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# 9 Challenges and problems of re-growth

The case of Leipzig (Eastern Germany)

*Dieter Rink, Marco Bontje, Annegret Haase,  
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## Introduction

As an East German city, Leipzig underwent a specific transformation after the end of the Cold War in 1989/90. This transformation was unlike the changes that took place in other post-socialist cities in Poland, the Czech Republic and Hungary. East Germany joined a “ready-made state”, whereby West Germany became the blueprint for the targets of post-socialist transformation. The transformation was designed as “catch-up modernisation”. For the former German Democratic Republic (GDR), the unification of the two German states meant immediate accession to the European Union, without the usual transitional rules and adjustment processes. Re-integration into the capitalist world market had already been formally completed with the economic and monetary union by July 1990. This led to a shock transformation after 1990; within a short period of a few years, profound economic, political, social, and cultural changes took place. The transformation was associated with extensive and widespread de-industrialisation, high and persistent unemployment, and a massive decline in population. However, unlike other East German cities, Leipzig returned to a path of gradual re-growth after 2000, not least thanks to major public investments and subsidies. From 2010 onwards, Leipzig has experienced dynamic re-growth and has been described as a “comeback city” (Bernt 2009) or “Phoenix city” that has “risen from its industrial ashes” (Power et al. 2010). Leipzig’s shrinkage experience has already been studied in detail (see Bontje 2004; Rink et al. 2012); however, the re-growth process has so far received much less analytical attention (Haase et al. 2020, Power et al. 2010; Rink et al. 2012). We define re-growth as a particular urban development process affecting cities after a shrinking experience. It is a process towards economic recovery or revival accompanied by stabilisation and an increase in population. Leipzig’s re-growth was welcomed by many stakeholders, including urban policy-makers, who looked for and supported projects and strategies for successful re-growth. However, re-growth has also led to serious challenges and problems in a number of policy fields. The aim of this chapter is to analyze the specific problems caused by strong re-growth after a phase of (severe) shrinkage.

This chapter focuses on the following questions: What specific challenges and problems arise from this constellation of re-growth after a period of intense shrinkage? How are they reflected and dealt with in relation to different policy fields? To

answer these questions, three policy fields have been selected: housing provision, schools as social infrastructure, and public transport as technical infrastructure. The selection was based on the following criteria: 1. The policy fields are affected by re-growth, but to a distinct degree and on different scales, 2. they face political constraints and opportunities for action, and 3. they are currently a focus of municipal policy. These three policy fields are currently at the top of the public agenda in Leipzig. Major problems have emerged in all three fields with respect to the re-growth context since the 2010s, although the nature of the problems vary. In the following, the case of Leipzig will be used to illustrate the problems caused by re-growth after a transformation crisis and shrinkage, and how these new challenges can be met by urban actors.

## **Background, materials and methods**

Urbanists or urban planners in many countries have been discussing the post-decline revival of inner or core cities since the 1960s and 1970s. In this debate re-growth not only refers to an increase in population, but also a qualitative change including new urban forms, mixed-use areas, and the idea of urban conservation. Different terminologies have been used for this phenomenon, such as re-growth, reurbanisation, resurgence, and revival and others. Apart from the urban life cycle models, another strand of discussion that has some anchor points in cyclical models deals with the reconcentration of populations in large cities, set against an overall regional context of shrinkage: Core cities are referred to as “islands of growth or stabilization” (Herfert 2007) or as winners in a continuous context of decline (Couch et al. 2009). According to these studies, large cities either remain the only places that do not decline, or recover first, or become destinations for inward migration because of their amenities and infrastructure (Rink et al. 2012).

Some studies deal explicitly with the factors that drive re-growth and this strand of the debate is especially relevant for our chapter’s rationale. Based on a comparative study of various “Phoenix cities”, Power et al. (2010) and Power and Katz (2016) point out the following key factors: land reclamation and environmental upgrading; sprawl containment; transport infrastructure improvements; physical redesign and restoration; neighbourhood renewal; job creation; the development of new skills in the population; civic leadership and increased participation; social inclusion; and new publicly sponsored agencies that help to deliver change. In another comparative work on the “remaking of postindustrial cities”, Carter (2016) suggests that the most important factors are the consideration of the metropolitan (not the urban) scale; the need for a long-term vision; the development of a sustainable planning strategy; the need for alliances and partnerships, strong leadership and citizen engagement; diversification of the economy; a strengthening of the central city; investment in education, culture, quality of life, heritage and urban design; and a readiness to take risks. Rink et al. (2012) highlight the existing ambivalences of re-growth and discuss related risks for sustained new growth after shrinkage. Particularly, this study mentions the economic fragility of re-growing cities and their ongoing dependency on both external decisions (e.g. by large-scale investors and the political choices of national or regional governments) and

external factors such as national or regional economic circumstances. The authors also underline the ambivalence of those success factors that were identified at the time of research: What might support re-growth today, may tomorrow lead to new problems and hinder re-growth. Aside from this debate about the factors that drive re-growth, it should briefly be mentioned that other scholarly work looks at the relationship between the debate on “resurgent cities” and changes affecting demographics, households or housing. Not least, Siedentop (2018) provides a summary and assessment of the hitherto mentioned reurbanisation (re-growth) debate.

