1.3
84142	Stockings,etc.,knitted or crocheted,not elastic nor rubberized	10.5	0.16	292,159	20,183	6.9
84143	Under garments,knitted or crocheted,not elastic nor rubberized	18.8	0.14	1,900,118	58,522	3.1
84144	Outer garments,knitted or crocheted,not elastic nor rubberized	13.8	0.14	4,912,049	203,526	4.1
Total commodity groups above		12.0	0.22	24,265,843	980,350	4.0

1) Subject to VERs or on import licence at least one year. 2) SITC Rev. 1 all years.
3) VER countries 1977: Portugal, Singapore, Jugoslavia, Macao, India, S. Korea, Hong Kong, Malaysia, Taiwan, Pakistan, Malta, Thailand, Mauritius and Sri Lanka.

When the foreign country is being subjected to an additional VER, or increased stringency in an existing VER, the foreign country changes its exports supply curve into a vertical line in the relevant interval and reduces exports from q_F to q_F' in Figure 1:1. 1/ The VER-imposed change in export supply gives the world export supply curve a kink beyond which the world supply curve is steeper than before (Figure 1:4). The traded quantity on the world market decreases by $q_W - q_W'$, and the world market price increases by $p_1 - p_0$. The group of exporters of the country under the VER will increase their producers' surplus by area A but lose B. (If area A is larger than B, the foreign country will have made a net gain by the home country imposing a VER. This could be relevant when the foreign government would not have been able to enforce an export tax, or the exporters of the foreign country would have been unable to form a supply restricting cartel.)

The exporters of the rest of the world will gain area C, that is, they gain from the "trade diversion" of VERs. In the VER-imposing home country import competing producers will gain D and consumers will lose D plus E. (Note that S (D) in Figure 1:3 is a domestic supply (demand) curve while in Figures 1:1, 1:2 and 1:4 the supply curves are export supply ones.) Finally, all consumers of imports will lose the consumer surplus represented by F. 2/

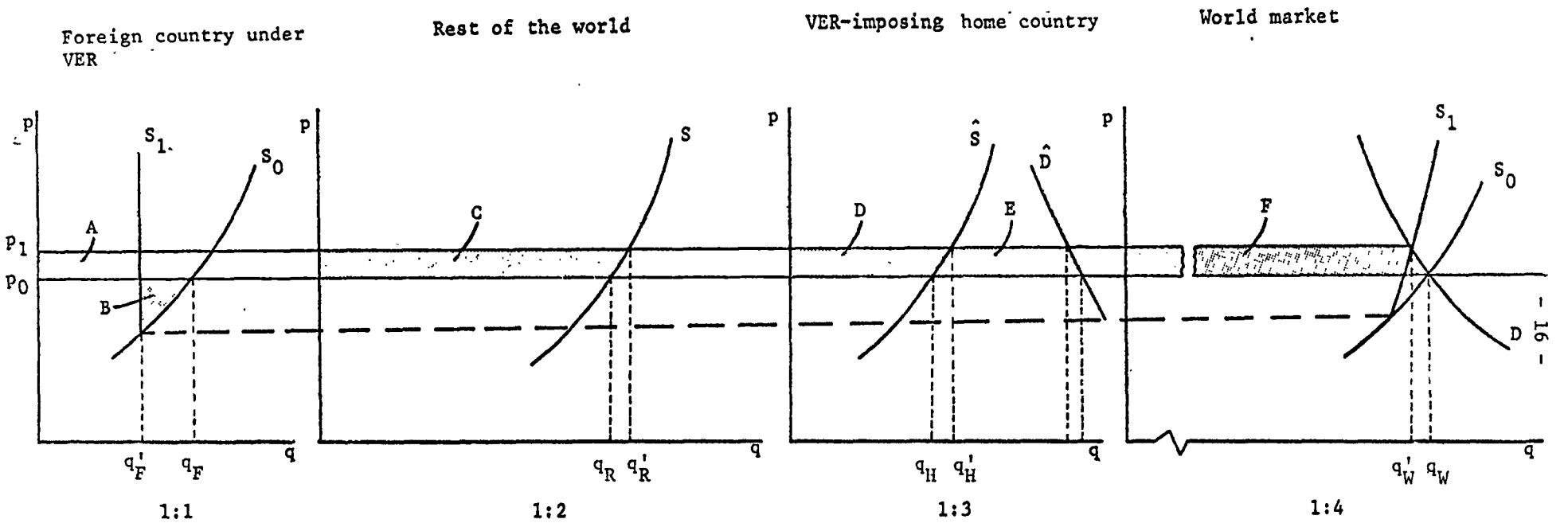
How can the impact of a VER on price be measured more precisely? Consider three markets. First, the supply of quantity $\bar{q}_F$ from a country under VER,

---

1/ In Figure 1 the initial situation is depicted as one in which the restrained export supply at p_o equals the non-restrained export supply at p_o.

2/ In Figure 1 it is implicitly assumed that any income changes are so small that they can safely be ignored and that demand only depends on price.

Figure 1 Perfect substitute on export markets and for domestic production



second, the supply from the rest of the world, q_R, and finally total world demand q_W. We can formulate the elasticity of the rest-of-the-world price with respect to changes of VERs,

$$\eta = - \frac{\partial p}{\partial \bar{q}_F} \frac{\bar{q}_F}{p} \qquad (1)$$

which shows the increase (decrease) in the world market price when the quantity supplied by the foreign country under VER decreases (increases). It can be shown (see appendix) that η can be expressed as

$$\eta = \frac{1}{\frac{q_R}{q_F} e_R^s + \frac{q_W}{q_F} e_W^d} \qquad (2)$$

where e_R^s is the export supply elasticity of the rest of the world and e_W^d is the (absolute value) of world import demand elasticity. The price fall due to $\bar{q}_F$ being relaxed will be relatively large if producers in the rest of the world have difficulty in quickly increasing their output (e_R^s is small) and if consumers are insensitive to price changes (e_W^d is small). Also if the country under VER is "large", the impact on η of relaxing a VER will be relatively large. This is shown by the ratios $q_R/\bar{q}_F$ and $q_W/\bar{q}_F$.

In this study, one can expect $e_W^d \leq e_R^s$ as it seems likely that there are greater substitution possibilities in production than in consumption of textile and clothing commodities. Hence, in an investigation in which one wants to get an upper limit estimate of η, and thus of Δp, it is reasonable to asume $e_W^d = e_R^s$. The elasticity to look into is therefore e_W^d. Import

demand elasticities have been estimated at the disaggregated level for textiles and clothing (Kreinin, 1973, Stern et.al, 1976, Hamilton, 1980). For textiles the estimates are found in the interval 0.8 to 3.0 with large importers like the U.S., U.K. and France being found in the interval 1.14 to 3.0. For clothing the few estimated import demand elasticities are higher, 2.4 to 3.9 in Sweden and the US respectively. 1/

It has been suggested that elasticities at a disaggregated level are larger than at a more aggregated level. In consumption it is easier to substitute, for example, between different kinds of clothes than between clothes and other goods. In production, it is likewise easier to switch from producing one textile or clothing commodity to another than from clothing, say, to other manufactured goods. These are arguments for our elasticities being lower limit values leading to η being on the high side.

To undertake the empirical test, the commodity groups under VERs, or subject to import licences, were classified from the CCC into 26 five digit SITC commodity groups. The CCC code is more disaggregated than our five digit SITC groups, and our 26 SITC groups may include some commodities not subject to VERs or licenses. However, we have little choice but to use the SITC classification as international trade statistics are not compiled on a CCC basis.

In Table 2 we have estimated for each commodity group the maximum price increase due to a 50 percent export increase from VER-countries to Sweden, employing import demand elasticities estimated for the more aggregated

---

1/ These estimates have been arrived at by using an implicit assumption of non-perfect substitutability between home and foreign goods. Had the commodities in fact been perfect substitutes, our method of estimation would work against high elasticities being assessed. If anything, this would result in a bias in the desired ("upper limit") direction in our estimates.

groups, textile and clothing (see below). The estimated price change in Table 2, column (4), is

$$\Delta p = \eta \frac{\Delta \bar{q}_F}{q_F} = \eta \frac{0.5\, q_F^{SWE}}{q_F} \qquad (3)$$

Where q_F^{SWE} are the Swedish imports of the commodity group from VER countries during the year in question. The following assumptions are made:

(i) For commodities belonging to SITC 65, $e_R^s = e_W^d = 0.8$ and for commodities belonging to SITC 84, $e_R^s = e_W^d = 2.4$. In picking the lower bound estimates we tend to overestimate the price increase.

(ii) The definition of q_F is taken to be the export to the OECD countries from all countries which were subject to VERs imposed by Sweden during the particular year in question. (This implies a slight underestimate of the true q_F, as the export to OECD is a subset of world exports.) The definition of q_R is taken to be total exports to the OECD countries, q_W, minus exports from the VER-countries, q_F (this is also a slight underestimate).

(iii) We assume that when VER countries increase their export to the OECD markets, other countries do not decrease their export in response, that is, by assumption there is no reversed "trade diversion" effect when increased VER-exports are allowed into the OECD markets. This assumption is again made so as to produce - if anything - an upward bias in the price change. If there is reversed "trade diversion", which seems likely, the additional supply on the OECD markets would be smaller than the additional supply from VER countries.

(iv) $\Delta \bar{q}_F$ is defined as a 50 percent increase in Swedish import from countries under Swedish VERs during the particular year in question. (The number

of countries under Swedish VERs increases during the period from nine to fourteen; footnotes 3 to 6, Table 1). A 50 per cent increase can be regarded as an extraordinary liberalization of Swedish VERs. In fact the increased supply may be such that the "rent" on export licences in exporting countries may disappear altogether on some commodities.

From Table 2 we can see that under these assumptions the estimated price fall in no case exceeds 0.6 percent for any individual commodity group in 1977. Taking a weighted average indicates that the Swedish import price for the commodity group SITC 65 and 84 combined would fall by only 0.14 percent in 1977. As Sweden is a small country, a low figure is indeed what one would expect.

