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Emerging East-West corporate networks in Central European border regions: Some theoretical arguments and stylized facts

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**Emerging East-West Corporate Networks
in Central European Border Regions:
Some Theoretical Arguments and Stylized Facts**

by
Katja Gerling and Klaus-Dieter Schmidt

March 1998



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Abstract

Economic re-integration after a long period of separation among countries with different levels of development is expected to start in border regions. Enterprises along the borderline can gain a rent due to low transport and transaction costs. They benefit from the fortunate opportunity of tapping the international division of labour on the shortest distance. Therefore, border regions should be predestined to become an economic powerhouse.

Despite their great potential, border regions in Central Eastern Europe are far from being an economic entity. The enormous development differences are obviously a source of constraint rather than an impetus to integration.

This paper examines the potential for cross-border activities on the German-Polish border. It

- first, sketches the theoretical background,
- second, presents some facts and figures, and
- third, discusses the key policy question of how to overcome the obstacles to closer co-operation.

The paper comes to the conclusion that close cross-border co-operation, which can be labelled as a network, is still the exception rather than the rule in the region under consideration. Most of the activities can be ranged in the category of simple subcontracting arrangements in which the German partners exploit the low wage, energy and pollution control costs beyond the border (D2, F2, P52).

1 Introduction¹

With the abolition of the Iron Curtain, the political and economic landscape in Central Europe altered fundamentally. Countries like Germany, Austria and Italy on the one side and Poland, the Czech Lands, Slovakia, Hungary and Slovenia on the other are now confronted with an open border. This border clearly marks the division between rich regions in the west and poor regions in the east.

Standard economic theory suggests that countries with different levels of development when moving from closed to open economies should tend to mutual integration without any delay: poor regions are normally endowed with cheap labour, rich regions with capital and technology. Theory also suggests that this process starts in border regions where transport and transaction costs are lower than in distant regions.

In two studies, Sander [1997] and Schmidt [1997] have recently shown that under free market conditions border regions have in fact a large potential for becoming an "economic powerhouse".

- The former study describes the development along the Rio Grande, the border between the United States and Mexico. There, the so-called maquiladora assembly has proved to be a vehicle for fostering industrial development on the Mexican side.
- The latter study describes the ongoing integration process between Hong Kong and its hinterland in South China. In particular, Guandong Province

¹ Research for this paper was undertaken with support from the European Commission's Phare ACE Programme 1996, project no. 96-2003-R. The authors are also grateful for critical comments and suggestions from Jana Sereghyová and other participants of the workshop. The paper benefited also from linguistic improvements made by Wolfgang Winkler.

has experienced a very rapid economic growth since Hong Kong's manufacturers were allowed to relocate their production capacities beyond the border.

In the current paper, we now investigate the situation in the German-Polish border belt along the rivers Oder and Neisse. Before World War II, agriculture predominated in these regions and industry was little developed. Under the communist system, industrialization proceeded slowly and concentrated on heavy industries. Poland's 1970s regional policy programme, e.g., which intended to shift the economic potential north- and westward, completely failed [Rykiel 1997]. Economically, the German-Polish border belt remained at the periphery.

Since the collapse of the communist system, this has been changing. With an open border, the belt has become a window to the outside world. This is indicated by the rapidly increasing trans-border traffic: from 1991 to 1996, the number of heavy goods vehicles passing the border grew by 160 percent, and the payload by 60 percent (Table 1). As part of the "Berlin-Poznan-Warsaw Trajectory" (A. Kukliński), the belt is now a bridge between east and west enabling intensive cross-border trade and other forms of economic co-operation.

Table 1 – Heavy Goods Vehicles' Cross-Border Traffic Between Germany and Poland 1991–1996

Border segment	1991	1992	1993	1994	1995	1996	Total change 1991–1996 in p.c.
Heavy goods vehicles (1,000)	782	1,050	1,275	1,602	1,824	2,046	+161,7
Payload (mill. tons)	5,858	8,898	8,367	9,052	9,470	9,390	+60,3

Source: German Federal Traffic Office; ifo-Institute for Economic Research, Munich.

But is the region economically moving from the periphery to the core? Appearances are deceptive. The impressive figures on trans-border traffic mainly reflect the increase in long-distance traffic from and to remote locations not in short-distance traffic within the border belt. A close co-operation among firms on both sides of the border — i.e. trans-border network economies — is emerging only slowly. It is mainly confined to retail trade and other small-scale businesses. The great development differences are obviously a source of constraint rather than an impetus to integration.

In our paper we

- first, sketch the theoretical background,
- second, present some facts and figures, and
- third, discuss the key policy question of how to overcome the obstacles to closer co-operation.

As our paper suffers from the lack of statistical information — cross-border network activities are not documented in official statistics anywhere — it is of limited scope. It cannot serve a palatable lunch, but will make appetite for further research.

2 Theoretical Background: The Spatial Dimension of the Network Approach

The best way to start a paper on border regions is to ask the question as to what makes these regions different from other regions. We try to answer this question from a theoretical point of view.

