

DIVISIONS OF LABOUR, POWER ASYMMETRIES AND PLACE
DEPENDENCE: THE RESTRUCTURING OF INDUSTRIAL
MITTELSTAND FIRMS IN THE RUHR AREA

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Abstract

During the last few years business representatives have begun to question the sustainability of the German Model in the wake of increasing international economic integration. The paper seeks to question this 'globalisation rhetoric' by analysing restructuring strategies of Mittelstand firms in the Ruhr Area. In view of the conflictual and complex relations between restructuring in space and place dependence it is argued that adjustment strategies are far too complex to be portrayed in such a one-sided discourse. Embeddedness in different institutional contexts and asymmetric power relations play a major role in explaining the strategic responses to the changing social division of labour.

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Introduction

During the last few years economic globalisation has become a buzzword in German public discourse. The 'German Model', associated with stable long-term inter-capital and capital-labour relations is regarded as being no longer tenable in the wake of increasing international integration and a substantive change of the system is demanded. This 'globalisation rhetoric' is employed by representatives of large corporations and 'Mittelstand' firms¹ as recent comments and statements by representatives of employers associations, such as the VDMA ('Verband Deutscher Maschinen- und Anlagenbau'), the VMU ('Vereinigung Mittelständischer Unternehmen') or the 'Arbeitgeberverband Gesamtmetall' illustrate (Hundt 1996; SZ 10.1.96; 28.2.96).

Cox (1996a, 1) recently argued that 'globalisation is a vague term and can be defined in many different ways', continuing that arguments associated with it '...not only seriously overgeneralize but [...] through their rhetorical power serve to mystify' (compare also Hudson 1996). It is the globalisation rhetoric employed by Mittelstand representatives which this paper takes issue with. The objective of this paper is to develop and apply a framework with which the globalisation-localisation dualism inherent in much of the restructuring literature can be overcome, choosing an approach which studies a region by studying firms and focuses on socio-spatial change without assigning priority to one particular spatial scale (see Markusen 1994; Swyngedouw 1997). The specific focus of this paper will be the effect of the profound deepening and extension of the division of labour (see Martin 1994; Sayer and Walker 1992) on the strategies of Mittelstand firms, stressing conflicts between

internationalisation² and regional place dependence and the effects on regional inter-firm and capital-labour relations.

The paper is divided into two main sections. It will start by setting out a different view on the geography of business restructuring, combining political-economic and socio-organisational perspectives. The second section seeks to illustrate this framework by looking at concrete restructuring activities, using eleven traditional Mittelstand firms in the Ruhr Area as an example. This will be done by moving conceptually from the international to the national, the regional and the firm level. It will be argued that there is a considerable contrast between the neoliberal 'globalisation rhetoric' employed by Mittelstand interviewees and the actions and strategies adopted in practice. It will be further maintained that internationalisation processes in the firms' environment and their strategic responses lead to complex patterns of competition and co-operation at the regional and the firm level.

Spatial Rescaling and Power Asymmetries: An Institutional Framework for Business Strategies

Business strategies can be conceptualised as efforts to reposition a firm in order to hold and/or improve its position within the social division of labour. Any spatial re-positioning, for instance internationalisation, may be resisted by other actors and groups attempting to maintain the control over their respective space, be it other capitals, the labour force of plants 'down-sized' or shut because of cheap labour competition or the national or regional state attempting to counter and respond to such developments through de- or re-regulation³. On the one hand, strategic actions are shaped by existing spatial configurations of organisational and individual interaction, on the other these structures are reproduced and may be transformed by these actions.

Strategy and structure: socio-organisational and political-economic space

Strategic action lies somewhere in a continuum between (neoclassical) price-taking and cost minimising and active (schumpeterian) innovation in products, processes and organisation, ideal cases which have been referred to as 'weak and strong competition' (Storper and Walker 1989). Given the fact that it brings about technological and organisational change, it is strong competition which is important for economic development (Sayer 1995).

Traditionally, there are two apparently contrasting views on the determinants of business strategies. On the one hand, strategic actions are rooted in far-reaching political-economic structures which determine the scope for action and a firm's development path. Notwithstanding considerable controversies with regard to the precise nature and significance of the processes at work, there is widespread agreement in the political-economic literature that since the early 1970s advanced capitalist economies have undergone momentous change. The following shifts can be identified: (i) the advent of a new techno-economic paradigm based on new information and communication technologies; (ii) the acceleration of the tertiarisation of economic development; (iii) a shift from the mass-consumption culture of the post-war period to a more individualised, internationalised and multi-dimensional culture of consumption; and (iv) an intensifying internationalisation of industry, services, and capital (Martin 1994). Any investigation of business strategies from this perspective in principal has to include these wider shifts and their implications for a firm's development path.

On the other hand, socio-economic relations and their spatial manifestation are articulated in particular ways by the actions of individual business enterprises, more precisely individual actors

within the firm (e.g. owners and/or managers, workers), whose actions are socially and culturally embedded (Granovetter 1985). This aspect has often been neglected in political-economic accounts, an omission which also holds for regulation theory which has been criticised for emphasising 'structure over agency and form over practice' (Painter and Goodwin 1995, 341). In other words, political-economic and socio-organisational factors are both responsible for economic change (Dicken and Thrift 1992; Zukin and DiMaggio 1990; compare also Giddens 1984).

Social relations and practices are always positioned spatially, be it within a local community, a nation or within the international division of labour, and thus involve organisational efforts across space. Similarly, political-economic factors and structures define a certain spatial scale context (e.g. the nation-state) within which businesses operate and which they may attempt to transcend or transform. Thus, one could define a 'socio-organisational space' and 'political-economic space' respectively. Ideally, the former may be conceptualised as encompassing those aspects of a firm's environment which can be actively influenced by strategic actions. This includes relations to other firms and organisations. Political-economic space can be understood as passive setting, for instance market conditions or the economic and political system, which business managers and owners initially have to take as granted. The 'boundaries' between both abstract spaces are formed by other organisations and actors and their scope for action and vary considerably depending on the power position of the protagonists. Everything else being equal, more power sources mean more potential scope for strategic action, more influence on actions of other agents and consequently a 'wider' (socio-) organisational space. Large, transnational corporations can in principle be regarded as having an advantage over smaller businesses. It is however not firm size and spatial extension which matters, but rather the ability to control the geographical space which is relevant for the business enterprise, to be more precise to control and organise relevant

relations with other organisations and actors in space. Extensive regional control may be accompanied by very little scope for action at the national or international level and vice versa. The crucial question instead is to what extent a firm is able to adapt its organisational space in times of strategic repositioning.

The co-ordination of the division of labour, power asymmetries and business strategies

Strategies of business enterprises - both large and small - can be understood as attempts to control relevant space, to spatially expand this control or, if necessary, to reduce it. 'Relevant' space will be defined as the part of the division of labour (DOL) and the production system which is of direct and immediate importance for the organisation of production and innovation, a firm's task environment to borrow a term used in organisation theory (see Nohria and Gulati 1994). This conceptualisation makes sense given that activities based on the specialisation of tasks and production steps always involve organisational interaction in space. Relevant space thus can be conceptualised as defining the spatial reach or scale of those interactions within the DOL which are immediately relevant for a firm. The DOL is conceived of here as a social institution determining and limiting the scope of action for the single business, giving cause for actions as well as in turn being actively transformed and reproduced by them (Sayer and Walker 1992; Schamp 1995; see the following section for a more detailed treatment of institutions).

Here, Marx's (1976) distinction between technical/detail and social divisions of labour is useful in attempting to disentangle the causes and effects of business strategies. The latter concerns the DOL in production under separate capitals and connects flows of products, money and knowledge across different sectors and industries. In so far as larger firms often have hundreds or even thousands of products, which are not directly related, the social DOL cuts through

to the level of the firm (Sayer 1988). While normally being understood as DOL between independent capitals, it is important to note that the social DOL goes beyond bilateral organisational interaction and constitutes a complex structure in which organisational interaction is rooted. Technical DOL applies to task specialisation under the control of a single owner and is closely intertwined with the internal authority structure or the vertical/hierarchical DOL. While the technical division of labour is normally planned and co-ordinated ex ante, this happens ex post through market exchange in the case of the social division of labour (Sayer 1995; Walker 1985; compare also Williamson 1985).

