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Urban sprawl and post-socialist transformation

The case of Leipzig (Germany)

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Preface

The present study was prepared as the German group's contribution to the first stage of the EU project URBS PANDENS (Urban Sprawl: European Patterns, Environmental Degradation and Sustainability), which started in 2002.[1] By comparing seven case studies from different European countries, this project aims to identify the major determinants and factors of urban sprawl as well as their interrelations. This will form the basis for the development of a qualitative model of urban sprawl in Europe. The methodology of URBS PANDENS draws on the research field of climate change, in particular the "global syndromes approach". Thus, urban and regional research focus on an aspect which hasn't received much attention in the past (at least in Germany). However, the catastrophic flooding that hit Central Europe in 2002 has greatly heightened awareness of the close links between urban development (i.e. sprawl) and environmental hazards in this region of the world, too.

In eastern Germany, urban sprawl, i.e. a conversion of rural into urban land on a large scale, is a new phenomenon which for the most part did not occur until post-socialist transformation got underway. The vigorous development on the fringes of eastern Germany's towns and cities in the 1990s triggered the resumption of an intense debate in the disciplines of urban sociology, geography and planning on the problem of urban sprawl, accompanied by several empirical studies. However, for theoretical references, this debate mainly draws on literature from the US and, in part, on ideas developed in Western Europe or western Germany, such as Thomas Sievert's' concept of the "In between city'" (*Zwischenstadt*). Hence the theoretical classification of what has recently been observed in and around the towns and cities of eastern Germany largely remains a desideratum. Due to its link to demographic dwindling, economic change and urban reconstruction, however, the empirical examination of peculiarities of urban sprawl in eastern Germany ought to be particularly interesting, not least in terms of urban theory.

Leipzig, the German reference case in the URBS PANDENS project, displayed most vibrant dynamics of urban sprawl throughout the 1990s, involving commercial sites and retail outlets as well as housing. At the same time, the city of Leipzig, in absolute numbers,

[1] The authors would like to thank Matthias Bernt and Sigrun Kabisch for providing valuable comments on an earlier draft of this paper.

suffered the highest loss of population of all east German towns and cities. Currently, however, Leipzig is no longer a front runner in urban sprawl and emaciation but is instead one of the trend-setters in the emerging debate on urban redevelopment.

The main task of this report is more limited though. As a first step, it wants to show the features of the sudden and expansive urban development in eastern Germany in the 1990s as well as to point to its economic, social, political and legal determinants. Since a good deal of research work in the field of urban development and sprawl has already been conducted at UFZ, we needn't start from scratch. Our analysis benefits for example from several earlier studies on urban ecology and social and political change in urban regions. Besides, UFZ has done a great deal of interdisciplinary research on the environmental impacts of land-use change and the possibilities of enhancing the sustainability of land-use patterns. Examples include work by the Interdisciplinary Department of 'Urban Landscapes' and UFZ's involvement in the 'Suburbanisation' research group comprising several partners from universities, other research institutions, urban policy and planning. Within the "programme-oriented funding of research" (POF) currently being implemented, this field of research is about to be extended and further moulded in order to become a focal point of landscape-oriented research at UFZ.

0. Introduction

The urban region of Leipzig has recently experienced a period of heavy urban sprawl, making it a prominent example of problems of urban development related to an increase in land use. However, developments in and around Leipzig in the 1990s are peculiar in some respects (cf. Scholz/Heinz 1995). They have taken place in the course of post-socialist transformation and, consequently, in a context of declining industry and a dwindling population (e.g. Doehler/Rink 1996). The case of Leipzig hence allows a thorough examination of both specifics and more common features of urban sprawl with particular regard to two aspects:

(1) In the early 1990s the paradigm of catching up on a modernisation backlog predominated not only in eastern Germany but almost everywhere in post-socialist Europe. Accordingly, most experts expected that societal, economic and spatial development in the post-socialist countries of Central and Eastern Europe would follow the paths previously carved out in the Western world. Hence, a heavy form of urban sprawl was predicted, which in fact, as far as we know, only began almost immediately in eastern Germany. There, towns' and cities' spatial development displayed an astonishingly expansionist character, with Leipzig being at the vanguard of these dynamics. Consequently, the process of urban sprawl in Leipzig and the surrounding region refers to the broader question whether there is a specificity of trajectories of spatial developments in the context of post-socialist transformation and change.

(2) Of course, urban sprawl in a dwindling context is not an exclusively eastern German phenomenon. It is well known from several 'old industrialised' regions in 'the West', too. Nonetheless, the speed and the intensity of shift in the urban fabric lends a distinct quality to the urban development in eastern Germany. There, the simultaneous processes of urban sprawl and urban erosion can be observed in a kind of 'time lapse'. This is, of course, in particular due to the peculiar conditions which the 'east German' version of post-socialist transformation (with a start-up programme steered by money and laws [Wiesenthal 1995]) set for urban development. Against this background the Leipzig case of urban sprawl seems to be worth investigating for at least two reasons. Firstly, practitioners in the field of urban and regional policy and planning ought to be interested in finding out more about this type of urban sprawl that poses such a distinct challenge. Secondly, findings from east Germany

may also be instructive as to the future of ('Western') urban regions where the disproportion between the developments on the urban fringes and in the urban cores is developing more moderately.

In this report, however, we are not able to deal with all these issues in depth. Its main aims are more limited: We shall give an account of the developments on the fringe of a major east German city. Particular attention will be paid to the systematisation of the conditions, impacts and dynamics of urban sprawl. This exemplary description of an empirical case should be an essential preliminary work to a more theoretical discussion of factors and impacts of urban, i.e. spatial, developments.

According to this report's character as a case study we shall start with an introduction of our case, i.e. with a brief overview on the history and contemporary development of Leipzig and its surroundings (paragraphs 2 and 3). A systematic account of particular conditions of urban development and sprawl in east Germany follows (paragraph 4). We then shall approach the empirical reality of urban sprawl in and around Leipzig from two different perspectives: Firstly, we shall focus on the process of sprawl by establishing four different phases of 'post-socialist' urban sprawl in and around Leipzig, each characterised by a specific combination of drivers (and inhibitors) of sprawl (paragraph 5); secondly, we shall discuss the structure of urban sprawl i.e. the major issues of urban sprawl that could be identified by means of the Leipzig case (paragraph 6). The final discussion resumes the question what the Leipzig case can contribute to 'theorising' on urban development in general, and urban sprawl in a context of transition in particular (paragraph 7). First of all however, an introductory remark on the concept of urban sprawl used here seems fitting.

The term 'urban sprawl' was coined in the US and was originally connected to the North American context, where urban land use has reached a degree of dispersion unknown in Europe. Usually, talking about urban sprawl reflects the attempt to achieve a comprehensive understanding of the dynamics of urban development and growth as well as the related environmental problems. In this vein, however, "sprawl has become an umbrella term (...). Given that there is no agreed definition, it is not surprising that there is also little agreement on the characteristics, causes and impacts of sprawl" (Chin 2002, 2).

In principle, at least four approaches to the definition of urban sprawl are conceivable (cf. Chin 2002), three of which could be seen as basic, in that they focus on just one

discriminating dimension: Sprawl can be defined (1) in terms of urban form, in particular the pattern of the spatial extension of settlement areas, (2) in terms of density, in particular the (changing) proportion of population densities in 'core areas' and 'peripheral areas', (3) in terms of land use change, e.g. the rate of conversion of 'open land' into 'urban land'. In addition, thanks to the attempt to discuss urban sprawl in connection with the problems it brings about, various concepts of urban sprawl have been developed which are based on (4) the impacts of urban sprawl. Despite their heterogeneity, the vast majority of the latter concepts stress several 'key-characteristics' of urban sprawl in that they point to "(a) segregated land uses, (b) emphasis on automobile for transit, (c) a push for growth at the boundary of the metropolitan area, (d) residential and employment densities that are generally lower than those in further-in suburbs or the central city, (e) populations that are homogeneous in terms of race, ethnicity, class (to a lesser extent), and housing status, (f) the inability of local governments to work together to devise common policies to address perceived negative characteristics of the current growth regime" (Johnson 2001, 721). Referring to the causal link between urban sprawl and its multiple effects in different dimensions, the 'impact-oriented' concepts of urban sprawl hint at the idea of identifying, i.e. constructing, an 'urban-sprawl-syndrome' as a complex structure of causes and effects (as is intended in the EU-project 'URBS PANDENS'). In that, however, they aren't suitable as a starting point of research that itself seeks for further insights into reasons and impacts of sprawl in a specific context. (Besides, the variety in the actual appearance of urban sprawl means that sprawl often doesn't exhibit the whole range of its 'typical' features – 'Edge cities', for instance, are usually built with comparatively high densities). Thus, we consider it appropriate to start off from a basic definition of urban sprawl. In the following urban sprawl is understood in the most general sense as an increase in urban land use (facilities for housing, industry, shopping, recreation etc.) outside existing settlement structures. This land-use based concept of urban sprawl is easy to operationalize and – compared to a concept of urban sprawl in terms of density or urban form – draws the attention on the immediate impacts of urban sprawl as to the landscape and the environment, in particular land sealing.

Admittedly, our specific definition of urban sprawl allows to subsume any process of physical urban growth. (However, for an analysis of the features of urban sprawl in a

particular case it should be sufficient.)[2] In particular those processes of urban development which have long been referred to by the narrower concept of suburbanisation – i.e. the spatial expansion of the industrialised city by the development of peripheral, more or less purely residential areas that are directly related to the core city in that they are the homes for households who earn their income primarily in the central city and that grow "at a pace more rapid than that of core cities" (e.g. Jackson 1985, 130) – are to be seen as a case of urban sprawl. However, much of the dynamics that can be observed on the fringe of Leipzig can (still) be described as suburbanisation. Thus, in the following 'suburbanisation' will be used to describe a type of urban expansion that is related to a particular stage of urban development, i.e. that clearly corresponds to the 'classical' phenomenon of suburbanisation (cf. Matthiesen/Nuissl 2002)[3]; otherwise we will use the term urban sprawl.

1. The history of Leipzig

Leipzig was always an important German city as of medieval times. Between the 16th and 18th centuries its prominence was mainly accounted for by the Leipzig Fair and the city's function as one of the leading commercial centres of Central Europe. Moreover, Leipzig was famous for its trade, its culture and not least its university. In the second half of the 19th century, Leipzig experienced rapid economic development as the Industrial Revolution gathered steam. Initially the leading economic sectors such as publishing and printing, the textile industry and the manufacture of metal items were closely related to Leipzig's role as a centre of trade fairs and commerce. These industries were mainly located inside and to the east of the historical city. But soon heavy industry began to prevail, lending the city its typical industrial profile and turning it into one of Germany's industrial hotspots. Most

[2] A possibility to distinguish urban sprawl from less vigorous, 'non sprawling', forms of urban expansion would be to define a threshold for the amount of land converted for urban use over a distinct period of time related to the size of an agglomeration.

[3] Our understanding of suburbanisation is in accordance with most attempts to identify a typical sequence of phases of urban expansion (where suburbanisation follows urbanisation and precedes more severe forms of dissolution of the urban form) (e.g. Hesse/Schmitz 1998). But, since we use urban sprawl as a term that covers all forms of urban growth as long as this growth has a spatial dimension, we don't adhere to the terminology typically used when successive stages of urban development are discussed. (Also, any generalised rules as to the phases of urban development are not deemed feasible for all types of cities, in particular the post-socialist cities.)

important was the metal industry i.e. the production of capital goods, which required large plants. Nonetheless, Leipzig also maintained its outstanding role as a commercial and cultural centre, evinced for example by several colleges and academies, the German National Library and the German Supreme Court. Until World War I the population of Leipzig increased at a rate of more than 10,000 a year. Thus, Leipzig was one of the fastest growing cities in the country and eventually became the fourth German city in terms of both population and also – as far as can be assessed – its general importance.

After World War I, despite being beset by the general slump throughout Germany, Leipzig managed to regain its pre-war dynamics and witnessed the rise of the electrical industry into a new, successful part of the city's industrial base. Moreover, many banks opened up in the city while many companies set up their head offices there, and the city's economy became increasingly integrated into the international market. In addition, the emerging chemical industry, mining industry and energy sector around Leipzig fuelled the city's economy, which became ever more integrated into the broader agglomeration of Leipzig and Halle (cf. Scholz 1966, 86 ff.).

By around 1930, the population of Leipzig had reached its historical maximum with some three quarters of a million (living in an area much smaller than today's!). However, the seizure of power by the fascists was accompanied by the first signs of a reverse in the city's fortunes. By the 1930s Leipzig was no longer a growing city in a number of respects with both the population and the service sector in stagnation.

Like almost every other German city, Leipzig was badly hit by the air raids in World War II. Yet although important sections of the city's infrastructure were destroyed, unlike in Dresden, Leipzig's 'urban morphology' by and large survived. By the end of the war the population of Leipzig had plummeted by almost 200,000 people, a loss which was only partly made up for by the arrival of around 40,000 new inhabitants from the formerly German territories to the East. Leipzig's economy suffered from an exodus of many of its banks, insurance companies and company headquarters as many firms relocated to western Germany. This process was followed by Soviet troops dismantling and exporting wholesale to the USSR many of the surviving industrial plants.

Following the establishment of the GDR (German Democratic Republic) in 1949, Leipzig wasn't a privileged place. The city only partly benefited from the large investments during

the 'development phase' (*Aufbau-Phase*) of the GDR in the 1950s and 1960s, which mainly supported the northern, rural parts of the GDR. As a result, the city's economic importance tended to decline, even within a national setting. Moreover, the GDR's biggest city outside the (divided) capital was also characterised by a deteriorating housing stock because the limited financial resources available for urban restructuring were directed elsewhere, especially Berlin. Thus, during the last two decades of the GDR Leipzig increasingly became a 'notorious' example of the decay of residential areas and the outdated nature of its urban infrastructure (a factor which eventually contributed to the upheaval of 1989, which emanated from Leipzig). Against this background it is hardly surprising that after the war the population of Leipzig never regained its former level and, furthermore, steadily declined as of the early 1960s. Moreover, Leipzig became the GDR's *only* city with a decreasing population and by 1989 had no more than some half a million inhabitants. In addition, as of the early 1970s the inner-city districts had begun to empty due to people moving into the newly built housing estates on the periphery.

