

Turnaround Cities: German Case Studies Insights from Dortmund, Duisburg and Leipzig

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Introduction

This report describes the experiences of three turn around cities in Germany, namely Dortmund, Duisburg and Leipzig. These cities were chosen based on their socio-economic trajectories over the past decades, more specifically how they managed to catch up with and even leap ahead of other German cities after a period of decline. The cases can serve as interesting reference points for UK cities due to sharing certain similarities in terms of their industrial past and urban structure.



Source: *Washington Post*

The first two cases, Dortmund and Duisburg, are located in the Ruhr region, a polycentric urban area in North Rhine-Westphalia, in the North-West of Germany. The Ruhr is home to over 5 million people spread across several large cities including Bochum, Dortmund, Duisburg and Gelsenkirchen. With an area of around 1,700 square miles it is about the same size as Somerset. For several decades, the region was Germany's industrial stronghold with the heavy industries of coal, steel and associated sectors representing a large share of the local economy. As for many other industrial areas around Europe, the fortunes of the region started to change in the 1950s and 1960s. Many coal mines closed due to the increasing importance of other energy sources such as gas and oil, and the steel industry slowly but unstoppably started moving towards cheaper locations around the world. The economic decline of the key industries had a profound impact on the cities of the area including significant employment losses, urban decline and poverty. Around 400 000 jobs were lost in coal mining alone since the beginning of the 1960s.¹

The cities in the region have been able to cope with these challenges with a varying degree of success. While unemployment has remained above the German average and other socio-economic challenges persist, important progress has also been made across the region. The cities of Dortmund and Duisburg are commonly lauded as managing the transformation processes relatively effectively. Dortmund has been able to establish itself as an important centre in the areas of micro and nanotechnologies and has moved to be an important centre for the service industries, while Duisburg has become one of the most important logistics locations in Europe.

The third case study, Leipzig, is located in the state of Saxony in the former East Germany. An important centre for heavy industries and manufacturing until 1990, 96 percent of existing industrial jobs had disappeared within 6 months of the reunification of Germany due to local firms' lack of competitiveness.² At the end of the nineties, Leipzig had among the highest unemployment levels in all Germany. Since then, Leipzig has undergone an impressive transformation. Endowed with modern transport infrastructure and plenty of culture, the city's population has grown by more than 100K and large companies such as Amazon, BMW and Porsche have located there.

The following report describes the efforts of the three cities in the last decades in order to address the challenges presented. To set the context, chapter 2 starts by outlining the overarching system, actors and policies relevant to promote regional and local development in Germany. Chapter 3 to 5 present the case studies of the three cities. Chapter 6 explores the enabling factors and lessons-learnt across the three cases, while the final chapter concludes.

Background on Germany' system

The German constitution explicitly recognizes the objective to achieve "equitable living conditions" across the national territory³ and the principle is reflected across the organization and financing of subnational government as well as many different policy fields. With this in mind, section 2.1 starts by outlining the structure of subnational government (SNG), the roles and responsibilities as well as the financing mechanisms. Section 2.1.3 is specifically dedicated to understanding how local government capacity was built up in East German after the reunification. The chapter then explores more narrowly the system of regional policy (section 2.2.1) and spatial planning (2.2.2). It finishes by considering some other actors relevant for regional development (2.3), which are particular to the German context,

¹ [Bundeszentrale für politische Bildung \(2019\)](#)

² [The Guardian \(2012\)](#)

³ What exactly is meant and implied by this is subject to a large political, legal, public and academic debate

namely the system of decentralized public banks and the Chambers of Commerce and Industry. It then summarizes and concludes.

Subnational government organization

Structure and competences⁴

Germany has a federal political structure with a three-tier system of sub-national government. The highest level are the 16 regions, the so-called Laender. At the intermediate level, there are districts ('Landkreise') and at the lowest level are the municipalities. The three levels are enshrined in the constitution.

Each Land has its own legislative, executive and judicial body. A parliament is directly elected for a four-year term, based on which a regional government is formed. Similarly, at the district and municipal level, councils are elected by universal suffrage for terms ranging from four to six years. Council leaders at the district level as well as mayors at the municipal level are either directly elected or elected by the respective council.

Laender are responsible for a broad range of policy fields. Legislative and administrative responsibilities are generally assigned to them unless the central government holds exclusive competency for the field or where there is concurrent responsibility between the central and the regional government. For fields with exclusive competency, Laender are only responsible if the central government explicitly tasks them, whereas concurrent responsibility implies that the Laender are responsible unless the central government exercises its powers. Areas of exclusive central competency are all foreign policy issues, defence, the protection of the civil population, citizenship, currency matters, the unity of the customs and trading area and cooperation between the Federation and the Laender concerning criminal police work. Concurrent responsibilities exist among others in the fields of civil and criminal law, road traffic, laws related to the right of association and assembly as well as business law. All other areas, including the promotion of the regional economy, fall within the responsibility of the Laender. In practice, the constitutional objective of equitable living conditions means that the federal government is exercising its right for legislation for most concurrent policy fields to ensure a coherency of laws and economic and social unity across the whole country.

The design of the SNG system implies that the system is symmetrical at the Laender level, with all Laender having the same degree of autonomy and responsibility.⁵ In contrast, responsibilities at the local level, i.e. districts and municipalities, are assigned by each Land and hence show a certain degree of variability between the different Laender. Nevertheless, there are strong commonalities in terms of responsibilities. Figure 1 provides an overview of the different policy fields and at which level of SNG the responsibility sits. While regional development is an important task at the Laender level, all levels of SNG can get involved in regional and local development initiative in their respective territory.

⁴ This section is based on (unless referenced otherwise): [Deutscher Bundestag: Gesetzgebungszuständigkeiten von Bund und Ländern](#) & [Deutscher Bundestag: Competencies of the German Federation and the Länder](#) & [OECD: Subnational Government in Germany](#)

⁵ Besides 6 policy areas from which Laender can opt-out if they wish to do so

Figure 1: SNGs and policy fields

	STATE LEVEL	INTERMEDIATE LEVEL	MUNICIPAL LEVEL
1. General public services	Internal administration, including salaries and benefits of all public employees (exclusive); Justice (concurrent); Local government (exclusive)	Internal administration	Internal administration including staff management; Some administrative duties devolved by the state to Städte
2. Public order and safety	Police (exclusive)	Fire protection; Disaster control service; Rescue services	Local security
3. Economic affairs / transports	Regional economic development; Labour and economic law (concurrent)	Secondary roads; Public transport; Promotion of economic activity and tourism, pedestrian areas and cycle lanes	Local roads, local public transport; Waterways; Local economic development; Local tourism; Energy supply utilities; Waterways
4. Environmental protection	Environment (concurrent)	Nature and landscape protection; Maintenance of nature parks; Household waste collection and treatment	Waste water management; Local green areas
5. Housing and community amenities	Housing and community amenities (concurrent)	Spatial planning at district level; Building permits and inspection	Urban development planning (Land use and building plans); Urban development and regeneration; Water supply and sewerage; Housing incentives
6. Health	Health (concurrent)	District hospitals (construction and maintenance)	Health care and veterinary affairs
7. Recreation, culture & religion	Culture (exclusive power)	Public libraries (construction and maintenance); Support for cultural activities	Culture; Sports; Recreational areas and leisure
8. Education	Education including universities (construction and maintenance); Adult education colleges; Support for pupil exchanges	Secondary schools and technical schools (construction and maintenance)	Primary schools
9. Social protection	Social welfare (concurrent)	Social welfare and youth welfare; Social welfare infrastructure	Social aid and youth; Child care

Source: OECD⁶

Financing⁷

In line with the principle of equitable living conditions, the financing for the different levels of SNG in Germany is characterized by a complex system of equalization payments between federal level and the states. This ensures that each level of government, independent of its location, is appropriately funded to carry out its duties. Almost half (48.3 percent) of total government expenditure happens at SNG level, 63 percent of which at the Laender level and the remaining 37 percent mainly at municipality level.

In principle, SNGs fund their expenditures through a mix of tax revenues, grants, subsidies, and fees. Tax revenues are the main source (almost 70 percent in 2016) for Laender, while at the local level (districts and municipalities) revenues are more mixed with grants and subsidies making up over 40 percent. Taxes can be shared or own-source taxes. Shared taxes are collected nationally and a share of these is allocated to the Laender and municipalities. The main shared taxes are the personal income tax (PIT), corporate income tax (CIT) and the value-added tax (VAT).

The sharing arrangement between federal level and among states depends on each tax. A share of each tax is first allocated between the different levels of government. This share is then distributed amongst the Laender. PIT and CIT are allocated to the Laender based on revenue collected in each territory, while VAT is distributed based on population. Furthermore, 25 percent of VAT revenues were allocated to financially weaker states through an equalisation scheme, however this system was reformed in 2020 (more detail below).

The own-source taxes of the Laender include property taxes, inheritance tax, betting and lottery tax. These only represent a relatively minor portion of the overall revenues, with the shared taxes

⁶ [OECD: Subnational Government in Germany](#)

⁷ This section is based on Bundesministerium der Finanzen (unless referenced otherwise): [Bundesministerium der Finanzen: Bund-Länder-Finanzbeziehungen auf der Grundlage der Finanzverfassung 2021](#) & [OECD: Subnational Government in Germany](#) & [Bundesministerium der Finanzen: The Federal Financial Equalisation System in Germany 2018](#) & [Bundesministerium der Finanzen: BMF-Monatsbericht März 2021 - Der Finanzausgleich zwischen Bund und Ländern im Jahr 2020](#)

accounting for around 84 percent of Laender tax revenues. Hence, the Laender have relatively little discretionary power over their tax revenues.

Districts and municipalities are mainly funded by grants and subsidies (~42 percent), tariffs and fees (~16 percent), and taxes (~39 percent). In terms of taxes, municipalities receive a share of the PIT and VAT as well as have own-source taxes, namely the local business tax and recurrent property tax being the most significant. The local business tax is the most important local tax and is calculated based on a uniform base tax of 3.5 percent in all municipalities and a local multiplier decided by the municipality itself. Districts do not have their own taxes. Grants are given to the local level by each Land and not by the central level.

To ensure sufficient funding at each level of government and independent of location, revenues are equalized through grants and subsidies both between Laender and between Laender and federal level. Three mechanisms have been in place for this purpose over the last decades. First, the already mentioned vertical equalization between federal government and Laender by means of allocating a share of VAT to financially weaker states. Second, a horizontal equalization mechanism between the Laender in order to equalize the per capita tax revenue between the states. This implies a direct revenue transfer between richer Laender and poorer Laender. And finally, there are additional supplementary grants from the central government to Laender. Both general supplementary grants and special needs grants exist in this category. Until 2019, the former East German Laender also received additional funds, the so-called Solidarity Pact 2, in order to finance investments in infrastructure and municipal structure.

This equalization system has been undergoing several changes over the years, most recently in 2020. The reform gave the central government a stronger role in the equalization between the Laender, with the horizontal equalization now being integrated into the first step of VAT revenue allocation rather than a separate step between the Laender. However, this change was more cosmetic, i.e. changing the way the equalization shows up in the accounts, rather than fundamentally changing the amount of revenues redistributed.

The equalization system results in a relatively coherent fiscal position of the different Laender despite significant differences in their inherent capacity to generate tax revenues. Table 1 illustrates the equalizing effect in the different steps. Overall, funds distributed through the scheme were €14.7billion in 2020 between the Laender and an additional €9billion of supplementary grants from the central level.

Table 1: The effect of the federal financial equalization system

Financial capacity per inhabitant before financial equalisation among the Länder as a % of the average financial capacity per inhabitant	Financial capacity per inhabitant after financial equalisation among the Länder as a % of the average financial capacity per inhabitant ¹	Financial capacity per inhabitant after financial equalisation among the Länder and the general supplementary federal grants as a % of the average financial capacity per inhabitant
70	91	97½
80	93½	98
90	96	98½
100	100	
110	104	
120	106½	
130	109	

Source: Bundesministerium der Finanzen⁸

Establishment of local administration in the former East German Laender after the reunification

After the German reunification in 1990, the structures and capacities of subnational government in the areas of the former German Democratic Republic (GDR) had to be adapted to the system in the West German Laender. After the Second World War, the Soviet zone was split into five Länder as administrative regions. In 1952, in line with other reforms aiming toward establishing Socialism, the five Laender, which, as described in previous sections, are key to the structure of SNG in Germany, were dissolved and replaced by 14 new districts (Bezirke). Simultaneously, lower levels of regional and local government (the original districts and municipalities) lost independence and a large share of their governmental roles. Indeed, Wollmann (1997) describes this reform as effectively abolishing the institution of municipal self-government that historically characterised German administrative tradition.

Under the principle of “democratic centralism” local government acted on behalf of the state’s overall goals, i.e. implemented decisions taken by the SED party and central administrative authorities. Only a few administrative duties remained at the local level, such as housing, the distribution of coal and ensuring provision of necessities and consumer durables (Osterland, 1994). Besides handing down orders to local government, central government also maintained power to overrule local decisions as well as ensuring control through personnel policy, i.e. installing party functionaries at all levels of government (Kuhl & Werner, 2017).

Establishment of self-government during re-unification

With the fall of the Berlin Wall and the collapse of the ruling SED party, processes of democratisation and restructuring began. Local self-government was formally re-established in May 1990 with municipalities taking on crucial roles in providing for the local population after the central government collapsed. Besides democratisation, the major challenge was to create new structures to take on administrative tasks at a municipal level that had previously been fulfilled by the centralised authorities or publicly owned enterprises. While some previous tasks were eventually phased out due to privatisation of the respective areas (housing, energy), local government had to adapt to new social and legal frameworks in other tasks (e.g. urban planning, infrastructure provision) as well as take on

⁸ [Bundesministerium der Finanzen: The Federal Financial Equalisation System in Germany 2018](#)

entirely new ones, notably with respect to business promotion and administration as well as labour market and social welfare programmes (Osterland, 1994). A major problem in developing the necessary structures and capacity of local self-government in East Germany was the scarcity of personnel. On the one hand, the new tasks and structures of local administration required not only more employees at this level of government but also specific skills and knowledge that was not always available. On the other hand, there was societal pressure to replace personnel that had been active under SED rule with new and politically neutral staff (Osterland & Wahsner, 1992).

Mechanisms of institutional transfer

The system of local government was modelled after West German examples both because these served as a functioning model for the rather inexperienced new policy makers and to facilitate eventual reunification (Osterland, 1994). Each of the new Federal States was partnered with one (or more) of the West German Länder which supported the administrative and legislative changes. Although there was a rather direct channel of institutional transfer from West to East Germany, the partnership model along with the considerable variety in institutional settings meant that East German Laender did not simply adopt a single West German model of local government. Instead, institutions were built from a variety of different legislations and systems (Wollmann, 2002). For instance, due to low population density, Brandenburg did not adopt a model of large independent municipalities as exemplified by its partner North-Rhine Westphalia but rather maintained a system of smaller municipalities and intermunicipal cooperation in the form of so-called “Ämter” (Kluth, 2020). Besides the partnership model at the Laender level, a similar mechanism of targeted support existed at the municipal level within municipal partnerships, i.e. agreements between German-German twin towns, which were either pre-existing or newly formed after re-unification.

These Laender-level and municipal-level partnerships provided not only material support (such as office equipment) to local administration but also advice and consultation by sending personnel. Financed through a Federal fund, West-German civil servants were “loaned” to East-German partners in order to temporarily take on coordinating and leadership roles in the administration. The scale of this personnel mobility was substantial: by 1993, 15.000 West German civil servants were supporting Laender-level administration with another 4.000 working at the municipal level (Goetz, 1993 in Wollmann, 2021). This personnel mobility not only alleviated temporary shortages of staff, it also served as important transfer channel for knowledge and supported institutional change and transformation by means of “importing” a new elite from the West (Wollmann, 2021).

Territorial reforms

The administrative structure of the districts and municipalities in the new Federal States was much more fragmented than in the West, where territorial reforms had taken place in the 60s and 70s. As a result, the average population size of the East German districts was, at 60.000, much smaller than for West German districts (150.000) (Wollmann, 1997). A first set of territorial reforms took place in the early 90s in all East German Federal States, reducing the number of districts by about half. Following socio-economic restructuring and demographic changes, further territorial reforms were undertaken in the 2000s aimed at efficiency increases in small and low-density districts.

At the municipal level, territorial reforms consisting of either combining municipalities or creating systems of intermunicipal cooperation (e.g. within municipal unions (“Verbandsgemeinden”)) were also implemented although the extent and form of these reforms vary across Federal States (Franzke, 2017). However, empirical evaluations of these reform provide mixed evidence on their success in terms of increased efficiency and quality of administration with some studies additionally showing negative effects on political engagement after territorial reform (e.g., Rösel, 2017).

Lessons?

It should be emphasised that local self-government in East Germany of course represents a very specific case. It was fundamentally shaped by the existing systems of administration in West Germany as well as a historical tradition of self-government at municipal levels. Moreover, the implementation of these local administrative structures took place during a complete rebuilding of the institutional framework (at all administrative levels) along with fundamental socio-economic restructuring. For these reasons, it is difficult to draw generalised lessons from the East German experience.

