Naujoks, Petra; Schmidt, Klaus-Dieter

Working Paper

Outward processing in Central and East European transition countries: Issues and results from German statistics

Kiel Working Papers, No. 631

Provided in cooperation with:
Institut für Weltwirtschaft (IfW)

Kieler Arbeitspapiere
Kiel Working Papers

Kiel Working Paper No. 631

OUTWARD PROCESSING IN CENTRAL AND EAST EUROPEAN TRANSITION COUNTRIES: ISSUES AND RESULTS FROM GERMAN STATISTICS

by
Petra Naujoks and Klaus-Dieter Schmidt

May 1994

Institut für Weltwirtschaft an der Universität Kiel
The Kiel Institute of World Economics

ISSN 0342 - 0787

Institute of World Economics
24100 Kiel
Federal Republic of Germany

Kiel Working Paper No. 631

OUTWARD PROCESSING IN CENTRAL AND EAST EUROPEAN TRANSITION COUNTRIES: ISSUES AND RESULTS FROM GERMAN STATISTICS

by
Petra Naujoks and Klaus-Dieter Schmidt

May 1994

Contents

List of Tables

Abstract

Our paper explores the recent trends in outward processing (OP) of German firms in former centrally planned economies (CPEs). We argue that OP is an interesting alternative to cross-border trade and equity foreign arrangements. We present the theoretical framework to understand OP as well as some facts and figures which may prove the empirical evidence. Finally, we discuss consequences for corporate restructuring in CPEs.

I Introduction[1]

Internationalization has become an important issue in international business and international economics. More and more firms are considering it profitable to move lines of their production to foreign countries. Much has been written to explain when, how and where a firm takes a step to internationalization.[2] The "internationalization literature" has focused mostly on one form of international involvement, namely on foreign direct investment (FDI). It has given only little attention to other forms, especially to the so-called outward processing (OP). In OP, a special form of contracting, a domestic firm (the contractor) delivers mostly semi-processed goods to a foreign partner (the subcontractor) for refining, finishing or assembling and to be incorporated into a product to be sold by the contractor. OP can be considered as a sub-category of counter-trade, a transaction where exports and imports are linked (Piatti, Spinanger, 1992; Neale and Sercu, 1993).

The negligence of OP in the literature is astonishing as it is in stark contrast to its empirical evidence. For a growing number of industries both in developed and in developing countries OP is an important strategic device in international competition. In the developed countries OP often provides an instrument for "cross-subsidization" of high-cost production: without OP neither the textile, the clothing and the footwear industry nor some other labour-intensive productions would exist there any longer. In the developing countries, on the contrary, OP opens the access to international markets for some industries (Spinanger, 1992). That way a subcontractor firm gets the opportunity to climb on a running tandem. The success story of labour-intensive industries in many developing countries cannot be written without OP.

The paper examines the recent trends in OP of German firms in former centrally planned economies (CPEs). It is a well-known fact that by their OP-activities German firms have made an important contribution to the development of the textile and clothing mills in Greece and Portugal. The same has been true for French firms in Morocco and Tunisia and for Italian firms in the former Yugoslavia (Spinanger, 1992). One can assume that in the years to come something similar will happen in the CPEs.

---

1 This paper was presented at the ACE-Workshop "Corporate Restructuring, Trade Performance and Economic Policy in Central Eastern Europe" held in Sofia from 28 - 30 May 1994. Very helpful comments to the draft were provided by our colleagues Birgit Sander and Dean Spinanger.

2 See Dunning (1977,1988), Rugman (1980), Bartlett and Goshal (1989).

For several reasons the CPEs are utmost suitable candidates for OP:

- Low unit labour costs relative to other producer countries constitute an important source of comparative advantage. It results from low wage rates for skilled, semi-skilled and unskilled labour, combined with relatively high labour productivity which comes close to that of western industrialized countries. Additionally, comparative advantages may also result from linkages between OP-industries and capital goods industries in CPEs. So the Czech textile industry may benefit from synergies with the country's famous machinery industry.

- Geographically, most of the CPEs are close to the manufacturing centers in western Europe. Modern production concepts as "just-in-time", "outsourcing" or "industrial networks" tend to favour geographic proximity between customers and their foreign offshore plant, as it requires fast and reliable transport.

- Contracting has a long-standing tradition in the CPEs. The former Yugoslavia, Hungary and Poland, e.g., have been the preferred locations for OP-activities of the German and Italian textile, clothing and footwear industry already under the communist regime.

- Imports of textiles, clothing, footwear and other "sensible" goods from producers in low-wage countries encounter wide import restrictions by industrialized countries, especially by the EC. OP can reduce trade barriers considerably: exports and imports for OP are duty-free, only the added value has to be declared.

For CPEs, the main benefits of OP are obvious. OP includes the acquisition of managerial and technical know-how, of specific production skills, of financial support and, last but not least, of employment opportunities. For firms this can be the bridge from production for the plan to production for the market.

The paper argues that OP is an interesting alternative to both cross-border trade and equity foreign arrangements. Starting from Dunning's eclectic theory of international involvement it presents the theoretical framework to understand OP as well as some facts and figures which may prove the empirical evidence. Finally, it discusses consequences for corporate restructuring in CPEs.

II Theoretical Rationale

In recent years internationalization has become a dominant paradigm in the theory of international division of labour. The most widely accepted framework is the "eclectic paradigm", developed by Dunning (1988) in order to explain "extent, form and pattern of international

production". Although the paradigm is not generally accepted and empirical results are partly contradictory it provides a useful platform for analyzing different forms of cross-border activities.

A basic conclusion from the "eclectic paradigm" is that a firm which considers undertaking cross-border activities has the choice: it has to choose between trade in goods or trade in factors of production. However, it has no absolute freedom of choice. The "internationalization literature" mentions a large number of country and industry characteristics which may influence the decision. The most important are

- endowment with mobile and immobile factors of production,
- degree of horizontal and vertical integration of production,
- level of transportation costs,
- market structure and
- government policy (Schmidt, Naujoks, 1993).

From a theoretical point of view OP cannot be explained easily. It is an intermediate form of trade in goods and trade in factors of production. The literature suggests that a traditional package with transferring capital, technology and management by means of a joint venture or a greenfield investment provides some advantages for foreign investors. On the other hand, such an equity involvement may often be considered as too risky or may absorb too much of the firm's management capacity. A firm may therefore look for a compromise: it may choose a contractual arrangement which enables it to exploit some ownership advantages by a non-equity involvement. OP represents such a compromise.