This contribution is based on long-term research on Leipzig and the Leipzig-Halle region that was conducted in the context of various projects dealing with segregation, reurbanisation, urban sprawl, shrinkage, and re-growth. In the 1990s we produced the *Social Atlas of Leipzig*, which analyzed and examined the socio-spatial differentiation of the population at the district level (Kabisch et al. 1997). The increasing social inequality among the population was investigated in the *Life Situation Report* (City of Leipzig 1999), and a further project examined urban poverty in Leipzig (Richter 2000). In the 2000s, the European Union (EU) project URBS PANDENS analyzed suburbanisation in the Leipzig-Halle region, in particular the connection between shrinkage and urban sprawl (Nuissl and Rink 2005). In the same decade, reurbanisation was addressed from a comparative perspective by the EU project ‘Reurban Mobil in Leipzig’ (Haase et al., 2012). The EU project ‘Shrink Smart’ in the late 2000s/early 2010s then focused on the trajectory, consequences, and political and planning response to shrinkage in the two cities of Leipzig and Halle (Rink et al., 2012, 2014). To better understand the population growth of the 2010s, a survey was conducted among newcomers and immigrants in Leipzig (Welz et al. 2014, 2017). Studies from the 2010s on Leipzig’s housing market, gentrification and housing policy provide specific insights regarding the issue of housing supply (Rink 2015, 2020; Haase and Rink 2015). For the topic of schools, Anne Walde’s PhD thesis about how to deal with declining school student numbers in Leipzig and Timisoara (Romania) was very useful (Walde 2019).

Our methodological approach includes both quantitative and qualitative methods of primary data collection. Several quantitative household surveys addressing several groups of inhabitants were conducted in a number of Leipzig districts. The migration survey was a large postal survey. Our governance analyses are based on expert interviews and the analysis of policy and planning documents. Furthermore, since the beginning of the 1990s, secondary data on demographic, social, economic, and political developments have been systematically analyzed for different levels, including the city of Leipzig, the Leipzig-Halle region and the (post-)industrial region south of Leipzig. Furthermore, some policy areas have been systematically researched over a long period of time, such as urban development and redevelopment, housing, environment, and education.

The advantage of this long-term perspective is that despite the changing focus of the projects mentioned above, we can follow the development of the city and the region with our own empirical material. It includes data on population and household development, socio-economic and income data, the housing market situation and housing conditions, as well as expert and household interviews, surveys, research formats, workshops, in-situ observations and mapping, and the

evaluation of municipal policy and planning documents. We collaborated closely with a variety of urban practitioners during all the projects. The authors are engaged in expert panels, invited advisory boards, and specific working groups. This chapter provides new insights in the discussion on re-growth by focusing on selected policy fields that have so far not gained much attention.

### **Leipzig's development as a shrinking and re-growing city**

Leipzig was founded in the Middle Ages around the year 1000 and was conveniently located at the intersection of two European trade routes. In 1394 it was granted the privilege of a trade fair and subsequently enjoyed development benefits. In 1409 the University of Leipzig was founded, making it one of the oldest in the German-speaking world. At the end of the 18th/beginning of the 19th century, the book trade in Leipzig experienced an upswing and the city's first commercial area was created east of the city wall between 1800 and 1830.

#### ***Leipzig as a growing city during industrialisation***

In the course of industrialisation and urbanisation, Leipzig experienced dynamic growth and became the sixth-largest German city in 1871 in terms of population. By the end of the 19th century, Leipzig had developed into an industrial city with a focus on book and textile production and mechanical engineering. Leipzig became a "city of books" during the 19th century due to the major role played by book production and book trade; before the Second World War almost 50% of all books produced in Germany were printed and published in Leipzig (von Hehl 2019). The population grew exponentially in the second half of the 19th century; the population of Leipzig grew 4.2 times between 1871 and 1899, from 107,000 to 450,000 people. Shortly after 1900 the city had more than half a million inhabitants. In connection with this, the number of rail passengers quadrupled and Leipzig became the "heart of German rail transport". In anticipation of further growth, construction began on Europe's largest terminus station in 1900 and the station opened 15 years later. The First World War interrupted this increase in population, yet it continued unabated in the 1920s. At that time, the industrialisation of the area around Leipzig and Halle saw the addition of lignite mining and the chemical industry, and the so-called Leipzig-Halle-Bitterfeld conurbation was created. Leipzig developed central functions for this industrial region, including banks, insurance companies, wholesale trade and the trade fair. During the Great Depression, the population peaked in 1931 at 719,000, making Leipzig the fifth-largest city in Germany. The global economic crisis was accompanied by a halting of dynamic in-migration and a decline in the birth rate. When the Nazi dictatorship came to power in 1933, Jews and politically oppressed people began to emigrate or were deported. The Second World War was the most severe cut in the city's development: The population losses amounted to more than 100,000 and the number of inhabitants fell to less than 600,000 by the end of the war. As a result of the Anglo-American bombardments, the historic buildings in the city center and the inner city were badly damaged (von Hehl 2019).

***The GDR era: Towards long-term shrinkage***

Shortly after the end of the war many companies emigrated west with the American troops, which meant a deep cut, especially in the publishing industry, as many publishers moved to West German cities such as Frankfurt, Munich and Stuttgart (von Hehl 2019). Former armament and heavy industry factories were expropriated or transferred to Soviet stock corporations, and further economic losses were linked to reparations to the Soviet Union. It took a correspondingly long time to restore the industries and the economy in the 1950s and 1960s. At the beginning of the 1950s, the population reached the 600,000 mark once again due to return migration and the immigration of German refugees from Germany's former eastern territories. After this, Leipzig's population shrank almost continuously until the end of the 1980s, although it was a slow decline. By this time, other cities in the region were more strongly developed than Leipzig, e.g. Halle, Dessau and Bitterfeld-Wolfen. New industries were established in those cities and they were therefore the object of state investments (also in relation to infrastructure and housing). The structure of the industrial sector in Leipzig did not change after the Second World War; in the adjacent regions to Leipzig's north and south, large areas of lignite coal were exploited from the 1970s onwards. Although the surrounding region continued to grow, Leipzig became one of the few major European cities with long-term shrinkage. As a result of the economic weakness of the GDR, too little investment was made in a number of industrial sectors as well as in infrastructure and the housing sector. The consequences were gradual decline and decay, poor working and living conditions, and a polluted environment. All of this then formed part of the background to the famous Leipzig Monday demonstrations, which in 1989 ushered in the peaceful revolution and then led to German Reunification in 1990 (Doehler and Rink 1996).

