Traffic infrastructure, car mobility and public transport

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Since the Wende[1] in the former GDR in November 1989 and the accession of the GDR to the Federal Republic in October 1990, the transport structures in the new German Länder have changed fundamentally[2]. In the field of passenger traffic, the adjustment of East Germany to the conditions in the former federal territory took place particularly fast. The development is marked by an unprecedented increase in the field of private car use and a massive loss of passengers in the public transport sector. The changes in mobility are accompanied by a dynamic suburbanisation, preceded by the big shopping malls and consumer markets built in the green belt, followed by housing construction by mostly West German investors in the surrounding areas and the subsequent move of private homes to the outskirts of town.

In the goods traffic sector as well, a fundamental structural change took place in East Germany. While the railway lost two thirds of the freight volume (as regards wagonload traffic) in only two years after the Wende, lorries took the place of the railway as the most important carriers in the long-distance goods traffic by 1992. Unlike in the public transport sector, the breakdown of whole industrial sectors in East Germany meant that a substantial part of the traffic volume ceased to exist. In the future, however, it may be that there will be an increase in goods transport by road, which is well above average, and a further decrease in the transport volume on the railways. A re-transfer of the goods transport from road to railway – in order to give some relief to people and to the environment – is an option which is even more limited in the new German Länder than in the old ones, because of the high degree of decentralisation of the new trade and business locations in the East.

In forty years, during which the two German states developed separately from each other, only few trans-border routes have been maintained as corridors for transport between the old Federal Republic and West Berlin. Since the building of the Berlin wall in 1961, numerous railway lines were dismantled in the border area. Of all the traffic connections of the former Federal Republic with other countries, the exchange of people and goods with the GDR was of little significance (both below 5 %). The few border-crossings for transit traffic to and from Berlin registered 9.7 million motor vehicles (86 % private cars) and 2.8 million railway passengers, representing a total of 6,600 motor vehicles or 15,000 passengers at each day. The opening of the borders at the end of 1989 and the monetary union with the GDR of July 1, 1990, led to a dramatic increase in traffic from West to East, which the existing road and railway net was not capable of handling. Long-distance goods traffic on roads alone, a volume ten times greater, crossed the inner-German border in 1990, mainly from the West to the East.

1. Extension of the traffic infrastructure in the new German Länder

1.1 Starting point and the "Traffic Projects German Unity"

The traffic infrastructure in East Germany proved, by EU standards, to be an aggravating factor causing bottlenecks in spatial economic development at the end of the 1980s. This follows from an assessment of all 152 European regions plus the 15 Bezirke of the former GDR after the provision of infrastructure relevant for production. The total indicator comprises, apart from traffic and telecommunication, factors such as energy supply and professional training (BIEHL and UNGAR 1991). Almost half the former Bezirke of the GDR had a level of provision, which was below

[1] The German term "Wende" refers to the dramatic political changes in the former GDR in summer and autumn of 1989, which led to the fall of the Berlin wall in November 1989.

[2] In the following text, the former Federal Republic of Germany (FRG) which existed from May 1949 till October 1990 will also be called 'West Germany'. The eleven West German Länder which constituted the Federal Republic until 1990 (Baden-Württemberg, Bayern, Berlin, Bremen, Hamburg, Hessen, Niedersachsen, Nordrhein-Westfalen, Rheinland-Pfalz, Saarland and Schleswig-Holstein) will as well be called the 'old German Länder'. The former German Democratic Republic (GDR) which existed from October 1949 until October 1990 will also be called 'East Germany'. The five Länder which were reinstated in the East in 1990 (Brandenburg, Mecklenburg-Vorpommern, Sachsen, Sachsen-Anhalt and Thüringen) will also be called the 'new German Länder' or the 'East German Länder'. The new Federal Republic which was formed in October 1990 and consists of sixteen Länder will as well be called 'Germany'.

50% of the average value of all EU regions. As regards infrastructural deficiency, they are only outperformed by regions situated in the Mediterranean periphery. According to the traffic indicator, the Bezirke of the former GDR were below the average for the whole of Germany, except for East Berlin and Leipzig.

Although the GDR was equipped with a relatively dense road and railway network, the use of this network was restricted by its poor quality, such as the poor state of the roads, lack of local by-passes, outdated railway signal- and safety techniques, and numerous speed restrictions in the railway network, limits to safe loads on many bridges, as well as the overloading of important junctions and routes. Furthermore, the orientation and efficiency of the traffic network did not correspond to the new flows of traffic. The closing of gaps in the traffic network between both sides of the border proved to be particularly urgent.

In 1991, in anticipation of the first Federal Traffic System Plan for the united Germany, the Minister of Transport presented the "Verkehrsprojekte Deutsche Einheit" (Traffic Projects for German Unity, BMV 1991). These traffic projects represent 17 measures considered to be particularly urgent for the development of the most important East-West-axes, which are key to the "growing together" of Germany and of economic recovery in the new Länder. These plans became part of the Federal Traffic System Plan 1992 (see *figure 1*). In addition, this plan supports – in order to make up for the backlog – important projects for improvements to the quality of the traffic infrastructure in East Germany and – in the programme for filling gaps – measures for re-establishing traffic links in the former border area.

Nine of the 17 Traffic Projects for German Unity concern expanding capacity on railway lines in the five corridors Berlin-Hamburg (German North Sea harbours), Berlin-Hannover (Ruhr/Köln), Berlin-Halle/Leipzig-Nürnberg (München), Dresden-Halle-Eichenberg (Rhein/Ruhr) and Dresden-Leipzig-Erfurt-Bebra (Rhein/Main) as well as improvement of the connection Lübeck-Rostock-Stralsund. These have priority over other projects and represent an investment of DM 30 billion. In road traffic, seven projects were assigned to improving the most important East-West axes, representing an investment of DM 23.5 billion. Amongst these are the expansion to six lanes and the complete renovation of the motorways A2 Hannover-Berlin (including A10 Berlin Ring), A4 Bautzen/Dresden-Eisenach-Bad Hersfeld (including construction work between Bautzen-Görlitz and Eisenach-Kassel) and A9 Berlin-Nürnberg as well as the construction of the A20 (from Lübeck to the Polish border), A14 Halle-Magdeburg and the links Göttingen-Halle and Erfurt-Würzburg/Bamberg. A further project is the enlargement of the waterway from Hannover to Magdeburg (across the Elbe) and Berlin for pushboats with a load capacity of up to 3,500 t (investment: DM 4 billion).

Almost 60 % of the investment (which estimated at about DM 70 billion from the first projection to subsequent dates), forms the focal point of the Traffic Projects for German Unity for a more environmentally-friendly transport by railway and waterway (in the old Länder, road-construction continues to dominate). All 17 projects are in process of being realised; of the nine railway projects, five have already been completed. By the end of 1997, the Federal government had invested DM 68 billion in the traffic infrastructure of the new Länder (Traffic Projects German Unity: DM 23 billion). With the expansion or reconstruction of about 5,200 km of railway line (including electrification) and about 11,300 km of roads, numerous bottlenecks and deficiencies in the traffic infrastructure in East Germany have been overcome (Laschke 1998).

The total investment requirement for the adjustment of the traffic infrastructure of the new Länder to the level of the old ones was estimated at about DM 210 billion. According to the Bundesverkehrswegeplan (Federal Traffic System Plan) of 1992, about DM 122 billion are available for this purpose until 2010, the total volume amounting to DM 323.5 billion. The more than proportionally high investment requirement for the traffic infrastructure of the new Länder (38 %) will continue to exist beyond the year 2010, as has become apparent in the case of the construction and expansion of the announced projects (BMV 1992) with a high benefit-cost-ratio. However, as the projects for the expansion of the traffic infrastructure in the new Länder included in the Federal Traffic System Plan of 1992 have to be regarded under financially limited conditions, ways of privately financing public infrastructure are also taken into consideration. One solution could be to leave the construction of routes and their operation to private investors and to cover financing by charging fees to users of such traffic routes (Ewers 1993).