Nevertheless, a few specific aspects may be of interest in a general sense. First, the potential of learning from examples and policy transfer is evident. The institutions of local self-government were not invented anew for the East German Länder but rather emerged through adoption and adjustment of existing frameworks to local circumstances. Second, a crucial aspect in actually implementing these changes was the use of municipal-level partnerships and personnel transfer (along with, of course, substantial financial transfer in the context of reunification generally). Third, it should be noted that the East German experience also indicates the need for further adjustment over time e.g. in the context of territorial reforms but also in terms of the number of public employees. Due to the transfer of responsibilities to local authorities, the number of employees in local administration in East Germany increased rapidly and had to be drastically reduced again in the 1990s (Wollmann, 2021).

Levelling-up policies

The constitutional objective to reach equitable living condition in all part of the country implies that aspects of levelling-up and regional development are addressed in many different policy fields such infrastructure, innovation, social care and education to name just a few. To map all policy areas would be beyond the scope of this introduction. The following section, therefore, focuses more narrowly on the specific policies concerned with regional development, namely regional policy and spatial planning.

Regional policy

Regional and local economic development is addressed at all levels of central and subnational government as well as complemented by EU regional development policies. Despite this multi-level approach, it is the Laender governments which are at the heart of regional development policy.⁹ Each Laender government is tasked with the promotion of its own economy as well as structurally weaker regions more specifically. A Ministry of Economy in each Land is responsible for the implementation of this function. Laender programmes typically cover a broad range of topics, including start-up support, skills development, digitalization, innovation and the promotion of the regional economy abroad. Laender governments also provide direct financial support to firms, including equity, guarantees and risk capital through fully or partially owned financial institutions (more details on this in section 2.3.1). Laender use their own funds to fulfil this task as well as leverage funds from overarching national and EU programmes.

At the local level, municipalities and districts can furthermore implement their own local economic development initiatives either through their own means or by leveraging funding from the overarching programmes. The promotion of the local economy is considered among the 'voluntary functions' of the local governments, meaning that they have the right to do it, however have no obligation. Over the last two decades, there has been a noticeable shift with local governments and associations of local governments becoming increasingly active in this arena. Local governments have, in particular, moved beyond the traditional approach of mainly providing commercial space and catering to existing

⁹ [Bundesministerium fuer Wirtschaft und Energie: Wirtschaft in den Regionen stärken](#)

firms to more strategic initiatives aiming to attract and support new businesses.¹⁰ This shift has been driven by an increased awareness of the importance of local factors, such as networking among firms and other actors, social capital, the use of indigenous capacity and knowledge, in the context of the rise of cluster development initiatives and the literature on regional innovation systems.¹¹

In some areas, municipalities and districts have also teamed up in order to collaborate on strategic aspects that require a larger scale than the municipality level (while still being more local than the Laender). An example is the Regional Association of the Rhur, in which the 11 cities and four districts in the area of the river Rhur are organized with the aim to promote regional development and spatial planning. An increasing number of national and European programmes targeting the regional level have also contributed to this.

At the national level, the main instrument for regional policy is the Joint Federal/Laender Task for the Improvement of Regional Economic Structures (GWR).¹² As the name suggests, this is a joined effort between the national and the Laender governments. Funding for the programmes is contributed 50/50 between Laender and the federal level. In terms of roles and responsibilities, the federal level coordinates and sets a national framework for the funding, while the Laender administer and disburse the funds, set regional and strategic priorities as well as select specific projects. Hence, while the federal government has an important coordination role, the Laender are still at the core of the programme.

The GWR focuses specifically on promoting the development of 'structurally weak' regions. It only provides support to those regions that have been classified as requiring support based on indicators such as unemployment rate, average salaries, and infrastructure endowment. Funding is given in areas such as local economic infrastructure development, SME support, skills development, research and development, and cooperation of local/ regional actors.

Besides the GWR, several other national policies and funding streams implicitly and explicitly touch upon regional development topics. To improve the coordination between these programmes, twenty of them were pooled under one umbrella, the Federal Funding System for Structural Development Regions, in 2020.¹³ Programmes under this umbrella cover different categories, including research and innovation, enterprise support, skills development, digitalisation as well as infrastructure and the provision of public services. Depending on the programme, beneficiaries include firms, consortia between firms and research centres, municipalities, universities and start-ups. While some programmes, such as the GWR described in the previous paragraph, specifically target structurally weak regions, others apply to the national territory, but have special conditions to increase funding for structurally weaker areas. This system at the federal level is considered complementary to the primary responsibility of the Laender for regional development. The budget for the programmes involved in the funding system amounted to €3billion in 2021 (excluding investments for broadband infrastructure) with the GWR alone having a budget of over €900million.

Finally, at the European level, the European Regional Development Fund, the European Social Fund and the European Agricultural Fund for Rural Development provide funding for regional development initiatives to each Land in Germany. While the overall coordination responsibility for the funds sits at

¹⁰ [Deutsches Institute fuer Urbanistik \(2008\): Kommunale Wirtschaftsförderung 2008: Strukturen, Handlungsfelder, Perspektiven.](#)

¹¹ [Deutscher Staedte und Gemeindebund: Aufgaben, Organisation und Schwerpunkte der kommunalen Wirtschaftsfoerderung](#)

¹² [Bundesministerium fuer Wirtschaft und Energie: Wirtschaft in den Regionen stärken](#)

¹³ [Bundesministerium fuer Wirtschaft und Energie: Erster Bericht der Bundesregierung zum Gesamtdeutschen Fördersystem für strukturschwache Regionen](#)

the national level with the Ministry of Economy and Energy, each Land has its own programme for the implementation of the funds in line with the general principle that Laender are responsible for regional development and the promotion of their own economy.¹⁴ In the period 2014-2020, Germany received €28.8 billion from the different funds. The funding is based on the principles of co-funding and additionality, meaning that each funding flow is required to be complemented by financing from the member states and should be in addition to that funding rather than as a substitute.

Land use and spatial planning¹⁵

As regional policy, land use and spatial planning happens across all levels of federal and subnational government in Germany. While the federal government determines the basic ideas, general principles and objectives through the Federal Spatial Planning Act and the standing conference for ministers responsible for spatial planning, the main responsibility for spatial planning rests at the Laender level. Each land is responsible to develop state level spatial plans as well as regional plans, which in turn provide the framework for municipality level land use plans.

State level plans take the general principles agreed at the federal level and articulate them at the land level. Key information included in the state spatial plans are the general designation of different space categories, information about the development of infrastructure, the use of natural resources and guidance regarding the use of open spaces. The plans also designate the so-called central places which are a key planning instrument to ensure equitable living conditions across the national territory. Central places are towns and cities, spread across the territory, that are required to provide a certain catalogue of public services and amenities to the population in a defined distance to these central places. They exist at different levels of hierarchy and each level of hierarchy requires a different set of services. This system of central places, hence, ensures a similar level of access to services and amenities across the country.

Based on the state level plans, the regional plans make more concrete provision in terms of the spatial structure of each region, i.e. settlements, open spaces, growth areas. Regional plans cover an area of approximately 10-30 percent of each Land, hence covering larger areas than the districts. Specific regional bodies or associations are tasked to draw these plans, depending on the planning law of each Land. They are typically made every 15- 20 years.

Finally, at the municipal level, land use plans are drawn up that specify the possible development and uses of specific areas in each town. The law makes the differentiation between the preparatory land use plan and a binding land use plan. Preparatory land use plans cover the whole municipality and are binding for the public authorities. They typically make general statements about assigning certain areas for certain uses. However, they do not grant direct rights to landowners for development. Only the more detailed binding land use plan does, but in practice a binding land use plan is not always established. In that case, landowners need to request permission from the relevant authorities which in turn must base their decision on the preparatory land use plan.

Germany recognizes a strong counterflow principle. While each lower-level planning has to conform to the higher level, the higher level is also required to involve lower levels in the planning processes at a very early stage, ensuring that local implications are taken into account.

¹⁴ [Bundesministerium fuer Wirtschaft und Energie: Wirtschaft in den Regionen stärken](#)

¹⁵ This section is based on (unless referenced otherwise): [Bundesministerium des Innern und fuer Heimat: Raumordnung und -entwicklung: Was ist das](#) & [OECD: The Governance of land use in Germany](#) & [Schmidt & Buehler \(2007\)](#)

Other actors

While the primary responsibility for levelling-up and regional development sits with the public sector at different levels, the design and implementation of the policies require the participation and knowledge of other local partners, such as the private sector, university, research centres and civil society. The following section describes two of them in more detail, namely the banking system and the chambers of commerce and industry, due to their specificity to the German context.

Public banking system

An integral part of the system to promote regional economic development is the banking sector. The German banking system is based on three pillars: 1) private banks; 2) public banks and 3) cooperatives. The second category, the public banks with their distinct decentralized profiles and public mandate, are of particular relevance for regional development.

Public banks are either wholly publicly owned, or the state holds the majority of shares. They exist at the different levels of (central and) sub-national government. While their activities, specific ownership set-up and legal forms vary, they all share an explicit mandate to serve the public interest rather than to maximise profits. In contrast to other countries, where public banks are a niche sector, public banks have around 30 percent of market share in terms of balance sheets¹⁶ and are of particular importance to SME financing at the local level. Table 2 provides an overview of the public banks at each level of SNG and a brief characterization.

Table 2: Public banks

Ownership	Bank	Functions	Territorial scope
Laender	Landesbanken	<ul style="list-style-type: none"> - serve as a general 'Hausbank' for their designated states and support regional economic development - act as central bank and clearing institutions for Sparkassen¹⁷ - wholesale banking for large clients and other banks 	Laender involved
	Foerderbanken (promotional banks)	<ul style="list-style-type: none"> - support state governments in the fulfilment of their public duties, especially in terms of structural, economic and social policy¹⁸ - provide complementary financial services (mainly loans) in areas not sufficiently served by the market using public sources¹⁹ 	Corresponding Land
Municipalities/ Districts	Sparkassen	<ul style="list-style-type: none"> - provide universal banking services in 'home' region - serve as a financial advisor to municipalities 	Districts/ municipalities involved

¹⁶ Bundesverband Oeffentlicher Banken Deutschlands: [Wer wir sind](#)

¹⁷ Finanzgruppe Deutscher Sparkassen- und Giroverband: [Landesbanken: Regionale Spitzeninstitute](#)

¹⁸ UNEPFI: [Landeskreditbank Baden-Wuerttemberg – Foerderbank](#)

¹⁹ Bundesministerium fuer Wirtschaft und Energie: [Parlamentarische Anfragen 2018](#)

		- support regional development	
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At the Laender level, there are two types of public banks. The Landesbanken and the Foerderbanken (promotional banks). Each Land has its own Foederbank, whereas there are only six Landesbanken, some of which cover several Laender (resulting from the merger of several Landesbanken).²⁰ The Landesbanken are owned by the Laender and the local public banks. They function as a general house bank for each government and support the implementation of the regional development programmes. They also serve larger private clients and firms as well as other banks. Furthermore, Landesbanken act as a clearing institute and provide other services for the local public banks, the Sparkassen (see below).

The second type of public banks at Laender level, the Foerderbanken, are promotional banks and channel public funds through grants, loans and guarantees. Loans are by far the largest instrument with €63.8billion in 2018, compared to €11.3billion of grants and €686million of guarantees.²¹ Financing is given in the areas of private sector promotion, municipal support, housing and urban development projects, primary agriculture as well as other support programmes such as student loans.²² Private sector promotion has been by far the largest areas over the past 10 years with its share fluctuating between 40 – 60 percent most of time, however with housing and urban development catching up significantly in terms of funding volumes recently.

Finally, at municipal level, the public banks, the so-called 'Sparkassen' (saving banks), are typically owned by one or several municipalities or districts. Each Sparkasse's operations are limited to the specific regions they are located in, implying that Sparkassen can only serve customers and offer products in their respective municipalities or districts. This ensures that local funds do not flow out of the regions where they are raised to more prosperous areas. As the other public banks, they also have an explicit public mandate. Their public mandate is defined by the laws in each Land, but generally entails guaranteeing universal access to financial services in all territories and sectors; supporting regional development; serving as a house bank and financial advisor to their district and municipality administrations; as well as to promote savings and general financial education among the population.²³

There were 376 Sparkassen across all Germany with over 12,000 branches and more than 200,000 employees in 2020.²⁴ This decentralized structure makes them particularly important for local businesses with three out of four businesses in Germany having a working relationship with them. While each Sparkasse is independent, they are associated together with the Landesbanken in the Savings Banks Finance Group. The Landesbanken support the operations of the Sparkassen by, among others, acting as their clearing institute, providing IT solutions, conducting business abroad and balancing liquidity between the Sparkassen.²⁵ The Group runs its own Institutional Protection Scheme with the aim to avoid and counter any financial difficulties the affiliated members may face.²⁶ For this purpose, there are thirteen guarantee funds which are connected to ensure the stability of the individual parts of the system and thus the system as a whole, by injecting equity, providing guarantees and covering liabilities of third parties.²⁷

²⁰ [Finanzgruppe Deutscher Sparkassen- und Giroverband: Landesbanken: Regionale Spitzeninstitute](#)

²¹ [Bundesverband Oeffentlicher Banken Deutschlands: Foerderstatistik 2011 - 2020](#)

²² [Bundesverband Oeffentlicher Banken Deutschlands: Foerderstatistik 2011 - 2020](#)

²³ [Gaertner \(2008\)](#)

²⁴ [Finanzgruppe Deutscher Sparkassen- und Giroverband: The Annual Report of the Savings Banks Finance Group](#)

²⁵ [Gaertner \(2003\)](#)

²⁶ [Finanzgruppe Deutscher Sparkassen- und Giroverband: Institutional Protection Scheme](#)

²⁷ [Finanzgruppe Deutscher Sparkassen- und Giroverband: Das Sicherungssystem der Sparkassen-Finanzgruppe](#)

The public banks hence have a crucial role to play for regional development. They ensure universal access to credit and other financial services across all territories. This is particularly important for SME financing as their embeddedness in the localities ensures a deep knowledge of the local firms and customers, and hence allows to provide financial services which otherwise would be difficult to do for a larger more centralized bank. They also support the implementation of regional development programmes and policies more directly. Given that their operations are regionally bound, they have an inherent incentive to work with other local stakeholders to promote the economic development of their location and thereby ensure their own business base.

Chambers of Commerce and Industry

The German Chambers of Commerce and Industry, the Industrie- und Handelskammer (IHK), play an important role for regional development and skills formation more particularly. Compared to many other countries' chambers, IHKs are unique in their organization as well as their specific functions. They are statutory bodies under public law, which have been transferred the responsibility of exercising several public duties. Their membership is mandatory, meaning that all entities, required to pay business tax, are members of the chambers. These characteristics differentiate them from industry association in other places, including the UK, where membership is typically voluntary, and chambers are first and foremost privately organized advocacy bodies. The chambers have existed since the early 1800s with most of them being founded between 1830 and 1870.²⁸

The IHKs are regionally organized and have a strong regional profile, though their areas do not necessarily reflect administrative boundaries but rather organically grown economic systems. Their average size is 4,300km² (just below three times the area of greater London) and an average membership of 66,000. These averages, however, conceal significant differences between the chambers. The largest chamber in terms of members is the IHK of Munich and Oberbayern with over 400,000 members and the smallest is Bremerhaven with just above 6,000 members. There are currently 79 chambers which are organized under the national umbrella organization "Deutscher Industrie- und Handelskammertag".

The IHK's duties are wide-ranging. They can be summarized in three categories: (1) general advocacy to support businesses and to promote the overall economy in their regions, representing all members independent of their size, sectors etc.; (2) providing services to their members, such as start-up support and information on taxes and legal matters; and (3) the already mentioned exercising of certain public duties.²⁹

The exercise of public duties is an important and unique element of the IHKs and justifies the mandatory membership principle. A few examples of the public duties include the provision of certificates required for exportation such as the certificate of origin; mediation services between parties involved in conflicts related to competition law; and the running of regional business statistics. Their responsibility for the coordination, organization and supervision of the vocational education and training (VET) system is particularly well-known.

The VET system in Germany can be described as a collective system, in which both the state and private firms are heavily involved.³⁰ Most notably, VET has a dual structure, meaning that participants

²⁸ [Sack \(2017\)](#)

²⁹ See for example: [Gesetzlicher Auftrag der IHK \(ihk-muenchen.de\)](http://www.ihk-muenchen.de)

³⁰ A collective VET system, which is particularly prevalent in the German speaking countries, has four key characteristics according to [Vossiek \(2017\)](#): 1) most private firms are involved in the provision of the training courses; 2) chambers and other industry associations have an important role in the system; 3) the contents of training is standardized and the programmes lead to nationally recognized degrees; and 4) the programmes

split their time between theoretical courses in a school and a more practical part within firms. The IHKs play a central orchestrating role in this system, mediating between national VET guidelines and their implementation locally and within businesses. Chambers are the assigned 'Competent Bodies', whose responsibility is to promote and monitor the implementation of VET in their regions as well to provide the institutional backbone for different boards and committees related to the system.³¹ For instance, IHKs monitor and certify firms' adherence to specified quality standard, monitor in-company training and register training contracts. This ensures standardized contents and the quality of the degrees. They, furthermore, set up the examination boards and implement their decisions, e.g. by granting the final degree certificates.³²

Since the 1990s, IHKs have also become key actors with regards to regional development initiatives sponsored by the European Union and the federal government. IHKs are particularly well placed to participate in these initiatives due to their knowledge of the local and regional business environment as well as their inherent ability to coordinate and create networks among different actors.³³ The chambers hence have an important role for regional development through representing local businesses, their ability to connect different actors and their key role for skill's formation within the regions.