Table 1: City of Leipzig: area and population

	Area (km^2)	**Population**	**Density (pop/km^2)**
1699		15,653	
1797	17.7	31,847	1,799
1850	17.7	63,824	3,606
1871	17.7	106,925	6,041
1885	17.7	170,340	9,624
1900	58.5	456,156	8,798
1914	77.8	624,845	8,031
1933	128.6	713,470	5,548
1950	141.1	617,574	4,377
1975	141.3	566,630	4,019
1989	146.5	530,010	3,618
1993	148.5	490,851	3,305
1998	179.8	437,101	2,432
2001	297.6	493,052	1,657

Source: Stadt Leipzig (2002)

Notwithstanding its dwindling size and importance, and although its pre-war position couldn't fully be re-established, Leipzig was still a major urban centre in the GDR. It was home to the headquarters of 16 of the massive associations of state-owned enterprises (*Kombinate*) (only surpassed by Berlin with 20), it was a district capital famous for its publishing sector as well as its cultural life, and it had a unique position because of the Leipzig Fair, an important 'East-West gateway'. After German unification in 1990 the city

lost all these functions, although it still hosts one of the three regional councils of Saxony. Yet there is another issue which is perhaps even more serious. Like everywhere else in the former GDR, the economic and societal transformation of the 1990s inflicted severe structural changes on the city and the surrounding region leading to tremendous losses of industrial jobs. In connection with this, another drain on the city and its further development was the large number of inhabitants who left it after 1989. In fact Leipzig lost almost one fifth of its inhabitants within the space of under ten years. Approximately half of this loss was due to urban sprawl, while the other half was mainly accounted for by migration to the economically more prosperous western Germany.[4]

On the other hand, we have to take into account that Leipzig is still one of Germany's regional centres and shares with Dresden the position of eastern Germany's 'first' city – apart from Berlin, which is not entirely an 'east German' city. Leipzig is by far more successful in attracting investments and people than most other urban centres in eastern Germany. At any rate, so far the case of Leipzig seems to prove that the expectation that east Germany's cities could quickly re-establish their positions within the 'choreography' of German cities before World War II was too optimistic.

2. The regional context

Together with the city of Halle (pop.: 270,000), Leipzig forms the heart of an extended industrialised region which is characterised by a relatively high population density. The region's economic structure is largely shaped by the industrialisation of the first half of the 20th century. Firstly, a large cluster of chemical industry developed in several places near Leipzig (Böhlen, Espenhain to the south of Leipzig, Bitterfeld, and Leuna and Schkopau to the south of Halle) which in the 1930s became major sites of the 'notorious' IG Farben. And secondly, opencast mining began and became increasingly characteristic for the whole region. This gave the region a distinct economic profile and also led to spatial disparities

[4] Note that in the course of industrial urbanisation around 100 years ago, Leipzig (like many other industrial cities in Germany) experienced annual growth rates which outpaced even the astonishing speed of the recent population loss.

with the core cities, which continued to thrive (and absorb immigrants, albeit at a lower level than before the war) whilst the formerly rural hinterland suffered from 'peripherisation' and the over-exploitation of natural resources. After World War II, the economic central planning in East Germany led to the re-establishment of the chemical industry and the energy sector (opencast mining and coal-fired power stations) in the region in an effort to make up for the GDR's scarcity of natural resources. This, however, engendered the risk of a one-sided, imbalanced type of development. Moreover, the concentration on the chemical industry and the mining sector also meant a (re-)orientation towards environmentally destructive, intensive industries and eventually the (deliberate) creation of one of the most heavily impacted landscapes in Germany. In the city in particular, the mainly coal-fired heating in domestic households added to the resulting pollution, making Leipzig one of the dirtiest places in Germany. From the 1960s onwards the mining industry became increasingly dominant and land consuming in Leipzig's immediate surroundings, even 'burying' several former villages. Consequently, to the north and south of Leipzig the opencast mining pits approached the city's administrative boundaries by 1980 so that the scope for urban development was rather limited. Thus, Leipzig could only grow towards the east and the west, and this situation predetermined largely the future dynamics of urban sprawl. In the 1990s much of the region's industry was closed down and the remaining 'industrial cores' (comprising in particular the aforementioned big chemical plants) were streamlined and refurbished to bring them up to Western technological and environmental standards. This of course also resulted in numerous layoffs. Thus, the environmental situation in the region improved fundamentally within a few years. At the same time the region's economy weakened. These days, industry is no longer the region's main economic basis and especially the plants in the inner cities have almost all ceased to exist. For example, the number of industrial jobs in Leipzig decreased from about 100,000 in 1989 to approximately 10,000 in 2002. The gap left by the vanished industries has by no means been made up for by the growth of the local service sector.

All in all, the region of Leipzig and Halle (like the rest of eastern Germany) must be regarded as economically underdeveloped compared to the German and also the EU average. For instance, the gross national product (GNP) per capita of the Free State of Saxony is not even 70% of the west German average, and although the respective data

aren't available on a regional level we can assume that the figures for the Leipzig-Halle region are only slightly more positive. On the other hand, however, the Leipzig-Halle region is among the most privileged urban regions in eastern Germany, having huge assets in terms of both infrastructure and human resources and possessing a fairly good position in the Central European transportation network. Hence, compared to other regions in eastern Germany its economic prospects are rather good (cf. Rink 1995)[5]. Just to illustrate this point, recently there have been a number of successful efforts to attract major companies to open up industrial plants in Leipzig (Porsche, BMW), while the town of Schkeuditz, situated between Leipzig and Halle, contains a competitive international airport. The region is attracting inhabitants from other parts of the former GDR, although the number of 'immigrants' doesn't make up for those who have left for 'the West'. However, all in all it is difficult to predict whether the region's 'relative attractiveness' (together with the alleged 'footloose' character of modern capitalism) may prove to be a basis on which the strategic disadvantages in terms of the regional structure and economy accompanying post-socialist transformation could evaporate in the near future.

When investigating the dynamics of urban sprawl, a region's political i.e. administrative structure is of particular importance (not least because administrative units serve as the main entities for which data can be collected). In this respect the region of Leipzig and Halle faces two problems: Firstly, a border between two German federal states divides the region exactly between the cities of Halle (Saxony-Anhalt) and Leipzig (Saxony), and secondly on the Saxony-Anhalt side the administrative entities are much smaller (because local government hasn't yet been reformed). For analytical purposes we would therefore like to define two sub-regions:

a) the '<u>Leipzig region</u>' as the 'Saxon half' of the entire region of Leipzig and Halle (consisting of the city of Leipzig and the districts of Delitzsch, Muldentalkreis [the Mulde Valley] and Leipziger Land).

b) the '<u>urban region of Leipzig</u>' which comprises – on the basis of the administrative structure of 2002 – the city of Leipzig and 23 municipalities in its surroundings (excluding the [former] district towns of Delitzsch, Eilenburg, Wurzen, Grimma and

[5] The administrative units around Leipzig, Halle and Dresden are also about to lose their status as EU Objective 1 regions in the course of the enlargement of the EU.

Borna [some of which have lost their function as an administrative centre] which have long formed a ring around Leipzig) and which ends in the west at the border between Saxony and Saxony-Anhalt. This is the area of genuinely 'Leipzig-related' suburbanisation and urban sprawl.

This subdivision seems to be useful with respect to both substantial and pragmatic concerns:

- Firstly, together with its immediate neighbours the city of Leipzig forms a built-up area whose borders can easily be perceived. Moreover, the border between the cities of Halle and Leipzig has a very long history, having always divided two territories under different rule. These effects still persist since the functional links within the two different parts of the region are much stronger than those between them. For instance, the cities of Halle and Leipzig form their own 'commuter systems', while commuting between these systems is comparatively limited (cf. Regionaler Planungsverband Westsachsen 2000).

- Secondly, the region's administrative fragmentation poses a severe problem to a comprehensive study of urban development because the availability (i.e. the standards) of data on the respective territorial units differ remarkably in the region's two parts (Saxony and Saxony-Anhalt). Thus, comparisons are sometimes difficult and mapping often only makes sense for one (i.e. the Saxon) part alone.

3. The development of Leipzig's urban fringe

Those urban functions and facilities that either consume natural resources or are dependent on the provision of natural resources have always been located on the fringes or in the surroundings of human settlements (cf. Adam 1997; Harris/Larkham 1999). Thus, in terms of their ecological but also their socio-economic footprint, the problem of towns' and cities' radiation is much older than the recent debate on urban sprawl and its dysfunction. In the wake of modernity and industrialisation, however, a new quality of urban expansion has occurred that eventually led to the phenomena now being examined with such suspicion.

This urban expansion is hardly separable from the process of urban development in general. As far as the city of Leipzig is concerned, we can roughly distinguish between four periods of urban development, separated from one another by the most important turning points in German history of the 20th century: the two World Wars and German unification in 1990.

3.1. Industrialisation and urban expansion ('Kaiserreich')

Never before and never since have Germany's cities and towns grown as vigorously as between 1871 and 1914; even then Leipzig outstripped most other cities. Consequently, large areas had to be developed for urban expansion. To the west of Leipzig capitalist real estate companies began to develop huge areas for industry and housing, producing – inside and outside the urban boundaries of the day – the big industrial districts of Leipzig like Plagwitz/Lindenau and Leutzsch/Böhlitz-Ehrenberg (Scharf 1990, 348f.). North, south and east of the historical core, huge quarters of 'Wilhelminian' tenement blocks emerged which still lend Leipzig its characteristic urban appearance. However, the 'urban sprawl' of that period happened in an enormously dense, concentric manner (fortunately leapfrogging the ecologically precious and sensitive riverside forest along the Elster and Pleisse, which still stretches uninterruptedly from south to north-east through the urban fabric of Leipzig). In particular, around 1890 as well as around 1910 the dynamic development of Leipzig was supported by a 'generous' policy of extending the city's territory by incorporating the previously independent suburbs which had a largely urban character.

3.2. Rounding off the fringes ('Inter-war period')

Between the two world wars the urban fringe of Leipzig was further pushed outwards, although more moderately than before. As in most Central European cities of the time, major social housing projects were implemented on the periphery. Also, several suburban housing areas emerged, characterised by detached or semi-detached single family estate houses. In addition, the still growing city benefited much from the far-sightedness of the local administration in the 1920s, which made huge investments in the municipal infrastructure: roads, energy networks and canals were built or improved, some prestigious

‘exhibition palaces’ and high-rise buildings were erected in the city, and a new site was developed for the technical fair.

By around 1930 the concentric functional and spatial structure of Leipzig had evolved which is still characteristic of the city, consisting of 1) the city centre in the historical core, 2) the functionally mixed ‘inner districts ‘, 3) the residential ‘outer districts ‘, 4) the railway ring and the big industrial sites adjacent to it, 5) the zone of ‘green suburbs’ and ‘garden towns’, 6) the urbanised towns and villages on the urban fringe, often comprising huge road transport infrastructures, 7) the still independent villages and towns around Leipzig with strong functional links to the city (e.g. commuters), and 8) the rural ‘hinterland’ by and large unaffected by the urban development of Leipzig (Scholz 1966, 362). The allied bombings in World War II then led to a sharp decrease in the population in the severely damaged city as well as the ‘centrifugal redistribution’ of those who remained, since many of the devastated inner districts had been made uninhabitable.

3.3. Decay of the inner city and the ‘petrification’ of the fringes (‘GDR’)

The course of post-war urban development in Leipzig was peculiarly East German. Despite the heavy destruction brought by the war, both the economic and the spatial structure of the city were by and large preserved and hardly changed, including the decades to come. Until the 1970s the building of private homes was more or less impossible. Afterwards, the erection of single-family homes within or on the fringe of existing urban areas was no longer banned, although in terms of quantity this kind of suburbanisation did not reach a considerable extent. So, the GDR hasn’t experienced the kind of urban sprawl known from western countries and, being “(...) committed to the emergence of a new settlement pattern for mankind, (...) [was] preserving cities and centrality in a traditional sense” (Berry 1976, 12), whilst, ironically, “(...) liberal capitalism, with its acceptance of big cities and growth as the inevitable accompaniment of success, is seeing its cities disintegrate) (ibid.). However, between 1970 and 1990 around Leipzig a type of peripheral development had proceeded which could be regarded as the ‘socialist variant’ of urban sprawl. It could be described as a “golden triangle of jobs, slabs and dachas”, as Bernd Hunger, an urban planner from Berlin puts it. This ‘triangle’ consisted of large industrial combines (which dominated the demand for labour in the GDR), swathes of ‘mod-con flats’ (*Komfort-*

wohnungen) constructed from industrially prefabricated parts (a concrete technique perfected in the GDR which came to be known pejoratively as 'slab' housing) and weekend allotment bungalows of various shapes, sizes and colours (named *Datschen*, one of the very few Russian loan-words to make their way into the 'East German language'). The large housing estates were tantamount to a shift of the population within the urban territory towards its boundaries and, besides, meant an emphasising of the border-line between city and surroundings with the latter encompassing the weekend allotment. Note that also in the towns and villages around Leipzig various symptoms of the socialist variant of industrial Modernism occurred, for example industrially constructed apartment blocks, depots for the hire of farm machinery, bakery combines and *Kulturhäuser* (community arts centres).

3.4. 'Dwindle and sprawl' ('Post-socialist transformation')

According to the 'philosophy' that dominated post-socialist transformation especially in the beginning it was expected that urban development patterns in the 'East' would soon catch up with those in the 'West'. And indeed, immediately after the Berlin wall came down a sprawling development got underway in eastern Germany while towns and cities suffered a genuine bleeding of inhabitants (cf. Franz 2002; Herfert/Schulz 2002). Swathes of warehouses, industrial estates and residential parks around the former administrative boundaries of Leipzig display these dynamics most obviously.

Currently, however, we can observe an astonishing decrease in the dynamics of suburbanisation and sprawl – which in several cases virtually seems to have been transformed into its opposite. Although it might be too early to declare the recent processes of urban sprawl in Leipzig to be over, the last decade seems to have been unique in terms of suburbanisation and urban sprawl. In other words, it seems apposite to identify a period of 'intense' sprawl that lasted no more than about 10 years. At any rate, before we examine the different stages and dynamics of urban sprawl in this period in more detail (chapter 5), we should take a look at its circumstances (chapter 4). After all, the recent processes of urban sprawl (in Leipzig and elsewhere) mostly seem to have been caused by specific conditions which are at least in part unique.