1.2 Spatial effects of the expansion of the route system

The steps planned for the expansion of the road and railway network are intended to level regional differences in traffic development in Germany and to contribute to an improvement of the location and accessibility of East German areas by shortening travel and haulage times. Taking the average travelling

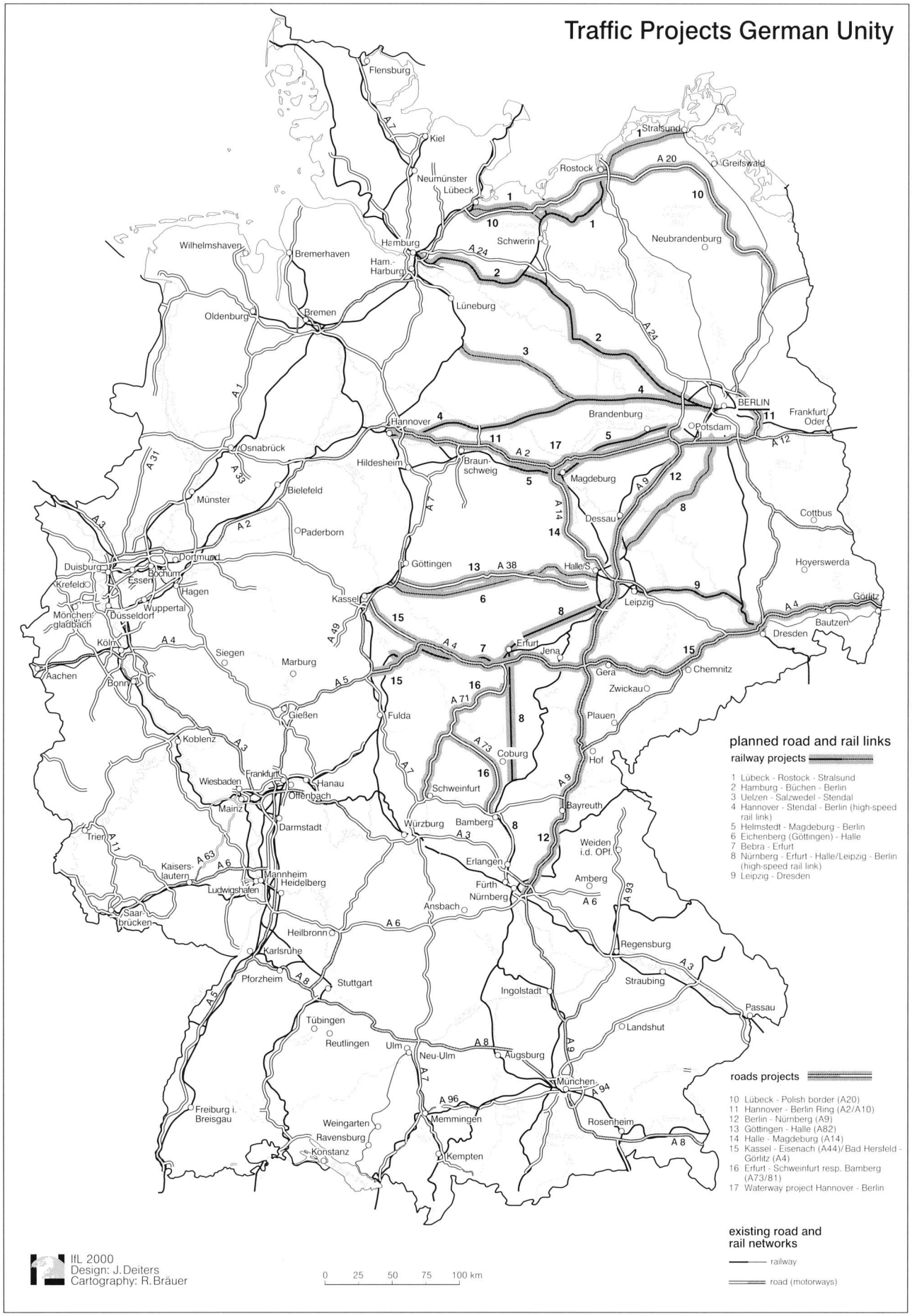

Figure 1: "Traffic Projects German Unity" (Verkehrsprojekte Deutsche Einheit)
Source: BMV 1991, 1992

times between all parts of Germany (weighted according to the number of residents) as a basis for a comparison of the traffic network before and after the realisation of the Traffic Projects German Unity, railway projects show the highest effect on the network (ECKEY and HORN 1992). The average travelling time between all districts is shortened by expansion of the Hannover-Stendal-Berlin line (running since 1998) to 250 km/h by 10.6 minutes and by the expansion and reconstruction of the Nürnberg-Erfurt-Berlin line by 12.7 minutes. Applied to the building costs, the expansion of the Halle-Eichenberg railway line (near Göttingen) produces the highest effect on the network. After completion of all nine railway projects, the average travelling time between destinations would be shortened by 28.2 minutes.

Compared with this, the total reduction in average travelling time produced by the seven road projects only amounts to 12.0 minutes. This comparatively weak network effect of the measures taken in road construction can be explained essentially by the fact that the road traffic infrastructure has almost an ubiquitous character. From this, however, it should not be concluded that bigger projects in the construction of long-distance roads could contribute only little to the improvement of the conditions of accessibility and location across the Federal Republic. Considerable reductions in travelling times result for connections between the old and new Länder as well as within the latter. The favourable improvement of the position of the new Länder due to the road projects manifests itself in the fact that the percentage of the population which can be reached within a travelling time of 2 to 6 hours by car is rising by 20 to 30 %, even by up to 50 % for Mecklenburg-Vorpommern (new motorway A20; see GIPPER 1995, p. 70). The significance of the regional differences in accessibility by railway and road traffic for regional development in the Federal Republic can be judged by the travelling times to the respectively closest agglomeration areas; in this respect, the North and the border areas of the former GDR still show considerable locational deficiencies and disadvantages, more pronounced for the railway system than for the road network (see *figure 2*).

If one incorporates all measures provided for in the Federal Traffic System Plan of 1992 in the assessment of the traffic infrastructure, and uses the speed by straightline (defined as minimum time/distance in minutes per 100 km straightline distance between points) as indicator, the following picture arises in the summary of the results at the federal level (ECKEY and HORN 1995 see *table 1*). In railway traffic, the North German Länder are at the moment the most easily accessible with about 65 km/h; the

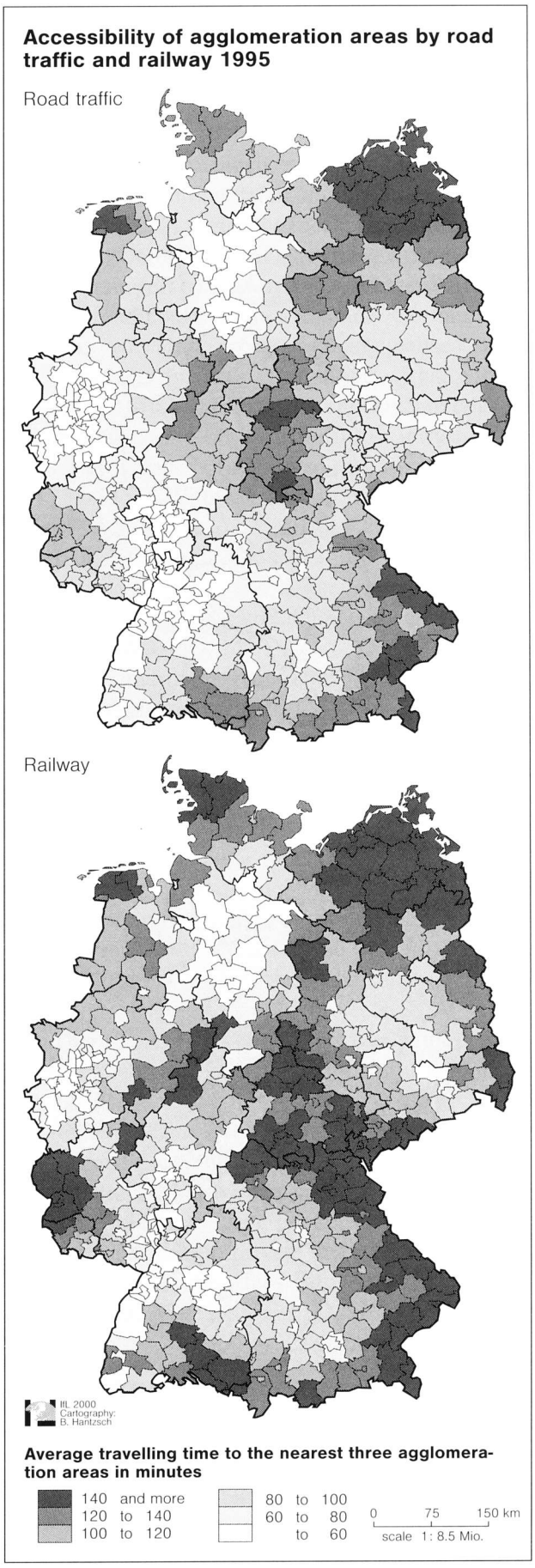

Figure 2: Accessibility of agglomeration areas by car and by rail 1995
Source: BBR 1998, table 12

