ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Hospers, Gert-Jan

Article — Published Version

Restructuring Europe's rustbelt: The case of the German Ruhrgebiet

Intereconomics

Suggested Citation: Hospers, Gert-Jan (2004) : Restructuring Europe's rustbelt: The case of the German Ruhrgebiet, Intereconomics, ISSN 0020-5346, Springer, Heidelberg, Vol. 39, Iss. 3, pp. 147-156

This Version is available at:
https://hdl.handle.net/10419/41768

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

Gert-Jan Hospers*

Restructuring Europe's Rustbelt

The Case of the German Ruhrgebiet

With the enlargement of the European Union its "Rustbelt", the mosaic of regions traditionally specialised in heavy industries such as coal and steel, will also be enlarged. The new member states in Eastern Europe have many regions that face industrial decline and need to be restructured. What can these traditional industrial areas learn from the case of the German Ruhrgebiet, one of Europe's most prominent examples of regional industrial restructuring?

Since the mid-1970s, the economy-wide process of structural change has resulted in substantial decline and rising unemployment in many of Europe's older industrial regions. Ironically, those very areas that were the forerunners of the Industrial Revolution had to give way to new growth poles in the European economy. In particular regions specialised in "smokestack" industries such as coal, iron and steel, heavy engineering, textiles and shipbuilding have been hard hit by industrial decline.[1] The widespread effects of this de-industrialisation process can be seen clearly over the years in the steady increase in the number of European regions that were designated as Objective 2 areas by the European Commission. Jointly, this regional mosaic of traditional industries, including such areas as the West Midlands, Wales, Flanders, the Ruhrgebiet, North-Pas-de-Calais, Lorraine and the Basque Country might be termed Europe's "Rustbelt".[2] With a mix of strategies European, national and local authorities have been trying to rejuvenate these traditional regions for many years. The Ruhrgebiet, Wales and North-Pas-de-Calais are prominent examples of areas where local parties have pursued such restructuring policies with varying degrees of success.

In the coming years the issue of how to deal with regional industrial decline will be high on the European policy agenda again as the enlargement of the European Union with member states from Eastern Europe will result in a significant expansion of Europe's Rustbelt. Especially in Poland, Hungary, the Czech Republic, Slovakia and Slovenia many regional economies are still highly dependent upon smokestack industries.[3] Although the shakeout in inefficient heavy manufacturing has been under way during the last decade, the restructuring of these traditional industrial regions is anything but completed. To give an example: the "GOP" (industrial area) in Silesia, Poland's major economic area with industrial conurbations such as Kattowice, is still completely dominated by mining and steel production. These industries employ many of the region's 6 million inhabitants. Coal and steel have not only shaped the region's socio-economic structure, but also its landscape: because of the enormous pollution problems in the GOP, public authorities have denoted it an "ecological disaster area" that should be restructured as soon as possible.

From the above it is clear that regional industrial decline once more is a topical European problem demanding appropriate and timely policy responses. In this context, the lengthy experiences of older industrial regions in Western Europe with restructuring might provide inspiration on how to deal with the problems in the accession countries. This article analyses such an inspiration source, the case of the German Ruhrgebiet. This region is perhaps Europe's most well-known example of an old industrial area in which structural change has been occurring for about forty years.[4] The article is organised as follows. First, to place the case in context, we give a rough sketch of the Ruhrgebiet and its economy. Next, we study the

* Professor of Strategic Management at Saxion Universities for Applied Sciences and Assistant Professor of Economics at the University of Twente, both located in Enschede, The Netherlands. Parts of this paper have been written while on sabbatical leave at the Faculty of Economics at the University of Münster, Germany. The author would like to thank Frans Boekema, Aloys Prinz, Albert Steenge and Burckhard Wetterau for generous support and valuable advice.

[1] R. Hayter: The Dynamics of Industrial Location, Chichester 1997, John Wiley & Sons.

[2] P. Cooke (ed.): The Rise of the Rustbelt, London 1995, UCL Press.

[3] IPTS (Institute for Prospective Technological Studies): The Competitiveness Map: Avenues for Growth, Sevilla 1999, IPTS; G. Hutschenreiter, M. Knell, S. Radosevic: Restructuring Systems of Innovation in Countries of Central and Eastern Europe, Cheltenham 1999, Edward Elgar; W. Meske, K.M. Weber: European Union enlargement: economic restructuring in candidate countries and the role of technological change and education, in: Science and Public Policy, Vol. 28, 2001, pp. 154-168.

[4] P. Cooke (ed.), op. cit.; R. Hayter, op. cit.

re-industrialisation strategies that have been pursued in the Ruhr as well as the associated problems caused by regional lock-in. This is followed by a look at the bottom-up approach of regional neo-industrialisation and an assessment of the restructuring efforts of the Ruhrgebiet and the area's future. Finally, we trace some implications the Ruhr case has for the way in which Europe's expanding Rustbelt might be restructured.