Borders in general can be understood as separating lines, set according to political, to cultural or to economic reasoning. Borders between nations are almost always politically determined, regardless of whether they separate spatial units which form an economic entity. Economic activity in regions separated by political borders is usually hampered by political and administrative measures to ensure national sovereignty such as restrictions on the mobility of goods and factors, which reduce the advantage of short distance. Considering this, border regions can be seen in a negative light as rather peripheral areas with economic interaction rigorously cut off. Compared to centrally located areas, they are often lagging behind in their economic development.

However, borders can also be understood in a positive light as a bridge between different regions. Accordingly, they can be seen as "contact areas" [Ratti 1993] with the possibility of meeting new markets, institutions and technology close by. The economic prospects of border regions thus depend on whether their advantages can be exploited so as to overcome their shortcomings.

In the following, we first examine the specific advantages and disadvantages of border regions under trade and locational aspects. Second, we discuss how to exploit border regions' advantages in an efficient way. And third, we assess the economic perspective of Central European border regions as to convergence or divergence in the light of networking activities.

2.1 Border Regions under Trade and Locational Aspects

Referring to neo-classical trade theory, border regions between countries of different levels of development represent a Heckscher-Ohlin framework on a small scale: factor price differentials on both sides of the border create strong incentives for a division of labour as long as there are some restrictions on factor mobility. If factors — in our case mainly labour — cannot migrate to be em-

ployed in the region where they gain the highest revenue, the exchange of goods will be a substitute. Along the border, firms even have an additional incentive for labour division and mutual exchange, namely the rent they can gain due to low transportation costs.

However, neo-classical trade theory is based on assumptions which do not very well reflect economic reality. In particular, it abstracts from specific locational conditions which might keep firms away from engaging in cross-border activities. Among locational disadvantages hitting border regions are tariffs and other restrictions on cross-border trade, insufficient cross-border traffic infrastructure and different culture and language on both sides of the border. They economically increase the distance between the regions along the border, melting away initial transportation cost advantages [Lösch 1940]. Impenetrable frontiers in the past frequently led to an isolation of the borderlands and to a lack of agglomeration advantages, such as availability of industry-specific labour and services, which made these areas rather unattractive for potential investors. Therefore, historic isolation can become a self-sustaining process as described in the centre-periphery models of economic geography [Krugman 1991]. All these factors might create considerable obstacles to making the border a "contact area".

2.2 Border Regions and the Network Perspective

In recent years, economic theory modified the strict neo-classical view of atomistic economic actors and started to acknowledge relations among them in economic transactions. Especially in the spatial context, relations, or networks, were seen as an additional factor for regional development.

A network of firms can be defined as a set of co-operative relations among economically dependent firms, which aim at co-ordinating parts of their economic activities in order to gain an advantage over their competitors [Sydow 1992]. As an organizational form between pure market or arm's-length transactions and hierarchical transactions, it combines elements of both, namely the flexibility of the market and the stability of the hierarchy. The incentive for firms to engage in network relations results from the possibility of attaining positive external effects (economies of scope) by having access to a common pool of resources, knowledge and information and from the possibility of saving on transaction costs. Transaction costs, on which most network approaches place the emphasis, are basically all costs associated with communicating and contracting in the process of economic transactions. They are especially relevant in an uncertain environment and if specific investment is required for the transaction which would be lost if the transaction failed. Under these circumstances, the "sensitive" transaction has to be protected from unexpected pitfalls, which might raise transaction costs considerably. By organizing the transaction more hierarchically and replacing arm's-length transactions by stable rules and regulations, transaction costs can be reduced.

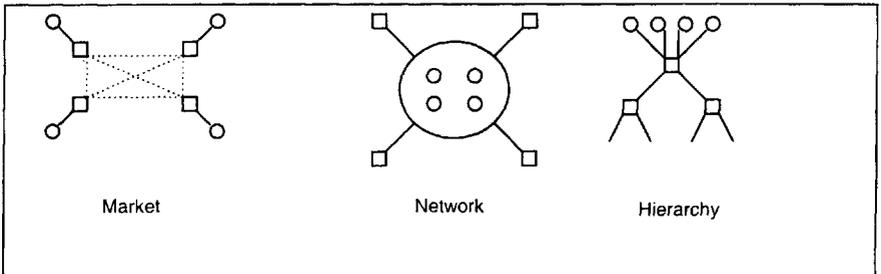
Network types of organization might offer advantages as to both these organizational forms:

- As compared to market transactions, networks allow to overcome uncertainty of the economic environment by establishing an atmosphere of trust among its members. Mutual investments into the relations make them more stable and especially suitable for economic activities which prove profitable only in the long run, like e.g. research and development. Besides, network firms have better access to complementary resources (resource pool)

which are important for gaining competitive advantages over firms outside the network (Figure 1).