Länder or grouping of Länder	Railway network					Road network				
	Existing		Planning (until 2010)			Existing		Planning (until 2010)		
	M_o	V_o	M_t	M(%)	V_t	M_o	V_o	M_t	M(%)	V_t
Schleswig-Holstein/Hamburg	65.4	21.2	68.6	4.8	15.9	54.8	5.2	58.5	6.8	5.9
Niedersachsen/Bremen	65.6	15.5	69.8	6.3	15.6	53.4	8.9	56.1	5.9	8.4
Nordrhein-Westfalen	56.6	19.3	59.5	5.0	19.9	52.4	6.9	53.2	1.5	7.2
Hessen	57.3	13.2	64.1	11.8	14.5	54.6	6.9	56.1	2.7	7.1
Rheinland-Pfalz/Saarland	53.7	15.1	61.0	13.6	17.2	56.4	6.9	57.6	2.2	7.2
Baden-Württemberg	55.8	16.4	61.4	10.2	19.5	54.3	11.9	55.4	2.0	11.3
Bayern	59.2	13.4	66.0	11.6	14.2	54.4	7.9	56.8	4.5	7.9
Mecklenburg-Vorpommern	56.6	10.4	66.8	17.9	14.9	48.1	4.5	54.3	12.9	5.6
Brandenburg/Berlin	48.7	9.0	57.6	18.3	11.0	46.5	6.9	50.1	7.7	7.7
Sachsen-Anhalt	45.1	14.4	57.9	28.3	19.6	46.7	6.2	51.6	10.3	7.6
Sachsen	40.4	16.2	52.7	30.5	26.5	45.6	8.0	50.1	10.1	9.8
Thüringen	41.2	12.9	54.4	32.1	22.9	47.9	6.5	53.2	11.1	6.8
Germany	**55.5**	**20.0**	**62.0**	**11.4**	**19.0**	**52.2**	**10.2**	**54.6**	**4.6**	**9.3**

Table 1: Regional and quality differences in the traffic infrastructure in Germany – Initial situation and planning (until 2010)

M_o, M_t = mean of the straightline speed from the Kreise to all other Kreise (weighted by the number of inhabitants) for the existing network (= 0) resp. for the network including all regionally significant building operations of the Federal Traffic System Plan 1992 (= t)
V_o, V_t = coefficient of variation (%) = S/M • 100, with S = standard deviation of the straightline speed between the Kreise
M(%) = increase of the mean straightline speed up to 2010 (percentage of the initial situation)

Source: Eckey and Horn 1995 (tables 1 and 2), self-calculations

East German Länder – as might be expected – take a lower ranking with below 50 km/h. Within the Länder, separately or in groups, however, there are considerable differences in traffic development. While the efficiency of railway traffic in West Germany is based on the good accessibility of a few locations (big differences between city and countryside), the traffic development in East Germany is balanced within the regions (small variations), although at a low level. Road traffic as well is at the moment characterised by an East-West differential in the development in broader terms, though this is significantly smaller that in railway traffic.

The realisation of all steps of the Federal Traffic System Plan by 2010 would reduce but not remove the East-West differential in both railway and road traffic as regards accessibility of large areas of Germany. With the exception of Mecklenburg-Vorpommern (better connection to the area of Hamburg/Lübeck), the straightline distance indicator would continue to remain below the federal average. Thüringen, Sachsen and Sachsen-Anhalt would profit most from the expansion of railways; the relatively even development of these areas would, however, be replaced by a considerable city-countryside differential (rise in variability; see Eckey and Horn 1995, p. 73). A similar picture emerges in the development effects of the measures envisaged for road construction. The situation would improve most for Mecklenburg-Vorpommern (see *table 1*). This effect is due to the 290 km of the so-called Ostseeautobahn (Baltic motorway) from Lübeck to the Polish border close to Cszczecin, probably the most disputed of the Traffic Projects German Unity. Apart from the concerns raised by environmentalists, it is denied that improvement of the favourableness of the position of this structurally weak coastal region will further economic development and investment in this area. It is argued rather that the faster and easier access to the agglomeration of Hamburg/Lübeck will promote a "drain effect", resulting in commuting and migration, especially among the younger and better-qualified workers. Companies which are cost-intensive in terms of wages could, in addition to this, use the A20 as a profitable means to transfer their production to Poland (Marquardt-Kuron 1996).

This estimation is essentially based on a survey of newly-settled companies carried out in Mecklenburg-Vorpommern in 1992, which did not show any connection between the choice of location and the existing or planned traffic infrastructure. Empirical surveys in the whole of East Germany for the period of 1991 until 1995 showed that those locations on traffic axes or with short travelling times to such traffic links attracted more industrial investments than others. Amongst these, the motorway links stand out. Kreise with traffic links better than the average (which also includes InterCity-links and international airports) displayed distinctly higher investments per resident (supported by the German regional economic development programme) than

those Kreise less developed in terms of traffic structures. For industries with long-distance business travel connections, the proximity to InterCity and air-traffic links gains in significance (LASCHKE 1998).

2. Traffic growth with special regard to goods traffic

2.1 The development of passenger and goods traffic

The structure and development of passenger and goods traffic in the former Federal Republic and in the former GDR since 1980 reflect the different social and economic conditions in the two parts of Germany and their assimilation tendencies after the Wende. Economic processes and individual mobility behaviour in the new Länder are becoming increasingly similar to those found in the old ones (see *table 2*).

As regards passenger traffic, the sudden increase in private car ownership in East Germany after the Wende and the subsequent shifts in the modal split at the expense of public transport are the most striking characteristics of change. Amounting to 84 % of the total traffic measured in person-kilometres in 1993, individual motorised traffic in the new Länder reached a volume equivalent to that in the old Länder at the end of the 'eighties. As explained later, this development was already heralded while the GDR still existed: from 1980 to 1989, the supply of private cars rose by 50 %, traffic volume (passenger journeys) by 45 %, and traffic expenditure (pkm) by 29 %, while the traffic performance of the railway (Deutsche Reichsbahn) and public road transport (urban high-speed railways, tramways and buses) remained at a constant level. After the Wende (1989-1993), the railway lost 44 %, and the remaining public transport sector 58% of their earlier transport volume (Verkehr in Zahlen 1994).

As regards goods traffic, all transport above 50 km had to be carried out by railway in the GDR. Goods traffic on roads only played a role in short-distance traffic and connections with foreign countries. The centralised production structures of the state-controlled collective combines were characterised by the high-level interconnection between production and trading stages before and after the production process, with a high degree of the production depth at the location. The separation of these structures and their transfer into a market economy with a national and international division of labour after the Wende has resulted in the collapse of whole spheres of production and the subsequent loss of transport demand on a considerable scale, especially for the railway. The organisation of new production and trading structures has simulta-