Summary and conclusion

The constitutional objective to achieve equitable living conditions across the whole country and Germany's federal organization means that levelling up and regional development takes a prominent role in the German political discourse and structure. It is reflected in the responsibilities of subnational governments and the intricate system of fiscal equalization between the Laender, a sizeable budget for regional development policies as well as by the strong involvement of other regional actors in regional development topics.

Germany's federal structure grants important responsibilities across many policy fields to the three levels of subnational government, namely the 16 Laender, the districts and municipalities. A complex system of equalization payments between the Laender and the federal government aims to ensure that all levels of government, independent of their location, are adequately funded to carry out these tasks.

While all levels of government have responsibilities for regional development, Laender governments are at the heart of regional development policy and levelling up. They are the prime responsible for the promotion of their own economies in general and structurally weaker regions more specifically. They are also key actors with regards to spatial planning. The federal government holds mainly a coordinative function with regards to the two policy fields and ensures funding is allocated to structurally weak areas.

Over the last two decades, local governments have also been taking an increasingly active role in local development initiatives. This development has happened over the past two decades due to an increased awareness of the importance of local factors for regional development, and hence more European and National Programmes explicitly involving local actors.

Direct and indirect financing volumes for regional development and to ensure equitable living conditions are significant. Since many policy fields straddle the area of regional development, it is

have an alternating structure for the participants, in which they spend part of the degree working within firms, and part of it in theoretical courses in schools.

³¹ [Bundesinstitut fuer Berufsbildung: Stakeholders of the German VET system](#)

³² [Vossiek \(2017\)](#)

³³ [Sack \(2017\)](#)

difficult to give precise numbers. However, the budget for the programmes under the umbrella of the Federal Funding System for Structural Development Regions amounted to €3billion in 2021 alone. Payments through the fiscal equalization scheme between Laender and federal government, furthermore, totalled €24billion in 2020. And an additional €28billion were given through the European Structural funds between 2014 and 2020.

Other local actors play a key role for regional development. This is particularly true for the local public banks as well the regionally organized Chambers of Commerce, whose organization and mission are particular to the German context. Their local/ regional profile and knowledge makes them key partners for the promotion of the local economies.

Finally, the experience of the establishment of SNG structures and capacities in the areas of the former GDR provides some interesting insights on ways to build local government capacity. A crucial aspect was the use of municipal-level partnerships and personnel transfer along with, of course, substantial financial transfer in the context of reunification generally.

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Dortmund

Introduction

Over the past few years, the city of Dortmund has received several accolades for its urban and economic development projects, including the German Sustainability Award, the German Urban Development Prize and the European Public Sector Award. While nowadays this might not be a surprising choice, not long-ago Dortmund's fortunes looked very different. Going back in history only 20 to 30 years, the city was hardly known as a glamorous innovative technology hub. Located at the Eastern edge of the Ruhr region, the triad of the traditional industries of coal, steel and beer dominated the city's image and external reputation. The city was plagued by high unemployment rates and urban poverty, while most large companies had closed their operations and left vast plots of abandoned industrial land behind.

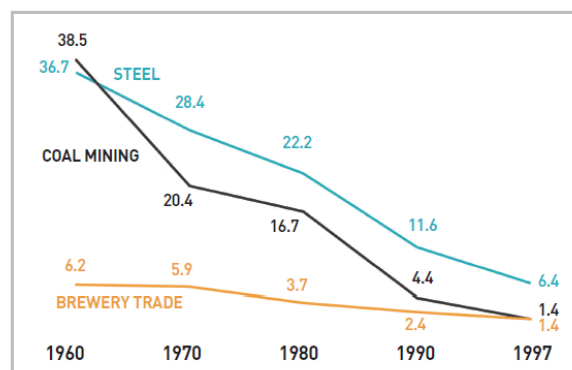
Entering the city today a very different picture awaits visitors. From the new art centre 'Dortmund U' and a modern concert hall in the city centre, to the new urban developments and technology centres on the former site of the Phoenix steel company, Dortmund presents itself as a modern, future oriented and creative city. New employment opportunities have been created in the service industry, making the city once more attractive for young people and families.

The following case study presents an overview of this remarkable trajectory. It starts with a short background on Dortmund's economic and social performance over the last decades and then describes the path the city has taken to reshape its outlook with the so-called 'Dortmund-Project' being at the heart of the city's efforts. It concludes by drawing a number of lessons-learnt.

Background

With almost 600,000 inhabitants, Dortmund is the largest city of the Ruhr area. Mirroring the region as a whole, the city's economy has long been dominated by heavy industries. Over 75,000 people worked in the production of steel and coal mining at the height in 1960 (see Figure 2). Dortmund was, furthermore, dubbed the beer capital of Europe with several thousand people working in the many large and small breweries. However, over the decades, most industrial plants had to reduce their workforce and ultimately stopped working. In 1987, the last coal plant closed its door followed by the last steel factory in 1997. By then, almost 80,000 jobs had been lost compared to 1960 and the unemployment rate reached 18 percent (Rollinghoff & Westphal, 2016). Dortmund's reputation was that of a typical worker's town with a declining population and a questionable future ahead.

Figure 2: Employment (in thousands)

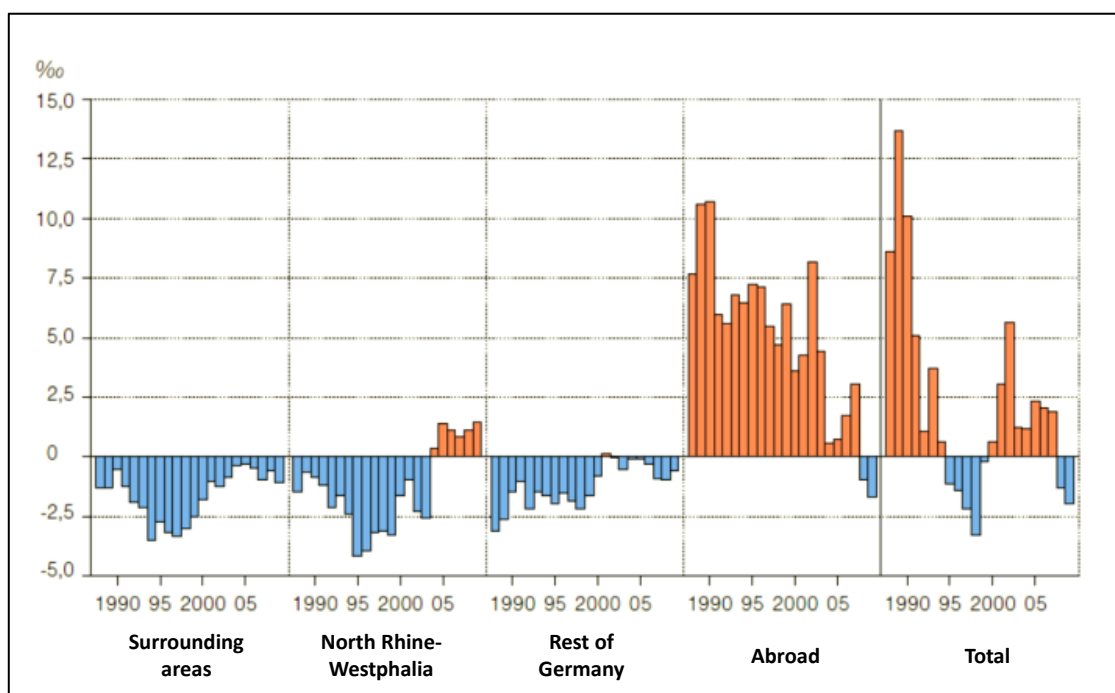


Source: Rollinghoff & Westphal (2016)

Dortmund's fortunes started reversing since the early 2000s. This is reflected in rising employment numbers within the administrative borders of the city as well as population trends. By 2010, 306,000 people were in employment compared to 280,000 in the year 2000. The number further increased to 333,000 by 2019, hence reflecting an almost 20 percent increase compared to the year 2000.³⁴ The vast majority of jobs has been created in the service sector, in which a total of 60,000 jobs emerged over the last 20 years. Despite this increase partially being offset by a loss in the manufacturing sector, the overall numbers remain significant and show the reorientation of the economy. A few sub-sectors have fared particularly well. While the number of firms in the logistics sector has remained relatively stable since 2006³⁵, the number of employees has grown by 70 percent from 12,000 to 20,000. Within the ICT sector, employment in firms providing services for information technology has grown by 82 percent from 4,500 to over 8,000. Employment in research and development has also grown by 70 percent, reflecting a move to more knowledge intensive activities. The largest relative increases in employment can be found in financial services (a 2.4-fold increase) and other technical and scientific activities (a 4.4-fold increase), further demonstrating the structural change occurring towards a service economy.

The positive development can also be seen in the various "Kompetenzzentren" (Centres of Excellence) developed to support key industries, which all display high levels of occupancy. The MST.factory, a centre focused on micro technologies opened in 2004, already underwent an extension in order to satisfy the high demand (Rollinghoff & Westphal, 2016).

Figure 3: Net migration Dortmund



Source: Osterhage & Thabe, 2012

The city has also seen a positive trajectory in terms of urban population development with the city regaining attractiveness as a destination within the wider region for both living and as a commercial centre. Figure 3 shows the migration balance of the city of Dortmund over time. After the year 2000, for the first time, there is a net migration to Dortmund from other locations in North Rhine-Westphalia, while the outflow to surrounding areas shrank. Net migration has furthermore become

³⁴ All employment numbers in this section are sourced from the [Statistical Office of North Rhine-Westphalia](#)

³⁵ Please note that detailed statistics are not available before this year

positive among the population up to 30 years (Osterhage & Thabe, 2012), showing an increased popularity among younger age groups.

Despite these undoubtedly positive developments, Dortmund is not without its persistent socio-economic challenges. The city continues to struggle with relative high unemployment rates and urban poverty in some areas of the city, underlining the challenge to bring long terms unemployed back into the workforce. While the unemployment has been reduced, it continues to fluctuate around 10-13 percent over the years and hence remains significantly above the German average.³⁶

Policies and strategies

The Dortmund Project

The 'dortmund-project' is a local development initiative launched in 1999. While not being a stand-alone policy, the initiative was largely credited with putting Dortmund on track for the positive developments experienced in the past two decades. Initiated by a public private partnership between the steel company Thyssen-Krupp and the City of Dortmund and supported by the consulting firm McKinsey, its objective was to transform the city into a "New Dortmund" with the explicit goal of creating 70,000 new jobs and reducing unemployment from over 16 percent to 8 percent by 2010 (Rollinghoff, 2008). While the actual employment growth does not reach the targeted 70,000 new jobs (see previous section), the outcomes remain remarkable and come close to what has always been an aspirational target. The strategy was approved in the year 2000 by the City of Dortmund and later fully integrated in the Economic Development Promotion Agency of the city.

The strategy development of the dortmund-project was guided by the premise that the city needed to become attractive for both employers and employees in order to be effective and reach its ambitious objectives (Rollinghoff & Westphal, 2016). Firms would not locate in the city or be able to take-off without being able to find the right people; and people would not stay in or move to Dortmund without job prospects and a liveable and family friendly environment. The approach, hence, combined aspects of traditional economic development policies with urban development projects, aimed to improve the quality of life in the city. The vision was, furthermore, for the strategy to be the central and guiding pillar of Dortmund's effort to renew the city, integrating policies and projects from different areas, rather than being a standalone private sector promotion initiative (Rollinghoff, 2008). The strategy itself can be summarized along the four focus areas it defined (Irle & Rollinghoff, 2008; Rollinghoff, 2008): (1) a strategic focus on selected industries; (2) land, infrastructure and business service development for the priority sectors and the development of a liveable city; (3) targeted human resource development; and (4) internal, national and international investment promotion in order to change Dortmund's reputation and make it internationally more known.

The selection of priority industries was a key part of the strategy. Three industries were identified which were deemed to have the largest potential for future development: ICT & e-commerce, microtechnology, and (e)-logistics. The selection was based both on Dortmund's existing capabilities and business environment as well as on the sectors' growth potential. This resulted in a mix of sectors which represented both the "New Economy" (ICT & e-commerce, microtechnology) as well as the already existing economic fabric (logistics). Despite Dortmund's reputation as a heavy industry location, a more technologically focused cluster of activity had already emerged organically since the 1980s around the Technical University and the University of Applied Science. The establishment of the Technology Zentrum and the Technology Park in close vicinity to the university in the late 1980s further strengthened the technological profile of the university. This was considered fertile ground for the development of the target sectors, in particular ICT and microtechnology (Kiese, 2012; Rollinghoff & Westphal, 2016). At the beginning of the project, it was estimated that by 2010, ICT and E-commerce

³⁶ [Stadt Dortmund \(2019\)](#)

could generate an additional 34,000 jobs; microtechnology 16,000; logistics 10,000 and another 10,000 jobs via secondary effects (Rollinghoff, 2008).

An integral part of the support for these sectors have been the start-up competitions “start2grow”, which exist until today.³⁷ Initially, two of them were focused on the priority sectors while the third was open to all sectors. The competition supports participants throughout their journey in the development of business plans as well as through accessing financing. A network of 600 mentors and coaches with expertise in different areas is available to mentor participants or provide specific inputs. The second focus areas targeted infrastructural and services developments for both people and companies. A particular emphasis was placed on developing infrastructure and business services in order to provide an ideal environment for the priority sectors to grow. A localized approach was chosen in which different locations in the city were developed to serve specific sectors. This included the establishment of incubators, and so called “Kompetenzzentren” (centres of excellence), which provide infrastructure and highly specialized services to tenant firms. These business services include start-up support, mentoring schemes, networking opportunities and help to access to finance. Table 3 provides an overview of the different centres of excellence which have been established to date and the targeted sectors.

Table 3: Centre of Excellence

Centre of Excellence	Sector
MST.factory	Micro & nanotechnology
E-Port	Logistics and IT
B1st Software Factory	Software, IT, new media and telecommunications
ZfP – Centre for Production Technology	Production technology
BMZ – BioMedizinZentrum Dortmund	Biomedicine, bioinformatics, biomicrostructuretechnology and proteomics

The development of large brownfield conversions played a crucial role for the development of business infrastructure and for the objective to turn Dortmund into a more attractive and liveable city. The Phoenix project, located on the site of a former steel plant in the district of Horde about 5km from the city centre, is one of the flagship projects. On two interconnected areas with a total of approximately 200ha, an industrial hub focusing on the micro- and nano technology was developed (Phoenix West) alongside one of Germany’s largest urban development projects (Phoenix East), creating a space for leisure, offices and urban living around an artificial lake. Up to 2,000 flats and house were built around the lake and 121 firms with 1200 employees had located there by 2016.³⁸

One of the most prominent “Kompetenzzentren”, the MST.factory, a centre of excellence for micro and nano technology, was opened in 2004 on the Phoenix West location as the first incubator in Europe focusing on the sector. Extended in 2007, it has been fully occupied ever since (Rollinghoff & Westphal, 2016) and has acted as the anchor tenant for the development of the site. The Centre for Production Technology was further established in close vicinity shortly after the opening of the MST.factory.

A third area of activity evolved around skill development in order to ensure that companies in the target sectors would be able to find qualified employees. For instance, new apprenticeship programmes at high-school level were introduced; the annual competition “Junior of the Year” was started to increase the awareness for and attractiveness of the IT sector for young people; and a two-

³⁷ [Stadt Dortmund \(no date\)](#)

³⁸ [Bild \(2016\)](#)

year fast track IT degree was established in collaboration between Dortmund's universities, the chamber of commerce and the Dortmund-project (Schierenbeck, 2010). The university offers one of the largest computer science degrees in the whole of Germany today (Kiese, 2012). A personnel service agency and mobilization campaigns also was supposed to help to attract talent from elsewhere (Rollinghoff & Westphal, 2016).

Finally, these activities were also supported by a strong push to promote Dortmund nationally and internationally to possible investors and to incentivize technologically focused firms to relocate to Dortmund (Becker & Herrmann, 2012). This was done through roadshows and strategic partnerships, for example with the city of Detroit. Simultaneously, a communications campaign targeted the "internal" marketing of the projects to the decision makers and the general population in Dortmund. This was considered a key aspect in order to create the needed support for the project in Dortmund itself.