It is remarkable to realize that in this case, even if exports to Sweden from VER-countries would have increased by 100 per cent the price fall would exceed 2 percent in only two cases, notably, SITC 65222 (2.12 percent) and SITC 65691 (2.32 per cent). For the large clothing groups, SITC 84111, 84112 and 84144, the price fall would be less than 0.5 per cent. Under the stated assumptions, what Sweden alone does with its VERs has little effect on its consumers and producers, although it may affect some producers marginally. 1/

Looking back at the situation during the 1970's, Swedish producers may have been protected somewhat in the short run insofar as exporters' and importers' adjustment costs for circumventing the VERs were reflected in higher prices on the Swedish market. To keep changing the "rules of the

---

1/ In the unlikely event that Sweden's example was followed by other Nordic countries the relevant Δq_F would be at most be double the one in Table 2.

game", that is, the mix of commodities under VERs as well as the number of countries under VERs, means increased costs for exporters and importers. This may have temporarily allowed Swedish import competing producers to sell domestically at a price above the world market level. The VERs would thus have resulted in a pure waste of resources to the extent that the government could have achieved its objectives through less resource-consuming instruments. 1/

The previous analysis needs a further qualification because input-output relationships have been ignored. As the prices of textiles fall because of relaxed VERs, and as textiles are inputs into clothing production, the price of clothing could fall more than has been indicated above, and/or domestic producers could have a higher output of clothing. How important is this input-output relationship? Imports of textiles (here defined as CCC 50-59 and 60.01) from developing countries accounted for only 9-10 per cent (1976 to 1978) of textile imports. The percentage of the market is, of course, even smaller when domestic production is also included. Hence, a 50 percent change in developing countries exports of textiles is relatively "small" and is unlikely to improve significantly the competitiveness of the Swedish clothing industry. This is also the impression obtained from discussions with clothing manufacturers. Henceforth, we ignore this input-output relationship.

1/ For example, a higher direct employment subsidy, provided that the subsidy has a lower distribution cost than the above-mentioned adjustment cost. However, having once introduced such a subsidy it may be politically almost impossible to withdraw it, and it may be easier to withdraw, or simplify, the less "transparent" system of VERs. Hence, considering a longer time perspective it is an open question as to which policy is the least resource consuming. An important difference between the two policies is, of course, that consumers will pay lower prices, but higher taxes with an employment subsidy system.

The method of estimation used above can be employed with regard to all OECD countries combined. Suppose that the VER-countries mentioned in Table 2 increased their exports to the whole OECD area by 50 percent. How would that affect the world market price given the two assumptions above? The price change would be

$$\Delta p = \eta \frac{0.5\ q_F^{OECD}}{q_F} = 0.5\ \eta\ . \qquad (4)$$

as $q_F = q_F^{OECD}$. The VER countries' export to the world market is approximated by their export to the OECD countries. The price changes are shown in column (3) of Table 2. In one case such an export increase would reduce the price by more than 30 percent (SITC 84113), and for the three largest commodity groups (clothing), representing 54 percent of OECD's imports of VER commodities, the increases are approximately 14 percent. Such price falls are likely to have a substantial negative effect on employment in the OECD countries' textile and clothing industries. This should be balanced against the gain on the part of OECD's consumers and the employment opportunities and export earnings gained in increased exports to the developing countries concerned.

A 50 percent increase in value terms in VER exports (as defined in Table 2) to OECD would increase VER-countries export earnings by $1805 million in 1977: Export earnings increase because of the 50 percent increase in supply (0.5 x $5.64 $ million), but this increase is partly offset by a fall in price - 12 per cent - on the VER-countries' present "stock" of exports and export increase [1.5 x 5.64 x (1 - 0.12) $ million]. Thus the 50 percent

increase in supply is estimated to result in 32 percent increase in VER-countries' export earnings in the OECD markets in 1977, that is, one percent increase in export supply results in an 0.66 percent increase in export earnings.

Note that Swedish import-competing producers would be hit much more by a 50 per cent export increase to the whole OECD area than by such an export increase to Sweden only.

It may seem that the modest price falls of Table 2 cast doubt on the idea that imports from developing countries "disrupt markets", an argument often heard from proponents of VERs. First, it should be realised that the experiment we are undertaking is a "one shot affair" of increasing VER imports one year. (We are not increasing imports by 50 percent in 1974 and from this higher level in 1975 increasing imports by a further 50 percent, etc.). Successive import increases would, of course, have a much larger impact on prices and employment in the import competing industries. Second, in this section we have employed an assumption of commodities not being export market specific. In many cases this may be a poor assumption and produces too small a price change. Therefore, in the next section we investigate the price change when commodities are assumed to be export market specific.

The Non-substitute in Export Markets and Perfect Substitute in Domestic Production (the Northeast case)

The Northeast case gives an upper limit estimate of the price change of the imported commodity in the home country, that is, the price relevant to home country producers. We denote the relevant elasticity by $\tilde{\eta}$,

$$\tilde{\eta} = \frac{1}{\frac{q_H}{\bar{q}_F^{SWE}} e_H^s + \frac{(q_H + \bar{q}_F^{SWE})}{\bar{q}_F^{SWE}} e_H^d} , \qquad (5)$$

where q_H is domestic production and $\bar{q}_F^{SWE}$ are imports from VER countries to Sweden. e_H^s and e_H^d are the home country domestic supply and demand elasticities, respectively. Again taking $e^s \geq e^d$ and again making the conservative assumption of $e_H^s = e_H^d$, allows us to compute e_H^d as there is a relationship between the domestic supply elasticity, the domestic demand elasticity and the import demand elasticity. 1/ In this instance, we were able to calculate Δp on commodity groups classified according to the CCC nomenclature. The results are reported in Table 3 for three years. As an illustration the encircled price change is derived step by step in the Appendix.

The price of textile commodities under VERs would fall by as much as 20 per cent if imports were relaxed in the way we have described. (Depending on the year in question, the textile group "cotton fabrics" (SITC 65229)

1/ The relationship is $e_W^d = e_H^d a^d + e_H^s a^s$, where a^d is the inverted share of imports in domestic demand and a^s is the inverted share of imports in domestic supply (see Kreinin (1975), Appendix III).

a^d and a^s were calculated for SITC groups 65 and 84 separately and for each year. The source was Swedish industry statistics (it is compiled on a CCC basis as well as on ISIC and SITC. SOS Industri, Parts 1 and 2, yearly). As estimates of import demand elasticities we employed 0.8 for SITC 65 and 2.4 for SITC 84 (see above). With these data we calculated the following values for e_H^d:

	1973	1974	1975	1976	1977
e_H^d(SITC 65)	0.4	0.4	0.4	0.5	0.5
e_H^d(SITC 84)	0.8	0.8	0.9	1.3	1.4

would fall between 10 and 33 percent, indicating that there are quite large variations in some groups from one year to another.) These commodities, however, form only a small part of total home demand 1/ of textiles, approximately 4 per cent. This means that the price fall in the aggregated textile group (SITC 65) is quite modest at around one per cent.

1/ Defined as the sum of imports and domestic production minus export. For a more precise definition see the part on government subsidies.

Table 3 Price changes in the case of non-substitute in export markets and perfect substitute for domestic production.

(1) CCC Code[1]	(2) Corresponding SITC Code	(3) Description	(4) Maximum domestic price fall (percent) with a 50 percent export increase from VER-countries 1973	1975	1977	(5) Share of total VER import to Sweden (1976)
5104 200	65351	Fabrics, woven, of continuous synthetic fibres, other than pile or chenille fabrics				0.0
306-309	65351				1.4	0.2
406-600	65351 65361		1.5[5]	1.7	1.0	0.0
706-709	65351				4)	0.0
906-909	65351				4)	0.0
5311 all	65321	Fabrics, woven, of wool or of fine animal hair, other than pile and chenille fabrics	2.3		4)	0.0
5405 903-906	65331	Fabrics, woven, of flax or of ramie	0.5	0.3	4)	0.0
5506 900	65142	Cotton yarn and thread put up for retail sail	2)	2)	2)	
5508 900	65212	Terry fabrics of cotton, unbleached	1.9	2.8	6.4	0.0
	65222	Terry fabrics or cotton, bleached, dyed, etc.				
5509 203-209	65229	Other Cotton fabrics, woven, bleached,	32.9[6]	20.7	9.7	4.5
803-809	65229	dyed, etc.			6.3	0.2
5607 106+606	65352	Fabrics, woven, of discontinuous synthetic fibres, other than pile or chenille fabrics	12.7[7]	11.6	10.5	0.2
107+607	65352				4)	0.0
103+108+608	65352				2.8	0.2
205+206+705	65352				12.4	0.5
207+707	65352				0.3	0.0
706+708	65352				0.3	0.0
301+302+803	65352				6.1	0.3
306+307+807	65352				4)	0.0
911+990	65352				4)	0.0
5804 500	65223	Pile and chenille fabrics of cotton	6.5	16.7	23.5	0.4
5805 002-009	65401	Narrow fabrics other than woven labels, badges, etc.	0.1	0.1	0.2	0.0
5808 + 5809[2]	65404	Tulle and other net fabrics, plain	1.2	26.2	18.5	
5904 all	65561	Cordage, cable, rope, twine	16.7	13.3	7.5	0.4
6201 all	65661	Blankets and travelling rugs of wool	7.9	4.1	9.4	0.2
	65662	Blankets and travelling rugs of cotton				
	65669	Blankets and travelling rugs, n.e.s.				
6202 110+1090	65691	Linen and other furnishing articles	10.8[9]	2)	22.5	2.3
190[2]	65691	articles of textile fabrics		2)		
311-399[2]	65691			2)	65.9	
6003 003-109	84142	Stockings, etc., knitted or crocheted,	4.3[8]		4.4	2.5
902-909	84142	not elastic nor rubberized			0.2	0.2
6004 all	84143	Under garments, knitted or crocheted, not elastic nor rubberized	4.0	4.1	4.3	5.7
6005[3] 302-309	84144	Outer garments, knitted or crocheted, not elastic nor rubberized	16.1	7.4	11.9	13.5
602-609	84144		1.2	0.8	0.9	0.7
802-896	84144		7.5	0.9	4.2	3.3
6101 all	84111	Men's and boy's outer garments, not knitted or crocheted	5.7	6.5	6.1	26.2
6102 all	84112	Women's, girls' and infants' outer garments, not knitted or crocheted	6.5	6.9	8.8	28.2
6103 102-209	84113	Men's and boys' under garments, not knitted or crocheted	29.1	20.5	16.1	10.0
	84142					
6104 102-109	84114	Women's, girls' and infants' under garments, not knitted or crocheted	11.0	3.4	5.6	0.3
						100.0
Weighted Δp of above groups from SITC 65			23.2	16.6	20.0	
- " - 84			10.9	8.6	8.7	
Weighted Δp of total home demand of SITC 65[10]			1.3	0.8	0.5	
- " - 84[10]			1.3	1.2	1.7	

1) Commodity groups in which there is no import in any year have been excluded.
2) No domestic production.
3) No domestic production in some subgroups 1976.
4) No import.
5) Refer to CCCN group 5104. 6) Refer to CCCN group 5509. 7) Refer to CCCN group 5607. 8) Refer to CCCN group 6003.
9) Refer to CCCN group 6202.
10) VER-commodities share of home demand (per cent):

	1973	1975	1977
SITC 65	5.4	3.1	3.1
84	12.3	14.3	19.7

The price fall for clothing commodities under VERs would be 9 percent on average. The two large groups containing "outer garments" (SITC 84111 and 84112) are slightly below the average price fall. The price fall for the whole clothing group SITC 84 combined would be approximately 1.5 percent.