A Sketch of the Ruhrgebiet

Traditionally, the German Ruhrgebiet, situated in the Federal State of North-Rhine Westphalia, has been the largest industrial centre in Europe. With its 5.5 million people in an area of 4,400 square kilometres the region is also one of Europe's most densely populated conurbations.[5] The Ruhrgebiet is neither a historical nor a political entity but rather a functional area with a distinct economic specialisation (coal and steel) mainly based on its geography. Seen in geological terms, the Ruhrgebiet belongs to the north-west European coal belt running from Silesia through the Ruhr, Belgium and Northern France to England. Although coal is its common geographic denominator, the area does not possess a single uniform landscape. The Rhine marks the western border of the Ruhrgebiet and one might say that the region is structured by the three tributaries of this river: the Ruhr in the south, the Lippe in the north and the Emscher in between. These rivers have given their name to three of the four zones comprising the towns and cities in the Ruhrgebiet: the Ruhr zone (Werden, Hattingen, Witten, Hagen and Schwerte), the Emscher zone (Oberhausen, Bottrop, Gelsenkirchen and Herne) and the Lippe zone (Wesel, Dorsten, Marl, Lünen and Hamm). Between the Emscher zone and the Lippe zone we find the industrial heart of the Ruhrgebiet. This is the Hellweg zone, named after the Hellweg, a centuries-old transport and trade route dating back to Hanseatic times. Here, the medieval towns of Duisburg, Essen, Bochum, Dortmund and Unna developed into large industrial cities when the Ruhr was industrialised. Administratively, all the towns and cities and their parishes are linked in the Association of Local Authorities in the Ruhrgebiet (Kommunalverband Ruhrgebiet (KVR)), the headquarters of which is in Essen.

The Ruhrgebiet as we know it is hardly more than 150 years old. At the end of the 18th century the area still was a sleepy rural one. Although coal had been dug in the Ruhr valley since the 14th century for heating, forging and casting, the mining industry was still relatively unimportant. The arrival of the Industrial Revolution was the prerequisite for the coal-mining boom the Ruhrgebiet experienced in the 19th century. Local entrepreneurs like Dinnendahl and Harkort put steam engines into operation that pumped off ground water and enabled the sinking of shafts.[6] The coal mined in the Ruhr Valley was suitable for coking and as such formed the basis for iron and steel production. The industrialisation of the Ruhr also marked the start of the region's extensive transport connections, such as roads, railways and canals. The "black gold" also left its mark on the landscape: in a short period of time the old rural structures were replaced by a patchwork of collieries, steelworks, coking plants and factories. Supported by progressive Prussian economic policies, after 1850 an enormous industrial boom in the Ruhrgebiet set in. People from all over Germany came to the area to find work; between 1850 and 1925 the population rose from around 400 000 to 3 800 000. After the two World Wars, in which many industrial sites were destroyed, it was predominantly the Ruhrgebiet that contributed to Germany's "economic miracle" in the 1950s. In 1956 the mining industry reached its peak: in that year 124 600 tons of coal were produced, offering work to nearly half a million of people. In 1958, however, the coal-mining crisis started, which put a definitive brake on employment in the Ruhr. Cheap imports from countries such as the USA and competition from substitutes for coal (crude oil, natural gas) resulted in the closing of many mines and drastic job losses. This situation deteriorated with the worldwide crisis in 1974: due to increasing imports from low-wage countries, decreasing demand for cars and ships and overcapacity many steel firms were also forced to shut down. The whole of the coal and steel industry in the Ruhr was thrown into a heavy crisis, requiring "structural change". As we shall see, the region has tried to counter the crisis in several ways. It is only in the last two decades, however, that the Ruhrgebiet has had the opportunity to regain its competitiveness within Europe.

Coal and steel set their stamp on the demographic development of the Ruhrgebiet as well. Population figures in the region rose to a height of 5.7 million in 1961. With the onset of the crisis the population began to decline to its present approximately 5.5 million.[7] The age structure in the Ruhr is not basically different from that of other German regions: the proportion of older people continues to increase, whereas that of younger

[5] KVR (Kommunalverband Ruhrgebiet): The Ruhrgebiet: Facts and Figures, Essen 2002, KVR.

[6] W. Pohl, L. Ponthöfer: Innovationsraum Ruhrgebiet, Berlin 2002, Cornelsen.

Table 1
Sectoral Employment Rates in % of those Employed as well as Unemployment Rates in the Ruhrgebiet and the Federal Republic of Germany (1961-2000)

	Primary sector		Secondary sector		Tertiary sector		Unemployment rate	
	Ruhr	FRG	Ruhr	FRG	Ruhr	FRG	Ruhr	FRG
1961	2.4	13.6	61.3	46.6	36.3	38.8	unknown	0.5
1970	1.5	9.1	58.4	49.4	40.0	41.5	0.6	0.5
1980	1.4	5.3	51.7	45.3	47.0	49.4	5.3	3.5
1990	1.2	3.6	44.4	40.6	54.4	55.8	10.8	6.6
2000	1.2	2.5	33.3	33.5	65.4	64.0	12.2	8.1

Source: S. Goch: Betterment without airs: social, cultural and political consequences of the deindustrialization in the Ruhr Area, in: International Review of Social History, Vol. 3, 2002, p. 91.

people shows a steady decline. Within Germany the Ruhrgebiet does differ, however, in terms of the composition and identity of its population. The regional social structure is a combination of a traditional local working-class population, a growing middle class (jointly: 88%) and (descendants of) immigrants (12%). During its history the Ruhr received two large waves of immigration. From 1890 to 1918 many Poles enjoying German rights came to work in the Ruhr industry, followed in the 1960s by people of Mediterranean origin. In particular Turks, Yugoslavians and Italians arrived in the region to take up the low-paid and unskilled industrial jobs that were unpopular among the Germans.