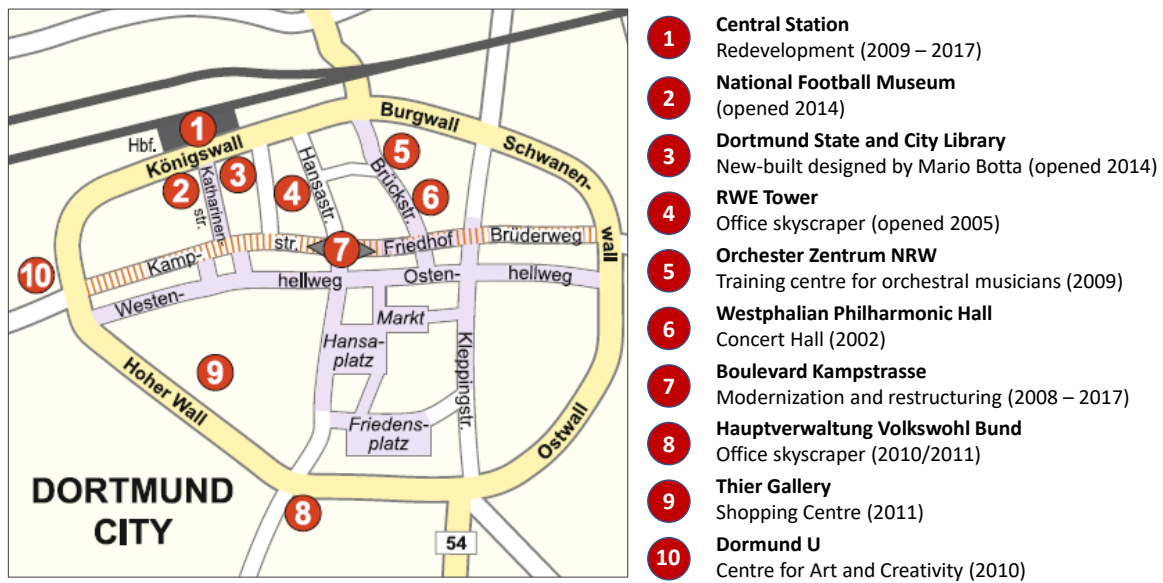
Complementarity with other policies and spatial planning

A central principle of the dortmund-project was that the efforts to revitalize Dortmund's economy had to be complemented by urban development initiatives in order to convert Dortmund into an attractive and liveable city for employees. The Phoenix East development as described above was one of the main projects in this regard. However, the efforts of the city went well beyond the specific projects associated to the dortmund-project. Several strategies were developed and implemented in parallel for areas such as housing, retail as well as the cultural and art scene. The spatial planning process in the form of the development of a new preparatory land use plan integrated the different initiatives and masterplans and ensured a focused and balanced use of the available space.

The development and regeneration of the city centre was particularly prioritized (Osterhage & Thabe, 2012). Two areas of activity were important, namely the support to the retail sector and the promotion of the centre as a place for the arts and creative industries. Historically, large shopping centres on non-integrated greenfield sites played an important role in the region, contributing to a loss of centrality and decay in the city centre. The city, however, took an active stance on limiting the further development of these centres (Osterhage & Thabe, 2012). For this purpose, the city administration, in collaboration with the local Chamber of Commerce and Industry, the local trade union and other actors, developed and approved an overarching strategy for retail trade in the city, the 'Gesamtstaedtische Einzelhandelskonzept fuer Dortmund', in 1999. The strategy excluded the development of new retail centres on non-central places in order to strengthen the city centre and local highstreets in the suburbs (Stadt Dortmund, 2004b). This principle was further developed in the Masterplan Retail in the year 2004.

In addition, several large infrastructure projects were developed in the centre to give it a modern and attractive outlook. Figure 4 provides an overview of the new developments which include the national football museum which opened its door in 2014; a new concert hall - the Westphalian Philharmonic Hall inaugurated in 2002 - and the Dortmund U, a centre for art and creativity, opened in 2010 on the site of a former brewery. These projects helped to regain the attractiveness of the city centre which in turn supported the flourishing of the retail sector. Overall, these efforts seemed to have paid off with the centrality index raising, indicating a larger centralization of commercial activities in the city centre (Osterhage & Thabe, 2012).

Figure 4: New developments in Dortmund's city centre



Source: Translated from Osterhage & Thabe (2012)

In parallel to the regeneration of the city centre, the local administration reoriented its housing policy to support the structural change occurring in the city (see Osterhage & Thabe, 2012; Stadt Dortmund, 2004c). While the focus until the mid-1990s was on providing relatively low-cost housing in order to alleviate pressures resulting from migration from eastern Europe and East Germany, a conscious shift to target more quality housing was realized in the mid-90s. A particular emphasis was placed on the provision of more land for the construction of one and two family houses in order to avoid more affluent families working in the service sector to move to the surrounding areas (Stadt Dortmund, 2004c) since this group represented a large portion of people leaving the city (Stadt Dortmund 2004a). From the 2000s onward, this shift in strategy was further cemented, first in a new preparatory land use plan; and second, in the development of the Masterplan Housing 2004 (Stadt Dortmund 2004c). The Masterplan 2004 targeted three objectives (Stadt Dortmund, 2004c): support structural change; develop the housing market towards quality and ownership; and the strengthening of the attractiveness of the location Dortmund. The Masterplan makes specific reference to the interconnected nature of the objectives of the dortmund-project and the resulting need to reorient the housing market policy. As intended by the dortmund-project, the strategy, rather than being a standalone policy, served as an integrating vision for other policy fields.

The development of a new preparatory land use plan (see section 2.2.2 for more details on the German land planning system), initiated in the year 2000, tied these different policy fields together. Three overarching objectives were formulated for the plan: the development of Dortmund as a competitive location for firms, in particular in the priority sectors; the provision of new land for housing; and the development of open spaces as an important source of a high quality of life (Stadt Dortmund, 2004a). The development of the preparatory land use plan was guided by the objectives and principles formulated in the spatial plans at the higher level, i.e., the Laender and the regional plans, as well as informed by the above-mentioned master plans for housing, retail and others including transport and the environment. For example, it follows the vision of the dortmund-project to develop specific areas within the city for the priority sectors. It, hence, integrated in a space-specific manner the different policy fields with the dortmund-project frequently being referenced as a guiding pillar for the development of the plan.

Institutional set-up and funding

Institutional set-up

The dortmund-project was conceived as a local development initiative, spearheaded by the city of Dortmund. The city administration thus decided to act in a 'voluntary' policy field³⁹ which until then was mainly occupied by regional development initiatives of the Laender. In fact, the project is often seen as one of the first of its kind with an increasing number of municipalities getting involved in the area since the early 2000s.

After the strategy's approval in the year 2000, a separate department with 18 employees was created within the administration to drive forward its implementation and further development. The department was set up with a direct reporting line to the then mayor Gerhard Langemeyer from the social democrats (Kiese, 2012) rather than being integrated into one of the existing structures. The mayor was a key supporter of the dortmund-project and the direct reporting line to him showcases the strong personal commitment and leadership provided to the project. The project was further guaranteed support by the Minister of Economy of the Land Nord-Rhine Westphalia as the initiation as a PPP (see more details below) was seen as an innovative approach (Rollinghoff, 2008). The project, hence, had significant political support and leadership from the highest levels.

In addition to the local administration's central and integrating role for the project, many other actors were key in the design and implementation stages. For instance, the conceptualization and initial implementation of the dortmund-project was done in a PPP set-up with a project team around employees seconded from the steel company Thyssen-Krupp, a team of consultants from the consulting firm McKinsey as well as members of the economic development cooperation of the city of Dortmund (Jonas, 2008). In fact, the project was initially proposed to the city by Thyssen-Krupp during conversations on how to mitigate the effect of their planned plant closure on the city (Kiese, 2012). Similarly, a steering committee was established to guide the work of the initial project team, comprising representatives of different sectors such as the local Chambers of Commerce and Industry, the different universities as well as trade unions (Rollinghoff & Westphal, 2016). Hence, the initial conceptualization of the project benefited from input and guidance of a multi-sector partnership early on.

The implementation of the actual projects further involved many different actors. The implementation of the focus area around skills particularly benefitted from the collaboration with the Universities and the Chamber of Commerce and Industry, amongst others in the establishment of the new IT programme as described in section 3.3.1. The start-up competition start2grow would not have been able without the commitment of voluntary coaches from local firms, financial services and civil society. And the development of the different master plans for retail and housing was done in collaboration with a wide range of actors including the Chambers of Commerce. This active involvement of a variety of actors and sectors created acceptance and shows how different groups stood behind the strategy and supported its effectiveness.

The local saving bank, the Stadtparkasse (see section 2.3.1 on more details regarding the saving banks), have had a particularly interesting role and is seen as a key partner for the development of the city (Gaertner, 2008). Traditionally, they have an important role for the financing of local SMEs.⁴⁰ Due to their superior local knowledge and relationship with local companies, the Sparkasse is furthermore able to accompany firms even in more challenging times, which contrasts with the private banks that have a less localized profile (Gaertner, 2008).

³⁹ In a voluntary policy field, the city can take action, but has no obligation to do so (see section 2.1.1 for further details)

⁴⁰ See for example [Deutscher Bundestag \(2021\)](#)

Beyond this general importance for local development, the Sparkasse also took an active role in the dortmund-project more specifically and the promotion of Dortmund 's economy in general. For instance, it re-adjusted its departments and services in order to reflect the new focus on the priority sectors. Furthermore, it set up a specific venture capital fund in 1999 to close the funding gap for local start-ups. The Sparkassen Venture Capital GmbH provides equity funding in the range of 100,000 to 1 million Euro for start-up funding. It also established the Seed Capital Dortmund Fund in 2006 in collaboration with the the NRW.Bank (the local Landesbank) and a local foundation, which aims to finance start-ups at an even earlier stage. Finally, the Sparkasse also provides significant support for the start2grow competitions by mentoring participants and evaluating proposals. The Sparkasse, thus, was not only involved by providing feedback and input to the project, but also by actively adapting its operations and services to align with the strategy.

Overall, it can be seen that while the city administration is the central actor for the Dortmund-project, many other institutions were involved in both conceptualization and implementation of the initiative. This multisector support was an important facilitator for the project implementation as it also allowed for continuity despite changing political leadership.

Funding

The funding for the initial phase of the project in 1999 was provided by Thyssen-Krupp (Jonas, 2008) and amounted to approximately 2 million Euro (Rollinghoff, 2008). After the approval of the strategy by the council of the city of Dortmund, the city allocated a budget of 50 million Euro for the 2000-2010 period (Rollinghoff & Westphal, 2016). In 2008, the project was integrated into the City's Economic Development Cooperation in order to create a permanent basis for its projects.

Besides the 50 million Euro earmarked by the city of Dortmund, significant additional funds were leveraged from EU Target 2 structural funds and the regional government of North Rhine-Westphalia for the implementation of the projects. While there are no exact numbers available, total investments in projects associated to the dortmund-project, including the re-development of the Phoenix sites, were estimated to be around 240 million Euro, with approximately 100 million Euro mobilized through external (non-city) sources (Rollinghoff, 2008). However, the actual numbers are likely to be significantly higher as the development of the lake around Phoenix East alone had a cost of 230 million and received 70 million Euro of subsidies from regional funds (Frank & Greiwe, 2012).

Initially, it was envisioned for the project to have a significant private funding component; however, these hopes were not fulfilled due to different reasons including legal requirements that prevented the participation of private entities in the projects. Therefore, only a minor portion, mainly related to funding provided by Thyssen-Krupp during the conceptualization phase and ' ; some donations by private people over time, were from private sources.

Enabling factors and lessons-learnt

Several lessons-learnt and enabling factors can be drawn from the example of Dortmund to inform policies in other cities. First, the complementary approach of economic and urban development strategy was central to Dortmund's success. A clear emphasis was placed on developing the different sectors as well as the social infrastructure required to attract and maintain the population. Strengthening the attractiveness of the city for both employers and employees proved to be mutually reinforcing strategies which would have struggled to take hold in the absence of the other.

Second, and related to the first point, the Dortmund Project was not a stand-alone project but integrated into a wider set of policies, including housing and retail, many of which were pre-dating the project itself, hence creating fertile ground for the project to bear fruits.

Third, on the economic side, a comprehensive and balanced set of interventions was implemented. The strategy integrated hard infrastructure development with other “softer” measures such as training and skills development, business services and investment promotion. In this way, the different pillars, key for regional and local development, were addressed rather than only targeting some aspects.

Fourth, the strategy took an approach of “strengthening the strengths”, i.e. focusing on those sectors in which Dortmund clearly had an important pre-existing comparative advantage. The universities and the Technologie Zentrum were particularly important anchors in this regard. While this is intuitive, many regional development strategies elsewhere still aim to attract industries for which pre-conditions are simply not in place.

Fifth, the institutional capacity to reach consensus and execute in Dortmund is considered exceptionally high. The so-called “Dortmund Konsensus” is a long-standing tradition, derived from the representative structure of supervisory boards in the steel and coal industries. Members from all relevant parties, such as universities, chambers of commerce, trade union and public administration were traditionally represented in these boards, which in turn created a culture of collaboration for the common good. Furthermore, different stakeholders have always been invited to participate in the process of the development of the different programmes and strategies. Hence, while collaboration is somewhat ingrained in Dortmund’s ‘culture’, it is also the result of concerted efforts in this regard. Sixth, the project benefitted from high-level and very visible leadership and support from the then mayor of Dortmund. It was not one of many different projects integrated into already existing structures but was given its own department with a direct reporting line to the mayor. However, the involvement of many different actors throughout the years also guaranteed continuity once the political leadership changed, which was key to the progress achieved in Dortmund.

Seventh, the Dortmund project and associated interventions were able to access a wide variety of funding sources, including city budget, regional funds and EU funding. This gave the project enough “teeth” to move ahead and implement all different aspects of the strategy. The large-scale upfront commitment of the city over a 10 year period was also important to create the needed structure and ability to leverage further funds from outside sources.

And finally, while the development of Dortmund has been positive on many accounts, its history also underlines that even a strategy that is successful on many aspects may fail or struggle to address some of the underlying socio-economic challenges a city faces. This emphasises the need for wider community development initiatives.

Conclusion

The city of Dortmund has undergone an impressive transformation from a city dominated by heavy industries to a recognized knowledge and innovation centre over the past twenty years. The so-called Dortmund-project, while by no means a standalone project, has been the central pillar of the city’s effort to manage this change. A comprehensive set of interventions straddling both traditional economic development policies and urban development projects was implemented. The efforts were further embedded in other longstanding policies around housing, transport, retail and others. While important socio-economic challenges remain, the policies were successful in reversing population decline and reinvigorating the local economy. Dortmund today is considered to have successfully managed the “Strukturwandel” and has become a recognized hub for innovation in Germany and Europe.

Important lessons can be learnt from Dortmund’s experience for other cities, struggling with similar challenges as Dortmund twenty years ago. These include the importance to combine urban and

economic development policies, designing and implementing a balanced set of interventions as well as leveraging existing economic potentials rather than building cathedrals in the desert and. A strong institutional capacity to collaborate between different actors in society and the ability to access different sources of funding further underpinned the effective development and implementation of the strategy.

Duisburg

Introduction

The following case study provides a summary of the efforts of the city of Duisburg, a town in Germany's rust belt the Ruhr, to stimulate the transition of its economy from heavy industries to modern and innovative sectors. Strongly affected by structural change since the 1960s, the city has implemented several initiatives to attract new business and raise employment levels, in particular in the logistics sector. While the effectiveness of the initiatives has been varied, a modern logistics hub has emerged through a concerted and collaborative effort between different levels of government. Today, Duisburg is one of the most important logistical centres in Central Europe with employment in firms related the port having increased more than 2.5fold over the last 20 years.⁴¹ The city has furthermore been hailed as a pioneer in urban regeneration, turning derelict brownfield sites into places for modern living, entertainment, and work.

The case study begins with a brief introduction of Duisburg's industrial and economic history. It then describes some of the strategies and policies which the city has employed over the past decades to reshape its outlook with the urban regeneration programmes around the IBA, the development of the logistics sector and the agenda "Impulse.Duisburg" and consequent efforts to diversify the economy at the heart of its efforts. We conclude with a few lessons-learnt.

Background

With a population of just below 500,000, Duisburg is one of the large urban centres in the Ruhr area in Germany. As the other cities in the region, Duisburg's economy and history are closely intertwined with the rise and fall of the coal and steel industries. Contrary to Dortmund, Duisburg still remains one of the main centres of steel production in Europe, however it has also been one of the most severely affected cities by the decline of these industries and has faced significant socio-economic challenges. Between 1978 and 2010, Duisburg lost almost 20 percent of its population⁴² and around 20 percent of overall employment since the late 1980s (Zimmermann et al., 2017). Compared to other major centres in the area, Duisburg has among the lowest levels of employment, with only 32 percent of the population being in employment compared to 37 percent in Essen and 61 percent in Dusseldorf.⁴³ While unemployment rates have seen a positive trend since 2015, they remain high with 12 percent in May 2021.⁴⁴

Against this background, the city and the state government have collaboratively implemented a host of policies and initiatives to mitigate and counter the impact of these changes. The development of the logistics sector is considered one of the major success cases in the Ruhr area in terms of managing structural change. The Duisburg port, making use of the sites of former coal and steel plants along the river, has become the largest inland port in the world and is one of the most important logistic hubs in central Europe. Global companies such as Schenker, DHL and Johnson & Johnson have invested in the port area with Maersk being one of the latest to confirm their intention to establish there.⁴⁵ The number of people employed in approximately 300 transport and logistics related firms has increased from 19,000 to 50,000 since 1998, contributing significantly to offset the losses in the traditional industries.⁴⁶ Duisburg is also one of the main European gateways for the new Silk Road initiative by the Chinese Government, accounting for 30% of good transported by train between Europe and

⁴¹ [The Guardian \(2018\)](#)

⁴² [Stadt Duisburg \(2011\)](#)

⁴³ [Stadt Duisburg \(2011\)](#)

⁴⁴ [Bundesagentur fuer Arbeit \(2021\)](#)

⁴⁵ [Maersk \(2020\)](#)

⁴⁶ [The Guardian \(2018\)](#)

China.⁴⁷ Besides the repurposing of derelict industrial land for industry purposes, Duisburg is frequently also referenced as an important example for its effort to regenerate the city and find other uses for the former industrial sites, contributing to the attractiveness of the city and creating a growing tourism industry.