Remembering that, if anything, we overestimate the price falls, these results point to price falls in the home country market that are fairly modest given the restrictive assumptions. They also point to overall consumer losses due to VERs being smaller than widely believed. Note, however, that for some commodity groups the price fall would be very substantial had VERs been relaxed.

The VER countries' potentially increased export earnings are estimated to be for SITC 65 $49 million in 1977, and for SITC 85 $271 millions in 1977. This means 33 percent increased export earnings for the VER countries in the Swedish market.

Effects on Domestic Employment

A. The overall effect. Suppose imports from VER countries increased by 50 percent as described in the previous section. What would be the effect on employment in the textile and clothing industry?

To try and answer this question we applied industry data to a model of the Salter (1969) type. This class of models focuses on efficiency differences between production plants within an industry. Some plants are older and technically less efficient than the more modern ones. Alternatively put, plants with comparably low productivity have higher variable costs per unit of output than more efficient, modern plants. In principle, a plant will have to close down when (private) variable cost exceeds price. 1/

1/ I have only come across one other paper which uses a Salter approach to a trade problem; R. Webb (1975) looks into intra-industry differences in effective protection.

In Figure 2 we have ranked the plants along the horizontal axis with the most profitable ones closest to the origin. Profitability is indicated along the vertical axis and is measured as the variable cost share of price. At price P_0 all units run without (private) loss (no non-shaded pile crosses the price line) and employment is Oh. However, if producers' private costs increase by the shaded areas, for example, because government subsidies are withdrawn, units G and H will have to close down and fh individuals will face unemployment.

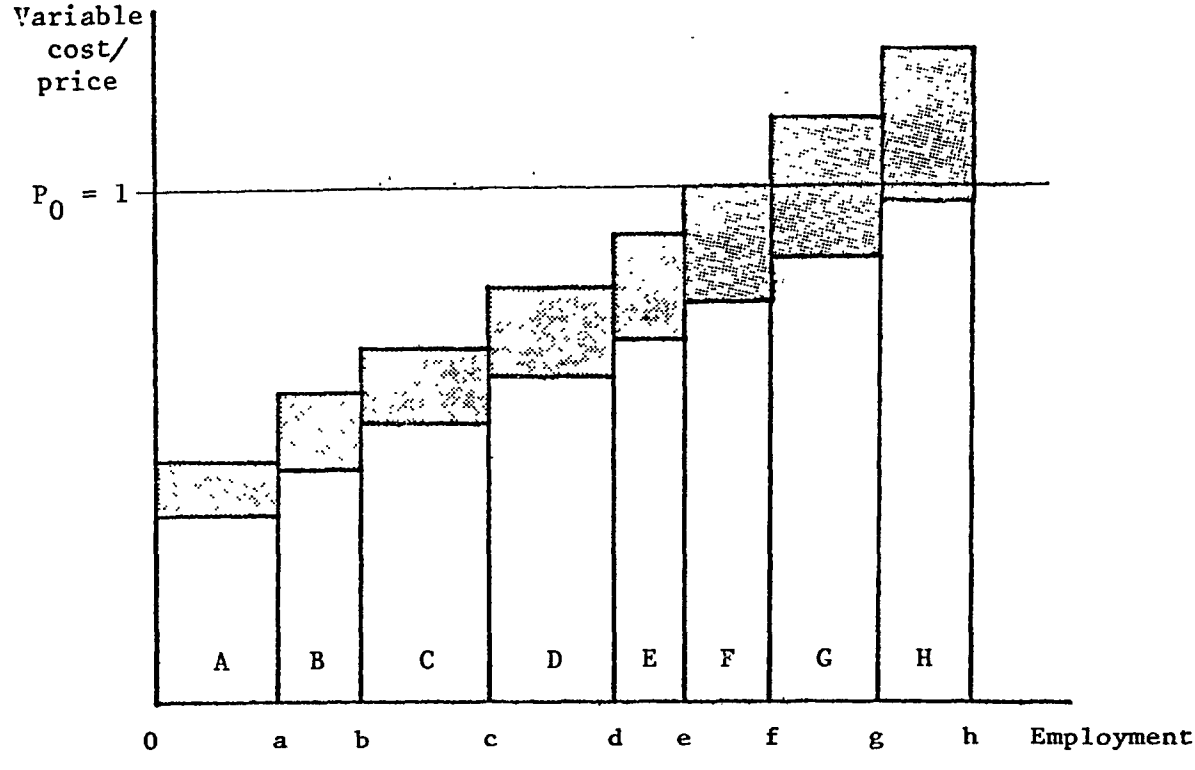
Some simplifying assumptions are embedded in the above reasoning. First, all plants are assumed to encounter the same price on variable factors of production. This is likely to be a very fair assumption with regard to labour in Sweden with the trade union movement's "solidarity wage policy" and the country's very centralized wage bargaining system (Lindbeck, 1975).

Secondly, the reasoning rests upon an assumption that plants are price takers and cannot escape a closedown by increasing the price of output. This is a very reasonable assumption to make for this industry during the period under study.

Thirdly, all plants are assumed to produce one homogenous good. This assumption is not fulfilled in our case and plant managers may resort to changing the product mix to avoid closing down. Disregarding this adjustment possibility might lead to an overestimate of the effect on employment.

Fourthly, plants may be able to avoid a closedown through increased efficiency without investment, for example, by reduced "slack" and "x-inefficiency

Figure 2 A Salter diagram in principle



and possibly through "learning-by-doing". Again, disregarding this possibility might lead to an overestimate of the employment effect of the subsidies. We will investigate this issue.

From the basic industry data, we gathered information on the share of variable cost for each production unit in the textile industry (ISIC 321) and in the clothing industry (ISIC 322). 1/ For each industry and year a Salter structure was derived. Figure 3 shows Salter diagrams of the clothing industry as examples for 1972/3 and 1976. The steeper "stair case" of 1976 indicates that the industry has become, at the margin, less employment sensitive, for example, to foreign competition, and also that the industry has declined.

Looking at the data for each year and industry it is seen that some plants cannot cover their variable costs. If there were no adjustment possibilities for these plants, they would close down and, as a consequence, a certain number of individuals would become unemployed. Comparing this ex ante estimate of employment decline with the ex post decline should reveal the extent of adjustment possibilities. Contrary to our presumption it was found that there was very little difference between the ex ante and ex post employment figures (3 percent) and that this difference was the same for both industries. Both the textile and the clothing industry seem to have had similar but small possibilities of avoiding dismissing workers through such measures as a change in product mix or reduced "slack" in organization.

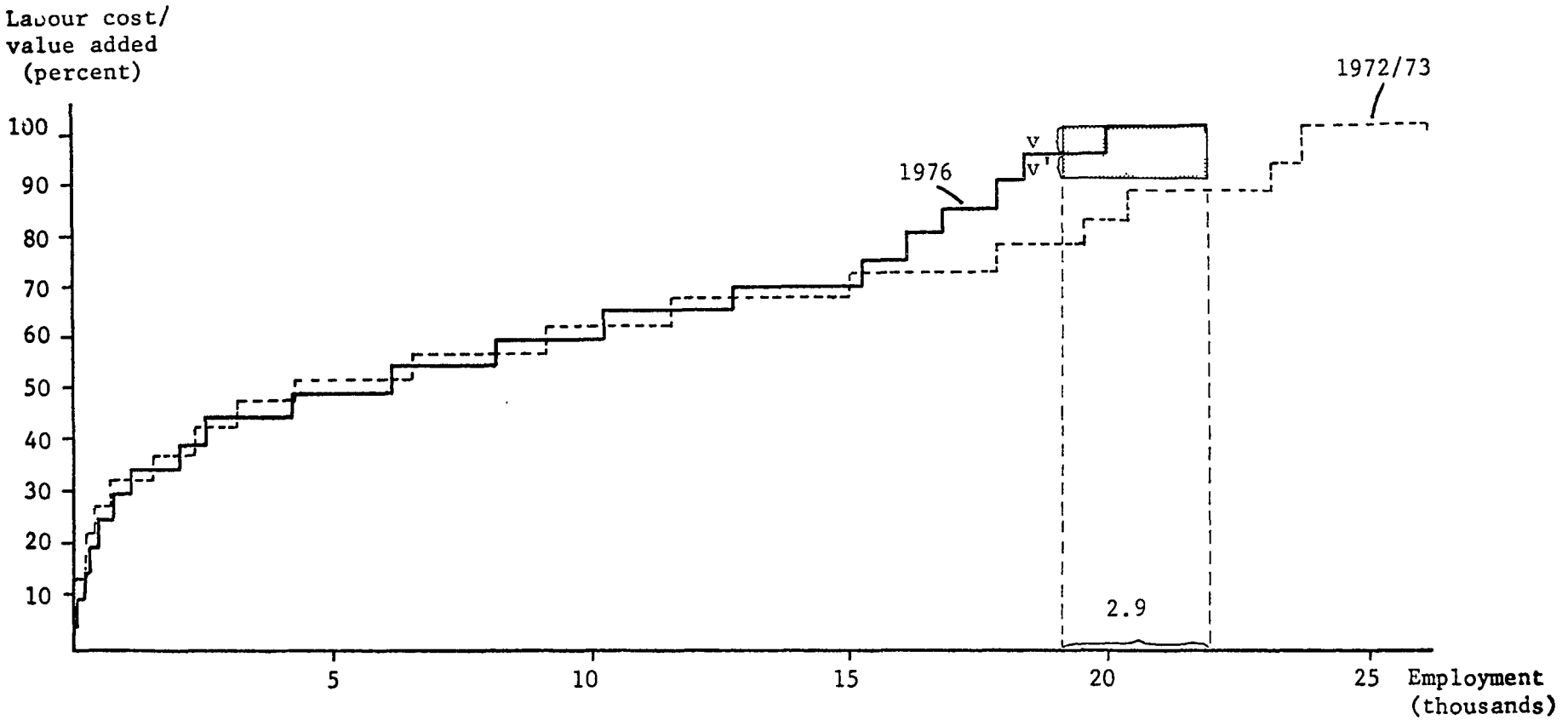
To investigate the employment effect of increased VER-imports, the experiment we undertook was to lower the average price of output by an amount

---

1/ Head offices and plants under start-up conditions are excluded.

Figure 3

A Salter diagram in practice: The clothing industry 1972/73 and 1976



Source: Heikensten (1979) from Bearbetning av primärmaterialet till SCB, Industristatistik, 1972 och 1976.

equal to the price cut for the whole industry combined, caused by a 50 percent increase in VER-imports. The price changes were taken from Table 3 and weighted to an industry average by the commodity groups share of home demand. The resulting estimates of potential unemployment are given in Table 4.

It turns out that under our assumptions, which if anything, tend to overstate the employment fall, on average approximately 1,000 people in Sweden would have become unemployed if VER imports had increased in one year by 50 percent. In 1974, more than 2,000 man years would have been lost compared to less than 400 in 1976. Of these potentially unemployed, a majority, approximately 60 percent, would work in the clothing industry and a majority would be women. This increased unemployment constitutes about 0.03 percent of the total Swedish labour force.