Following Granovetter's (1985) seminal article, the last few years have seen increasing emphasis on a further mode of co-ordination. Networking, associated with self regulation based on mutual trust, reciprocity and information sharing, has become a dominant metaphor in academic discourse (compare Castells 1996; Grabher 1994). Network-type relations can exist independently from property relations, thus being able to co-ordinate both the social as well as the technical DOL. Seen from the perspective of inter- or intra-firm relations, the growing attention paid to networks has considerably 'flexibilised' and broadened the rigid market/hierarchy dualism. Above all, network approaches allow us to get a better grasp at the 'grey areas' between both types of DOL, such as inter-firm relations depicted by flexible specialisation theorists ('technisation' as opposed to complete internalisation of the social division of labour) or the increasing quasi-independence of corporate subdivisions exemplified by vertical disintegration, outsourcing and profit centres (socialisation of the technical division of labour). This permits a more open view of what constitutes a firm, for instance allowing the inclusion of different legally defined business enterprises (Granovetter 1994). Objections are therefore directed less at the network approach per se, but rather at the tendency in parts of the literature to portray networking as an alternative mode of co-ordination, which substitutes other modes. However, critics like

Sayer (1995) point to the fact that networks usually supplement rather than displace market exchange and that in spite of the rootedness in personal networks ex post market co-ordination continues to play an important role. Networks modify and regulate markets, but they are only able to do so over parts of a production chain and therefore only over segments of the social DOL.

Secondly, much of the work associated with the network approach shows a curious neglect of power and power asymmetries inherent in the co-ordination of specialised tasks and complex production systems. Networks can in themselves be structured in an extremely hierarchical way, with divisions of knowledge and unequal access to information being at least as common as the pooling of resources depicted in the network literature (Cox and Wood 1997; Hayek 1937; Pratt 1997; Sayer 1995). Power, competition and co-operation are integral parts of any social interaction (see Simmel 1903). The failure to adequately include issues of power and power asymmetries is, I believe, one of the main reasons for the overemphasis on positive aspects of embeddedness in the socio-economics literature. While I do not necessarily adopt a zero-sum notion of power, I am sceptical of the collectivist conceptualisation found in the flexible specialisation literature. Power asymmetries are deeply ingrained in the capitalist mode of production and allow more powerful actors to appropriate more of the benefits and socialise more of the costs vis-à-vis other agents. What matters is whether individual or collective actors are able to get 'interaction partners' to engage in precisely those types of joint activities most beneficial for the more powerful actor, enforcing co-operation to adopt a term coined by Portes and Sensenbrenner (1993).

Similar arguments could be made with respect to capital-labour relations, with power asymmetries based on class, gender or ethnicity still being an important feature within firms despite trends which may, for instance, involve more 'democratic' and less hierarchical structures. Strategic decisions on the part of one firm may therefore

be resisted both by other capitals and by labour. In other words, depending on their position within hierarchically structured networks, actors have different degrees of scope for strategic action, the 'boundaries' between active and passive space running in an unequal way. To put it with Moulaert (1996, 167), what matters is therefore the 'hierarchy in markets and alliances and the markets in hierarchies and alliances'.

'Institutional distance', organisational interaction and space

In social science, 'institution' is normally understood in the broad sense of socially habituated behaviour (i.e. systems of rules and norms) and not only in the narrow sense of formal organisations. An often quoted broad definition stems from Hamilton (1932 quoted in Hodgson 1993: xii) who argued that

"It connotes a way of thought or action of some prevalence and permanence, which is embedded in the habits of a group or the customs of a people.[...]Institutions fix the confines of and impose form upon the activities of human beings."

It is the structuring and regularising role of institutions which will play an important role throughout this paper. Institutions may be distinguished between those which are confined to a limited set of actors and organisations and stem from direct and repeated interaction and those which have more general applicability. Institutional structures can be quite specific, as in the case of particular forms of intra-firm organisation and of dealing with 'outsiders', or may reflect more general institutional contrasts due to the embeddedness in different political-economic contexts. Distinguishing between formal and substantive contextual structures, Layder (1981) made a similar point, the latter being 'concrete sites of interaction' and conditioning interaction in a more immediate and specific sense. Both institutional structures are linked together, given that general rules, laws, norms and values of a society are the

product of organisational and individual interaction and at the same time are subject to continuous reproduction and transformation as the result of this action (compare also Giddens 1984; Hodgson 1993) (see Fig. 1). This interconnectedness can be illustrated on the example of the division of labour. For while being the outcome of the actions and decisions of workers, managers or capital owners, the division of labour across sectors and industries (the social DOL) is from the perspective of an individual firm part of the wider political-economic context. Technical divisions of labour and vertical firm hierarchies, on the other hand, can be influenced more directly and are therefore examples for specific institutional structures.

Organisational interaction entails the collision of established routines, conventions and specific 'ways of doing things' which - mediating political-economic structures - 'may stand in the way of the performance of new duties' (Hamilton 1932, 86), but at the same time make interactions possible in the first place. This enabling function is achieved through the provision of information for other agents. In this context, institutionalised routines and habits help agents to estimate the potential action of others in a highly complex world of uncertainty (Hodgson 1988). At a certain point, however, institutions may become more and more rigid and inflexible, and may lead to what is called 'lock-in' and path dependence in evolutionary economics (see David 1985; Nelson 1994). It is important to point out that institutional lock-in may occur with any mode of co-ordination. To put it differently, 'network failure' may be as likely as market or hierarchy failure. Institutional lock-in may also be a result of an escape into well-known, traditional institutionalised routines in the face of growing uncertainty and an expression of resistance against new, unfamiliar 'ways of doing things'.

From the point of view of a single firm institutions in this sense assume a mediating role between socio-organisational and political-economic space (see Fig. 1). The greater the differences made visible through interaction, the more extensive are the co-ordination efforts

of the participating actors. Activities based on the DOL are therefore the more difficult to organise and govern, the greater the institutional differences and thus the institutional distance between interactants. Institutional distance may manifest itself in conflicts of interest and different assessments of a given situation. In this context, it appears to be reasonable to assume that every change from a given organisational status quo as result of external turbulence is likely to increase institutional distance, thus making more organisational efforts necessary.

The extent to which a business firm is able to actively govern or regulate institutionally distant relations can be a proxy for its capacity to control its organisational space. Market mechanisms may be weakened (= reembedding or de-marketisation) or strengthened (= disembedding or marketisation) (see Lundvall 1992; Sayer 1995). For instance, firms can choose between supplementing markets through internalisation in a corporate hierarchy or through looser networks in order to close institutional distance. Rather than searching for a somehow defined 'optimal' degree of organisation, emphasis should be put on changes in institutional distance as a consequence of business restructuring and the interaction between institutional and spatial distance.

Normally, one would expect institutional and geographical distance to correlate and therefore assume that internationalisation or 'globalisation' processes increase institutional differences. This argument is supported by findings of Gertler (1995a) who analysed the cultural differences between German machine tool producers and Canadian users (compare also Gertler 1995b). Equally, institutional proximity may be influenced by geographical proximity. However, economic actions take a spatially concentrated form only under specific, contingent conditions (Sayer and Walker 1992). Thus, only under certain circumstances may institutional proximity develop into what Amin and Thrift (1995) have called 'institutional thickness'. Recalling the ambivalent nature of institutions, there might be a thin

line between lock-in and enabling effects here. The time-space contingencies behind regional economic success stories should serve as a reminder in this context (compare Saxenian 1994).

An obvious example of an inverse relation between institutional and geographical distance is British firms which may find it easier to interact with their Northern American rather than their geographically closer European counterparts. On the other hand, the problems of firms in former West Germany in co-ordinating business activities in the former GDR would be an extreme case of institutional distance together with geographical proximity.

These examples illustrate that attempts to co-ordinate activities based on the division of labour have to find answers to the contradiction inherent in capitalist production, namely that business enterprises have to be mobile in order to survive in competition with other capitals but at the same time are temporally and spatially bound as they build up fixed capital, labour skills, personal ties and shared conventions (see Harvey 1982; Storper and Walker 1989). Strategic decisions of the past influence and limit the scope of action, in short firm development is both path and place dependent at different spatial scales and may be locked into a particular development path (Cox 1996b; Langlois 1988). The conflict between mobility and place dependence can be expected to be particularly visible in times of restructuring and spatial rescaling, such as associated with 'globalisation'.