Duisburg, however, continues to struggle with its industrial legacy, with a diversification away from the already strong sectors of steel and logistics proving difficult to achieve. While making some progress in this regard, growth in the knowledge-intensive industries targeted in its former development strategy IMPULSE.Duisburg has remained slow. Furthermore, while unemployment has decreased in the past five years, it remains high and well-above the German average and currently stands around 12%.⁴⁸

Policies and strategies

Different policies and approaches have been implemented in Duisburg to help the city recover from the adverse shocks experienced through industrial change. The following section elaborates on three of them which have been particularly important: the urban regeneration projects surrounding the International Architectural Exhibition (IBA), the efforts to develop a modern logistics cluster around the port and the economic development programmes Duisburg 2000 and Impulse.Duisburg.

The IBA and urban regeneration

A central pillar of Duisburg's efforts to overcome the challenges related to structural change was the regeneration of the city landscape through large-scale redevelopments of the vast amount of derelict industrial sites. The underlying idea was not only to find new uses for the abandoned land but also to restore a sense of identity and pride among the city's population by "healing" the physical scars left by deindustrialization throughout the city. The redevelopments of the former industrial sites were also seen as a visible sign for the shift from a production to a service economy (Beyer, 2018).

The 'International Bauaustellung Emscher Park' (IBA) or 'International Architectural Exhibition' provided a framework and the initial impetus for the first steps in this direction. The IBA was a ten year-long programme of the state government of Nord Rhine-Westphalia held between 1989 and 1999. Its objective was to develop and showcase new ideas to address the socio-economic, cultural and ecological challenges generated through industrial decline in the Ruhr area.⁴⁹ The programme concluded in 1999 with an exhibition.

Seventeen cities and other project partners implemented a total of 117 projects around six themes: (1) Working in the park; (2) the building and modernization of new and existing housing; (3) the ecological renovation of the Emscher River; (4) promotion of urban development; (5) social stimuli for urban development; and (6) the development of a regional park, the Emscher Landscape Park.⁵⁰ The projects covered a total of 800 square kilometres, an area slightly larger than the entirety of the Liverpool City Region. The aim was not only to reshape the physical landscape but also to instil a new sense of pride and identity in the region.

The city of Duisburg participated with several projects in the IBA, most notably with the development of the 'Landscape Park Duisburg Nord' and the regeneration of the 'Inner Harbour'. Both projects were primarily focused on urban regeneration and finding new uses for the abandoned land and buildings rather than stimulating new industrial developments. The Landscape Park Duisburg Nord was

⁴⁷ [RailFreight.com \(2020\)](#)

⁴⁸ [Bundesagentur fuer Arbeit \(2021\)](#)

⁴⁹ [Internationale Bauaustellung \(no date a\)](#)

⁵⁰ [Internationale Bauaustellung \(not date b\)](#)

developed on the side of the former Duisburg-Meiderich ironworks which closed in 1985 and turned it into an open space for leisure while maintaining the original structures for businesses and cultural institutions to move in.⁵¹ Nowadays, it hosts a climbing park and several event spaces. The Park was selected as one of the ten most beautiful urban oases in the world by The Guardian and receives more than one million visitors each year.⁵²

The second main project related to the IBA was the redevelopment of the Inner Harbour, an area of 89 hectares close to the city centre. The Inner Harbour was once an important location for the transportation of steel, coal and grain. However, due to the continuous decline of these industries, the harbour was used less and less until large parts remained abandoned. The redevelopment of the Inner Harbour aimed at reconnecting the waterfront with the city centre and hence giving the city's population access to the waterfront once again.⁵³ Based on a Masterplan by Fosters and Partners from 1994, the harbour was converted into a mixed-use area with housing and offices as well as space for entertainment and culture. It maintained some of the old buildings while reflecting the past architecture in some of the new buildings as well (Sanchez, 2011). Several museums are now located in the harbour and a number of cultural events conducted each year. The Inner Harbour is frequently referenced as an example for successful urban regeneration of former industrial cities (see for example Sanchez, 2011).

Based on what was perceived a large success, the city of Duisburg has pushed forward other large scale urban redevelopment projects over the past 20 years. Among the main projects are the redevelopment of city centre from 2007, the redevelopment of the area called formerly called 'Duisburger Freiheit' (today 'Duisburger Duinen') and Wedau-Nord. These redevelopments are largely still underway and have undergone several iterations.

[The development of the logistics cluster](#)

After the realization of the initial regeneration projects, it became clear that reusing the land for housing, leisure and offices was not a feasible path given the amount of abandoned land across the city and the continued decline of the steel industry. A new approach had to be considered in order to repurpose some of the land to support new industrial developments (Glassmann & Voelzkow, 2004). The logistics sector had already been important in the city since the rise of coal shipping in the 19th century. Over the years it had become the most important inner harbour in Europe due to its central location and important transport connections by water, highway and rail to other important cities and harbours such as Rotterdam, (Glassmann & Voelzkow, 2004). However, due to the decline of the coal and steel industries it had also come under pressure.

Different initiatives had sought to strengthen the sector since the 1980s. The logport concept was developed in the late 1990s with the underlying idea to develop Duisburg as a main reloading hub for goods in Europe, taking advantage of its location in a central position within the main European transport corridor ('the blue banana') as well as access to river, road and rail infrastructure.⁵⁴ The repurposing of the vast amount of derelict land available throughout the city – in a first step the former Krupp steel plant in the neighbourhood of Rheinhausen, closed in 1993 and spanning 265 hectares or roughly the size of 371 football fields – was at the core of the plans.

In different phases from 1998 onwards, various facilities were developed on the site and over time on other derelict land, including an Intermodal Terminal (DIT), a Trimodal Terminal (D3T), a multi-Purpose

⁵¹ [Internationale Bauausstellung \(no date c\)](#)

⁵² [Landschaftspark Duisburg-Nord \(no date\)](#)

⁵³ [Foster & Partners \(2003\)](#)

⁵⁴ [Duisport \(no date a\)](#)

Terminal (DKT) as well as a secondary railway station and warehouses.⁵⁵ Logport V and VI are currently under development with the logport I – IV being completed marketed. Between 2000 and 2004 alone, over 200 million Euro were invested (Schierenbeck, 2010).

Much of the efforts to support the emergence of the cluster have gone into infrastructure development on the different sites. However, a clear emphasis was placed as well on developing value-added services for the logistics sector with a strategic view of what was needed from the clients' perspective and in which direction the sector was developing. The development of a large array of services, targeting improvements in the general business environment for the logistics sector have, hence, also complemented the infrastructure component. These initiatives included, for example, the extension and the marketing of vocational training programmes specifically for the logistics sector and a marketing and image campaign for the whole Land North Rhine- Westphalia (Glassmann & Voelzkow, 2004). Today, the different universities, technical and vocational training centres and colleges offer a large range of programmes targeting the logistics sector, including a MSc Supply Chain Management and Logistics at the University of Duisburg-Essen, a three-year vocational programme to become captain on inland vessels⁵⁶ and a dual-education Bachelor of Arts in Business Administration jointly conducted by the FOM University of Applied Science and the port management firm Duisport⁵⁷. This offer is seen as an important USP to attract an ever-growing number of international logistics firms to Duisburg.

Efforts have also gone into developing an entrepreneurial environment around the cluster in which innovative SMEs can flourish by taking advantage of the proximity to the big established firms in the industry. Startport, a start-up network and incubator, was launched in 2017 as a subsidiary of the port management company with the aim to support entrepreneurs developing innovative solutions for the logistics sector and supply chain management. Startport is both an incubator for entirely new ideas for the sector as well as an accelerator for existing firms. It facilitates access to the large network of established logistics firms including the possibility to pilot the ideas with the large firms as well as it provides monitoring, coaching and coworking spaces. 65 start-up have been supported since the launch in 2017⁵⁸, contributing to the attractiveness of the city as a logistics centre.

[Duisburg 2000, Impulse.Duisburg and Duisburg 2027](#)

Besides the development of the logistics cluster, Duisburg has also sought to diversify its economy towards more knowledge intensive sectors over the past decades. Together with cities such as Barcelona, Duisburg was actually among the first European cities to put in place a specific city development strategy: the strategy 'Duisburg 2000' was already approved in the year 1987 and then refined with the subsequent programme 'Impulse.Duisburg' in 2001 (Del Romero Renau, 2009). 'Impulse.Duisburg' has been the city's main economic development strategy for many years, while having undergone several changes over time. The strategy's main objective has been to promote the diversification of the economy away from its reliance on steel and coal based on the underlying idea of "strengthening strengths".

As in Dortmund, several core industries were identified, which were considered to have a particular potential in the city: ICT and microtechnology, material technologies, people related business services, logistics, city tourism as well as environmental and energy technologies (added later on). However, the choice of the different sectors has been criticised for not being sufficiently anchored in a rigorous analysis of the city's strengths (Ziesemer, 2004) as well as lacking clarity in terms of grouping the sectors as clusters (Schierenbeck, 2010). While some progress has been made, besides the logistics

⁵⁵ [Duisport \(no date a\)](#)

⁵⁶ [Schiffer-Berufskolleg RHEIN \(no date\)](#)

⁵⁷ [Duisport \(no date b\)](#)

⁵⁸ [Startport \(no date\)](#)

sector, none of the targeted sectors has seen the growth envisioned at the time of formulating the strategy.

Similar to the 'dortmund-project', the city aimed to develop specific locations within the city for different sectors. At the core of the strategy was the provision of different types of infrastructure including office spaces, technology-oriented infrastructure and transport connections in and around the selected locations (Schierenbeck, 2010). The strategy, furthermore, aimed to improve the general business environment through strengthening education, administrative support, its connection to the urban development projects as described in the previous section and other cross-cutting activities such as imaging campaigns (Schierenbeck, 2010). The city also established the start-up competition 'StartUp Duisburg' in 2005, in collaboration with the University Duisburg Essen, the local saving bank 'Sparkasse Duisburg' and other local partners.⁵⁹

In 2007, the strategy was developed further in the context of the 'Zukunftinitiative Kompetenzregion Niederrhein' (ZIKON)⁶⁰. ZIKON was part of the Land's support to regions, which largely reflect the regions as defined by the Chambers of Industry and Commerce and not the city boundaries. The strategy added a stronger focus on strategic communication activities and the creation of an entrepreneurial environment to the plan. It also suggested that more resources had to be dedicated for the strategy if it were to make a serious impact for the city's development (Schierenbeck, 2010). In terms of implementation of specific projects connected to the strategy, the sectorial support has been focused mainly on the logistics sector despite the definition of several priority industries (Zimmermann et al., 2017). Out of the 32 projects described in the 2001 Impulse.Duisburg programme, 12 targeted the logistics sectors (Schierenbeck, 2010). This has been partially attributed to the fact that the strategy, despite its ambitions, has remained somewhat fragmented rather than putting together a coherent overarching ambition with clear intermediate outputs attached to it (Zieseimer, 2004).

In 2007, the Impulse.Duisburg programme was also embedded in a more comprehensive city development strategy, touching upon housing, education culture, sport and other fields, when the council of the city tasked the administration to develop a new land use plan as well as a strategic plan for the sustainable development of the city with a time horizon of 15-20 years. The strategy has been designed in three phases. In a first step, a concept for housing and work for the whole city was developed, followed by more localized plans for each part of the city in a second step. The concept for housing and work was approved in 2011 and the localized strategies were then developed in the following years. The Impulse.Duisburg programme was integrated into the strategy by being one of the two pillars targeting the strategic objectives related to the economy (together with a separate effort to support SMEs). The overall strategy was finally approved in 2015, forming the base for the new land use plan which is currently still being developed (expected approval in 2022).⁶¹

While Impulse.Duisburg is still being referred to in these documents today, the strategy has lost its relevance in the city's effort to promote economic development in recent years. The repurposing of derelict land continues to play an important role, however topics such as smart city development, sustainability, start-up promotion and the revitalization of the inner city are becoming increasingly important.⁶²

⁵⁹ [Agiplan \(2007\)](#)

⁶⁰ [Agiplan \(2007\)](#)

⁶¹ [Stadt Duisburg \(no date\)](#)

⁶² See for example [Duisburg Business & Innovation \(2020\)](#) & [Duisburg Business & Innovation \(no date\)](#)

Institutional set-up and funding

The different initiatives and policies in Duisburg were a multilevel effort, involving all levels of government, especially the state North Rhine- Westphalia and the municipality (see for example Potter & Marchese, 2010 and Glassmann & Voelzkow, 2004). Programmes by the state government provided an initial framework for the kick-off of the initiatives: the IBA kick-started the initial urban regeneration projects⁶³, whereas the regional conferences and the 'Future Initiative – coal and steel regions' (ZIM) organized by the Land government starting in the late 1980s paved the way for the development of the logistics concept and the development of the different versions of the city development strategy. At the core of these programmes was the idea that the state government would provide a unifying framework and provide coordination, while the actual initiatives had to be developed at a more local level in order to design more tailor-made programmes as well as to create local ownership.⁶⁴

The joint approach between Land and city is also reflected in the establishment of several bodies with shared ownership set-ups for the purpose of the development and implementation of the initiatives. Among the examples are the Inner Harbour Development Corporation Limited which was created in 1993 for the purpose of the redevelopment of the Inner Harbour with a shared ownership between the Land and the city⁶⁵ and the Duisburg Hafen AG.

The latter is a particularly interesting case as it has been instrumental for the development of the logistics sector and shows in an exemplary way how the Land and the city collaborated in the promotion of local economic development. Duisburger Hafen AG is the owner and management company for the port with net assets of €400million and €145million of loan liabilities in 2019.⁶⁶ The ownership is split two third and one third between the state and the city of Duisburg.⁶⁷ Several subsidiaries exist under the umbrella Duisport Group, each of them with shared ownership. In 1998, Duisburg Hafen AG took over the strategic responsibility for the development of the site of the former Krupp Steelworks. The Logport GmbH⁶⁸ was founded as a subsidiary, in charge for the development and marketing of the site. It is jointly owned by the state government and the city as it was evident that a municipality on its own would not be able to take on a redevelopment project of this scale (Glassmann & Voelzkow, 2004). Since the launch of the Logport project, the Duisport group has turned from a traditional port management firm to a full-service provider in the logistics arena.

In parallel to the organizational set-up being a multilevel effort, the financing for the various initiatives has come from different levels including the central government and the EU. For instance, the 120 IBA related projects received a total of €2.5billion, made up of €1.5billion of public funding primarily from the EU and the state, and €1billion of private investments (NAO, 2007). For this purpose, 40 already existing subsidy programmes were regrouped to finance the projects.⁶⁹

Significant funds from the EU Objective 2 financing also went into the development of the logistics cluster. The purchase of the initial land from Krupp alone cost around 35million and a total of over

⁶³ The institutional and coordinative backbone for the IBA, which – as mentioned above – was a programme initiated by the state government, was the Bauausstellung Emscher Park GmbH. Created as a separate arm-length body and staffed with regeneration, design and planning experts, it was charged with the implementation of the exhibition and more specifically with the selection of the project proposals from the participating cities, which then in turn were prioritized by state government for funding (NAO, 2007).

⁶⁴ [Ruhrgebiet Regionalkunde \(2010\)](#)

⁶⁵ [Innenhafen Portal \(no date\)](#)

⁶⁶ [Duisport \(2019\)](#)

⁶⁷ [Duisport \(no date c\)](#)

⁶⁸ GmbH is equivalent to the English Company with Limited Liability

⁶⁹ [Internationale Bauausstellung \(no date b\)](#)

85million was allocated to projects related to the harbour in the EU programmes for the period of 1997-1999 alone (Glassmann & Voelzkow, 2004).

Enabling factors and lessons-learnt

The case of Duisburg is instructive as on the one side, the city has been very successful with the promotion of the logistics sector and its urban regeneration projects. On the other side, the city struggles to further diversify its economy away from the still large steel sector and continues to have high unemployment rates. A few lessons can be drawn from this experience.