As a result of the crisis many of the miners and steelworkers are now unemployed. Although new jobs have been created, the greatest social problem in the Ruhrgebiet continues to be its high levels of unemployment. Due to their common past and today's parallel development, one might expect a strong regional identity in the cities making up the Ruhrgebiet, but on the contrary, because in the past the higher authorities did not want to concentrate power in the Ruhr, there is no one city that can claim a natural central position within the region. Consequently, the loyalty of the citizens does not lie with the area as a whole but with their city.[8] This strong "pride of place" – often symbolised by the local football club – has led to a climate of rivalry between the Ruhr cities which has hindered the development of a common identity and a common strategy for the Ruhr. Rather, the cities are inclined to strive for the local interest rather than the regional one. In the last decade, however, local parties such as the KVR have increasingly tried to put a stop to this "parochialism" and to replace it by an identity of a common Ruhr legacy – but until now without much success.

The Economy of the Ruhrgebiet

The current economic structure of the Ruhrgebiet has been the result of the region's distinctive economic history on the one hand and global developments on the other hand. The coal and steel crisis of the 1960s and 1970s affected the whole Ruhr economy and can still be felt today. Over the last forty years more than 500 000 jobs have been lost in these basic industries, which is one of the reasons why the share of employees in the Ruhrgebiet working in the secondary sector decreased from 61.3% in 1961 to 33.3% in 2000 (see Table 1).[9] Still, however, the amount of people employed in coal and steel production – concentrated on a few firms such as Thyssen-Krupp Stahl AG (TKS) and RAG – is around 15%. In the European Union 31 per cent of the hard coal comes from the Ruhr; and the same is true of 15% of European steel production. Nevertheless, these figures still continue to fall. The process of closing down collieries in the Ruhrgebiet will continue in the coming years, even although only nine of the original 136 mines are in operation now. Moreover, due to high-technology investments ever fewer workers are needed to control the gigantic equipment in the mines and steel factories. Consequently, most of the remaining jobs in the future will be found in highly qualified work (such as engineering) rather than production work. This trend of upgrading the economic base can be seen throughout the Ruhr economy. Generally, the secondary sector of the "new" Ruhrgebiet now consists of modern branches, often represented by large, world-wide known concerns. Examples of manufacturing activities in which the region has achieved (inter)national comparative advantage in recent years include sophisticated ener-

[7] KVR (Kommunalverband Ruhrgebiet), op. cit.

[8] A. Lagendijk, H. van Houtum: Contextualising regional identity and imagination in the construction of polycentric urban regions: the cases of the Ruhr Area and Basque Country, in: Urban Studies, Vol. 38, 2001, pp. 747-768; KVR (Kommunalverband Ruhrgebiet): Das Ruhrgebiet: Landeskundliche Betrachtung des Strukturwandels einer europäischen Region, Essen 2002, KVR.

[9] S. Goch: Betterment without airs: social, cultural and political consequences of the deindustrialization in the Ruhr Area, in: International Review of Social History, 2002, Vol. 3, p. 91.

gy supply (RWE, RAG and Ruhrgas), solar technology, medical technology and last but not least environmental technology.

In line with the European-wide expansion of services, it is the tertiary sector that dominates the Ruhr economy now, in terms of both output and employment. The proportion of people working in services in the Ruhrgebiet rose from 36.3% in 1961 to 65.4% in 2000, a share even larger than the average of the (old) Federal Republic of Germany (64%).[10] Within the inherently heterogeneous category of services, especially business-oriented services, household services (like retail trade and tourism) and banking & insurance services have been growing in the Ruhrgebiet over the years. The strongest branch in household services is the retail industry, as can be observed by anyone visiting one of the many mega-shopping centres (e.g. Centr-O in Oberhausen, the Hansazentrum in Bottrop and the Drehscheibe in Bochum) in the Ruhrgebiet. Retail trade is followed by health and veterinary services, transport and communication services, wholesale trade, legal and business consultants and real estate agencies. Recent growth areas within the regional service sector are computer and internet services, multimedia, advertising, telecommunications, engineering consultancy and – perhaps a little surprising to some people – tourism (e.g. industrial heritage). Although in absolute terms the development of the tertiary sector in the Ruhrgebiet looks quite favourable, compared with the average of the (old) Federal Republic of Germany, another view emerges: in comparison with other large agglomerations in Germany the Ruhrgebiet still shows less capacity to generate employment in the business-oriented services. In this respect, it has been suggested that in the last 20-30 years there has been a strong correlation between the number of business services and the development of jobs in the manufacturing sector in the German economy. This "parallel thesis", similarly to the neo-industrial interpretation of structural change, suggests that tertiarisation in the Ruhrgebiet cannot be separated from developments simultaneously taking place in the region's manufacturing sector.[11] Indeed, the recent growth of information and communication services in Dortmund and logistic services in Duisburg, for instance, can both be linked to the cities' originally strong electronic and transport industries respectively.

The growth of the service sector in the Ruhrgebiet has by no means been enough to compensate for the loss of manufacturing industries since the 1970s. Despite the successes achieved in the process of structural change, the level of unemployment in the Ruhrgebiet is still relatively high.[12] At the moment, the Ruhr labour market lags behind the general job trend in the (old) Federal Republic of Germany: in 2003 about 12.0% of people in the region were out of work compared with 8.0% in the (old) Federal Republic (see Table 1 for comparisons for earlier years). Although these differences in job rates are still considerable, compared with the situation in the period 1980-1995 the Ruhr labour market has improved. Unemployment in the Ruhr reached record levels in 1987 and 1988: in both years the unemployment rate was 15.1%, which strongly contrasted with the national average of 8.1%. The relatively favourable development of the Ruhr labour market later on in the nineties was boosted primarily by a wave of new firms in the region. The share of self-employed rose from 8.4% to 13.4% of the working population between 1995 and 2000.[13] These figures are well above the national average for business start-ups. Most new ventures are knowledge-based and operate in the field of high technologies such as information technology and solar technology. Often, they are spin-offs of technology centres or universities located in the Ruhrgebiet. These new firms are often started by young, Schumpeterian entrepreneurs who have just graduated. The start-ups, however, offer few possibilities for older employees to get back to work since they do not have the qualifications needed. Nonetheless, the new companies have eased the difficult situation of the regional labour market to a certain extent and may be a source of employment for current and future generations in the Ruhrgebiet.