4. Societal and economic conditions for urban sprawl in the context of post-socialist transformation in eastern Germany after 1990 ('Incentives to sprawl')

The social, economic and political conditions under which urban and especially suburban development has taken place in and around Leipzig since 1990 can be summed up in a nutshell as a specific scenario overlaid by the structural effects of German unification and societal transformation. This chapter tries to outline the resulting peculiarities of the general societal 'background' of sprawl. The more specific and variable conditions of sprawl will then be dealt with in connection with the following analysis of actual processes of urban development, because they have been changing continuously from 1989 until now.

4.1. Demography

According to 'classical' geographical theory, suburbanisation and urban sprawl are seen as a result of an ongoing process of both demographic growth and (previous) concentration. Both these factors, however, can't be assumed, neither for eastern Germany in general nor for the Leipzig-Halle region in particular – and this is the case even though the GDR had seen a centralisation of population i.e. a dominance of migration from rural areas to big towns and cities which 'sucked out' their immediate surroundings.[6] Since German unification, the population of eastern Germany in general and of Leipzig and its region in particular has been decreasing rapidly. This was mainly due to a heavy wave of 'emigration' to western Germany after travel restrictions were abolished in 1989; in 1989 and 1990 alone, about a million people moved from the (former) GDR to western Germany, some 32,000 from Leipzig. On the other hand migration from other parts of Germany to Leipzig or the Leipzig region is too small a factor to have any quantitative significance (cf. Herfert 1994; 1996).

However, an important part is also played by natural population decline with the number of deaths far exceeding the birth rate, especially after 1989 when births in eastern Germany immediately plummeted. The birth rate is now slowly recovering to its former level (cf.

[6] It must be borne in mind that although these days in western Germany and Western Europe suburbanisation and urban sprawl occur irrespective of the phenomenon of growth, too, the severe processes of 'urban dwindling' recently observed in eastern Germany are hardly known there.

Münz 1995; Niephaus 2003). This, combined with the extensive interregional migration, has brought about a kind of demographic revolution.

The population decline has not been accompanied by a proportional reduction in households. The number of households has remained almost unchanged due to a strong tendency towards smaller households (undoubtedly a response to the improved housing supply). In the city of Leipzig, for instance, between 1981 and 2000 the percentage of single-person households rose from about 31% of all households to more than 41%, whilst the average household size dropped from 2.3 to 1.9 persons.

Table 2: Households in Leipzig

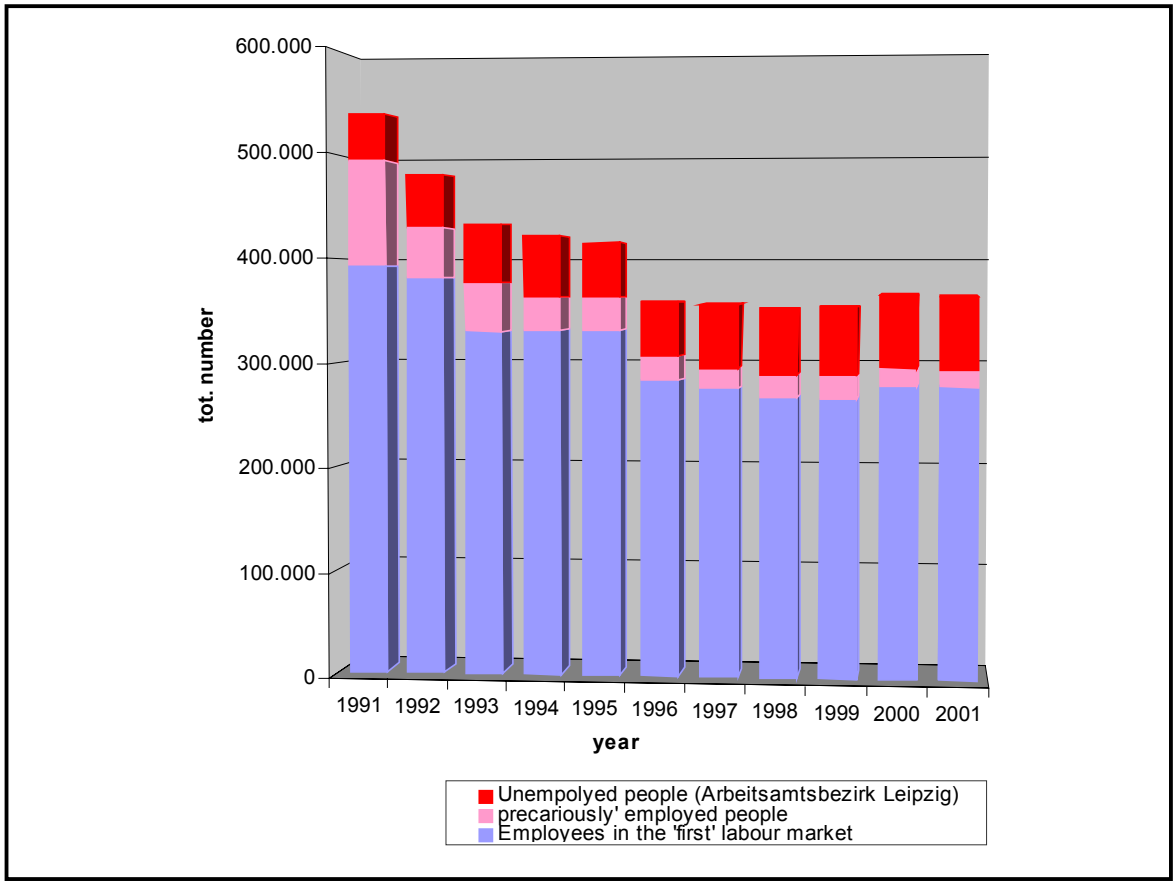
Households	**1981**		**1991**		**1995**		**2000**	
	Number in 1000	Proportion (%)	Number in 1000	Proportion (%)	Number in 1000	Proportion (%)	Number in 1000	Proportion (%)
Total number of households	273.3	100.0	243.8	100.0	231.7	100.0	264.1	100.0
One-person-households	74.5	31.4	87.1	35.7	86.2	37.2	112.2	42.5
Two-persons-households	68.2	28.7	84.0	34.5	74.4	32.1	88.9	33,7
Three-persons-households	53.3	22.5	42.6	17.5	40.9	17.7	39.9	15.1
Four-persons-households	31.5	13.3	24.2	9.9	24.6	10.6	20.2	7.6
Five and more persons	9.8	4.1	5.8	2.4	5.6	2.4	/	/
Average household size	2.3	/	2.1	/	2.1	/	1.9	/
Data: Statistisches Landesamt Sachsen								

We can assume that the number of households will also remain stable in the long term despite the decreasing population, since an increase in ‘single’ (i.e. ‘new’) households is still being observed. At any rate, this trend won’t lead to a considerable increase in the demand for housing as would be the case in a growth context.

4.2. The economy and the labour market

The lack of demographic growth in eastern Germany has been accompanied by a lack of economic growth. Hence another 'classic' driving force behind suburbanisation and urban sprawl is lacking (cf. Arlt 1999). The east German economy hasn't yet recovered from its integration into the 'Western hemisphere' and thus the world market. The sudden and almost unprepared opening of the east German market, its simultaneous split from the East European trading bloc Comecon into which it used to be tightly integrated, and the subsequent devaluation of the prevailing antiquated industrial technologies prompted massive deindustrialisation in virtually every east German region. The development of east Germany's economy is probably unparalleled regarding speed, depth and breadth of restructuring. Former industrial centres were converted into regional service centres in largely deindustrialised agglomerations while the remaining industries became highly dependent on companies from western Germany or other Western countries. Concurrently, the conditions for urban development changed fundamentally. Vast industrial areas inside and outside cities became urban brownfields waiting for reuse and thus contending with the new suburban enterprise zones for investors (mostly unsuccessfully). From 1989 to 1995 between 70% and 90% of the jobs vanished in the various branches of industry, resulting in the general shrinking of the labour market and the simultaneous mushrooming of unemployment. In fact the total number of people in work in eastern Germany dropped by about a third from 9.8 million to 6.4 million. (These figures would have been even worse if many women who were engaged in gainful employment in GDR times hadn't 'left' the labour market due to the lack of vocational alternatives to becoming housewives). Furthermore, the share of long-term unemployment in eastern Germany is particularly high. (The establishment of an extended 'secondary labour market', financed by job creation and welfare programmes, failed to bring unemployment rates down to a tolerable level.) At present (December 2002) the rate of unemployment in eastern Germany and also the Leipzig region is on the rise again, topping 18%. This rate probably needs to be supplemented by another 10% of people capable of gainful employment who are either employed on the 'secondary labour market' or excluded from unemployment figures owing to their participation in training courses. Hence all in all a considerable share of households are unlikely to figure as protagonists of urban sprawl.

Graph 1: The labour market in Leipzig and nearby areas (Arbeitsamtsbezirk Leipzig)



Data from Bundesanstalt für Arbeit

4.3. Income

Until 1990 incomes in East Germany were geared to the very low, 'socialist' level of prices. Also, in line with the socialist ideal of social equality, income differences were limited. During the course of German unification, the average income in eastern Germany increased enormously, roughly doubling between 1990 and 1994. This increase can only partly be interpreted as a genuine rise in income since it was part of a general transformation of the structure of monetary value and prices. Nonetheless, the purchasing power of those east Germans who had a job undoubtedly increased considerably in that period. However, these dynamics soon abated. Since as early as 1993 the average purchasing power of households in Leipzig has by and large stagnated (cf. Drechsel 2001).[7] One important reason for this

[7] The relative stagnation in incomes in eastern Germany also means that a gap remains between eastern and western Germany: incomes in eastern Germany have reached about 80–90% of the west German

has been the sharp increase in housing costs. Their adaptation to the conditions of a Western market economy was stretched over a couple of years, so that after a short delay rents for new housing rose considerably (especially in the second half of the 1990s), meaning the share of total average income among Leipzig households spent on rent has also gone up. Currently however, incomes stagnate and rents have been stable throughout the last years (cf. Brenke 2001). Moreover, we have to take into account that the average standard of dwellings and the average consumption of living space increased simultaneously (cf. Steinführer 2002, chapter 6). However, the most important aspect regarding the economic potential for residential sprawl on the 'demand side' is that households in eastern Germany were unable to accumulate wealth (i.e. 'Western' currency) before 1990 and so mostly still do not have the same economic resources at their disposal as their 'Western' counterparts.

Table 3: Average household incomes in Leipzig *by household size (in DM)*

	1991	**1992**	**1993**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Total	1.922	2.183	3.003	3.178	3.173	3.144	3.263	3.217	3.375	3.262
1 person	1.169	1.345	1.908	1.952	1.965	1.976	2.051	1.931	2.095	2.097
2 persons	1.898	2.157	3.010	3.303	3.484	3.503	3.633	3.654	3.779	3.751
3 persons	2.508	2.843	3.705	4.010	4.176	4.033	4.192	4.447	4.647	4.400
4+ persons	2.745	3.219	4.273	4.493	4.571	4.603	4.741	4.786	5.159	4.919
Source: Stadt Leipzig (2000c; 2001a)										

Together with their increase, incomes in eastern Germany have become more diverse. A very small group of people with very high incomes has emerged. However, eastern Germany is still almost devoid of an upper class, and the middle class is smaller there than in western Germany (at least if measured by the same criteria). On the other hand, the number of households with low incomes (with regard to the national average income) has grown considerably. In 1990 only 2% of the east German population were relatively poor i.e. lived in households with an income of less than 50% of the average; by 2000 this figure

level and this level hasn't changed much in recent years – notwithstanding the fact that east German households in general have less capital at their disposal than west German households.

had reached 10%, and by now it is probably around 12% (cf. Winkler 2002, 136f.). For instance, in Leipzig approximately 80,000 inhabitants – i.e. more than a sixth of the city's total population – either live in households that can be classified as poor or are in danger of becoming poor according to the criterion cited in the near future (cf. Stadt Leipzig 1999c). Note, however, that the degree of social inequality in eastern Germany is still smaller than in western Germany (cf. Otto/Siedler 2003).

4.4. Institutional framework I (Restitution)

German unification created a very specific institutional framework. The 'import' of entire administrative structures and institutions from 'the West', financial transfers and substitution of players, the start-up programme (Wiesenthal 1995) steered by money and law caused a kind of abrupt and total reversion of conditions for urban and regional development in terms of actors, potentials for action and institutional settings. Here, the legal institutionalisation of restitution is of particular importance; it meant and in places still means a very specific framework for suburbanisation and urban sprawl, rather distinct from the scenario of a free property market.

Restitution – i.e. the principle whereby expropriated owners were to be given their former property back rather than compensated financially; in short 'return takes priority over compensation' – exerts a heavy influence on the property market and has changed the structure of real estate ownership totally (cf. Dieser 1995). In Leipzig, for example, the total number of restitution claims has been around 30,000 and there are inner-city districts where about 90% of properties have been subject to restitution claims. All these claims have to be decided legally. Thus, restitution is in at least three respects conducive to urban sprawl:

- Firstly, restitution impedes the reconstruction of damaged buildings until their ownership has been clarified, which frequently takes longer than initially assumed. And even when a case has been decided, the new 'old' proprietors may lack the financial resources necessary to refurbish their property (cf. Häußermann 1997). The delay in urban restructuring caused by restitution claims provided a strong incentive to flee the city for 'nice' suburban dwellings.

- Secondly, restitution could have the effect of 'elbowing out' the local population. Many people were forced to search for new housing while others went because they expected or feared receiving notice to quit. A major reason for this was that requests for restitution were frequently the start of a long process of the (intermediate) trading of restitution claims and subsequently of 'restituted' property, which ended up in the total rearrangement of property structures (i.e. a predominance of 'anonymous capital' instead of individuals) and which often also led to an enlargement of plots (cf. Reimann 2000). In some places, restitution thus induced huge rifts in the social cohesion of communities. In the early and mid 1990s, when the majority of those who were affected by restitution claims to their dwellings were looking for new homes, the most attractive housing was usually found on the urban fringe.

- Thirdly, restitution impeded the development of retail facilities in east German city centres, where restitution claims often proved to be particularly complicated. So, even if it had been intended to open up shopping malls there no suitable sites would have been available in the early 1990s (cf. Franz/Richert/Weilepp 1997).