Case-Study: The Restructuring of Traditional Mittelstand Firms in the Ruhr Area

For the remainder of the paper the theoretical arguments presented above will be applied using concrete case-studies of Ruhr Mittelstand firms during the period 1990 to 1995. Analysis will focus on restructuring processes within the inter and intra-firm DOL and the tensions between internationalisation and regional place

dependence. The 11 firms used as case-studies have been selected from a larger sample of 50 small and medium-sized enterprises. All firms belong to the metals and machinery industry, have traditional links to the steel, iron and coal complex and are therefore part of the region's traditional key production cluster. This sample was chosen in order to control as far as possible for sectoral differences and because one would expect restructuring of these firms to have considerable regional effects. Given that such an approach allows detailed, in-depth investigation, a case-study approach focusing on a limited number of firms was given preference to a quantitative investigation of a representative sample. The interviews were mainly conducted in autumn and winter 1995, with additional interviews and follow-up phone calls in April and May 1996, and were based on a preprepared list of key issues. These semi-structured talks have been taped and subsequently transcribed in full length, providing the base for detailed analysis and investigation. As the sources for the findings presented in the following section have predominantly been interviews with Mittelstand representatives, only those based on interviews with other actors will be identified separately.

Amongst the first German regions to be industrialised, the Ruhr Area was the power centre of what has become to be known as the 'Wirtschaftswunder' (economic miracle) in post-war West Germany. Given that the rebuilding of the West German economy was based on heavy industry, such as steel and coal mining, the Ruhr economy received an enormous boost in the 1950s and 1960s. With hindsight, this rebuilding boom can be regarded as being partly responsible for the belated recognition of the economic crisis which set in during the 1970s (compare Sachverständigenrat 1988). Problems became visible, when after the two oil crises growth and unemployment rates suddenly de-coupled from the rest of the economy in the late 1970s, a process which continued during the 1980s and early 1990s (see Table 1). Throughout the period since officials first became aware of the structural problems besetting the region, national and regional state governments explicitly adopted a policy of 'socially cushioned

change', that is the coal mining and steel industry was enabled to gradually reduce employment and capacity with the help of government subsidies. This approach is in obvious contrast to the policies adopted by the Thatcher governments in Great Britain during the 1980s. The phased-out transition is widely credited with limiting the social costs of restructuring and the extent of marginalisation and deprivation associated with rapid deindustrialisation. On the other hand, the continuing importance of traditional industries⁴ arguably had negative consequences for the capability to find a way out of the trajectory the region has become locked in (Grabher 1993). More recently, however, several scholars have hinted at signs of an endogenous recovery process, especially with respect to the emergence of new activities, such as the environmental protection industry, and a general improvement with regard to political and economic innovation and learning (Berndt 1995; Butzin 1995; Danielzyk and Wood 1993; Hassink 1992; Rehfeld 1995). What is important is that these new activities very often have their roots in knowledge, skills and strengths of traditional industries and are largely the result of an internal diversification process. To be sure, signs of 'de-maturity' (Abernathy *et al.* 1983) are still extremely frail and have certainly not been able to stop the increasing gap with the rest of the country. But in a context of continuous job losses in traditional industries and an increasingly hostile fiscal and political climate both at the regional and the national level, the Ruhr Area shows at least some signs for positive re-development.

An important feature of the Ruhr economy is, and this is partly a result of the cautious policies followed by government officials, that in contrast to traditional industrial areas in other countries the region has kept its main corporate players. The Ruhr Area proper harbours four of the twenty largest German industrial corporations, the number increasing to six, if companies like VEBA and Mannesmann are included which have their headquarters in neighbouring Düsseldorf and conduct a considerable part of their activities in the

Ruhr (see Table 2). Multinationals like Thyssen or RWE thus continued to be 'centres of strategic decision-making' (Dicken and Thrift 1992) throughout the period of economic restructuring. The powerful firms dominating the traditional steel, iron and coal complex have been and continue to be a mixed blessing for the region, on the one hand stifling innovation, on the other remaining an important source for the emergence of new activities (see Kilper and Rehfeld 1994). The ambivalent role of large firms and the thin line between 'lock-in' and the opening of new opportunities will be taken-up below.

Changes in political-economic space: internationalisation and state over-reglementation

Interviewees reported two main bundles of factors as being the reason for their immediate problems and the strategies followed. First, all firms witnessed a significant increase of competition both from domestic and foreign firms during the period studied. Second and interrelatedly, the firms have been confronted with growing pressure by key customers to cut prices and a general trend towards a marketisation and disembedding of user-producer or buyer-supplier relations. Competitive pressure was further exacerbated during the deep recession in the aftermath of unification which had its grip on the economy in 1992/93 and from the effects of which Germany is still struggling to recover. This 'problem mix' resulted in growing uncertainty concerning the future, extensive measures to cut costs and employment, and efforts to increase productivity (see Table 3).

Owners and managers put much of the blame on large firms in their organisational space. Many reproached the negative effects of internationalisation, criticising 'footloose capital' for destroying and breaking up traditional relations by relocating production facilities and by sourcing internationally. A further important cause for problems was what is termed 'Standort Deutschland', that is Germany's apparently accelerating loss of international

competitiveness, linked with aspects as diverse as labour costs, the welfare and benefit system, the tax system or the continuous revaluation of the Deutschmark. The arguments and facts presented in the debate around the 'Standort Deutschland' are an integral part of the 'globalisation rhetoric' insofar as the perceived structural weaknesses are portrayed as obstacles, disadvantaging their firms and to be removed in order to help them to adapt to the changing economy. Roughly speaking, the German model is declared obsolete and the interviewees portrayed deregulation measures as panacea for their problems. Above all with a view to capital-labour relations interviewees often pointed to Anglo-Saxon countries as positive role models. The owner-manager of Parsunke⁵:

“One cannot escape the fact that one has to give work to those places where it is done cheaper than here....There is no reason which justifies the high standards and demands of the people here. It is simply impossible for us to think we can continue to work the shortest hours and earn the highest wages...You certainly know better than I about the changes in England [sic]. During the last fifteen years things have changed dramatically there, and it is no surprise that German companies increasingly move to England. Fifteen years ago one would have said, what, producing in England, where they are on strike all the time and so on, today the situation is different, today they have low wages, a motivated work-force...”

(Interview, 16.10.1995)

What this interview excerpt illustrates is that in addition to competition vis-à-vis other capitals, capital-labour relations appear to be very important with regard to the problems encountered by the firms. Despite their special situation with respect to both regional and sectoral background, the case-study firms explicitly attributed their problems to the overall, regulatory situation in Germany. All in all, and in anticipation of what follows, inter-firm and capital-labour relations are both affected by restructuring and the processes and

mechanisms at work are interlinked, therefore requiring a look at both types of relation.

State de-regulation - whether at the national or regional level - assumes a paradoxical role in this discourse. While generally seen as positive when associated with 'unnecessary' costs, mostly if they are linked to the welfare system, de-regulation is resisted as soon as it negatively effects the own task environment. A point in case, and also proof for the enmeshment of government regulation, internationalisation and firm strategies, is the de-regulation of the hitherto sheltered energy markets as part of the EU single market programme which has considerable implications for the Ruhr economy and the sample firms.

As a consequence, decades of quasi-symbiotic relations, often very personal in character, are beginning to gradually give way to relations dominated by the exchange logic, price freezes and the playing off of suppliers against each other. Given that the sales of the firms still depend to a considerable degree on regional corporations (compare Table 3), there is a distinct regional component insofar as traditional regional inter-firm relations apparently undergo profound change as a result of internationalisation. All in all, strategies were seen as responses to actions and decisions of other capitals, which themselves expanded their task environment spatially.

So far, two aspects qualifying the 'globalisation rhetoric' have become clear. First, as the links between large firms, themselves responding to environmental pressure, state policies and sample firms show, international integration is by no means a quasi-natural force coming out of thin air, but an outcome of concrete action. Secondly, rather than being powerless in the face of 'globalisation' government policies are actively influencing the course of development, in principle being able both to accelerate and block the process. This is all happening across different spatial scales, a complex interaction of processes at the regional, national and

international level. All in all, changes in political-economic space, to a large extent having international origins, have had profound implications for regional inter-firm relations.