Re-Industrialisation and Lock-In

Broadly speaking, the strategies the parties in the Ruhrgebiet have pursued to bring about structural change since the 1960s fall into two categories: re-industrialisation and neo-industrialisation – with, as we shall see, the latter strategy being the more successful one. Until 1984 most efforts to counter industrial decline in the Ruhr were aimed at preserving the traditional regional economic structure. The catchword of the local parties was "defence is the best form of attack"; and consequently the region was largely re-industrialised in the 1960s and 1970s.[14] Confronted with an increasingly shrinking world market for coal

[10] S. Goch, op. cit.

[11] F. J. Bade, A. Niebuhr: Zur Stabilität des räumlichen Strukturwandels, University of Dortmund, Institute for Spatial Planning, Working Paper No. 158, 1998.

[12] S. Goch, op. cit.

[13] Projekt Ruhr: The Ruhrgebiet, Essen 2002, Projekt Ruhr GMBH.

and steel, large concerns such as Thyssen, Mannesmann and Krupp tried to remain competitive by additional investments intended to raise their scale and productivity. Furthermore, within the regional basic industries cooperation increased since the 1960s, a trend that led to several mergers between former competitors and closer linkages with customers and suppliers. In addition, starting in the 1970s the large concerns bought up firms in associated branches such as processing and industrial technologies, but mostly outside the region. This strategy of "external diversification" transformed the coal and steel concerns that were merely operating on a local scale into large multinational, mixed concerns. At the same time, however, this policy did not result in many new activities within the Ruhr itself. Despite all the efforts to remain competitive, many mines and plants were forced to close down. The closures, however, took place gradually and were socially controlled. In mining, for instance, the workers who were fired were given large sums of money in compensation; alternatively, they were simply allowed to retire at the age of forty-nine. Simultaneously, however, a new generation of young miners and steel workers was educated with subsidies from the local government. In short, the structural change approach in the Ruhrgebiet in that period was merely defensive: the local actors still believed that the region's future would lie in coal and steel.

This is not to say, however, that offensive policies were entirely absent in the Ruhr during the 1960s and 1970s. At the outset of both crises, local authorities in particular did their utmost to look beyond the heavy industries' short-term interests and think about long-term regional growth. For the first time in its history, the region acquired institutions for higher education: in 1965 the Ruhr University was established, followed by other universities and polytechnics throughout the region. Next, to diversify the economic structure the local government tried to attract inward investments, predominantly in industries until then unknown to the Ruhr such as micro-electronics, cars and chemicals. Apart from the arrival of car manufacturer Opel (that built a factory in Bochum) this policy largely failed, however.[15] The fact is that most of the time the government's restructuring initiatives were frustrated by the local industries. The reaction of Gustav Krupp to the establishment of higher education in the Ruhr, for instance, was illustrative for the mindset of most of his colleagues: "What we need in the Ruhr are muscles, not brains". To note another example: large concerns refused to give their sites for the attraction of inward investment or stated such unattractive conditions that potential investors finally gave up. In turn, the local authorities were giving in rapidly. With regard to this refusal to sell land, the government did not mind very much as, after all, the traditional industries paid high income taxes. Likewise, industrial lobbies for sectoral intervention by the local government often succeeded, for the relationships between managers and politicians in the Ruhr community were close. Soon, therefore, the original attempts to launch an offensive were overwhelmed by a self-sustaining coalition of local parties that hampered structural change in the Ruhr rather than supporting it.

It was only in the mid-1980s that the local actors realised that solely relying on the past was not an appropriate regional restructuring policy. After more than twenty years this defensive re-industrialisation strategy was gradually replaced by a more offensive approach. Why did it take so long before the Ruhr parties changed their minds – although it was clear to the outside world that coal and steel were anything but engines for growth in Western Europe? The clue might lie in a phenomenon known in the literature as "lock-in", referring to the possibility that regions become locked into rigid trajectories.[16] In our view, during the re-industrialisation phase of the Ruhrgebiet three types of lock-in played a role: economic, institutional and cognitive lock-in.[17] First, the Ruhr's monostructure resulted in "economic lock-in", paralysing entrepreneurship, innovation and flexibility. Most firms in the Ruhrgebiet were directly linked with the few large companies dominating the regional economy. These close linkages reduced the need for firms to look outside the region and to innovate. Nor were entrepreneurial spirits activated among workers, as they were cared for by their employers from the cradle to the grave. This "rigid specialisation trap" led to a kind of ossification in the Ruhr that prevented firms from reacting quickly and effectively to exogenous impulses, i.e. the declining demand for coal and steel. Second, the Ruhrgebiet suffered from "institutional lock-in". The dense regional institutional tissue resulted in a "preperestroika

[14] R. Hassink: Regional Innovation Policy: Case-Studies from the Ruhr Area, Baden Württemberg and the North East of England, Utrecht 1992, University of Utrecht; W. Pohl, L. Ponthöfer, op. cit.