One instrument designed to mitigate the impeding effects of restitution is the *Investitionsvorranggesetz* or Investment Priority Act. In a nutshell, this law enables public authorities and investors to give a specific project preference over pending restitution claims for the promise of future compensation, provided all the other legal and financial prerequisites for the project concerned have been met. However, the 'positive' effects of the *Investitionsvorranggesetz* were by and large restricted to investments by big companies on vast greenfield areas, whereas investments by mainly smaller investors inside urban areas hardly benefited from it. Thus, instead of moderating the sprawl-conducive effects of restitution, this law actually increased them.

4.5. Institutional framework II (Local and regional planning)

One peculiarity of post-socialist transformation in eastern Germany was that the immediate integration of the former GDR into the Federal Republic resulted in a vacuum regarding the power of public authorities to steer spatial developments. In the early 1990s the organisations, instruments and rules of planning were still in a state of development and

often not yet fully able to function – let alone the products yielded by public efforts to steer spatial developments. Since legal requirements had changed completely, development plans, if they existed at all, gave only limited power to the authorities and thus had to be drawn up almost from scratch. Besides, the planning bureaucracy for the most part was, of course, fairly inexperienced as to both the legal framework for planning and the manner of 'Western' investors. All in all, this left a kind of 'vacuum' in spatial planning (cf. Häußermann 1997, 97). And this 'vacuum' was most pronounced in rural areas to which the open landscape around the cities belonged because this was where the human resources of public administrations were most limited and because the GDR usually hadn't left any planning regulations for these areas which could be used as a basis by the administrations (cf. Sahner 1996).

As a result, most projects conducive to urban sprawl were already underway before the public administration had any 'hard' instruments to hand which could be used to intervene (Häußermann 1997; Sahner 1996). Then again, it is perhaps doubtful whether planning, in particular regional planning, would have had a 'fair chance' of effectively countering the pressure of real estate investors and shopping-mall developers (who perceived east German towns and cities as a sort of 'uncultivated field crying out for investments') as well as of local councils and politicians, even if it had been armed with its genuine instruments. After all, generally speaking, almost all kinds of investment in east Germany were (and still are) all too welcome. Thus the activities of private investors were regularly received with open arms by public authorities and were frequently supported by local governance and planning policies which by and large were geared towards the assumption that urban sprawl was not only inevitable but indeed desirable. Moreover, federal programmes and certain tax regulations designed to attract businesses to eastern Germany came into force in 1990, making investments into the real estate and building sector there highly attractive for rent-chasing capital.

4.6. Sociocultural conditions

It's not just the institutional (i.e. legal) conditions for urban development which are peculiar in eastern Germany. The preferences of individuals (i.e. households) as to living and housing needn't necessarily be the same in eastern and western Germany. This is firstly due

to differences in social-structural figures and also, of course, economic resources. Eastern Germany, for instance, still has a higher share of females in the labour market while the proportion of owner-occupied housing is much lower. Yet more significantly, preferences as to living and housing may be influenced by general habits, opinions, values – in other words by everyday culture – and there is some evidence that significant differences persist between eastern and western Germany in terms of everyday culture which affect the decisions made regarding living and housing. In particular it is not certain whether the idea of living in 'suburbia' is as influential in eastern as it is in western Germany.

In the GDR, living as a family in a detached suburban house didn't serve as a societal – let alone a political – guiding star. So, in addition to being very difficult, becoming a 'suburbanite' neither raised a person's social status nor proved to be a practicable means of social distinction. Nevertheless, for particular groups suburban housing was attractive, especially families and elderly people. At least insofar, the thesis of a suburbanisation backlog is plausible. However, after 1990 the idea of becoming a suburbanite seems to have spread to those groups who previously wouldn't have thought of living in a suburban house. The increase in incomes and wealth might have been one reason for this; another was probably a kind of (re-) orientation of criteria (i.e. aspirations) in terms of living standards, which was supported by politics (cf. Leonhardt 1997). Little is known, however, about the extent to which the media and advertising created new preferences in terms of living and housing on the one hand, and whether or how the presumable persistence of sociocultural legacies will affect the process of urban sprawl on the other. A thorough empirical investigation into this point still needs to be done.

4.7. Political programmes and tax policies

In the course of post-socialist transformation in eastern Germany, the most effective 'incentives to sprawl' probably came from federal policy on the economy and housing in general, and on the development of eastern Germany in particular. A good deal of programmes and fiscal instruments were implemented in order to overcome a perceived shortage of housing and to support the establishment of private home ownership. In this vein, the 'Sonder-AfA' ('special expense for depreciation') proved to be a particularly important instrument, allowing a depreciation provision of 50% of the sum invested into

new buildings on the territory of the former GDR. By contrast, public subsidies for the creation of ownership in the old-building sector was only half as high (cf. Herfert 1997, 27). 'Sonder-AfA' remained in force until the end of 1996, after which the depreciation provision for new buildings in the following year was 25%. In addition, private households could and still can receive financial support (€2,500 annually) for investments into owner-occupied property throughout Germany. Furthermore, the mileage allowance to tax payers for travelling to and from work is another incentive for 'suburbanites' to settle in the urban periphery since it eliminates an important reason for opting to live inside a city. These regulations clearly thwart the political aim of achieving a more economical (i.e. 'sustainable') land-use policy and are therefore attacked in public debates time and time again – albeit with little effect.

Complementing the economic and housing policy of the federal government, the various federal states in Germany put forward programmes to support the erection of new housing. In Saxony, however, these funds were used up as early as 1994 and thus had only little impact on urban sprawl as a whole.

Concerning industrial investments, business development policy (*Wirtschaftsförderung*) harbours powerful incentives for urban sprawl. It is well known that enterprises and companies are attracted to eastern Germany by high subsidies (from both central and regional government in Germany as well as the EU) with no distinction made between different locations. Hence this instrument doesn't allow investments to be directed to plots ripe for urban redevelopment. Consequently, enterprises erecting new facilities regularly did so on greenfield sites (often in new enterprise zones) where no reconstruction work or decontamination was necessary.

4.8. Infrastructure investment

Public investments into infrastructures which are located in 'suburbia' don't merely contribute to urban sprawl themselves – they also set conditions for the general dynamics of urban development. Moreover, investments into the infrastructure of the urban core may foster urban sprawl – which is most obvious with the improvement of the urban road network, connecting a city with its surroundings. And after 1990 the Leipzig region, having

been largely ignored by the developmental policies of the GDR, was definitely one of the focal points of investments into the east German infrastructure. Hence Leipzig has an efficient transport infrastructure along with good social and cultural facilities. It is, however, difficult to assess whether the recent improvements in the infrastructure have had an effect on urban sprawl since they concern the whole of the region. True, it has for instance become easier to commute to the city centre; then again, the city centre itself became a much more attractive place to live. However, even more important than any infrastructure investment is probably the severe increase in car ownership, which mushroomed throughout eastern Germany immediately after the wall had come down.

4.9. Actors

Apart from the legislature which sets the framework for urban development (the importance of which can hardly be overestimated), four kinds of actors can roughly be distinguished who together form the specific 'choreography' of protagonists of suburbanisation and urban sprawl in (but not only) eastern Germany: firstly households, secondly economic actors (i.e. commercial companies), thirdly the public administration (in particular the planning bureaucracy), and finally real estate companies and developing firms trying to profit from an urban development in the periphery of towns and cities.

After 1989 most east German households sought to improve their living conditions, which on average were worse than in western Germany in terms of the available living space and fittings. (Note that the number of households remained stable despite a rapid decrease in eastern Germany's population since households became smaller.) Besides, especially in urban centres like Leipzig where administrative functions were concentrated, 'immigrants' from western Germany created an additional demand for 'western-standard housing'. Thus, a high demand for reasonable modern housing arose, and it was the urban outskirts that first provided the means to meet this demand.

The Leipzig region has seen not only the disappearance of the majority of its former economic actors (i.e. enterprises or companies) but also the appearance of new, more or less powerful investors. The vast majority of these investors come from western Germany and in most cases the firms concerned are rather large. As a result, several impressive sites have

been developed on Leipzig's fringe in recent years which also symbolise the regional economy's dependence on external economic agents. In addition, these investments have been facilitated by a strategy of authorities which was usually both generous in terms of subsidies and rather permissive. Hence, rather than solely proving Leipzig's cleverness in pursuing a 'pro growth policy, they also reflect the comparatively weak bargaining position of public authorities due to the region's economic problems. Consequently, in almost all cases the investors built on those plots (often in ecologically sensitive areas) they intended to develop right from the start, and the chances of achieving an economical use of land against their interests were almost zero.

As to the regulation of urban sprawl, those actors who are responsible for the administration of territorial units are particularly important. In Germany we find several such actors on different spatial levels often competing with each other. Besides the federal level, in the first place there are the *Laender*, some of which (like Saxony) have installed *Regierungsbezirke* as 'sub-units' of governmental power, hosting independent planning authorities for the regional level. On the local level usually there is a two-tier administration with *Landkreise* (districts) and local councils as the 'actual' local authorities. Big cities like Leipzig aren't part of a *Landkreis*; instead they have equivalent status. This complexity of polity typically makes concerted efforts by public administration to contain sprawl considerably more difficult. Concerning the Leipzig region, however, the situation is particularly intricate. Firstly, the neighbouring city of Halle builds an urban core with which Leipzig is in many respects contesting. Secondly, between the two cities, and very close to Leipzig's western edge, runs the borderline between the two *Laender* Saxony and Saxony-Anhalt, both of which are involved in the organisation of regional development in the area. Thirdly, most of the many local authorities in the area have been competing by means of often extraordinarily ambitious plans for the future development of their mostly very small territory. This situation led to sometimes bizarre phenomena of urban development especially in the early 1990s whose sustainability must be critically assessed (e.g. large shopping malls in the close vicinity of each other but hardly accessible by public transport, or too many industrial zones or residential areas in rather unattractive locations).

The lack of 'endogenous' capital in eastern Germany in general and the scarcity of autochthonous resources for urban development in particular had the effect that it was mainly 'real estate companies' (i.e. 'real estate investment funds') and developing firms

(such as big retail companies or banks) from western Germany which spread urban sprawl around Leipzig by initiating projects of various kinds in order to draw profit from urban sprawl itself. For instance, more than 70% of the capital involved in the preparation of new residential areas came from western Germany (Dangschat/Herfert 2001).

Table 4*: *Major investments in Leipzig and its immediate surroundings (since 1990)

Project	**Period**	**Est'd. total investment in €m**
Mainly public investments (urban fringe)		
Medical Scientific Centre including Heart Clinic	1992–1996	1,500
Leipzig-Halle Cargo Handling Centre	1993–1994	50
New Leipzig Fair Centre	1993–1995	660
New Leipzig Fair: Development of site	1993–1995	1,400
Leipzig Airport: New terminal	1993–1995	160
Leipzig Airport: New runway	1998–2000	500
Mainly private investments (urban fringe)		
Quelle mail–order warehouse	1992–1995	500
Central German Office and Administration Center', Schkeuditz	1992–1996	500
Porsche/car production	2000–2002	130
BMW/car production	2002–	1,400
Belantis Theme Park	2001–2008	40
Investments in Inner Leipzig		
Deutsche Telekom, including district office	1992–1995	580
Technical infrastructure (gas, electricity, water)	1993–1994	1,000
Redevelopment and preparation of enterprise areas	1993–1996	1,200
Various media–related projects of urban renewal (Prager Straße, Brockhaus Center, Graphic Quarter Atrium Complex)	1993–1996	900
Main Station Leipzig Mall	1996–1998	260
media –city/MDR	1998–	250
Source: Stadt Leipzig (1993), own investigations		

Hence we can state that urban sprawl in Leipzig was mainly induced by – 'exogenously created' – supply instead of demand. An important reason for this is to be seen in the political programmes and tax policies described above.

5. Recent phases of suburbanisation and urban sprawl in Leipzig

Within the space of no more than ten years, the urban periphery of Leipzig developed its current appearance, which has very little in common with the former distinct separation between urban and rural areas. However, in Leipzig (as in probably all other east German cities), the underlying dynamics of urban development haven't proved to be a continuous process. Instead, we have identified not only different facets of sprawl (which will be discussed in detail in chapter 6) but also different phases of sprawl – the latter being mainly due to the fact that the conditions of urban development were changing continuously. Three 'turning points' were distinguished which allow a differentiation of four phases of urban sprawl in the Leipzig region: the beginning of massive residential suburbanisation in 1992, the peak of residential suburbanisation in 1996 and the incorporation of many municipalities adjacent to Leipzig in 2000 into the core city.

5.1. 'Point of departure'

A clear difference in settlement density persisted until 1990 between the compact city of Leipzig and its surrounding area. Not only were parts of the city's fringe still characterised by its major expansion in the first two decades of the 20th century; also the housing policy of the GDR had produced immensely dense urban structures in particular on the periphery of Leipzig. Hence the population density differed significantly between the urban area of Leipzig and its surroundings. (Note, however, that in 1990 the density of population varied greatly in the municipalities around Leipzig. To mention a few of the extremes, the number of inhabitants per square kilometre was 945 in Böhlitz-Ehrenberg and 67 in Seehausen, both now parts of Leipzig, 645 in Markleeberg, and 45 in Jesewitz.) Hence, seen from the angle of spatial structure, the abolition of the central planning and planned economy

produced a high potential for urban sprawl. However, regarding the gradient in population density and the amount of land already used for suburban development, in 1990 urban sprawl in the Leipzig region evidently began almost from scratch. Yet judging by the history and functional structure of urban and regional land use, recent processes of urban sprawl in eastern Germany have been taking place on the basis of relatively persistent 'suburban structures' which occurred in the 40 years of the existence of the GDR – i.e. an industrial economic structure, and a separation of different urban functions (living, working and recreation) which also included the suburban zone (cf. chapter 3.3.).

Table 5: Population density in the Leipzig region (1990 and 2001)

	Area (km^2)	**Pop / km^2**	
		1990	**2001**
Municipalities adjacent to Leipzig ('suburbia')	743.69	187.67	217.28
Towns and villages incorporated into the city of Leipzig since 1990* (Leipzig – 'New Fringe')	145.12	318.59	476.24
Leipzig (1990 limits)	146.50	3,578.90	2,954.29
Data: Statistisches Landesamt Sachsen; Stadt Leipzig, Amt für Statistik und Wahlen; own calculations			

*Excluding Podelwitz Süd & Radefeld

5.2. 'Sprawl-phase 1' (1990–1992): The 'Wild East' and the beginning of sprawl

As soon as the German–German borders opened, thousands of investors (sometimes of doubtful reputation) flocked to the still existing GDR and endeavoured to gain a foothold on the emerging market. As far as the real estate sector was concerned, it was almost natural that the interest of investors and developers in eastern Germany was mainly focused on the fringes of major urban centres. After all, nowhere else could they expect sufficient demand for their goods and products – and nowhere else could they find enough affordable land which was free of restitution claims. This influx of 'foreign' capital affected the Leipzig region in particular since it was part of the biggest industrial agglomeration and thus the most promising regional market in eastern Germany (soon becoming famous for its huge

shopping malls which flew in the face of any attempt at serious regional planning and which nowadays, with offices, service and leisure facilities having sprung up around them, sometimes even display elements of 'edge cities'). In addition, public actors began to invest large sums into the improvement of infrastructures which led to huge projects in the suburban realm such as new highways and motorways.