First, a concerted and strategic effort in the logistics sector combined with the pre-existing strength of the industry and good pre-conditions resulted in an important leap forward for Duisburg as a logistics hub. This shows the importance to promote sectors with a clear potential rather than trying to develop industries for which the preconditions are not in place. The support for the logistics sector was also quite 'comprehensive': while large sums were spent on the necessary infrastructure, a strong emphasis was placed on developing the required skills in the population by raising the sector's profile and ensuring a diversity of training programmes to be in place, including relevant degrees at the university, dual education programmes and vocational training. This was further complemented by other measures such as the (international) promotion of Duisburg as a logistics hub and the support to start-ups.

Second, conversely to the comprehensive support for the logistics sector, other new emerging industries seem to struggle to garner the same level of support. The sectorial support for other sectors such as ICT and microtechnology as defined in the Impulse.Duisburg strategy has been described as one-sided with a major focus on the provision of different sorts of infrastructure (Schierenbeck, 2010). While infrastructure development and provision play an important role for the attraction of firms, it needs to be complemented with other aspects such as skills development to be effective, as shown by the successful promotion of the logistics sector. The choice of the different sectors has also been criticised for not being sufficiently anchored in a rigorous analysis of the city's strengths (Ziesemer, 2004) as well as lacking clarity in terms of grouping the sectors as clusters (Schierenbeck, 2010). This might help to explain the challenges these sectors are facing and further highlights the need for promoting sectors with a clear potential.

Third, the institutional landscape was not conducive to create consensus and collaboration. A continued presence of and dependence on some large firms in the traditional industries linked to steel seems to make it difficult to shift gear and develop adequate support for new emerging sectors. This contrasts with the city of Dortmund where there was no alternative to finding entirely new solutions. Some research has also suggested that a strong fragmentation of the different actors in Duisburg was in the way of developing and implementing more effective strategies (see for example Zimmermann, 2017; Schierenbeck, 2010).

Fourth, the collaboration of different levels of government was key to the success of the initiatives around urban regeneration and the logistics sector. The programmes by the Laender provided an important impetus for the start of the initiatives, which then provided a framework to be taken forward by city actors. The financing of the different bodies also reflects this shared initiative with the Laender supporting those projects financially that would have been hard to fulfil by the city alone. The EU and the central government, furthermore, played an important role for the financing of different projects, the central government through the GWR (see section 2.2.1) in particular for asset recycling. And finally, the success of the logistics sector needs to be seen in light of the personal leadership of individual people, in particular of the long-standing CEO of Duisport Erick Staake. He has been widely

credited with developing the strategic vision of the port and taking it forward through personal commitment and initiative.⁷⁰

Conclusion

This case study explored the experience of the city of Duisburg which has been strongly affected by industrial and urban decline since the 1970s due to the collapse of its coal and steel industries. Several initiatives have been implemented to revive the local economy over the years. A particular focus was placed on the development of the logistics sector which turned the city into a major logistics hub in Europe and increased employment in the sector significantly. The urban regeneration efforts kick-started through the IBA have, furthermore, been an international reference point for urban renewal. However, other aspects of the strategy have failed to get off the ground with little diversification happening away from the traditionally dominant sectors. Furthermore, the city continues to struggle with high unemployment.

The city's experience highlights a few lessons learnt including the effectiveness of strategies combining the leveraging of clearly established economic potentials and comprehensive policies targeting infrastructure, skills and other important elements for firms to grow. Conversely, it also showcases the shortcomings of one-sided strategies and the promotion of sectors lacking the economic potential. The collaboration between Laender, city administration, central government and EU further underlines the importance for different levels of government to collaborate and for local levels to lead.

⁷⁰ Various interviews

Leipzig

Introduction

Not considering Berlin, Leipzig is the largest city in former East Germany and also the prominent location of the *Monday Demonstrations*, protests at the heart of the Peaceful Revolution and eventual reunification of Germany. An important historical, economic and cultural centre, the city lost much of its previous economic advantages in the centrally planned economy of the GDR and faced further de-industrialisation following re-unification. A crumbling housing stock and rocketing unemployment led to outmigration and gave Leipzig a reputation as an economically lagging, poor and severely shrinking city in the early 2000s.

However, recently, Leipzig has experienced an impressive reversal of fortunes. Rapidly growing and attracting both industrial and creative sectors, Leipzig now regularly emerges as one of the most dynamic and promising urban areas in various German city rankings⁷¹ and serves as a success story of economic recovery in former East Germany. In this case study, policies and circumstances supporting this trend reversal are explored. First, the economic and demographic background of Leipzig is introduced. Second, some core policies and strategies are described, focusing specifically on the role of urban regeneration, infrastructure projects and strategies of industry attraction and clustering. Third, we will consider the role of institutional set-up and funding for Leipzig before exploring possible lessons-learnt.

Background

Leipzig was a flourishing industrial and trade centre in the 19th and 20th century. It specialised in textile and machine industry (and later additionally media, printing and publishing) but was also renowned as one of the earliest locations for trade fairs (called “Messe” and specifically acting as showroom and for networking rather than as a selling place) (Bontje, 2004). This economic relevance and growth were accompanied by urban development and strong population growth up to 713,000 in 1933 making Leipzig the fourth largest city in Germany at the time.

The urban growth of Leipzig came to an end as population began declining with the rise to power of the Nazi regime and the Second World War. During the war, Leipzig was bombed from 1943 onwards and especially inner-city areas were destroyed (e.g., the *Graphische Viertel*, the centre of the printing industry) although some of the architectural heritage was spared destruction. After the war, the German division meant that several central political and economic institutions were relocated from Leipzig to urban centres in West Germany (Frankfurt, Munich, Hamburg), such as the national supreme court, the national library as well as headquarters of banks and publishing companies (Bontje, 2004). Moreover, the centrally planned allocation of resources in the GDR was disadvantageous for Leipzig because it prioritised new industrial and residential development in rural areas in the north over the previously stronger industrial regions in the south and re-allocated investment towards the lignite and chemical industry around Leipzig rather than building on the existing industrial structure and small-scale enterprises (Glock, 2006). In this sense, Leipzig’s economic development until 1990 undermined most of the cities’ historical success factors. This process was accompanied by slow but continuous population decline and decay of the housing stock.

These problems were magnified with reunification when the industry sector in Leipzig suddenly lost its domestic as well as export demand (since the currency reform meant that at D-Mark prices export goods from the former GDR industry were not competitive). As a result, the industrial sector recorded massive declines in employment with an estimated 80% of pre-existing 100,000 industrial jobs lost

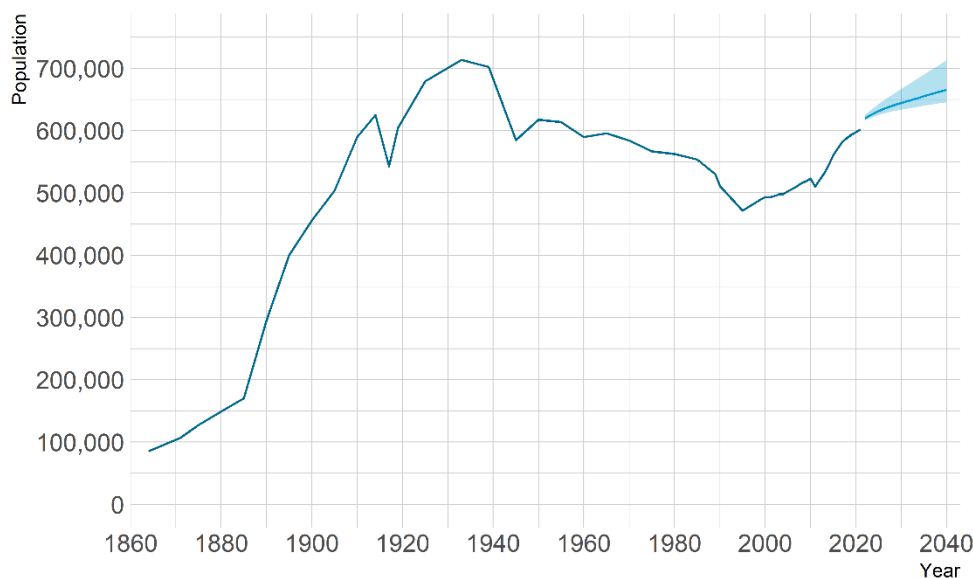
⁷¹ E.g. Prognos Zukunftsatlas 2019 (<https://www.handelsblatt.com/politik/deutschland/zukunftsatlas-2019>), Wiwo Städteranking 2021 (<https://www.wiwo.de/politik/deutschland/staedteranking/>)

between 1990 and 1995 (Rink & Görbing, 2019). Rink and colleagues (2012) note that these job losses had relevance beyond being an economic shock: since the GDR (officially) operated under full employment, many people had never before faced a prospect of unemployment. While temporary programs of reduced working time and early retirement buffered the initial jump in unemployment, there was optimism that Leipzig, due to its previous role as economic and trade centre, would be able to build upon existing potential (Kolinsky, 1998). However, the de-industrialisation in Leipzig was not just worse than e.g. in Duisburg, but also more severe than in other cities in Saxony and was not easily compensated by new employment in the service sector (Glock, 2006). The radical structural change of post-socialist transformation and profound technological catch-up led to a period of high and increasing unemployment: Unemployment in Leipzig increased from 12.9% in 1994 to a peak of 21.3% in 2004 (Julke, 2020).

With re-unification and the dire labour market situation in the 1990s, Leipzig experienced significant outmigration. Migration towards the west but also trends of suburbanisation led to Leipzig losing almost 100.000 inhabitants in the course of 10 years or 18% of its population (Stadt Leipzig, 1999 in Glock, 2006, p. 104). Population declined to a record low of 437.000 in 1998 just before some suburban municipalities were incorporated, thus increasing population size again (Stadt Leipzig, 2019). Annual population growth remained very low (under 0.6%) or even intermittently negative until 2004 (Figure 5).

Along with reunification, large scale investment programs were implemented, focusing especially on infrastructure and urban redevelopment as well as attracting industrial investments. Towards the late 1990s and early 2000s, these programmes started to show first successes. Although Leipzig seemed like the prime case of a shrinking city in the early 2000s, this trend started to reverse and then pick up momentum around 2005⁷².

Figure 5: Past and projected population development of Leipzig



Data sources: Statistisches Jahrbuch before 2000 (Stadt Leipzig, 2021); Statistik Leipzig for 2000-2021 (Stadt Leipzig, 2022a); (main, lower and upper projection) from Bevölkerungsvorausschätzung 2019 (Stadt Leipzig, 2019).

⁷² Note that Figure 5 shows a population decrease in 2011. This is due to the discrepancy in population data from rolling estimates versus the census of 2011. With the last census for East Germany taking place in 1981 (and for West Germany in 1987), the 2011 EU population and housing census was the first census of re-unified Germany and led to substantial downward corrections of population size in Germany (at all geographic levels).

From 2000 onwards, Leipzig began experiencing increasing in-migration of especially young age groups (18-35) from within Saxony and the surrounding Federal States consistent with a reurbanization of the inner-city areas (Haase et al., 2012, Rink et al., 2012). Offering universities as well as vocational training institutions, cultural amenities and affordable cost of living, Leipzig quickly became an attractive location especially (but not exclusively) for students and young professionals. Population has increased rapidly since, reaching 600,000 in 2020 (an increase of 116,000 or 23% since 2005) and is in optimistic scenarios projected to grow up to 700,000 by 2040 (Stadt Leipzig, 2019), which would put the historical peak of population size within reach (albeit with a larger city area due to the large number of municipalities that have been incorporated in the meantime). Due to the influx of relatively young population, Leipzig is, compared to the Free State of Saxony, the national average, and many other large German cities, relatively young and is also becoming increasingly international with foreign population accounting for 17% (Stadt Leipzig, 2022b).

Besides population growth, economic growth and the successful attraction of some influential industrial investments furthermore contributed to economic recovery: factories for Porsche and BMW as well as logistic centres for Amazon and DHL created jobs and firmly established Leipzig as a viable location for investment. From its lowest point in 2005 until 2021, employment has increased by 90,000 and unemployment has steadily reduced to 6.1% (Stadt Leipzig, 2022c). However, Rink (2021) points out that a relatively large share of the created jobs was in low income segments and Leipzig's income level remains low. Indeed, with a mean per capita disposable income of 19,574€ in 2019, the city of Leipzig is not only clearly below the national German average of 23,706€ but also below the average for the eastern German states (21,046€) (Seils & Pusch, 2022). Despite recent growth and many optimistic reports on reindustrialisation and economic potential in eastern Germany, it is thus important to keep in mind that Leipzig and its surroundings are still located in and categorised as structurally weak geographic regions and economic challenges persist. Nevertheless, Leipzig's reputation as a shrinking city has been replaced by one characterised by dynamic growth and creative entrepreneurial spirit. This is reflected in it sometimes being labelled as "boomtown" or nicknamed "Hypezig", although it should be noted that especially the latter is also used almost sarcastically (see e.g. in Bischof, 2015) and holds criticism of romanticising and commercialising local (sub-)culture and covering up persisting socio-economic issues for the purpose of city marketing.

Policies and strategies

Urban regeneration

The quality of the housing stock and vacancy of apartments in Leipzig were massive problems in the early 90s. In the GDR, declining population and limited resources meant that the old and architecturally typical inner-city buildings were left to decay (rather than being demolished or modernised) and instead industrialised apartment blocks ("Plattenbauten") were built at the edge of town. This was not enough to compensate the extent of decaying and uninhabitable apartments in Leipzig and in 1989 70,000 people were searching for a place to live with 25,000 apartments vacant but uninhabitable (Rink, 2020, p. 178). With its decaying housing stock and environmental pollution due to lignite mining advancing towards the city limits, quality of life in Leipzig was deemed low, fuelling outmigration (Glock, 2006).

Addressing these problems emerged as a pressing issue after re-unification. Various financial subsidies and tax deductions for renovation, modernisation and expansion of the housing stock were implemented in former East Germany alongside privatisation of the majority of the housing market. While these measures successfully engaged private capital in the renovation of the housing stock, they also incentivised its expansion, particularly outside the inner-city areas where property rights were

clearer⁷³, and thus stimulated suburbanisation (Bontje, 2004). Since the housing stock grew in the early 90s while the population declined, Leipzig was faced with extensive vacancy of especially the architecturally valuable buildings from the 19th century (the so called “Gründerzeit”-buildings) in the inner city. In 2000, 69,000 apartments (21% of the housing stock) were vacant (Rink, 2021) and decreasing rents were putting pressure on the housing market and property owners showing that urban regeneration required more targeted strategies than broad financial incentives (Stadt Leipzig, 2015).

This realisation was reflected in the conception of a strategic process called *Neue Gründerzeit* (New Founder Epoch) in 1999 meant to focus specifically on the last third of Gründerzeit-buildings that were still not modernised and therefore vacant. The strategy’s core principle (summarised as *competitiveness, preservation, and conversion*) was to improve quality of life in the old inner-city areas by increasing greenspace and reducing density, thus increasing their competitiveness as residential areas while preserving as much architectural heritage as possible and converting or removing buildings to open up new spaces (Stadt Leipzig, 2015). This strategy was implemented via a dedicated development plan for housing and urban renewal for the city of Leipzig in 2000 (*Stadtentwicklungsplan Wohnungsbau und Stadterneuerung*). In line with this plan and later strategies of integrated and sustainable urban development (e.g. under the European Leipzig Charter of 2007), projects were implemented via various funding programmes for city development, especially *Stadtumbau Ost* (Urban Restructuring East), financed by German national-and state-level governments, but also through the European Regional Development Fund (ERDF).

Implementation of these strategies took shape both in terms of “upgrading” and “reducing” buildings. Between 2003 and 2013, 63.6 million € were spent on modernising architecturally valuable residential buildings, schools and other cultural institutions (Stadt Leipzig, 2015). However, considering the extent of vacancy and the financial pressure this put on the housing market, a reduction in the housing supply was also necessary and even supported by relevant property owners and housing cooperatives: In 2002 six large housing cooperatives and companies participated in a so-called “Pact of Reason” (Pakt der Vernunft), which meant negotiating and agreeing on a strategy for reducing the housing supply. From 2003 onwards, €45.7 million were invested to demolish a total of 12,830 apartments, most of which (74%) were located in prefabricated Plattenbauten especially in the area of Grünau to the west of Leipzig but also included some 3,400 apartments in old inner-city buildings (Stadt Leipzig, 2015). The largest share of the demolished apartments (66%) were owned by the municipal housing company (LWB), 26% were owned by housing cooperatives, 3% by the city itself and 5% belonged to private property owners (Stadt Leipzig, 2015, pp.12-13).

A notable aspect of the urban regeneration strategy in Leipzig was the implementation of “interim use agreements” (*Gestattungsvereinbarungen zur Zwischennutzungen*) for otherwise unused (brownfield) areas. Interim uses represent an instrument of city development that has been gaining popularity since the 1990s with Leipzig representing an early adopter (Rink & Görbing, 2019) and allowed converting vacant space without changing its ownership or even zoning due to a temporary agreement. With such agreements, the city of Leipzig for instance made 150 private properties available to be used as public (green) space for a limited time frame of at least 5-10 years while covering the costs of such conversion through public financing and waving property taxes (Stadt Leipzig, 2005; Rall & Haase, 2011). Interim use agreements were also applied and supported by the city in other applications, such as the association *Haushalten e.V.*, which was founded as a citizen initiative in 2004. *Haushalten e.V.* aims to safeguard architecturally valuable buildings by providing owners of unused properties with new maintenance options, e.g. by helping to apply for funding but also by connecting them with potential users. This is achieved through the instrument of so-called

⁷³ Due to histories of expropriation and incomplete property records it was in some cases difficult to establish or contact the owner (or their heirs) of buildings after re-unification.

