



JUST TRANSITION FOR REGIONS AND GENERATIONS

Experiences from structural change in the Ruhr area

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Experiences from structural change in the Ruhr area

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Foreword

Worldwide, it has become clear that global warming is the greatest ecological and social challenge of our time. Achieving the climate targets are part of a bigger scheme: a global transition in Germany and Europe towards a society that no longer relies on fossil fuels.

This transition is the only possible response to the climate crisis, and in its magnitude and significance comparable to such major historical upheavals as industrialisation or digitalisation. Therefore, the question of justice inevitably arises in two respects: nothing is as unjust and unsocial as inconsistent climate protection. At the same time, the transition must be fair and socially balanced so that people can support and advance it. The so-called Just Transition is therefore becoming increasingly important.

The trade unions have known this for a long time, as they have been trying for decades to prevent the negative effects of transformation processes on workers. However, just transition encompasses more than the employees of now obsolete branches of industry. It affects entire regions that for decades have supplied us with energy. Coal may no longer be viable, but the regions should stay so. A fair energy transition means achieving the climate targets set out in the Paris Agreement so that we can continue to live well in our regions in the future – and share this good life with as many people as possible.

WWF Germany is devoting a new project to this very topic: Together with WWF in Bulgaria, Greece and Poland, the “Just Transition Eastern & Southern Europe” project was launched in 2017. It is part of the European Climate Initiative (EUKI) of the Federal Ministry for the Environment. The project focuses on developing strategies for structural change for South-West Bulgaria, West Macedonia in Greece and Silesia in Poland: away from coal and towards sustainable economic activities that benefit people and the climate.

The unique thing about it: the strategies are developed together with relevant actors from the regions. People from politics, business, civil society and trade unions come together to find solutions for structural change that are both climate and socially compatible. In Germany, the Coal Commission is currently attempting to create a similar model. Its decision on how to phase out coal should be taken both from the point of view of climate and structural change.

But developing plans is the first important step. What is needed then is binding commitment. This applies to the climate targets, so that they are not, as was recently the case in Germany, abandoned without consequence. And it applies to the necessary steps in structural change. This is crucial considering the long-term nature of these tasks. This is what the experience of structural change in the Ruhr area, to which this study is dedicated, teaches us. It also shows how important the participation of civil society is. On the following pages you can read which additional lessons from the Ruhr area could be relevant for other regions in Germany and Europe. With this study we want to contribute to the discussion: towards the common task of preserving our livelihoods.

A handwritten signature in black ink, consisting of stylized cursive letters and a long horizontal stroke at the end.

Jörg-Andreas Krüger

Chief Conservation Officer, WWF Germany

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“Structural change” is generally understood to mean a change in the structural composition of an aggregate (e.g. gross domestic product (GDP) or the workforce). From a sectoral point of view, it includes changes in the structure of industries, and from a regional perspective, shifts between individual regions in a larger economic area. Regional and sectoral structural change cannot be viewed independently from one another as industries are typically not evenly distributed across the regions. This applies especially to the lignite and hard coal regions in Germany and Europe, which are concentrated in specific regions, for example, for many years, in the Ruhr area and Saarland or the four lignite mining districts of Rhineland, Helmstedt, Central Germany and Lusatia.

The imminent phase-out of coal will bring structural changes to the regions affected. Depending on the social and political model, the State steps in to support the regions through structural policy interventions. However, structural policy cannot (and will not) prevent structural change, but can provide a framework. Regions must allow change. Structural policy interventions, however, which are also required under constitutional law in Germany, are not ineffective and meaningless – on the contrary!

This study reviews Germany’s experiences with structural policy focusing on the Ruhr area (but also experiences from other regions) and identifies the structural policy developments and their positive and negative impacts. In addition to an analysis of relevant literature, quantitative analyses of secondary data were conducted. Building on these initial results, the most important effects of the structural policy measures were identified. Guideline-based interviews with decision-makers from the realms of politics, administration, business and trade unions were conducted to provide a further empirical foundation for the study findings. In addition, a dedicated group discussion was held with representatives from the political arena, environmental organisations and trade unions.

To discuss transferability to other regions and countries, particular attention was also paid to the geographic conditions, historical context and structures. This is relevant in view of the fact that structural change is organised differently in large industrial centres with interconnected economic sectors than in industrial villages situated on the periphery.

Since the general institutional framework in Greece, Poland and Bulgaria differs considerably from Germany's institutional setting, the effects were also evaluated with regard to institutional integration.

The core of the empirical work, however, deals with the main dilemma of structural policy, namely that it usually occurs after the fact to remedy the situation and is not preventive. However, structural policy in the wake of the energy transition in particular could be shaped at an early stage.

In the following, the most important terms related to structural change and policy are defined and the functioning of structural policy in Germany is explained (chapter 2). Building on these definitions and explanations, the development of lignite and hard coal mining in Germany as well as structural changes in the Ruhr area will be traced (chapter 3). The fourth chapter describes and analyses selected structural policy measures in the Ruhr area over the last 50 years, as well as the current structural policy program "*Unternehmen Revier*" for the four lignite mining areas in Germany. Finally, transferable solutions identified and criteria for other regions are proposed in the context of recommendations for action (chapter 5).

2

Economic change in Germany

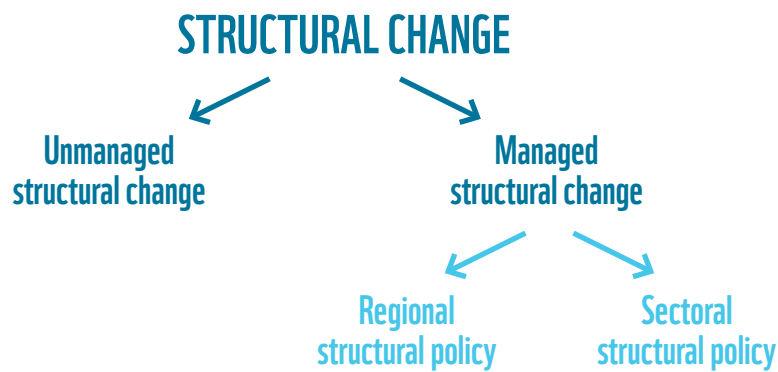
Structural change as an ongoing process

Economies are subject to constant structural change. However, various factors can impair an economy's ability to adjust to this change. Depending on the social and political model, the State then intervenes to help regions with developmental deficits. As shown in Figure 1, this structural change, in contrast to the "unmanaged" (meaning the unintentionally influenced structural change only resulting from the market), can be described as "managed" structural change.

Structural policy shapes structural change

"Structural policy" is understood to mean political interventions, including legal and institutional interventions intended to influence structural change in a targeted manner. For example, structural policy is the sector of economic policy that selectively relates to specific areas (e.g. weaker regions or sectors with development deficits). As shown in Figure 1, structural policy can also be subdivided into sectoral and regional structural policies.

Figure 1: Structural change
Source: Author's data



Regional structural policy has different meanings, is used interchangeably with terms like regional policy or regional economic policy¹ and is used to promote targeted development of certain sub-areas. This is usually achieved by financially supporting certain areas and rerouting financial flows. Regional science distinguishes between planned and unplanned spatial financial flows. Financial flows with planned regional impacts include financial equalisation, large-scale transport infrastructure measures and measures under the scope of structural and regional planning policy. Financial flows with unplanned spatial impacts include, for example, taxes, general government subsidies and social security systems.

¹ See e.g. Fürst et al. 1976: 4; Eckey 1995: 815

Financial flows in regional structural policy can unfold so-called spatial effects. Among the financial flows which – as regional science calls it – have planned spatial effects are, for example, transport infrastructure measures.



Photo: Karl-Heinz Liebisch/pixelio.de

Regional and sectoral structural policy

The application and impact of structural policy is often a mixture of regional and sectoral policies, as the development deficits of specific sectors are concentrated in certain regions there is a lack of growing and sustainable sectors in structurally weak regions. Sectoral and regional structural policies also influence each other in terms of interests, motives and objectives. But there can also be conflicting goals: if an industry and thus a region in which the industry occupies a significant position is in decline, regional policy-makers are primarily concerned with the development of the region, e.g. paying subsidies to attract new businesses. For the owners as well as the employees of the prevailing industries the top priority is to preserve established companies because good wages are often paid in established industries and returns are high.

Structural policy is a multi-level policy

Regional structural policy is a multi-level policy that extends from the EU, federal and state levels down to the municipal level. In Germany, the possibilities to access the lower spatial level (e.g. local self-government guaranteed by the constitution) are limited, as became evident, for example, in the context of Germany's energy transition and the planned power lines. In the case of larger infrastructure projects, the various stakeholders in the region must therefore be persuaded to participate in the process.

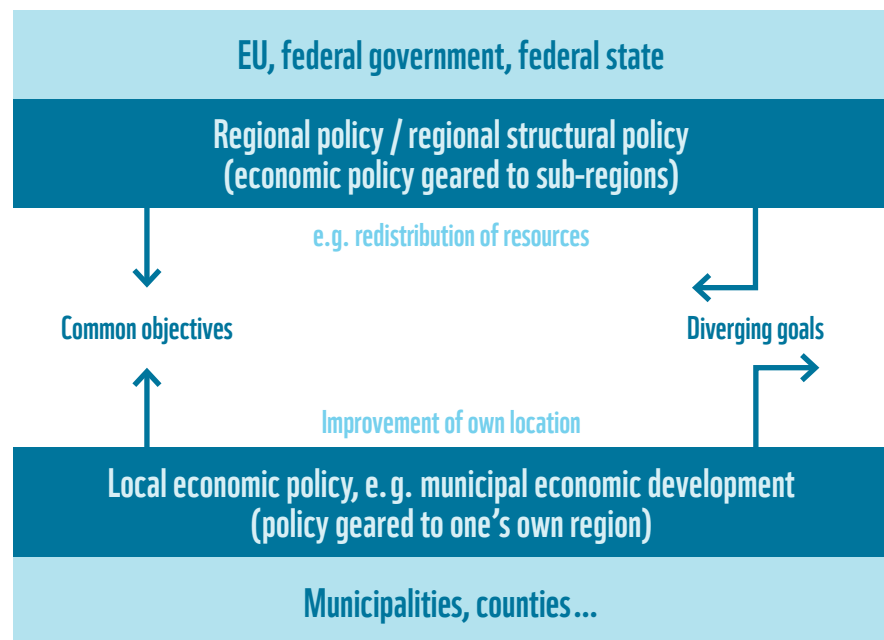
Local economic policy and / vs. regional policy

Local economic policy – policy that focuses on the city, county or region – is pursued independently of the structural policy objectives of the higher spatial level as shown in Figure 2. Often the objectives of the different levels complement one other, e.g. when a structurally weak region responds to specific, balanced regional economic development programmes of the EU or a federal state. The distinction between regional and local economic policy is by no means trivial because municipal economic

development can pursue an egocentric policy regardless of overall regional objectives. Thus, in addition to a consensus-oriented policy, a conflictual local economic policy may also result if, for example, certain sectors in individual locations are to be promoted by all regions, from which, however, not everyone benefits. Strictly speaking, the same is true of a balance-oriented regional policy, e.g. when a wealthy region increases its prosperity through smart economic policy and thus contributes to widening the regional welfare gap.

Figure 2: Levels of regional structural policy

Source: Author's data based on Gärtner 2008



Section 2.1 discusses the context of structural change, which generally can be considered an independent process based on growth of location factors due to market pressure, natural conditions and political and social trends. However, the section also addresses the fact that this automatism can lead to undesirable socio-political, regional and macroeconomic outcomes. The State therefore tries to intervene through targeted measures (section 2.2). Section 2.3 deals with the fact that, despite structural interventions, change can hardly be stopped in the long term. Finally, Section 2.4 concludes by highlighting the dilemma that structural policy generally has no preventive impact.

The coal and steel industry has made the Ruhr area the largest agglomeration in Europe. With the end of the hard coal mining, the Ruhr area had to reinvent itself economically.



Photo: Getty Images / Stockphoto

2.1 Structural change and structural rupture

Development paths of structural change

Even though structural ruptures sometimes occur, new economic sectors often grow out of these old sectors. For example, the environmental economy in the Ruhr area was created by the mining industry due to the increased environmental requirements since the 1970s. This industry still exists in the region today, although the mining industry no longer matters². The food industry in Mecklenburg-Western Pomerania, which was created there because of a strong agricultural base³, is another example. Furthermore, in the region around Bielefeld the processing of flax into linen began in the 16th century. Even if today the production no longer exists, local textile brands still exist in the area.

Adjustments to product ranges usually are made by the companies themselves, if, for example they find that their products are less in demand. It is often helpful to observe companies of the same industry to get an impression about the market situation – which products are in demand and which new markets can be tapped. This is one of the reasons why companies of the same sector, especially historically, often concentrate locally. The industrial complexes grew outside of cities and city centres not only for reasons of space shortages and rising land prices, but also for reasons related to urban hygiene. The systematic separation of the functions of housing, work, transport and leisure was adopted in the Charter of Athens in 1933 and was only revised by the so-called Leipzig Charter on Sustainable European Cities in 2007, which added more authority to the concept of the “City of Short Paths”⁴. Furthermore,

2 Nordhause-Janz/Rehfeld 1995, 2012; Pizzera 2012

3 Gärtner/Flögel 2017

4 Brandt et al. 2017

The German Mining Museum in Bochum, the largest of its kind in the world.



Photo: Getty Images/Stockphoto

declining transport costs have shifted production to parts of the world where natural resources are cheaper, labour and other factor costs are lower and environmental regulations were and still are laxer.

Structural change creates opportunities

Structural change also repeatedly creates opportunities for a new start, for example buildings are empty and new things can be tried out. For instance, former industrial sites have been considered to have special potential for about 20 to 30 years from now and are no longer seen exclusively as the decline of the industrial base. This is also reflected in a corresponding policy for the preservation of historical monuments, specific funding programmes, international building exhibitions and well-designed architectural projects which often enhance the value of these building complexes. Within the framework of structural policy, interventions and economic development policies, services have been provided in many old industrial regions and districts in recent years, e.g. in the cultural and creative industries, but also knowledge-based services. The rehabilitated industrial buildings often serve as backdrops for these new cultural venues and creative added value.