In the Leipzig region a certain peculiarity contributed to these developments on the urban fringe: vast areas that had been earmarked for opencast mining were re-dedicated to other uses. Thus, plenty of space was made available north of Leipzig for the development of enterprise zones and large scale infrastructure investments, such as the new Leipzig Fair Exhibition Centre and the expansion of the Leipzig-Halle airport. South of Leipzig, it was intended to convert the mining landscape into a recreation area, with plenty of lakes in the former mining pits as a special quality. This process is still under way, making the whole area also attractive for residential suburbanisation (cf. Kabisch/Linke 2001).

The activities in east Germany's emerging markets in the real estate and housing sector largely benefited from a combination of factors that proved to be highly conducive to the spatial expansion of cities, towns and villages. In the early 1990s the 'vacuum' regarding the power of public authorities to steer spatial developments was most pronounced. Representatives and employees of the public administration were often rather inexperienced as to the new forms of 'bargaining', and were also very much focused towards growth. This gave private investors ample scope to get their own way.

As everywhere else in eastern Germany, the first investments to 'arrive' in suburban Leipzig were the 'notorious' shopping malls, soon followed by some industrial plants and the costly but subsidised preparation of (often huge) enterprise zones in many municipalities around Leipzig. These first phenomena of urban sprawl indicate that what could be prepared fastest were large-scale projects of urban development, including the development of vast commercial areas (especially alongside motorways). The planning and development of such sites with little internal differentiation could be pushed forward rapidly because their reduced complexity didn't place great demands on the investors, while their implementation was greatly facilitated by the weakness of the planning bureaucracy which allowed concerns that usually have to be considered to be neglected. Most shopping

malls in Saxony, for instance, stem from planning proceedings that were initiated between 1990 and 1992 (cf. Golle 2001).

In most cases, the development of residential areas (not only in 'suburbia') started a little later than that of commercial estates. However, from the very beginning of post-socialist transformation there were also efforts to develop residential parks around Leipzig. But before 1992 these efforts yielded only few results in terms of planning law and construction work.[8] On the other hand, there was an urgent need for urban reconstruction in the towns and cities of the GDR (which, according to many observers, was a decisive factor for the political upheaval of 1989) (Schmidt 1991). However, the reconstruction of the often heavily damaged stock of pre-war buildings proved to be difficult in the early 1990s (particularly due to the problem of restitution). Thus large parts of the Wilhelminian (Victorian) architecture remained in a bad condition, and rents for the relatively few refurbished flats were fairly high. Nonetheless, by the end of 'sprawl phase 1' the first new residential areas (mostly called 'parks') had emerged on the urban fringe of Leipzig, leading to a simultaneity of decay in the inner city and residential development on the fringe.

5.3. 'Sprawl phase 2' (1992-1996): Increasing suburbanisation in a dwindling, post-socialist context

Whereas 'sprawl phase 1' was dominated by commercial developments in 'suburbia' in both the retail and the industrial sectors, from 1992 onwards Leipzig experienced a period of heavy, exponentially increasing residential suburbanisation, which reached its peak by the end of 1996. New housing on the urban fringe apparently exerted great attraction on the city's population in particular in the first half of the 1990s. Major reasons for this can be found in some serious pull factors that diminished the quality of life in the urban core of Leipzig:

[8] Since commercial suburbanisation preceded residential suburbanisation in eastern Germany, the sequence of different dynamics of urban sprawl regarded as 'normal' was turned upside-down. The debate on urban development has emphasised this reversal of 'suburbanisation phases' in 'post-socialist eastern Germany' (Herfert 1997; Nuissl 1999). However, seen from today's perspective (which is somewhat clearer even though the period in question is almost contemporary), urban development in eastern Germany after 1990 appears from the start to have been a juxtaposition of different dynamics which are nevertheless largely independent of one another (i.e. the simultaneity of urban sprawl in

- Until the mid-1990s the real estate market in the Leipzig region was still dominated by the problems of restitution, a scarcity of housing in the inner city and, as a result, a considerable difference in rents for dwellings between the city and the outskirts, resulting in the latter becoming the only place where large parts of the population could afford a new home.

- Moreover, on the urban fringe a growing supply of housing was provided by real estate companies and investment funds. Hence this was the only place which could offer people the chance to live in a home and surroundings of 'Western standard', fulfilling a desire which was widespread among east Germans.

- Though quickly abating, the environmental impacts imposed on the entire Leipzig region by the 20th century's policy of industrialisation were still severe in the first half of the 1990s; pollution and other environmental problems were still the main drawbacks in Leipzig's reputation (cf. Scholz/Heinz 1995). However, this problem at least partly also concerned the areas around Leipzig.

Yet it wasn't just the pull factors listed above that were responsible for the impressive 'centrifugal' migration in Leipzig. An important driving force in connection with urban sprawl also consisted in the fact that for the first time many people with a 'traditional' inclination to live in 'suburbia' had an opportunity to live up to their aspirations. (Although a family home programme had existed in the GDR since the 1970s, in urban areas in particular it was only possible for a privileged few to build their own homes.)

Note the distinctive feature of residential suburbanisation around Leipzig especially in 'sprawl phase 2': whilst individual households normally build their own homes on previously developed suburban land, on the fringe of Leipzig development companies (from the 'West') organised and financed the whole process of suburbanisation – from planning to the erection of new dwellings (sometimes in more or less homogenous detached or semi-detached houses, more frequently in small [2- to 4-storey] apartment blocks) which were then sold or rented to 'suburbanites'. Thus, suburban housing around Leipzig consists

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different functional sectors) (cf. Aring/Herfert 2001; Herfert/Röhl2001). This, however, still means a considerable deviation from the route suburbanisation and urban sprawl took in 'Western' countries.

mainly of small and middle-sized apartment buildings, and almost 70% of the new dwellings are rented, making home ownership a comparatively rare phenomenon.

The described driving forces of suburbanisation were apparently stronger than the inner city's pull factors like the good public transport network and cultural infrastructure (as is probably always the case when suburbanisation and urban sprawl are to be observed). Concerning the particular case of Leipzig, however, it is remarkable that the city was hardly able to benefit from one specific advantage that usually accounts for the attractiveness of 'suburbia': whilst the region's biggest area of woodland is to be found in central Leipzig (Banzhaf 2000, 109), most of the suburban realm around Leipzig didn't contain much in the way of natural beauty. However, the situation has been improving considerably of late with the current flooding of disused opencast mining pits.

Interregional migration contributed only little to the growth of Leipzig's 'suburbia' in 'sprawl phase 2' (cf. Herfert/Röhl 2001). Nevertheless, some of the residential zones which were developed around Leipzig soon became famous for their high share of 'Wessis' (people from western Germany) which in places was as high as 40% (cf. Aring/Herfert 2001, 48; Herfert/Röhl 2001, 152). The problem was that, just like the 'indigenous' population, the many people 'imported' from 'the West' to join the new elite working in the administration and the economy also had difficulty finding decent, reasonable housing in the inner city and thus moved into the 'first generation' of suburban housing.

5.4. 'Sprawl phase 3' (1996–2000): The resurgence of the core city

Although at first glance the year 1997 didn't see the tide of inhabitants leaving the city due to suburbanisation stemmed, the year still marked a turning point in Leipzig's recent urban development. For the first time since 1989, the stream of residential suburbanisation no longer increased. At the same time the character of residential development in 'suburbia' changed. Whereas until 1996 the majority of new suburban dwellings were built in apartment houses, since then the detached single family house has become predominant. Rather than occurring by chance, this development reflects a decrease in incentives to drive urban sprawl forward as well as the accomplishment of the 'first round' of transformational dynamics in terms of urban development:

- With the ongoing resolution of restitution claims and the growing supply of refurbished inner-city dwellings, usually to a remarkably high standard, the housing markets in the central and the peripheral parts of the urban region levelled out. Finding a good home in the city of Leipzig was no longer more difficult or expensive than in 'suburbia'.

- The renewal of inner city districts became very effective in the mid-1990s, greatly improving the inner-city environment as a whole. Investments into retail and leisure facilities contributed further to the resurgence of the inner city.

- In the second half of the 1990s, temporary fiscal instruments and supportive programmes designed to intensify the influx of capital into the east German real estate market ran out. This concerned in particular the aforementioned "Sonder-AfA". On the other hand, investments into existing buildings could still be set off against taxable income by 40% (meaning a relative increase in the attractiveness of investments into the stock of old houses in the inner city).

- As the period since German rededication increased, the regulations imposed by planning authorities in order to contain the use of land for urban purposes became more and more effective. Hence with several years having passed since the sudden implementation of the 'Western' institutional framework in eastern Germany, municipal administrations, especially the regional planning authorities, managed to increasingly catch up on their delay in planning. Nevertheless, the latter still needed some more time to enforce its own planning instruments. Whilst the development plan for Saxony was set in force as early as 1994, the regional plan for Leipzig and its surroundings ("Regionalplan Westsachsen") did not becomes law until 2001.

The increase in rooms and living space the 'average inhabitant of Leipzig' was able to use gives a measure of the improved housing situation in the inner city (even though the figures in the table are based on the total housing stock of Leipzig, including unoccupied and/or uninhabitable dwellings) (cf. Table 6). In 'suburbia' the respective figures have been increasing as well, albeit at a slightly lower level: Whereas in 1999 inhabitants in Leipzig occupied more than 41m² per head on average' 'suburbanites' only had around 36m² at their disposal. This is due to both the inclusion of uninhabitable dwellings in the statistics (which are more frequent in Leipzig) and the higher share of families in 'suburbia'. Apart from

this, the development in average living space in the Leipzig region may be described as moderate. East Germans on average still only occupy around 80% of the living space of west Germans, and there is no sign that this difference is about to shrink (cf. Steinführer 2002, chapter 6).[9]

Table 6: Dwellings and living space in Leipzig (1971–1999)

Year	Number of dwellings	Total living space (in 100 m²)	Average size of dwellings (in m²)	Inhabitants per dwelling	Living space per inhabitant (in m²)
1971	216,551	13,497	62.3	2.7	23.1
1981	240,568	15,278	63.5	2.3	27.3
1989	257,399	16,208	63.0	2.1	30.6
1991	258,324	16,308	63.1	1.9	32.4
1993	261,445	16,423	62.8	1.9	33.2
1995	268,247	17,285	64.4	1.8	36.7
1997	277,812	17,836	64.2	1.6	39.9
1999	310,329	20,176	65.0	1.6	41.2
Source: Stadt Leipzig (1997b; 2000e)					

Not all circumstances of urban development, however, were apt to mitigate the dynamics of urban sprawl in 'sprawl phase 3'. Especially with respect to detached houses the 'potential to sprawl' in fact grew slowly but steadily since the comparatively well earning households had managed to accumulate the financial resources necessary to acquire property in the preceding years. This was the case against the background of a national housing policy which had always granted incentives to build new private homes by offering financial support for owner-occupied property. Also, the huge investments into the (suburban transport) infrastructure had made 'suburbia' a convenient place to reach.

Interestingly, by the end of the last decade the figures for urban sprawl in Leipzig and its region revealed not only a decrease in centrifugal forces but also the beginning of a further

[9] Data from Dresden indicates that in the course of suburbanisation living space per capita has indeed

differentiation of locations in the suburban realm. As well as the difference between those places where developmental activities had led to considerable economic and demographic effects and those where not much had happened, the former had also started to develop at different rates since some of the new residential and commercial zones (still) had attracted far more tenants than others.

5.5. 'Sprawl phase 4' (2000+): Consolidation

As part of Saxony's territorial reform act, the city of Leipzig was able to almost double its area by the end of the 1990s.[10] In a legal sense the problem of urban sprawl has thus at least partly been made up for since many residential and enterprise zones as well as retail facilities in 'suburbia' were 're-captured' by the central city, – although a good deal of suburban development has remained outside the city's borders, of course. But more importantly, the recent enlargement of Leipzig has been accompanied by a general halt in the flow to 'suburbia', at least as far as residential suburbanisation is concerned. One important reason for this development is doubtless that those who had been desperate to leave the city had mostly already succeeded in moving to 'suburbia' in the 1990s. Thus, the pressure of demand for suburban housing had gradually abated.

Since the year 2000, migration between Leipzig and what has remained of Leipzig's surroundings is more or less balanced, and there are not many more peripheral development-projects on their way in either the retail or the residential sector (since dynamics on both real estate markets can be described as very calm). Moreover, whereas the population figures of the inner city have been stabilising, we can currently observe the population of some of the new areas of Leipzig actually declining, reflecting that east Germany's cities experience a new quality of emaciation (cf. Herfert 2002b): the decline in population is gaining speed again and it is becoming increasingly problematic that the physical fabrics of towns and cities are too big for the decreasing number of people

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increased but hasn't reached the west German level (Müller et al. 1997).

[10] Thirteen municipalities were incorporated into the city of Leipzig in the 1990s, two of them only in parts. Five more areas launched an appeal against the recent territorial reform act in favour of Leipzig, but four lost and followed in 2000. Only the town of Markkleeberg has managed to remain independent. (Incidentally, the recent reorganisation of local authorities creates enormous problems for the analysis of statistical data.)

inhabiting them (cf. Bernt 2002). Against this background, the incorporation of large parts of Leipzig's periphery in the years 1999 and 2000 marks another turning point in the city's recent 'sprawl history'.

Although we can't yet observe a significant trend of people who had moved to 'suburbia' returning to the city, we can in some respects identify a kind of reversion of earlier dynamics in urban development:

- Many of the dwellings which had mainly been built due to the depreciation incentive remain empty. In some places, housing providers claim that 30–50% of the 'urban villas' currently in vogue have long been vacant. Hence the differences between segments of the peripheral housing market are becoming deeper. Especially the less attractive residential areas in 'suburbia' which lack direct access to unspoilt countryside or/and which offer too many (unpopular) apartment blocks are increasingly difficult to rent out and suffer from high 'vacancy rates'. In some places we can even observe signs of the social decay of suburban housing estates (cf. Empirica 1996; Herfert 2000).