Wächterhäuser (literally translated as “Guardian Houses” – which could be a house with or for a guardian), where owners temporarily grant the use of their building to the association, which then looks for suitable users (usually with social and cultural purposes) to become “guardians”. The guardians take over responsibility for the unused building and pay running costs but gain cheap (mostly rent-free) space in return. At the same time, further decay or eventual demolition of the building is (ideally) prevented and the “revived” house also contributes to a revitalisation of the neighbourhood. Of the 18 *Wächterhäuser* in Leipzig, 14 have now been returned to regular use including some where the interim use was made permanent through regular rental contracts or because the users outright bought the property (Haushalten e.V., n.d.). Rink and Görbing (2019, p. 607) describe that there was widespread support for interim uses as policy measures, since there were no profitable uses for the vacant land at the time and the temporary uses also represented chances for experimentation and innovation, attracting specifically actors from a creative, alternative “sub-cultural” scene while also involving planners and scientists interested in city development.

Large-scale infrastructure investments

In the GDR, decay and lack of infrastructure were not limited to the residential housing stock and city development as described so far but affected all types of infrastructure. From an economic perspective, telecommunications networks but also transport infrastructure were in dire need of modernisation and expansion. Compared to West Germany, dismantling of industry but especially also rail infrastructure as reparation payment had taken a much larger scale in Soviet-occupied territories⁷⁴ and this could not be compensated by investment in the GDR, which mostly took the form of few and spatially limited large-scale projects (Jaeck, 2020). Therefore, upon reunification the large gap in infrastructure became a core priority of economic recovery policy and investment. At the national level for instance, 17 investment projects for transport infrastructure (*Verkehrsprojekte Deutsche Einheit*, German Unity Transport Projects) were defined in 1991 and funded with a total of 43 billion euros. These projects target the lacking transport infrastructure along east-west trajectories and within the former GDR through modernisation and extension of rail, road and water infrastructures and are estimated to have been completed to 90% in 2021 (BMDV, 2022). Due to its location, Leipzig benefited from improved interregional accessibility from these national investments, for instance in terms of the high-speed rail network but also the expanded Autobahn A9 connecting Berlin and Munich.

Similarly, on a local scale, infrastructure investments were also undertaken to quickly (and noticeably) improve the city’s location factors and strengthen its role as a regional centre, both of which were deemed necessary to strengthen the service sector and create jobs (e.g., Glock, 2006; zur Nedden, 2010). In the city of Leipzig, notable large-scale infrastructure projects included (among others) the building of a new Messe-area (and conversion of the old one), and the modernisation of the central station and airport.

Leipzig Messe Areas

As mentioned above, Leipzig has historically been shaped as a place of trade with a reputation as a marketplace already in the Middle Ages and then developing into the Leipzig trade fair (“Messe”) attracting international exhibitors especially for books and consumer goods. Although the trade fairs continued in the GDR and represented a relevant connecting space for East and West Germany, reunification meant that the Leipzig trade fair, by then co-owned by the city of Leipzig and the State of Saxony, was suddenly in direct competition with other German locations for trade fairs. Especially in the face of de-industrialisation, the Leipzig Messe offered an important chance to strengthen the service sector while building on the city’s economic history. The old location and building of the Messe

⁷⁴ For instance, until 1947, 11,800 km of rails had been sent to the Soviet Union meaning that the rail network in large parts of the GDR had been reduced to one-way traffic (Jaeck, 2020).

would have required extensive renovation and instead a new Messe area was developed in the north that offered modern facilities and better accessibility (Bontje, 2004). The project was realised in 1996 and cost 1.3 billion DM (ca. 700 million euro) that were shared between the city, the Free State of Saxony, and the Federal Republic (Glock, 2006). In 2019, the Leipziger Messe had over 400 employees, welcomed 1.2 million visitors and recorded its (so far) highest revenue of 99.6 million euro (Leipziger Messe, 2020). Although the trade fair in Leipzig is nowadays smaller than in other German cities, it remains an important institution economically (through direct and indirect effects) and for the city's image.

Developing a new Messe area of course also meant that the traditional location of the old trade fair ("Alte Messe") became vacant and was meant to be sold in order to finance part of the new project. Glock (2006, p.127) describes that the city had planned, in the 1990s, to transform the old trade fair into a multipurpose area, containing 5,000 apartments, businesses as well as administrative and research organisations but that the increasing vacancy (especially in residential but also office spaces) around the city hindered these plans. In retrospect, it may be clear that this strategy was not well suited to the economic and demographic processes in Leipzig at the time and had little impact on the turn-around process that Leipzig was to experience. However, when the city started to become more attractive, the old Messe area was indeed transformed into an industrial area. The area is now used by private and public actors from different sectors. It houses offices for various companies as well as, for instance, a branch of the German central bank, different leisure and societal purposes, a large automobile sales area (for eight separate companies) and several research institutes especially in life-sciences and biotechnology. Indeed, the area is also the location of the BioCity Campus (described in more detail below), which joins universities, research institutes and companies and offers laboratories as well as office space especially for the purposes of R&D and start-ups.

Transport infrastructure

Built in 1915, the Leipzig central station was not only a major transport node in the region but, as the last train station of the Wilhelminean period and the largest terminal station in Europe, an important piece of architectural heritage (Johanssen, 1999). Large parts of the building had been destroyed in the Second World War and, although it was partially reconstructed in the GDR, the building required restoration in the early 90s. Moreover, the number of passengers, which had stood at 300,000 per day in the GDR had fallen to less than 70,000, and the infrastructure had become too large to serve the purpose of a modern rail station only (Johanssen, 1999). By converting part of the station into a shopping centre, the modernisation allowed engaging private investors into the maintenance of the station building and securing 1,000 jobs in the service sector (Johanssen, 1999). This was part of the broader strategy to strengthen Leipzig's role as a regional centre and compensate the job losses in the industrial sector by transitioning towards the service sector. Additionally, the station was also redeveloped to better connect the local public transport in the area (zur Nedden, 2010) increasing local accessibility of the city.

Additionally, some developments of the rail network that have only been realised more recently, should be mentioned as they have strongly shaped the accessibility of Leipzig nationally and internationally. The national rail connection of Leipzig largely follows the network priority of connecting Munich to Berlin within the German Unity Transport Project 8 as well as the Trans-European Transport Network (TEN-T) Scandinavian-Mediterranean Corridor. Already since 2006, high-speed rail (up to 200km/h) connects Berlin and Leipzig in about an hour. Moreover, high-speed rails with speeds up to 300km/h have been built or upgraded between Leipzig, Halle (Saale) and Erfurt, which has reduced travel time between Munich and Berlin to 4 hours since 2015 (DB Netz AG, 2017). Investments in the rail and road network through the German Unity Transport Projects were complemented by expansion and modernisation of the local airport further increasing accessibility of the region. Previously mostly serving to support the Messe activities in Leipzig, the local airport was

modernised and expanded significantly in the 90s and 2000s after having been passed to the Federal States of Saxony and Saxony-Anhalt, and the cities of Leipzig, Halle (Saale), Dresden and some other local administrative districts as majority shareholders (Brause & Grundmann, 1994). The airport is located between Leipzig and the nearby city of Halle and was rebranded as *Leipzig/Halle Airport* in 1991. Besides modernisation of the existing airport infrastructure, a new terminal building was constructed to cope with the quickly increasing travel demand as the number of yearly passengers first reached 1 million in 1992 and then doubled to 2 million in 1995 (Mitteldeutsche Flughäfen AG, n.d.). Despite the large increase in passenger numbers at the time, the national and international relevance of Leipzig/Halle airport instead developed in cargo traffic. Further investments (e.g. a new runway in 2007) followed and were closely integrated with policy aimed at securing a DHL hub and establishing a logistics cluster in the region (see below). Nowadays, Leipzig/Halle airport is the fourth-largest cargo airport in Europe.

Attracting industry, supporting clusters and increasing employment

As described above, the economic restructuring of post-socialist transformation led to massive employment losses in the industrial sector. As Kolinsky (1998) describes, there were hopes that emergence of small and medium businesses would be able to absorb excess labour and thus facilitate the economic transformation. In contrast to the large industrial firms of the former GDR that were often sold to West German investors and entrepreneurs in privatisation⁷⁵, the majority of the emerging small business sector was in fact owned by East Germans but faced administrative and financial challenges as well as market risk leading to high rates of closure (Kolinsky, 1998). The initial optimism and expectations of economic expansion also led to overinvestment and thus vacancy of commercial real estate in Leipzig where up to 30% of office space was vacant in 1997 (Heinig & Herfert, p. 331). To counter the high unemployment, policies aimed at increasing employment were thus of utmost priority. Building on the improvements of Leipzig's location factors, e.g. in terms of the above described strategies of urban regeneration and improving transport infrastructure, economic development policy aimed at attracting firms to Leipzig (zur Nedden, 2010). Indeed, Leipzig's economic development goals focused on the role of clusters and attracting investors, while emphasising innovation and technology as well as development of human capital (Siemon, 2003). To support the latter point and ensure that attracted companies would have access to human capital while at the same time re-integrating previously unemployed individuals into the labour market, the city of Leipzig established its own personnel agency, the PUUL GmbH in 2001, (Siemon, 2003), which actively accompanied the major industrial investments in the early 2000s (e.g. for BMW, DHL and Amazon) before being disbanded in 2012.

The strategy set out in the Leipzig's economic development plan considers 5 priority or "cluster" areas: automotive and suppliers, healthcare and biotech, energy and environment, logistics, and media and creativity. Notable early successes in attracting industry investment were the opening of a new production facility for Porsche in 2002 and for BMW in 2005. Pries (2009) describes that a decisive factor in Leipzig's bid for the BMW plant was the "negotiated and regulated production and labour flexibility" (p.342), i.e. early-stage compromise that innovative and flexible models of working hours and shifts could be implemented while respecting the regional level of collective agreements between the union and employers' association. Although comparable locations outside of Germany would have yielded lower labour costs, Pries (2009) emphasises the role of institutional embedding that allowed negotiation for a win-win outcome for Leipzig and BMW. The investments by Porsche and BMW

⁷⁵ The privatisation of the previously state-owned east German companies (via the *Treuhand* agency) remains a contentious issue. Dissatisfaction with the process as well as evidence that more profitable businesses were more likely to be sold to West German investors (e.g. Hennicke, Lubczyk & Mergele, 2020) lead to suggestions that the process may have fuelled rather than reduced economic disparities between eastern and western Germany.

further led to the development of an automotive cluster through attracting some other (upstream) companies, which employed 19,000 people in 2021 (Stadt Leipzig, 2022c).

An important milestone in the area of healthcare and biotechnology, was the construction and opening of BIO CITY Leipzig on the old Messe area in 2003. BIO CITY LEIPZIG is a science park offering 20,000 square meters of space for companies, research institutes and the University of Leipzig in the areas of biotechnology and life sciences. The area offers office and laboratory space for companies but also houses its own incubator supporting start-ups and a number of central research institutes such as the Fraunhofer Institute for Cell Therapy and Immunology (IZI), the Max-Planck-Institute for Evolutionary Anthropology, and, more recently since 2012, the German Centre for Integrative Biodiversity Research (iDiv). Even with extension projects, e.g. the building of the BioCube in 2013, demand for space on the biotechnology campus is high: BIO CITY is (in 2022) fully rented out illustrating the growth of this sector in Leipzig (in and outside of BIO CITY). According to the city of Leipzig (2020), the biotechnology and healthcare cluster in the city was made up of 2,600 firms and accounted for 45,000 employees in 2020.

For the logistics industry, the improved infrastructure of the airport allowed attracting DHL, who announced plans to move its European logistic hub from Brussels to Leipzig/Halle airport in 2005, prompting further modernisation and construction, e.g. of runways. This decision was supported by extensive subsidies for DHL by the Free State of Saxony, part of which (a guarantee of up to 500 million euros compensation for DHL in case cargo flights at night were to be restricted) were later rejected by the European Commission as distorting competition (FAZ, 2008). The DHL logistics hub has been operating since 2008 and other logistics firms followed both to the airport and the region of Leipzig in general, e.g. the cargo airline AeroLogic, Lufthansa Cargo and Amazon. As mentioned above, the airport is now the fourth-largest cargo airport in Europe. Employment in logistics stood at 35,000 in Leipzig in 2022 with DHL alone employing 7,000 people (Stadt Leipzig, 2022d).

Besides developing new industrial specialisations there were also initiatives to build on the historical role of Leipzig in the media industry, albeit pivoting from publishing towards film. In 1991, the new public broadcasting service for the Federal States Saxony, Saxony-Anhalt and Thuringia (MDR – Mitteldeutscher Rundfunk) was established in Leipzig, partially due to its central geographic location in the relevant region (Bathelt & Boggs, 2003). Supported by the Free State Saxony, a complex of buildings called “Media City” was opened next to the MDR building in 2000, housing TV studios and offices for different media firms. Bathelt (2005) observed that the Leipzig media cluster had grown into an important centre within Germany but was characterised by a narrow local focus and lacking external links. Indeed, the city of Leipzig considers the industrial specialisation of this cluster not to be just media but rather a broader focus on “IT, media and the creative economy”. Especially the creative sector also benefitted from synergies with programmes of cultural promotion by the city administration and citizens (Garcia-Zamor, 2013) and with the general urban and demographic development of the city described above. High vacancy, low rents and flexible policy making for urban renewal opened space for experimentation, citizens’ initiatives and entrepreneurial ventures in the creative sector, establishing places like the *Baumwollspinnerei* or the *Tapetenwerk*, unused industrial complexes turned into studios, galleries and event locations (Friemel, 2009).

These examples illustrate, that Leipzig successfully attracted key investors in different industries (automotive, logistics) while providing supportive investment and infrastructures for cluster development in others. However, although the city of Leipzig officially frames these strategies around the term of “cluster policy”, the concept of a cluster seems to be defined rather loosely. Rosenfeld and colleagues (2011) find that some of the sectors defined as cluster areas in the economic policy, do not show much concentration, presence of local value chains or firm networks. While this could be due to early stages of cluster formation in these areas, in some areas, such as the media industry, it

may be indicative of lacking internal and external networks and learning, which may pose challenges for future growth potential (Bathelt, 2005).

Institutional set-up and funding

A relevant feature of the policies implemented in Leipzig is their integrated and multilevel nature. Leipzig started developing “integrated” urban development plans in the mid-1990s, which aimed to take multidimensional approaches to current and future challenges of city development⁷⁶. An encompassing “concept of integrated urban development” (Integriertes Stadtentwicklungskonzept) called *Leipzig 2020*, was adopted in 2009 and updated to *Leipzig 2030* in 2018. Combining strategic aims of municipal development in ten thematic areas with the broader framework of the Leipzig Charter for Sustainable European Cities, Leipzig 2020 set out four aims: to increase national and international relevance, to increase competitiveness, to maintain and improve quality of life, and to secure social stability (Stadt Leipzig, 2009, p. 74f). These aims were meant to motivate the broader development strategy but also guide policy in the respective sub-fields of urban development.

Moreover, the experience of Leipzig is embedded in broader policies of regional development from multiple geographic perspectives. For instance, while Leipzig 2020 was formulated for the city of Leipzig as a whole, the smaller and larger geographic scales were also considered. On the one hand, neighbourhood-level policies and targeted interventions were emphasised to address specific challenges at the micro-level. On the other hand, Leipzig 2020 was also set in a framework of economic development initiatives at the state and regional level, positioning Leipzig in the broader geographic region and recognising its role as an economic centre. Cooperation with other political, administrative and business actors in Saxony as well as Saxony-Anhalt and Thuringia was emphasised for example in the context of strengthening the Central German Metropolitan Region (Metropolregion Mitteldeutschland). More generally, various organisations supporting this aim emerged as relevant actors, such as the Wirtschaftsinitiative für Mitteldeutschland GmbH, a network of firms and chambers of commerce in the region (which merged into the Europäische Metropolregion Mitteldeutschland e.V. in 2014, an association that joins not only companies and chambers of commerce but also city and district governments from three Federal States).

The relevance of the involvement of multiple scales is also evident when considering the structure and sources of funding for urban and economic development projects in Leipzig. While some initiatives, notably in the housing sector, were partially supported by privatisation, the extensive infrastructure and urban regeneration projects, as well as research and business subsidies were financed by funds from the city, the Free State of Saxony, the national government and from the European Union via a multitude of different programmes with different foci. A central actor in the coordination and allocation of public funds from different sources is the Sächsische Aufbaubank (SAB), the promotional bank of the State of Saxony.