[15] W. Pohl, L. Ponthöfer, op. cit.

[16] P. R. Krugman: Geography and Trade, Cambridge (MA) 1991, MIT Press; R. A. Boschma, J. G. Lambooy: Evolutionary economics and economic geography, in: Journal of Evolutionary Economics, Vol. 9, 1999, pp. 411-429.

[17] G. Grabher (ed.): The Embedded Firm: On the Socio-Economics of Industrial Networks, London 1993, Routledge; R. Hassink: What distinguishes 'good' from 'bad' industrial agglomerations, in: Erdkunde, Vol. 51, 1997, pp. 2-11.

consensus culture", a self-sustaining coalition of local business men, politicians, labour unions and workers, whose only shared interest was the preservation of the existing structure. In this setting new initiatives did not readily emerge, thus putting a brake on structural change. This is what Granovetter and Grabher have dubbed "the weakness of strong ties".[18] Third, the Ruhrgebiet had to cope with "cognitive lock-in", both inside and outside the region. The local parties had an over-optimistic view of the region's potential: they did not want to believe that the crises were of a structural rather than a cyclical nature, and the outside world had a one-dimensional, negative view of the Ruhrgebiet as an unattractive, polluted industrial region. Considered from an objective perspective, this was a wrong spatial image: just as it is now, already at that time the area was one of the greenest German regions! If anything, the cognitive distance between the region's identity and its image may offer an additional explanation as to why the Ruhrgebiet failed in attracting inward investment that could contribute to its renewal.

Neo-Industrialisation from Within

From the mid-1980s onward structural change policy in the Ruhrgebiet gradually changed from a re-industrialisation strategy to a neo-industrialisation approach. More than before, emphasis was now laid on the development of new, future-oriented branches of economic activity around the old industries in the region. For one thing, this change in orientation came from the large coal and steel concerns themselves: despite all their earlier efforts they had to recognise that staying in their traditional business was a dead-end strategy. Ultimately, they realised that industrial decline was not a cyclical but a structural trend. The increasingly competitive world market simply forced them to diversify internally as well. Although willy-nilly, firms such as RAG, Thyssen and Krupp diversified beyond coal and steel and invested in related growth branches like plant engineering, environmental technology and control services. It is estimated that today these new activities even make up about two thirds of the turnover of the former coal and steel giants. For another thing, local authorities played an important part in bringing about a "break-out" from the Ruhrgebiet's lock-in situation. In 1984 the State of North-Rhine Westphalia changed its industrial policy into a technology policy and developed a programme aimed at "sunrise technologies" with a focus on environmental technology.[19] Simultaneously, most municipalities within the Ruhr stopped their often fruitless policy efforts to attract inward investment. In line with the developments at the state level, it was decided to focus on innovation instead and to set up local technology transfer centres providing advice and services to starters. Within a decade the Ruhrgebiet already boasted 29 such centres, some of which have become very successful. For instance, within ten years the Dortmund technology centre has generated 3,700 jobs.[20]

The most prominent example of neo-industrialisation in the Ruhrgebiet is the region's diversification strategy in the field of environmental technology.[21] Interestingly, this branch of activity has its roots in the local coal and steel industry that has constantly searched for innovative ways to keep pollution levels as low as possible. Thanks to the strict environmental rules and the high demand for clean technologies among local firms, the Ruhr could accumulate much expertise in how to counter environmental damage. At present, the Ruhr has grown into the centre of environmental technology research in Germany. The cluster has created new employment in the region as well: about 100 000 people are working in this branch and their number is still growing. Local firms, universities, research institutes (e.g. the Soil Protection Centre and the Environmental and Packaging R&D Centre) and environmental agencies cooperate closely, the result being many innovative applications. Although the market for these innovations used to be mainly locally concentrated, the Ruhr environmental cluster increasingly sells its output outside the region. Other branches that grew out of the region's industrial past and in which the Ruhrgebiet has now developed a comparative advantage are energy supplies and waste disposal. Due to the massive amounts of energy resources needed and waste produced by the coal and steel plants, R&D in the field of renewable resources, recycling and waste combustion was stimulated in the Ruhrgebiet at a relatively early period. Just as in the case of environmental technology, these branches are future-oriented while they paradoxically emerged from the region's industrial tradition.

---

[18] M. Granovetter: The strength of weak ties, in: American Journal of Sociology, Vol. 78, pp. 360-1380; see also G. Grabher (ed.), op. cit.

[19] P. Ache: Wirtschaft im Ruhrgebiet, University of Dortmund, Institute for Spatial Planning, Working Paper No. 123, 1994.

[20] M. Schönert: Umweltwirtschaft als Hoffnung für altindustrielle Regionen? Chancen und Risiken für die Regionalentwicklung, University of Dortmund, Institute for Spatial Planning, Working Paper No. 141, 1995.

[21] H. Kilper, G. Wood: Restructuring policies: the Emscher Park International Building Exhibition, in: P. Cooke (ed.): The Rise of the Rustbelt, London 1995, UCL Press, pp. 208-230.