***Massive shrinkage after 1989***

After German Reunification, there was great hope that the city would be saved from imminent collapse, e.g. in relation to its technical and housing infrastructure. But after the fall of the Berlin Wall in November 1989, the city lost more than 30,000 inhabitants in just 14 months. German Reunification was not associated with a rapid and sweeping economic upswing that many had hoped for; some had even expected a second "economic miracle", like the one that took place in West Germany after the Second World War. The city therefore relied on optimistic forecasts and assumed its economy and population would grow and catch up to the level of West German development in about 10–15 years. Instead, as a result of the rapid and seamless integration into the EU and the world market, as well as shock therapy, there was a widespread de-industrialisation of the city and the industrial conurbation by about 80% (Doehler and Rink 1996). Only a few industrial cores remained in the region (petrochemical industry, coal mining and energy generation) and in the core cities of Leipzig and Halle (mechanical engineering). The reasons for this massive and rapid de-industrialisation were 1. the age and poor state of the industrial plants, 2. the upward revaluation shock associated with the

exchange rate between the two German currencies (exchange rate of 2:1 from the perspective of former GDR) and 3. the hasty privatisations. The combination of those factors led to many insolvencies within a very short time. The conurbation fragmented, the former production and economic relationships were almost completely discontinued. Only massive state intervention was able to cushion the crisis socially during this phase. The federal government provided billions of euros for re-qualification, further training and subsidised job creation measures; for Leipzig, this was estimated at around one billion euros in the 1990s (Rink and Kabisch 2019). The transformation crisis was associated with a huge drop in the birth rate, suburbanisation and migration to West Germany. Young and well-educated people migrated to West Germany because they found jobs there with better salaries and, furthermore, benefitted from better living conditions. The city lost a large amount of its younger inhabitants, including young families. In addition to the shrinkage in the city, the entire region also shrank. Only communities in the suburban zones of Leipzig and Halle were able to generate population gains by offering detached housing construction. With a population loss of about 100,000 people (about 20%), the loss of its industry and an unemployment rate of 20% (Rink and Kabisch 2019), the city became the paradigmatic example or extreme case of post-socialist shrinkage in East Germany.

### ***Moderate re-growth: The 2000s***

As was the case throughout all of eastern Germany, investments in Leipzig were made in the opposite direction to the shrinking trend. Around 1.5 billion euros were spent on renovating and modernising the housing stock. For the New Trade Fair Centre, around 680 million euros were provided by public funds from the federal government and the Free State of Saxony. During this period, Leipzig attracted attention thanks to other major projects, such as the Medical Heart Centre, the Media City and the Quelle mail-order centre, although this did not initially translate into significant growth. At the time, Leipzig proclaimed itself to be the “boom city of the East” and residents took heart from the city’s image campaign “Leipzig is coming”. In addition, substantial subsidies were granted to businesses and practically all infrastructure was improved, such as transport, communications, water/wastewater, schools and kindergartens. Investments were also made in the environmental sector, for example in the rehabilitation of contaminated facilities, rivers and canals. Hundreds of millions of euros were spent by the EU, the federal government and the Free State of Saxony to rehabilitate the open-cast mines and turn them into recreational areas, thereby completely transforming the character of the entire region. The first successes of these massive investments were evident at the end of the 1990s/beginning of the 2000s (Heinig and Herfert 2012). In Leipzig, Porsche and BMW decided to build car factories. In Halle, Dell decided to set up a new production centre, and in Bitterfeld-Wolfen, solar industry companies received investments. In the north of Leipzig along the A14 motorway in the direction of Halle and in the vicinity of the airport, companies in the logistics and service sector also established new production and distribution centers. The airport itself was gradually developed into an intercontinental

airport with public investments from the Free State of Saxony and the State of Saxony-Anhalt. In 2008, DHL set up a branch at the airport, which developed into a job engine. In 2019, almost 10,000 people were employed at Leipzig-Halle Airport (Rink and Kabisch 2019).

A political and legal reform that altered municipal boundaries led to a change in the population figures in 1999 and 2000. By incorporating a number of adjacent municipalities, Leipzig was able to statistically increase its population by 50,000 and thus approached the 500,000 mark (Figure 9.1). The 500,000-inhabitant threshold was important for the allocation of additional financial support from the federal government. The city of Leipzig experienced moderate growth in the 2000s, with annual growth rates of between 0.5% and 1%, but there was further shrinkage in Halle and across the entire region. In Leipzig, it was mainly the extensively redeveloped Wilhelminian-style inner-city districts that experienced an influx, with growth taking the form of reurbanisation (Haase et al. 2012). This influx came primarily from the southern part of eastern Germany (Saxony, Thuringia and Saxony-Anhalt). This influx became more permanent, mainly due to economic re-growth. Since the mid-2000s, Leipzig has been experiencing a sustained employment dynamic; from 2005 onwards, the number of unemployed began to fall and the number of jobs started to rise.