B. The regional effect. It is an advantage of our approach that once the Salter structure has been calculated it is simple to investigate the regional distribution of the potential unemployment. Among the data collected, those on the location of plants are probably the easiest to find. 1/ Table 4 shows the potential unemployment impact on Alvsborgs county, the region in which the two industries are heavily concentrated.

The impact on that county varies very much from one year to another. It is interesting that only during one year (1974) would the potentially unemployed constitute more than one percent of the total employed labour force in this region.

1/ Provided they are kept secret from competitors.

Table 4 Predicted number of man years lost if VER imports increased by 50 per cent in the case of non-substitutability in export markets

(1)	(2)	(3)	(4)		(5)	
	Predicted number of man years lost*				Predicted number of man years lost as per cent of total number of employed individuals**	
Year	Textile (321)	Clothing (322)	Total (321+322)	of which in Älvsborgs county, %	Total Sweden	Älvsborgs county
1973	337	677	1,014	40	0.03	0.23
1974	816	1,419	2,235	90	0.06	1.07
1975	648	153	801	69	0.02	0.29
1976	10	376	386	26	0.01	0.05
1977	105	576	681	16	0.02	0.06

* Note that one should not aggregate over time the predicted number of man years lost as the experiment is a "one shot affair" during any of the years.

**Excluding agriculture.

Regional concentration does not necessarily imply a severe unemployment problem. If the declining industry is concentrated in a booming region there may be little problem compared to the closedown of a single small factory in an already severely unemployment stricken region. In the Swedish case, Alvsborg's county is also a region with relatively high unemployment. If imports increased, the stock of unemployed individuals would rise by 19 percent (average), the highest figure among all the 25 counties. The regional dimension of the employment issue is further analyzed below.

III. GOVERNMENT SUBSIDIES

The Data

Data on subsidies to the textile and clothing industry were taken from a study undertaken at the Swedish Board of Industry by P.G. Nyberg (Nyberg, 1978). The study covers the fiscal years 1971/72 to 1977/78 (a fiscal year runs from 1.7 to 30.6 the following year). Some of these subsidies are euphemistically called loans and they have been placed among the subsidies in order to distinguish them from "true" government loans. The latter have been placed at the end of Table 5. Even in the true loans there is a grant element but henceforth we disregard this though this means that total government subsidies to the industry are somewhat underestimated. 1/

The number of subsidies is large, 23 in all. Some can be said to conform to market mechanisms, for example, "subsidies to make firms merge

---

1/ A precondition for obtaining a true government loan is often that the loan application first has been turned down by the commercial banks. Secondly, the rate of interest is often below the market rate.

Table 5 Subsidies paid out to the Swedish textile and clothing industry, fiscal years 1970/71 and 1977/78

Type of subsidy and loan	1970/71 Sw crowns (thousands, current prices)	1970/71 Share of total subsidies (per cent)	1977/78 Sw crowns (thousands, current prices)	1977/78 Share of total subsidies (per cent)
Export promotion	3535	19.8	17701	3.5
1. Firm-specific subsidies	2468	13.9	9943	2.0
2. Industry subsidy	801	4.5	6307	1.2
3. Export consultants	192	1.1	1400	0.3
4. Other	74	0.4	46	0.0
Training and adjustment subsidies	2182	12.2	70795	13.9
5. Education	1018	5.7	2500	0.5
6. Firm-specific adjustment	0		4900	1.0
7. Subsidies to make firms merge or cooperate	0		2000	0.4
8. Industry subsidy	0		3000	0.6
9. Refunded interest payments and honoured guarantees	0		1000	0.2
10. Specially refunded interest payments and honoured guarantees	0		35800	7.0
11. Efficiency increasing subsidies	0		15700	3.1
12. Research and Development	1164	6.5	5895	1.2
Subsidies to maintain preparedness in case of blocked imports	0		116300	22.9
13. Subsidies conditioned on maintaining a certain level of production	0		76000	15.1
14. Investment subsidies	0		30400	6.0
15. Government procurement subsidy	0		9000	1.8
Regional subsidies	12100	67.9	2950	0.6
16. Subsidies to firms in depressed areas, including subsidies to encourage firms to move	6400	35.9	900[1]	0.2
17. Introduction and education subsidies	4300	24.1	1800[1]	0.4
18. Pure employment subsidy	1400	7.9	n.a.	
19. Transport subsidy to firms in the north	0		250	0.0
Labour Market subsidies	0		300670	59.1
20. Subsidies to labour over 50 years of age	0		227300	44.7
21. Subsidy to training when unemployment is the alternative	0		60930[2]	12.0
22. Subsidies to firms threatened by closedown			9440	1.9
23. Special employment subsidy	0		3000	0.6
TOTAL	17817		508416	
TOTAL in fixed (1974) prices	23851		377163	

Table 5 (continued)

24. Environmental and energy policy measures including subsidies to environment improving activities, reduced energy tax, and subsidies to energy-saving activities	Up to 31.12.1977: Approximately 3 million Sw. crowns	
Loan and credit guarantees		
25. Guarantees for industry loans	3850	17270[1]
26. Handicraft and industry loans	3000[3]	11900[4]
27. Government banks' loans	0	93200
28. Export credit guarantees	1400	5600[5]
29. Tariff reduction on imported textile machinery	yes	yes
TOTAL	8250	127970
TOTAL in fixed (1974) prices	11044	94933

1) The period 1.7-31.12.1977 only
2) " " 1.7.1977-31.3.1978 only
3) The calendar year 1972
4) " " " 1977, includes the leather and leathergoods industry
5) The fiscal year 1976/77

or cooperate", "efficiency increasing subsidies" and retraining subsidies. However, the explicit objective of several subsidies, such as the "the regional" and the "labor market" subsidies, is to soften the impact of market forces on employees in industry.

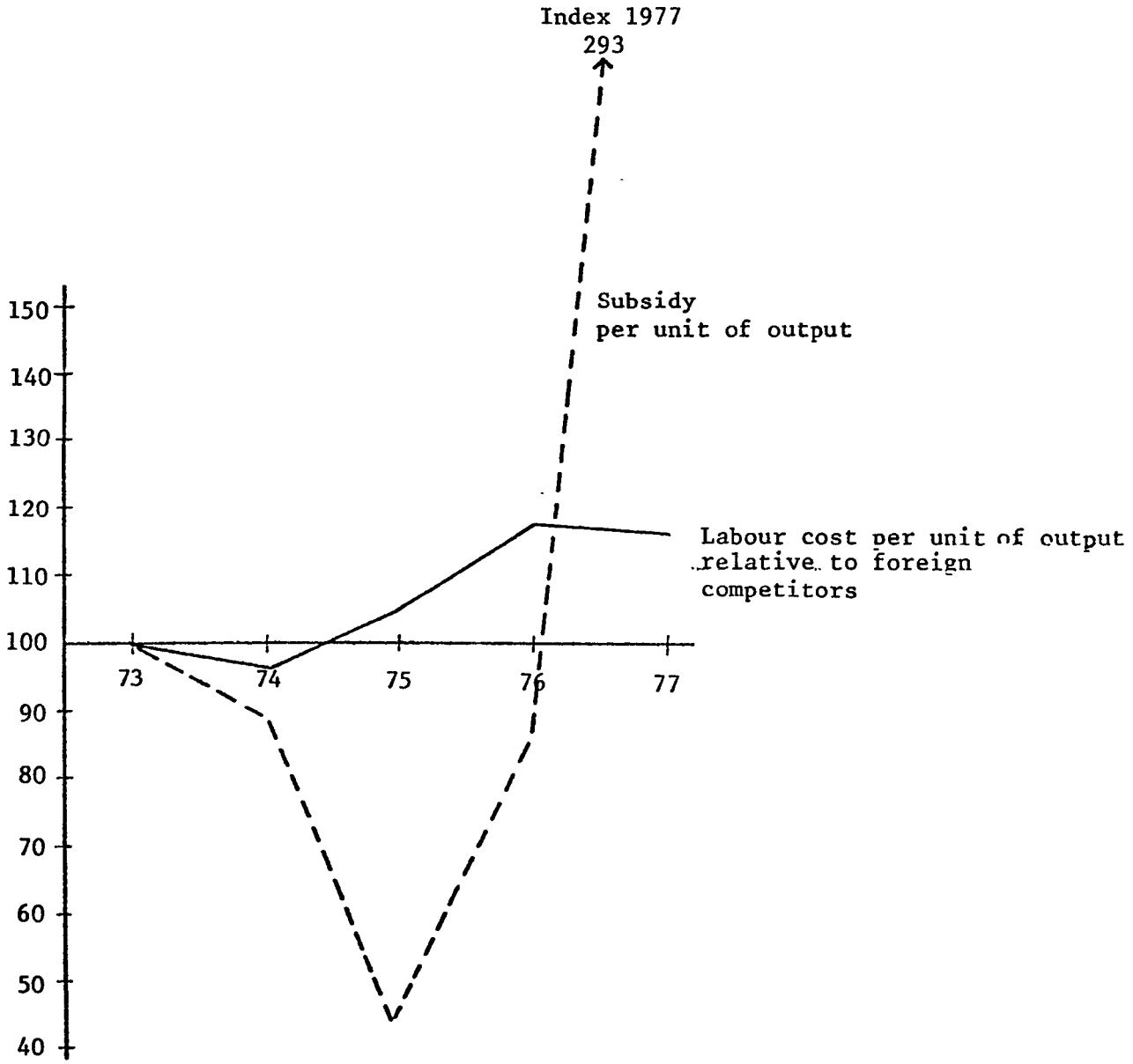
Economists often worry about industry subsidies being difficult to withdraw once they have been introduced even if the primary cause is eliminated. From this point of view the "subsidy to labour over 50 years of age" should be comparatively attractive as it will eventually cease, provided no new commitments are made. The subsidy also goes to a category within the labour force which has comparatively serious difficulties in retraining and moving. Finally, the "national defence" subsidies are intended to help maintain a certain level of domestic production.

During the period covered by Nyberg's study, subsidies increased more than 15 fold in constant fixed prices. Note, however, that the end year was exceptional (Figure 4 and Appendix Table 1). The sharp increase in 1977 can be explained as a government response to the dramatic fall in the competitiveness of Swedish industry after 1975, in spite of three successive devaluations in 1976 and 1977. The weakened competitiveness is illustrated by the increase in the aggregate labour costs for Swedish industry relative to foreign competitors (Figure 4). 1/ The increase in subsidies lagged behind

---

1/ Sweden can be regarded as small open economy. It maintained a fixed exchange rate up to 1977. Employment, the overall level of production, and investment in the tradable sector will depend mainly on relative labour cost per unit (wages and salaries constitute 85-90 percent of the Swedish GNP). When the relative labour cost rose in the mid-seventies so did subsidies to industry as the government tried to keep down open unemployment.