The neo-industrial strategy which the local parties in the Ruhr pursued from the mid-eighties was not only novel in terms of its focus on regional renewal. The way the approach towards structural change was organised also differed from the past. To stimulate the region's endogenous potential, a bottom-up approach was now chosen rather than a top-down strategy. The initiative IBA (Emscher Park International Building Exhibition), which lasted from 1989 to 1999, is a case in point for this shift towards decentralising responsibilities in matters of structural change in the Ruhr.[22] This public-private project was aimed at the economic, ecological and social reconstruction of a densely populated area of 800 square kilometres near the river Emscher that had suffered much from industrial exploitation. Besides coping with structural change in this district, the aim of the project was a modernisation of the institutions and procedures of regional policy. Consequently, the project's official subtitle was "Workshop for the Future of Old Industrial Regions". Within the context of the IBA the State of North-Rhine Westphalia called upon towns, companies, architects, citizens and interest groups in the Ruhr to make single project proposals that would fit into one of the following central guideline projects:

- the renovation of the Emscher Landscape Park
- the ecological improvement of the Emscher river
- the new utilisation of industrial buildings
- the development of new working locations
- the development of new housing forms and municipal districts.

The philosophy of the IBA of giving the region itself a say in the Ruhr's revitalisation ("renewal from within") met with approval in the local community: in ten years 123 cooperative projects were implemented, varying from the setting up of technology centres to the renovation of apartments and the restoration of industrial monuments for tourist purposes. The last project in particular has obtained world-wide attention, not least because the Ruhr now proudly presents its renovated industrial heritage as a unique tourist and leisure attraction. With slogans like "The Ruhrgebiet... is hard to beat", offers like the "RuhrpottCard" and an Industrial Heritage Trail, the region is trying to raise the number of tourists and day-trippers to the area and to give the Ruhrgebiet a more positive image in the outside world.

Inspired by the experiences of the IBA, public and private actors in the Ruhr have recently launched several new projects on the way to neo-industrialising the region. Representative examples of such projects are the cases of "E-City Dortmund" and "Solar City Gelsenkirchen".[23] The E-City Dortmund project was set up in 2000 as an answer to the decision of Thyssen-Krupp to close the local steelworks. To compensate for the resulting job losses, the city of Dortmund, Thyssen-Krupp, the consulting firm McKinsey and some local organisations formulated a vision for the city based on the motto: strengthen what is strong, invest rather than subsidise and initiate pilot projects in public-private partnership. Because manufacturing, information technology and logistics have played a leading role in Dortmund for a long time, the local parties now do their best to create jobs in the interface of these sectors (such as e-logistics and robotics) by investing in "incubation centres" and start-up promotion. Part of the new technology infrastructure is created on Thyssen's former steel industry site. With such measures, it is hoped that Dortmund may be transformed "from steeltown to e-city". The city of Gelsenkirchen also explicitly draws upon its economic legacy. In its industrial heyday, energy supply for steel production was one of the main engines of the local economy; and Gelsenkirchen was called "the city of a thousand fires". This background as an "energy city" was recognised in the 1995 decision by local authorities and companies to construct a Science Park in the field of energy technology on the site of a run-down factory. The niche the park found was solar technology, a modern field in which the expertise of the traditional sectors could be combined with state-of-the-art high technology such as photovoltaics. The park has been able to attract Europe's biggest solar cell factory (Shell Solar International), solar housing estates and a number of other solar-related activities. Consequently, Gelsenkirchen is trying to establish a profile as a hot spot in solar and other modern renewable technologies. With a wink at the past the location now brands itself "the city of a thousand suns" or simply "Solar City Gelsenkirchen".

Taking Stock of the Ruhr's Strategy

Obviously, it is hard to evaluate the overall impact of the neo-industrialisation approach in the Ruhr since the mid-1980s. The added value or difference made

[22] NRW.USA Economic Development Corporation: Dortmund: IT Center of Excellence in Nordrhein-Westfalen, New York 2002, NRW.USA; KVR (Kommunalverband Ruhrgebiet): Das Ruhrgebiet: Landeskundliche Betrachtung ... , op. cit.

[23] M. Schönert, op.cit.; W. Pohl, L. Ponthöfer, op. cit.

Table 2
The Environmental Sector vis-à-vis an Old Industrial Region

Characteristics: environmental sector	Characteristics: old industrial region
- emerging sector with high returns	- at end of product life-cycle
- new and high-quality employment	- large unemployment figures
- high degree of technology intensity	- relatively low levels of R&D
- international competitive sector	- fierce international competition
- usually diversified company structure	- dominance of few large firms
- endogenous potential for the future	- searching for new markets
- improvement of ecological situation	- considerable ecological problems

Source: translation and adaptation from M. Schönert: Umweltwirtschaft als Hoffnung für altindustrielle Regionen? Chancen und Risiken für die Regionalentwicklung, University of Dortmund, Institute for Spatial Planning, Working Paper No. 141, 1995.

by the particular efforts of the local actors is hard to isolate from factors beyond their control, including international, domestic and regional forces and trends. What would have happened anyway, without the deliberate transition of the regional change strategy? Besides, with regard to some initiatives it is too soon to draw definitive conclusions on their effectiveness. Nevertheless, some preliminary observations can be made about the impact the changing policy orientation has had on the development of the Ruhrgebiet. At a general level, we believe that neo-industrialisation has been a more adequate response to regional restructuring than the re-industrialisation efforts of the 1960s and 1970s. What is more, the neo-industrialisation strategy in the Ruhr can be viewed as a creative policy experiment, both in its substantive content and in its procedural set-up.