However, the feasibility of OP is limited. The most important one is that the production process is technically and economically decomposable into different stages. Only some stages are suitable for OP, mostly the intermediate, sometimes also the final stages (e.g. assembling, customizing). Consequently, OP-goods are for the most part semi-finished goods, which can be processed easily by standardized technologies. Thus, in the typical offshore plant no sophisticated know-how should be required. A further condition is a potentially high mobility of production: it must be possible to shift production easily from one country to another. Most of the OP industries are so-called "footloose" industries which can be built up quickly everywhere. Certainly, support on part of the contractor is necessary to improve product quality, to safeguard delivery times or to refinance wage and overhead costs. But normally an offshore plant can be expected to go on its own. There are no specific internalization advantages which could be realized. Insofar, OP contracting is sometimes the superior alternative to

a risky equity involvement. By means of OP a producer can reduce these demands by economizing on such activities as instruction and controlling.

OP is like a "call option": the domestic producer has the possibility, but not the obligation to use the capacities abroad. By this he shifts the risk onto the subcontractor. He can also play one subcontractor off against another in order to negotiate more favourable conditions. Therefore OP is most useful in areas where the uncertainties are relatively apparent. Uncertainties about exchange rates, e.g., which influence input costs or output prices push up the real option price and increase the advantage for the firm of being flexible.

From trade statistics it is well known that OP concentrates on only two product groups: one group comprises textiles and tissue, footwear, knitwear and clothing, the other group includes components and parts of electrical and mechanical machinery and electrical engineering. These two product groups can be classified as Heckscher-Ohlin goods without any exception or, in terms of factor intensities, as labour and fixed capital-intensive goods. This indicates that OP is predominantly based on comparative advantage, particularly, on low wage costs. Traditional theory implicitly suggests that firms in high-wage countries first of all should consider OP as a vehicle for "sweatshop labour". In fact, many firms from western countries are interested in short-term engagements only. However, this argument is oversimplifying. Many firms are in search of new modes to organize sourcing, production and sales. They pay special attention to new factory concepts such as "lean production", "just-in-time production" and "global outsourcing" - aiming at a lower degree of vertical integration. In order to implement these concepts an efficient "network" of supplies is required, that means a bundle of autonomous firms which are, however, strongly interrelated. This brings a completely new element into the contracting mechanism.

Most of the literature on internationalization focuses on the role of governments in affecting the firms' locational decisions. One of the main factors that may induce a firm to go for international operations are tariff and non-tariff trade barriers or local content clauses. These clauses could preclude a firm from producing and exporting from its home country and lead it to establish a foreign basis for its business. Frequently, also the form of this business - FDI or OP - is decisively influenced by the intention to circumvent protectionistic measures. It is a well known fact that western industrialized countries' trade policy is very selective with respect to both industries and countries. Among the most protected industries (protected by tariffs and non-tariff measures) are the textile and the clothing industry. For these industries effective tariff rates (calculated from explicit and implicit rates) account for twice respectively three times the average, a level which in Germany is only surpassed by aircraft and pulp and paper. Quantitative restrictions in the textile and clothing industry are by far the highest at all

(Table 1). Most of these measures are directed against low-wage developing countries. But also the CPEs are extremely discriminated by them.

Table 1 - Protection Rates in West German Manufacturing 1972 and 1982 (Percent)

	Nominal tariff rate(a)		Effective tariff rate(b)		Total protection		Note: Quotas and voluntary restrictions(c)
	1972	1982	1972	1982	1972	1982	1982
Total Manufacturing	7.3	7.9	9.1	9.5	11.8	12.3	11.7
of which:							
Textiles	10.3	13.0	13.4	18.4	14.7	19.9	65.0
Clothing	14.0	15.0	27.4	28.0	29.9	29.9	56.5

(a) Production weighted. - (b) Including effective subsidization. - (c) Percent of effected tariff lines.

Source: Klepper, Weiß, Witteler (1987).

Selective trade policy with respect to different countries becomes more and more obvious by the trade negotiations in the context of the "Europe Agreements". This contract leads to a two-class-treatment even among the CPEs. The "Interim Agreement", as the trade component of this association contract, concluded with Poland, Hungary and Czechoslovakia (respectively the Czech Republic and Slovakia up from 1993) is aiming at a stepwise foundation of a free trade area in the sense of GATT until 2002. With effect from March 1992 the EC began to reduce tariffs and to abolish or diminish quantitative restrictions for the three association partners named above. Since May 1993 Romania and Bulgaria have also enjoyed the privileged treatment as a partner within the "Interim Agreement". For a lot of the industrial products tariffs and quotas were abolished immediately. But among the protected goods like textiles and clothing or iron and steal a softer transition with a stepwise reduction during a period of some years is intended.

Therefore, OP is also a way to escape the de-escalation effect of the tariff-system: firstly, because OP generally benefits from the special customs regulation that only the added value has to be duty-paid; secondly, and special to this case, because due to the "Europe Agreements" tariffs for the most categories of textiles and clothes which are imported after outward processing were to be abolished immediately with effect from March 1992 (Schultz, 1992).

Those eastern European countries, which are not included in the "Europe Agreements", are subject to the "General Systems of Preferences" with comparatively smaller relieves. Table 2 shows the differences in tax burdens of Poland, Czechoslovakia and Hungary in 1992 as the outcome of the "Interim Agreement" compared to the tariff burden for industrial products of

Romania and Bulgaria in 1991 under the "Generalized System of Preferences". The tariff rates to be paid by the association partners of the "Europe Agreement" are clearly lower than those to be discharged by the other countries. Still strikingly high is the tariff rate for clothing. In case of OP it is to be paid on the added value.

Table 2 - EC-Tariff Rates for Imports from Selected Eastern European Countries (a) (Percent)

	Czecho-slovakia	Poland	Hungary	Romania	Bulgaria
Total Industry	2.8	3.2	3.0	6.1	5.2
of which:					
Leather	2.7	1.2	3.7	1.8	4.1
Clothing, knitted	9.6	9.8	9.6	12.7	10.1
Clothing, not knitted	9.7	9.9	9.5	13.2	12.1
Footwear	6.3	3.6	4.4	6.7	6.3
Machines	0.0	0.0	0.0	3.0	2.9
Electrical Engineering	0.7	0.8	0.6	2.1	3.0
Furniture	1.4	3.1	1.1	4.5	3.2

(a) Czechoslovakia, Poland and Hungary 1992 in scope of the "Europe Agreements", Bulgaria and Romania 1991 in scope of the "Generalized System of Preferences".