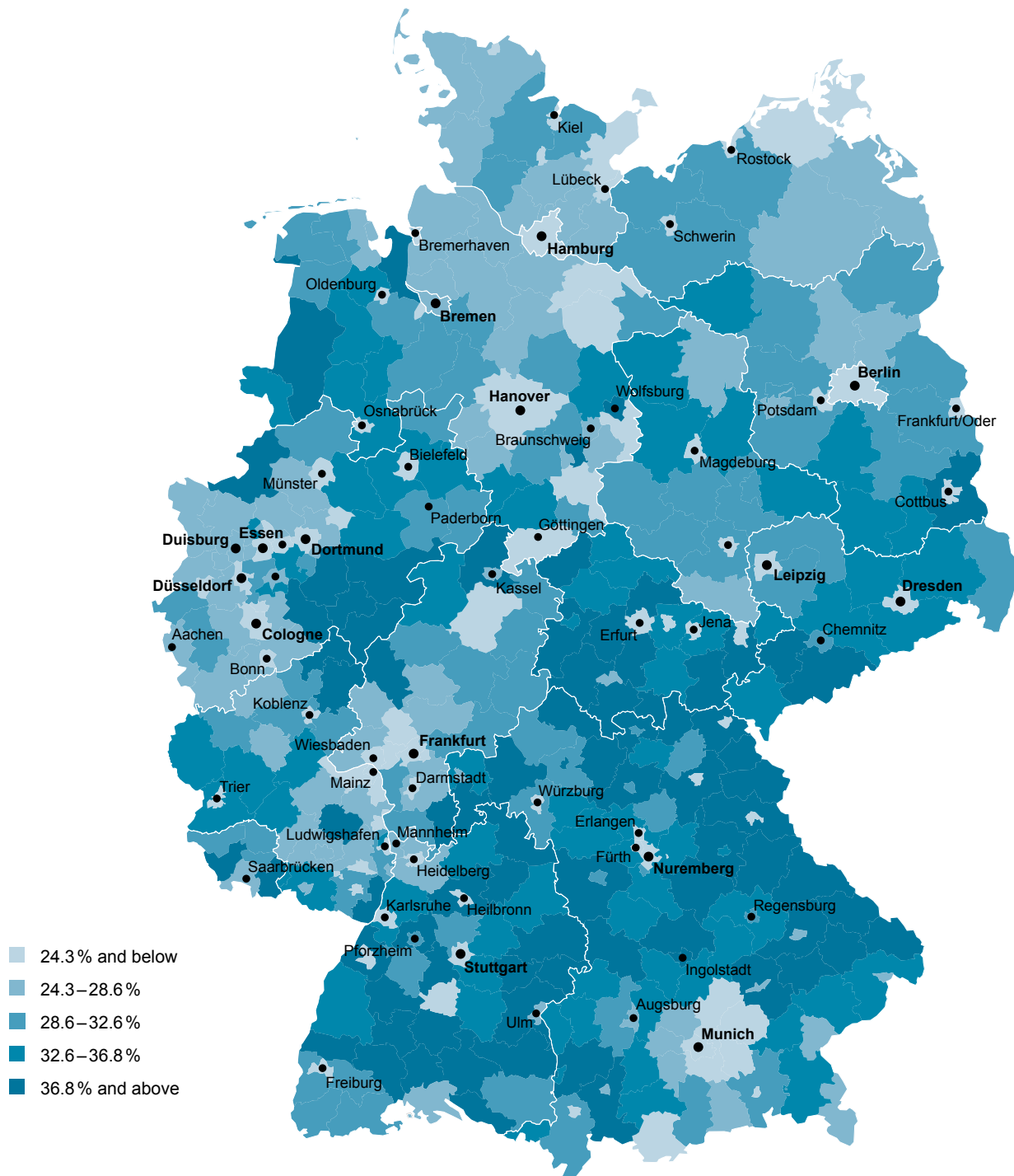
Strong significance of the service sector

However, this structural change has mainly created jobs in the service sector. The lower demand for labour due to the high productivity increase in the industrial sector could not be compensated completely and not in all regions by job offers in the service sector. In addition, salaries in the service sector have not increased to the same extent as in the industrial sector. This is mainly due to the fact that rising wages – at least in the case of private service companies – are usually financed by an increase in productivity. But on average, productivity gains are lower in the service sector than in the manufacturing sector. Even though de-industrialisation has contributed to an improvement in the quality of life, individual

Figure 3: Employees subject to social security contributions in production professions as a percentage of all employees, counties and independent cities 2014

Source: BBSR Bonn 2017

Data: Employment statistics of the Federal Employment Agency



employment biographies are fractured, because former industrial workers only partly fit the requirements of the new service industries. This also means that nowadays, e.g. in the Ruhr area, fewer people work in manufacturing professions than in the rest of North Rhine-Westphalia (Figure 3).

Size, location, economic diversity

Mining regions have always been affected by structural change: phases of economic growth are usually followed by phases of structural change, for example because deposits have been depleted or have become economically unprofitable for different reasons. These development pathways differ greatly. Whether cities and agglomerations survive structural change without significant demographic decline when the raw materials run out or have lost value due to developments on the global market depends, on the one hand, on their economic diversity, their size, the situation in the region and, on the other hand, on the political willingness to support the regions in developing new competitive economic fields. The commitment to support regions is partly determined geopolitically and culturally. For example, it is difficult to imagine suggesting to the people of Helgoland or the Azores that they move to the mainland and receive financial support, even if this would be cheaper in the long term than implementing permanent structural policies. In Europe, and especially in Germany, the State is more willing than in many other parts of the world to counteract and mitigate the consequences.

2.2 Political intervention is necessary for balanced regional development

Balanced structural policy

Regional structural policy has traditionally pursued the goal of balanced regional development motivated either by social policy or growth policy. The aim of social policy is to ensure that everyone in all sub-regions has equivalent living conditions. However, if growth is the goal, the main question is to define where financial support generates the highest overall economic return. From a growth policy standpoint, a balanced structural policy can also be justified by the fact that the best possible economic outcome is achieved by exploiting the full potential and resources in all areas.

Equivalent living conditions

In Germany there is a prescribed legal requirement to create equivalent living conditions in all sub-regions. Article 72, paragraph 2 of the Constitutional Law formulates a statement on spatial equilibrium, thereby conferring on the federal level the authority to act or legislate *“if and to the extent that the establishment of equivalent living conditions throughout the federal territory or the preservation of legal or economic unity in the national interest require regulation by the federal law.”*

Article 106 of the Constitutional Law which determines the financial equalisation among the federal states in the event of imbalanced development also impacts regions. Germany’s Regional Planning Act also takes a position in Section 1 (2) by requiring the establishment of *“similar standards of living in all regions”*.

However, this position has been slightly revised. After the reunification, the passage in Article 72 (2) of the Constitutional Law was changed from *uniformity to equivalence of living conditions*⁵, which creates greater scope for interpretation and action. It is therefore not a question of the same living conditions but equal living conditions.

Demand-driven approaches

In post-war Germany, the primary focus was to distribute growth and link the peripheral regions to the growth centres. In this traditional structural policy which strived to achieve a regional balance, demand-oriented approaches were mainly pursued, e.g. in the form of export base theory (see Figure 4).

5 E.g. Eickhof 2005:2; Hahne 2005

Figure 4: Income cycle according to the export basis model

Source: Gärtner 2008 based on Schätzl 2001



GRW - Improving regional economic structure

According to the theory, the engine of economic development is the export of goods and services and the income generated by a region. A key pillar of this policy is the Joint Federal/Länder Task for the Improvement of Regional Economic Structures (GRW) which was introduced in 1969 for the purpose of coordinating the various levels involved in structural policy (federal, state and local government). The GRW works with incentives to encourage investments in certain regions. As part of this policy to redirect investment, attempts were later made not only to generally divert investments to structurally weak regions, but also to concentrate them there on certain growth clusters⁶. Since the 1980s, this policy has been complemented – as part of a policy that relied less and less on large corporations – by targeting the development of start-up and technology centres and networking with universities and research institutes.

⁶ Becher/Rehfeld 1987

After attempts were initially made to channel this investment primarily to disadvantaged regions as part of an innovation-oriented regional policy⁷, since the 1990s research and education investments have been channelled to regions where specific competitive cores already exist as part of a policy that focuses more on regional competences. Even though the GRW has been reoriented for the 2014–2020 funding period, is now more strongly oriented towards Germany as a whole, makes individual company support possible again and now also includes elements such as the promotion of services of general interest and tourism⁸, it continues to focus heavily on the traditional industrial economy.

Decentralised, endogenous structural policy

As a counter model, decentralised, endogenous development has been promoted since the 1970s,⁹ and concepts developed with a stronger focus on endogenous development. This concept has experienced a renaissance since 2007, on the one hand, due to the debate about environmental transformation and, on the other hand, as a result of the financial crisis. These approaches go hand in hand with a shift in political and social values, relying more on a bottom-up rather than a top-down approach and focus more on personal accountability than before. One of the best-known bottom-up examples is the “Transition Town” movement launched by Rob Hopkins in 2005 in the town of Totnes in south-west England¹⁰ where, in addition to environmental goals, the aim is to create employment opportunities through regionalisation of value chains.

Monetary flows

The starting point for such a consideration is a systemic understanding of spatial economy. As shown in the figure below, different (monetary) flows enter and leave a region. In the case of a residential area, this would mainly involve income, transfer payments and investments. At the same time, money flows out of an area in the form of spending for external consumption (e.g. energy costs), taxes, social security contributions and returns. The regionalisation of value chains includes a significant reduction of the money outflow.

Traditionally, however, regional structural policy focused on the opposite: the aim was not to reduce the outflow of money, but to export goods and services to a region as the engine of economic development.

7 See Bömer/Noisser 1981

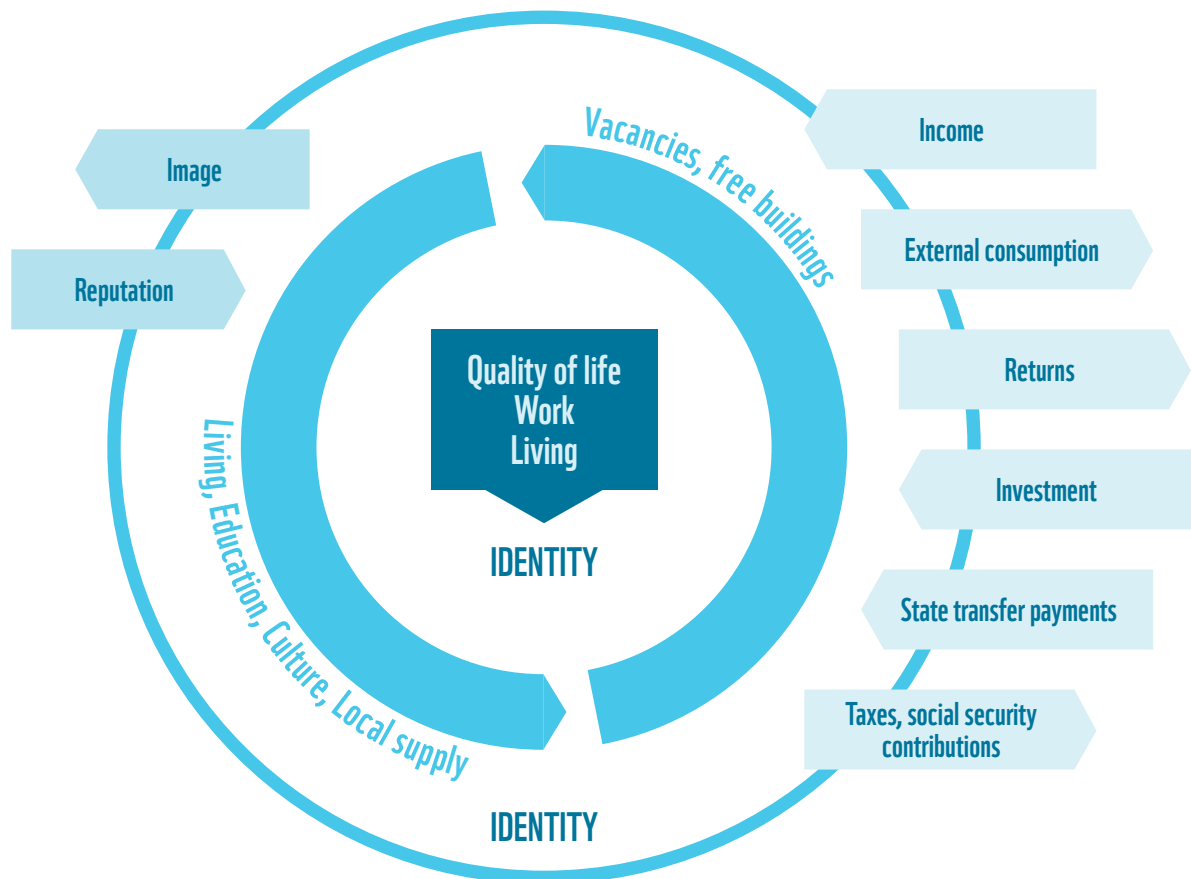
8 Coordination Committee of the Joint Task 2016

9 See Friedmann/Weaver 1979; Hahne 1985; Hahne/von Stackelberg 1994; Kappel 1999: 434

10 Maschkowski/Wanner 2014

Figure 5: Systemic analysis of regional economic processes

Source: Flögel/Gärtner 2011



The site of the former Nordstern mine in Gelsenkirchen was rehabilitated and transformed into a landscape park after the closure of the mine. The “Nordsternpark”, through which the Rhine-Herne Canal flows, hosted the Federal Horticultural Show in 1997.



Photo: Timo Beyl/pixelio.de

2.3 Shaping change

Shape change, don't prevent it

The example of the Ruhr area shows that, even if an initial attempt was made to change the framework conditions and stop structural change, structural change cannot be stopped. Regional actors often do not try to change the situation in the region and embrace structural change, but instead try to change the prevailing conditions. The decline of a region can therefore be exacerbated by stable, consensus-oriented relationship structures¹¹. In some cases, the dominating industries and companies are so powerful that they can exert influence. One notable example is the introduction of the coal penny in Germany in 1974, which helped to keep German hard coal subsidised and competitive. This does not just apply to industries with long traditions.

Initiate discursive processes at an early stage

Strong industry identity and clinging to traditional structures (although it is always difficult to identify what the industries of the future will be) can lead to a situation where change is prevented in the short term but cannot be stopped in the long term. This may be particularly detrimental to sectors and regions that do not have the power to permanently influence national and international policies and the related regulations to their own benefit in the long term or to which the harmful effects (e.g. climate damage resulting from coal-fired power generation) can be clearly and easily attributed. If it is not possible to prevent change in the long run, it makes more sense to accept and embrace change at an early stage than to fight it. For this insight to lead to action, a discursive process must take place with the shareholders and stakeholders.