- As compared to transactions in a hierarchy, network relations prove to be more flexible and subject to a stronger efficiency pressure: if the relations do not develop successfully, the network members still have the "exit option", i.e. they can terminate their co-operation. Besides, the network co-operation does not comprise all fields of economic activity of the member firms, but generally focuses on those in which the firms have potential competitive advantages [Barjak 1997].

Figure 1 – The Co-ordination of Actors and Resources in Markets, Hierarchies and Networks

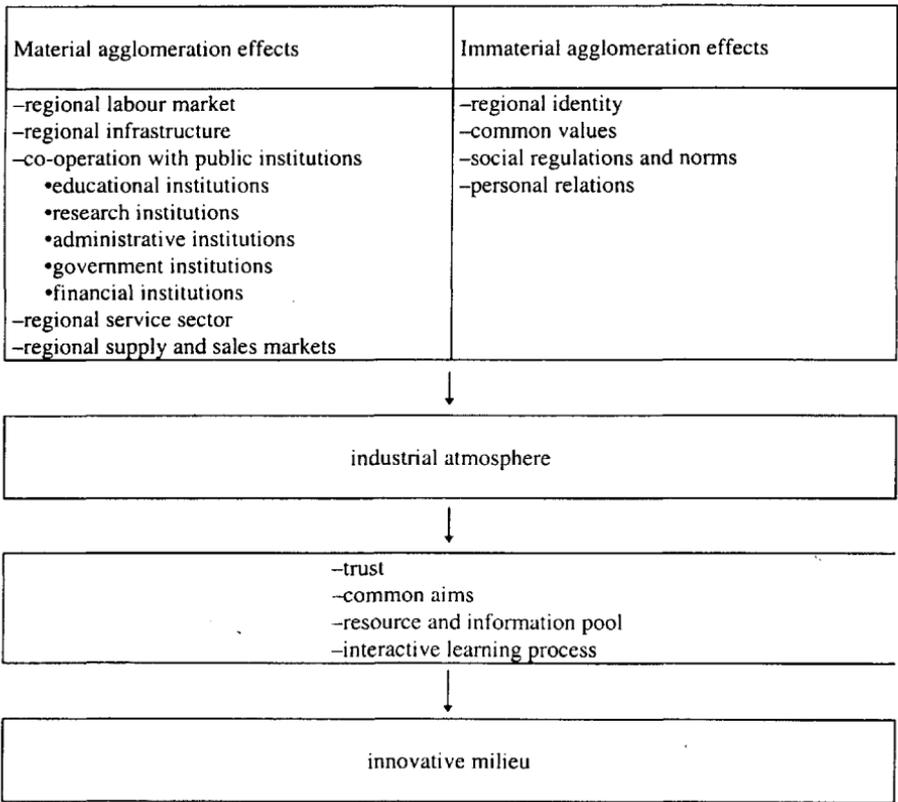


Legend: □ = actor ○ = resource

Source: Gerling [1997].

Thus, network forms of organization might represent a promising strategy for firms to overcome difficulties in economic transactions. This makes them potentially suitable for tackling the challenges of trans-boundary activities.

Figure 2 – The Establishment of an Innovative Milieu



Frequently, spatial aspects have been neglected in the network approach. In a regional network, short distances are of particular importance — not so much because they lower transportation costs which have lost much of their relevance in entrepreneurial calculations, but because they lower transaction costs. Short distances make frequent face-to-face contacts possible, thus benefiting the exchange of resources and information in the network, and they also help to establish an atmosphere of mutual trust and control, in particular in combination with a common feeling of regional identity. Access to specific local resources becomes easier for all actors, making spill-over effects likely. In such a context of

regional network relations, material agglomeration effects lose part of their importance to immaterial agglomeration effects represented by the socio-cultural factors of the regional "milieu". If resources and information can flow freely between the actors, an interactive learning process is initiated, which fosters product and process innovations and leads — together with an adequate division of labour — to more efficiency in the production process. Marshall [1919] called regions where such an innovative milieu had been established "industrial districts".

For regions being separated by a national border, the situation is quite different, though. Diverging business cultures, languages and behavioural patterns hinder a common feeling of regional identity and the establishment of an atmosphere of trust. National aversions are often particularly strong there. Thus, it is obvious that borders might impose a severe complication on the formation of networks of firms.

2.3 Border Regions: Convergence or Divergence?

The key question is what will happen to economic development in border regions in the process of mutual integration. Will there be an allocation of resources which, in turn, generates a convergence of incomes on both sides of the border?