Year	Passenger traffic				Goods traffic				
	Railway	Public road traffic	Car traffic	Total	Railway	Road traffic	Pipe-line	Inland navigation	Total
	percentage			bill. pkm	percentage				bill. tkm
				FRG/old Länder					
1980	6.9	12.5	80.6	592.5	25.4	49.0	5.6	20.1	255.9
1985	7.2	10.4	82.4	600.9	25.0	52.0	4.1	18.8	255.9
1989	6.1	9.1	84.8	686.8	21.5	55.9	3.9	18.7	288.8
1990	6.3	9.1	84.6	711.5	20.6	56.7	4.4	18.3	299.9
1991	6.5	9.4	84.1	714.9	19.7	58.8	4.2	17.3	319.1
1992	6.6	9.3	84.1	723.3	17.8	60.4	4.2	17.6	319.2
				GDR/new Länder					
1980	20.4	27.6	51.7	107.7	66.7	24.8	5.9	2.6	84.6
1985	18.5	24.1	56.2	121.8	72.7	18.7	5.6	3.0	80.7
1989	17.2	21.8	60.8	139.7	71.5	20.5	5.2	2.8	82.5
1990	13.5	18.7	67.6	133.1	69.2	22.0	5.6	3.2	59.1
1991	8.1	12.2	79.7	126.4	50.1	42.2	5.1	2.5	35.5
1992	7.2	9.6	83.2	135.9	31.7	60.9	4.7	2.7	42.8
				Germany as a whole					
1991	6.7	9.8	83.5	854.0	20.2	61.8	3.9	14.1	397.6
1992	6.6	9.2	84.2	869.2	17.7	63.9	4.0	14.5	395.1
1993	6.7	9.1	84.3	879.1	16.6	64.5	4.1	14.8	390.0
1995	7.2	8.7	84.1	883.3	16.0	65.2	3.9	14.9	429.1
1997	7.2	8.5	84.3	895.1	16.2	67.1	2.9	13.8	450.0

Table 2: Development of passenger and goods traffic in Germany
Source: Verkehr in Zahlen 1994, 1998

neously caused a substantial increase in goods traffic on roads, although the deficiencies of the road infrastructure at first limited its development (EWERS 1993).

In the former Federal Republic the tendency to transfer goods traffic from the railway onto road haulage continued, together with a further increase in the total transport volume; at the beginning of the 'nineties, the share of the railway was below 20 %, but the share of the road traffic amounted to 60 % of the traffic effort. In the former GDR until the end of the 'eighties, however, the railway dominated with a share of more than 70 % of the total volume of goods traffic. With a share of 20 % in the total goods traffic, lorries had, because of the reasons mentioned above, a minor role. In the two years after the Wende, almost 60 % of the goods traffic (railway: 70 %) had fallen away due to the decline of the outdated industry. New industries situated in new locations required lorries as a means of transport. The lorry doubled its share of traffic until 1992 and has subsequently (with over 60 % of the inland traffic) gained the same importance it has in the old Länder. *Table 2* furthermore shows road haulage in Germany in the meantime covers two thirds of the total goods traffic, while the share of the railway and inland navigation only amounts to about 15 % each.

2.2 Traffic forecasts: Perspectives for goods traffic

The Federal Traffic System Plan of 1992 offered forecasts with three variants (scenarios) each for passenger traffic and goods traffic, which differ above all in terms of the political framework on which they are based (to curb environmentally unsound means of traffic and transportation) and the development of costs in road traffic. The status-quo-variant (trend-scenario F) was set against an environmentally friendly "contrast-variant" (scenario G) and a medium variant (scenario H). The Minister of Transport decided, as had been expected, in favour of the third variant, which had been offered as a compromise. This variant does take into account current trends in the development of user costs, but does without measures directed towards specific objectives in order to reduce road and air traffic, and in this respect corresponds rather to a status-quo-forecast (GORISSEN and SCHMITZ 1992).

The traffic performance in road passenger transport will, according to this, rise by 23 % from 1991 to 2010; individual traffic will be increasing below average (+ 17 %), public transport will be increasing above average (+46 %) (BMV 1992). This forecast is obviously unrealistic, if one realises that the traffic performance both in individual traffic and public transport (despite strongly increasing air traffic which is included) has increased by about 6 % each from 1991 until 1997 (Verkehr in Zahlen 1998). The effects caused by an assumed reduction of the speed limit by 5 % on all roads until 2010 were overestimated in the forecast.

The development forecast for the goods traffic sector appears to be similarly unrealistic. According to the forecast, the total traffic performance will increase from 1991 to 2010 by 76 %, especially since the railway (+126 %) and the inland navigation (+84 %) are expected to increase far above average (BMV 1992). In fact, the performance of total inland goods traffic (excluding short-distance traffic) has increased by 15 % from 1991 to 1997. While inland navigation managed to maintain its market share of 15% and the share of the railway decreased from 24 to 19 %, goods traffic on roads represents the definite winner of the competition for long-distance traffic. The forecast for 2010 (238 billion tkm) had already been almost achieved in 1997 (235 billion tkm; see SCHLIEPHAKE 1999). The further increase of goods traffic on roads represents the special problems of environmental policies, which is tackled in an efficient way neither at the national nor at the European level.

The increases for railways and inland navigation, wrongly calculated, are based on the expectation (not yet justified in terms of traffic policy) that both carriers fully bring to bear their advantages, which are conditioned by the system, for long-distance transport. According to the forecast for goods traffic in 2010, even slight losses in the traffic volume on the railways would be compensated for by the over-proportionate increase of the median transport distance from 206 km (1988) to 347 km (+69 %), causing an increase of 56 % (old Länder: 103 %) in traffic performance (see ENGELKAMP and BISON 1994).

Combining road and railway traffic, an idea which once represented the hope for environmentally sound goods transport, has stagnated for years on a low level. In 1998, the core volume of the combined traffic in Germany amounted to 4.8 million tons. This is only 1.7 % of the total transport volume of DB Cargo, the freight subsidiary of the Deutsche Bahn AG (DB AG). Since 80 % of the total national combined traffic volume is being handled on 6% of the inner-German combined traffic network, the DB AG intends to focus on the most important links and reduce the number of terminals served. Co-operation with the German Association for Combined Goods Traffic "Kombiverkehr" (22.4 million tons per year in national and international traffic) was cancelled, combined with a unilateral rise in prices on 1 June, 1999. Kombiverkehr

reckons that 30 to 40 % of the national combined traffic volume will be transferred back to the roads. The increases which are expected in combined traffic until 2010 will be left behind by the general growth of goods traffic in Germany (ZAPP 1999). Under these conditions, no relief can be expected for road haulage.

3. Private car ownership and change in the mobility structure

3.1 The wave of car ownership in East Germany

With 237 private cars per 1,000 residents, the level of ownership in the GDR in 1989 drew close to that existing in the former FRG at the beginning of the 'seventies (1971: 274 private cars per 1,000 residents). The development of the choice of transport of the population in the cities in West and East Germany since 1972 shows the mobility structure in the GDR in 1987 was definitely similar to the FRG's mobility structure in 1972 (see *table 3*): high percentages of journeys travelled on foot (40 %) and by public transport (17 resp. 24 %) contrast with relatively low percentages of the use of private cars (31 resp. 25 %).

Considering the high percentage of private cars in mobility in cities in West Germany (1992: 48 %), the extension of the cities into the suburban areas, which was encouraged by car ownership by wide classes of the population, and the generally known consequences of car traffic, the completely different initial conditions in society in the GDR and the structure of its cities (compact housing with negligible suburbanisation) were seen as a special opportunity at the outset of the transformation process; an opportunity to create a more environmentally sound, and less car-oriented mobility, which was meant to be stabilised and strengthened through further development of settlement structures reducing traffic demand.

However, it soon turned out illusory to try to avoid the negative developments which had taken place in the old Länder, by introducing alternative traffic development concepts in the new ones. As a result of the "Motorisierungswelle" (wave of car ownership;

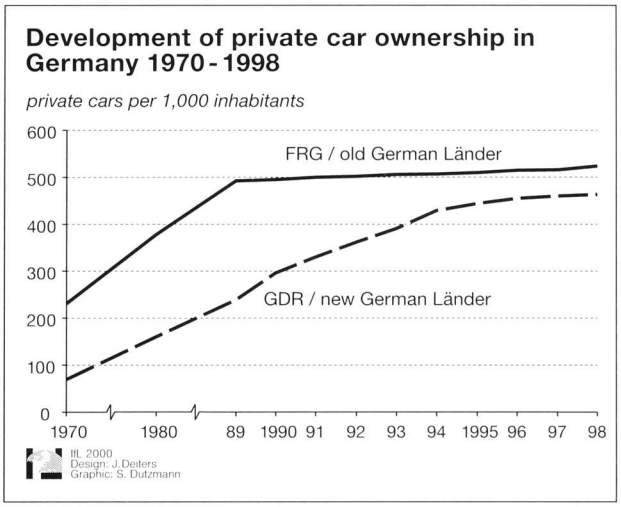

Figure 3: Development of private car ownership in Germany 1970–1998
Source: VDV-Statistik 1997; FLIEGNER 1998