Socio-organisational space: the institutional limits to internationalisation

Problems encountered by the sample firms with regard to their own internationalisation efforts show that the firms had considerable difficulties in co-ordinating a spatial expansion of their activities. This holds especially for measures which aim at market diversification and product innovation and require a considerably higher organisational effort than mere exploitation of cost advantages (compare Table 4). Thus, with a view to an international expansion of organisational space, weak competition above all with respect to moves to Eastern Europe dominated the picture.

Asked about co-operation failures and possible reasons for them, owners and managers often pointed to different 'mentalities' on the part of their prospective partners and problems associated with different legal and political systems. This holds for countries as geographically distant as China, where a planned co-operation between Reinhold and five regional mining suppliers faltered because of the uncertain legal situation, and as close as France or Great Britain. Even in cases where spatial distance appears to be surmountable, legal and cultural barriers and different views of the interactants obstruct expansion across national borders. Firms such as Bauer+Morgott and Kundmüller therefore even had to abandon further internationalisation efforts (including export activities). Moreover, creation of trust in order to solve conflicts of interest appeared to be the central problem, above all in cases where competitors had to co-operate horizontally. Controversies revolved mostly around the aim of the partnership and the fair division of the costs and (potential) profits associated with the co-operation. Interviewees therefore favoured a certain formalisation (e.g. legal

contracts, financial involvement) of partnerships in order to increase the barriers to and the costs of exit and create favourable conditions for a transfer of knowledge and information.

Increasing institutional distance resulting from a spatial extension of activities confronted the firms with considerable organisation and co-ordination problems. Here, two types of institutional distance can be distinguished which are closely interrelated. On the one hand there is 'market distance', that is increasing institutional distance originated in different political-economic contexts (for instance, the failed joint venture in China). On the other, institutional distance can be traced back to specific conflicts of opinion between interactants ('interaction distance'). What is crucial is that institutional difference always becomes visible through organisational interaction. 'Market distance' gives rise to 'interaction distance' and is in turn reproduced and redefined in the course of efforts to bridge differences through adequate organisational measures. Accordingly, in cases of co-operation failures market co-ordination was not sufficient and institutional distance could not be reduced by supplementing it with other modes of organisation. In addition to formal-organisational measures, such as the agreement on penalties for breach of contract, personal relations play an important role in this context. The owner-manager of S.Kuhn, for instance, had to relinquish a long-term co-operation with a Spanish firm after the death of his contact person.

Asked about their main 'gatekeepers' to international markets, ties to regional large firms were generally regarded as being very important (Table 4). This holds especially for S.Kuhn, Papke, Reinhold and Parsunke which profit regularly from their position as traditional suppliers to Rhine-Ruhr multinationals, such as Thyssen, RWE, Ruhrkohle, Babcock or Mannesmann. Here, the firms profited from the changing social DOL as a result of reorganisation measures of regional large firms, such as the trends towards outsourcing and general contracting. As an aside, the development of increasingly complex general contracting systems in plant engineering and in

other areas, combining products and know-how across industries, being co-ordinated by large multinational firms and often involving considerable government influence, constitutes a good example for the changing environment the sample firms are faced with. In this context, all four interviewees stressed long-term, personal ties as facilitating what could be called 'piggy-back' rides to international markets through involvement in general contracting systems. Close interaction with these 'regional champions' was considered as crucial for product innovation and diversification. Insofar as internationalisation has occurred it is predominantly based on ties to regional large firms and thus embeddedness in and dependence on regional (hierarchical!) networks. Recalling the generally negative effects of large firm restructuring, this clearly illustrates the ambivalent nature of close regional ties, providing both opportunities and constraints at the same time (for a more pessimistic view with regard to the Ruhr Area, compare Grabher 1993).

In addition to this, considerable organisational and financial support by public institutions and intermediary organisations played an important role, above all with respect to multilateral co-operation. Here, the strong position of national business associations, such as the VDMA or the ZVEI ('Zentralverband Elektrotechnik- und Elektronikindustrie'), in setting up joint international projects should be mentioned. Another function of business associations actively used by the firms has been that of international harmonisation of standards and norms. The owner managers of S.Kuhn, Parsunke, Biberkopf and Gagsteiger all are members of various commissions and working groups at the European level. On the one hand, influence is used to create better starting positions as compared to competitors within EU-member states. Of at least equal importance, however, is the defence of market positions against low price competitors from Eastern Europe by imposing technological 'minimum standards'. In sum, power and influence is used to defend the firm's competitive position via the exclusion of other capitals. Influence at the national level and co-operation with other firms is

used to prevent foreign firms from extending their markets and to limit competition, thus cushioning against the effects of international competition and effectively blocking international integration.

National and regional place dependence and the deepening of regional ties

Successful product and market diversification at the international level was mainly due to embeddedness in traditional, predominantly regional relations. Some firms even managed successfully to deepen and strengthen their ties to regional multinationals, assuming a position as preferential supplier and to some extent binding the corporations to themselves and the region. S.Kuhn and Reinhold, for instance, improved their positions in the social DOL in the wake of reorganisation efforts of important clients such as Mannesmann-Demag or Ruhrkohle (compare Table 5). The favourable position of S.Kuhn is illustrated by frequent visits from sales managers together with potential international clients as part of acquisition efforts. In this context, interview partners stressed that they actively seek strong personal bonds with their business partners in order to protect against competitive pressures. A manager of Meck:

CB: "How did you solve your problems [with competitive pressure]?"

Meck: "We always try to be better. But also by binding our clients personally to us, by establishing personal relations, by committing ourselves personally. In doing so, we try to protect ourselves against low price competition."

(Interview, 18.9.1995)

Efforts to deepen existing, traditional relations, and to cushion against the market mechanism have to be seen in the light of turbulence in political-economic space. Businesses reacted to the changing and apparently extended social DOL by relying on traditionally evolved 'secure' relations. In times of economic

uncertainty firms therefore looked at routinised regional interaction and thus at institutional close relations. Here, institutional and geographical proximity condition each other. In yet another manifestation of the ambivalence of close regional ties, it should be added that short-term protection against environmental pressure through reliance on traditional, regional relations may in the long-run result in a lock-in into stable networks and possibly obstruct a firm's capacity to innovate in the future. As Kern (1997) has recently argued this appears to be a general problem of the inter- and intra-firm relations associated with the German Model.

The fact that power relations between the partners are far from symmetric can be illustrated using the certification according to the ISO-norms (International Standardisation Organisation) as an example. All interviewees reported that they have been required to certify their production facilities by large customers as a precondition for orders. By using their power over suppliers, large firms avoid having themselves to conduct expensive supplier audits as part of their certification process. Given that certification is often demanded by their international customers, multinationals like Mannesmann or Ruhrkohle socialise the costs associated with it by shifting them to regional suppliers (additional source: Senior Representative, Purchasing Division, Ruhrkohle Bergbau AG, 6.5.96).

On the other hand sample firms used power asymmetries in their relations to smaller, regional suppliers to transmit the pressure stemming from their key customers. This is illustrated by the following further quote from the interview with the owner-manager of Parsunke:

“...there is a nice saying - large firms go away, small firms go bust. Obviously, we want to avoid this. Thus, our suppliers will in turn feel the effects of that. We tell them, either you are able

to deliver cheaper supplies or we have to look for other sources in the New Länder, in the Czech Republic, in Poland...”

(Interview, 16.10.1995)

This is an example of the extent to which restructuring in space is connected with restructuring in situ. Smaller regional suppliers are confronted with threats to relocate production and purchases to the New Länder and Eastern Europe. In doing so, sample firms disembed and marketise their close and traditionally evolved relations to regional suppliers. A look across the spatial scale hierarchy clearly illustrates that responses to a changing environment at the international and national level can result in a transformation and restructuring at the regional level. Changes in the political-economic context result in a transformation of the relations with key customers and consequently in a further modification of the firms' immediate environment. It should be added that less favourable positions in the social DOL left some firms, such as Bauer+Morgott and Mair, with considerably fewer options to restructure inter-firm relations. Both firms therefore became even more dependent on traditional clients and activities and were forced to rely on the devaluation of labour (i.e. the reduction of the workforce; see below) or capital (i.e. Mair's bankruptcy) as 'strategic' responses.