Some possible answers are provided by alternative theories explaining economic growth:

- The traditional neo-classical growth theory gives a positive answer: convergence of regions with differing income and economic development is basically an automatic process. Because capital productivity is higher in the region with the lower income, capital can be expected to move from the

richer to the poorer region, thus leading to a convergence of capital productivity and income in both regions. The neo-classical theory, however, is based on several restrictive assumptions, such as perfect competition, complete factor mobility, constant returns to scale and the absence of technological progress. If these assumptions are modified, the results might be different. If one allows e.g. for technological progress which is higher in the rich region and leads to a higher productivity of all factors of production there, then two alternative scenarios are imaginable [Krieger-Boden 1995]: first, labour tends to move from the poor to the rich region, leading to labour scarcity and higher labour income there and thus to convergence; and second, capital tends to move from the poor to the rich region, leading to a fall in capital intensity and labour productivity there, and thus to a decrease in income and to divergence. The outcome depends on the mobility of the factors of production, which in border regions can be expected to be higher for capital than for labour so that divergence would be the more likely scenario.

- The new growth theory [Romer 1986; Lucas 1988; Sala-i-Martin 1990], which includes externalities and endogenizes technological progress, principally arrives at rather pessimistic conclusions concerning convergence. Because of its main assumption — increasing returns to scale due to external effects (e.g. learning by doing) of fixed capital and/or human capital — growth is faster, the higher the endowment with these factors, implying that the richer region (with an initially higher capital endowment) becomes even richer. The only perspective for the poorer region of overtaking its richer counterpart is offered in the framework of the new growth theory by the so-called leapfrogging models [e.g. Brezis, Krugman and Tsiddon 1993]. One type of these models assumes sporadic technological shocks, which make old technologies obsolete on a large scale. It is supposed that

poorer regions have a strong incentive to invest massively in new technologies while richer regions only tend to marginally up-grade old technologies with which they were successful in the past. In this way, poorer regions get a chance to leapfrog, i.e. to overtake the richer regions in terms of growth.

At a first glance, leapfrogging seems to be an exception rather than the rule, at least in a medium-term perspective. If one considers regional development in a world-wide context over the past decades, such an over-optimistic view of success of the poor regions cannot be maintained. However, combining the leapfrogging model with the network perspective, this new approach might offer some realistic possibilities for convergence of border regions in the future: with increasing integration and the formation of network relations which ease the flow of information and resources across the border, the chance for technology to spread rises and with it the perspective of regional convergence. Again, the short distances might prove to be an important locational advantage in this context.

Consequently, modern growth theory has increasingly focused on the links between geographic proximity, technology flows and economic growth [Porter 1990; Glaeser et al. 1992]. It can be argued that, to a certain extent, knowledge transfer is carried out through informal channels — and these are limited by geographic distance. Geographic proximity might therefore be considered as an advantage for companies when absorbing knowledge, especially since verbal communication is often more important in business than formal contracts: the more complex the knowledge, the more important are personal contacts [Sjöholm 1996]. This corresponds with earlier findings that new technology is mostly reserved for partners that can be completely trusted [Cheng 1984].

Therefore, nobody should be surprised that business relations along the German-Polish border are still in their infancy and closer to arm's-length transactions than to networking co-operation. Thus, it still seems to be a long way from here until these relations will allow for an exchange of resources and technology and contribute to a convergence on the regional and, eventually, on the national level.

3 Some Empirical Findings: Extent, Structure, and Motives of Cross-Border Activities

3.1 Statistical Constraints

Giving an account of regional cross-border networks is a puzzle everywhere. Only sparse information exists. Hence, research should start with collecting primary data. Principally, there are two possibilities:

- First, some thousand questionnaires could be mailed to a random sample of firms on both sides of the border, focusing on key characteristics of co-operation. According to our experiences, this method has some important merits as it allows to extrapolate the results of the survey to cover the total firm population. However, such a survey is very expensive. Because of the limited financial resources available to our project, it was out of consideration. Accordingly, we decided to make use of information drawn from a study by the Deutsches Institut für Wirtschaftsforschung, Berlin, (DIW) [Eickelpasch, Lessat and Pfeiffer 1996].²

² We are indebted to Alexander Eickelpasch (DIW) who provided additional data from separate calculations.

- Second, a small number of firms on both sides of the border could be interviewed. This way, it would be possible to study a number of more detailed problems which cannot be covered by a questionnaire. However, because of their anecdotal character, interviews are considered to be of limited scope. Since interviews are very time-consuming,³ we decided to refer to a study of the Institut für Wirtschaftsforschung Halle (IWH) which carried out appropriate empirical field work [Barjak 1997].

Accordingly, in our paper we mix second-hand information from two sources — from a full-blown firm survey with those from some case studies.

3.2 *Evidence from a Firm Survey*

With regard to extent, structure and motives of cross-border activities in the German-Polish border belt, some evidence comes from a firm survey conducted in winter 1995/96 in the eastern German *land* of Brandenburg with respect to sourcing and delivery networks. The questionnaire was sent to 4,400 firms, 3,200 in the manufacturing sector and 1,200 in the service sector. About one fourth of them (1,260) reacted positively.⁴ The survey can be considered as an adequate representative sample (Table 2).

The survey allows to separate firms in three regions alongside the rivers Oder and Neisse which mark the borderline between Germany and Poland in the *land* of Brandenburg. These are the so-called 'planning regions' Uckermark-Barnim,

³ Interviews require not only intensive travelling but also much time for preparation, e.g. identifying appropriate interview partners, co-ordinating timetables and authorizing statements.