For a start, the experiences in the Ruhr suggest that a lock-in situation can indeed be overcome by the actors involved – and in particular by the local government – by drawing on the existing regional economic structure. To be sure, it was the market that forced the large firms in the Ruhrgebiet to look beyond their traditional core business in the 1980s. With its policy change in 1984, however, the State of North-Rhine Westphalia certainly catalysed and focused this process of regional diversification. It finally realised that modern high-tech technologies *per se* without a base in the industrial past (unrelated diversification or re-industrialisation) simply were "a bridge too far" for the region. Instead, the re-orientation towards technologies related to the industries' expertise (related diversification or neo-industrialisation) has borne fruit over the years. Among such technologies as energy technology and waste disposal, in particular environmental technology is a promising Schumpeterian "new combination" for the traditional firms in the Ruhr. Table 2 lists the general advantages the environmental sector has for old industrial regions in decline.[24] First, today a growing demand for clean technologies can be observed. This structural trend comes from the greater attention paid in current post-industrial society to issues that have to do with "the quality of life", such as sustainability. Second, old industrial regions themselves can benefit from a supply-side effect from investments in environmental technology: such investments can contribute to an improvement of the region's ecology that has often been damaged by industrial (over)exploitation. Thus, in the current inter-territorial competition a region may become more attractive for residents, firms and visitors and enlarge its development chances. In our view, therefore, the Ruhr has chosen the right track by focusing on the environmental technology cluster and related activities (e.g. solar technology) as future growth branches replacing the heavy industries of the past.

Next, the IBA project and the subsequent bottom-up initiatives in the Ruhrgebiet can be seen as an institutional innovation that has facilitated regional structural change. In a sense, with the IBA the State of North-Rhine Westphalia ran a risk by adopting a change strategy that was explicitly aimed at "renewal from within". As a matter of fact, the same parties whose conservative attitudes and actions had led to lock-in were now asked to generate innovative ideas within the state's central guideline projects. In assessing the IBA, some authors contend that the traditional consensus culture among local business-men, politicians and civil society has indeed resulted in less innovative projects than could have been the case. Nonetheless, in a period of ten years the IBA has dealt with 123 projects with concrete results such as the cleaning of 300 square kilometres of green space, the construction of 17 technology centres, 6 000 flats

[24] M. Schönert, op. cit.; KVR (Kommunalverband Ruhrgebiet): Das Ruhrgebiet: Landeskundliche Betrachtung ... , op. cit.

and the restoration of many industrial monuments.[25] Apart from these results, the idea of promoting "industrial tourism" in former mines, coking plants and steelworks has certainly been an innovative one which was brought forward by the former local industry coalition. Also the recent Dortmund project shows that the local business community has abandoned its earlier defensive thinking: Thyssen-Krupp closed its Dortmund steel works while trying to secure jobs for the city by participating in a public-private partnership. By tapping creative potential on the spot, the IBA has raised awareness of the importance of joint local action in countering industrial decline. As such, the project has really been able to realise its original sub-goal of being an experimental and creative "workshop for the future of industrial areas". It is this very role of local empowerment and responsiveness for which the IBA and the bottom-up actions that followed have to be praised primarily. The fact is that the quantitative effects of the decentralised change strategy in the Ruhr are probably far less significant than the qualitative effects. For example, in 1999 the technology centres built with IBA funds employed 2 100 people, while there are only a few hundred persons working in the field of industrial tourism.[26] In view of the structural problems in the present Ruhr labour market, these employment effects are obviously only drops in the ocean. Certainly, the IBA has boosted local confidence and morale, but the new economic engines it generated can never replace the enormous number of jobs lost through industrial decline.

Perspectives for the Ruhrgebiet

Yet, the assessment of the neo-industrialisation strategy in the Ruhr to date leaves us with an ambivalent feeling. While both the diversification and bottom-up strategy have turned out to be adequate responses towards regional restructuring, the economic future of the region is still surrounded by uncertainty. On the one hand, to be successful, restructuring strategies in the Ruhrgebiet should draw on the region's particular economic and institutional past. Earlier attempts to rejuvenate the region failed to recognise this important aspect of contingency. Hence, it will be the history of the Ruhrgebiet that shows the way to new economic futures. On the other hand, it is questionable whether such an approach will suffice when looking at what has been realised so far in the region. We saw that environmental technology, energy technology and industrial tourism have been chosen as new branches combining locally built assets to take advantage of global trends in a creative way. But will these activities separately create enough additional jobs to rejuvenate an entire industrial region in decline? Among the alleged future growth branches, the Ruhr's environmental cluster perhaps has the best prospects. The Ruhrgebiet has grown into Germany's centre in this technology now and there are reasons to believe that demand for this technology will be stable or even grow in a post-industrial society in which sustainability has become a concern for many firms and consumers. But in terms of employment the sector falls short of being a structural solution for the problems on the Ruhr labour market. The same is true of the energy branch and especially of the industrial heritage sector.

Instead of merely developing these activities separately, we think it is time now for the public and private actors in the Ruhrgebiet to look at where these new branches can complement and possibly reinforce each other. At the moment, for example, industrial monuments in the region are utilised and marketed merely for tourist purposes, while they also might be useful places for starters in new technologies. What is more, the future re-use of the Ruhr's industrial legacy is not restricted to tourism and technology. The striking words of the urban planning guru Jane Jacobs may serve as a motto in this context: "New ideas must use old buildings".[27] Experiences in Northern America and the United Kingdom demonstrate how this credo can find practical application. In cities such as New York, Vancouver, Manchester and Newcastle a variety of modern service activities have been housed in industrial heritage. Industrial monuments turn out to be useful places for the establishment of call centres, conference rooms, consultancy services, studios and trendy shops.[28] These examples show how the recycling of industrial heritage may fit into the framework of other localised regeneration strategies. Such an extended re-use of industrial relicts is just one of the possible ways in which the Ruhrgebiet could combine and coordinate its individual renewal strategies in a more innovative way – and thus contribute to a more integral approach towards structural change.