For instance, Leipzig received funds within federal urban development programmes, i.e. *Soziale Stadt* (Social City) and *Stadtumbau Ost* (Urban Restructuring East). The latter amounted to 110 million euros between 2003 and 2013 (of which 89.7 million came from the national funds and Saxony whereas 18.9 million were from the city) (Stadt Leipzig, 2015). More generally, as a structurally-weak region, Leipzig was (and is partially still today) eligible for funds from the Joint Task “Improvement of the regional economic structure” (*Gemeinschaftsaufgabe Verbesserung der regionalen Wirtschaftsstruktur - GRW*) which subsidises firms and economically-relevant infrastructures, although the majority of GRW funds were allocated in the 1990s and Leipzig received relatively little funding per employee especially when

⁷⁶ Integrated urban development plans are not specific to Leipzig but an established measure at the municipal level in Germany since they are a precondition to apply for funding within urban renewal programmes (Städtebauförderung) including Stadtumbau Ost.

compared to rural industrial regions in the area (IWH, 2019, p. 47). Additionally, The Leipzig (NUTS 2) region was also supported by EU regional funds, as an Objective 1 (2000-2006), phasing-out (2007-2013) and transition region (2014-2020) and it is now classified as a more developed region in the 2021-2027 programming period. For instance, ERDF funds supported the regeneration of the neighbourhoods Leipzig-East and Leipzig-West (Lindenau/Plagwitz) with a total investment of 29,2 million euro between 2000 and 2020 and an additional 19.8 million euro within the EU programme URBAN II (Stadt Leipzig, 2022e). Additionally, the SAB of course also allocated ERDF and ESF funding more generally e.g. in the form of R&D subsidies and provision of educational programmes.

Despite the multilevel funding of the programmes in Leipzig, a relevant institutional factor in their implementation was the emphasis on participatory and bottom-up approaches. These are reflected for example in the Leipzig 2020 concept, which involved inhabitants and civil society actors in its design and also emphasised the role of participation in its implementation. Moreover, some of the described projects implemented in Leipzig relied crucially on citizen engagement and private initiatives, such as the association Haushalten e.V., the repurposing of industrial brownfields by entrepreneurs in the cultural sector or establishment of temporary greenspace on unused but privately-owned ground. Garcia-Zamor (2012, p.76) describes that Leipzig's inhabitants were eager to be "participants in, and witnesses to, the urban transformation process [...]" and emphasises the tangible impact civic initiatives have had on the city. At the same time, while many of these projects would not exist without individual initiatives and (in some cases volunteers), they were also accepted, supported and facilitated by policy makers and city administration.

In this sense, Leipzig's urban development policies showed an openness towards civic engagement and concern for social equity (Garcia-Zamor, 2012) and innovative solutions. Such institutional flexibility is also reflected in the fact that Leipzig followed a strategy of urban development that embraced specific aspects of shrinkage by reacting to vacancy with a reduction in density rather than focusing on re-growth. This represents a conceptual shift in planning strategy and may have been accompanied and facilitated by the emergence of a narrative of Leipzig as a shrinking city (Mace & Volgmann, 2018). In fact, Engelbert Lütke Daldrup (2003), at the time head of city development and building, coined the term "perforated city" to describe how shrinkage and vacancy was leaving holes in Leipzig's urban fabric. Rink and Siemund (2016) argue that the idea of perforation was set in a paradigm change of planning practice where the aim was no longer complete maintenance and restoration of old buildings. While the "perforated city" remained a rather loose concept and description rather than a planning model (and although it eventually lost relevance for Leipzig when growth picked up), it nevertheless provoked debates, experiments and research (Rink & Siemund, 2016). Moreover, while some of the described initiatives were supported by the realisation that shrinkage was a tangible and perhaps not temporary phenomenon that required new tools, especially the economic development strategies (e.g. attracting industrial employment of BMW or DHL, expanding infrastructure, and cluster projects) were nevertheless growth-oriented (e.g. Mace & Volgmann, 2018).

Finally, and in line with the notion of narratives as relevant institutional factor, Leipzig also experienced and actively pursued an image change. Due to the dire situation in the early 2000s, Leipzig was perceived rather negatively (see e.g. Bontje, 2004) but 20 years later, the city has once (again) become an attractive place for people and firms. While this is of course attributable to improved quality of life and economic outlook, efforts in rebranding and actively shaping the perception of Leipzig should also be mentioned. For example, city advertising emphasising specific sectors, e.g. *Messestadt Leipzig* and *Medienstadt Leipzig* ("media city"), the bid for the 2012 Olympic Games, and the image campaign *Leipzig Kommt!* ("*Leipzig is coming!*") were relevant for the tourism sector but also aligned with aims of economic restructuring and urban renewal (Coles, 2003). Indeed, Haase and colleagues (2022, p.342) list, besides the large public investments and subsidies as well as ecological

improvements in the urban environment, also the change in Leipzig's image as a "liveable city" as factor in its regrowth.

Enabling factors and lessons learnt

The case of Leipzig illustrates an impressive reversal: previously a prime example of urban shrinkage, deindustrialisation and the economic difficulties of post-socialist transformation, the situation and future outlook for Leipzig is now much more positive. A few lessons emerge from this case study.

First, the implemented strategies, in the spirit of an integrated development approach, addressed different dimensions of regeneration simultaneously. For instance, in terms of the three broad strategies described above, attracting industrial investment helped create and maintain employment, thus reducing the impact of deindustrialisation. At the same time, urban regeneration projects targeted quality of life, for instance in terms of provision of urban greenspace, and repurposing brownfields and vacant buildings for social and cultural initiatives. Infrastructure investment supported both these strategies by improving location factors. An integrated approach allowed for synergies between these dimensions of regeneration, ultimately aiming to make Leipzig a more attractive place for both people and firms.

Second, Leipzig's experience was supported by extensive financial investment from various sources. Many of the large-scale infrastructure projects and subsidies to attract firms or support local cluster development, for instance, were only possible because the city secured funding from state-level, national and European agencies. In this sense, there was not only local support for the implemented initiatives but also a general mandate to invest into Leipzig as a city in former East Germany, i.e. in the context of re-unification and regional policy aims at the national and European level.

Third, although Leipzig implemented more traditional measures of economic development policy (attracting industry, establishing and supporting clusters, improving location factors through transport infrastructure or improving supply and matching of human capital), there were also approaches that showed institutional flexibility and innovation. While implementing growth-oriented economic policies, urban regeneration strategies acknowledged the existing impact of shrinkage and thus focused on reducing vacancy even if this meant reducing the oversupply of housing. Additionally, the mechanism of interim use agreements allowed repurposing vacant buildings and brownfields for socially desirable activities. The city also emphasised and facilitated civic participation and bottom-up initiatives in these areas. These strategies may have been supported by various and changing narratives emphasising Leipzig's history as a trade centre on the one hand but also its willingness to adapt to new circumstances on the other.

However, there are also some caveats to consider, when drawing lessons from the case of Leipzig. Crucially, both the initial situation of economic and demographic decline but also the experience of recovery and regeneration were embedded in fundamental processes of re-structuring and transformation not only at the city-level but also the regional and even national scale. This may have created both urgency and freedom for policies and changes while at the same time offering substantial (political and financial) support both within and outside the city, which may be difficult to achieve elsewhere.

Furthermore, the successful economic and demographic recovery of the city has also brought challenges. While unemployment has decreased and stood in 2021 at 7.3% and thus not far from the national average of 5.7% (Statistische Ämter des Bundes und der Länder, 2023), average income in Leipzig is the lowest within Saxony and still almost 15% lower than the national average, according to the figures reported by Seils and Pusch (2022). Moreover, in contrast to the problem of high vacancy rates in the 90s and early 2000s, the recent population growth is putting pressure on the housing

market. Privatisation of the housing market, while raising private investment and helping to upgrade the housing stock, has led to ownership of housing being skewed towards large corporations and private owners residing not in Leipzig but western Germany and who may be more profit-oriented than local owners (Rink, 2021). Rink (2021) argues that rents in Leipzig remain relatively low (especially for a city of this population size) but that incomes are low too, leading to relatively high rent-burden especially for vulnerable population groups. With rising rents, especially in the inner-city, displacement pressure and gentrification processes are increasing, also leading to political tensions within the city. To counteract these trends, a rent control policy came was implemented in summer 2022 and will remain in effect until 2025, capping the acceptable rent for new contracts relative to an index rent and limiting rent increases to a maximum of 15% in three years (Stadt Leipzig, 2023). Thus, the case of Leipzig highlights that, even in rather successful economic turn-arounds, it remains necessary to consider and monitor also the socio-economic and distributional effects of local economic development policy.

Conclusion

The city of Leipzig was a flourishing industrial and trade centre before the Second World War but lost competitiveness and population in the planned economy of the GDR. Upon re-unification, the city experienced sudden and fundamental de-industrialisation leading to unemployment, population decline and extensive building vacancy. In the early 2000s, Leipzig was considered a prime example of a shrinking city, but it has since experienced a trend reversal in terms of both economic and population growth and is nowadays a dynamic urban centre with a young and quickly growing population.

This case study examined Leipzig's experience and its policy approaches, focusing on policies of urban regeneration, improving infrastructure and generating employment by attracting and supporting firm investments. Extensive urban renewal projects that included modernising but also demolishing and repurposing buildings combined with large-scale infrastructure investments and business support made the city more attractive for both firms and population and contributed to recovery. Moreover, the case of Leipzig illustrates the relevance of an institutional set-up that integrates different aspects of urban development and levels of government, mobilises large amounts of funding but also allows citizen engagement and innovative approaches. At the same time, Leipzig's experience of shrinkage was rooted fundamentally in its post-socialist transition and German re-unification, and this institutional framing should be kept in mind when drawing lessons for other shrinking cities.

Lessons-Learnt and discussion

While the three cases presented all differ with regards to their context, strategies employed and specific institutional set-up, a number of lessons learnt can be drawn across them.

First, there is a clear complementarity between urban and economic development strategies. One of the key challenges for firms locating or growing in more 'remote' locations is their ability to find people with the right skill set. At the same time local people, often those with a higher level of qualifications, move elsewhere in pursuit of more attractive employment opportunities. Cities and regions therefore need to become attractive for employers and employees alike to generate successful turn-arounds. The three cases studies all show this parallel approach. Dortmund had a clear strategy around making the city more liveable by regenerating the city centre and building modern mixed-use spaces in attractive locations, as well as focusing its housing strategy on young families to prevent them from leaving the city and attract new ones to settle there. Similarly, Duisburg was at the forefront of urban regeneration activities starting in the early 1990s and has invested significant amounts in the modernization of the city in parallel to its economic promotion activities. For Leipzig, urban regeneration and improvements in the cities' liveability were central goals, especially in the face of the challenges of environmental problems and its vacant and decaying buildings in the early 1990s. Planning policy embraced certain parts of shrinkage, by demolishing and repurposing buildings and Leipzig was eventually able to benefit from its smaller but better quality stock of housing at affordable prices, which made the city a more attractive place to live.

Second, comprehensive strategies for the promotion of the local economy are more effective. Firms require complex ecosystems to flourish, comprising elements such as access to finance, a skilled workforce, a conducive business environment and the right infrastructure among others. Traditionally local economic development strategies have tended to be biased towards one of these pillars, more often than not infrastructure or tax incentives. However, addressing the different aspects only partially leads to ineffective strategies. The case of Duisburg is particularly instructive in this regard. While the highly successful support for the logistics sector was comprehensive and included the provision of infrastructure, skills development, international promotion and start-up support, the diversification into other sectors proved more challenging with the support being focused mainly on infrastructure. Similarly, Dortmund's strategy integrated hard infrastructure development with other "softer" measures such as training, business services, investment promotion and the establishment of local investment funds. For Leipzig, infrastructure investments were a prerequisite to improve the city's competitiveness because of the large gap in both quantity and quality of infrastructure between former East Germany and West. However, these improvements were coupled and aligned with strategies of attracting firm investment as illustrated for instance by the development of a logistics cluster around the modernised and expanded airport Leipzig/Halle. While subsidies played an important role in attracting employers, there was also concern for ensuring matching and efficient use of the available human capital (e.g. through Leipzig's own personnel agency) as well as cluster development initiatives including start-up support in key sectors.

Third, successful strategies build upon a region's/ city's strengths rather than building cathedrals in the desert. While this is intuitive, many local and regional development strategies still aim to attract industries for which pre-conditions are simply not in place. The successful development of Duisburg's logistics cluster was facilitated by the favourable starting point of the sector. In contrast, the choice of other target industries lacked a strong analytical backing and hence support measures were less effective. Dortmund's strategy also took an approach of "strengthening the strengths", i.e. focusing on those sectors in which Dortmund clearly had an important pre-existing comparative advantage. Leipzig reconnected to its historical specialisation in publishing and as a trade city in the forms of a new Messe area and a cluster focusing on media and creative industries. It is important to note

however that identifying very narrowly defined priority sectors is a notoriously difficult undertaking. Even in the highly successful Dortmund case, not all the target sectors realized the initially envisioned growth potential, while other sectors, initially not included in the strategy, grew significantly. This highlights the need for addressing cross-cutting constraints that facilitates growth in all sectors as well as suggests that a continuous monitoring is required to allow adjustments of the strategy when required.

Fourth, local and/ or regional leadership rather than central government-led policies were central for the turn arounds. In the German system, the Laender, i.e. the 16 states, rather than the central government have the responsibility for the promotion of their own economies and structurally weaker areas within their territory more specifically. Over the last two decades, municipal governments and sub-regional associations of municipalities have further taken an increasingly active role in the initiation and implementation of local economic development initiatives. This allows to leverage local knowledge about an area's potential as well as to benefit from a higher motivation to drive local change. All three German case studies reflect this dynamic with municipal leaders in collaboration with state governments taking a key role in the efforts to regenerate the cities, while leveraging support from higher levels. The specific roles can differ depending on the context: where local actors were more fragmented (e.g. Duisburg), the regional level took a more active role to facilitate the development of the policies, whereas in Dortmund with its strong collaborative tradition, the city was at the heart of the efforts.

Fifth, significant, stable and long-term funding is required, which enables the creation of local capacities and a long-term vision rather than a multitude of piecemeal projects. A complex system of equalization payments through revenue sharing and supplementary grants between the German states and the federal government facilitates this in Germany. The system ensures that all levels of government, independent of their location, are adequately funded to carry out their assigned competencies, including regional and local development. Overall, funds distributed through the scheme are significant. In 2020, €14.7billion were transferred between the regions and an additional €9billion of supplementary grants from the central level flowed to the regions. A further €3billion was spent through the Federal Funding System for Structural Development Regions in 2021 on specific project to support structurally weaker areas. This set-up allowed the regional and city governments in the three case studies to invest significant funds in their own strategies and initiatives. The upfront commitment of €50 million of the city of Dortmund to create the institutional backbone for the implementation of the 'dortmund-project' is illustrative in this regard as are the joint bodies created by the city of Duisburg and the Land North Rhine-Westfalia for urban regeneration and the running of the port. For Leipzig, large-scale funding was provided by various levels of government (including the European Union), showing a joint long-term commitment to regeneration of the city and the reduction of disparities between former East and West Germany.

Sixth, the engagement of a variety of actors and a sense of collaboration for the common good play an important role in the design and implementation of turn around strategies and policies. Through the transfer of public duties to different actors such as the chambers of commerce or the system of public banks, this collaboration between different actors is de-facto built into the German system by design. While the public sector typically takes the initial lead and holds a coordinative function, other actors are crucial for the effectiveness of the policies. The adjustment of Dortmund's local saving banks strategy to align more closely with the city's strategy illustrates this well as does the active publicly mandated role of the chambers of commerce in the development and implementation of VET programmes.

Seventh, the experience of the establishment of SNG structures and capacities in the areas of the former GDR provides some interesting insights on ways to build local government capacity. A crucial

aspect was the use of municipal-level partnerships and personnel transfer, allowing the newly formed administrative entities to learn from the expertise of experienced bureaucrats from municipalities in West Germany. Similar programmes could be replicated in other places either with local-local or central-local partnerships.

And finally, despite the undeniable progress made in these cities, challenges such as high unemployment, low incomes and the displacement or marginalization of certain social groups continue to plague the cities. This shows how difficult it is to tackle some of the underlying problems and highlights the need to make these strategies as inclusive as possible as well as complement them with adequate safety nets for those that do not benefit directly.

Conclusion

This report explored the experience of three cities in Germany, which after a period of decline managed to turn around their economic fortunes. The selected case studies are Dortmund, Duisburg and Leipzig, which were chosen based on their socio-economic trajectories over the past decades, more specifically how they managed to catch up with and even leap ahead of other German cities in terms of economic performance. The cases can serve as an interesting reference point for UK cities due to sharing similarities with them in terms of their industrial past and urban structure.

For each city, the report analysed the policies and strategies employed, the institutional set-up and financing of the initiatives as well as the enabling factors and lessons learnt. Chapter 6 of the report draws on each of the case studies to identify common features and to explore what other places can learn from them. While each case is different and the lessons-learnt will inevitably mean different things in different contexts, a number of principles were identified that can help shape the thinking of policies makers around the world on how to design and implement turn-around strategies.

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