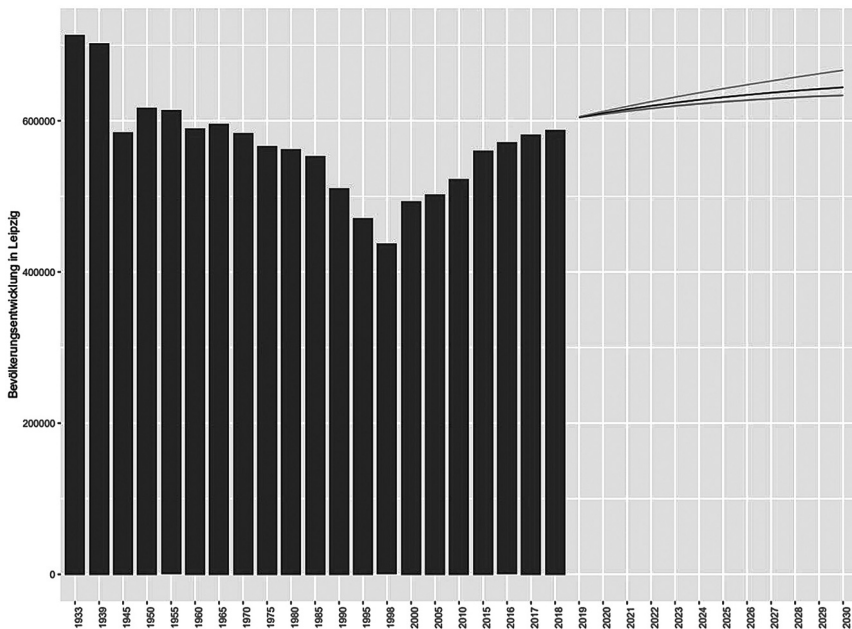


Figure 9.1 Population development 1933–2018 and forecast until 2030.

Source: Own elaboration on the basis of data from Stadt Leipzig 2019.



## Challenges and problems of re-growth

At the beginning of the 2010s, immigration doubled compared to the yearly growth rates in the 2000s. Leipzig experienced a very dynamic population growth of over 2%, in some years even 3%. It was now no longer only young people from eastern Germany who immigrated to Leipzig, but also people from western Germany and from abroad (Welz et al. 2017). In addition, young people came from the southern EU countries that were deeply affected by the 2007/08 Global Financial Crisis, as well as from Eastern Europe. In 2015/16, Leipzig experienced strong refugee immigration, particularly from Syria, Afghanistan, and Iraq. In the middle of the 2010s, Leipzig became the fastest-growing metropolis in Germany. Due to the strong economic boom and availability of newly created jobs, the attractiveness of universities and colleges, as well as its positive image as a good place to live, Leipzig has experienced a significantly higher level of in-migration than other eastern German cities such as Chemnitz, Dresden or Halle. The growth now spread to almost all parts of the city; only a few districts experienced stagnation or even shrinkage. Towards the end of the decade growth slowed down, but still stood at around 1%. Leipzig is thus still an island of growth in a region that is shrinking (Herfert 2007) (see Figure 9.2). Since 2014, however, suburbanisation has also been taking place again, especially in the directly adjacent municipalities; every year about 1,000–1,500 people moved into the surrounding area (just under 0.25%)—an overall weak suburbanisation (see Figure 9.2). The main source of this new suburbanisation has been young families building or buying their home outside the city borders. Halle, the second-largest major city in the region, has been experiencing weak growth for some years, but

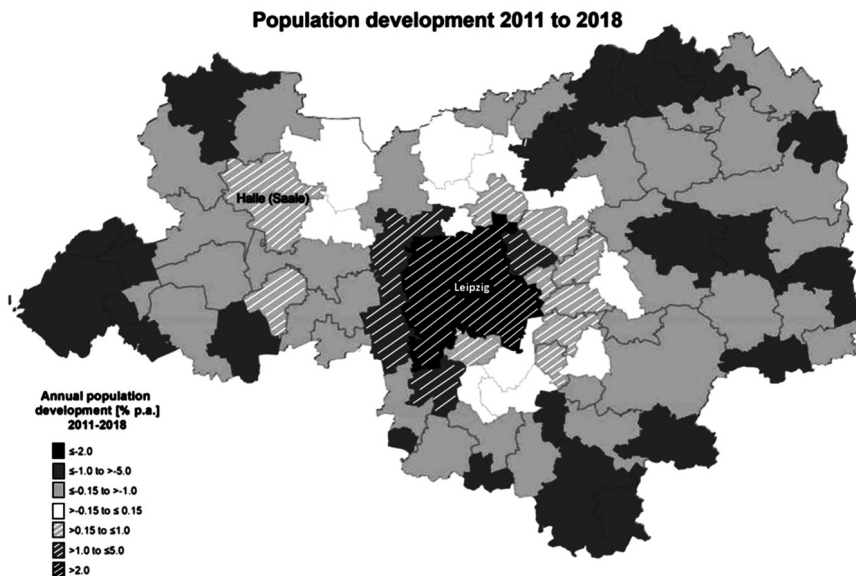


Figure 9.2 Population development in the Leipzig–Halle region 2011–2018.

Source: Statistical Office of the Laender 2019; GeoBasis-DE/BKG 2019.

the rest of the region is shrinking to a greater or lesser extent. In this respect, one can already speak of a polarised development.

At the peak of immigration in 2016, a very optimistic expert forecast was made for the population development. The forecast expected the population to grow to approximately 700,000 inhabitants by 2030 (Stadt Leipzig 2016). Against the backdrop of declining immigration in the subsequent years and the 2019 population figure of 600,000, the new population forecast from 2019 had been adapted to approximately 640–650,000 by 2030 (Stadt Leipzig 2019, see: Figure 9.1). This equates to slightly less than 1% growth per year, or 8% by 2030. National population forecasts continue to see Leipzig as one of the fastest-growing cities in Germany. In its latest study, the renowned Berlin Institute forecasts that Leipzig will be the front-runner in Germany with 16% growth by 2035 (Berlin Institut 2019), which seems to be too optimistic.