FLIEGNER 1998, p. 118), the level in the new Länder reached a standard in only five years after the Wende that had taken 15 years in West Germany compared to the initial level in 1970/71 (see *figure 3*). At the end of the 'nineties, the population in the new Länder will have at its disposal a supply of private cars, such as existed in the old ones in 1989, the year of the Wende. Applied to households with a medium income, the supply of private cars is now already higher than in the old Länder (98 in comparison with 96 per 100 households; Statistisches Bundesamt 1998). In no

Transport mode	1972	1977	1982	1987	1992	1997 (trend)
			FRG/old Länder			
On foot	41	34	30	26	23	21
Bicycle*	11	9	11	13	13	13
Car	31	40	43	46	47	49
Public transport	17	16	15	17	17	17
			GDR/new Länder			
On foot	51	48	45	40	32	28
Bicycle*	15	12	12	11	9	9
Car	11	15	19	25	44	49
Public transport	23	25	24	24	15	14

Table 3: Modal split in urban passenger traffic in Germany 1972–1997 (percent of either walks or trips)
*incl. motorcycle

Source: DEITERS 1998

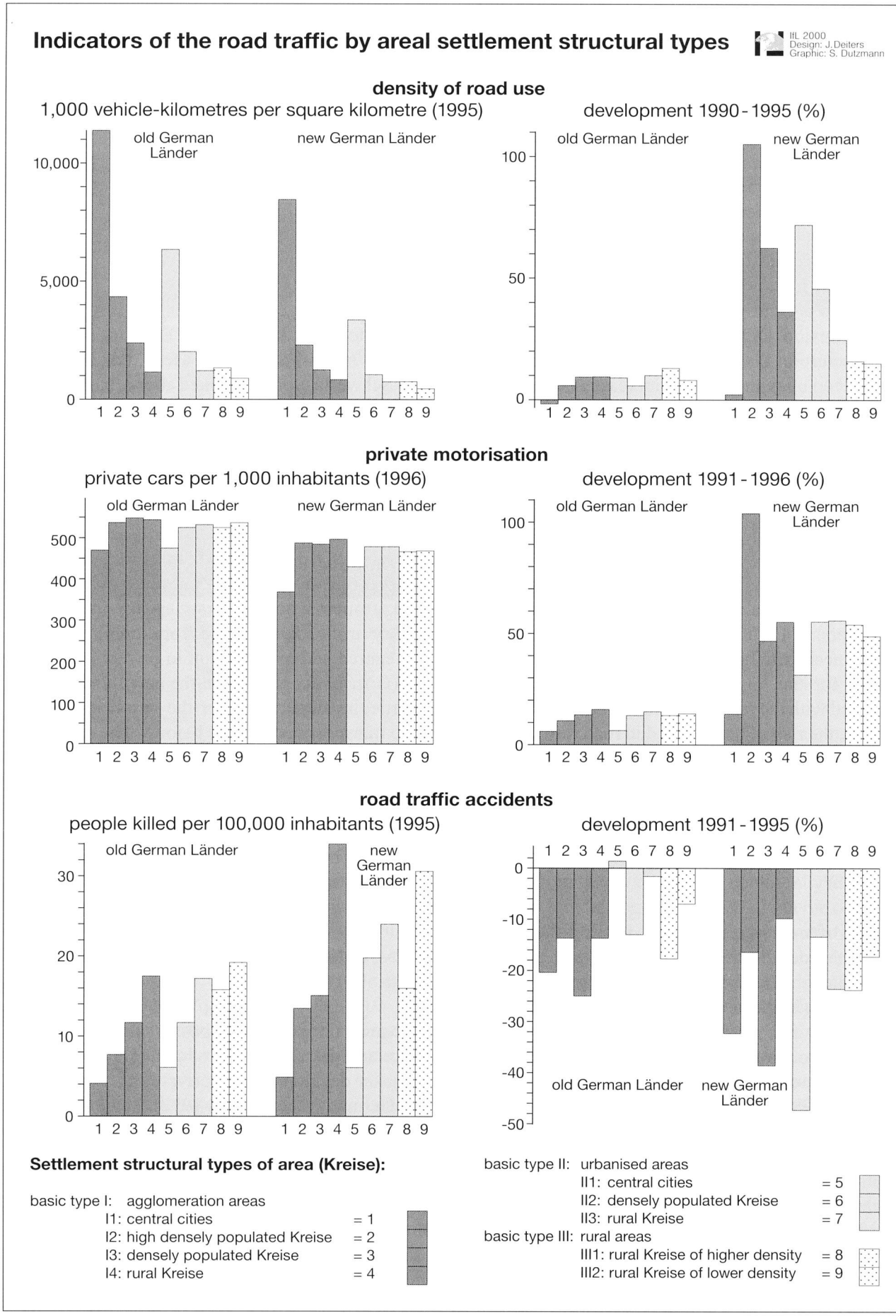

Figure 4: Indicators of the road traffic by areal settlement structural types
Source: BBR 1998, table 12

other field have the living conditions in both parts of Germany assimilated faster.

The distribution pattern of the degree of private car ownership and the density of road use in the new Länder are – apart from differences in level – quite similar to those in the old ones (see *figure 4*). Big cities show lower degrees of car use than their outer suburbs and the rural areas. Considering the so often deplored traffic misery in the great conurbations of East Germany it attracts attention that the traffic burden (vehicle kilometres per square kilometre) in the core cities and the more densely populated peripheries is clearly lower than in the old Länder. The expansion and modernisation of the traffic infrastructure in the cities have obviously not been able to keep up with the rapid increase in car traffic.

Figure 4 shows another problem resulting from the rapid catching-up process in the field of private car ownership. The number of people killed in road accidents (per 100,000 residents) in the new Länder in 1995 was still 70 % above the standard of the old Länder, despite the outstanding decline since 1991. Here as well, the differences in spatial distribution in both parts of Germany are similar, with the rural areas being especially afflicted. At the peak wave of car ownership 1990/91, the number of people killed in road accidents had doubled compared with the average for the 'eighties in the former GDR. As compared with the respective total journeys of motor vehicles, the risk of being killed in road traffic in the new Länder was 3.5 times higher than in the old ones.

3.2 Everyday mobility and mobility orientation behaviour

Studies of everyday mobility in East Germany confirm the idea that the rapid motorisation represents a development making up for the formerly much lower degree in the new Länder and does not leave a big margin for alternative traffic development concepts. From interviews conducted in households in a housing estate close to the inner city of Halle, Fliegner (1998) draws the conclusion that "a high subjective readiness for the use of private cars" (p. 126) already existed in the GDR. The private car ownership in West and East Germany would have developed almost similarly, if a functioning market for motor vehicles with a corresponding spending power of the population had as well existed in the GDR (Hesse 1999).

The comparative recording of "styles of mobility" in West and East German cities (Freiburg and Schwerin as examples) proved the idea of an unchallenged supremacy of the car image can only be confirmed for Schwerin (East Germany), and that there is a clearly higher degree of identification with the private car in Schwerin than in Freiburg (West Germany). Owning a car is an expression of social status, symbolising - in the existing situation of radical changes – "that one is still at the centre of society and not on the verge" (Götz et al. 1998, p. 258). It is therefore characteristic that in Schwerin the dominating type of mobility is the "insecure status-oriented type" (38 %), who appreciates the car as rational means of transport, believes riding a bicycle to be dangerous and feels the use of public transport to be inconvenient. In Freiburg the type of mobility "status-oriented car users" takes the place of the Schwerin type mentioned above, but with only a 15 % share. For these types, the car represents a status symbol. The groups of different mobility types are otherwise clearly distinguished as regards their choice of transport (which was no criterion for the definition of types of mobility).

The gap between attitude and behaviour is not – as often declared – the problem of transportation policy, but rather the realisation of the finding that there are social groups whose life styles are joined with mobility or mostly disjoined from mobility, or who are prepared and in a position to be mobile without a car (Götz et al., p. 261). In the new Länder, this is of particular importance for the revaluation of the public transport system (see below). The research in Halle by Fliegner has revealed the sudden rise in car ownership after 1989 could in the main be attributed by women catching-up motorisation on car use, – predominantly by those who got their driving licence after 1989, because more than half of the women who owned a car in 1994 had bought it after 1989.