Paradoxically, given the vertical disintegration strategies adopted by the sample firms and the fact that more specialised and complex inputs are to a large extent still sourced regionally, the firms have 'disembedded' relations at the same time as they get potentially more dependent on them. Problems, such as meeting lead times and general difficulties in finding adequate additional supplies at times of increasing demand, as witnessed by Gagsteiger, Reinhold or Biberkopf, may be first hints in this context. Traditional and co-operative relations, once revoked are extremely difficult to revive again. This problem of non-substitutability illustrates the dependence of firms on regional ties. Notwithstanding their better position within the social division of labour, this contradiction between regional place

dependence and restructuring in space does also hold for Ruhr transnationals and their relations to sample firms.

With respect to multilateral co-operation, the establishment of business groups played an important role as a response to the changing political-economic context. Three firms, Meck, Biberkopf and Papke, set up or got involved in multi-firm business groups during the last five years. Of special interest is the strategy of Meck, a metal-processing firm which has recently started to diversify forward, significantly increasing its value-added. Deliberately modelled on the example of the Swedish group Ericsson, Meck has been one of the driving forces behind the establishment of a complex network of firms in Germany which consists of three regional sub-groups with two leading firms. Relations between the companies are diverse, ranging from cross-capital linkages and parent-daughter relations to looser forms of co-operation. The two leading firms (one of them Meck) assume the roles of 'planets' around which smaller firms cluster regionally as 'satellites'. Power relations between firms consequently vary considerably. If based on capital stakes and ownership (mostly vertically between planets and satellites) they are asymmetric and hierarchical, without capital dominance (e.g. horizontally between planet firms) they are more symmetric and mutually co-operative, the DOL becoming 'technicised'. National R&D co-operation, for instance, was crucial for efforts to diversify forward from merely galvanising metal to the development of own products.

At the regional level more powerful firms like Meck co-ordinate vertical 'networks' to react 'flexibly' to increasingly volatile orders, with smaller firms being used as buffers. The interviewee explicitly pointed to increased relocation of production to Eastern Europe on the part of traditional regional customers as the source of the increasing demand uncertainty. Collaboration also involves the intra-regional pooling of labour, and according to the respondent allowed Meck to avoid large scale job losses (see Table 3). The commitment

needed to organise these regional 'networks' required the integration of formerly independent smaller firms in a corporate hierarchy despite regional and supposedly institutional proximity (internalisation of the social division of labour).

Asked about the advantages of the whole network, the interviewee pointed to the pooling of resources and information (labour regionally, R&D nationally) and the protection against domestic and international competitors; in other words: the socialisation of risks associated with changes in political-economic space. All in all, Meck constitutes an example where as a consequence of restructuring of larger regional customers some regional links are loosened (e.g. the national extension of its R&D activities and sales) and others (e.g. capital-labour relations) are profoundly reorganised and transformed.

In sum, it seems to be reasonable to argue that the main activities during the period covered have been to use strategic power at the regional and national level to resist and cushion changes in political-economic space. Insofar as activities are directed against negative consequences of internationalisation, there is a contradiction with the interviewees' globalisation rhetoric. Demands for a facilitation of internationalisation contrast with actual practice.

Place dependence and capital-labour relations

The conflictual relation between local and regional place dependence and restructuring in space can be further illustrated by moving to the level of the individual firm. Vertical authority structures and the technical division of labour constitute a crucial arena for strategic actions, resistance and counter-measures. From the perspective of the individual worker, it is labour which bears the brunt of the costs of restructuring (compare the significant job cuts in Table 3). As a manager at Papke put it:

“We are in a permanent rationalisation process, less and less employees, faster times, better machines, better organisation, in order to achieve even faster times...”

(Interview, 13.9.1995)

Looking at the strategies employed vis-à-vis the remaining workforce, sample firms adopted a dual policy. On the one hand, an all-in-one-boat philosophy is used, a ‘call to arms’ in the face of economic competition and state over-reglementation. Workers council representatives and regional union officials confirmed this internal ‘moving-together’ and a co-operative impulse in the wake of external pressure. Increasing competition within the social DOL resulted in affinity of interests between employers and employees. As the interviews have shown, this affinity is manifested in similar views and interpretations of the processes at work, in other words in institutional proximity.

On the other hand, labour is confronted - either directly or indirectly - with exit threats and relocation of production, and with demands for concessions (e.g. longer working hours without full compensation). Co-operative and authoritarian elements thus exist side-by-side. It is important to note that both are linked together. Co-operation can be enforced, an aspect which is generally absent in the debate on embeddedness and collective action.

Again the degree of substitutability and power asymmetries play an important role in explaining different manifestations of these processes. Owners and manager stressed that it has predominantly been low-skilled employment which was cut down. Significant overall problems in recruiting skilled labour (‘Facharbeiter’) which were frequently reported by the interviewees and labour market regulation led to short-term numerical flexibility being a less favourable option here. Given the increasing dependence of firms on skilled labour in the wake of technological and organisational learning and the fact that workforces of the sample firms show

extremely high rates of union membership (with rates of 60 to 80% and up to 95% in the case of Reinhold), skilled labour has the potential power to resist changes. For instance, when in 1988 the owner-manager of Reinhold took over the traditional mining supplier in a Management-Buy-Out and employed four members of the construction department of a regional large firm which he had headed earlier, he met considerable resistance from the ranks of the incumbent middle management. As a consequence, he faced problems in his attempt to change the firm's internal organisation during the following years. Faced with the unsettling of the internal labour 'market', a traditionally established institution at the firm, in order to bring in new organisational ideas and concepts, the work force refused to co-operate and the project was thus almost doomed to failure (Additional source: Workers Council Representative, 13.5.1996). This is another example, this time with regard to capital-labour relations, where different 'ways of doing things' collide and where institutional distance increases in the course of restructuring. However, this example also makes clear the extent to which there may be diverging interests between 'core' and 'periphery' employees (e.g. due to different positions in the technical DOL), qualifying one-sided interpretations which reduce all processes to conflicts between capital and labour. Given the demands for labour market deregulation in the 'globalisation' debate and the fact that successful product and organisational innovation normally depends on the trust and co-operation of the workforce, this example also reveals a further contradiction in the interviewees' rhetoric.

Concluding Remarks

During the last five years sample firms were confronted with increasing competition and pressure in their environment. Internationalisation and a spatially extended social division of labour was responsible for the turbulence in the firms' political-economic space and resulted in uncertainty with regard to strategic responses. The businesses had significant problems in expanding the scale of

their organisational space internationally, above all in cases where co-operation included attempts to develop new products and diversify markets. The move across national borders was accompanied by increasing institutional distance, manifested in different views and conflicts of interest between interaction partners, with differences arising from general political-economic as well as from more specific structures. Firms therefore had to realise the extent to which they are rooted in distinct institutional contexts, be it at the national or the regional level. All in all, increasing institutional distance and place dependence became visible in organisational interaction, amplified the organisational commitment needed to stabilise the situation, and ultimately obstructed restructuring in space.

Sample firms nevertheless managed - at least judged from turn-over and profit figures - to resist or to adapt to the changes in their environment (see Table 1). This was however mainly due to the utilisation of favourable power positions and of contacts at the regional and national level. In addition to restructuring in space firms predominantly continued and restructured existing regional relations, building on traditionally evolved and institutional close ties. Firms thus reproduced and transformed relationships on which they have been traditionally dependent. Power was used to cushion against changes in political-economic space and thus against internationalisation. On the one hand, relations to traditional regional clients were actively reembedded, reverting to institutionally close contacts in times of economic turbulence. In the same vein, firms fostered co-operative relations to the workforce in the face of the increasingly hostile political-economic environment. On the other hand, external pressure and the costs of reembedding were transmitted to traditional regional suppliers and the workforce, with formerly more co-operative relations assuming an increasingly competitive and authoritarian character.