¹¹ See Grabher 1990; Granovetter 1973

A victim of the global steel crisis in the 1970s: the ironworks in Völklingen, Saarland, which closed down in 1986. In 1994 the ironworks' pig iron production was declared a World Heritage Site by UNESCO.



Photo: picture alliance/BeckerBredel

Structural weaknesses offer potential, but also the risk of recurring crises

Old industrial cities and regions can also draw potential from their perceived structural weakness. In the context of structural and demographic change, for example, land and buildings frequently become vacant which can be used temporarily or permanently for cultural or economic activities. For example, the old industrial architectural heritage in the form of empty industrial buildings can be used as landmarks and for identification with symbolic or cultural value. The importance of these spaces for the hotspots of the creative scene has meanwhile been acknowledged in the development of urban areas, but some potential is also evident in more rural regions due to vacancies and economically underused spaces¹². These are usually individual examples that cannot trigger a self-sustaining economic upswing. And the dilemma here is that areas become vacant mainly in monostructured old industrial areas on the periphery¹³ while new uses are quickly found for these kinds of spaces or buildings in more prosperous areas. According to Kersten, Neu and Vogel¹⁴, the argument that special opportunities arise from cycles of crises also runs the risk of deserted spaces being rebranded as “creative zones”. In areas with particularly pronounced crisis cycles, civil society’s involvement and the potential of skilled workers are eroding along with economic developments. A reversal of this trend only seems realistic with the help of external interventions. At the same time, however, there must be an understanding that politics cannot solve everything and that there will be regions that will shrink economically and demographically. Potentially, peripheral industrial regions will be affected more strongly than larger (old industrial) agglomerations.

¹² Flögel/Gärtner 2011

¹³ Sandeck/Simon-Phillip 2008

¹⁴ 2015a

2.4 Structural policy is almost always too late

Preventive structural policy

Since the 1970s, debates have been taking place about a preventive rather than a structural policy implemented in retrospect. One of the early founders of this philosophy is Rembser from the German Federal Ministry of Research and Technology, who spoke about initiating active structural change¹⁵. Rembser's concept of preventive structural change was not concerned with building up forecasting capacities, but rather with building networks and promoting research and innovation, since "technology and scientific research can make a contribution to preventing problems or crises from occurring in the first place". According to the concept, support measures should not focus on the industry, but on the technologies, because they bring potential for the economy as a whole¹⁶.

Involve various actors from all social backgrounds

The issue was also taken up under the label "forward-looking structural policy" by trade unions and employee representatives who were looking for an "innovation-oriented regional policy". Innovation-oriented regional policy, which sought to integrate state funding for science and technology with regional structural policy and to increasingly channel it to disadvantaged regions, should be expanded to become a forward-looking structural policy¹⁷. Pfeiffer¹⁸, former managing director of the German Trade Union Confederation (DGB), is critical of the fact that global governance, which with the help of the German constitution and the Stability and Growth Act seeks to keep the Federal Republic balanced in a macroeconomic sense, "does not take regional development and sectoral economic cycles and crises into account". The trade union concept, which Pfeiffer proposes instead, provides for institutionalised macroeconomic and regional participation of the social groups in shaping opinions and positions related to economic policy decisions. His solution involves a forward-looking "structural policy that does not seek to rectify sectoral and regional undesirable developments retrospectively, but intends to avoid them in the first place"¹⁹.

15 See Rembser 1977: 5

16 Gärtner 2014; Rembser 1977: 39

17 Bömer/Noisser 1981

18 1982

19 Pfeiffer 1982: 623

High demand for information about future developments and trends

Thoss and Ritzmann²⁰ wanted their study “Informationsgrundlagen für die vorausschauende Strukturpolitik” (Informational basis for forward-looking structural policy) to contribute to qualitative growth, full employment of existing production factors and balanced development of supply and demand also at regional level. Thoss and Ritzmann²¹ distinguish between two structural policy strategies: first, the defensive strategy, which aims to slow the pace of structural change without being able to prevent it in the long term. They cite forward-looking structural policy as a second and preferred alternative: “A policy of this kind would be designed to prevent negative structural developments – i.e. imbalances in supply and demand in sectors (and/or regions) well in advance – and with a view to the future”²².

Additionally, growth industries should be supported effectively and the process of withdrawing from shrinking sectors should be started at an early stage. “In this way, the risk of misguided investments in vocational training and production facilities, which will no longer be needed in the future, could be reduced and the necessary structural change achieved with as little friction as possible”²³. They underscore the fact that a forward-looking structural policy requires a high level of information in the form of analyses, forecasts and projections²⁴.

Factor in forecasting problems

The fact that this has not been implemented in the discussed form is also due to the problem of forecasting, which is, however, less virulent in the context of an imminent coal phase-out, in particular due to the high climate damage of lignite-fired power generation. This has been reinforced in international spacial science by misguided, regional forecast-based, centralist planning by the French regional government as well as poor forecasting results of macroeconomic forecasts. In addition, the fall of the Berlin Wall, rapid reunification and the subsequent transformation took everyday politics in Germany by surprise. This showed, on the one hand, how quickly macroeconomic and geopolitical events can arise and, on the other hand, it required ad hoc measures that do not create any scope for a long-term perspective. In the course of the political transformation of Eastern Europe and Russia and the global market-oriented economic order, efforts were also made to avoid political concepts that had the appearance of planning and control.

²⁰ 1984

²¹ 1984: 4 ff.

²² Thoss/Ritzmann 1984: 5

²³ Thoss/Ritzmann 1984: 5

²⁴ Thoss/Ritzmann 1984: 6

New support criteria for preventive structural policy

It should also be kept in mind that structural policy is traditionally based on a regional status quo, structurally weak regions, for example, were supported in the past. In the case of preventive intervention, the structural weakness of a region will only become apparent in the future and will only come about if successful preventative action is not taken in advance. This is the fundamental challenge of prevention: if successful preventive action is taken, the original risk identified will not materialise. Policy-makers would therefore have to be willing to finance structural change in a region that, according to socioeconomic data, does not need funding at the expense of a region that is currently structurally weak. Structural change – unlike, for example, climate change (although implementation in this area also lags far behind the targets) – is not a real existential catastrophe for society as a whole. And the uncertainty as to whether there will actually be a change prevents any action from being taken.

However, the finite nature of mineral resources, for example, can generally reduce uncertainties and lead to structural change being initiated at an early stage by the stakeholders affected to create scope for action, and the competences in the entire value chain can be developed into new competitive sectors.

3 Structural change in Germany and the Ruhr area

To demonstrate the importance of coal production in Germany, the following section will first trace and analyse selected indicators of lignite and hard coal production. The structural

change in the Ruhr area over the past decades is then presented and analysed using selected indicators.

3.1 Development of coal production in Germany

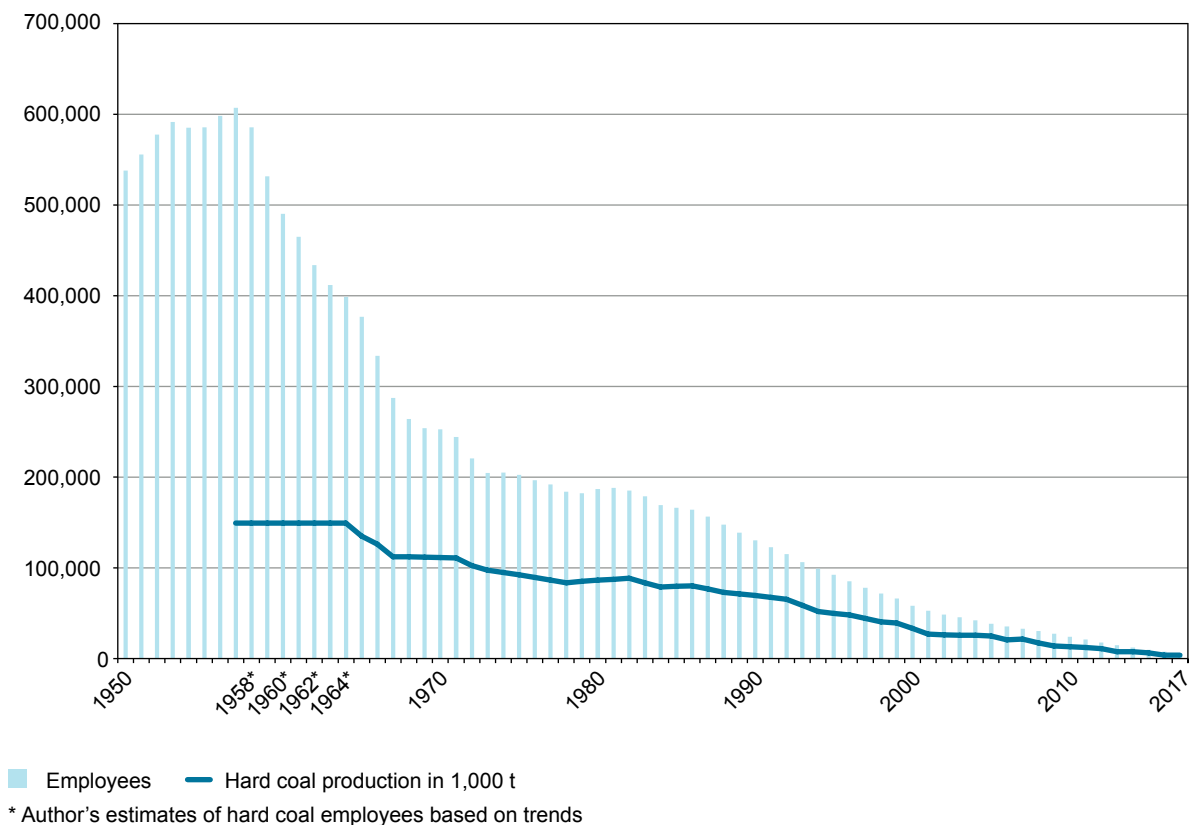
Long tradition of hard coal mining in West Germany

Coal mining has a long tradition in Germany. In the southern Ruhr area, for example, the first coal deposits were already being excavated in the Middle Ages for domestic consumption. Over the course of the advancing industrialization it was also possible to penetrate and extract deeper coal seams.

Figure 6 below shows the development of employees and coal production in 1,000 tonnes in hard coal mining in West Germany from 1950/1957.

Figure 6: Development of hard coal production and employees in West Germany, 1950–2017

Source: Statistik der Kohlewirtschaft e.V., author's data



- » Hard coal mining is very labour-intensive due to underground work. At the end of the 1950s, nearly 600,000 people were employed in this sector in Germany.
- » Due to high productivity gains in the 1960s, an above-average reduction in the workforce can be observed in this decade. Between 1957 and 1968, the workforce decreased by more than half (-343,300, -56%) from over 607,300 to 264,000. The coal deposits produced during this period fell by around 37.4 million tonnes (-25%). One reason for this was the various measures to stabilise demand for hard coal through government subsidies (see below).
- » Only after the substantial staff cutbacks before 1968 is it possible to speak of a slow and steady “structural change” by 2018, which is evolving roughly in parallel to the declining trend of coal mining. Since 2000, the number of employees has further decreased from just under 45,400 to 5,800 in 2016. This represents a workforce reduction of -87.2%.

High importance of lignite production in East Germany

Historically, the origins of lignite use in Germany date back a long way to as early as the 17th century. While hard coal was only mined in West Germany, lignite plays an important role in energy production both in West and East Germany (see Figure 7).

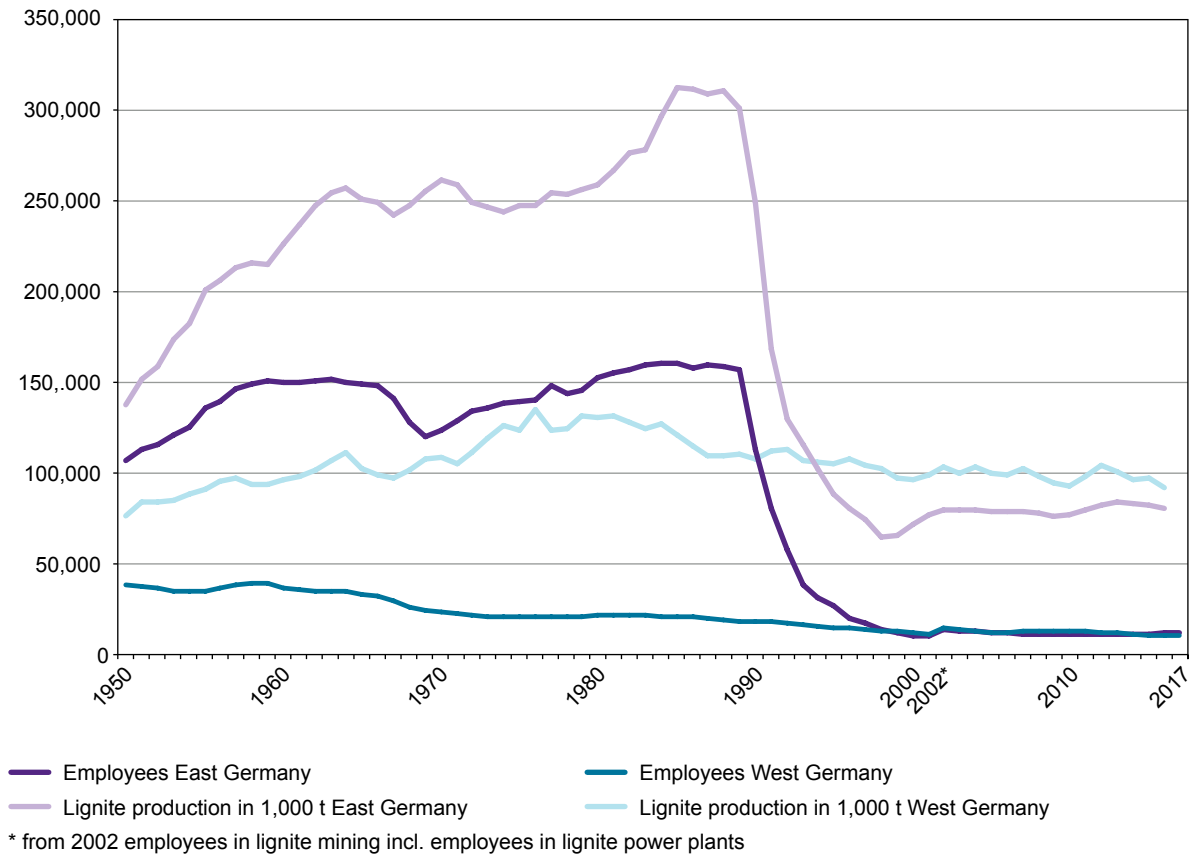
Welzow-Süd is one of the four active opencast lignite mining areas in Lusatia. With 8,600 employees and a production volume of 62.3 million tonnes (2016), lignite mining is still of great economic importance for Lusatia.