⁴ The survey also covers 1,750 firms in the Berlin region not included here.

Oderland-Spree and Lausitz-Spreewald (Graph 1). Firms located there represent one half of total Brandenburg firms and employment.

Table 2 – Survey of Brandenburg Firms Under Investigation
– Structure in Percent –

	Manufacturing		Services	
	Firms	Employment	Firms	Employment
By size				
less than 20	60	8	67	19
20–49	23	13	18	17
50–99	8	10	10	21
100 and more employees	9	69	6	44
By year of foundation				
before 1991	46	53	32	43
after 1991	54	47	68	57
By status				
dependent firms	18	68	12	21
independent firms	82	32	88	79
By region				
Uckermark-Barnim ^a	11	15	13	15
Oderland-Spree ^a	14	14	19	19
Lausitz-Spreewald ^a	26	23	23	21
Others	49	48	45	45
Note:				
Total	824	44,200	439	6,100

^aDefined as border regions.

Because the central issue of the survey was to find out about the sourcing and delivery networks, firms were asked about their

- form of inter-firm co-operation,
- regional destination of deliveries, and
- regional origin of sourcing.

Graph 1
Map of the Eastern German State Brandenburg



Unfortunately, survey data does not allow to extract reliable information on cross-border activities with Central European reform countries, in particular in neighbouring regions. Firms were only asked about their co-operation with foreign partners in general. Accordingly, we have made an assumption that firms in the sample, which co-operate with foreign partners, do so mainly with partners on the Polish side. This assumption could not be ascertained. However, it might not be implausible, since the overwhelming majority of firms operating

in the region are small- and medium-sized ones which can be considered as local rather than global players.

3.2.1 Scope and Forms of Co-operation

Although small- and medium-sized firms are supposed to be economically less integrated, a remarkable share of them is involved in co-operation relations with other firms (Table 3). About every second manufacturing firm co-operates in transport and logistics and about every third in research and development. In services, three out of four firms co-operate in dealing with orders. There are obviously no significant differences between manufacturing and service firms: roughly 40 percent of both groups co-operate in sales activities. Interestingly, a relatively small share of firms practise partnerships in representing themselves on foreign markets, which reflects their small international integration. Although data does not reveal the modes of co-operation, it can be assumed that most firms practise only loose or shallow forms of involvement because small- and medium-sized firms do not engage in forms of deep integration as often as large-sized ones.

There is no evidence, however, that firms located in the border belt practise significantly more co-operation with other firms on the average. In sourcing, 36 percent of total Brandenburg manufacturing firms under investigation co-operate with other firms, compared to 40 percent in the belt. The share is clearly higher in the Uckermark-Barnim region, but it is lower in the Oderland-Spree region. In production, where 42 percent of total firms co-operate, there are only small deviations from the average (Table 4). In this respect, border regions obviously generate neither advantages nor disadvantages.

Table 3 – Scope and Forms of Co-operation of Sample Firms (in percent)

Type of activity	Firms which	
	co-operate	do not, but want to co-operate
<i>Manufacturing</i>		
Purchasing goods	36	6
Production	42	8
Research and development	32	8
Selling goods	38	8
Transport/logistics	52	5
Representation in foreign countries	18	9
Participation in fairs	32	10
Training workers	51	9
<i>Services</i>		
Co-operating in projects	75	8
Selling services	40	9
Exchange of information	39	12
Representation in foreign countries	21	13
Participation in fairs	34	10
Training workers	60	13

Table 4 – Sourcing and Production Co-operation of Sample Firms (in percent)

	Firms which			
	already co-operate	want to co-operate	already co-operate	want to co-operate
	in sourcing		in production	
<i>Manufacturing</i>				
Total	36	6	42	8
of which:				
in border regions				
–Uckermark-Barnim	50	6	41	9
–Oderland-Spree	30	3	38	9
–Lausitz-Spreewald	38	9	42	9
<i>Services</i>				
Total			75	8
of which:				
in border regions				
–Uckermark-Barnim			78	10
–Oderland-Spree			68	3
–Lausitz-Spreewald			73	16

3.2.2 Sales Markets

Concerning sales activities, sample firms have a strong preference for cooperating on short geographical distance. The main sales markets are local and regional ones. Manufacturing firms pursue 40 percent and service firms even 87 percent of their business in terms of total turnover with partners nearby (Table 5). This is no surprise: for small- and medium-sized firms, geographic proximity is an important source of competitive advantage. However, activities in foreign markets are not negligible. On the average, sample manufacturing firms realize 20 percent of their total turnover there. Although the data base does not allow to separate sales according to their regional destination, it is not implausible to assume that an important share of turnover is made with firms in neighbouring reform countries, in particular with firms in Poland.