Strategies to co-ordinate a changing and expanding DOL revealed a complex and interrelated juxtaposition between co-operation and competition. Strategic responses vary according to the power resources actors can draw on and the strength of the forces at work. Decisions have to be made about how to respond to pressure and how to transmit and distribute the consequences internally (i.e. within the firm) or externally (i.e. outside the firm). Different positions in the social and the technical DOL or the firm hierarchy give rise to different measures with varying consequences for the firms, their suppliers, their clients, their competitors and labour. Whether pressure stemming from political-economic space is transmitted to other firms or to the workforce or parts of the workforce therefore rests with the power relations between the actors. With respect to relations to other firms and skilled labour sample firms had thus to experience their dependence on both sets of actors, given their limited scope to substitute either skilled workers or clients and suppliers in the short to medium term. The higher the degree of non-substitutability, the greater the potential for resistance and thus the degree to which firms are spatially bound and locked in. In sum, in cases of diverging interest and different views of a situation, other potentially weaker actors were able to resist and even block reorganisation efforts.

Given the rootedness of relations in different institutional contexts and place dependence at different scales, restructuring strategies had profound spatial consequences. Case-study firms illustrate that processes at 'higher' spatial scales play an important part in the formulation of strategic responses. From a local or regional perspective 'globalisation' and inter-regional competition is used to elicit favourable conditions in situ, even if these threats only rarely translate into practice. To take up a point made by Swyngedouw (1997): at the same time as businesses restructure in space and change the importance and role of certain geographical scales (e.g. the reduction of regional sales; the movement across national borders), the importance and role of the same spatial scales are being

re-asserted and transformed in other areas (e.g. the active use of existing regional ties; the regional and local restructuring of capital-labour relations). The fact that relations in the firms' organisational space have been partially transformed illustrates the active structuring role of the actors and the spatially uneven effects of firm strategies.

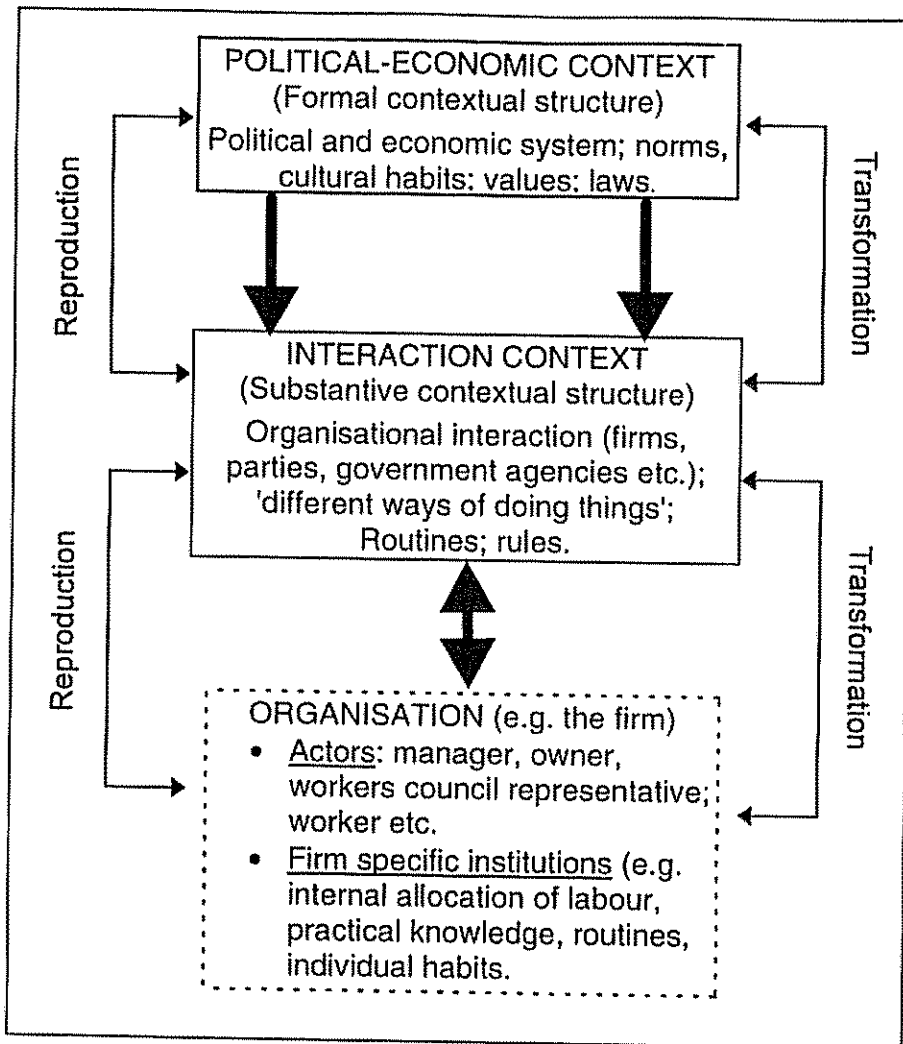
To conclude, the conflictual impact of institutional distance and place dependence revealed the complexity of business strategies and a stark contrast with the interviewees' globalisation rhetoric. This contrast between rhetoric and practice is a result of the fact that firms had to come to terms with the simultaneous co-existence of co-operation with competition in interaction relations which posed obstacles to restructuring. With a view to the sample firms and possibly also with respect to the German social economy more generally these tensions are not likely to be solved by the deregulation measures demanded in a discourse which regards 'globalisation' as entirely unproblematic and neglects issues of place dependence and institutional differences.

Notes

1. Mittelstand is a widely used and ambiguous term in Germany. Here, industrial Mittelstand will be defined as independent small and medium-sized manufacturing firms.
2. The aspect of globalisation which constitutes the focus of this paper, the profound deepening and spatial extension of the division of labour as a result of corporate strategies, should still more adequately be described as internationalisation, given that the processes associated with it tend to be largely confined to inter-state relations. In this essay the focus will be on globalisation as a powerful metaphor, a rhetorical device with which to justify restructuring strategies and measures.
3. State de-regulation measures should be understood in the sense of de-reglementation and not in the sense used by the regulationist school (see Boyer 1990; Tickell and Peck 1992). It should be added, however, that this does not mean that state reglementation cannot become part of a wider regulatory fix.
4. For instance, as recently as 1994 the Ruhr produced about 40,000 tonnes of coal per year and still had about 80,000 miners amongst its working population (source IHKn 1995; the numbers in Table 1 include additional activities in the mining industry).
5. For reasons of confidentiality the names of the 11 Mittelstand firms have been changed.

FIGURES AND TABLES

Figure 1: The business firm, organisational interaction and the political-economic context



Adapted from Layder 1981.

Table 1: Macro-economic indicators for the Ruhr Area and Germany

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Mining Employment (1000)	RA	245	240	232	228	227	220	210	199	188	178	167	145
Unemployment	RA	10.1	13.2	14.3	14.7	14.7	15.2	15.7	12.7	11.7	10.3	10.3	11.9
(annual average)	G	7.5	9.1	9.1	9.3	9.0	8.9	8.7	7.9	7.2	6.3	6.6	8.2
Manufacturing	RA	102	102	108	114	104	102	108	113	118	123	122	113
Turn-over ¹	G	107	110	117	125	123	123	131	142	152	163	163	152
Value added	RA	108	112	117	123	125	127	131	131	140	151	157	
(DM per capita) ¹	G	109	115	121	126	133	138	144	150	160	172	181	

Notes: RA = Ruhr Area; G = West Germany. ¹ Index: 1980 = 100

Sources: Bundesanstalt für Arbeit; Kommunalverband Ruhrgebiet; own calculations

Table 2: Regional conglomerates

Rank 1995	Corporation	Headquarters	Sector	Turnover 1995	
				DM (million) ¹	Percentage Exports
<i>Germany (Europe)</i>					
4	(8) Veba	Düsseldorf	Energy, Chemicals	66323	30.0%
5	(14) RWE	Essen	Energy, Construction	52913	16.5%
11	(26) Thyssen	Düsseldorf/Duisburg	Steel, Engineering, Services	39123	46.0%
34	(31) Mannesmann	Düsseldorf	Engineering, Steel	32094	56.0%
17	(40) Ruhrkohle	Essen	Mining, Chemicals	24696	13.7%
18	(43) Krupp-Hoesch	Essen	Steel; Engineering	23535	55.0%
26	(76) Ruhrgas	Essen	Energy	13658	9.0%
37	(-) VEW	Dortmund	Energy	8546	1.0%
38	(-) Deutsche Babcock	Oberhausen	Engineering	8319	44.0%