The population development is based on economic recovery and the provision of jobs; between 2005 and 2018 more than 70,000 new jobs were created, although many of them are precarious and poorly paid. A radical revival of the labour market in the city and, to some extent, in the region could be observed. While in 2005 unemployment in Leipzig was around 20%, it fell to 5.3% by 2019—its lowest level since German Reunification. This background makes it possible to explain the continuous immigration, especially of young people. The influx was additionally promoted by the positive image that Leipzig had gained in the 2010s. This image was largely due to the German public's growing awareness of the city's economic success, population growth, and attractive housing market (good housing available for reasonable costs). Successful PR work also played a major role, e.g. the marketing campaign "Leipziger Freiheit" and other activities. This led to a real boom in mass media reporting: More than 200 reports about Leipzig appeared in national and international media, culminating in the slogan "Hypezig" (Bischof 2015). The "new attractiveness" of Leipzig had been expressed as an important reason for immigration in a survey among newcomers (Welz et al. 2017).

This robust growth came as a surprise to the city, nobody had expected it. On the contrary, in some areas of action, such as the housing market, shrinkage policies were still being pursued in the 2010s (see below). The strong re-growth was felt to varying degrees in the individual urban areas or fields of action. This led to new problems and challenges, to which different responses were made. In the following sections, three fields will be presented in more detail: the provision of housing, schools as part of social infrastructure, and public transport as part of technical infrastructure. First, the previous context of shrinkage will be examined, then we will describe the specific problems that arose as a result of strong re-growth, as well as the political and planning reactions to them, such as concepts, instruments, resources, and specific governance.

## **Housing provision**

In Germany, housing provision is not completely left to the market. Instead, to a certain extent it is seen as a socio-political task. In addition to the federal and state governments, local authorities also have a responsibility here. Immediately after

German Reunification in the beginning of the 1990s, the housing market in Leipzig was tense because on the one hand about 70,000 people were looking for a suitable apartment, while on the other hand about 25,000 apartments (about 10% of the stock) were empty due to lack of renovation and repairs (Doehler and Rink 1996). In the 1990s a capitalist housing market was gradually re-established, the public ownership of apartments was restituted to former private owners or their descendants, and rents and prices were no longer determined by the state. With urban development subsidy programmes and special tax deductions, much public money was channelled into housing stock and private capital was mobilised (Doehler and Rink 1996). Thus, in the 1990s, about two-thirds of the 110,000 pre-1918 (so-called Wilhelminian-style) apartments were renovated and modernised. In addition, about 47,000 new housing units were built during this phase. The combination of the above-mentioned population shrinkage with the expansion of the housing supply led to a massive oversupply on the housing market at the end of the 1990s/beginning of the 2000s (Wolff et al. 2017). In 2000, approximately 68–69,000 housing units were vacant, which corresponded to a vacancy rate of 21%. Just under half of these were not renovated or modernised, but the other ample half were either freshly renovated/modernised or newly built. This extremely high vacancy rate was the highest of any major German city and one of the highest in eastern Germany, making Leipzig the “metropolis of vacancy” (Rink 2015).

Although the population forecasts at that time predicted a certain amount of growth for the 2000s, for the longer-term perspective after 2010 experts expected stagnation or a return to shrinkage. Given the long-term lack of demand in the housing market, the demolition or dismantling of apartments seemed inevitable. Starting in 2002, public funds were once again made available for both demolition of apartments and upgrading of the remaining stock as part of a joint federal and state programme called *Stadtumbau Ost* (Urban Restructuring East). Between 2001 and 2012, almost 13,000 residential units were thus demolished in Leipzig; the majority of them were prefabricated apartments in large housing estates at the urban fringe that belonged to the municipal housing company’s and the cooperatives’ portfolio. In conjunction with the renewal of the Wilhelminian-style inner-city areas, the vacancy rate fell significantly and in 2011 amounted to about 39,000 residential units, which was still quite high compared to other major German cities (Rink 2020).

By the end of the 2000s, the real estate market had already resumed its course of moderate growth. The subsequent dynamic growth led to a significant increase in investment in the renovation of old buildings and new construction in the city centre. Due to strong demand in the 2010s, the vacancy rate continued to decline sharply. The vacancy rate in 2018 was approximately 4.5%, but the market-active vacancy rate was only 1.8% (Rink 2020). Together with the significant increase in property prices since the mid-2010s and rising rents, the city administration indicated that the housing market had now become tight. The city council began reacting to the new housing market situation in the mid-2010s and adopted a new housing policy concept in 2015 (Stadt Leipzig 2015), which has been implemented since 2016. With this new concept, the general orientation is towards medium- and long-term population growth in the city, thereby increasing demand on the

housing market without any demolitions. However, the new housing policy and associated instruments can only be implemented on the proviso that there are indications of a tight housing market. A set of indicators was developed and used specifically for this purpose. The City of Leipzig has thus reacted cautiously to the new situation on the housing market, which is understandable for a city coming out of a deep and long vacancy depression. Although the city administration claims that Leipzig has a tight housing market, this is still a matter of dispute. The housing cooperatives doubt this in view of the vacancy rates in their housing stocks (Rink 2020). Nevertheless, housing policy instruments have been successively implemented since 2016. On the one hand, the aim is to influence new construction and renovation in such a way that affordable housing comes onto the market, for example through the promotion of social housing and urban development contracts with investors. In addition, the municipal housing association (LWB) intends to build new housing and significantly expand its stock in the affordable segment by around 5,000 units by the mid-2020s. On the other hand, price increases in the existing stock are to be curbed, for example by limiting rent increases to a total of 15% within three years or by designating conservation areas to prevent expensive renovations.