Photo: picture alliance / Andreas Frank

Figure 7: Development of lignite production and employees, East and West Germany 1950–2017

Source: Statistik der Kohlewirtschaft e.V., author's data



- » In the 1950s, lignite was much less important in West Germany than in East Germany both in terms of the volume of coal produced as well as the number of employees. In 1950, 37,600 people were employed in the sector in West Germany, and coal production amounted to 75.8 million tonnes. While the number of employees peaked in 1958 at 38,700, the volume of lignite produced rose with slight fluctuations until 1976, when it hit a high of 134.5 million tonnes in West Germany. In 2016, the approximately 9,900 employees mined 91.5 million tonnes of coal in West Germany which was processed in power plants.
- » In East Germany, on the other hand, lignite mining was of much greater importance, with 106,000 employees and 137.1 million tonnes of lignite produced in 1950. The number of employees rose continuously to 152,000 by 1963 (+44,800, +42.3%). Following a brief decline in the late 1960s and early 1970s, the workforce peaked at 160,000 in 1985. Lignite production also continued to steadily increase and peaked at 310.1 million tonnes at the end of the 1980s.

Structural rupture in East Germany after reunification

» The reunification of Germany resulted in a massive structural rupture in open-cast lignite mining in East Germany. The reason was the lack of productivity: in 1989, 109.9 million tonnes of lignite were produced in West Germany by 17,900 employees (or an average of 6.1 million tonnes per employee). At the same time, 156,700 employees in East Germany produced 300.8 million tonnes (or an average of 1.9 million tonnes per employee). In the subsequent years – between 1989 and 1996, i.e. in only seven years – the number of employees in East Germany fell from 156,700 to 18,900. This represents a loss of 137,800 (87.9%)²⁵. Lignite production in East Germany fell by 310.1 million to 80.3 million tonnes (-220.5 million tonnes, -73.3%) during the same period. Only after this period does East German lignite production stabilise to some extent, although this is marked by a continued slow and steady decline in employment. In 2016, around 11,200 employees were still working in this sector and producing around 80 million tonnes of lignite. Productivity between West and East Germany has thus largely converged. In West Germany, for example, an average of 9.2 million tonnes are produced per employee, while in East Germany the average comparable value is 7.2 million tonnes.

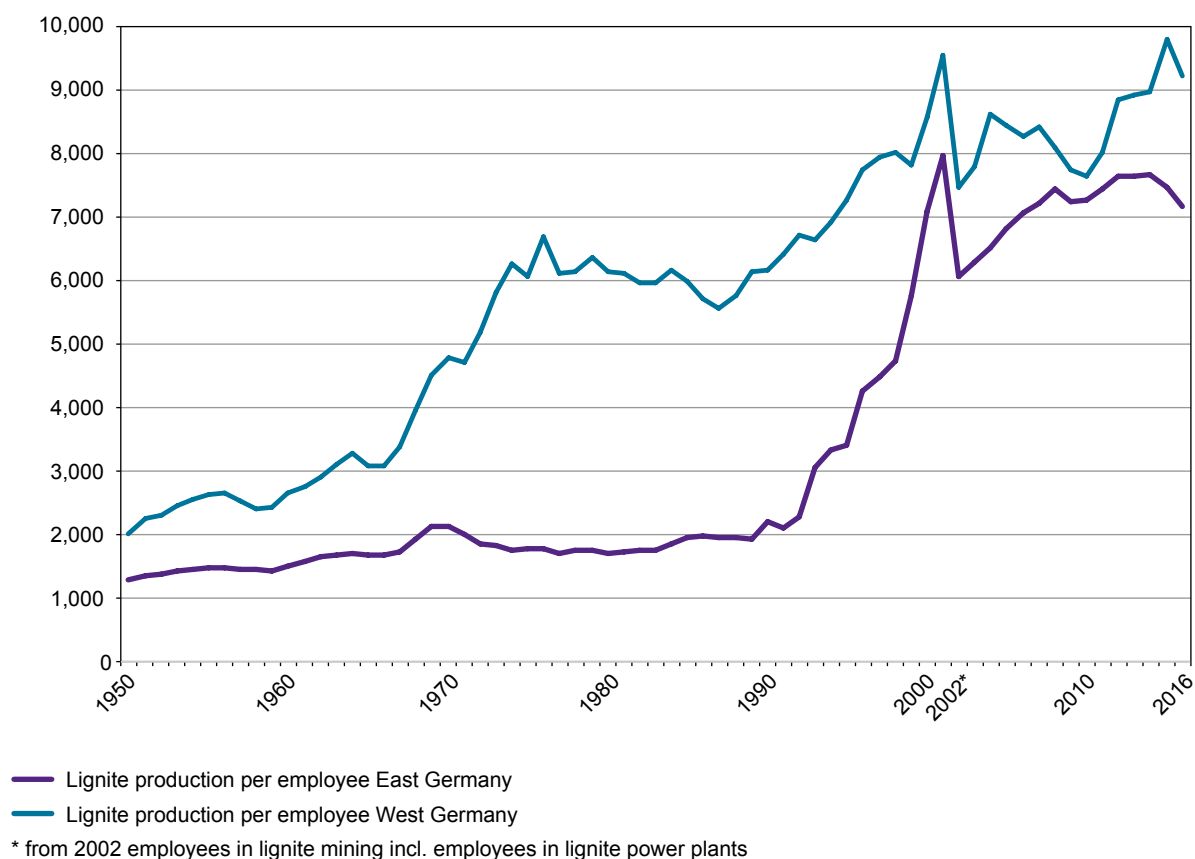
High productivity increases

Figure 8 shows the increase in productivity in lignite mining in East and West Germany since the 1950s. The decline in development between 2001 and 2002 is due to a change in the number of employees as all employees in the lignite-fired power plants are also included from this point onwards.

²⁵ The structural rupture in East Germany affected not only lignite mining, other economic sectors also collapsed with reunification. This major upheaval was not accompanied by specific programmes for individual sectors, but by programmes covering the whole of East Germany. The exact fate of the many people affected by lignite mining cannot be traced. Many older people took advantage of early retirement (covered by social systems). A study conducted by the German Institute for Economic Research (DIW) shows the employment biography of former employees in the lignite sector. They are unemployed longer than employees in other industries and the wage losses when starting a new job are higher than average (Franke et al. 2017).

Figure 8: Lignite production per employee in West and East Germany, 1950–2016

Source: Statistik der Kohlewirtschaft e.V., author's data

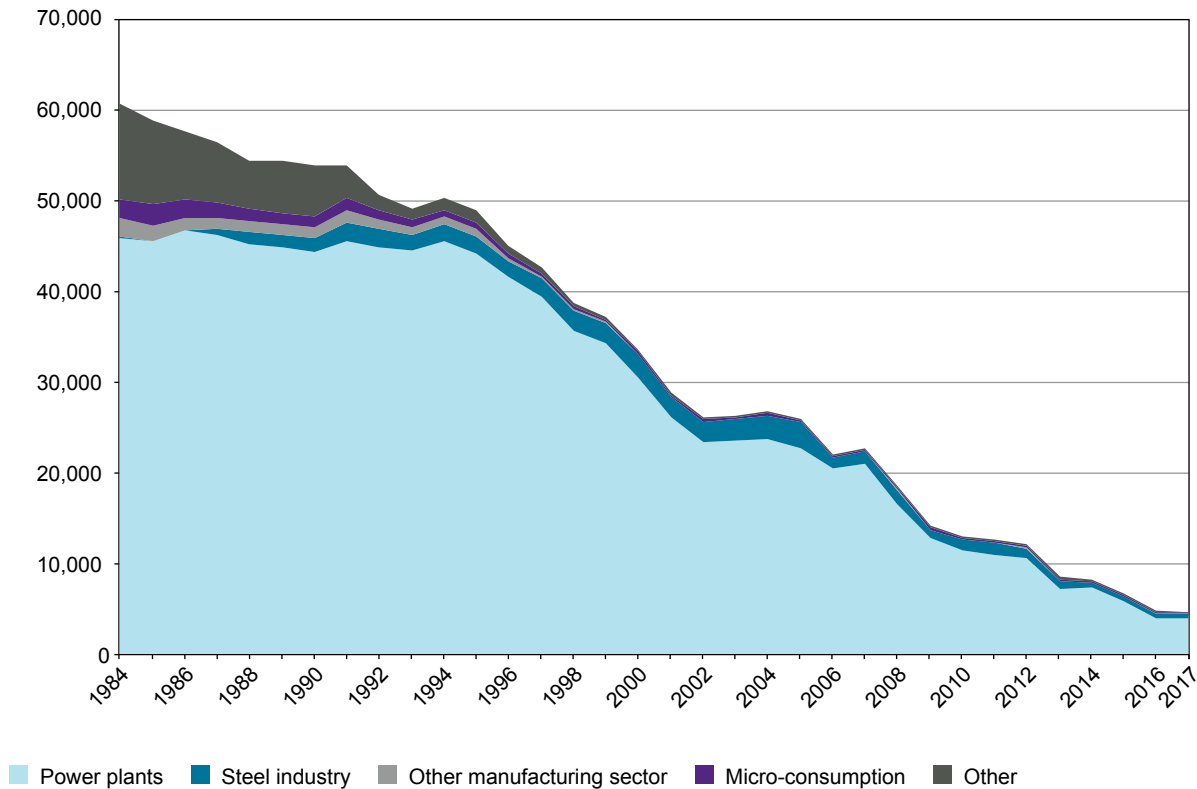


A lot of productivity gains were made in both West and East German lignite production.

- » In West Germany, the volume of lignite produced per employee rose from 2,000 tonnes in 1950 to 9,200 tonnes per employee in 2016. This means that the volume of lignite produced per employee more than tripled (358%).
- » A structural rupture occurred in East Germany in the wake of the reunification. While the volume of lignite produced per employee rose from 1,300 tonnes to 2,200 tonnes between 1950 and 1989, there has been a significant increase in productivity since 1990 due to the unusually large reduction in employment, but also to a significantly lower level of lignite mining. Since 1991, productivity has increased from 2,100 tonnes to 7,100 tonnes per employee.

Figure 9: Development of the use of hard coal in 1,000 t, West Germany 1984–2017

Source: Statistik der Kohlewirtschaft e.V., author's data



In addition to the volume of coal produced and the changes in the numbers of employees, it is interesting to analyse how lignite and hard coal were and are used in Germany. Figure 9 shows the development of the use of hard coal in West Germany.

In the case of West German hard coal, the continuous phase-out of hard coal production, which was finally decided in 2007, becomes evident. The production volume decreases from 60.6 million tonnes in 1984 to 4.7 million tonnes in 2017. In 1984, 45.9 million tonnes were used in power plants which is equivalent to a share of 75.7%. However, it is not just the link between hard coal and electricity generation that becomes visible, but also the link to the steel industry. 17.3% of hard coal was exported, with around half purchased by steel producers. The percentage used by the domestic steel industry is also slightly increasing. Around 3.5% of hard coal was used for micro-consumption in 1984 including use for private purposes (household heating). The miners and their widows received a lifelong supply of hard coal from Ruhrkohle AG (RAG).

Figure 10: Development of the use of lignite in 1,000 t, East Germany 1989–2016

Source: Statistik der Kohlewirtschaft e.V., author's data

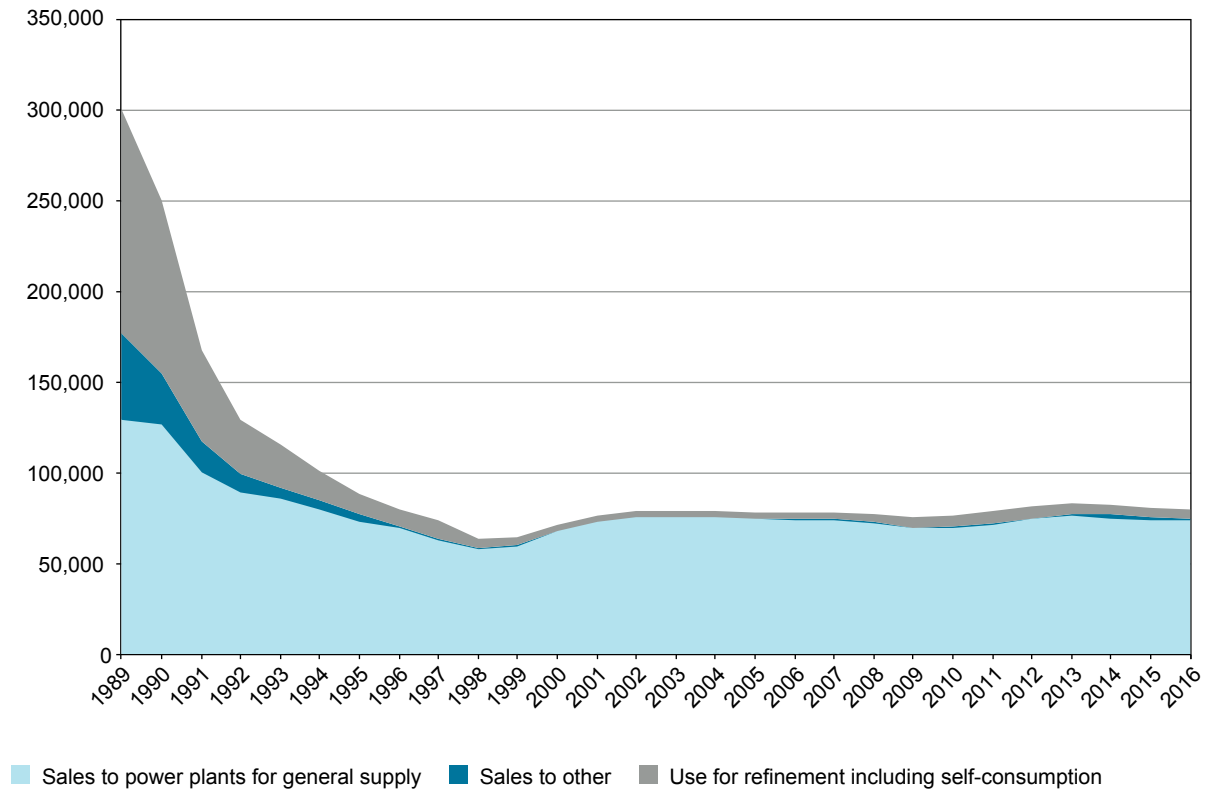


Figure 10 shows how East German lignite was used in 1,000 tonnes between 1989 and 2016.