Source: Deutsches Institut für Wirtschaftsforschung (1993).

III Data Base

For the empirical part of this paper data from Eurostat are used. They are collected and updated by the statistical office of the EC in permanent co-operation with the member states. The used classification is the combined nomenclature (CN, combines tariff and statistical nomenclature). For our purpose we transferred this classification from the 2-digit-level into the 2-digit-level of the SITC classification.

For OP both export and import data are available (export for OP and import after OP). We decided to use import data after OP for the following reason: exports for OP concern many different industries and give no evidence neither of the engaged branches in the participating CPEs nor of those branches in the home country, which are threatened by increasing OP and which run the risk to be squeezed out by their eastern colleagues. Exports for OP describe the components needed rather than actual production. Therefore we used data of imports after OP. They give clearer evidence about the affected industry and are normally concentrated on fewer industries, which facilitates interpretation.

The period for our investigations runs from 1989 to 1992. The reporting country - the country that effects the imports after outward processing - is Germany. Up from October 1990 these home country data have included eastern Germany. As partner countries we regarded the former Soviet Union, Poland, Czechoslovakia, Hungary, Romania, Bulgaria and Albania as the representatives of eastern Europe and - for reasons of comparison - the Asian countries as an aggregate.[3]

Notwithstanding the excellent possibilities to gain and to convert the data from the Eurostat CD-Rom, there are some restrictions to be considered. One essential limitation is that all the registered figures are recorded on the basis of customs declarations. This means that there is no possibility to obtain trade figures if transactions are free of duty or of variable export and import levies and excises (without value added taxes on imports) or - in the case of OP - if the contracting partners relinquish tariff privileges. So it is rather impossible to investigate the full extent of OP within the EC, because presently no customs and only very few special taxes are to be discharged anymore. For similar reasons it will become more and more difficult to analyse the development of OP in eastern Europe considering the fact that tariffs and thus necessary customs declarations will be reduced enormously within the next ten years. Furthermore, not included are transactions of goods with weight or value below the statistical threshold fixed by the reporting member states (in this case Germany).

IV Empirical Analysis

1 Recent Trends

To show the relevance of OP for the CPEs it is interesting to take a look at the share of imports after OP in total German imports from the respective country (Table 3). In most of the CPEs imports after OP have a relatively high share of total imports from this country. In 1989 on average more than 10 percent of the total imported value from CPEs was attributed to imports after OP and this share is still increasing (17 percent in 1992). For imports from the whole world this relation remains between one and two percent. Particularly among the clothing and footwear industry the relevance of imports due to OP is strikingly high. More than 75 percent of total imports of this product group from CPEs are traced to OP, compared to only 12 percent from the whole world. Probably the scale of OP in these countries will still strongly increase due to the fact that tariff impediments are enormously decreasing.

---

3 Including Pakistan, India, Bangladesh, Maldives, Sri Lanka, Nepal, Bhutan, Burma, Myanmar, Thailand, Laos, Vietnam, Cambodia, Indonesia, Malaysia, Brunei, Singapore, The Philippines, Mongolia, China, North Korea, South Korea, Taiwan, Hong Kong and Macao.

Table 3 - Ratio of Imports after Outward Processing to Total Imports 1989 and 1992 (Percent)

SITC -No.	Description	SU	PL	CSFR	H	RO	BG	AL	CPEs	Asia	World
						1989					
	Total	0.1	15.3	5.0	24.5	35.3	14.3	8.2	10.1	3.7	1.1
0-5	Food et al. (a)	0.0	0.1	0.0	0.6	1.0	1.9	0.1	0.1	0.0	0.1
6	Manufactured Goods	0.0	1.5	1.3	6.0	0.8	0.6	0.0	1.3	0.6	0.2
	of which:										
61	Leather	0.0	41.8	34.2	56.3	24.5	15.3	0.0	35.1	0.9	2.9
7	Machinery and Transport Equipment	1.6	6.6	8.5	24.5	1.5	2.7	0.0	12.4	9.3	0.9
8	Miscellaneous Manufactured Goods	3.0	65.6	25.0	68.7	64.9	39.1	54.6	54.7	2.8	5.4
	of which:										
82	Furniture	21.7	44.4	25.8	32.3	51.8	10.6	0.0	43.6	0.2	4.9
84+85	Clothing and Footwear	8.3	82.7	36.6	87.9	77.5	59.6	60.3	76.4	3.6	10.6
						1992					
	Total	0.5	20.0	13.8	25.0	43.8	21.3	39.6	17.4	4.9	1.5
0-5	Food et al. (a)	0.0	2.2	0.5	1.0	2.5	3.8	0.9	0.9	0.0	0.1
6	Manufactured Goods	0.0	2.7	3.1	6.2	2.5	0.5	0.3	2.9	1.0	0.3
	of which:										
61	Leather	0.0	36.9	28.4	38.1	55.7	7.8	0.0	32.4	1.1	2.2
7	Machinery and Transport Equipment	1.2	15.8	24.5	23.3	0.8	2.6	0.0	19.7	11.6	1.3
8	Miscellaneous Manufactured Goods	19.6	60,0	33.9	59.1	63.9	54.9	93.1	53.5	3.0	6.1
	of which:										
82	Furniture	9.5	24.2	7.6	13.3	22.6	0.8	2.9	17.8	0.0	2.4
84+85	Clothing and Footwear	60.1	81.4	54.8	79.9	87.1	63.5	97.8	75.6	3.5	11.6

(a) Food, beverages and tobacco, crude materials, mineral fuels, oils, fats and waxes, chemicals and related products.

Source: Eurostat (CD-Rom); own calculations.

Taking a look at the other countries of the European Community it is striking that Germany is by far the most important contractor country for the CPEs. German enterprises effect more than 2 ½ times as much OP than the enterprises of all other EC-countries together (Table 4). The reason for this is that German enterprises have a long-standing tradition in OP. Already in the sixties the German textile and clothing industry started to link domestic and foreign production by means of OP. While some EC countries frequently provided extensive protec-

tion against imports of textiles, clothing and other products for their domestic markets[4], the German trade regime was much more liberal. From there the German textile and clothing industry was much more under pressure than the competitors in many other countries. In search of attractive locations German enterprises early discovered the eastern European countries. In this respect also geographic proximity accounted for some of that pattern, because costs and fastness of transport were relevant criteria for OP activities, too.