In the past the state has repeatedly intervened in the housing market with regulations and financial interventions. In the 1990s, for example, the supply of housing was quantitatively ensured by new construction and improved by renovation—through both public investment and subsidies. In the 2000s, on the other hand, housing demolition was largely supported by state-led programmes. The housing demolitions subsequently came under criticism in recent years due to developments in the housing market. Civil society actors have also criticised the public sector, claiming that it reacted too late and too little to the new growth in recent years. Private and cooperative housing companies, however, reject further or stronger regulation. In the years 2018–2020 there has been a significant increase in investment in Leipzig’s housing market, with more than 2,000 new or refurbished apartments coming onto the market each year. The current and planned investment volume in the housing market for the years 2021–2025 amounts to over 4 billion euros of private investments, and the 20 million that the Federal State of Saxony spends on this each year is quite modest (Rink 2020). As can be seen, the city has had to intervene more strongly in the market again in the field of housing supply. A different approach can be witnessed concerning schools, where the municipality is fully responsible.

### **Schools as an example of social infrastructure**

School infrastructure is the area where the greatest changes and problems have been caused by Leipzig’s shrinkage and re-growth. As described above, there was a decrease in the birth rate in the early 1990s and the total fertility rate in eastern Germany fell to below one—the lowest level ever measured in Germany. At the same time, young people in particular and, to some extent, families with children emigrated to western Germany and the greater Leipzig area (suburbanisation). As a result, the number of school students fell rapidly from the second half of the

1990s onwards. The size of the school population almost halved, decreasing from just under 60,000 in the 1989/90 school year to about 35,000 in 2008 (Walde 2019). This means that the number of school students fell far more sharply than the average population decline, so the school sector was therefore particularly affected by the shrinkage. It was only through the incorporation of numerous surrounding municipalities that the number of school students rose again for a short time between 1998 and 2000, after which it continued to decline. The political response to the declining number of school students was to reduce the number of schools and to thin out the school network, not only in order to adapt the number of school places to the reduced demand, but also to save costs. Following reunification and the conversion of the school system, the City of Leipzig established a total of 161 primary and secondary schools in the 1992/93 school year. In the course of the following two decades, 75 of the schools were closed (Walde 2019). Some of the closed schools could not be used for other purposes and decayed over the years, becoming ruins within residential housing areas. The school closures were sequential, starting with the primary schools and ending with the secondary schools. The driving force behind the school closures was the city council, which made the relevant decisions. This process took a very conflictual course compared to other fields of action. Practically every school closure provoked resistance from the affected school students, their parents and teachers, who carried out numerous protest actions (Walde 2019).

The renewed increase in the number of school students made itself felt in primary schools from the 2003/04 school year onwards, and in the first grade of secondary schools from the 2009/10 school year onwards (Stadt Leipzig 2018). Since the beginning of the 2010s, there has been dynamic growth in the number of school students across all grades. This growth is also fed by higher birth rates. Birth rates already began rising in the mid-2000s and in 2014 the balance of births and deaths was positive for the first time since the mid-1960s. Since then, Leipzig has been one of the few cities in eastern Germany to record natural population growth, even if it is quite low. The high level of immigration in the 2010s meant that (young) families with school-age children also came to Leipzig at that time. Many of them arrived during the peak of the wave of refugees in the years 2015/16, as a result of which the number of school students increased by 50% between 2008 and 2018, from 35,000 to 52,000. In the years 2015 to 2017 alone, the number of inhabitants in the 6- to 15-year-old age cohort rose by 5,620 (Stadt Leipzig 2020). This quantitative development was closely connected with qualitative efforts, because of the large number of children without sufficient German language skills. As a consequence, new student groups were formed to provide particular support for those learning the German language and entering the German school system.

The disproportionate decline in the number of school students during the shrinking phase was followed by a disproportionate increase in the number of students. This strong growth in the number of children and school students is fed by both immigration and natural growth. As a result, the demand for schools in particular has grown enormously in the short term. The city or public authorities are legally obliged to provide school places for all school-age children. A new school development plan was drawn up in 2016 in response to this growth, which featured up to 40

construction measures across all school types, including new buildings, reactivation of closed schools as well as renovation and capacity expansion of existing schools. Over the following years, this plan was revised and adapted to the requirements, and in 2018 the ‘Immediate Construction Program for Schools’ was launched and an independent task force responsible for school construction was set up within the city administration. The number of grade one enrolments at primary schools will increase by approximately 50% by 2030, by which time there will be around 21,000 more students in total. This means that by 2030, in purely mathematical terms, Leipzig will require more than 70 new schools or 120 capacity-enhancing school construction measures. Between 2016 and 2023 the city will invest a total of about half a billion euros in school construction (Orbeck and Dunte 2019).