Figure 4 Subsidy and relative labour cost per unit of output 1973-77



Source: Svenska Handelsbanken for relative labour cost.

the rises in relative labor cost and the devaluation had no apparent effect on subsidies.

The data on subsidies were used to answer two questions. What would the volume of imports have been in the absence of subsidies? What impact did subsidies have on employment in the textile and clothing industries?

Import Volumes and Domestic Prices in the Absence of Subsidies

To appraise the effect of subsidies on the volume of imports we estimated an import demand function for textiles and clothing. The estimated equation was then used to simulate imports for 1971-77.

The import demand function is

$$Q_m = f(p_m, P_d, s, A) \qquad (6)$$

where Q_m is imports in volume terms, p_m is the import price, P_d is the domestic price, s is a subsidy variable, and A is a variable reflecting the level of economic activity. The estimated equation is based on yearly data for the period 1960 to 1977.

The Price variable. Prices for 1960 onwards at a disaggregated level (SITC commodity groups 65 and 84 combined) were taken from Hamilton (1980) and extended to 1977. The relative price is the ratio between (i) the commodity price "on the quay" including the tariff, p_m, and (ii) the price of the domestically produced good "at the factory gate", P_d. The specification implicitly assumes that markups, and so on are proportional to price.

Our formulation of the import demand function with two prices implies an assumption that the imported and domestically produced commodities are

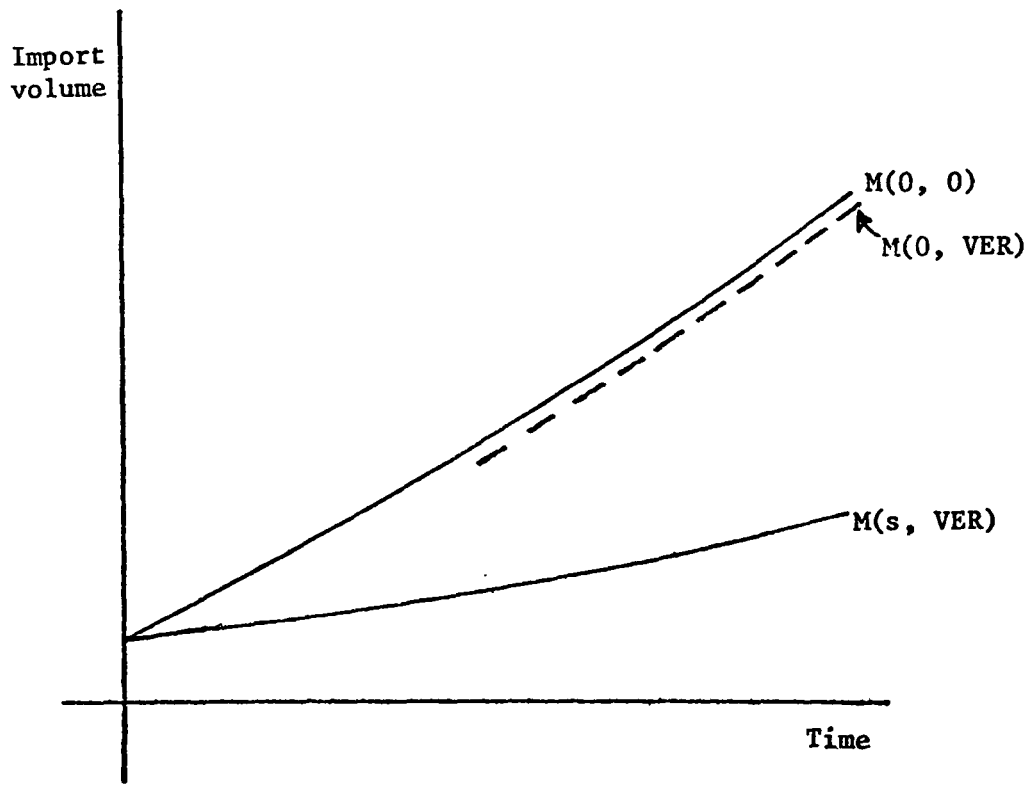
imperfect substitutes. This assumption however, does not clash with the belief that the commodities of Tables 2 and 3 being perfect substitutes. These commodities constitute only a minor part of SITC 65 and 84 combined (19 percent in 1977), and there is little reason to think that all commodities in SITC 65 and 84, but not in Tables 2 and 3, would be perfect substitutes.

The Activity Variable. As the activity variable we used the domestically produced part of home demand (apparent consumption) of textiles and clothing. Actual figures were used to represent the domestically produced part of the home demand 1971-77.

VERs. How do VERs influence our estimation? Very little, as they influence domestic prices only marginally. As a further check we ran the import demand function with a dummy variable for the VER-years. The coefficient was both very small and very insignificant. Hence, what we estimate is the import volume in the absence of subsidies; if VERs have a price influence it is assumed to be the same for all years. In Figure 5 that means comparing paths M(0, VER) and M(s, VER).

Subsidies Before 1971. For the pre-1971 period data is not available on subsidies to the textile and clothing industry. We know, however, that subsidies during the sixties and in 1970 were very small. Government policy at that time was that any subsidies given were exceptions to a general policy of not extending government assistance to industry (The 1970 Medium Term Plan, Appendix 2 on the textile and clothing industry, p. 174). The first government commission on the textile and clothing industry was set up in 1968 and its reports were delivered in 1969 and 1970. These reports suggested various types of assistance to the industry, such as a government procurement

Figure 5 Estimating the import demand function



M(0, 0): Imports without VERs and subsidies

M(S, 0): Imports with VERs but without subsidies

M(s, VER): Imports with VERs and subsidies, i.e. actual imports

program (mainly uniforms), export-promotion subsidies, training subsidies, R&D subsidies and a regional subsidy to the area in which the Swedish textile and clothing industries had traditionally been concentrated.

Subsidies would be expected to improve the international competitiveness of the industry. But by how much? Producers could also utilize the subsidies to increase profits and wages. The equation which is estimated below answers this question.

Simulated Import Volume and Effect on Domestic Competitiveness

The estimated import demand function is of the form

$$\frac{M}{P_m} = \pi + \alpha\left(\frac{P_m}{P_d}\right) + \beta A \qquad (6)$$

where M is the value of imports of textiles and clothing

P_m is the unit import price of textiles and clothing,

P_d is the domestic unit cost of textiles and clothing gross of subsidies,

is a constant, and

A is the volume of the domestically produced part of home demand and is defined as $\frac{DP - X}{P}$, where DP and X are the values of domestic production and exports, respectively.

In the specification we want to distinquish between the influence of a change in the rate of subsidy, s, and a change in the domestic unit cost net of subsidies, P_d. Thus we write $P_d = P_d(1 - s)$. The price and subsidy

variables are then expressed in comparable units, and equation (6) is written as

$$\frac{M}{p_m} = \pi + \alpha^1\left(\frac{p_m}{p_d}\right) + \alpha^2\left(\frac{1}{1-s}\right) + \beta A \qquad (7)$$

The OLS procedure yielded the following estimated equation (t-values in parenthesis),

$$\frac{M}{p_m} = \underset{(6.24)}{175334} - \underset{(-9.39)}{73174}\left(\frac{p_m}{p_d}\right) - \underset{(-3.07)}{73632}\left(\frac{1}{1-s}\right) - \underset{(-2.72)}{0.5968}\, A \qquad (8)$$

$$dw = 2.3 \quad \bar{R}^2 = 0.97 \quad F = 172$$

We can now ask whether subsidies improved the international competitiveness of the industry. If subsidies had no impact on the demand for imports, α^2 would not be significant; it is clearly not ($t = -3.07$). As is seen from the estimated coefficients, import demand is just as sensitive to a relative price change caused by a change in subsidies as an equivalent change caused by other factors; that is, $|\alpha^1| \sim |\alpha^2|$. 1/ Thus it seems that these subsidies have improved domestic competitiveness and do not seem to have passed through to higher wages or profits. 2/

This also seems to be a result more reasonable for textiles and clothing than for other industries, since textile and clothing firms typically

---

1/ Testing at the 99% level of significance we could not reject the hypothesis that $\alpha^1 = \alpha^2$.

2/ Bjorklund and Holmlund (1980) report a similar result for the Swedish labor market as a whole during the late 70s.

face intensive price competition which threeatens their survival. In other industries, government subsidies are more likely to spill over into higher wages. The resulting implicit unit cost increases are shown in Table 4, column (3).

Our simulation suggests that, the subsidies had an import depressing effect during all seven years in question. This effect was particularly strong during 1976 and 1977 (Figure 6, in which imports foregone are indicated by the shaded area, see also Appendix table 2). Thus during 1976 and 1977 actual imports are estimated to have been 8 and 31 percent, respectively, lower than would have been the case in the absence of government subsidies. But as early as 1973 imports foregone were not negligible; it is estimated that actual imports would have been 5 percent higher had there been no subsidies.