- An increasing number of insolvencies of suburban home-owners is another rather dramatic sign of the decreasing dynamics of urban sprawl. Many owner-occupiers around Leipzig overstretched themselves financially to realise their 'suburban dream' and have recently been unable to make their mortgage repayments, for example owing to unemployment. This problem is further aggravated by the fact that prices on the regional housing market have fallen considerably, creating negative equity (i.e. selling the property may not suffice to pay off one's debts).

- Some analysts have even observed signs of 'de-malling' (Herfert/Röhl 2001). Sales in the peripheral shopping centres are stagnating or decreasing, whereas in the city several malls and a big department store have been successfully (re-) established. This threatens the very existence of some less attractive suburban 'retail clusters' whereas others seem to be able to keep up with their new competitors by further investments (cf. Jürgens 2000).

The abatement of the urban sprawl around Leipzig seems to be the inevitable consequence of reduced incentives to sprawl as well as a reduced demand for suburban housing since many of those keenest to escape the city have now been able to do so. Both have (been

discussed in connection with 'sprawl-phase 3' and have) apparently led to a diminished 'sprawl potential' – i.e. a decrease in the number of households in Leipzig that intend to leave the city for 'suburbia' in the near future.

Table 7: 'Sprawl-Potential': Proportion of households in Leipzig intending to move (%)

	1991	**1992**	**1993**	**1995**	**1997**	**1998**	**1999**	**2000**	**2001**
Determined to move	14	11	10	18	17	16	13	15	14
Intending to move	29	24	28	22	26	25	27	26	25
Total (= 'Willing to move')	43	35	38	40	43	41	40	41	39
Willing to move to 'suburbia'	/	16	20	27	26	20	15	12	13
Source: Stadt Leipzig (1991; 1992;1994; 1995; 1997a; 1999; 2000a; 2000b; 2001a)									

Furthermore, in one decisive respect we can now even observe a reversion of sprawl incentives. Around the turn of the millennium, rents for modernised flats in the inner city fell to an incredibly low level (cf. Table 8). Whereas the rent per m^2 for a modernised flat was up to almost DM17 in 1997, by 2001 it was almost impossible to find tenants who were willing to pay more than DM13. This reflects a growing surplus on the housing market. At the moment there are about 60,000 empty dwellings in Leipzig, accounting for 17% of the city's housing stock. Although some 20,000 of these dwellings aren't yet habitable, the vast majority of them are still being offered on the housing market for rent. Thus, these days in Leipzig comfortable flats in good locations are comparatively cheap – at least cheaper than in almost any other big German city and very often even cheaper than in the city's periphery.[11] The market for offices displays a similar pattern. However, the general problem of a dispersed settlement structure and the resulting ecological impacts persist, of course.

[11] The rents for unmodernised flats as well as for flats in 'slab housing estates' have slightly increased in recent years, albeit at a very low level. This, however, is of little importance for the processes in question here, because it isn't the lower segments of the housing market where there is competition between the city and 'suburbia'. Nonetheless, the continuous reduction of cheap housing due to ongoing modernisation considerably diminishes the supply of housing for the least solvent social groups (cf. Steinführer 2002).

Table 8: Average rents in different types of dwellings in Leipzig 1997, 2001[12]

	Average rents per m² in DM (median)	
	April 1997	**Jan. 2001**
1. Built before 1918		
- WC outside flat, no bathroom or central heating, simple standard	4.32	4.38
- WC inside flat, bathroom or central heating, good standard	12.35	9.95-10.40*
2. Built 1919-1945		
- WC inside flat, no bathroom or central heating, simple standard	5.23	5.55
- WC inside flat, bathroom and central heating, good standard	11.83	9.50-10.40*
3. Built 1946-1960		
- WC inside flat, bathroom and central heating, average standard	8.12	8.20
- WC inside flat, bathroom and central heating, good standard	9.45	9.21-9.30*
4. Built 1961-1992		
- WC inside flat, bathroom and central heating, simple standard	5.98	6.15-6.31*
- WC inside flat, bathroom and central heating, good standard	8.62	8.91-9.50*
5. Built as of 1993		
All flats (common standard)	14.72-16.64*	11.58-12.93
Source: Steinführer 2002 (according to the 'Mietspiegel' of the city of Leipzig)		

An analysis of land prices in the Leipzig region displays a similar pattern to the housing market. Table 9 shows the recommended prices for land in selected areas. Firstly, the prices vary according to the kind of development and building permitted on the respective plots of land, of course. A good deal of variation in prices, however, could also be explained by differences in location. But, by and large, this variation has been decreasing over time, gradually reducing the differences in land prices between the inner city and suburbia.

[12] There is no data on average rents before 1997. This is mainly due to the fact that then the housing market for the most part was still regulated. However, the analysis of ing advertisements for rented flats in the local newspaper indicates that in the 1990s rents for modernised flats were at least as high as in 1997, and mostly higher (cf. Heydenreich 2000; Steinführer 2002).

Table 9: Prices for land in selected places of the Leipzig region (in DM /m²)[13]

	Structure & Function	Place	Average price per m² in DM					
			1992	1994	1996	1998	2000	2001
Leipzig in its 1990 limits	Block structure	Gohlis Mitte	450	470	430	430	410	410
		Südvorstadt	550	650	700	650	600	560
		Waldstraße	1.000	1.000	900	1.000	900	850
		Plagwitz	600	600	570	500	380	360
	Slab housing'	Grünau Mitte	300	320	320	320	300	280
	Small detached houses	Probstheida	300	310	310	310	270	290
		Meusdorf	150	160	160	220	220	170
		Portitz	250	220	220	220	180	180
		Paunsdorf Mitte	280	260	260	230	230	240
		Wolfswinkel	250	260	260	260	260	330
		Knautkleeberg	150	180	200	170	170	170
	Enterprise area	Plagwitz	150	140	140	140	140	140
		Eutritzsch	200	240	240	220	200	190
Leipzig 'new fringe'	Small detached houses	Seehausen	80	120	150	150	150	140
		Wiederitzsch		110	270	330	330	330
		Engelsdorf		110	180	190	220	220
	Enterprise area	Baalsdorf	200	70	90	90	90	85
Suburbia	Mix	Taucha: Dewitz	40	40	40	140	160	
	Housing	Taucha: Deuritzer Straße	100	100	110	110	160	
		Taucha: Leipziger Straße	200	200	180	170	150	
	Enterprise area	Taucha: Portitzer Straße	95	150	210	210	120	
	Mix	Schkeuditz-East	60	60	170	120	120	
		Schkeuditz-South	100	100	100	100	100	
		Schkeuditz Centre	210	200	200	200	200	
	Enterprise area	Schkeuditz: Flughafen	40	55	120	90	80	
	Mix	Machern: Schloßplatz	75	110	110	110	110	110
	Housing	Machern: Zeitzer Weg	65	115	200	200	200	200
		Machern: 'Schloßblick'		180	180	180	180	180
	Mix	Brandis: Bahnhofstraße	65	75	75	75	75	

Data:[14] *Stadt Leipzig; Muldentalkreis; Landkreis Leipziger Land; Landkreis Delitzsch*

[13] The municipalities that have been incorporated into Leipzig since 1990 figure as 'Leipzig – new fringe'. This corresponds to their largely 'suburban' character. If today's administrative structure had been used in order to distinguish between the city and suburbia, processes of suburbanisation and urban sprawl would have been hidden by the calibre of spatial entities.

[14] In Germany local councils are obliged to monitor the prices paid in actual land purchases in order to provide a guideline for future transactions. Hence the average land prices in the different parts of a municipality are calculated at regular intervals.

6. Dynamics and impacts of urban sprawl in a context of stagnation and decline

This chapter aims to provide a comprehensive discussion of various issues and impacts of urban sprawl in the Leipzig region. It thus refers to the results to which the aforementioned phases of sprawl – i.e. the dynamics inherent to these phases – have led.

6.1. Spatial patterns of urban sprawl

The recent expansion of towns and cities in eastern Germany has mostly taken place in a more or less concentric manner.[15] This was possible because of the sharp contrast between urban and rural areas that persisted in the GDR. In the Leipzig region, however, a somehow peculiar pattern of development has been observed. Since the industrialised area around Leipzig was already fairly densely populated on the one hand, structured by vast opencast mining pits on the other hand, the spatial structure of sprawl of the 1990s was comparatively disperse: There occurred phenomena of ribbon development (mainly due to the erection of multi-storey buildings) and leapfrogging (mainly due to detached housing) (Herfert 1997, 20; Herfert/Röhl 2001, 154), so that right from the start urban sprawl reached areas that weren't (and still aren't) directly adjacent to Leipzig. However, compared to the peripheries of more prospering urban regions in Germany such as Munich, Frankfurt or Stuttgart, the range of urban sprawl is still rather limited and doesn't exceed a ring of about 25 km in diameter around Leipzig City Hall. It is striking that the small urban centres (with a population of around 20,000) which surround Leipzig at a distance of 20–25 km away and which, according to the regional planning authorities and their concept of "decentralised concentration", ought to be regional growth poles have not only failed to benefit from the dynamics of urban sprawl, but moreover themselves have suffered from a kind of small-scale suburbanisation (cf. Herfert/Röhl 2001).The effects of suburbanisation and urban

[15] Unlike the recent development in eastern Germany, in western Germany different suburban zones have emerged within the past few decades. In the 'inner suburban zone' most scholars have observed a kind of 'mature sprawl' – i.e. an urbanisation of suburbs in terms of functional and social differentiation. Thus, a weakly controlled, land-consuming and mostly monofunctional ribbon and/or leapfrogging development of urban structures takes place mainly in the 'outer zone' of urban regions in western Germany – a rather famous object of investigation in this respect being Frankfurt and the Rhine-Main region. Cf. for instance Keil/Ronneberger (1994) or Thomas Sievert's *Zwischenstadt* (1997), a book that has come in for a great deal of attention in the German discussion on urban development and planning.

sprawl are by no means distributed equally around Leipzig. Instead, we can observe different trajectories of different communes. East of Leipzig, where the region's most attractive parts in terms of environmental qualities and countryside are situated, we find those communes that clearly benefited most from residential suburbanisation (cf. Herfert 1996; 1997; Regionaler Planungsverband Westsachsen 2000). By contrast, especially in the heavily impacted southern surroundings of Leipzig, we find some areas that have hardly participated in the process of residential suburbanisation at all.[16] To the north-east and, again, in particular the south of Leipzig we can also find areas whose population had considerably grown by the mid-1990s due to the development of new residential areas, but whose population has been in decline over the past few years. The economic 'growth poles' are mainly situated in the west (motorway) and the north (airport) of Leipzig. This, however, is a rather bold description; in fact we can find every kind of suburbanisation and urban sprawl (residential and commercial) almost everywhere in the suburban realm around Leipzig.

6.2. Land use change

Due to a dramatic increase in urban land use, between German unification and the turn of the millennium the 'urban landscape' in eastern Germany developed its current appearance which indeed has almost nothing in common with the former situation. In and around Leipzig the amount of sealed land used for settlements, roads and industrial estates etc. increased tremendously. The conversion of land was particularly intense in some distinct areas. In the corridor between Leipzig and the neighbouring city of Halle, the quantity of sealed land more than doubled, mainly at the expense of farmland (cf. Banzhaf 2000). This is an extreme figure, of course, since the corridor concerned contains the airport and a main motorway interchange, and so is probably the region's most attractive part for commercial investments. Nonetheless, the designation of land for 'urban' purposes that took place

[16] In the south the town of Markkleeberg has a peculiar role. Traditionally home to middle and higher income groups, thanks to the arrival of 'suburbanites' from Leipzig it has recently become one of the few towns in eastern Germany to actually grow.

throughout the whole Leipzig region went far beyond the usual limits and is to be assessed as highly problematic in terms of ecology and sustainability.[17]

6.3. Migration and residential suburbanisation

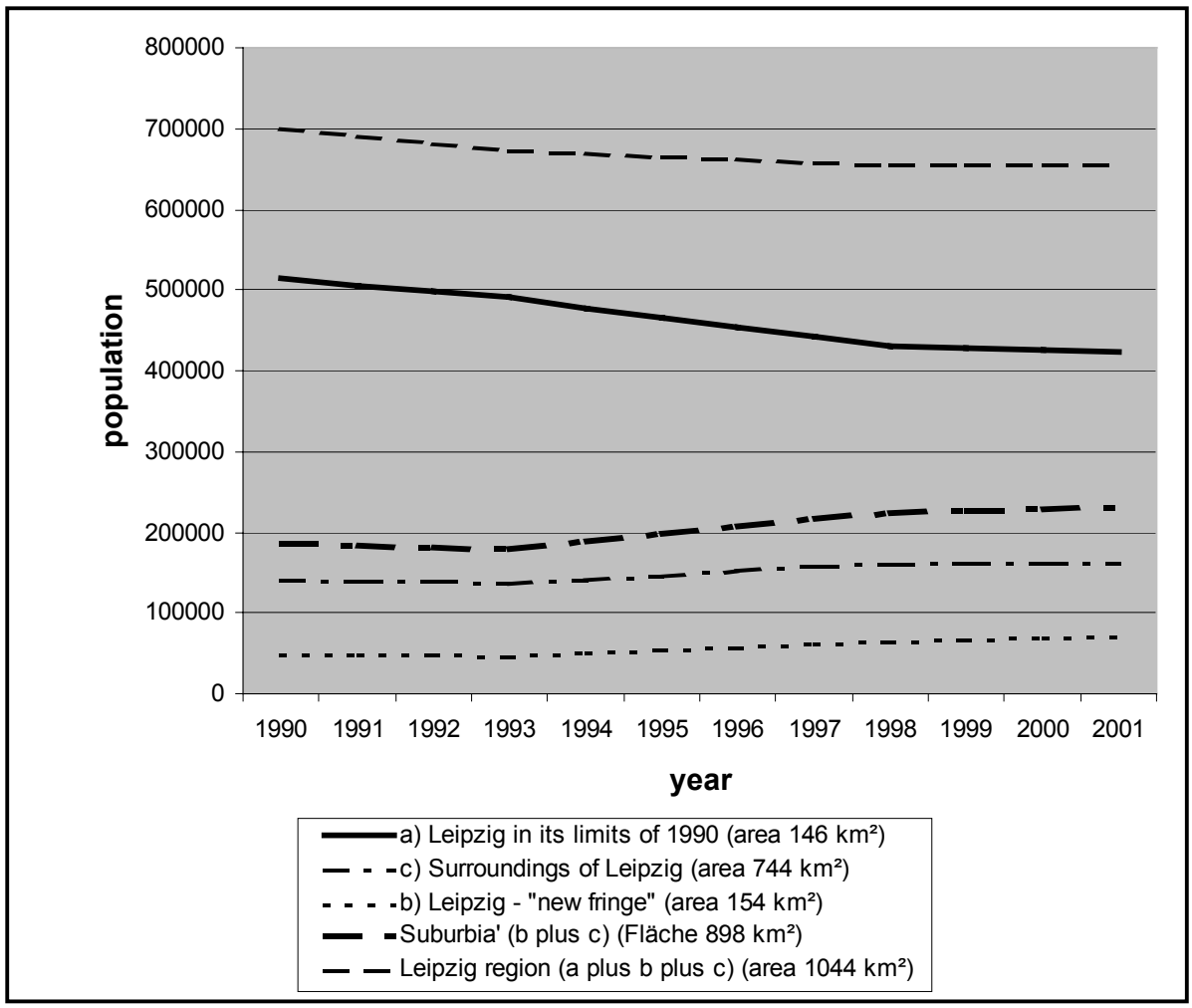
In past years, migration has taken place not only out of but also into Leipzig and its region. An increasing number of people have come from other parts of Germany in order to work or study in Leipzig, and following the integration of eastern Germany into the 'Western world' migrants from other countries and continents have also been coming. The majority of 'newcomers' to Leipzig have chosen to live in the inner city (if they had a choice at all). This influx, however, is far too small in terms of quantity to make up for the dominant migration pattern in the Leipzig region, which was shaped by the general drain of people from eastern to western Germany throughout the 1990s and thus shouldn't be seen as an important (push) factor in connection with urban sprawl. Instead, residential suburbanisation in the Leipzig region has been synonymous with an intra-regional redistribution – from the centre to 'suburbia' – of a generally shrinking population. This means that the effects of de-concentration, inherent to urban sprawl by definition, have been severely augmented.