3.3 Possessing a driving licence and availability of cars

The connections between possession of a driving licence and the availability of a car are known from the earlier development of private car ownership in West Germany (see Deiters 1992). Since the middle 'seventies it could be noticed the share of people possessing a driving licence in the age group up to 30 was increasing constantly especially among women, because in this group there was still a backlog compared to more strongly car-oriented men. The possession of a driving licence is therefore a strong motive for being able to have a car at one's disposal as soon as possible. As long as these aspects were neglected, the forecasts concerning future numbers of private cars were always too low. As *figure 5*

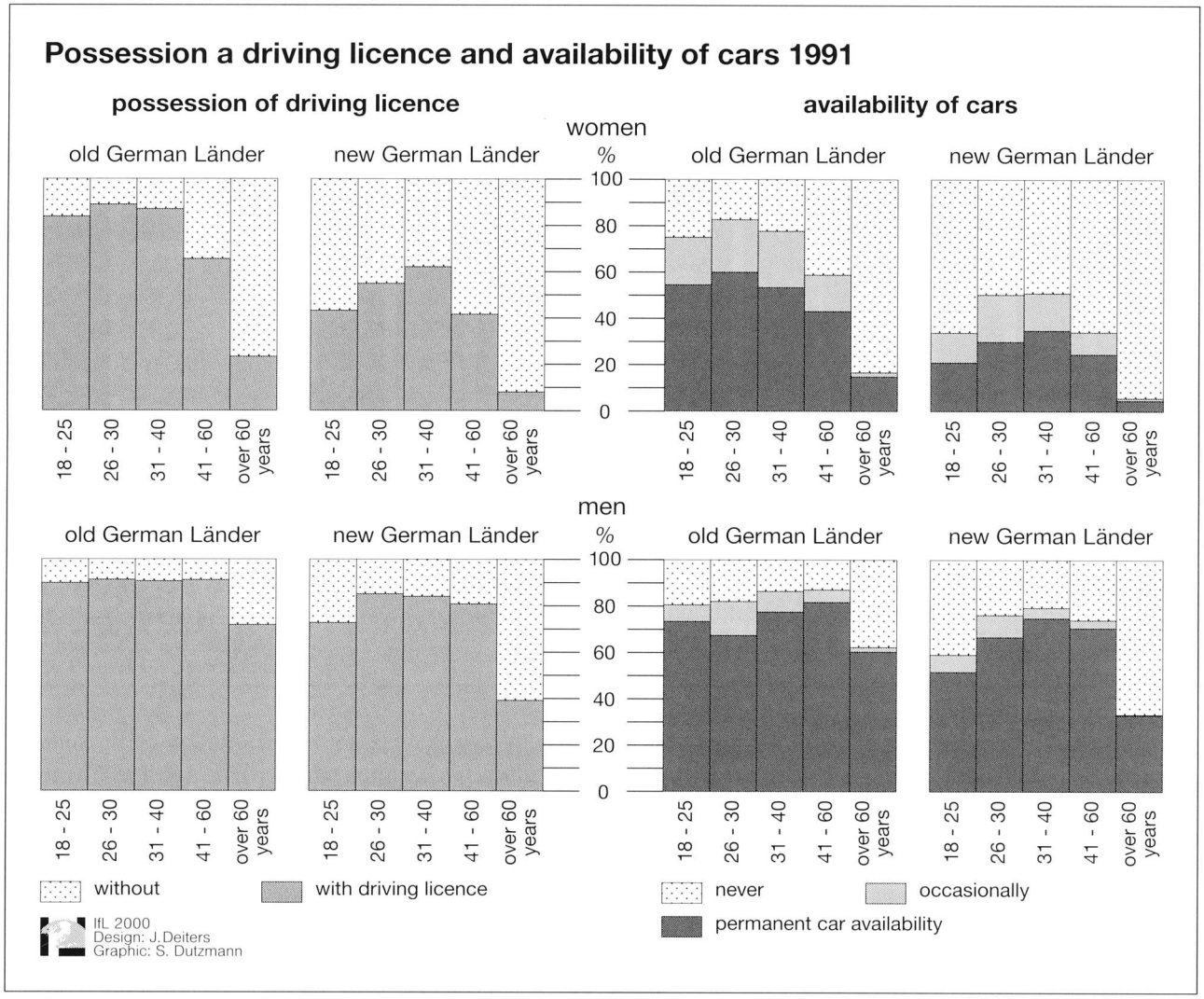

Figure 5: Possession a driving licence and availability of cars 1991
Source: Verkehr in Zahlen 1997, p. 308f. (social-economic panel, calculations by the DIW)

shows, there is, in comparison with the former FRG, consequently (especially among women) still a considerable backlog in the new Länder in the possession of a driving licence and the availability of private cars. It is therefore not unrealistic to expect a supply of approximately 49 million private cars for the whole of Germany by the year 2010 (1997 41.4 million). This would equate to a degree of almost 600 private cars per 1,000 residents (1997: 506).

The conditions for mobility in the new Länder at the beginning of the 'nineties, in comparison with the old ones, are well expressed in the use of transport by working people, pupils and students, especially since the distance travelled between home and the place of work or study was recorded indirectly through the distinction between the journeys within, or to and from the community (see *figure 6*). As regards traffic to or from work, public transport still holds a major share despite the considerable setbacks in this sector after 1989 (see below). In comparison with the old Länder, this holds true especially for journeys travelled to and from places outside the community (30.5 % in the new Länder compared to 13.3 % in the old ones). The share of private cars (including motorised bicycles) in such journeys was already 60 % and growing strongly. The commuters' mobility, which has risen after the Wende by leaps and bounds despite of a large number of jobs having been lost, has resulted in a considerable extension of the areas from which people commute to work, and city-to-city-commuting has taken the place of the classical periphery-to-city relationship (Arlt 1999).

As regards journeys travelled by pupils and students (educational traffic) it is striking that the use of public transport in the old Länder (also within the community) and pedestrian movement in the new ones play a special part. Bicycles and private cars hold only a modest share here, which may also have something to do with differences in the age group composition of pupils and students in the old and new Länder. Here as well, tendencies

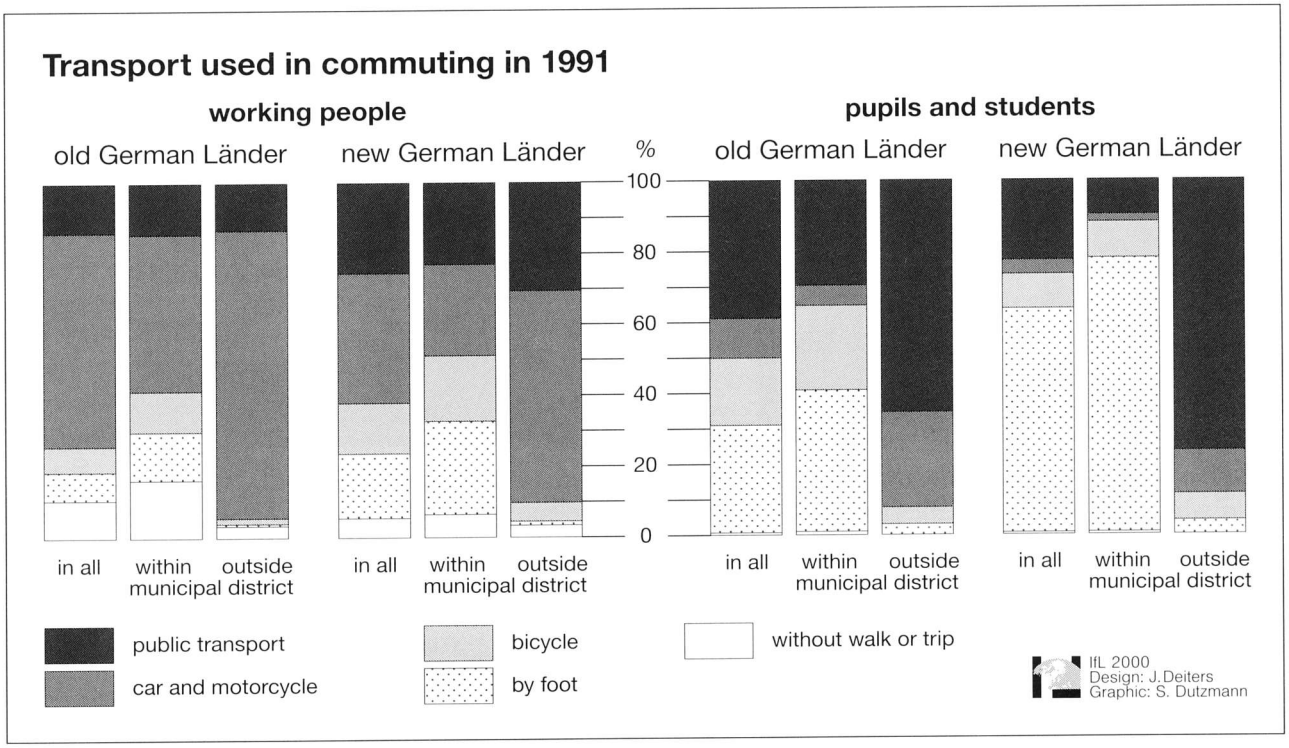

Figure 6: Transport used in commuting in 1991
Source: Verkehr in Zahlen 1997, p. 304 (micro survey of the Federal Agency of Statistics)

demonstrating fast alignment to West German conditions appear, because after only two years, approximately half the journeys once travelled on foot are now done by bicycle, public transport and also increasingly by private car.