Note: ¹ Excluding tax

Sources: Company Reports; *Die Zeit* 9.8.96, 27.9.96

Table 3: Mittelstand firm indicators

<i>Firm</i>	<i>Activity</i>	<i>Foundation</i>	<i>Employment 1995</i>	<i>Employment 90-95</i>	<i>Turnover 1995 (DM mill)</i>	<i>Turnover 1990-95</i>	<i>International Inputs 1995</i>	<i>Regional³ sales (% of turnover)</i>	<i>Exports (% of turnover)</i>	<i>Profits/Losses 1990 - 1995</i>
Bauer+ Morgott	Electrical/ Mechanical Engineering	1946	50	-38%	12	-14%	n.a.	60-70%	6-7%	+ - - - - 0
Parsunke	Electrical Engineering	1922	390	-14%	60	+28%	ca. 5%	50-60%	5%	+ + + + + +
S.Kuhn	Mechanical Engineering	1955	62	+24%	20	+18%	ca. 30%	40-50% ⁴	40%	+ + + + + +
Mair ¹	Metal Processing	1867	100	-33%	17	-19%	n.a.	40-50%	<5%	+ + - - - -
Meck	Metal Processing	1889	150	±0	30	+67% ⁵	ca. 40% ⁶	70-80%	10% ⁷	+ + + + + +
Kundmüller	Engineering	1945	700	-13%	60	-8%	ca. 5%	80-90% ⁴	<5%	+ + + + - +
Biberkopf	Mechanical Engineering	1907	270	-13%	65	+25%	n.a.	40-50%	5-8%	n.a.
Papke	Machinery Equipment, Parts	1936	200	-17%	35	-8%	ca. 20%	30-40%	5%	n.a.
Gagsteiger	Machinery Equipment, Parts	1884	205	-33%	63	+24%	ca. 40%	30-40%	25%	+ + - - - +
Schramel	Metal Products/ Wire Products	1920	86	-9%	20	+33%	ca. 50% ⁵	20-30%	40-50%	+ + - - - +
Reinhold	Mechanical Engineering	1955	140	+33% ²	22	+83% ²	ca. 10%	60-70%	10%	+ + + + + +

Notes: ¹ Mair had to declare itself bankrupt in February 1996. ² Predominantly due to the take-over of mining products from a division closed by Preussag. ³ Northrhine-Westphalia. ⁴ Partly including 'indirect' sales to national and international customers via regional corporations (general contractors). ⁵ Predominantly due to 'tertiarisation' (i.e. increasing emphasis on trading). ⁶ Including purchases of zinc; extreme volatility due to market listing in London. ⁷ Figure for the whole business group

Table 4: Crucial contacts for innovation, product and market diversification at the international level

	<i>Bilateral</i>	<i>Multilateral</i>
S. Kuhn	-Clients -JV: SME (France, Marketing) -Regional Large firms (Clients) -National Large firms (Clients) -Regional Institutions	-National Business Associations
Papke	-Clients -National Large Firms (Clients) -Supplier (Czech Republic)	
Biberkopf	-Clients -Regional Large firms (Clients)	-National Business Associations -ST: National Business Group (Netherlands) -Regional Competitors, Länder Government
Schramel	-Clients -OS: Subsidiary (Czech Rep.) -JV: Competitor (France, Marketing)	-National Business Associations
Kundmüller	-Regional Large firms (Clients) -National Large firms (Clients)	
Gagsteiger	-JV: Client (Netherlands; R&D)	-National Business Associations
Reinhold	-Marketing Partner -Regional Large firms (Clients)	-Regional Competitors, Länder Government
Mair	-Regional Large firms (Clients)	
Bauer+Morgott		-Regional Competitors, Länder Government
Parsunke	-Regional Large firms (Clients) -National Business Associations	-National Business Associations
Meck		-ST: National Business Group (Netherlands)

Notes: 'Institutions' = Universities, Polytechnics, Research Agencies; OS = 100% Ownership; JV = Joint Venture; ST = Stake; SME = Small and medium-sized firms; CIC = Chamber of Industry and Commerce

Table 5: Crucial contacts for innovation, product and market diversification at the national and regional level

	National (bilateral)	(multilateral)	Regional (Agglomeration Rhine-Ruhr) (bilateral)	(multilateral)
S.Kuhn	- Regional Large Firms (Clients) - Large Firms (Clients) - Institutions - Suppliers	- Business Associations (VDMA, DIN)	- Large Firms (Clients) - Suppliers (SME) - Institutions	- Business Associations (VDEH)
Papke	- Large Firms (Clients) - OS: Subsidiary (New Länder) - Institutions		- Institutions - CIC	- National Business Association - ST/OS: Business Group - Competitors (SME)
Biberkopf	- Large Firms (Clients)	- ST: Business Group - Business Association (VDMA)	- Large Firms (Clients) - Suppliers (SME) - Institutions	- National Business Association - ST/OS: Business Group
Schramel	- Clients (SME; Large Firms) - Suppliers	- Business Associations	- Large Firms (Clients) - Clients (SME) - Institutions - CIC - Suppliers	
Kundmüller	- Large Firms (Clients)		- Large Firms (Clients) - Competitors (SME) - Institutions	
Gagsteiger	- Clients - OS: Subsidiary (New Länder) - Institutions	- Business Associations	- Large Firms (Clients, Competitors) - Institutions	
Reinhold	- Large Firms (Competitor) - Institutions		- Large Firms (Clients, Competitors) - Competitors (SME) - Suppliers (SME) - CIC	
Mair	- Large Firms (Clients) - OS: Subsidiary (New Länder)	- Business Association (VDMA)	- Large Firms (Clients) - Institutions	- Business Association
Bauer+ Morgott	- Large Firms (Clients)		- Large Firms (Clients)	
Parsunke	- Large Firms (Clients; Competitor) - Institutions	- Business Associations (ZVEI; DIN)	- Large Firms (Clients) - Institutions - CIC	- Business Association
Meck	- Large Firms (Clients) - Institutions - Clients (SME)	- ST/OS: Business Group - Business Associations	- Clients - Suppliers (SME) - Institutions	- ST/OS: Business Group - National Business Associations

Notes: See table 4 for explanations.

References

- Abernathy, W., Clark, D. and Kantrow, E. (1983) *Industrial renaissance - producing a competitive future for America*, Basic Books, New York.
- Amin, A. and Thrift, N. (1995) "Globalisation, institutional "thickness" and the local economy". in P. Healey et al. (eds), *The new urban context*, Wiley, Chichester, pp. 91-108.
- Berndt, C. (1995) "Regeneration altindustrieller Regionen in Deutschland und Großbritannien", *Geographische Rundschau*, 47, 10, pp. 579-584.
- Boyer, R. (1990) *The regulation school - a critical introduction*, Columbia University Press, New York.
- Butzin, B. (1995) *Zur Zukunft des Ruhrgebietes: Eine Spurensuche*, Kommunalverband Ruhrgebiet, Essen.
- Castells, M. (1996) *The rise of the network society*, Basil Blackwell, Oxford.
- Cox, K. (1996) "Period and place, capitalist development, and the flexible specialisation debate", in D.C. Knudsen (ed.), *Transition to flexibility*, Kluwer, Boston, ch.10.
- Cox, K. (1997) "Putting space in its place - globalisation and geographies of struggle in the late twentieth century", in Lee, R. and J. Wills (eds), *Society, place, economy - states of the art in economic geography*, Edward Arnold. (forthcoming)
- Cox, K. and Wood, A. (1997) "Competition and co-operation in mediating the global - the case of local economic development", *Competition and Change*, (forthcoming)

- Danielzyk, R. and Wood, G. (1993) "Restructuring old industrial and inner urban areas - a contrastive analysis of state policies in Great Britain and Germany", *European Planning Studies*, 1, 2, pp. 123-147.
- David, P. (1985) "Clio and the economics of QWERTY", *American Economic Review*, 75, pp. 332-337.
- Dicken, P. and Thrift, N. (1992) "The organisation of production and the production of organisation: why business enterprises matter in the study of geographical industrialisation", *Transactions of the IBG, N.S.*, 17, pp. 279-291.
- Gertler, M.S. (1995a) "Manufacturing culture: the spatial construction of capital", Paper presented at the Annual Conference of the Institute of British Geographers, University of Northumbria, Newcastle upon Tyne, January 3-6.
- Gertler, M.S. (1995b) "'Being there' - proximity, organisation, and culture in the development and adoption of advanced manufacturing technologies", *Economic Geography*, 71, 1, pp. 1-26.
- Giddens, A. (1984) *The constitution of society*, Polity Press, Cambridge.
- Grabher, G. (1993) "The weakness of strong ties - the lock-in of regional development in the Ruhr Area", in G. Grabher (ed), *The embedded firm - on the socioeconomics of industrial networks*, Routledge, London, pp. 255-277.
- Grabher, G. (1994) *Lob der Verschwendung*, Edition Sigma, Berlin.