Table 5 – Regional Distribution of Total Turnover of Sample Companies (in percent)

	... of turnover are made			
	nearby ^a	elsewhere in eastern Germany	in western Germany	abroad
<i>Manufacturing</i>				
Total	40	16	24	20
of which:				
in border regions				
–Uckermark-Barnim	58	8	10	24
–Oderland-Spree	25	21	31	23
–Lausitz-Spreewald	41	16	26	17
<i>Services</i>				
Total	87	9	3	1
of which:				
in border regions				
–Uckermark-Barnim	88	6	6	0
–Oderland-Spree	90	6	5	0
–Lausitz-Spreewald	86	12	1	2

^aBrandenburg and Berlin.

Interestingly, the export quota reached by sample firms located in the border belt is generally not significantly higher than the export quota attained by other sample firms in the Brandenburg region. To a certain extent, this might reflect the suboptimal size structure of sample firms in the belt along the German-Polish border with a very high share of smaller firms. However, it is also an indication that the border is still a barrier for transactions because it enlarges the distance.

As a proxy for network activities one can consider the share of customer products as well as contract work in total turnover. This share accounted for 40 percent in total manufacturing firms: 28 percent of sales were products manufactured according to the specification of customers and 12 percent were products assembled or refined for customers (Table 6). But this figure does not generally reveal that the respective share is higher for firms in border regions than for total sample firms. The high share of customer products in the Oderland-Spree region is biased by one large company, the steelmaker EKO (the former combine Eisenhüttenstadt) which is a producer of non-standardized steel products. The high share of contract work in the Uckermark-Barnim region can mainly be explained by the large proportion of small firms operating as prolonged workbenches for western German firms there.

Table 6 – Regional Distribution of Turnover of Sample Manufacturing Firms by Type of Production

	... percent of turnover are made with				
	own products	customer products	contract work	services	traded products
Total	50	28	12	4	6
of which:					
in border regions					
–Uckermark-Barnim	41	2	46	3	8
–Oderland-Spree	25	67	1	5	2
–Lausitz-Spreewald	71	18	1	3	7

3.2.3 Outward Sourcing

While small- and medium-sized firms usually concentrate their sales activities on local and regional markets, their outward sourcing is more dispersed: frequently, the goods they need are not available in the region at all, or they are more expensive than in other regions. Brandenburg sample firms buy roughly 50 percent of their total input outside — which corresponds to the average of total eastern German manufacturing firms but is considerably lower than for total western German manufacturing firms (Table 7). Interestingly, only 25 percent of total outward sourcing is done in the neighbourhood and 19 percent elsewhere in eastern Germany. 35 Percent of the supply comes from western Germany and 21 percent from abroad. Firms located in border regions — and that is a remarkable result — do not report a higher share of foreign supply in general. In two of the three regions along the border, viz in Uckermark-Barnim and in Lausitz-Spreewald, the share is even significantly lower. Only in the Oderland-Spree region, it is twice as high as on average. This results from intensive outward sourcing of two large raw material-intensive firms, the EKO steelmaker, which is getting its hard coal from Upper-Silesian pits, and the Schwedt oil-refinery, which is getting its crude oil from Russia. Apart from this, the figures do not trace empirical evidence that the firms are intensively tapping the division of labour with partners beyond the border.

Table 7 – Regional Distribution of Total Outward Sourcing of Sample Manufacturing Firms (in percent)

	... percent of sourcing comes from				
	nearby ^a	elsewhere in eastern Germany	western Germany	abroad	Note: Share of sourcing in total output
Total	25	19	35	21	49
of which:					
in border regions					
–Uckermark-Barnim	31	19	43	7	30
–Oderland-Spree	15	28	11	46	70
–Lausitz-Spreewald	32	15	42	11	48

^aBrandenburg and Berlin.

3.2.4 Networks

With respect to sales and sourcing activities abroad, a breakdown of total sample firms by branches does not reveal a clear pattern either (Table 8). The results appear to be incidental rather than systematic. There are relatively high shares of foreign sourcing in chemical and metallurgical industries reflecting EKO steelmaker's and Schwedt refinery's hard coal and, respectively, crude oil purchases. However, there are extremely small shares in food and beverages. The high share of foreign turnover and supply in textiles and clothing tells probably more about co-operation networks. They stem from some firms in the Cottbus region, formerly a center of the GDR textile and clothing industries, which are successfully practising contract work with partners in Silesia.

Not surprisingly, there is a strong positive correlation between firm size and foreign activities: very small firms seldom co-operate with partners abroad. There is also a correlation between the legal status and purchasing abroad: for dependent firms, foreign turnover and sourcing is a more promising field than for independent firms. In this respect, firms located in the border belt do not differ from those located outside the belt.