- » With respect to the use of East German lignite, it has stabilised at a constant level of around 80 million tonnes after the structural rupture in the wake of reunification.
- » It is also clearly evident, however, that lignite was still widely used for personal consumption at the end of the GDR period until the early 1990s. The percentage here was still around 41.2% in 1989 and then fell to less than 10% during the 1990s. Accordingly, the importance of lignite use in power plants increased from 43.1% to 92.1% by 2016.

3.2 Structural change in the Ruhr area

High immigration rates in the middle of the 19th century

With around five million inhabitants on an area of 4,400 km², the Ruhr is one of the most densely populated regions in Europe. This was not always the case: prior to industrialisation, which began in the middle of the 19th century, there were still less than a million people living in the Ruhr area²⁶. As a result of industrialisation, the Ruhr area experienced an enormous increase in population in a very short time due to immigration. After a temporary peak of over 5.5 million inhabitants in the 1960s, the number of inhabitants remains relatively constant at around 5 million. Figure 11 shows the total of 15 districts and independent cities in the Ruhr area, which are located in the heart of Europe and border the Rhineland with the cities of Dusseldorf and Cologne.

Figure 11: Counties and independent cities in the Ruhr area

Source: Author's data



500,000 employees in Ruhr mining in the 50s

Since the mid-1950s, when the highest number of employees measured was 500,000, the Ruhr area has been phasing out hard coal. This means that every tenth inhabitant in the Ruhr area was employed in mining. This shows the immense importance of mining for this region and the families living there, especially as it must be kept in mind that the traditional “sole breadwinner model” still prevailed at the time, in which men pursued gainful employment while women were responsible for raising children.

The first coal crises, however, cut the number of jobs in half by the end of the 1960s: the number of employees fell from 495,800 in 1957, the year of

²⁶ Source: Statistics of the RVR

*Everyday life in the Ruhr area in the 1950s.
Miners on the “underground” road.*

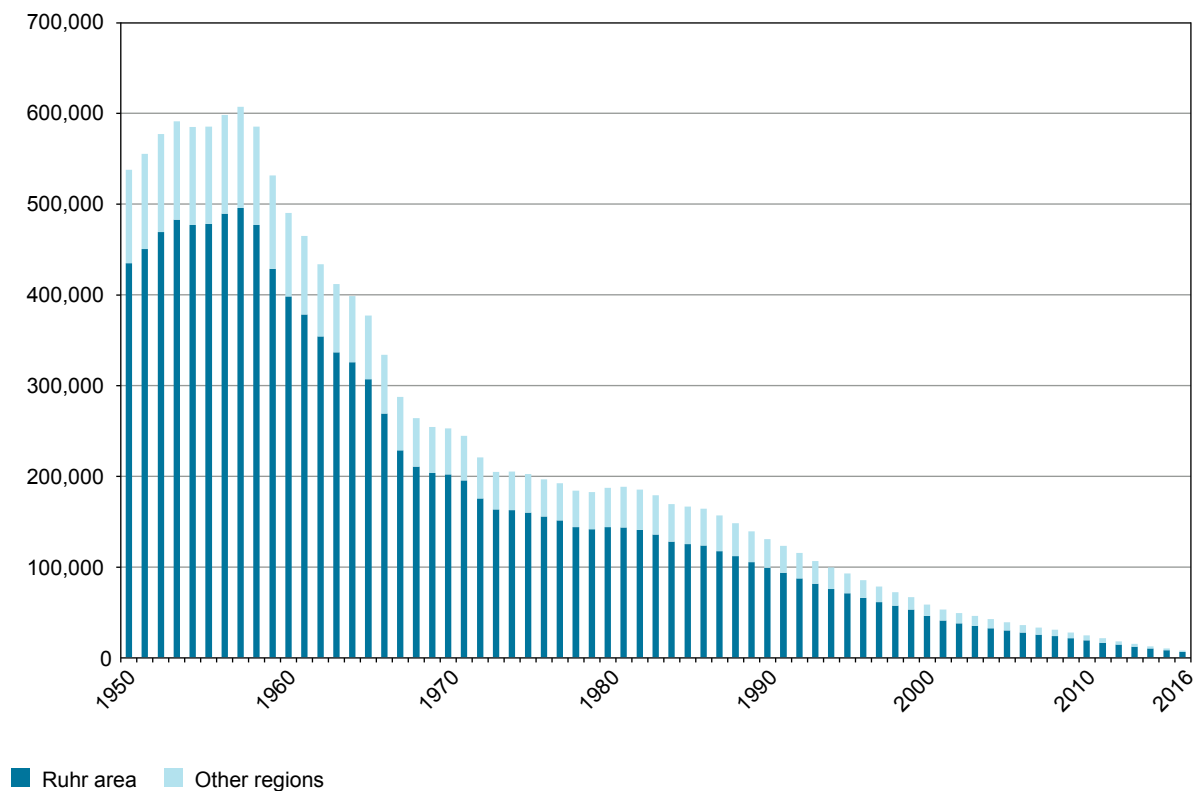


Photo: picture-alliance / KPA/Andres

the highest level of employment, to 210,300 in 1968, the year in which the first specific structural policy programme for the Ruhr area was launched (see below). This represents a decline of more than 285,600 employees and thus a percentage employment loss of 57.6% (see Figure 12).

Figure 12: Development of employee numbers in the coal mining industry, Ruhr area 1950–2016

Source: Statistik der Kohlewirtschaft e.V.



Declining importance of the manufacturing sector

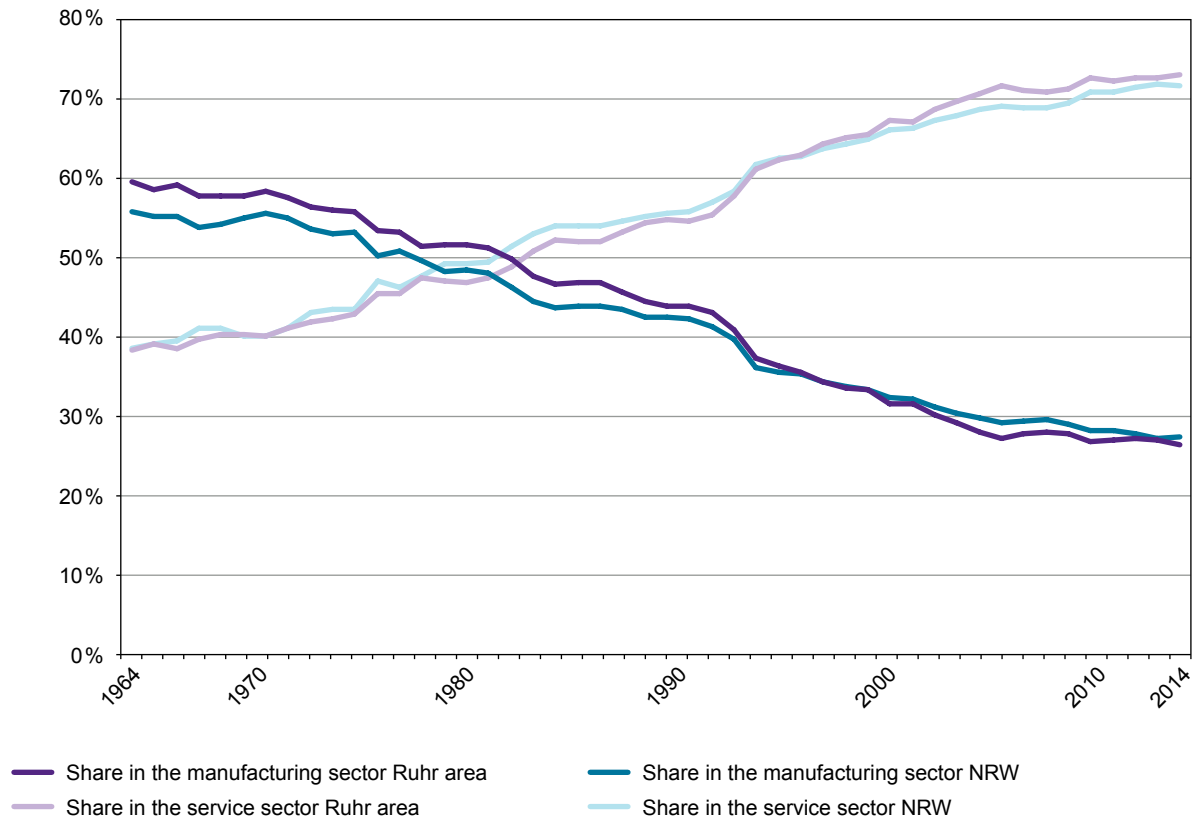
In the 1970s, the transition to a service society got underway. Since then, the share of the workforce employed in the service sector – with slight cyclical fluctuations – has risen, while the share of those employed in the manufacturing sector has declined. This trend can be observed for both the federal state of North Rhine-Westphalia (NRW) and the Ruhr area (see Figure 13). For the Ruhr area, it is important to keep in mind:

- » that the structural change towards a service-based economy (measured in the percentage of employees) began about three years later than in NRW due to the high significance of the coal and steel industry;
- » that the percentage losses of people employed in the manufacturing sector were higher than in NRW in the period 1964–2014 (Ruhr area: -57.2%, NRW: -42.7%), while the growth in the service sector with an increase in employment of 84.2% is lower than the national average of 116.4%;
- » that at 26.4%, the percentage of people employed in the manufacturing sector in the Ruhr area is now below the national average of 27.4%

Economic development thus lags behind development of NRW.

Figure 13: Share of employees in the manufacturing and service sector, Ruhr area and NRW, 1964–2014

Source: Employment statistics of the German Federal Employment Agency, Calculation and representation: IAT



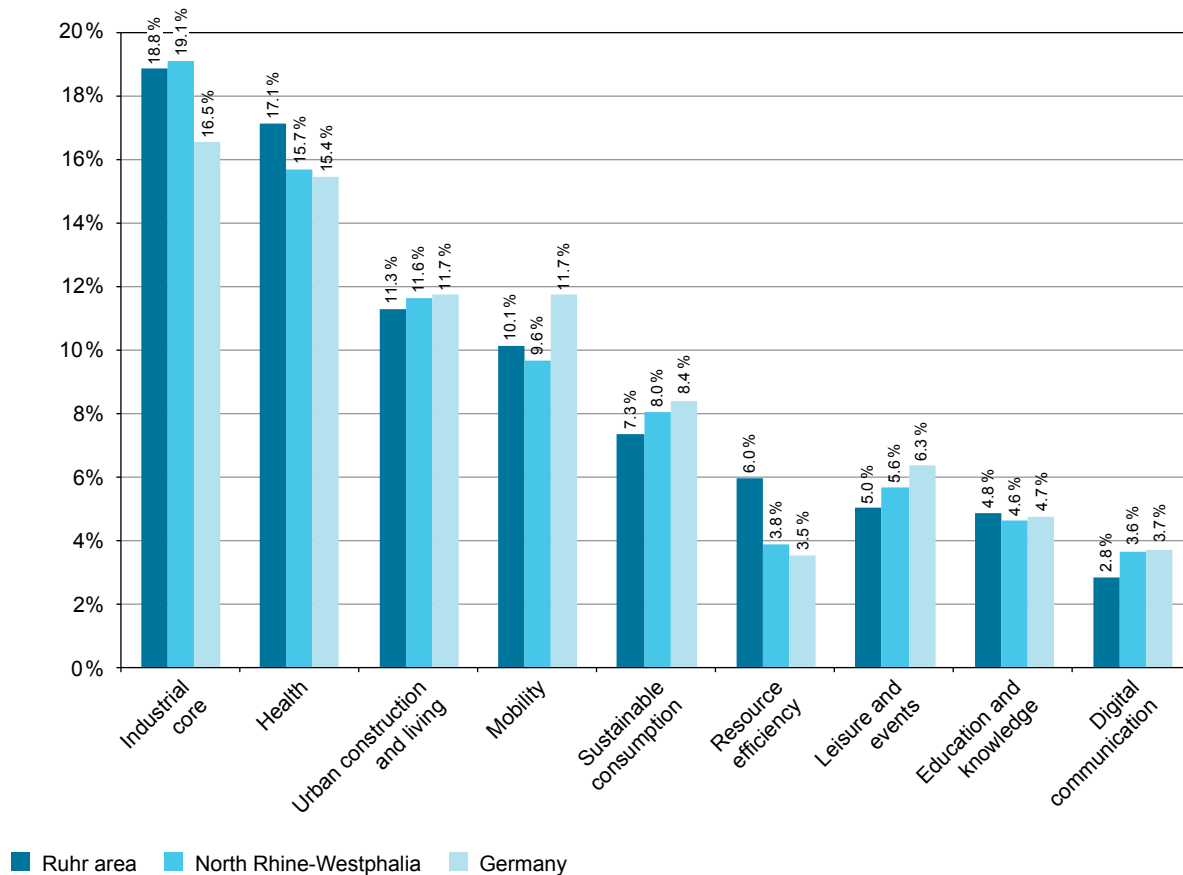
Focus on lead markets

As part of an analysis carried out on behalf of the business.metropole Ruhr, eight leading markets were defined for the Ruhr area in 2008²⁷. These fields of competences are characterised by regional competencies and future viability. However, the Ruhr area only has above-average employment percentages for 2013 in the lead markets of health with 17.1%. (NRW: 15.7%, Germany: 15.4), mobility with 10.1% (NRW: 9.6%, Germany: 11.7%) and resource efficiency with 6% (NRW: 3.8%, Germany: 3.5%), which includes both renewable energy and traditional energy suppliers. In the lead market of education and knowledge, the Ruhr area (4.8%) is at the same level as NRW (4.6%) and Germany (4.7%) (see Figure 14).