A substantial part of this will come from the Free State of Saxony, but the city will also have to make its own contributions. In order to be able to raise these funds, in 2019 the mayor of finance announced a budget freeze on current expenditure to save money for the construction programme. In addition, the municipality of Leipzig wants to raise up to 500 million euros in new debt to finance the school construction programme (Orbeck and Dunte 2019). However, the implementation of many construction measures is not progressing fast enough and is not keeping pace with the growth of the school student population. For example, finding suitable sites for the construction of schools is a major problem and there is also a lack of building capacity, because housing construction is booming and competing with public infrastructure such as schools (see above). Bottlenecks had already started appearing in the 2019/20 school year, especially in secondary schools, and these will not ease significantly in the coming years despite considerable additional investment measures. For example, ten classes are already missing from secondary schools in the 2019/20 school year (Orbeck 2019). Due to this dynamic growth in the number of school students, the existing bottlenecks and the statutory mandate, schools are currently right at the top of the city’s political agenda, and the school construction programme has top priority. The city had to do a 180-degree turn from school closures to an extensive programme of new construction in this field. Not quite as dramatic is the development in the area of public transport, which we will look at next.

### **Public transport as an example of technical infrastructure**

Public transport is another area where the problem of re-growth can be observed. In the GDR, local public transport was given priority, while motorised private transport played a subordinate role. Cars were expensive luxury products, which explains the GDR’s low level of motorisation, especially in cities. The share of public transport in mobility was quite high and walking also played a major role. Thus, shortly before German reunification, 35% of all trips in Leipzig were made by public transport and 36% on foot, while motorised private transport accounted for only 24% (Jana 2018). In 1987, about 200 million passengers travelled on Leipzig’s public transport system. Admittedly, the system also suffered from the investment weakness of the GDR, as a result of which the vehicle fleet of the Leipzig transport company was completely outdated and the technical equipment

was largely worn out. Nevertheless, the inhabitants were dependent on the public transport system consisting of trains, urban railways, buses and trams. There was a surge in motorisation immediately after the economic and monetary union in summer 1990. At last, long sought-after Western cars were available to buy, although mostly older models were sold. Despite the transformation crisis and high unemployment, the strong growth in motorisation continued in the 1990s. The modal split worsened to the disadvantage of public transport: The share of public transport halved between 1987 and 2003 from 35% to 17.3%, while the share of motorised private transport almost doubled in the same period from 24% to 44% (Jana 2018). This was associated with a sharp decline in the number of passengers using public transport (tram, urban railway, and bus). All in all, there was a strong increase in overall traffic, fueled by suburbanisation. In the 1990s about 30,000 inhabitants moved from the city to the surrounding area and many started commuting to Leipzig for work. The 1990s also saw the emergence of numerous large shopping centres in the suburban area, which led to a considerable increase in shopping traffic. Finally, there was also a partial relocation of trade and services to the suburban area, which similarly led to an increase in traffic. We are dealing here with opposing developments; the shrinkage did not in any way result in a decrease in traffic. The decline in the number of public transport passengers could not be stopped by the massive investments either. In the 1990s, new trams and buses replaced the outdated models, and the rail network and bus shelters were renewed. The attractiveness of public transport has increased enormously since the 1990s. However, public transport still couldn't compete with the convenience and attractiveness of the car.

At the end of the 1990s, the number of public transport passengers in Leipzig appeared to reach a low point, after which the number of passengers rose again, reaching 156.4 million in 2018 ([www.l.de](http://www.l.de) 2019). This is the highest figure since the German Reunification, but it is still below the 1987 figure at the end of the GDR. Since reunification, roads and transport infrastructure have been renewed or modernised in parallel with investments in public transport. Motorway connections in the region have been expanded and modernised, and the A14 motorway has been completely modernised and extended to the A2 to Magdeburg. With the new construction of the A38 motorway, the region now has a southern bypass from Leipzig and Halle and an additional connection to western Germany. Motorised private transport has increased strongly in the course of the economic situation since the mid-2010s, which can also be seen in the growing number of motor vehicle registrations, not only in the city but across the entire region. At the end of the 1990s, construction began on the City Tunnel from the central railway station through the inner city. This was Leipzig's major public infrastructure project, which the federal government financed with one billion euros. Its completion was originally planned for the 2006 Football World Cup, but it was completed much later and began operating at the end of 2013. It remarkably improved the urban railway connections within the city of Leipzig. For instance, the project made it possible to reopen a railway line to a large housing estate that had been closed in 2011 despite massive protests by residents. Furthermore, the regional railway connections between the city and the central German region were substantially improved. Thus, the completion of the City Tunnel fitted perfectly

into the phase of dynamic growth and has since provided relief for some of the problems associated with shrinkage and re-growth.

Current plans envisage a significant expansion of the public transport system, with passenger numbers expected to double by 2030 and the share of public transport in the modal split estimated to rise to 23% (Jana 2018). This increase is the result of the city's expected growth and its sustainability goals: Leipzig aims to gradually reduce motorised private transport to 30% by 2025 (Jana 2018). At the same time, foot traffic is set to increase to 27% and cycling to 20% (Jana 2018). The problem here is how to implement and finance the politically desired and planned disproportionate growth in public transport. In the mayor's election campaign in 2020, for example, a 365-euro ticket for one year was proposed, but this would deprive the municipal transport company (LVB) of millions in revenue and place an enormous burden on the municipal budget. Here in the transport sector, a cut-back in local public transport usage clearly took place in the 1990s, i.e. in the phase of de-industrialisation and shrinkage. Due to motorisation and suburbanisation processes, however, traffic continued to increase during this phase instead of shrinking. In the 2000s, public transport recorded growth in passenger numbers again, but the share of the modal split has stagnated at a low level since the early 2000s. Given that the share of motorised individual transport stagnated at a high level during this period, there has also been a growth in traffic volume.

## Discussion

What did we learn about the re-growth of Leipzig with our particular focus on the commonalities and differences between these three policy fields? What challenges and problems arose and how are they reflected by the development in the selected policy fields?