The graph illustrates that between 1990 and 2001 inner Leipzig lost more population than the suburban zone gained. And what's more (though not shown in the graph), the suburban zone gained population from the urban core in all demographic groups – i.e. including single-person households and elderly people, who wouldn't normally be conceived of as 'typical suburbanites'. So, concerning residential suburbanisation, in the 1990s dynamics can be identified in Leipzig even exceeding those observed in western Germany at the peak of suburbanisation in the 1960s and 1970s. Since then, however, the picture has changed: the development in population numbers in the suburban realm as well as the inner city has become rather balanced (while due to the region's relaxed housing market the level of mobility is still high). Also, it is striking that the population of the surroundings of Leipzig is still smaller than in 1971, even though it is now much more dispersed! Hence, in

[17] Many case studies on the ecological effects of land conversion have been performed, not least in the Leipzig region (cf. the studies in Breuste [1996] and [1997]; Krönert 1994; Freyer et al. 1996; Müller 1997; Wagler 1998). However, an integrated assessment of this topic has yet to be carried out.

population terms urban sprawl hasn't yet entirely made up for the process of urbanisation and 'sucking people in' from rural areas so characteristic for spatial development in the GDR. However, this finding needs to be differentiated as to the heterogeneity of 'suburbia'.

Graph 2: Population in the Leipzig Region*[18]*:



Data: Statistisches Landesamt Sachsen; Stadt Leipzig: Amt für Statistik und Wahlen; own calculations

Within the suburban zone around Leipzig we can distinguish between those places that have benefited considerably from recent residential suburbanisation and several others that have only grown slowly, if at all. In particular, east and west of Leipzig we find several

[18] Cf. footnote n13.

municipalities that grew at a rate of around 100% in the first half of the 1990s (cf. Herfert 1996). On the other hand, some places were afflicted by a high rate of unoccupied housing right from the start (cf. Empirica 1996, 45ff.), and some of these places have even been hit by processes of 'suburban' social decay. Consequently, the local population's assessment of living conditions in different places varies remarkably. Although those who have moved from Leipzig to the periphery often describe the quality of life in their new home towns and villages as being rather high, there are also places – in particular the most densely built 'residential parks – where several new inhabitants are rather disappointed with their environment. This, of course, seems to be largely a reflection of the environmental and architectural quality of new housing in places around Leipzig (cf. Empirica 1996).[19]

6.4. Residential suburbanisation and segregation

One peculiarity of urban sprawl in the Leipzig region concerns the architecture of recently built residential areas. A new segment in the housing market has been created, the suburban multi-storey building, which contrasts with the detached houses that 'traditionally' dominate the suburban realm (cf. Herfert 1996, 39f). The emergence of this market segment was for the most part induced externally. In particular around Leipzig, fiscal incentives to invest in the east German housing market resulted in the building of 'urban' architecture (often of low quality), because investors had pinned their hopes on the assumption that the city would thrive in the future. Apart from the fact that it looks as if many suburban settlements mainly consisting of apartment blocks will be out of step with demand in the long run (Herfert/Röhl 2001), this has led to a kind of demographic dichotomy as to residential suburbanisation. The inhabitants of the new suburban apartment houses are fairly mixed in terms of both their socio-economic status and their demography, although young couples aged between 25 and 34 are clearly over-represented. By contrast, as to the privately owned, suburban single-family homes, we observe the demographic structure one would expect with families with one or two children (i.e. the age groups 5–15 years and 30–45 years), higher education and above-average income prevailing (Herfert 1996, 36; 1997, 25; Herfert/Röhl 2001).

[19] A similar suburban patchwork-pattern has been described for other urban regions in eastern Germany (e.g. Franz 1995 [Halle]; Nuissl 1999 [Berlin]; Ott 1997 [Erfurt]).

The mixed demographic structure of Leipzigers who recently became 'suburbanites' is only partly apt to back up the common assumption of an increasing social (-spatial) polarisation in the course of suburbanisation and urban sprawl (cf. Herfert 1997). The labour market figures, for example, reflect that urban sprawl in the Leipzig region hasn't meant a profound form of socio-spatial differentiation i.e. segregation (cf. Table 9). Although the population in the core city has a higher share of unemployed (i.e. a smaller share of employed people) than the suburban realm, the differences aren't very impressive; in particular, they are negligible compared to the 'intra-suburban' variances. For instance, among the various areas in 'suburbia' the number of employees per 1000 inhabitants varies between 150 and 680, and, similarly, the number of unemployed per 1000 inhabitants is between 68 and 109 (compared to as few as 30 in some recently incorporated parts of Leipzig!).

Table 10: The labour market in the Leipzig region (2001)

	Employees per 1000 Inhabitants	**Unemployed persons per 1000 Inhabitants**
Municipalities adjacent to Leipzig ('Suburbia')	330 (between 150 and 680)	80 (between 68 and 109)
Leipzig (in its current limits)	410	88
Data: Statistisches Landesamt Sachsen; Stadt Leipzig, Amt für Statistik und Wahlen; own calculation		

However, although it is not only the 'classic suburbanites' who've moved to 'suburbia', the recent suburban developments around Leipzig indirectly support a kind of segregation within the city of Leipzig, too. Firstly, residential suburbanisation has not only contributed to an extreme relaxation of the housing market (seen from the dwellers' perspective) which is normally judged to be a remedy for socio-spatial polarisation, but has also considerably enhanced the general problem of housing vacancy. And the latter has undoubtedly led to a differentiation of inner-city districts by processes of filtering down.

It is hardly the case that the better off drive out the local population from the most attractive inner city districts (because, so far, even there the rents are quite reasonable). Hence the social structure of the more attractive and more affluent parts of Leipzig is (still) rather

mixed. But on the other hand, it is only the most disadvantaged social strata who remain in the less attractive areas of the city. There accelerating dynamics of erosion can be seen, the most visible sign of which is the closure of infrastructure facilities due to a lack of uptake (i.e. a lack of consumers) – to the further detriment of local attractiveness. Moreover, just recently the long-expected stigmatisation of large housing estates and an increasing trend of middle-class strata to leave these estates have emerged, contributing disproportionately to the current migration from Leipzig to 'suburbia'. Nonetheless, the dynamics of socio-spatial differentiation in the urban region of Leipzig are on the whole still less vibrant than in the urban regions of western Germany, even though they undeniably exist, too.

6.5. Motives and choices of 'suburbanites'

In order to obtain insights into the motives and choices of 'suburbanites', several studies have been conducted on urban development and suburbanisation in eastern Germany. They include surveys among people who had recently moved into the urban periphery (e.g. Harth/Herlyn/Scheller 1998; Müller et al. 1997) – and Leipzig has been a target of major interest in this respect (e.g. Herfert 1996). It has been shown that the main incentive for private households to 'sprawl' was the opportunity to considerably improve their dwelling standards in 'suburbia'. Concerning the more solvent 'suburbanites', the possibility of acquiring property was also important. On the other hand, the specific quality or character of different places in the suburban realm, in particular the proximity to open countryside, proved to be of minor importance, albeit not negligible. And the same has been true for the motive to extend one's living space because, in contrast to expectations, especially in the early 1990s those who moved from the inner city to 'suburbia' have only increased their living space moderately (cf. Aring/Herfert 2001).

In a study on residential suburbanisation in the Leipzig region Günter Herfert (1996), distinguishing between 'suburbanites' living in single-family homes on the one hand and in apartments on the other has produced some interesting insights into the individual rationales for 'sprawling behaviour'. Whereas the first group (single-family home owners) mainly cited their wish to become property-owners (approx. 65%) and – less pronouncedly –the poor environmental standards in the inner city (approx. 45%), not many stated they sought to improve their living conditions (approx. 25 %) which, in their case, already used to be

above-average. In comparison, a third of the latter group (tenants in apartment houses) complained about the bad living conditions and poor fittings of their former homes (approx. 33%). In this group, too, the sharp increase in rents (in the 1990s) was quoted as a major reason for moving to the urban periphery (approx. 30%). One interesting aspect thrown up was that many 'suburbanites' of both groups claimed they would rather have stayed in the inner city if their living requirements could have been met there. This concerns even more single-family home owners (approx. 40%) than apartment occupants (approx. 33%). Moreover, the wish for segregation from former neighbours was definitely of minor importance in the heyday of urban sprawl in Leipzig in the 1990s (cf. Aring/Herfert 2001, 54).

Against the background of the reported findings concerning the motives for becoming a 'suburbanite', we can seemingly identify two different 'ideal types' which could roughly, though not completely, be assigned to the two types of suburban dwellers (apartment tenants and single-family home owners):

- Especially in the early 1990s there was a widespread desire in eastern Germany to improve living conditions in terms of domestic fittings. (A similar – though in terms of quantity almost negligible – demand for housing came from the élites from western Germany who'd moved to the urban centres of eastern Germany, where administrative functions were concentrated.) Sometimes, additionally, people wished to increase their living space and/or become owner-occupiers. The connection of these types of preferences to urban sprawl, however, is somehow contingent since the people concerned don't pay much attention to the location of their dwelling.

- Many suburbanites living around Leipzig seem to have a 'traditional' inclination (that could probably be found everywhere, at least in the industrialised world) to live in a detached suburban single-family home. They, of course, necessarily and 'deliberately' contributed to the recent processes of suburbanisation and urban sprawl.

6.6. Commercial suburbanisation

Around 45% of the land in the Leipzig region dedicated to urban development by planning laws and building regulations between 1990 and 2000 was designated as enterprise zones. Today, about 80% of the area covered by these enterprise zones is in use. The remaining 20%, however, is accounted for by plots of land and also a few entire enterprise zones ready for building which are still void (called 'illuminated pastures' in the jargon of German planners).

The firms that have settled on the new enterprise zones mostly came from other parts of the region (75%), in particular the city of Leipzig (40%), where they had given up their former sites. Investments by firms of a different (mainly west German) provenance (including some famous 'big' projects) only account for about 25% of the economic development on the fringe of Leipzig (cf. Usbeck 2000) – but note that this figure doesn't include the huge factory currently being erected by car maker BMW north of Leipzig. A main incentive for firms to bring plants and facilities to 'suburbia' was that land (necessary for expansion) was not only available but usually also cheaper there than in the city, where unsettled property claims or intricate property structures meant an additional obstacle to quickly redeveloping or reusing abandoned industrial sites. The transport infrastructure (motorway) represented an additional 'location factor'.

Not surprisingly, in connection with the economic development of 'suburbia', the number of jobs in the suburban realm has also increased. The density of jobs in the enterprise zones around Leipzig is nevertheless comparatively low. This is mainly due to a predominance of the wholesale, logistics and construction sectors, while the more labour-intensive productive sector is underdeveloped. Besides, many office blocks planned and built in the expectant times of the 1990s are still vacant, and the situation is now so acute that some of them are shortly to be demolished.

6.7. Commuting

Within the last decade the distribution of work-places in the Leipzig region has shifted fundamentally in favour of 'suburbia'. Simultaneously, the region, as well as the whole of

eastern Germany, has faced a sharp increase in commuting figures. This is, however, only partly an effect of urban sprawl in connection with the extension and dispersion of both dwellings and work places. Instead, a major reason for the growing number of commuters whose daily travel distance by far exceeds what was customary in the GDR was the explosion of the number of cars. Besides, the general shortage of jobs forces people to seek employment farther afield. Hence these days far fewer people work near their place of residence than before 1990 (cf. Arlt 1999).

At any rate, although urban sprawl could not be regarded as being responsible for the increasing number of commuters in general, it still goes along with a diversification of commuting patterns. These are much more dispersed than they used to be in the past when most commuters lived in the urban periphery, travelled into the city centre in the morning and back after work. Now there is a noticeable amount of outward commuting, too – from the city of Leipzig to the new industrial and commercial areas in the periphery. What's more, there are also many commuters now whose daily journeys don't touch the city's territory at all. Approximately a third of the 'suburbanites' who moved from Leipzig to the urban fringe in the first half of the 1990s didn't work in Leipzig but were employed somewhere else in the urban region. And the same was true for youngsters and their respective schools or trainee posts (cf. Herfert 1996).