Table 4 - Importance of Germany as a Contractor in Outward Processing for Eastern Europe (a) 1992

Commodity Group	SU	PL	CSFR	H	RO	BG	AL	CPEs	World
Total	0.3	2.7	4.9	2.4	2.2	2.2	-	2.7	0.9
of which:									
Road vehicles	0.0	21.0	51.1	40.3	0.0	5.4	-	3.5	1.0
Furniture	0.0	34.6	16.4	35.2	11.6	3.6	-	22.0	14.7
Clothing and Footwear	1.3	2.5	3.0	2.2	2.1	2.5	-	2.4	2.2

(a) Relation of Germany's imports after outward processing to imports of the other EC-countries (without Germany).

Source: Eurostat (CD-Rom); own calculations.

2 Specialization Patterns

a) By Commodity Groups

It is not surprising that in 1992 about 86 percent of the world-wide OP undertaken by the German industry fell upon clothing, footwear, furniture as well as upon machinery and transport equipment. Special attention has to be paid to the latter category: machinery and transport equipment belong to the so-called screw-driver industries which are very suited for evacuating assembly plants. In recent years OP has expanded rapidly in these branches. In these categories OP normally consists of producing components or assembling parts for larger German firms.

---

4 In the 1980s especially France, Italy and Ireland made extensive use of article 115 of the Treaty of Rome which allows a given member state to restrict the flow of indirect imports from non-member countries coming through other EC countries. Article 115 actions were mainly undertaken against fabrics and clothing (France, Ireland) and some other industrial goods (Italy). Although article 115 disappeared by the completion of the internal market it has not been buried definitely. There is a great danger that it will be replaced from time to time by adequate other "temporary protection measures" (Spinanger, 1989).

Initially the commodity structure of German OP was characterized by a relatively high degree of diversity. In the seventies, however, a concentration on few product groups, especially textiles and clothing, emerged. Now it seems as if the trend is changing again.

Specialization between the CPEs and Asia

In the past the specialization pattern of Asian and eastern European countries in OP followed the historical pattern (Table 5). Asia had its comparative advantages in machinery and electrical engineering, whereas eastern Europe was leading in processing clothes and their accesso-

Table 5 - German Imports after Outward Processing by Commodity Groups 1989 and 1992 (mill. ECU)

SITC No.	Description	1989			1992		
			of which:			of which:	
		Total	CPEs	Asia	Total	CPEs	Asia
	Total	2 760	924	566	4 773	2 221	970
0	Food and live animals for food	25	2	0	42	18	1
	of which:						
01+ 03	Meat, fish and preparations thereof	0	0	0	13	12	0
2	Crude materials	2	0	0	8	7	0
3	Mineral fuels, lubricants etc.	0	0	0	0	0	0
4	Oils, fats and waxes	0	0	0	0	0	0
5	Chemical products	17	5	1	102	22	0
	of which:						
57	Plastic materials	8	2	1	16	15	0
6	Manufactured goods	103	31	17	171	98	30
	of which:						
61	Leather	50	19	7	44	28	9
65	Textile yarn, fabrics and others	19	2	3	39	17	4
67	Iron and steel	8	5	0	21	20	0
68	Non-ferrous metals	6	1	0	24	16	0
7	Machinery and transport equipment	658	69	386	1 414	377	708
	of which:						
70-77	Machinery and electrical engineering	640	61	386	1 279	285	708
78	Road vehicles	15	8	0	128	88	0
8	Miscellaneous manufactured articles	1 952	816	159	3 036	1 697	232
	of which:						
82	Furniture	168	154	0	144	134	0
84+ 85	Articles of apparel, clothing accessories, footwear	1 713	650	145	2 707	1 520	190
88	Photographic apparatus, watches, clocks, etc.	54	4	11	128	14	36

Source: Eurostat (CD-Rom); own calculations.

ries. But having a look at the recent development a remarkable shift is to be observed: in 1989 more than 60 percent of all German OP in machinery and electrical engineering were undertaken in Asia and only 10 percent in eastern Europe (Table 6). In 1992 already 16 percent were processed in eastern Europe and only 47 percent in Asia. Obviously the CPEs are quickly catching up in their competence to handle these kinds of goods.

Table 6 - Share of OP per Product Group in Total German Outward Processing 1989 and 1992 (Percent)

SITC -No.	Description	1989			1992		
		Asia	CPEs	Rest of the World	Asia	CPEs	Rest of the World
	Total	20.5	34	46	20.3	46.5	33.1
0-5	Food et al. (a)	2.3	18.4	79.3	0.5	31.6	67.9
6	Manufactured goods of which:	16.4	30.1	53.5	17.4	57.4	25.3
61	Leather	13.8	37.1	49.1	20.0	63.9	16.1
7	Machinery and transport equipment of which:	58.8	10.4	30.8	50.1	26.7	23.2
70-77	Machinery and electrical engineering	60.4	9.5	30.1	47.0	16.4	36.6
78	Road vehicles	0.4	49.1	50.5	0.0	58.2	41.8
8	Miscellaneous goods	8.1	41.8	50.1	7.6	55.9	36.4
84+85	Articles of apparel, clothing, accessories, footwear	8.5	37.9	59.6	7.0	56.1	36.8

(a) Food, beverages and tobacco, crude materials, mineral fuels, oils, fats and waxes, chemicals and related products.

Source: Eurostat (CD-Rom); own calculations.

Generally striking is that the volume of OP has enormously increased in recent years. From 1989 to 1992 it had nearly doubled, in eastern Europe even more than doubled. This is true for machinery and electrical engineering, too. Therefore it is surely not correct to regard the shift in the specialization pattern as a crowding out of Asian countries by the CPEs. It is rather the consequence of the increasing possibilities for OP lying behind the countries in transition. Considering the short geographic distances, this will give German enterprises an edge on their competitors in other western countries.

Specialization among the CPEs

However, the eastern European countries do not all participate to the same extent in German OP. In 1989 by far the biggest volume was processed in Hungary followed by Poland and Romania (Table 7). The most important product categories were clothing and footwear as well as furniture. This focus is also to be found in nearly all of the countries. Though in Hun-

gary an astonishing high share could be found in machinery and electrical engineering. Bulgaria and Albania only played a minor role in German OP .