- Granovetter, M. (1985) "Economic action and social structure - the problem of embeddedness", *American Journal of Sociology*, 91, 3, pp. 481-510.
- Granovetter, M. (1994) "Business groups", in Smelser, N.J. and R. Swedberg (eds), *The handbook of economic sociology*, Princeton University Press, Princeton, pp. 453-475.
- Hamilton, W. (1932) "Institution", in Seligman, E.R.A. and A. Johnson (eds), *Encyclopaedia of the social sciences*, 8, pp. 84-89. (reprinted in Hodgson, G. (ed) (1993), *Economics of institutions. The International Library of critical writings in economics*, 33, Edward Elgar, Aldershot, pp. 3-9)
- Harvey, D. (1982) *The limits to capital*, Basil Blackwell, Oxford.
- Hassink, R. (1992) "Regional innovation policy: case studies from the Ruhr Area, Baden-Württemberg and the North-East of England", *Netherlands Geographical Studies*, 145, Utrecht.
- Hayek, F. (1937) "Economics and knowledge", *Economica*, 4, 1, pp. 33-54.
- Hodgson, G. (1988) *Economics and Institutions*, Polity Press, Oxford.
- Hodgson, G. (1993) "Introduction", in Hodgson, G. (ed), *Economics of institutions. The International Library of critical writings in economics*, 33, Edward Elgar, Aldershot.
- Hudson, A. (1996) *Globalisation, regulation and geography - the development of the Bahamas and the Cayman Islands offshore financial centres*, unpublished PhD-dissertation Department of Geography, University of Cambridge.

- Hundt, D. (1996) *Die Regelungskompetenz der Betriebe muß erhöht werden*, Handelsblatt (Online: http://www.handelsblatt.de/hb/kurs_2010/26.htm, 17.10.96).
- Industrie- und Handelskammern des Ruhrgebiets (= IHKn) (1995) *Konjunkturbericht - Jahresbeginn 1995*. Essen.
- Kern, H. (1997) *Vertrauensverlust und blindes Vertrauen - Integrationsprobleme im ökonomischen Handeln*, unpublished manuscript.
- Kilper, H. and Rehfeld, D. (1994) "Konzern und Region - Bilanz einer vergleichenden Analyse von Monatn- und Automobilregionen", in Kilper, H. and D. Rehfeld (eds), *Konzern und Region: Zwischen Rückzug und Integration*, LIT Verlag, Münster, pp. 317-330.
- Langlois, R.N. (1988) "Economic change and the boundaries of the firm", *Journal of Institutional and Theoretical Economics*, 144, pp. 635-357 (reprinted in Hodgson, G. (ed) (1993), *Economics of institutions. The International Library of critical writings in economics*, 33, Edward Elgar, Aldershot)
- Layder, D. (1981) *Structure, interaction and social theory*, Routledge and Kegan Paul, London.
- Lundvall, B.-A. (1992) "User-producer relationships, national systems of innovation and internationalisation", in Lundvall, B.-A. (ed), *National systems of innovation - towards a theory of innovation and interactive learning*, Pinter, London, pp. 45-67.
- Markusen, A. (1994) "Studying regions by studying firms", *Professional Geographer*, 46, 4, pp. 477-490

- Martin, R. (1994) "Economic theory and human geography", in D. Gregory, R. Martin and G. Smith (eds), *Human geography - society, space and social science*, Macmillan, London, pp. 21-53.
- Marx, K. (1976) *Capital Vol. 1*, Penguin, Harmondsworth.
- Moulaert, F. (1996) "Rediscovering spatial inequality in Europe: Building blocks for an appropriate 'regulationist' analytical framework", *Environment and Planning D*, 14, S. 155-79.
- Nelson, R. (1994) "Evolutionary theorising about economic change", in Smelser, N.J. and R. Swedberg (eds), *The handbook of economic sociology*, Princeton University Press, Princeton, pp. 108-136.
- Nohria, N. and Gulati, R. (1994) "Firms and their environments", in Smelser, N.J. and R. Swedberg (eds), *The handbook of economic sociology*, Princeton University Press, Princeton, pp. 529-555.
- Painter, J. and Goodwin, M. (1995) "Local governance and concrete research - investigating the uneven development of regulation", *Economy and Society*, 24, 3, pp. 334-356.
- Portes, A. and Sensenbrenner, J. (1993) "Embeddedness and immigration: notes on the social determinants of economic action", *American Journal of Sociology*, 98, 6, pp. 1320-1350.
- Pratt, A. (1997) "The emerging shape and form of innovation networks and institutions", in Simmie, J. (ed), *Innovation, networks and learning regions?* Jessica Kingsley, London, pp. 124-136.

Rehfeld, D. (1995) "Disintegration and reintegration of production clusters in the Ruhr Area", Cooke, P. (ed) *The rise of the rustbelt*, London.

Sachverständigenrat (1988) "Wirtschaftliche Erneuerung altindustrieller Problemregionen: das Beispiel Ruhrgebiet", in Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, *Arbeitsplätze im Wettbewerb*, W. Kohlhammer, Stuttgart, pp. 183-210.

Saxenian, A. (1994) *Regional advantage - culture and competition in Silicon Valley and Route 128*, Harvard University Press, Cambridge.

Sayer, A. (1988) "Uneven development and the social division of labour", *Urban and Regional Studies Working Paper 67*, University of Sussex.

Sayer, A. (1995) *Radical political economy - a critique*, Basil Blackwell, Oxford.

Sayer, A. and Walker, R. (1992) *The new social economy - reworking the division of labour*, Basil Blackwell, Oxford.

Schamp, E.W. (1995) "Arbeitsteilung, neue Technologien und Regionalentwicklung", in Barsch, D. and H. Karrasch (eds), *Verhandlungen des 49. Deutschen Geographentages*, B and 1: Umbau alter Industrieregionen, Steiner Verlag, Stuttgart, pp. 71-84.

Scharpf, F.W. (1993) "Coordination in hierarchies and networks", in F.W. Scharpf (ed), *Games in hierarchies and networks - analytical and empirical approaches to the study of governance institutions*, Campus Verlag, Frankfurt, pp. 125-166.

- Simmel, G. (1903) "Soziologie der Konkurrenz", *Neue Deutsche Rundschau*, 14, pp. 1009-1023.
- Storper, M. and Walker, R. (1989) *The capitalist imperative*, Basil Blackwell, New York.
- Süddeutsche Zeitung (= SZ), 10.1.96: *Die Konjunktur hat einen Knick bekommen: Weiterer Arbeitsplatzabbau im Mittelstand - VMU-Präsident kritisiert Bundesregierung.*
- Süddeutsche Zeitung, 28.2.96: *Klagen mitten im Boom: Der deutsche Werkzeugmaschinenbau bangt um sein Überleben.*
- Swyngedouw, E. (1997) "Neither global nor local - "glocalisation" and the politics of scale", in K. Cox (ed.), *Spaces of globalisation: reasserting the power of the local*, Guilford Press, New York, pp. 137-166.
- Tickell, A. and Peck, J. (1992) "Accumulation, regulation and geographies of post-fordism: Missing links in regulationist research", *Progress in Human Geography*, 16, S. 190-218.
- Walker, R. (1985) "Class, division of labour and employment in space", in Gregory, D. and J. Urry (eds), *Social relations and spatial structures*, Macmillan, Houndsmills, pp. 164-190.
- Williamson, O.E. (1985) *The economic institutions of capitalism*, Free Press, New York.
- Zukin, S. and P. DiMaggio (1990) "Introduction", in Zukin, S. and P. DiMaggio (eds), *Structures of capital - the social organisation of the economy*, Cambridge University Press, Cambridge, pp. 1-36.