Obviously, the scaling up, coordination and branding of the separate renewal initiatives in the Ruhrgebiet

[25] Internationale Bauaustellung Emscher Park GMBH (IBA): Die Erfahrungen der IBA Emscher Park: Programmbausteine für die Zukunft, Gelsenkirchen 1999, IBA.

[26] Ibid.

[27] J. Jacobs: The Death and Life of Great American Cities, New York 1961, Random House.

[28] N. Kirkwood (ed.): Manufactured Sites: Rethinking the Post-Industrial Landscape, London 2001, Spon Press; G. J. Hospers: Industrial heritage tourism and regional restructuring in the European Union, in: European Planning Studies, Vol. 10, 2002, pp. 397-404.

demands joint strategic action encompassing public and private stakeholders in the entire region. There are serious doubts, however, whether the Ruhr will be able to show sufficient organising capacity and leadership "from within" in order to formulate and implement an integral regional vision for the future. Again, history plays a role here: the drive of higher authorities in the past to prevent the concentration of power in the Ruhr has resulted in a climate of parochialism between cities within the area. This striving for local interest keeps the cities divided and is the reason why many commentators see the emergence of the highly controversial "Ruhrstadt" as hardly feasible.[29] Although confronted with similar problems, the municipalities making up the Ruhr still prefer to think in solutions benefiting their town or city rather than the region as a whole. It is striking, for example, how the Ruhr cities individually present themselves as the "places to be", while they could realise synergy by working together. As examples, just think of the aforementioned projects of E-City Dortmund and Solar City Gelsenkirchen. This inter-city competition in the Ruhr has reduced the potential for strengthening organisational capacity and will be an obstacle to future collective action. The main challenge the cities in the Ruhrgebiet face for the future, therefore, is to join forces. Only then will the slogan of the KVR to brand the region in Europe ("The Ruhrgebiet... is hard to beat") really make sense.

Conclusions and Implications

The enlargement of the European Union also means the enlargement of Europe's Rustbelt. Especially in Poland, Hungary, the Czech Republic, Slovakia and Slovenia a number of traditional industrial regions can be found that need to be restructured to be revitalised. Although a specific case, the process of structural change in the German Ruhrgebiet might offer some general lessons about how to counter industrial decline in a regional context. First, the Ruhr case reveals that regional restructuring is a long-winded process lasting decades rather than years. The importance of this insight, so pessimistic but yet so true, can hardly be overemphasised: in dealing with regional restructuring "quick wins" are hardly possible owing to the persistence of an area's past. Second, the ups and downs in the Ruhrgebiet point to the following lesson: rejuvenation strategies should ideally depart from the existing economic and institutional structure of the region in question. Usually, in our opinion, neo-industrialisation approaches building upon the region's assets will make more sense than simple, rootless re-industrialisation strategies. Third, if older industrial regions are to face a favourable future, they may benefit most from related diversification. Diversifying the economy can break the industrial monostructure and simultaneously enlarge the area's absorptive capacity for new economic developments. Finally, the case of the Ruhr demonstrates how important it is to involve a range of local stakeholders to secure the support and understanding of regional restructuring strategies. Unlike top-down measures coming from outside, bottom-up policies can tap the creative potential on the spot. Even in traditional industrial areas that are locked into rigid trajectories – like the Ruhr in the 1960s and 1970s – this will probably work.

In conclusion, we think that the experiences of the Ruhrgebiet are a useful learning device for other "smokestack areas". The case of the Ruhr may offer some ideas and warn of some traps for industrial regions in Eastern Europe. After years of experimenting and with all its remaining problems, the Ruhrgebiet at least shows that structural change is possible and may result in such interesting "new combinations" as environmental technology and industrial tourism. Obviously, it is tempting to use such promising restructuring experiences as basic ingredients for the formulation of a "best practice" which can be recommended for application in the rest of Europe. To do so would be a contradiction in terms though. If anything, one overall lesson of the case of the Ruhrgebiet is the importance of what the economist Friedrich von Hayek has aptly called "the particular circumstances of time and space" in economic life.[30] Likewise, appropriate strategies for regional renewal in an enlarged EU should ideally emerge from a careful consideration of what is suitable, acceptable and feasible within the particular local context. Thus, there is no magic recipe for rejuvenating European regions hit by industrial decline. Nevertheless, the Ruhr case is still useful for those areas: as a matter of fact, in every industrial region the precise nature and rate of structural change is not only determined by the particularities of time and place, but also contingent on policy responses by the local community. It is from this notion, we believe, that authorities can still draw sufficient inspiration and hope in order to continue their efforts to restructure Europe's Rustbelt.

[29] A. Lagendijk, H. van Houtum, op. cit.; KVR (Kommunalverband Ruhrgebiet): Das Ruhrgebiet: Landeskundliche Betrachtung ... , op. cit.; W. Knapp: The Rhine-Ruhr Area in transformation: towards a European metropolitan region?, in: European Planning Studies, Vol. 6, 1998, pp. 379-393.

[30] F. A. von Hayek: Individualism and Economic Order, Chicago 1948, University of Chicago Press.