First of all, a *number of a) parallels became apparent*: In all three fields, the consequences of the population shrinkage in the 1990s were drastic, especially with respect to schools and the transport sector (although the dramatic changes in transport were mainly due to increased car usage). The same is true for the dynamic re-growth of the 2010s, which is also causing massive problems, particularly in the school sector. However, we are *also observing certain b) counter-trends*: For example, in the 1990s, new housing construction and renewal was promoted and supply was massively expanded, although demand fell sharply. In the 2000s, housing stock was then torn down, although demand rose again. In the school sector, schools were still being closed as late as 2012, even though the number of students has been rising again since 2008. These counter-trends are mainly caused by the *c) inertia of policies*. This is particularly visible in the housing sector: The housing shortage at the beginning of the 1990s triggered a decade of new construction and renewal that took place alongside a simultaneous decline in housing demand. It was not until around 2000 that the massive problem of housing vacancy was recognised and then dealt with by large-scale demolition. After 2010 this inertia or mismatch between new developments and policies is still evident, and although demand grew rapidly, demolition continued until a new housing policy was introduced in 2015. In the school sector, the reaction to the sharp decline in the number of students in the



1990s was much faster and schools were closed. However, schools were still being closed until 2012, even though the number of students had begun rising again in 2008. It took several years for school policy to change completely. But there are also *d) learning effects* from the experience of extreme shrinkage and dynamic re-growth. After only sporadic population forecasts were made in the 1990s, this instrument has been systematically developed since 2001. Every three to four years, comprehensive and differentiated population projections are prepared in different variants. This is done by including many local stakeholders and experts from administrative and scientific bodies, and has formed the basis for planning in fields such as housing provision, schools, and public transport. In the 1990s, there had been divergent developments and counter-trends in various policy fields, and undesirable processes such as suburbanisation. Since the early 2000s, master plans have been regularly drawn up to enable coordinated and integrated action for a number of policy fields. In addition, all three policy fields considered here are still subject to specific monitoring, planning concepts and action programs that are constantly being updated.

As we can see, shrinkage and re-growth are each associated with specific problems that are quite different in the researched policy fields. Leipzig, in a way, represents a “city of extremes” (Rink 2015) with its experience of massive shrinkage which was followed by initially moderate and then dynamic re-growth. While re-growth “solved” some problems such as weak demand in the housing sector, it also created new problems such as increased demand in the school sector. The political and planning responses also depended on the responsibilities and possibilities for action of local policy-makers in each individual policy field. For instance, the municipality is legally obliged to facilitate compulsory school attendance. Housing provision is largely seen as a task to be handled by the market; the municipality has only limited responsibilities and opportunities in this sector. Regardless of shrinkage and re-growth, the city has consistently pursued the goal of strengthening public transport. Due to the strong increase in traffic during the re-growth period, the expansion of public transport is imperative in the future. Table 9.1 summarises the processes within the policy fields under investigation for the periods of shrinkage, moderate and dynamic re-growth in Leipzig.

## **Conclusion**

The current re-growth in Leipzig must be interpreted primarily as the result of welfare state policy, which had (and has) the goal of equalising living conditions. Without the permanent and substantial subsidies and investments from the federal government, the European Union and the State of Saxony, this development would not be possible. Leipzig has thus caught up to the level of urban development evident elsewhere in Europe; its re-growth is comparable to that of other European cities of this size, such as Gdansk, Liverpool or Lyon. The further prospects for Leipzig’s population development foresee further re-growth, but it remains to be seen whether the high level of in-migration of recent years will continue. The city has consistently pursued classic growth objectives. In the 1990s, massive state support from the federal government, the EU and the Free State of Saxony was used

*Table 9.1* Processes in different policy fields during shrinkage, moderate and dynamic re-growth

<i>Policy Field</i>	<i>Housing Provision</i>	<i>Public Schools</i>	<i>Public Transport</i>
Shrinkage 1990s	Massive new construction, renewal and modernisation	New structure, start of school closures	Decline in public transport, growth in motorised private transport
Moderate re-growth 2000s	High vacancy rates, intense demolition and some upgrading	School closures, some demolition	Recovery of public transport, growth in motorised private transport
Dynamic re-growth 2010s	New construction and renewal, some demolition	First closures, then re-opening, renovation and new construction of schools	Growth in both public and motorised private transport

Source: Authors' elaboration

to pursue growth policies and counteract shrinking processes. In the 2000s, investments then began to take effect with the establishment of new businesses, which boosted re-growth. Despite the emergence of re-growth the management of shrinkage continued to be pursued in order to deal with the consequences of shrinkage exemplified by provision of school infrastructure and housing. In the 2010s, the city then experienced dynamic re-growth, which confronted the city with a number of new problems, particularly in the areas under investigation. The changing requirements meant that the city constantly had to react and, as we have seen, the reactions differed greatly between the various policy fields. Both the shrinkage and the re-growth revealed that the city cannot cope with the associated problems on its own. In all three fields of action considered here, Leipzig is absolutely dependent on public funding from the federal government, the Free State of Saxony and the European Union. Concerning the present problems and challenges caused by the coronavirus crisis, several future scenarios are more or less likely to happen: (a) resumption of growth after a brief slump, (b) stagnation, or (c) renewed shrinkage. At present, all levels of government are in crisis mode and it remains to be seen what policy response patterns will develop as a result. What can the urbanistic discourse learn from Leipzig's re-growth experience? As we've shown, shrinkage and re-growth affect the policy areas differently and trigger different government responses. Re-growth solves some shrinkage-related problems, but brings with it new problems and challenges. Policy-makers should generally be more open to varying future developments and react more quickly to both shrinkage and re-growth. While some learning effects can be identified, the scope and ability of policy-makers to act promptly and flexibly is often limited.

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