²⁷ Nordhause-Janz/Rehfeld

Figure 14: Employees subject to social security contributions in the lead markets as a percentage of all employees subject to social security contributions 2013

Source: Employment statistics of the German Federal Employment Agency, Calculation and representation: IAT



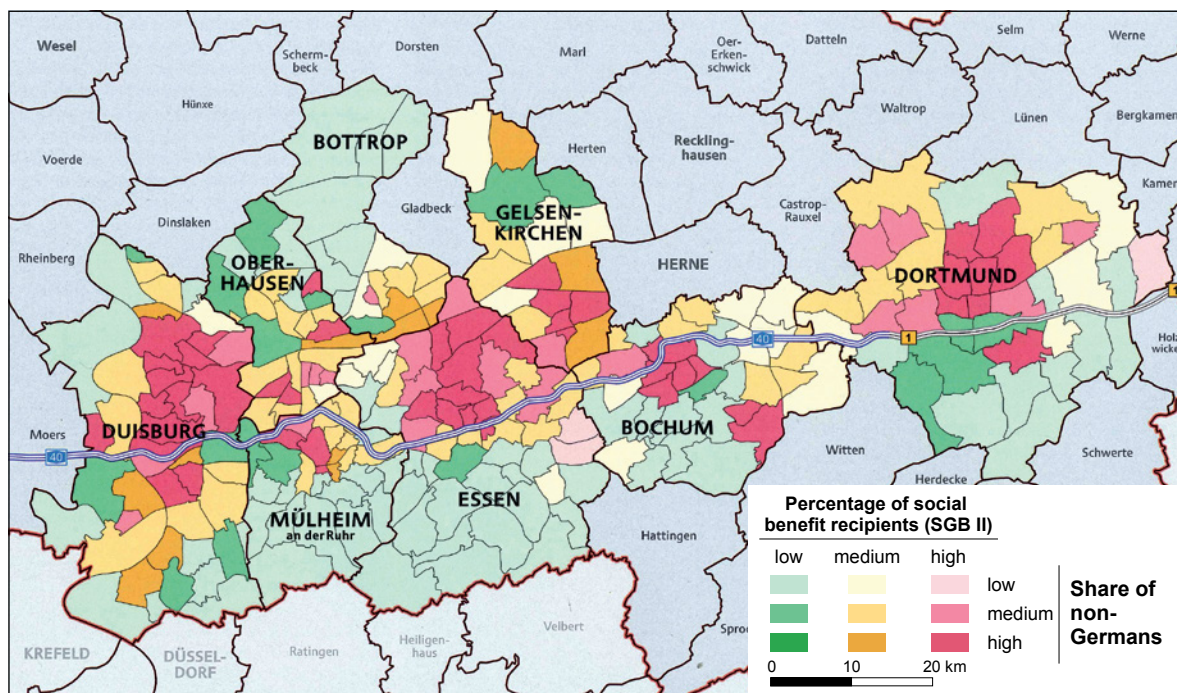
With the decline of coal and steel in the Ruhr area, a change began which is still ongoing today. This affects the northern Ruhr area in particular because of the later onset of structural change due to the “northward migration²⁸” of coal mining. In the southern Ruhr area, the loss of coal and steel was compensated more strongly due to the expansion of the universities in Bochum, Dortmund, Essen/Duisburg, the private university in Witten, the distance learning university in Hagen and several successfully established technology centers. In single neighborhoods in the southern Ruhr area, a new urban quality has emerged with high-quality services and cultural centers.

²⁸ Coal production started in the Muttental valley in Ennepe Ruhr country in the southern Ruhr area and migrated north in order to extract the deeper coal there as technology advanced.

Figure 15: Ratio of social benefit recipients (SGB II) in selected urban districts in the Ruhr area – Social Equator A40 Highway

Source: Bogumil et al. 2012: 25

(Draft: T. Terpoorten, Cartography: U. Beha)



Intra-regional division of the Ruhr area

In the northern Ruhr area, on the other hand, multiple problems are exacerbating the situation. These include above-average unemployment rates, lower employment rates, higher income poverty and higher percentages of people receiving social benefits (SGB II), a higher occurrence of health problems and a lower level of education, etc.²⁹ It must be noted that this dividing line runs right through the individual cities, such as Dortmund, Bochum or Essen, as can be seen in Figure 15 in the example of the percentage of recipients of social benefits in the population aged 15–65 in the individual urban districts. The Emscher-Lippe area in the northern Ruhr area faces particular structural challenges.

Overall, it should be noted that the phase-out of coal production in Germany has already had a considerable structural impact. This can be seen in the Ruhr area, where mining ends at the end of 2018 with the closure of the last coal mine. This also holds true to the period around the fall of the Berlin Wall, when East Germany experienced a considerable structural rupture with a high drop in the employment rate in lignite due to low productivity.

²⁹ see Strohmeier 2002, Schräpler et al. 2017, Neu/Dahlbeck 2017

Structural policy in Germany

The following chapter aims to show how structural policy shaped structural change in the Ruhr area over the last 60 years, and which structural policy measures are to be used with regard to the four still existing lignite mining areas within the framework of the “*Unternehmen Revier*” program (Reinventing Coal-Mining Districts).

4.1 Structural policy in the Ruhr area

Structural policy in the Ruhr area over the past six decades can be roughly divided into four phases:

- » Integrated structural policy (1966–1974)
- » Centralised structural policy (1975–1986)
- » Regional structural policy (1987–1999)
- » Fields of competence oriented structural policy (since 2000)³⁰.

4.1.1 Integrated structural policy (1966–1974)

Coal and steel crises

No later than the first coal crises, it became clear to those responsible at federal and state level that the path taken to stabilise demand for hard coal through links with the steel and power generation industries was not sufficient to make up for the lack of competitiveness of German hard coal.³¹ On the contrary, the combination of coal and steel further accelerated the structural crisis in the Ruhr area in the years to come, especially with the subsequent steel crises.

First introduction of a regional active, integrated structural policy

Active structural policy in Germany was introduced with the start of the Ruhr Development Programme (Entwicklungsprogramm Ruhr, EPR) in 1968. Instead of the previously practiced sectoral promotion, an integrated approach of specific measures for the development of an

³⁰ Arndt et al. 2015

³¹ These include the first, second and third *Verstromungsgesetz* regulating the conversion of coal into electricity which granted power plant operators and the steel industry tax subsidies for using domestic hard coal and gave the iron and steel industry financial resources for social measures if layoffs were necessary (Goch 1996: 382–386). With the introduction of the “*Kohlepfennig*”, or coal penny, in 1974, a special consumer tax on electricity subsidised sales of domestic hard coal. In 1994, this compensation payment was “overturned” by Germany’s Federal Constitutional Court.

Until the beginning of the sixties, there was not a single university in the Ruhr area. With the founding of the Ruhr-University Bochum (pictured here), the region began to change from an industry location to one of research and development.



Photo: Niko Korte/pixelio.de

“old industrial region” was used for the first time. The focus of the measures was on the socially responsible reduction in employment in the coal industry and the expansion of the infrastructure in the Ruhr area with the aim of aligning it with nationwide standards³², in particular:

Demand-driven approaches

- » expanding the road network and public transport system,
- » expanding regional recreational facilities (e.g. coal mining district parks) and
- » establishing and expanding the education and research infrastructure.³³

In particular, the expansion of the academic and research landscape in the Ruhr area can be regarded a success, as no university existed in the Ruhr area until the mid-1960s. In this period, the merger of the mining companies led to the reorganisation of the Ruhr mining sector into a single mining company: the Ruhrkohle AG in 1969.

The Ruhr Development Programme (EPR) was designed for a period of five years, but was transferred to the North Rhine-Westphalia Programme in 1970. The financial volume was DM 17 billion with funds provided by the German federal government, the federal state, the European Community (EC) and the Germany Federal Labour Office³⁴.

³² Kilper et al. 1996: 16

³³ see Arndt et al. 2015: 101–102; see Heinze et al. 1996: 17–20; Kommission Montanregionen des Landes Nordrhein-Westfalen, 1989: 59

³⁴ Goch 1996: 395

*Today more than ever
a disturbing sight:
View of the empty
Duisburg-Kaiserberg
motorway junction.
As a result of the “oil price
crisis” in 1973, a driving
ban was imposed in
Germany on Sundays.
With the rise in oil prices
and the awareness
of dependence on oil,
the coal industry
regained confidence.*



Photo: picture-alliance/dpa

4.1.2 Centralised structural policy (1975–1986)

Centralisation of regional planning

With the global oil price crises in the 1970s, the competitive situation for industry in the Ruhr area also intensified. Policy-makers responded by turning away from integrated and demand-side (infrastructural) measures in favour of more central and supply-side measures³⁵ that focused on the existing large industry: between 1975 and 1985, technology was promoted by the state of North Rhine-Westphalia under the scope of the four technology programmes for Mining, Energy, Economy and Steel. The aim was to boost the productivity of the large local companies and thus improve competitiveness, minimise environmental pollution and optimise technology transfer³⁶. Except for the Steel Technology Programme, these programmes were transferred to the Ruhr Action Program in 1980 (Aktionsprogramm Ruhr – APR) – Modern Structural Policy for the Ruhr area. The APR operated for four years and had a total budget of DM 6.9 billion, of which DM 5.1 billion was provided by the state of North Rhine-Westphalia and DM 1.5 billion by the German federal government from the various programmes.

Centralised supply-side structural policy

As a result of the oil price crisis and the recurrent hope of a coal renaissance as a competitive energy source, the state government relied on the APR to upgrade the old industrial monostructure in the Ruhr area with the “traditional” components of infrastructure development, urban renewal, technology promotion, training and further education. In addition, a number of coordination problems became apparent due to

³⁵ Kilper et al. 1994: 18

³⁶ Heinze et al. 1996: 23–28; Arndt et al. 2015: 102–103

the different responsibilities between the federal, state and local authorities, which prevented a “re-industrialisation perspective”³⁷ from being formed for the entire Ruhr area³⁸.

Grundstücksfonds Ruhr (Ruhr Property Fund)

An important innovation was the establishment of the Ruhr Property Fund (Grundstücksfonds Ruhr) as part of the programme³⁹. The aim of the State development company North Rhine-Westphalia (Landesentwicklungsgesellschaft Nordrhein-Westfalen für Städtebau, Wohnungswesen und Agrarordnung mbH) (LEG NRW, today NRW.Urban), which was in charge of managing the Ruhr Property Fund, was to rehabilitate the old abandoned land and make it available for new businesses. The Ruhr Property Fund was expanded to include all of NRW in 1984. In this phase, the centralisation of regional planning was shifted from the Ruhr area to the state level. Moreover, a monitoring instrument was centralised at state level. Since 2009, planning competence has been assigned to the Regional Association Ruhr (Regionalverband Ruhr – RVR) both by the state and by the Ruhr municipalities, which has been responsible for regional planning ever since.

4.1.3 Regionalised structural policy (1987–1999)

“Zukunftsinitiative Montanregionen – ZIM” (Future initiative coal and steel regions)

In 1987, in response to the ongoing coal and steel crises, the NRW state parliament adopted the “Zukunftsinitiative Montanregionen – ZIM” (Future initiative coal and steel regions), which pooled funds from the federal, state, municipal and EC levels⁴⁰. The introduction of ZIM heralded the start of regionalised structural policy in Germany. This step followed the realisation that the economic structure within the Ruhr varied from area to area and that the involvement of regional stakeholders was necessary for the development and implementation of structural policy measures to be successful. This was the first time that the central control of the federal level was “weakened”. However, these new procedural processes had hardly any impact as the content of ZIM was similar to the APR: key building blocks included innovation and technology promotion, forward-looking qualification and job-creation measures, infrastructure expansion and environmental measures⁴¹. Like previous programmes, ZIM was expanded to include the entire federal state in 1989 (Future initiative North Rhine-Westphalia – ZIN).

37 Kilper et al. 1994: 19

38 Kilper et al. 1994: 19

39 Arndt et al. 2015: 104

40 Heinze et al. 1996: 37

41 Heinze et al. 1996: 37

The “stairway to heaven”. The 10 metre high sculpture made of demolition material from the former heavy industry rises as a landmark on the Rheinelbe slagheap in Gelsenkirchen. In the course of the IBA Emscher Park in the nineties, the slagheap was developed as a local recreation area.



Photo: Thomas Max Müller/pixelo.de

IBA Emscher-Park

The International Building Exhibition (IBA) Emscher Park ran between 1989 and 1999. The Ruhr municipalities located in Emscher and Lippe were the main participants. In addition to the renaturation of the Emscher system, which will only be completed in the coming years, and the expansion of the Emscher Landscape Park, the focus lay on transforming old industrial buildings, into places of culture, art, recreation or even residential schemes. While a great deal of success was achieved here, which made the Ruhr area more attractive as a tourism destination, other goals such as the conversion of old industrial buildings for new services were less successful⁴². The IBA Emscher Park was the last major structural or rather regional policy programme for the Ruhr area and displayed an important structural milestone because it was the first time that the region’s industrial and cultural heritage was successfully acknowledged. The renovated industrial buildings have since served as backdrops for these new cultural attractions and creative added value venues.

42 Goch 2011: 70–71; Arndt et al. 2015: 109–110

4.1.4 Field of competence oriented structural policy (since 2000)

With the adoption of the Lisbon Strategy in 2000, the cluster or field of competence oriented focus was integrated into European structural policy. The cluster concept was primarily developed in the 1990s by Michael E. Porter⁴³. According to Porter, clusters are understood to be a “spatial concentration of interdependent companies on the vertical relationship level along the value chain (supplier and producer) and the horizontal relationship level between research and development, qualification and technology promotion”⁴⁴. Known worldwide, Silicon Valley (USA) represents an example for a high-tech IT cluster.

Fields of competence-oriented structural policy

In North Rhine-Westphalia and the Ruhr area, too, the discussion about fields of competence and clusters was reflected in structural policy. The Lisbon Strategy and the subsequent Europe 2020 Strategy adopted in 2010 constitute the framework for the specific design of the operational structural programmes of the structural funds for the individual German federal states. The theoretical debate about expertise-oriented or cluster policy has influenced the structural policy actors in the Ruhr area since the mid-1990s, and various actors have defined different fields of competence, production clusters and lead markets for the Ruhr area⁴⁵.

Commissioned by the Business Metropole Ruhr GmbH, the Institute for Work and Technology (IAT) defined the eight leading markets⁴⁶ of: resource efficiency, urban construction and housing, mobility, health, education & knowledge, digital communication, leisure & events, sustainable consumption as well as the industrial core and business-related services in 2008⁴⁷.

Establishment of management structures

Meanwhile, management structures have been established in numerous leading markets. However, the fact that some parallel structures still exist between the federal state and the Ruhr area presents a problem, as the leading markets of the state of North Rhine-Westphalia and the Ruhr area are not coordinated distinctively.