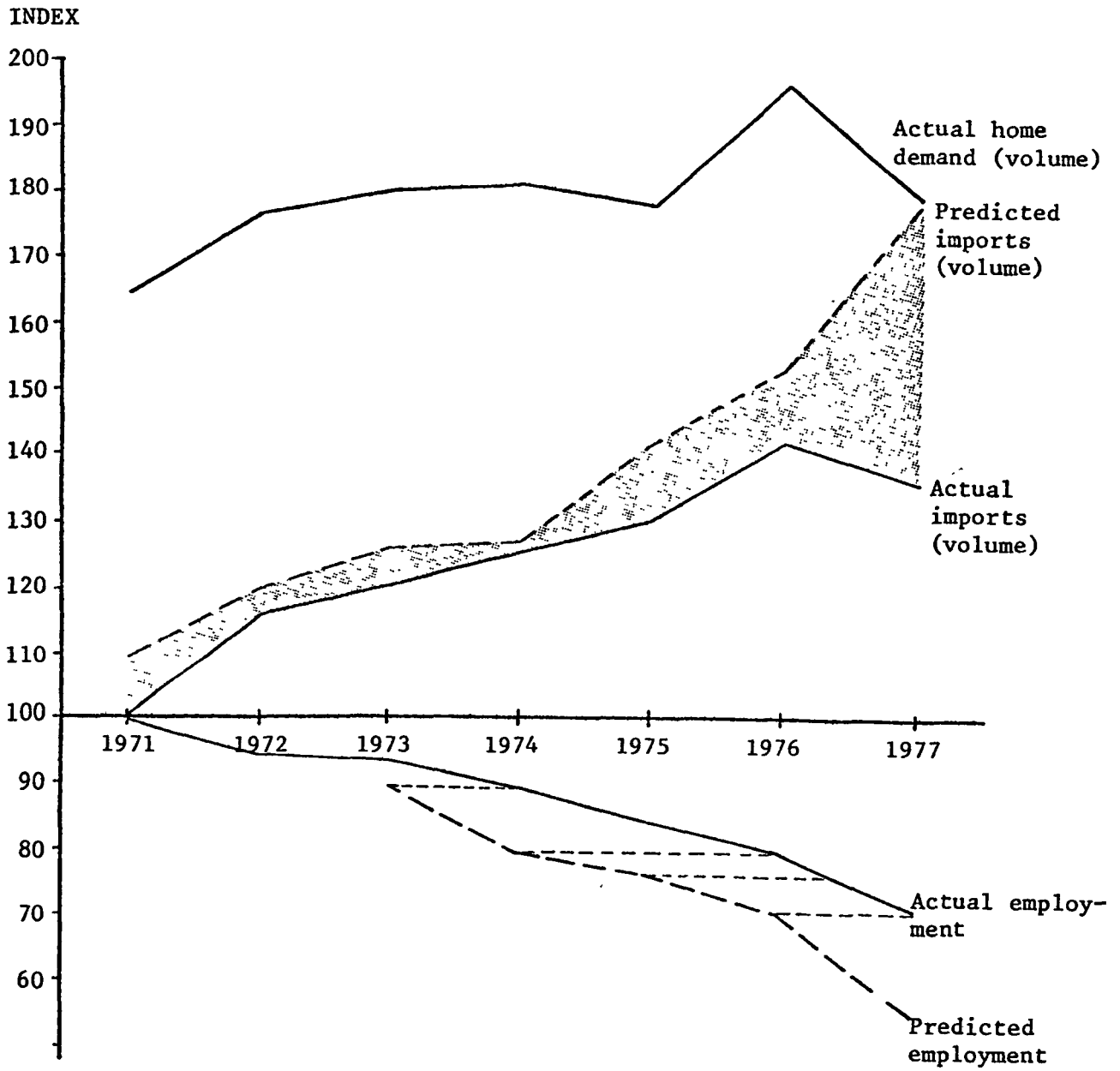
Table 6

Adjusted and non-adjusted domestic unit cost (1973 non-adjusted unit cost = 100).1/

	(1) Domestic private cost with subsidies	(2) Domestic private cost without subsidies	(3) Domestic unit cost increase, %, (2)/(1)
1973	100	103.0	3.0
1974	117.2	123.0	4.9
1975	127.0	135.7	6.9
1976	146.4	158.3	8.1
1977	163.8	189.2	15.5

1/ Total subsidies were deducted for each year from the total cost of production of commodities classified as belonging to SITC groups 65 and 84. In using the trade statistics classification of total production rather than the industry statistics classification we implicitly made the assumption that all subsidies have gone to that part of the industry which produces internationally traded commodities. Thus SITC 65 plus 84 constitutes 85 percent (1973-75) of ISIC 321 plus 322. As the politicians who decide on subsidies regard import competition as the main problem for industry, this assumption about the way in which subsidies have been distributed seems reasonable. However, if incorrect, the assumption would lead to a slight overestimation of imports in the absence of subsidies.

Figure 6 Simulated import demand and predicted employment 1971-77



The import penetration ratio (defined as import volume divided by home demand volume) would have been substantially higher than was in fact the case. This is indicated by the vertical distance between the two upper curves in Figure 6. The actual import penetration ratio increased from 60.6 percent in 1971 to 76.0 percent in 1977. The predicted ratio already reached the latter level in 1975, and in 1977 it reached 99 percent.

Effects on Domestic Employment

In this section we estimate the employment effects of government subsidies again using the Salter approach. In addition, the import simulation in the previous section is used as alternative measure of the employment effect to check the robustness of the Salter approach. 1/

The Overall Effect. The subsidy statistics, Nyberg (1978), are unfortunately not disaggregated. Hence, we have to treat the textile and clothing industries as one industry and assume that each of the two had the same proportion of its variable costs covered by subsidies. A second assumption is that subsidies were distributed in a uniform fashion over all plants. If this assumption is violated and some of the production units indeed have received more than average subsidies, our method of measuring jobs "saved" will produce an approximative estimate. In fact there is reason to believe that some larger and regionally predominant plants have received a more than average share of the subsidies. 2/ Thirdly, for the marginal plants we take

---

1/ The second method can also be used as an alternative to the Salter method in Section II.

2/ I owe this information to Lennart Ohlsson.

it that subsidies are reflected as reductions in unit cost. This seems reasonable both against the background of our discussion, the test of $\alpha^1 = \alpha^2$ in the previous section, and because the plants we are interested in are the marginal ones with their "backs against the wall". 1/ The textile and clothing industries are particularly suitable for this type of analysis since the plants in these industries are small compared to most other branches of industry. 2/ The price changes employed in the analysis are presented in Table 6, column (3). Applying these necessary simplifying assumptions, the overall figures for predicted employment are presented in Table 7 and Figure 6.

The total number of man-years "saved" is estimated at 28,900, of which 34 percent occurred during 1977. In that year both subsidies and number of jobs "saved" reached peak values. For the other four years there is no clear relationship between subsidies and jobs "saved". Table 7, column (6), shows that the 1974, 1975 and 1976 subsidies were more efficient in saving jobs than the subsidies of 1973 or 1977, measuring efficiency as subsidy cost per man-year "saved". This feature is measured in Figure 6 by the length of the dotted horizontal lines. In 1973 the subsidies could postpone unemployment only one year before it fell below the predicted value, but the (smaller) subsidies of 1974 postponed the predicted unemployment twice as much. Note

---

1/ This "back against the wall" characteristic is also confirmed by our investigation of the industries (lacking) adjustment possibilities in section II.

2/ Of total output, approximately 20 percent was produced in units with less than five employees. In the remaining plants the average number of employees was 61 in the textile industry and 41 in the clothing industry in 1976.

that the fairly large subsidies of 1976 do not seem to have been able to postpone the predicted unemployment for more than just over a year. 1/

The overall macroeconomic situation in the country was comparatively good in 1974 and 1975. During 1973, the economy was still suffering from a home-made recession and during 1976, the economic situation deteriorated rapidly, resulting in successive devaluations during 1976 and 1977. One conclusion from Table 7 is that if there is an overall macroeconomic recession in the country, a government wanting to keep up employment through subsidies will have to pay much more per man-year "saved" than during a boom. The government not only has to pay subsidies for an exceptionally large number of potentially unemployed individuals, it also has to pay an exceptionally high per capita subsidy for those potentially unemployed. Figure 3 also illustrates this. When in 1976 subsidies increased, the necessary subsidy increased from v to $(v + v')$ per person as the number of potentially unemployed individuals moved from 1900 to 2900.

The Regional Effect. From a regional point of view more than 50 percent of the total number of man-years saved during 1973-77 occurred in Alvsborg's county, and two other counties--Gothenburg-Bohus and Malmohus--together took 16 percent. The marginal plants are thus very concentrated regionally (Figures 7, 8 and Appendix Figure 1). But even in the county most severely hit, the additional number of unemployed does not constitute more than 1.6 percent of the employed labour force (excluding agriculture). However, if these individuals were to become unemployed, the stock of

---

1/ It should be stressed that such a postponement, likely to mean an important welfare gain to the potentially unemployed individuals as it may give some of them the necessary time to prepare for an adjustment in the form of a new job in a new location, applying and being accepted for retraining, etc.

Table 7 Predicted number of man years "saved" due to government subsidies 1973-77

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Number of man years saved in the textile and clothing industries*			Predicted number of man years saved as per cent of total number of employed individuals**	Subsidy per man year saved (Skr, 1974 prices)	Total subsidies (1,000 Skr, 1974 prices)
Year		of which women, %	of which in Älvsborgs county, %			
1973	2,600	57	50	0.07	39,400	102,438
1974	6,100	56	59	0.16	15,600	94,897
1975	4,700	58	57	0.12	9,000	42,311
1976	5,800	62	53	0.15	14,300	82,668
1977	9,700	62	42	0.25	24,900	241,050
All years	28,900					

* Rounded off.

**Excluding agriculture.

unemployed in this county would increase by 90 percent (average, see Figure 8). It is worth noting that in only five counties out of 25 would the stock of unemployed have increased by more than ten percent (average) if the subsidies had been withdrawn (Skaraborg, Alvsborg, Jonkoping, Kronoberg and Kristianstad).

A general conclusion from studies in other countries of the employment effects of trade with developing countries has been that the overall effect on employment is very marginal but that increased competition can affect certain groups severely (for a summary of studies, see UNIDO 1978). Typically unskilled people, women and those living in a depressed area can be hard hit by competing imports. The region which would be most hit if subsidies were withdrawn is a fairly depressed one. As is seen in Table 1, women are over-represented in the industry's labor force. But it should be noted that most of Sweden's textile and clothing imports do not originate in developing countries. Finland's export of textiles and clothing to Sweden is of about the same volume as the developing countries' and in the import-competing Swedish textile and clothing industry approximately 25 percent of the labour force are immigrants of which a vast majority comes from Finland.

A comparison with a Commonly Used Approach to Estimate the Impact of Increased Exports from Developing to Industrial Country Markets

It is common to assume that there is a close link between the volume of production and employment. Assuming that home demand is unaffected by the subsidies, one would expect a relationship between imports foregone and jobs "saved". To check the robustness of our estimates for jobs "saved" we specified a simple relationship: the number of employees in the industry is

Figure 7 Regional distribution of the aggregated number of man years "saved" 1973-77 (28,900 man years; see Table 7).