Table 7 - German Imports after Outward Processing from CPEs 1989 and 1992 (mill. ECU)

SITC		Soviet Union		Poland		CSFR		Hungary		Romania		Bulgaria		Albania	
No.	Description	1989	1992	1989	1992	1989	1992	1989	1992	1989	1992	1989	1992	1989	1992
	Total	5	11	264	814	59	494	317	570	255	266	22	62	2	5
0	Food and live animals for food	0	0	0	13	0	2	1	3	1	0	0	0	0	0
	of which:														
01+ 03	Meat, fish and preparations thereof	0	0	0	12	0	0	0	0	0	0	0	0	0	0
2	Crude materials	0	0	0	6	0	1	0	0	0	0	0	0	0	0
3	Mineral fuels, lubricants etc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Oils, fats and waxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Chemical products	0	0	2	4	1	10	3	8	0	0	0	0	0	0
	of which:														
57	Plastic materials	0	0	1	4	0	9	0	2	0	0	0	0	0	0
6	Manufactured goods	0	0	9	37	5	34	15	24	2	2	0	0	0	0
	of which:														
61	Leather	0	0	5	8	3	7	9	10	1	2	0	0	0	0
65	Textile yarn, fabrics and others	0	0	0	5	0	3	2	9	0	0	0	0	0	0
67	Iron and steel	0	0	2	7	1	10	3	3	0	0	0	0	0	0
68	Non-ferrous metals	0	0	0	14	0	1	0	1	0	0	0	0	0	0
7	Machinery and transport equipment	1	2	8	55	8	192	51	127	0	0	0	1	0	0
	of which:														
70-77	Machinery and electrical engineering	1	2	7	35	5	140	47	107	0	0	0	1	0	0
78	Road vehicles	0	0	1	20	3	48	4	19	0	0	0	0	0	0
8	Miscellaneous manufactured articles	4	8	245	698	45	255	247	408	251	263	21	60	2	5
	of which:														
82	Furniture	3	1	38	74	9	14	13	14	91	31	0	0	0	0
84+ 85	Articles of apparel, clothing accessories, footwear	0	8	205	616	35	219	227	383	159	231	21	60	2	5
88	Photographic apparatus, watches, clocks, etc.	0	0	0	1	0	8	4	5	0	0	0	0	0	0

Source: Eurostat (CD-Rom).

Table 8 - Share of Product Groups by CPE Subcontractor Countries in Total German Outward Processing in each Product Group and Country 1989 and 1992 (Percent) (a)

SITC		1989							1992						
-No.	Description	SU	PL	CSFR	H	RO	BG	AL	SU	PL	CSFR	H	RO	BG	AL
	Total	0.6	28.5	6.4	34.3	27.6	2.4	0.3	0.5	36.7	22.2	25.7	12.0	2.8	0.2
0	Food and live animals for food	0.0	7.3	2.6	40.4	49.3	0.0	0.5	0.0	71.4	9.0	17.9	0.9	0.9	0.0
	of which:														
01+ 03	Meat, fish and preparations thereof	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	98.5	1.4	0.0	0.1	0.0	0.0
2	Crude materials	0.0	76.4	0.2	17.1	5.6	0.0	0.7	0.0	83.6	12.2	3.2	1.0	0.0	0.0
3	Mineral fuels, lubricants etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Oils, fats and waxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Chemical products	0.0	31.7	15.2	52.1	1.0	0.0	0.0	1.4	19.0	44.0	34.5	1.0	0.0	0.0
	of which:														
57	Plastic materials	0.0	74.2	3.2	20.4	2.2	0.0	0.0	0.0	28.2	59.4	10.9	1.5	0.0	0.0
6	Manufactured goods	0.0	28.8	17.2	48.1	5.4	0.6	0.0	0.1	37.8	34.6	24.8	2.4	0.3	0.0
	of which:														
61	Leather	0.0	35.2	22.9	36.8	4.5	0.6	0.0	0.0	28.6	25.9	37.5	6.9	1.1	0.0
65	Textile yarn, fabrics and others	0.0	17.7	3.9	77.6	0.8	0.0	0.0	0.4	28.6	19.7	51.1	0.1	0.0	0.0
67	Iron and steel	0.0	37.6	9.5	49.8	1.6	1.6	0.0	0.0	34.7	48.2	17.1	0.0	0.0	0.0
68	Non-ferrous metals	0.0	38.8	2.8	63.4	0.0	0.0	0.0	0.0	87.3	6.9	5.8	0.0	0.0	0.0
7	Machinery and transport equipment	2.1	11.5	11.2	74.1	0.7	0.5	0.0	0.5	14.7	50.9	33.6	0.1	0.3	0.0
	of which:														
70-77	Machinery and electrical engineering	2.4	11.2	8.4	76.8	0.8	0.6	0.0	0.6	12.2	49.1	37.7	0.1	0.3	0.0
78	Road vehicles	0.0	12.8	33.9	53.4	0.0	0.0	0.0	0.3	23.3	54.3	22.0	0.0	0.0	0.0
8	Miscellaneous manufactured articles	0.5	30.0	5.5	30.3	30.8	2.6	0.3	0.5	41.2	15.0	24.0	15.5	3.6	0.3
	of which:														
82	Furniture	2.1	24.5	5.6	8.6	58.9	0.2	0.0	0.5	55.2	10.7	10.5	23.1	0.0	0.0
84+ 85	Articles of apparel, clothing accessories, footwear	0.0	31.6	5.4	34.9	24.5	3.2	0.4	0.5	40.5	14.4	25.2	15.2	3.9	0.3
88	Photographic apparatus, watches, clocks, etc.	4.2	4.6	10.7	80.2	0.2	0.1	0.0	0.0	4.4	57.9	36.6	0.1	0.2	0.8

(a) Each row sums up to 100 percent per year.

Source: Eurostat (CD-Rom); own calculations.

Meanwhile the expansion of total OP in the three association partners of the "Europe Agreements" - Hungary, Poland, Czechoslovakia - is striking. As mentioned above almost all tariffs for trade concerning OP were to be abolished. Surely, this is one reason why these three countries could further increase their previously high share. In 1992 more than 85 percent of total German OP undertaken in eastern Europe were carried out there (Table 8). Again the high increase is mainly to be attributed to the rising OP in clothing and footwear. But also in road vehicles a remarkable start from scratch has been realized.