43 1990

44 Muth/Rehfeld 2004: 3

45 Kiese 2012: 140 ff.

46 The leading markets are value creation networks that have been identified in analyses as vital for the future development of the economy in the Ruhr area (Nordhause-Janz/Rehfeld 2013).

47 Nordhause-Janz/Rehfeld 2008

4.1.5 Evaluation of structural policy measures in the Ruhr area

A review of structural policy measures in the Ruhr area including conclusions for other regions can only be performed if the specific regional characteristics and the integration of structural policy into other policy fields – in particular how they interact with the social policies of the labour market and pension policy, but also with the energy policy – are considered.

Political dependency

Securing domestic energy sources: The promotion of hard coal as an autonomous energy source was of exceptionally high importance in post-war Germany. As a result, the Ruhr's economy was always heavily dependent on political decisions. Over time, it became even more important as a result of the links between coal production, electricity and steel production.

Social systems provide cushioning

Socially responsible layoffs: As the cutbacks in employment in hard coal were socially responsible, the social stability in the Ruhr area was largely maintained. The slow, heavily subsidised phase-out of hard coal prevented the “structural upheavals” that occurred in East Germany after the fall of the Berlin Wall in 1990. The main reason for this lies in the specific features of the social market economy in Germany with its social partner model and the relatively supportive social system compared to other countries, in particular the long-standing possibility of early retirement. For mining employees, early retirement does not have a significant financial impact due to legal and collective bargaining regulations. Even today, miners can retire at the age of 50 owing to their physically demanding work.⁴⁸ This was not the case for many employees of supplier companies who were not covered by many of these regulations.

48 Miners who worked for a long time underground are eligible for early retirement at the age of 50 (Art. 238, Social Code Book (Sozialgesetzbuch – SGB) VI). They receive the state-financed early retirement payments benefits in this case. At the age of 55, the early retirement payments are replaced by the miners' compensation payments (DRV – Deutsche Rentenversicherung Bund 2017).

*The private University
Witten-Herdecke.
The densely populated
Ruhr area has succeeded
in establishing a dense
research and university
landscape. This means
that the conditions there
are quite different from
those in other regions
of Germany with a more
rural character.*



Photo: picture alliance/blickwinkel/S

Dense urban sprawl at the heart of Europe

Unique regional characteristics: The Ruhr area grew to more than five million people in a very short time as a result of industrialisation, making it one of the most densely populated regions in central Europe. This makes the Ruhr area interesting both economically with its large sales market for new businesses and because it has established one of the densest research and university landscapes as well as a successful technology advancement infrastructure. The Ruhr area therefore had completely different conditions than those in the rural lignite mining districts in Germany or abroad. This also applies to the value chain of the coal and steel industry, which enables the growth of new and distinct sectors. Starting in the 1970s, for example, the coal and steel industry gave rise to the environmental sector in the Ruhr area as a result of the stricter environmental standards. This industrial sector is still present in the region today although the coal and steel industry is no longer relevant⁴⁹. It should also be emphasized that the large number of unionised workers (at least in the past) created strong political pressure.

The state of North Rhine-Westphalia, in cooperation with the social partners, has initiated innovative structural policy interventions that applied to all the different phases. The following positive aspects are mentioned in particular in the literature:

Development of the university landscape

- » The establishment of the infrastructure in the Ruhr area within the framework of the EPR is unanimously described as successful and ground-breaking, especially the creation of the university and higher education landscape.

49 Nordhause-Janz/Rehfeld 1995, 2012; Pizzera 2012

- » The introduction of regional dialogues and the strengthening of endogenous potential are important prerequisites for the successful implementation of projects. These were introduced and established during the regional structural policy phase. This can also be regarded as a success, even though coordination has been difficult due to the different responsibilities in the context of multi-level structural policy.
- » The IBA Emscher Park was also innovative in its form and orientation. Here, the socio-ecological claim was first established and implemented in a regional policy programme and the value of the industrial heritage was acknowledged. Even though some of the goals set were too ambitious and not as successful, such as the creation of new jobs, the IBA Emscher Park has numerous landscapes, cultural and recreational sites as well as ecological renewal both through the rebuilding of the Emscher river system and the expansion of the Emscher Park. The industrial monuments built here made it possible for the Ruhr area to be successfully awarded the title of “Cultural Capital of Europe” in 2010 and the city of Essen to be declared European Green Capital in 2017.
- » Individual fields of competence in the Ruhr area underwent very promising development in recent years: for example, IT and micro-systems technology in Dortmund. The development of the technology park enabled these two technology fields to develop further. Promising cluster structures can also be found in logistics and waste management in the Ruhr area⁵⁰.

But there are also critical aspects mentioned in the literature:

Focus on established large industry

- » For a very long time, many of the measures aimed at supporting the established large coal and steel companies. This focus on large companies and the resulting insufficient development and support for smaller companies can still be seen to some extent today. This hindered structural change at an early stage, particularly because these large companies themselves often actively blocked further development of the region through what was known as a “Bodensperre”, which can be loosely translated as a land freeze⁵¹.

⁵⁰ Rehfeld/Nordhause-Janz 2017: 244

⁵¹ For a long time, much of the mining land that became vacant was owned by the mining companies which refused to free up the land in order to block efforts by new companies to relocate to the region.

- » In addition to the subsidies for coal production, a substantial amount of funding has flowed into the Ruhr area over the last 60 years. Even if there is no consensus in the literature on whether the level of funding has been too high, the efficiency of the funds is viewed very critically, especially with regard to the long-term focus on large companies.

Lack of a political voice

- » Despite the establishment of governance structures to manage the processes involved in structural policy measures (e.g. the establishment of the Ruhr Property Fund, the establishment of the Business Metropole Ruhr GmbH for joint internal and external marketing of the Ruhr as an economic region, the reallocation of planning authority from the federal state to the Regional Association Ruhr, a broad technology centre and transfer infrastructure or even the establishment of cluster management structures), there is still no political voice that speaks for the Ruhr area and develops common strategies and makes demands on the federal state.

Socio-geographic division

- » Probably the greatest criticism can be seen in the existing and growing division of the Ruhr area with regard to economic, social, ecological or even health aspects. Unless targeted action is taken in these areas, districts in the northern Ruhr area are at risk of being permanently cut off. This is all the more true as these districts are currently still “stable” mainly as a result of relatively high pension payments to former coal and steel workers. However, it can be assumed that the pensions of the next generation will no longer be this high as a result of, among other things, low pension entitlements due to a lower wage level and longer phases of unemployment.

Structural policy interventions, which are constitutionally required in Germany, are anything but ineffective – on the contrary. They are doing their best to prevent us from having these sights in this country.



Photo: Getty Images / Stockphoto

4.2 Structural policy for the lignite mining districts in Germany

4.2.1 Lignite mining districts in Germany

Structural policy programme for lignite mining districts

The federal model project “*Unternehmen Revier*” (“Enterprise Territory”), which was launched by the Federal Ministry of Economics and Energy (BMWi) in 2017, aims to achieve “ambitious climate change mitigation targets and the restructuring of the energy supply with regional and industrial policy objectives”⁵² in the four lignite mining areas of Lusatia, Rhineland, Helmstedt and Central Germany. To this end, the Energy and Climate Fund (Energie- und Klimafond – EKF) will provide four million Euros a year to support structural change. The funds will flow annually over a period of ten years. Initially, they are approved for four years until an interim evaluation has been carried out. The figure below shows the location of the lignite mining districts with the respective open-cast mines. The Rhineland and Central German coal-mining districts still have three open-cast mines each, and there are four in the Lusatian coal-mining district. Only the Helmstedt coal-mining district no longer has any open-cast mines.

The context in the four coal-mining districts is very different (see table in the annex):

No relevance in Helmstedt

» Lignite mining no longer plays a role in the Helmstedt coal-mining district, i.e. in the cities of Braunschweig and Wolfsburg as well as in the district cities of Wolfenbüttel and Helmstedt. With around 600,000 inhabitants, the smallest of the four regions is heavily industrialised – in particular with the headquarters of Volkswagen (VW) in Wolfsburg. 28% of the total workforce is employed in the manufacturing sector which is more than nine percentage points above the Germany-wide average of 18.8%. This also explains the higher than average gross domestic product per capita of EUR 47,900 (Germany: EUR 36,900; Lower Saxony: EUR 62,400) for 2015 and the higher than average household income per inhabitant of EUR 21,700 (Germany: EUR 21,500; Lower Saxony: EUR 20,700).

Low level of importance in the Central German coal-mining district

» The Central German coal-mining district is located in Saxony, Saxony-Anhalt and Thuringia and comprises the administrative districts of Leipzig, Northern Saxony, Burgen county, Saale county, Mansfeld-Südharz, Anhalt-Bitterfeld, Altenburger Land and the cities of Leipzig and Halle. With around two million inhabitants and a population

⁵² BAnz 2017:11

density of 238 inhabitants per km², the region is comprised of both urban and rural areas. Lignite plays only a marginal role here as well with nearly 2,400 employees. The average disposable income per inhabitant is lowest at EUR 18,100 per inhabitant and is at the average level for Saxony-Anhalt, but below the level of Saxony at EUR 18,600 per inhabitant and Thuringia at EUR 18,300 per inhabitant and Germany at EUR 21,500. The GDP per capita in 2015 was EUR 27,500, below the level of Saxony (EUR 27,800) and Germany (EUR 36,900), but above the average of Thuringia (EUR 27,100) and Saxony-Anhalt (EUR 25,800).

Highest production volume in the Rhineland coal-mining district

- » With 2.4 million inhabitants, the Rhineland coal-mining district is the largest region. With a population density of 490 inhabitants per km², the Rhineland coal-mining district is surrounded by major urban centres such as Cologne and Bonn. The largest volume of lignite is currently still being produced here (90.5 million tonnes in 2016), and this district has with almost 10,000 employees the largest number of people still working in this sector. The GDP generated per capita is EUR 32,500, which is below the state average of EUR 36,300 for NRW and EUR 36,900 for Germany. The EUR 20,800 per capita disposable household income in 2015 was below the national level of EUR 21,200 and Germany-wide average of EUR 21,500.

Above-average importance for Lusatia

- » With 1.2 million inhabitants on 11,700 km², the Lusatia coal-mining district is the most rural region with a population density of 99 inhabitants per km². Lignite production still plays a very important role here with 8,600 employees and a production volume of 62.3 million tonnes in 2016. The private household income per inhabitant is EUR 18,600 and thus on the same level as in Saxony, but below the state-wide average in Brandenburg of EUR 18,800 and the Germany-wide level of EUR 21,500. The GDP generated per capita in 2015 was EUR 27,000 and thus below the state level of Saxony at EUR 27,800 and the Germany-wide comparative value of EUR 36,900, but slightly above the GDP per capita in Brandenburg of EUR 26,700.

Figure 16: Lignite mining districts in Germany

Source: DEBRIV – Bundesverband Braunkohle 2017: 32



OPEN-CAST MINES

RHINELAND DISTRICT

- 1 Garzweiler
- 2 Inden
- 3 Hambach

CENTRAL GERMANY DISTRICT

- 4 Amsdorf
- 5 Profen
- 6 Vereinigtes Schleenhain

LUSATIA DISTRICT

- 7 Welzow-Süd
- 8 Jänschwalde
- 9 Nochten
- 10 Reichwalde

4.2.2 The “Unternehmen-Revier” initiative

Ideas and project competitions

In order to capitalise on the endogenous local potential and actively involve local stakeholders, “*Unternehmen Revier*” was designed to initiate competitions of ideas and projects that could act as models for other regions. The four priority areas span a broad portfolio of traditional structural policy instruments⁵³:

Boosting competitiveness and enhancing the region as a business location

Within the context of this goal, the aim is to promote application-oriented research, regional marketing and to strengthen the potential for innovation. This includes increasing digital expertise, optimising business infrastructure and securing skilled labour.

Employee qualification

Here the aim is to strengthen inter-company initiatives and vocational training and promote the pool of skilled labour.

Cluster and innovation management

Here the focus is to optimise networking between regional players, i.e. universities and companies, and to develop knowledge bridges to other regions.

Expertise and capacity building

The primary goal of the measures that are combined here is to strengthen regional expertise for local development. The aim is therefore to teach people the skills for self-help in the respective local context (e.g. grant scout). It also provides advice and training on the evolution of individual sectors (such as the energy region, digitalization, etc.).

Regional innovation concepts as a basis for decision-making

The regional innovation concepts (Regionale Innovationskonzepte – RIK) serve as the primary decision-making basis for local stakeholders. These were developed by the regional partners, agreed with the BMWI and are also available to the public.⁵⁴

Establishment of governance structures

„*Unternehmen Revier*“ aims to establish regional decision-making and implementation structures (governance) as well as to focus on the content of individual sectors or areas of expertise. As part of the development of the RIK, future fields and key projects were defined in the four regions

⁵³ BAnZ 2017: 3

⁵⁴ <https://www.bmwi.de/Redaktion/DE/Artikel/Wirtschaft/strukturwandel-in-den-braunkohlregionen.html>. Accessed on 12.06.2018.

and an organisational structure was set up to implement the competitions. In addition, the regional innovation concepts contain a set of criteria for the evaluation of projects submitted to each competition. The content ranges from recycling and waste recycling (Helmstedt), electromobility (Lusatia), sustainable regional development, intelligent energy use, regional resource system (Rhineland coal-mining district) to potential value creation, energy region, mobility and logistics and recreation (Central German coal-mining district).

Monitoring and evaluation

The four regions receive support in the areas of monitoring, coordination and evaluation under the pilot project “*Unternehmen Revier*”. This enables the regional stakeholders on the ground to offer qualification and training courses, to initiate and hold competitions, and to monitor the approved projects. In the interest of sustainable development, it is therefore important to provide local stakeholders with the tools they need to promote regional development independently in the future. Monitors will also evaluate the four regions after the previously approved period of four years.

Involvement of regional stakeholders

The pilot project „*Unternehmen Revier*“ (Reinventing Coal-Mining Districts) is still in the early stages. A detailed evaluation is therefore not possible at this point, and certainly the impacts in the four coal-mining districts cannot be assessed. However, it is promising to see that a programme was set up before the end of lignite mining to support and actively promote the phase-out of coal in the four coal-mining districts. The programme focuses on endogenous potential and aims to train local stakeholders to strengthen their capabilities in order to support “their local structural change” in the long run. The programme thus starts at an early stage, something that other programmes have failed to do. Frameworks for these kinds of programmes could be tried out in other countries to foster an exchange of experiences. Various current projects (e.g. the coal platform) and programmes (e.g. Climate-KIC flagship re-industrialise) at the European level could be used or expanded for this purpose.