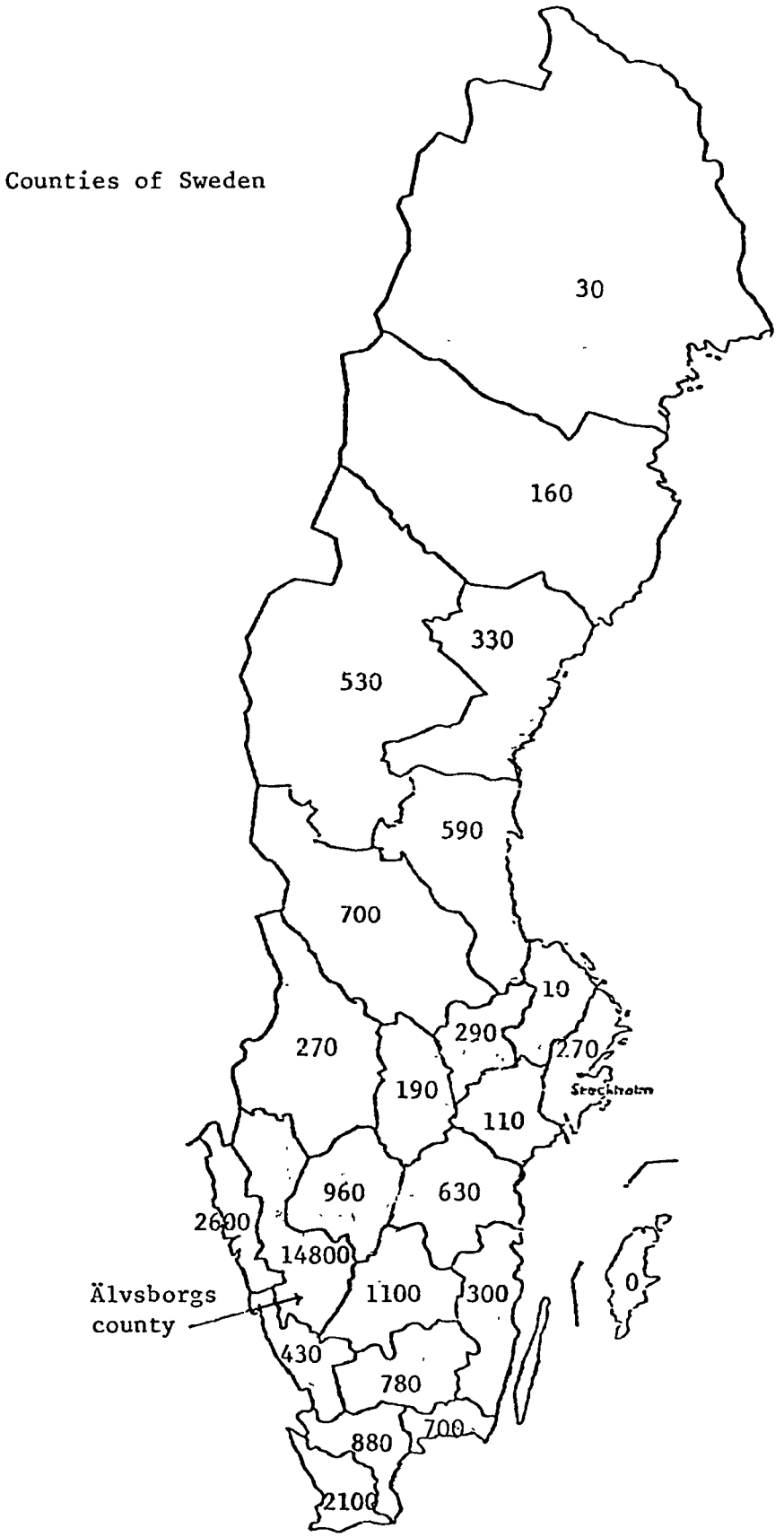
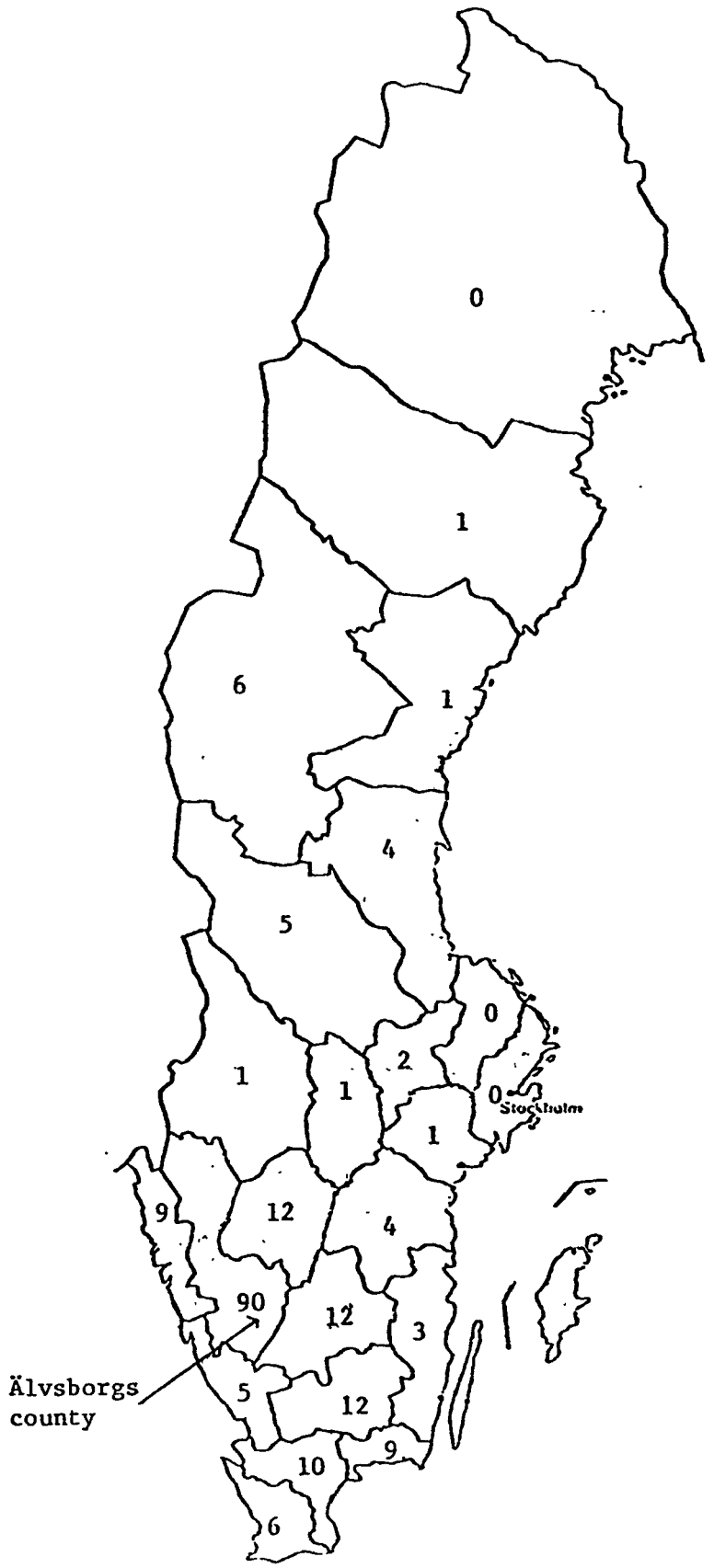


Figure 8 Increase in the counties' stocks of unemployed in the absence of subsidies (per cent)



proportional to the volume of total output. Thus if imports foregone constitute z percent of production, had we allowed these imports into the country, employment would have been reduced by z percent. This shockingly simple estimate of the number of jobs "saved" has a downward bias. In reality it is not average production units which have to close down, as is implicitly assumed in this method, but rather marginal units which are more labour intensive than average ones.

According to this method, the total number of man-years "saved" in 1973-77 was 22,300. Compared with our "Salter model" method, this estimate produces, as expected, a lower figure - 20 percent - for the total number of conserved man-years.

The above "simple" method has been widely used in studies of the impact of increased developing country exports on industrial economies (see UNIDO 1978 for a survey). Our approach has several important advantages to the "simple" approach. First, it brings prices into the picture opening up the possibility of estimating the gain to consumers of increased imports and the gain in developing country export earnings. Second, the "simple" method uses coefficients of average labour-output ratios for the industry. With a Salter approach the plants actually at risk of being closed down are considered. A demand for labour curve is in fact derived. This gives the possibility of seeing how employment sensitive the industry is to changes in profitability (in Figure 3, is the flight of stairs "steep", that is, is employment insensitive, or is it "flat", that is, sensitive?). Thus, a Salter approach is much to be preferred when simulations and forecasts are undertaken. Third, the "simple" method often applies the same labour-output coefficient to several years. In our analysis, however, we calculated a new Salter structure for each year.

Appendix

The derivation of η

q_F and q_R are quantities supplied by the foreign country and the rest of the world and q_W is world demand. We want to investigate $\eta = -\frac{\partial p}{\partial \bar{q}_F} \frac{\bar{q}_F}{p}$. Supply equals demand,

$$q_F = - q_R + q_W$$

$$\frac{p}{\bar{q}_F} \frac{\partial \bar{q}_F}{\partial p} = - \frac{p \frac{\partial q_R}{\partial p}}{\bar{q}_F} + \frac{p \frac{\partial q_W}{\partial p}}{\bar{q}_F}$$

$$\frac{1}{\eta} = - \frac{q_R}{\bar{q}_F} \left(\frac{p}{q_R} \frac{\partial q_R}{\partial p}\right) + \frac{q_W}{\bar{q}_F} \left(\frac{p}{q_W} \frac{\partial q_W}{\partial p}\right)$$

Define the demand elasticity $e_W^d = - \frac{p}{q_W} \frac{\partial q_W}{\partial p}$. We can then write

$$\eta = \frac{1}{\frac{q_R}{\bar{q}_F} e_R^s + \frac{q_W}{\bar{q}_F} e_W^d}$$

The derivation of $\tilde{\eta}$

q_F^{SWE} and q_H are the quantities supplied by the (foreign) VER-countries and domestic suppliers, respectively. $(q_H + q_F^{SWE})$ is total demand in Sweden which is equal to the world demand under our assumption of non-substitutability in export markets. Supply equals demand,

$$q_F^{SWE} = - q_H + (q_H + q_F^{SWE})$$

$$\frac{p}{\bar{q}_F^{SWE}} \frac{\partial \bar{q}_F}{\partial p} = - \frac{p \frac{\partial q_H}{\partial p}}{\bar{q}_F^{SWE}} + \frac{p \frac{\partial (q_H + \bar{q}_F^{SWE})}{\partial p}}{\bar{q}_F^{SWE}}$$

$$\frac{1}{\tilde{\eta}} = - \frac{q_H}{\bar{q}_F^{SWE}} \left(\frac{p}{q_H} \frac{\partial q_H}{\partial p} \right) + \frac{q_H + \bar{q}_F^{SWE}}{\bar{q}_F^{SWE}} \left(\frac{p}{q_H + \bar{q}_F^{SWE}} \frac{\partial (q_H + \bar{q}_F^{SWE})}{\partial p} \right)$$

Define the home demand elasticity as $e_H^d = - \frac{p}{q_H + \bar{q}_F^{SWE}} \frac{\partial (q_H + \bar{q}_F^{SWE})}{\partial p}$

and denote the domestic supply elasticity by e_H^s. We can then write,

$$\tilde{\eta} = \frac{1}{\frac{q_H}{\bar{q}_F^{SWE}} e_H^s + \frac{q_H + \bar{q}_F^{SWE}}{\bar{q}^{SWE}} e_H^d}$$

Derivation of a price change

To illustrate the method behind table 3 we derive the price change in 1975 for "Blankets and travelling rugs" (CCC 6201, SITC 65661, 65662, 65669). The price change is encircled in table 3. The figure for domestic production we collect in the industry statistics, $q_H = 14608$. The figure for VER imports we collect from trade statistics, $q^{SWE} = 987$. By assumption $e_H^d = e_H^s$.