4. Structural changes in public transport

The 'eighties in the FRG were marked by considerable losses of passengers in the public transport sector (1980-86: -14 %). This was caused by increasing unemployment, decline in the numbers of students and progressive car-ownership. In 1988, a reverse trend took place, mainly attributable to improvement in the transport offered (operation of modern vehicles, better timetabling, extension of the route network) and customer-friendly tariffs (see DEITERS 1995, 1998). The number of passengers using public transport rose by 25 % in only five years (Verkehr in Zahlen 1994). The transport volume of the Deutsche Bundesbahn showed a parallel development only for short distance traffic (less than 50 km); the numbers of long-distance passengers stagnated.

In the former GDR, the volume of traffic on the railway (Deutsche Reichsbahn) and on public passenger road traffic (tramways and buses) remained virtually constant until 1989, although the volume of private motor traffic had risen by almost 45 % since 1980, representing a much higher increase than in the old Länder (+10 %). Despite approximately constant numbers of inhabitants, the total volume of passenger traffic increased by 13 % from 1980 until 1989, which can probably be mainly attributed to the fact that many journeys which had previously been made on foot were replaced by public transport, and private cars were above all used for additional leisure-time journeys (e. g. to the allotment at the weekend). The share of public transport in total passenger movement in the GDR decreased between 1980 and 1990 from 54 to 38 %.

4.1 New beginnings for local transport enterprises in East Germany

Competition between transport suppliers led to the public transport sector in the former GDR, mainly in the big cities, being the actual loser after reunification. At the beginning of the 'nineties, Leipzig, Halle and Erfurt were leading (ahead of Münster, München, Stuttgart and Freiburg) in the ranking of big German cities, arranged according to the degree of environmental acceptability of the choice of transportation, with a share of between 63 and 68 % of journeys of the so-called Umweltverbund (environment combine, i. e. public transport, bicycle, and on foot). They were only outperformed by bicycle- and public-transport-friendly cities as well known as Amsterdam and Zürich (see *table 4*). Today, the majority of the East

	On foot	Bicycle	Car	Public transport
Bochum	27	6	*57*	10
Düsseldorf	18	4	*55*	23
Kassel	28	8	*45*	19
Dresden	28	8	*43*	21
Freiburg	21	19	*42*	18
Hannover	23	16	*39*	22
München	23	14	*38*	25
Münster	21	32	*37*	10
Leipzig	38	6	*36*	20
Halle	32	10	*36*	23
Wismar	45	11	*33*	11
Amsterdam/NL	26	24	*30*	20
Groningen/NL	17	48	*30*	5
Zürich/CH	28	8	*27*	37
Bern/CH	22	13	*25*	41

Table 4: Modal split of urban population in selected cities at the outset of the nineties (percent of either walks or trips)
Source: Deiters 1998 (completed)

German cities would find themselves among the bottom of the list. Looking at the number of passengers per inhabitants per year, as a performance indicator of the short-distance transport systems in cities (Zürich with 470 public transport journeys per inhabitant per year at present, still being considered as a good example), East German cities again show peak numbers in 1990 (Erfurt 502, Dresden 434, Leipzig 386). In the context of the general upward trend of the public transport sector in West Germany, only München comes close to this level.

Table 5 shows the development of this indicator for ten cities in the old and new Länder since 1990. The transport enterprises in East Germany have mostly not yet recovered from the setback in passenger demand after 1990 (Leipzig being a prominent example). For this setback, apart from the rapid rise in car ownership, mainly the necessity of economic efficiency is responsible, which resulted in increased fares. In contrast, in the largest West German cities, a continuous upward trend can simultaneously be observed. The conditions in Dresden can be seen as an example of the problems of inner city traffic in East Germany. By 1991, when private car ownership amounted to 290 private cars per 1,000 inhabitants, it had already reached a level that had according to a 1998 forecast only been expected for the year 2000. The share of public transport in commuter traffic had decreased

Selected cities	Population in the operating area	Number of public transport trips per inhabitant per year								
		1990	1991	1992	1993	1994	1995	1996	1997	1998
					old Länder					
München	1,295,877	297	299	301	306	295	318	322	327	336
Stuttgart	874,376	169	173	174	180	191	199	197	196	195
Hannover	732,519	170	173	168	183	181	183	186	214	205
Dortmund	679,933	119	134	143	155	158	157	156	152	154
Braunschweig	344,000	110	120	109	113	112	108	107	106	103
Kiel[1]	280,572	160	159	149	155	147	146	146	147	135
Freiburg	229,857	216	224	251	267	266	290	283	282	279
Oberhausen[2]	223,307	102	113	112	114	104	111	121	133	136
Osnabrück[1]	201,909	136	145	151	157	153	152	150	154	161
Trier[1]	123,996	114	127	132	128	130	141	128	124	125
					new Länder					
Leipzig	598,647	386	237	224	186	188	196	184	146	134
Dresden	563,320	434	266	249	239	240	243	244	246	238
Chemnitz	262,693	332	283	228	183	183	210	210	193	186
Magdeburg	262,356	323	279	261	222	230	230	227	222	215
Erfurt	257,212	502	205	178	175	169	169	170	167	166
Rostock	211,339	304	190	180	185	194	186	193	197	201
Cottbus	154,800	198	161	122	125	114	120	115	116	121
Potsdam	139,187	254	150	180	198	189	240	205	212	191
Schwerin	116,400	361	280	237	232	202	194	194	193	193
Frankfurt/Oder	77,753	280	164	152	133	144	145	149	139	132

Table 5: Development of specific trip frequencies on public transport in selected cities
[1] only bus traffic
[2] bus traffic, from 1996 also tram

Source: Verband Deutscher Verkehrsunternehmen, VDV-Statistik 1990 until 1998

from 46 % (1987) to 30 % (ROSSBERG 1993, p. 207). The Dresdner Verkehrsbetriebe (an enterprise owned by the city) still had 4,200 employees in 1990, transported 254 million passengers, earned DM 195 million but required subsidies of DM 200 million from the city (16.7 % of the costs were covered). Today organised as a limited company, it has only 2,100 employees (to decrease further), transports 133 million passengers, mostly by modern low-floor vehicles, and has achieved a cost-effectiveness of 52.6 % (KUTTIG 1999).

Table 5 shows in addition that neither in the old nor the new Länder is a direct connection between the strength and the trend of passenger demand and the size of the city or respectively the service system (railway and buses or merely buses). The situation of public transport in the cities in East Germany is characterised by having no city with more than 100,000 inhabitants which is not equipped with a tramway. Considering the special success of city transport systems operated by railways in West Germany (as the city-railway in Freiburg, Karlsruhe and Hannover for example), large cities in East Germany have a potential at their disposal to transfer car journeys more to public transport in the future. Statistics showing the transfer potential have revealed that the readiness to use public transport instead of a private car is still higher in the new Länder (mainly in the larger cities) than in the old ones, but that potential is rapidly diminishing (especially among women). Reasons in favour of switching from the car to public transport are, according to people interviewed in East Germany, mainly problems of finding a parking space and the stress of driving. Reasons against the switch are the level of fares, which are perceived as being too high, and the availability of a private car (see VDV 1996, p. 23). In addition to this, there are psychological barriers: public transport is still stigmatised as being "ordained by the state", whereas the private car represents the symbol of the newly gained freedom (FLIEGNER 1998, p. 121).