Table 8 – Share of Foreign Turnover and Foreign Sourcing of Sample Manufacturing Firms by Type

	p.c. of total turnover	p.c. of total sourcing
Total	20	21
of which:		
by branches		
–Food, beverages	6	1
–Textiles, clothing	25	17
–Chemicals	46	20
–Glass, stones, pottery	9	12
–Metal products	23	42
–Machinery	22	15
by employment size		
–less than 20	2	7
–20-49	4	7
–50-99	12	11
–100-199	10	21
–200 and more employees	30	25
by legal status		
–dependent firms	24	24
–independent firms	8	8

Admittedly, the results of the survey have yielded but a few pebbles in the mosaic. Nevertheless, they suggest two important conclusions:

- First, they provide some evidence that cross-border co-operation in the German-Polish border belt is still on a low level. In particular for the majority of small-sized firms, the border seems to be an insurmountable barrier to establishing business contacts.
- Second, they provide also some evidence that firms, if they co-operate, prefer shallow forms of integration. They are concentrated on sales and sourcing activities or, at best, on contract work. Proper network relations have not developed until now.

When firms under investigation were asked what in their opinion would be absolutely necessary for network co-operation, the following criteria were

mentioned as the most important: transparency of sales and supply markets, availability of partners who are able to respond quickly and reliably, good image of partners and their products (certification), and innovative products. Networking was by far not considered as the ultimate ratio but as one form among other forms of co-operation.

3.3 Evidence from Case Studies

A postal survey cannot trace the intensity of inter-firm co-operation and the motives behind. In this respect, case studies based on interviews are superior. Our picture can be supplemented by an investigation carried out by Barjak [1997] who interviewed nine companies located in the German part of the so-called Euroregion Spree-Neisse-Borber in the south-eastern part of Brandenburg. The companies are operating in the manufacturing sector, five have less than 100 employees, one has more than 500 employees (Table 9). Some of them already existed before 1989, some were founded in recent years (also as a subsidiary of western German companies).

Table 9 – Sample Firms in the Oder-Neisse-Borber Region

Total	9
By branches	
Chemical	3
Textile, clothing	4
Machinery	1
Food, beverages	1
By size	
Less than 100	5
100–499	3
500 and more	1

Source: Barjak [1997].

The sample can be subdivided into three categories: firms which are co-operating with Polish partners, those which were co-operating, and those which have never been co-operating up to now.

3.3.1 Co-operating Firms

Among sample firms with cross-border activities only two reported forms of close co-operation which can be characterized as network relations. Interestingly, both are producers of textiles and clothing.

- One firm, which existed already in the GDR as part of a state-owned combine (and closely co-operated with partners in Poland), holds a sub-contracting agreement with a Polish firm: exploiting low costs of labour, energy and sewage disposal in Poland, it supplies materials and semi-products. In addition, it co-operates with its partner in developing new products. By and large, the relations have developed successfully. Consequently, the German partner would like to come into a stronger position towards the Polish counterpart in order to safeguard mutual relations by purchasing the majority of the Polish firm.
- Another firm has started a more sophisticated form of network activities with Polish firms within a model project of the Center for Innovation and Technology Guben-Zielona Gora (CIT). The aim of the project is to establish a regional apparel network by interconnecting firms on both sides of the border. Network partners are not only supposed to co-operate in the field of production, but also in other fields like research and development or marketing. The idea is to create their own "regional identity" for products which might open the gate to international markets. The CIT project usually begins with simple OPT operations among two partners, but

intends to end in a durable network system in which the partners co-ordinate most of their business.

3.3.2 Formerly Co-operating Firms

The firms which cancelled co-operation with Polish partners are purchasers of raw materials and semi-products. According to Barjak, the co-operation mainly failed because German firms were not satisfied with the quality and punctuality of the products supplied.

3.3.3 Non-co-operating Firms

The firms without eastward co-operation are subsidiaries of western German companies. They are integrated into the sale and purchase networks of their respective parent companies. The trading and sourcing partners are in Germany and in western countries. Geographic proximity of sales or supply markets does not count for them.

However, it should be noted that even these firms can generally imagine several forms of co-operation with Polish firms in the years to come. Besides sales activities, co-operation in production is considered the most promising field.

4 Policy Conclusions

The German-Polish border belt is of strategic importance. It is one of the gateways from western to eastern Europe and vice versa. And it is a testing ground for close co-operation among firms on both sides of the border.

However, it is our impression that the belt is still far from becoming an integrated economic space — despite enormous efforts made by the EU, national

and regional governments, local and regional administrative bodies and business organizations [Scott and Collins 1997]. The question remains: what makes economic interaction across the boundary in the region so difficult?