Commuting patterns in the Leipzig region indicate the general problem that an increase in jobs in one place usually won't be accompanied by any significant reduction of commuters in that place but will instead make that place a new destination for commuters from elsewhere. Thus, the provision of jobs in suburban areas is no guarantee that the amount of commuting going out of these areas will decrease. In fact the opposite seems to be true. The work-related road traffic within the periphery of Leipzig has grown considerably since people started living and working in the urban periphery – because they often do so in very different places of the suburban realm far away from each other. All in all, the immediate neighbourhood of dwellings, industry and commerce around Leipzig hasn't reduced traffic significantly (cf. Patz/Kuhlpfahl 2000, 92f.).

6.8. Community life

A specific feature of the process of suburbanisation stems from the partly tremendous demographic growth of towns and villages around Leipzig. It brings about the problem of integrating new inhabitants, whose number sometimes reaches or even exceeds the former population. Little effort has been made so far to investigate this problem. However, some evidence was gathered in a study from the mid-1990s that most new residential areas are not only somehow unconnected to the suburban realm's older settlement structures in terms of morphology, but are also at best weakly integrated into the local milieus in terms of social life (Empirica 1996). Often, there's hardly any contact between their residents and people who have been living in a respective place for long. This, of course, is a problem that typically occurs in the course of suburbanisation and urban sprawl (e.g. Matthiesen 2002); in the case of Leipzig, however, it will be worth seeing whether this problem dissipates over time because the sudden, massive emergence of new milieus of residents there, which finds also expression in the new residential area's architecture, has often created a kind of dichotomy which is particularly perceptible.

6.9. Environmental impacts

The quality of the environment in Leipzig used to be appalling in GDR times. Due to the regional industries (in particular the chemical and energy industries), air pollution was in particular severe. This concerned both the city of Leipzig and its surroundings, which in the 1980s were among the most polluted European regions. The maximum air-pollution limits for almost all relevant chemicals were exceeded – often several times over. Although this problem has almost vanished now, one particular kind of emission has been growing since 1990: the degree of motorization has exploded and car traffic has more than doubled. Hence whereas these days in Leipzig 'classical' pollutants such as sulphur dioxide and particulate no longer cause severe problems, pollutants emitted by traffic such as benzene, soot, nitrogen oxide and ozone deserve critical attention. It is also expected that by 2010 the emission of carbon dioxide will have increased by 50% compared to 1990.

Table 11: Pollution impact in central Leipzig (Main Station) (µg/m³)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	Critical threshold
SO_2	103	79	41	34	23	15	9	6	5	140.0 (TA-Luft)
NO_2	33	36	36	48	48	53	50	46	48	80.0 (TA-Luft)
Particulate	65	62	58	53	75	52	46	42	41	150.0 (TA-Luft)
Source: Stadt Leipzig (2000d)										

Many experts state that urban sprawl exerts a considerable environmental impact and causes air pollution; after all, it's self-evident that extended settlement structures 'need' more energy and traffic. In this connection, a lot of effort has gone into showing that a sprawled settlement structure creates traffic, especially car traffic (e.g. Kagermeier 1997). However, finding scientific evidence for a causal relation between the two variables proved very tricky (cf. Gassel et al. 1997). In Leipzig, for example, almost all households that have moved into the urban fringe within the last 13 years already had a car when they left the city (more than 90%). However, on arriving in the periphery they often bought a second car – indicating at a 'car-oriented suburban way of life'. On the other hand, there is no evidence that the respective households would have abstained from buying a (second) car if they stayed in the inner city. Also, we have to take into account that due to suburbanisation and urban sprawl public transport in 'suburbia' has gained new passengers, too – though its increase nowhere makes up for the growth-rate in automobile traffic.

Due to the difficulty of relating a certain volume of traffic to distinct settlement structures, intense discussion is being waged on this point in the disciplines of urban geography and planning. The view of those who deny that mobility (i.e. traffic) can be influenced i.e. traffic by creating 'sustainable settlement structures' is gaining the upper hand (cf. Bahrenberg 1999; Camagni/Gibelli/Rigamonti 2002; Hesse 2001a). To put it somewhat simplistically, in highly developed societies it seems hardly possible to prevent people from getting around by car, notwithstanding the respective spatial structure they inhabit. What, however, has been shown is the extent and the effects of traffic attracted by a single facility in the urban fringe. For instance, in the urban region of Leipzig, case studies on the (effects of the) car traffic related to new, large shopping malls (between 30,000 and 130,000 m^2 of retail space) have been carried out (Freyer et al. 1996; Wagler 2000). The traffic attracted

by the malls has increased the volume of car traffic in the surrounding streets at a rate of between 23% and almost 50%. Moreover, thorough calculations show that the malls lead to a considerable increase in pollution (CO_2, benzene and others) in particular parts of the urban region through which mall customers drive. It is, however, much harder to prove that the malls genuinely do create traffic (cf. Wagler 2000). If the inner city alone took over the malls' customers, an increase in automobile traffic would still have to be expected – at least for as long as the 'habits of shopping' continue to be linked to the use of cars – since more than a third of the visitors to the malls come from towns and villages outside Leipzig. If, however, retail was more deconcentrated and mainly located in different urban and suburban sub-centres, the shopping-related car traffic would probably be much lower.

All in all, it can be stated that urban sprawl together with a disintegration and spatial concentration of various functions necessarily entails a high level of (car) traffic, although admittedly it isn't possible to show that traffic would decrease if spatial structures were different.

7. What general conclusions can be drawn from the Leipzig case?

Two aspects have been outlined initially for which the Leipzig case of suburbanisation and urban sprawl ought theoretically to be instructive. They concern the specific context of urban development in Leipzig, which is firstly characterised by post-socialist transformation and secondly characterised by a general tendency to shrink. Both these aspects, however, are closely interrelated and can hardly be discussed separately.

In the early 1990s the expectation prevailed that eastern Germany in general would grow and catch up with the 'West', not least in terms of urban development and settlement structures. Hence, assuming (at least implicitly) that an expansive urban development as had taken place in the 'west' before is to be seen as an expression of progress, the recent process of suburbanisation and urban sprawl in eastern Germany had been predicted almost immediately and was, as soon as it had started, interpreted as a sign of 'delayed modernisation'. However, whilst the prediction of urban sprawl proved to be a kind of self-

fulfilling-prophecy, it is well known that the underlying expectation of a generally growing eastern Germany hasn't by any stretch of the imagination come true yet and, furthermore, more than a decade after the Berlin Wall came down, there is no sign that the structural weakness of eastern Germany will be successfully countered in the not-too-distance future. Against this background, it seems questionable in principle that urban development in eastern Germany just reflects an accelerated repetition of the dynamics to which towns and cities in 'the West' were formerly subject. And indeed, on a large scale of observation we can see that problems of urban sprawl have become similar in both parts of Germany, of course. But a closer look reveals several distinctive features of urban and suburban development in eastern Germany (which have been mentioned in the present paper). They concern, for example, the demography of migrants to 'suburbia', the ownership of property, the architecture of suburban residential parks and not least the 'incentives to sprawl'. Moreover, the degree of de-concentration in eastern Germany's urban regions is still much lower than it is in their 'western' counterparts where the spatial expansion of towns and cities has been taking place for many decades. Whereas in modern metropolitan areas the functional, spatial and social interweaving between a major city and its 'hinterland' has usually become so intense that the traditional structural differences between 'town' and 'country' have more or less dissolved – which has led to a furious discourse about the 'disappearance of towns' (cf. Alain Tourraine 1996, 22) – urban sprawl in and around Leipzig, though impressive in places, has by and large been restricted to a ring around Leipzig which doesn't extend much further than about 25 km from the city hall. Thus, all in all the Leipzig case bears evidence that the 'paradigm of catching up on a modernisation backlog' alone is hardly suitable to explain what is going on in terms of urban development and urban sprawl in the course of post-socialist transformation in general, or in eastern Germany in particular.

The most salient peculiarity of suburbanisation and urban sprawl in Leipzig is, without doubt, its connection to simultaneous processes of dwindling – at the same time we've had to note an almost explosive spatial expansion of the core city into its surroundings and implosive forms of urban development in both several inner cities districts and the big housing estates of the socialist era, where an often dramatic decrease in the population and jobs is bringing about places of decline and decay. The apparent coincidence of growth and decline is not contingent but of course somehow causal in character. The drain of people

and resources from the city to suburbia has contributed a lot to Leipzig's tendency to shrink – but note that this tendency would have existed anyway. Currently, however, the situation in and around Leipzig seems to have stabilised. At the moment the core city isn't dwindling – which is enough to lend Leipzig the character of an 'island of stability' in a still anaemic east German context (cf. Herfert 2002b) – and 'suburbia's' power to attract people and resources has apparently faded away. This is good news, but probably another dynamics of dwindling will begin in future, whilst we have little reason to expect another wave of heavy urban sprawl. Because of its demographic structure the east German population – including the Leipzig region – will decrease further and – unless a massive migration to eastern Germany starts which is very unlikely to come – this trend will accelerate tremendously in around 10 years. Given that there is already a huge oversupply of urban land in and around Leipzig, the main task for urban and regional policy and planning should be to find a way of steered urban contraction and restructuring. This is a particularly difficult task, because the negative trend in population figures as well as the problem of unoccupied housing and vacancy in commercial buildings will surely last. This situation might lead to a reversion of 'urban sprawl', a 'return of sprawl to the city', in that large parts of the urban fabric will decay and – at best – dissolve due to a lack of demand for buildings. Even today we can already observe signs of a 'perforation' in the urban fabric of Leipzig and its suburbs: whilst the city centre and the districts north, west and south of it have become a quite decent environment to live in, other parts of the urban region – including some of the new suburban residential parks – have to struggle with an increasing number of unoccupied dwellings and declining infrastructure, and, in the older parts of the city, with decaying buildings, many of which are liable to collapse. Thus, we probably have to expect a pattern of urban development characterised by

- …the stabilising inner city which is benefiting from re-concentration processes,
- …the 'perforation' of the larger part of the urban area due to the decay of industrial and housing districts,
- …the partial demolition of large scale housing estates being a main task of urban policy and planning,

- …the most thriving suburban shopping malls further developing into a kind of tiny ‘edge city’,

- …several residential and industrial ‘parks’ remaining scattered (and rather unconnected to each other and to the core city) in the surroundings of Leipzig.

Against this background, it seems that only innovative forms of policy and planning will have a chance (if there is any chance at all) to prevent the Leipzig region from developing an unwanted spatial pattern (cf. Bernt 2002) – with a reasonably consolidated urban core surrounded by an urban area, including a good deal of the inner city as well as the suburban realm, which is characterised by perforation and disintegration, by large spaces of degradation, and in the more attractive locations, perhaps, some ‘islands of prosperity’. Apart from this prospect concerning the development of the Leipzig region and the resulting demands on local and regional policy-making and planning, it seems to be possible to derive some general conclusions concerning the most important forces of urban sprawl and the applicability of different theorems of urban development on the Leipzig case. Hence, firstly we can learn from the particular case of Leipzig:

- ... that, notwithstanding the peculiarity of societal and cultural contexts, individual preferences and dispositions towards urban sprawl as well as economic demands for sprawl seem to be somehow ubiquitous, at least in the ‘Western’ world. Even though this needn’t concern a majority of (individual or collective) agents, the dynamics of urban sprawl could thus prove to be so vibrant that it even takes place under the condition of dwindling i.e. of a lack of pressure inside the respective urban cores.

- ... that the ‘amount’ of urban sprawl seems to be largely dependent on the fiscal, legal and infrastructural incentives for decisions and actions in favour of sprawl, which are set by (mainly national) governmental policy. In the Leipzig region, urban sprawl would clearly have been much more moderate if a different framework had been set for urban development.

- ... that it is hardly possible to influence or steer urban sprawl at the local or regional level. Generally speaking, spatial planning doesn’t have the power to counter the driving forces of urban sprawl, neither on the local or regional nor on the (‘least obligatory’) national level. If urban sprawl is seriously to be contained, the incentives

for the ‘spatial behaviour’ of economic and private agents in other fields of politics need to be modified.

Secondly, it isn’t possible to explain the Leipzig case of urban sprawl by subsuming it only under one specific theory of urban development. Instead, the different features of urban sprawl observed in and around Leipzig seem to support different and conflicting theorems.

- On the most general level of observation, we have found signs of a catching up on a modernisation backlog:
    - The very existence of urban sprawl seems to prove that the structure of ‘Eastern’ cities converges on ‘Western’ patterns after the restrictions of socialism have fallen.
    - Dwellings, workplaces, retail and recreation facilities started to move away from one another, giving way to the kind of separation of urban functions that is well known from ‘Western’ cities.
    - The mushrooming of car ownership and changing mobility patterns catapulted the road traffic almost immediately onto a ‘Western’ level.

- A closer look at what has been going on in and around Leipzig has yielded some empirical evidence for the thesis that the ‘typical’ process of urban sprawl was somewhat distorted under the condition of ‘post-socialism’:
    - The sequence of urban sprawl phases that proved to be characteristic for ‘Western’ cities was at least partly turned upside-down in Leipzig.
    - The speed and intensity of urban sprawl in Leipzig (and some other East German cities) during the 1990s was and still is almost unparalleled.
    - The most important manifestation of urban sprawl in terms of housing, the large scale residential park with a predominance of apartment blocks, is rather different from the ‘typical’ suburban sprawl of detached houses.

- If the focus is finally directed to the conditions and protagonists of urban sprawl the Leipzig case seems to display a very distinct pattern which is almost incomparable to the kinds of urban sprawl that have happened elsewhere:
    - The combination of extraordinary strong fiscal incentives to invest in the real estate and housing sector with a situation of both weak institutions of spatial

planning and specific barriers to inner city developments led to heavy urban sprawl, although the city and the region were shrinking in terms of population and no economic pressure to sprawl would have existed without the aforementioned incentives. In fact, it has turned out that many suburban projects of the 1990s aren't economical at all.

- The main actors of urban sprawl were investors and investment funds from western Germany who still possess most of what has recently been built on the fringe of Leipzig. In that we can state an exogenous type of urban sprawl.

The specificity of urban sprawl in Leipzig will probably become even more pronounced in future, since the 'general dwindling' isn't over yet. This problem, however, concerns other urban regions in Europe that lack demographic and economic growth, too. Hence, as a forerunner in urban sprawl without growth, Leipzig will probably remain an instructive example concerning future problems of urban development in a specific type of old European cities. A process is well under way in Leipzig which requires the development of strategies that should soon also become useful elsewhere.

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