In some categories not the volume as such, but very high growth rates are remarkable. An example is meat and fish (SITC-No. 01+03). This is due to the rising tendency of the German fish-industry to send raw crustaceans to Poland in order to have them shelled. This kind of work is very labour-intensive - as there are absolutely no machines or other means to reduplicate the movement of human hands. It is exclusively to be done by manual work. Previously this work was mostly executed in Germany by family members of the crustacean-fishermen or other families living near the seaside. But with the new possibilities it has become worthwhile to shift this job to the neighbour country.

In order to gain a better insight into the specialization pattern among the CPEs one should regard the shares rather than the volume of OP. Table 8 reveals the shares of each product group processed in each single country in relation to the total German OP of this product group undertaken in whole eastern Europe. For each year rows sum up to 100 percent. By this it can be seen which of the countries are Germany's most relevant partners in each product group.

- The most important category is clothing and footwear. Here most of the OP is effected in the three countries, Hungary, Poland and Romania which in 1989 contributed more than 90 percent to total German OP undertaken in clothing and footwear in eastern Europe. In contrast, the share of Czechoslovakia was astonishing small - considering the proximity to Germany. But meanwhile a shift is to be observed: in 1992 the three most important countries were still the same, but the Polish share had increased strongly against Hungary and Romania. Poland had become by far the most important partner of processing clothes and footwear for Germany. The former Czechoslovakia could catch up in this category but still only plays a minor role.

- The second largest category is machinery and electrical engineering. Here the former Czechoslovakia is the leader: in 1992 nearly 50 percent of the whole German OP in eastern Europe were effected in this country. Hungary which held a share of 76 percent in 1989 only reached 38 percent in 1992.

- The third category is road vehicles. In 1989 Hungary was at the top (53 percent), followed by Czechoslovakia and Poland. In 1992, however, Czechoslovakia had passed Hungary. This is to be explained by the start of the joint venture between Volkswagen and Skoda.

Another striking fact is the shift in processing furniture. Whereas in 1989 a very high volume, nearly 60 percent, was held by Romania, in 1992 most of the furniture came from Poland, and only one third of the initial share remained to Romania.

Specialization among Countries

Another possibility to reveal the specialization pattern is to regard participation in German OP from the point of view of the subcontracting countries. For this we use an index that provides information about the **relative** specialization of the regarded countries, more exactly: about the specialization of one country relative to the specialization of the other eastern European countries. This index is of the following form:[5]

$$Index = \frac{(\text{Import after OP of Product i, Country j})/(\text{Total Imports after OP of Country j})}{(\text{Import after OP of Product i, CPEs})/(\text{Total Imports after OP from the CPEs})}$$

$$= \frac{\text{Relative Weight of OP of one Product within the respective Country}}{\text{Relative Weight of OP of the same Product within the whole CPEs}}$$

A value higher than one means that the relative specialization is high. If, e.g., 50 percent of the whole OP in eastern Europe are undertaken in one product group (bottom of the index), the OP of the same product group of the regarded country has to be higher than 50 percent (top of the index). A value smaller than one means that the specialization is comparably below-average. Note: the index tells nothing about the absolute importance of OP of the regarded product.

Compared to the other countries, Poland has strongly specialized in the category fish and meat and also its relative specialization in the categories clothing and footwear as well as furniture is above-average (Table 9). Czechoslovakia is highly specialized in plastic materials, road vehicles, iron and steel and machinery and electrical engineering but below-average in processing clothes and footwear.

---

5 This index is derived from the export-specialization-index (Graziani, 1994).

Table 9 - OP-Specialization Pattern among the CPEs 1992 (a) (Percent)

SITC No.	Description	Soviet Union	Poland	CSFR	Hungary	Romania	Bulgaria	Albania
	Total	1	1	1	1	1	1	1
0	Food and live animals for food	0	2.0	0.4	0.7	0.1	0.3	0
	of which:							
01+ 03	-Meat, fish and preparations thereof	0	2.7	0.1	0	0	0	0
2	Crude materials	0	2.3	0.6	0.1	0.1	0	0
3	Mineral fuels, lubricants etc.	0	0	0	0	0	0	0
4	Oils, fats and waxes	2.9	0	0	0	0	0	0
5	Chemical products	0	0.5	2.0	1.4	0.1	0	0
	of which:							
57	Plastic materials	0	0.8	2.7	0.4	0.1	0	0
6	Manufactured goods	0.2	1.0	1.6	1.0	0.2	0.1	0
	of which:							
61	Leather	0	0.1	0.2	0.2	0.1	0.1	0
65	Textile yarn, fabrics and others	0.9	0.8	0.9	2.0	0	0	0
67	Iron and steel	0	1.0	2.2	0.7	0	0	0
68	Non-ferrous metals	0	2.4	0.3	0.2	0	0	0
7	Machinery and transport equipment	1.0	0.4	2.3	1.3	0	0.1	0
	of which:							
70-77	Machinery and electrical engineering	1.2	0.3	2.2	1.5	0	0.1	0
78	Road vehicles	0.7	0.6	2.4	0.9	0	0	0
8	Miscellaneous manufactured articles	1.0	1.1	0.7	0.9	1.3	1.3	1.3
	of which:							
82	Furniture	1.1	1.5	0.5	0.4	1.9	0	0
84+ 85	Articles of apparel, clothing accessories, footwear	1.1	1.1	0.7	1.0	1.3	1.4	1.5
88	Photographic apparatus, watches, clocks, etc.	0.1	0.1	2.6	1.4	0	0.3	1.0

(a) Index: see explanation in the text.

Source: Eurostat (CD-Rom); own calculations.

b) By Factor Intensities

It is not surprising that most of world-wide OP undertaken by German enterprises was - and still is - concentrated on labour-intensive and capital-intensive goods (Table 10). In this case the savings on production costs by shifting the processing outweighs the transport costs. But during the recent years OP for research-intensive goods has also been advancing. The bulk of these goods are still rather simple, e.g., parts and components for the automobile or the electrical engineering industry. However, OP in "sophisticated" goods makes up ground mightily.

This can of course only concern those kinds of goods where the research work itself is not necessarily linked to the production process - they may be called Mobile Schumpeterian Goods (MSG, see Klodt, 1993). In 1992 the share of MSG in total German OP reached almost one third. OP in MSG requires, however, a certain standardization of the part of production to be removed.