Establishment of regional governance is a key prerequisite for future development

With regard to the approximately four million euros spent annually on the preventive structural policy of the programme, the programme is just a drop in the ocean. However, by calling for regional innovation concepts, regional organizational structures are being set up for the implementation and monitoring of preventive structural change. This is an important prerequisite for the establishment of regional dialogue, but also for the absorption capacity and effectiveness of subsidies. In case the share of subsidies is increased later in the process (e.g. from the Energy and Climate Fund), the corresponding structures will already be in place and tested.

Set a timeline for upcoming processes

The current allocation of funding to the four coal-mining districts appears reasonable. However, the question arises as to whether policy-makers, at both regional and national level will have to consider a layered process in view of the different regional conditions and the different levels of efficiency of existing power plants and may also accept that not all regions will be able to achieve re-industrialisation and a self-sustaining economic recovery or at least a stabilisation comparable to the lignite industry. At least in some areas there is a risk that economic and demographic decline will continue and that other concepts, e.g. to mobilise civil society and/or innovative supply concepts, will then be demanded more than programmes for industrial development.

5 Recommendations and transferable solutions

It is not easy to transfer the success factors identified for Germany or the Ruhr area to other regions or countries. In Germany, for example, effective redistribution mechanisms

in social insurance systems helped to stabilise weaker areas. The respective overall conditions, in particular the social security systems in case of possible job loss, play an important role here. People's level of acceptance of the coal phase-out in the districts is weaker for lignite than for hard coal because the external effects of lignite-based electricity production are not internalised and lignite production is currently competitive in contrast to hard coal. .

Factor in country-specific systems

Development of joint guidelines

What we can generally learn from experience, however, is that there must be a structural policy reference framework – i.e. commonly defined goals and guidelines – which should be defined collectively by the various levels (of a nation state). Within this framework, it is also necessary to agree on the importance of equivalent regional development and, if necessary, how this should be achieved. This must be seen in the context of the economic and social system and the existing settlement structure in order to be able to define realistic expectations. As is repeatedly pointed out in the context of this report, social cushioning in the Ruhr area would not have been possible in this form without the many early retirements financed by the statutory unemployment and pension insurance.

Regional disparities

Due to the permanent growth in relation to the economy and population, which was distributed under the structural and spatial planning policy, there were hardly any conflicts between growth and compensation efforts in the past in Germany as the country's sufficient economic strength made it possible to promote both targeted growth cores and structurally weak regions. However, the economic differences in the regional structure are now showing some signs of inertia, partly because the possibilities of attracting large companies to the periphery are limited due to EU competition law regulations, but also because of the shrinking availability of stray production facilities. Peripheral regions are particularly affected. Theoretical explanations, such as the models developed in the context of the New Growth Theory, even predict an increase in spatial imbalances and growth spurts mainly in densely populated areas. This is consistent with the renaissance of cities which is ongoing despite rising housing and living costs.

New direction for compensation policy

In this context, the question of how a regional compensation policy should be organised must be clarified. This can be achieved either by creating incentives to redirect investments to structurally weak regions,

Establish local value chains

for example, and trying to establish equivalent economic development in these regions or support the development of companies already in the respective regions in the interest of reindustrialisation. An alternative would be to permanently support people living in weaker regions financially and to subsidise central infrastructure or public services such as consumption, education, health, etc. Traditionally, the incentive policy mentioned first dominated development strategy, also because a growth-oriented compensation policy cannot justify permanent financial support. If, however, a well-balanced regional development does not necessarily produce the best overall economic growth results, it may be economically and ecologically sensible, when weighing the costs and benefits, to develop only areas with excellent competitive potential and to permanently subsidise weaker areas. Furthermore, it makes sense to expand the local value chains to close supply gaps in order to generate as much added value as possible in the region. Measures range from mobilising civil society to alternative economic approaches. These approaches go hand in hand with a change in political and social values, focus more on a bottom-up rather than on a top-down approach and are based more on personal accountability than before. The dilemma, however, is that there is less willingness to get involved in the regions affected by structural change than in economically prosperous regions. It may therefore be advisable to encourage the involvement of civil society in structurally weak regions by creating special support services.

Use a bottom-up approach

Supra-regional competitiveness

But of course, regions should not disconnect from the world market, but try to develop sectors that are competitive beyond the regional level. Even if, as Lammers⁵⁵ puts it, regional policy is only economically worthwhile “if the transfer that is brought into the target regions generates economic returns that are higher than the economic losses in the regions from which resources are taken”, regions should not be abandoned because we do not know where the regional economic winners will be in the future. If the political objective is to develop regions without competitive potential, these regions usually need an external development impulse, e.g. through settlements of industries or creation of outstanding infrastructures⁵⁶. If this does not happen, there is a risk that deprivation will additionally occur in weak regions. The following aspects should therefore be taken into account in a structural policy programme for both the funding level and the local implementing level.

⁵⁵ 2004: 624

⁵⁶ see Gärtner 2008

1. Embrace change proactively

Start early

A consistent preventive change path should begin early and slowly. For mining regions, for example, a change in direction initiated at an early stage would mean slowly reducing the industrial core of coal mining so that resources (e.g. land, staff, training as well as research and development) are available for other aspects of development. This does not mean that industrial regions should not capitalise on the industrial-cultural basis; on the contrary: it can make a significant contribution to realignment. For the regional stakeholders, this means a shift since, on the one hand, the regional capabilities, culture and potential must be taken into account and, on the other hand, a realignment must also be pursued with the involvement of higher hierarchical levels (federal state) despite current functioning economic strengths.

2. Think in long cycles – despite limited information

Actively confront uncertainties

Established industries often generate good profits because the risks and uncertainties are low and the investments have paid off. These profits are distributed in different percentages to the shareholders (owners) and stakeholders (e.g. employees). This means that not only do capital owners generally make good profits, but also the public sector (e.g. through tax revenues), the region (e.g. through regional sponsoring projects) and employees (e.g. through appropriate collective bargaining agreements). New sectors, on the other hand, often generate lower profits and usually start with low-paid and insecure employment. This prospect makes it difficult for trade unions, public authorities and industry to diverge from established paths and actively shape structural change, especially since there is no guarantee of being rewarded later for actively initiating structural change by achieving high returns, which can then again be distributed more or less equally.

Structural policy decisions should be sustainable, although they are always made independent of the respective level, in the face of uncertainties about future development trends, even if the ability to forecast is well developed. Although regional trends that point to the future can generally be identified, examples of unexpected endogenous changes and even more exogenous shocks such as reunification in 1990 can be seen time and again. Therefore, the actors involved must plan for the long term but be aware of the limitations of forward-looking strategies.

3. Political courage to support regions early in their transition process

Within the context of a preventive structural policy, which is now slowly becoming part of federal programmes, a further and, as a result, very clear difference to a conventional structural policy becomes evident: it primarily relates to the involvement of the higher hierarchical level. This is fundamentally the challenge of prevention: if successful preventive action is taken, the original risk identified will not materialise. The question also arises as to whether our political system can guarantee sufficient continuity for such a long-term process.

**Establish multi-level
governance and
involve stakeholders
at an early stage**

Furthermore, civil society is an important potential to be activated, especially in transition regions. This requires the cooperation of a large number of stakeholders at different political and regional levels (local, municipal, regional, supraregional, national, supranational and international). Multilevel governance is therefore required here. Companies and business owners should also be involved in the process as they, as practitioners, can assess the implications for the economy and employment very well. In addition, universities and research institutions must be involved at project level as they are gatekeepers of specific knowledge.

And sometimes change also needs symbols! Cities and regions try to attract capital and a highly qualified workforce through certain images – most of which involve knowledge and expertise. This is often challenging for old industrial regions as they do not have a long-standing tradition as a service and knowledge centre (e.g. Darmstadt, Freiburg or Tübingen). Even if the flagship projects are widely criticised, cities like Bilbao with the Guggenheim Museum or Dubai where anything can be built – from mega buildings and ski facilities to entire islands – unique images emerge that have an internal and external impact.

4. Promote regional growth and balance

Numerous studies have come to the conclusion that innovation is primarily created in densely populated areas, especially in regions where the spread of knowledge meets with favourable conditions. The basic idea is to strengthen the growth factors, particularly (large) cities and densely populated areas to such an extent that there are propagation effects from which weak areas will also benefit in the long term. The fact that regional imbalances are initially accepted creates a conflict between growth and compensation objectives. The higher regional level (e.g. state or federal level) has to ask itself to what extent such regional development is intentional, acceptable and politically sustainable. This also applies, to a lesser extent, to the subordinate regional level (municipality, county) where the question may arise of whether to focus on certain developments in specific subregions.

Develop infrastructure

Since the concentration of funding in growth regions is (socio)politically difficult to sustain, there is a risk that a corresponding growth policy will be implemented across the board with the result that competitive potential is also sought in weak regions in particular. Another strategy would be, on the one hand, to consistently focus on potential independently of the regional distribution and, on the other hand, to set up specific programmes and instruments for weak regions. This might include, for example, the promotion of projects and picking up on impulses, where special potential or committed individuals and companies are involved, while at the same time promoting the development of a functional and appropriate infrastructure.

5. Embed structural policy into other policies and provide sufficient resources

Structural policy does not take place in a vacuum and is dependent on a political and social change of values. Cross-cutting issues such as gender mainstreaming, ecological transformation, participation, equal opportunities and inclusion must also be supported within the framework of regional structural policy and have, for example, also been included in structural funding under the European Regional Development Fund (ERDF). Projects that compete in the context of the lead market competitions in NRW, must demonstrate how they optimise cross-cutting goals such as gender equality.

Better coordination of policy and programme areas

To what extent regional educational policy and improving the situation of socially disadvantaged children and young people should be part of a modern structural policy, as it is currently the subject of ongoing discussions, cannot be answered here. On the one hand, however, it must be kept in mind that structural policy, which is in any case quite limited in terms of the volume of funds compared with other regionally effective policies, could thus be overloaded. On the other hand, in view of demographic change and the resulting shortage of skilled workers, a policy of this kind can achieve a greater (including economic) impact than traditional structural policy. If structural policy is interpreted in a broader sense and is to include regional development, an aspect of this kind cannot be excluded. This becomes even more evident when using the term prevention. After all, general “regional fitness”, i.e. well-skilled people and good infrastructure, ensures that a region is more resilient and can react better to changes.

When implementing structural policy programmes, it is also important to make the most efficient possible use of resources. There are no paradigms, and it depends very much on how high the impact of each transformation is and what programs are set up for it. In the case of the Ruhr area, it should be noted that a large part of the financial resources was covered by the social insurance systems. In particular, the high costs of pension insurance in this case have “bought time”, but this redistribution has been at the expense of the next generation and thus – not only due to demographic change – cannot be a viable solution for the future.

6. Think in functional spaces

Make local
reference clear

Structural change projects often require a local reference and local involvement in order to secure the commitment of stakeholders. On the other hand, structural change strategies can only be considered in larger spatial contexts, in which the economically and politically functional spatial contexts can also be considered. However, it is not enough to simply expand the regional area, but to define different spatial relationships and thus other stakeholders for different thematic issues. When considering overlapping spatial relationships, the first priority is to identify the possible reference areas for different issues. The difficulty lies in the fact that a region also depends on the willingness and ability of the surrounding area to influence and shape this kind of process. This becomes especially important when civil society actors are to be involved, who, in turn, have a different sphere of action and reference than economic or political actors. This requires a multi-dimensional and multi-hierarchical approach.

7. Reflect on new constellations of actors in structural policy

Take into account
more complex
decision processes

Regional development and structural policy have become more bottom-up in two respects. On the one hand, municipalities and counties – and more recently even districts – are called upon to contribute their own development ideas and concepts and not to leave structural policy to the higher hierarchical level, i.e. the federal states or the federal government. Moreover, structural policy actors today not only include politicians, companies and other (semi-) state institutions, but also civil society. Even if this can have great potential, for example by allowing civil society protest movements to point out shortcomings, raise awareness of dangers and persuade politicians and institutions to act, and also to highlight social trends, the process becomes more complex (if only to create the required transparency), and decision-making – at least if it is to be consensus-oriented – becomes more time-consuming and difficult. Moreover, it is important that participation and the power to shape policies are not left solely to an “elite with a voice” or to those who are pursuing their particular interests. This applies in particular to structurally weak regions where commitment and participation are often lower.

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Annex

Table 1: Overview of lignite mining regions in Germany

Sources: Federal and state statistics offices, Statistik der Kohlewirtschaft e.V., author's calculation

Coal-mining district	Rhineland coal-mining district	Lusatia	Central German coal-mining district	Helmstedt
Municipalities	Neuss Rhine county, Düren county, Rhine-Erft county, Aachen municipal regions, Heinsberg county, Euskirchen county, city of Mönchengladbach	Elbe-Elster county, Oberspreewald-Lausitz county, Dahme-Spreewald county, Spree-Neiße county, city of Cottbus, Bautzen county, Görlitz county	Leipzig county, city of Leipzig, Nordsachsen county, Burgen county, Saale county, city of Halle, Mansfeld-Südharz county, Anhalt-Bitterfeld county, Altenburger Land county	City of Braunschweig, Helmstedt county, Wolfenbüttel county, city of Wolfsburg
Federal state	North Rhine-Westphalia	Brandenburg, Saxony	Saxony, Saxony-Anhalt, Thuringia	Lower Saxony
Population 2015	2,400,000	1,200,000	2,000,000	588,000
Area 2015 (in km²)	5,000	11,700	8,500	1,800
Population density (Population per km²)	490	99	238	328
Lignite production 2016 (in 1,000 t)	90,500	62,300	17,700	1,100
Employees in lignite production* 2016	9,700	8,600	2,400	150
Employees 2015	1,125,100	531,100	956,900	357,000
Percentage of employees in the manufacturing sector	16.7%	18.9%	15.5%	28%
GDP per capita 2015 (in EUR)	32,500	27,000	27,500	47,900
Workforce** 2015	69.9%	73.4%	74.3%	92.4%
Private household income (in EUR per inhabitant)	20,800	18,600	18,100	21,700
Implementation partner Reinventing Coal-Mining Districts	Innovationsregion Rheinisches Revier GmbH	Wirtschaftsregion Lausitz GmbH	Burgen county	Helmstedt county
Funding volume Reinventing Coal-Mining Districts	25%	40%	20%	10%

* incl. lignite-fired power plants

** Employees per 100 inhabitants of working age 15–64 years

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