A realistic assessment of the potential of the region should take the following into account:

- The complicated and sometimes disastrous history between Germany and Poland is an obstacle. The border between the two countries was established by the victorious allied powers after Germany's defeat in 1945. The belt is mainly populated by settlers — by German people on the one side who were resettled from the new Polish territories, and by Polish people on the other side who were expelled from areas annexed by the Soviet Union. It is understandable that people on both sides of the border treat each other with some reserve, if not with mistrust. In particular, many Germans consider the open border — which might encourage smugglers, criminals and prostitutes — as a threat. Thus, it is quite plausible that firms hesitate to take actions which may result in costly and uncertain outcomes. As we know from empirical study, the complexity of the external environment has significant effects on firms' behaviour [Blaine 1994].
- People on both sides of the border have different cultural backgrounds. The majority of settlers on the Polish side came from rural areas in the Ukraine, Belorussia and Lithuania. It is well known that culture affects the mode of communication and information transfer in a variety of ways [Hall and Hall 1990].⁵ The same event can be understood differently on both

⁵ The overwhelming part of the firms does not complain about language difficulties as many businessmen in Poland speak English or/and German fluently.

sides of the border — as an opportunity or a threat. In such a situation, complex economic relationships as network activities cannot function smoothly. Simple arm's-length transactions between independent parties can be the most efficient means of co-operation for the moment.

- The economic potential is extremely weak, in particular for reasons of historical development. Accordingly, the image of the region is far from being attractive.⁶ For many people in Germany as well as in Poland, it is "land's end". After the break-down of old structures, a population drain has been in full swing, weakening the economic potential once again.
- Moreover, the traffic infrastructure is in a very bad shape. There are only a few routes in east-west direction. Waiting times for trucks of 20 or 30 hours at the border-crossing points are no exception. Consequently, cross-border clearing is time-consuming and is considered by firms as a severe obstacle to cross-border activities.⁷

Thus, expectations should not be pinned too high since — quasi an irony in itself — the distance is often longest in these areas.

⁶ This is also the result of the media reducing everything to black. Recently, the disastrous flood along the river Oder was puffed up as a disaster having ruined the region once and for all.

⁷ The German fish industry, which was sending raw crustaceans to Poland in order to have them shelled there, recently shifted this very labour-intensive job to Morocco. Obviously, it is worthwhile to carry crustaceans over a distance of 2,500 kms via Germany, France and in — as a substitute for short distance but lengthy transport to Poland.

What kind of means could be the most effective for overcoming these obstacles? Or, are there effective means at all? Certainly, governments and administrations could and should encourage firms to exploit their opportunities in trans-boundary co-operation. They can do so by conducting a liberal open-market policy, in particular by ensuring free flow of goods, capital and, last but not least, labour. And they can do so by improving traffic infrastructure and accelerating border controls. However, they have only limited possibilities of steering firms' internationalization.

The point of the story is: international network relations are marked by a considerable degree of complexity. It is widely accepted in the literature that their outcome is shaped not only by competence of the partners but also by trust among them. Trust can reduce uncertainty — which is fundamental in network organizations. However, trust has a cognitive and an effective component. The cognitive component refers to the expectation that one partner develops about its counterpart's competence and predictability. The effective component refers to his judgement about the counterpart's level of commitment to the relationship [Kumar 1996]. In the terminology of Druckman [1991], trust is based on familiarity and liking.

As far as familiarity is concerned, there is something that can be done: firms frequently suffer from high costs for obtaining information which is indispensable in international business, such as information on actual market trends, potential customers, legal provisions or regulations with respect to trade, taxes, foreign exchange and foreign ownership. In principle, this kind of information is provided by commercial information services, thus available on charge. Governments can make these cheaper by promoting competition among service suppliers. As long as no private suppliers enter the stage, they can also directly help firms to overcome their problems by

- supporting business advisory services as provided by chambers of commerce or so-called one-stop shops (collection and supply of business information in one single place),
- initiating communication and collaboration activities among SMEs for sharing marketing facilities or delivery services,
- promoting training initiatives to raise the level of sophistication in using modern tools for international business,
- enhancing capabilities for developing successful cross-cultural relationships, e.g., foreign language initiatives and trainee scholarship schemes.

In this respect, much has been done. Over the last decade, many institutions and organizations for supporting trans-boundary co-operation have been built up. Particularly, the EU has generously spent huge sums on supporting PHARE and INTEREG programmes. However, money is an unsuitable means to develop an atmosphere of trust. As long as potential partners dislike each other, they will remain strangers. This is not an easy obstacle to overcome. Governments can do little to develop liking for one another. They can only play the role of mediators concerned with controlling and lowering aversion emanating from different cultures and tragic historical events. Still, though, the eradication of deep-rooted aversions is an evolutionary process which is beyond the scope of intervention from outside, thus needing a lot of patience and time.

Maybe, the German-Polish border belt is not representative of other border regions along the former Iron Curtain. The situation might be completely different elsewhere. The counterpart is perhaps the Vienna-Bratislava-Budapest region which is integrating with high speed. However, this region represents the largest agglomeration of population and economic capacities across the former Iron

Curtain. It can provide more favourable initial investment conditions to the international business community compared to the German-Polish border belt.

In conclusion, we have to recognize that economic integration in the region under consideration is a self-propelling process. The belt will move geographically, but not necessarily economically from the periphery to the core. As a result, the income gap might not shrink but widen. Therefore, fresh ideas are required for pushing German-Polish co-operation in the border belt. Here, experiences from other border regions in the world might provide useful insights [Sander 1997; Schmidt 1997].

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