Table 10 - Total German Imports after Outward Processing by Factor Intensities in 1989 and 1992 - Division between Eastern Europe and Asia (Percent) (a)

SITC-No.	Description	1989			1992		
		CPEs	Asia	Rest of the world	CPEs	Asia	Rest of the world
	Labour-intensive goods	42.1	8.3	49.6	57.6	7.4	35.0
	of which:						
82	Furniture	91.6	0.2	8.1	92.6	0.1	7.3
84	Articles of apparel and clothing accessories	37.7	9.4	52.9	54.1	7.8	38.1
85	Footwear	39.8	1.6	58.6	75.0	0.0	25.0
	Mobile Schumpeterian goods	10.7	58.2	31.2	25.7	47.2	27.1
	of which:						
70-77	Machinery and electrical engineering	9.5	60.4	30.1	22.3	55.3	22.4
78	Road vehicles	49.1	0.4	50.5	68.4	0.0	31.6

(a) Each row sums up to 100 percent per year.

Source: Eurostat (CD-Rom); own calculations.

It may be interesting to compare once again the pattern of OP in Asia and eastern Europe. This pattern is rather clear: in labour-intensive goods CPEs are dominating, whereas in research-intensive goods Asian countries are dominating. But in recent years eastern Europe has enormously caught up in processing research-intensive goods by simultaneously extending its head start in processing labour-intensive goods. One can say that cheap labour is no longer the only reason for shifting production. Geographic proximity favours facilitating "industrial networks" between German and east European producers in form of joint ventures, subsidiaries and offshore plants. This has also happened in other parts of the world - in south-east Asia where Japanese multinationals have opened their OP bases in Hongkong, Singapore and Malaysia or alongside the Rio Grande where American multis have done so in Mexico.

Specialization among CPEs

In 1989 processing of labour-intensive goods was rather equally distributed among Poland, Hungary, and Romania, but the main part of processing research-intensive goods fell upon Hungary (Table 11). Just four years later another geographic pattern evolved. By far most of the labour-intensive goods are now processed in Poland. This is mainly due to the high share

in processing clothing and furniture. With respect to research-intensive goods Czechoslovakia got well ahead of Hungary. This shift is mostly to be attributed to processing machines and electrical engineering.

Table 11 - German Imports after Outward Processing by Factor Intensities in 1989 and 1992 - Specialization among the Eastern European Countries (a) (Percent)

SITC-No.	Description	Soviet Union	Poland	Czecho-slovakia	Hungary	Romania	Bulgaria	Albania
		1989						
	Labour-intensive goods	0.5	30.9	6.1	31.4	31.1	2.6	0.3
	of which:							
82	Furniture	2.2	24.5	5.6	8.7	59.1	0.2	0.0
84	Articles of apparel and clothing accessories	0.0	36.1	6.2	31.6	26.2	3.6	0.4
85	Footwear	0.4	9.8	1.5	67.9	20.4	1.5	0.0
	Mobile Schumpeterian goods	2.0	11.2	11.8	74.2	0.7	0.5	0.0
	of which:							
70-77	Machinery and electrical engineering	2.4	11.2	8.5	77.2	0.8	0.6	0.0
78	Road vehicles	0.0	12.8	33.9	53.4	0.0	0.0	0.0
		1992						
	Labour-intensive goods	0.5	42.5	16.1	25.1	15.8	3.6	0.3
	of which:							
82	Furniture	0.5	55.2	10.7	10.5	23.1	0.0	0.0
84	Articles of apparel and clothing accessories	0.6	46.2	14.9	21.3	17.1	4.8	0.4
85	Footwear	0.2	17.2	16.0	58.5	8.1	0.0	0.0
	Mobile Schumpeterian goods	0.6	14.5	50.3	34.6	0.1	0.3	0.0
	of which:							
70-77	Machinery and electrical engineering	0.6	12.3	49.3	37.8	0.1	0.3	0.0
78	Road vehicles	0.3	23.3	54.3	22.0	0.0	0.0	0.0

(a) Each row sums up to 100 percent per year.

Source: Eurostat (CD-Rom); own calculations.

3 Longer-Term Expectations

For western enterprises producing in east European countries - without equity links - has become an attractive alternative to producing at home in recent years. In manufacturing co-operation arrangements have typically only covered few industries as clothing and footwear or machinery, electrical engineering and automotive products. But obviously there exist also huge opportunities for reallocating production facilities into other industries. In this respect

the main candidates for future OP activities are nearly all industries in which transport costs are outweighed by wage cost differentials.

However, two caveats should be made:

- OP activities do not only take place in neighbouring countries. The choice is, as it was shown by Hiemenz, Langhammer et al. (1987), both industry-specific and country-specific. The most successful competitors of the CPEs in OP are still the LDCs in Southeast Asia. OP in CPEs and LDCs reveals a completely different pattern which cannot sufficiently be explained by different comparative advantages. LDC producers know how to upgrade product quality in order to outweigh high transport costs. Needless to say that producers in CPEs could only profit from OP if they are able to improve product quality;

- OP activities may be also strongly influenced by unforeseeable changes in preferential re-export facilities. In the past trade policy was perhaps the main reason for the different pattern of OP activities in Mediterranean and east European countries on the one hand and the Asian countries on the other hand. Undoubtedly, the "Europe Agreements" contracted with Poland, Hungary and the former Czechoslovakia pushed OP activities in these countries, and the enlargement of the contracts on Bulgaria and Romania up from 1993 should cause similar effects. But the ongoing debate on "dumping activities" by CPEs' producers shows that the wind can easily change its direction, too.

V Conclusions

In recent years most of the CPEs have made remarkable progress in building up the institutional basis for a market economy from scratch - although without great visible success in terms of improvements in efficiency. The reasons for this are rooted in the enterprise sphere: in the slow pace of restructuring and modernization of corporations. Only a small number of them has already found the way to the market.