From Hamilton (1980) we take the import demand elasticity e_W^d for SITC 65, the group to which "Blankets and travelling rugs" belong. By way of the formula given in footnote 1, p. 24, we calculate the domestic demand elasticity, e_H^d (SITC 65, 1975) to be 0.4. With these pieces of information we can calculate $\tilde{\eta}$ from the formula derived above in the appendix,

$$\tilde{\eta} = \frac{1}{\frac{14608}{987} 0.4 + \frac{14608 + 987}{987} 0.4} = \frac{1}{0.4(14.80 + 15.80)} = 0.0817$$

The price change is then (in per cent)

$$\Delta p = \frac{0.5\ \bar{q}_F^{SWE}}{\bar{q}_F^{SWE}} \tilde{\eta} \cdot 100 \sim 4.1.$$

Appendix table 1

Total subsidies to the textile and clothing industry 1974 prices, 1000 Skr.

Year	Total subsidies	Distribution over time (percent)
1971	23,435	3.8
1972	29,716	4.8
1973	102,438	16.6
1974	94,897	15.4
1975	42,311	6.9
1976	82,668	13.4
1977	241,050	39.1
	616,515	100

Source: Nyberg (1978).

Note: Fiscal years have been transformed into calendar years by assigning half of the subsidies from each of two successive fiscal years to the fully covered calendar year in between.

Appendix table 2 Trade and employment in textile and clothing 1963-77

	Actual imports (volume index)	Predicted imports (volume index)	Actual penetration ratio* (percent)	Predicted penetration ratio* (percent)	Actual employment	Number of man years "saved" measured by the simple method**
1963	50.5		34.3		92,000	
68	83.3		49.2		73,182	
69	98.0		54.0		70,939	
70	104.0		56.9		67,512	
71	100.0	109.1	60.6	66.2	59,871	
72	116.0	120.0	65.6	67.7	56,345	
73	120.9	126.2	67.1	70.0	55,929	2,150
74	125.7	127.4	69.3	70.3	53,548	710
75	130.3	142.6	72.8	79.7	50,337	960
76	142.2	153.9	72.2	78.1	47,873	7,200
77	136.6	178.7	76.0	99.4	42,789	11,290
						22,310

* Measured as share of imports in home demand (apparent consumption).

** Measured by the "proportion to output" method described in the text.

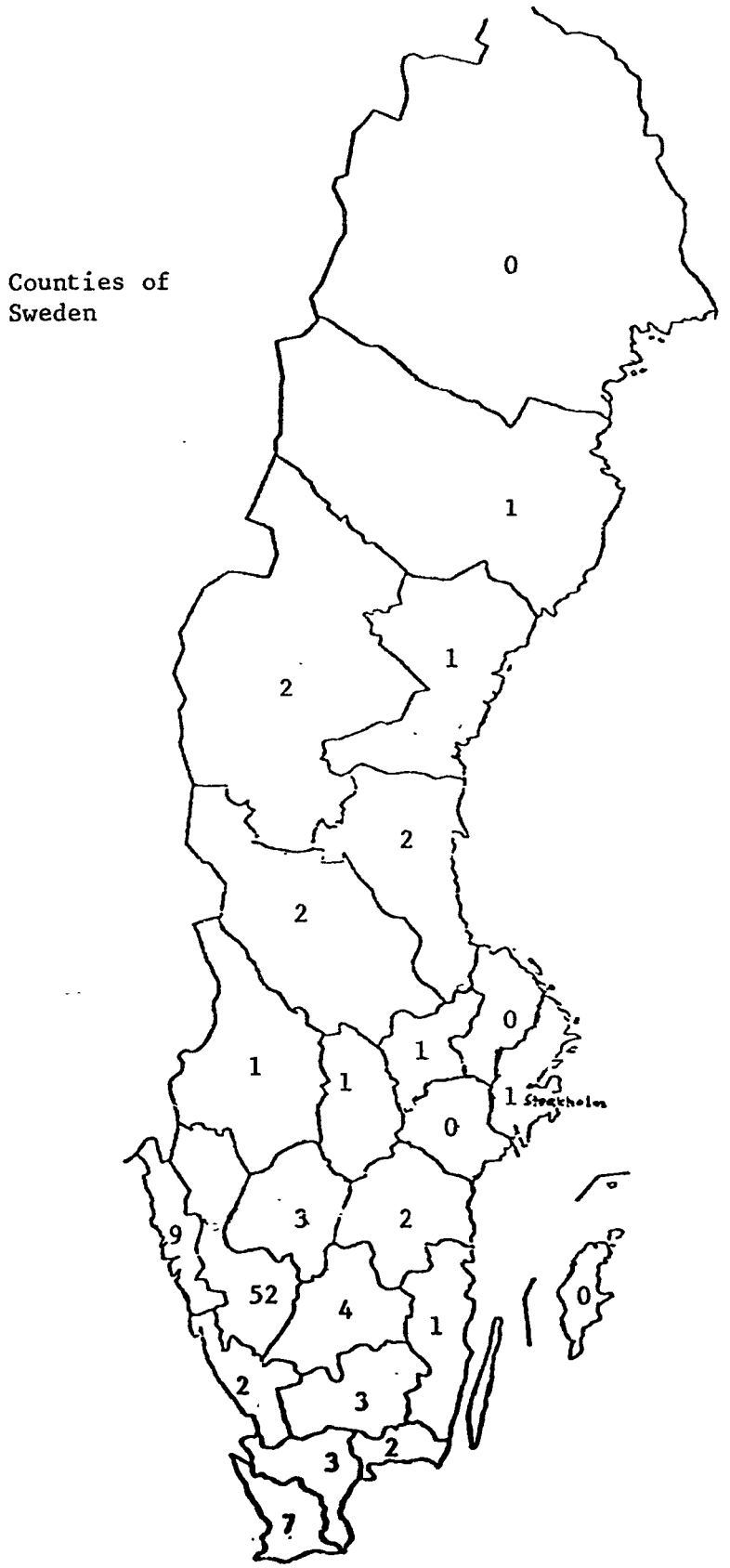
Appendix table 3 Commodity group shares of total VER import to Sweden 1973 and 1976

(1) CCC Code[1]		(2) Corresponding SITC code (for description see table 1)	(3) Share of total VER import to Sweden 1973	(4) 1977
5104	200	65 351	0.4	0
	306-309	65 351		0.1
	406-600	65 351, 65 361		0
	706-709	65 351		0
	906-909	65 351		0
5311	all	65 321	0.2	0
5405	903-906	65 331	0	0
5506	900	65 142	0	0
5508	900	65 212, 65 222	0.1	0.1
5509	203-209	65 229	16.2	3.5
	803-809	65 229		0.2
5607	106-606	65 352	7.4	0
	107+607	65 352		0
	103+108+608	65 352		0.3
	205-206-705	65 352		0.4
	207+707	65 352		0
	706-708	65 352		0
	301+302+803	65 352		0.2
	306+307+807	65 352		0
	911+990	65 352		0
5804	500	65 223	0.3	0.5
5805	002-009	65 401	0	0
5808 + 5809[2]		65 404	0	0
5904	all	65 561	0.8	0.4
6003	003-109	84 142	1.8	1.3
	902-909	84 142		0
6004	all	84 143	5.4	6.2
6005[3]	302-309	84 144	4.8	13.0
	602-609	84 144	1.0	0.7
	802-896	84 144	1.0	3.0
6101	all	84 111	23.3	27.0
6102	all	84 112	19.2	27.3
6103	102-209	84 113, 84 142	13.2	10.5
6104	102-109	84 114	0.4	0.2
6201	all	65 661, 65 662, 65 669	0.3	0.2
6202	110+1090	65 691	4.1	3.8
	190[2]	65 691		1.1
	311-399[2]	65 691		
			100.0	100.0

For footnotes, see Table 1.

Appendix Figure 1

Regional distribution of man-years "saved" due to government subsidies. Each county's percentage of the total number of man-years "saved", 1973-77.



BIBLIOGRAPHY

Bjorklund, A. and B. Holmlund (1980), "Erfarenheter av 70-talets arbetsmarknadspolitik", Ekonomisk Debatt, No. 4, 1980.

Bhagwati, J.N. and Srinivasan, T.N. (1976), "Optimal Trade Policy and Compensation under Endogenous Uncertainty: The Phenomenon of Market Disruption", Journal of International Economics, 6, pp. 317-336.

Hamilton, C. (1980), "Import Elasticities at a Disaggregated Level. The Case of Sweden", Scandinavian Journal of Economics, No. 4.

Heikensten, L. (1979) "En metod att forutsaga industrinedlaggningar", in Vagar till okad valfard Ds Ju 1979:1, Expertbilaga 1, Stockholm.

Jenkins, G.P. (1980), "Cost and Consequences of the New Protectionism," Discussion Paper, The North South Institute, Canada.

Kreinin, M. (1973), "Disaggregated Import Demand Functions - Further Results", Southern Economic Journal, vol. 40, June, pp. 19-25.

Kreinin, M. (1975), International Economics, 2nd edition, Harcourt Brace Javanovich, New York.

Lindbeck, A. (1975), Swedish Economic Policy, MacMillan, London.

Nyberg, P.G. (1978), "Selektiva naringspolitiska atgarder for TEKO-industrin", mimeo 1978-10-09, Statens Industriverk, Stockholm.

Salter, W.E.G. (1969), Productivity and Technical Change, Cambridge U.P., Cambridge.

SOU:1971:5, Svensk industri under 70-talet, bilaga 2, Stockholm.

Stern, R.M., J. Francis and B. Schumacher (1976), Price Elasticities in International Trade, MacMillan, London.

UNIDO (1978), "The Impact of Trade with Developing Countries on Employment in Developed Countries", UNIDO Working Papers on Structural Changes, No. 3, UNIDO/ICIS.85, Wien.

Webb, R. (1975), "Intra-Industry Differences in Input Coefficients and the Effective Rate of Protection", unpublished mimeo, Melbourne University, Parkville, Victoria.

MARKET PENETRATION RESEARCH PROJECT--WORK-IN-PROGRESS REPORTS

425	Britain's Pattern of Specialization in Manufactured Goods with Developing Countries and Trade Protection	Vincent Cable & Ivonia Rebelo
426	Worker Adjustment to Liberalized Trade: Costs and Assistance Policies	Graham Glenday Glenn P. Jenkins John C. Evans
427	On the Political Economy of Protection in Germany	H.H. Glismann & F.D. Weiss
428	Italian Commercial Policies in the 1970s	Enzo Grilli
429	Effects of Non-Tariff Barriers to Trade on Prices, Employment, and Imports: The Case of the Swedish Textile and Clothing Industry	Carl Hamilton
430	Output and Employment Changes in a "Trade Sensitive" Sector: Adjustment in the U.S. Footwear Industry	John Mutti & Malcolm Bale
431	The Political Economy of Protection in Belgium	P.K.M. Tharakan
432	European Community Protection Against Manufactured Imports from Developing Countries: A Case Study in the Political Economy of Protection	Eric Verreydt & Jean Waelbroeck