Restructuring and modernization are difficult tasks. The legacy of four decades of socialism lies heavily on the enterprises. They have to improve in terms of product quality, design, marketing, delivery and guaranty times; they have to raise productivity by cutting workforce, installing new machinery, reducing product lines and turning factories into smaller, more flexible manufacturing units; and, last but not least, they have to find new customers in domestic markets and abroad. All that is conditional on large financial resources and management skills which are often not available. Many enterprises, therefore, are relying on the assistance of foreign co-operators/partners. In fact, flows of foreign capital and know-how have increased in conjunction with establishing joint ventures and fully foreign-owned companies in recent years. But despite high growth rates, the level of flows remains rather disappointing

if measured against the needs and expectations of the CPEs. Obviously, there still exist important obstacles for equity engagements. These obstacles may vary from country to country - they include a broad variety of factors as political uncertainty, uncertainty about property rights, complicated bureaucratic procedures or lack of information (Sereghyová, 1993). As a consequence, an equity involvement may be found too risky for many potential investors.

Due to these considerations enterprises in CPEs should look out for other forms of co-operation, and contracting is a promising alternative to foreign direct investment. A contracting arrangement like OP would build a broad bridge for entering competitive markets. It opens the way to adopt modern technologies and market-oriented know-how and to gain entry into the sourcing networks of strong foreign partners. OP is not necessarily a "second best strategy". Sometimes it may be even superior to an equity arrangement.

Policy makers in CPEs do often lament that OP would normally lead to a downgrading of the subcontractor's production lines. In the short run this may be true as the main fields for OP are processing simple standardized goods; in these fields the levels of value added in manufacturing are relatively low.[6] But this argument is not against OP but in favour of it because OP will help the enterprises to develop technological capabilities in order to increase their capacity for adding greater value to goods. Recent shifts in OP - the increasing share of mobile Schumpeterian goods - indicate that many foreign contractors regard OP obviously as a prestage for an equity arrangement, too. Sooner or later, they must be interested in upgrading product lines and production technologies. The long-run benefits also for the CPEs can hardly be disputed. A major intention of this paper is to encourage policy makers to improve the legal framework for OP.

While CPEs have often tended to restrict particularly those imports in which OP can be carried out (e.g. clothing), OP itself has proved to be an option to open the trade policy window without (immediately) destroying domestic production.

---

6 No data exist to calculate the value added of OP. From an analytical point of view one could compare the figure for export before and those for imports after OP. However, the data base is very incomplete. E.g. goods exported for OP are partly not re-imported. They remain partly in the processing country or they are sold elsewhere. In addition, there exists a time-lag between exports and imports which is varying.

List of References

BARTLETT, C. A. and S. GOSHAL, "Managing Across Borders: The Transnational Solution". Boston 1989.

DEUTSCHES INSTITUT FÜR WIRTSCHAFTSFORSCHUNG, "Industriegütereinfuhren der EG aus Ost und Süd: Handelspolitik und Entwicklung - Abbau von Handelsbarrieren der EG gegenüber Mittel- und Osteuropa". DIW-Wochenbericht, Vol. 60, 23, 1993, pp. 317-326.

DUNNING, John H., "Trade, Location of Economic Activity, and the Multinational Enterprise: The Search for an Eclectic Approach". In: Bertil Ohlin, Per-Ove Hesselborn, and Per M. Wiskman (Eds.), The International Allocation of Economic Activity. London 1977, pp. 419-425.

--, "The Eclectic Paradigm of International Production: A Restatement and Some Possible Implications". Journal of International Business Studies, Vol. 19, No. 1, spring 1988.

EUROSTAT, "Monthly EEC External Trade (Combined Nomenclature)". 4.1993, (CD-Rom).

--, "EEC External Trade (Combined Nomenclature), Supplement 1". 1992, (CD-Rom).

GRAZIANI, Giovanni, "Trade Patterns and Comparative Advantages of Central Eastern Europe with EC Countries". In: János Gács, Georg Winkler (Eds.), International Trade and Restructuring in Eastern Europe. Heidelberg/Wien 1994, pp. 211-237.

HIEMENZ, Ulrich, Rolf J. LANGHAMMER, Jamuna P. AGARVAL, Martin GROß, Friedrich von KIRBACH, "The Competitive Strength of European, Japanese and US Suppliers on Asian Markets". Kieler Studien 211, Tübingen 1987.

KLEPPER, Gernot, Frank D. WEIß, Doris WITTELER, "Protection in Germany: Towards Industrial Selectivity". In: Herbert Giersch (Ed.), Free Trade in the World Economy. Towards an Opening of Markets. Symposium 1986, Tübingen 1987, pp. 171-191.

KLODT, Henning, "Perspektiven des Ost-West-Handels: Die komparativen Vorteile der mittel- und osteuropäischen Reformländer". Die Weltwirtschaft, No. 4, 1993, pp. 424-439.

NEALE, C. W. and P. SERCU, "Countertrade in International and Domestic Markets". The International Trade Journal, Vol. VII, No. 3, spring 1993, pp. 271-294.

PIATTI, Laura, Dean SPINANGER, "Redevelopment of Production, Trade Protectionism and the Global Firm's Strategy: The Case of Germany", 1992 (mimeo).

RUGMAN, A. M., "Internalization as a General Theory of Foreign Direct Investment: A Re-appraisal of the Literature". Weltwirtschaftliches Archiv, No. 2, 1980, pp. 365-379.

SCHMIDT, Klaus-Dieter, Petra NAUJOKS, "Western Enterprises on Eastern Markets: The German Perspective". Kiel Working Paper No. 607, Kiel 1993.

SCHULTZ, Hartwig, "Die Europa-Abkommen der Europäischen Gemeinschaft mit Polen, Ungarn und der CSFR". Zeitschrift für Zölle und Verbrauchssteuern, Vol. 68, 5, 1992, pp. 140-144.

SEREGHYOVÁ, Jana, in collaboration with B. Bastida Vila, M. Cizkovský, B. Galgóczi, E. Gidai, M. H. Grabowski, V. Kubista, B. Sander, K.-D. Schmidt and M. T. Virgili Bonet, "Entrepreneurship in CentralEast Europe, Conditions - Opportunities - Strategies". Physica-Verlag, Heidelberg 1993.

SPINANGER, Dean, "Is the EC Foreshadowing a Fortress Europe in 1992? Examining Implications of 1992 and Current EC Trade Restrictions for PACRIM Countries". PRICES Paper No. 1, July 1989.

--, "The Impact on Employment and Income of Structural Changes in the Clothing Industries". In: Gijsbert van Liemt, Industry on the Move. Causes and Consequences of International Relocation in the Manufacturing Industry. International Labour Office, Geneva 1992.

--, "MFA and the Spillover of Export Capabilities: The Case of Hong Kong", 1992 (mimeo).