4.2 The structural reform of the railway system and the regionalisation of the public transport system

As early as 1994, railway reform in Germany led – after the liquidation of the railway's debts by the Federal Republic – to the unification and the restructuring of the railways in both parts of Germany (Deutsche Bundesbahn, Deutsche Reichsbahn) under private law, with the establishment of the Deutsche Bahn AG. The DB AG is subdivided into "dedicated" spheres of action: long distance traffic, local traffic, network, goods traffic and passenger stations. On 1 January, 1999, these were separated to form DB Reise und Touristik AG (travel and tourism), DB Regio AG, DB Netz AG (network), DB Cargo AG and DB Station & Service AG, which are legally independent limited companies under the umbrella of the DB AG as their holding and respectively parent company (second stage of the railway reform). The structure of a holding company has according to the assessment of the new head of the Board of the DB AG, HARTMUT MEHDORN, not proven a success. He wants to partly reverse their splitting up (DIE ZEIT 51, 16.12.1999, p. 21).

With the structural reform of the Deutsche Bahn AG, the EU's regulations on competition were accordingly applied in Germany. The basis is the EEC guideline 91/440 of 1991, according to which state-owned European railways have to be converted into organisations under private law in order to make them independent of governmental and political influence. The essence of this reform is access free of discrimination for all European railway companies to the entire European railway network on the basis of a fair user price system for the lines. The second pillar of the EU's competition policy is represented by the EEC regulation 1893/91 (amendment of the regulation 1191/69), according to which the "Bestellerprinzip" (public service obligation principle) applies to common-user transport. This principle stipulates that transport services, which are demanded of the state or of a territorial authority for reasons of social provision or protection of the environment, but cannot be provided with costs covered, have to be operated and paid for accordingly.

The transfer of the responsibility for railway passenger traffic from the federal level to the German Länder with effect from 1 Jan., 1996, and the legal regulations at the Land level concerning the institutional responsibilities for railway passenger traffic on the one hand and public road transport (including underground, city-railways, tramways and buses) on the other are designated "regionalisation of the public transport sector". As regards the Federal Law on Passenger Traffic, the right of licensing (protection of property for existing companies) was redefined. Since then, different conditions for competition exist: while transport capacities in the field of railway passenger traffic have always to be placed by inviting public tenders, this applies to the rest of the public transport sector only if the transport capacities cannot be provided for in a self-financing cost-covering way (GIRNAU 1996). Because, however, public subsidies, transfer payments and benefits of the public transport sector count as profits in the framework of commercial law, there is practically no transport enterprise which

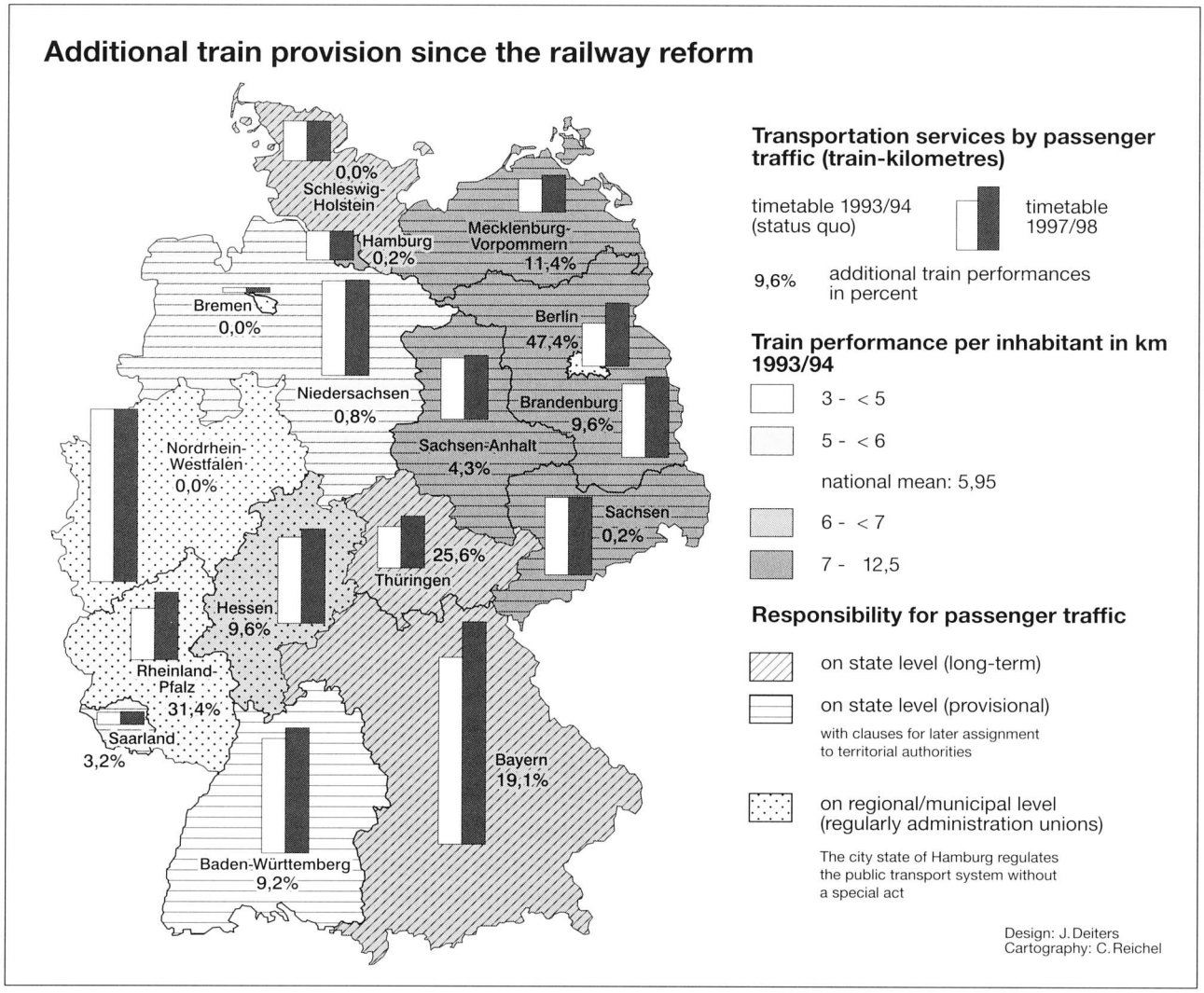

Figure 7: Additional train provision since the railway reform
Source: DEITERS 1999

does not operate in such a cost-covering way. Extensive isolation of businesses from the market and transport modes which are too expensive and inefficient may result from this, being the reason why after the structural reform of the railways, a fundamental structural reform of all the public transport sector is called for (BERSCHIN and HICKMANN 1998).

For railway passenger transport, the Länder have enacted differing regulations (see *figure 7*). Either the responsibility for the railway passenger transport remains with the Land, or it is delegated to the Kreise and the kreisfreie Städte, which form administrative unions for this purpose (regionalisation in a more restricted sense). Other Länder, among them four of the five new ones, have reserved the right to transfer the responsibility for railway passenger transport to the municipal level after a transitional period. With the delegation of the responsibility for the railway passenger transport to the Länder, they receive the government subsidies necessary for the continuation of rail traffic according to a certain ratio formula (DM 12.4 billion in 1998). Public transport in Germany has become an interesting growth market, which foreign competitors also seek to exploit. In Germany, the railway reform has caused a considerable innovative initiative favouring short distance traffic on railway in rural areas (i. e. outside agglomeration areas). Simplified operational systems on branch lines and the use of recently developed attractive and economical railway vehicles have considerably reduced costs. Simultaneously, they have led to increased numbers of passengers, which had hardly been thought possible to such a great extent. Already lines previously out of use are once again providing passenger services.

4.3 Revitalisation of regional railways

During the timetable year 1997/98, the Deutsche Bahn AG supplied 50 million train-kilometres more than in

1993/94. This is equivalent to an increase of 10.4 % in only four years since the railway reform. The share of the East German Länder with one quarter of this increase (not taking into consideration closing gaps in the Berlin suburban train system) is above average. As shown in *figure 7*, the respective increase in the Länder can neither be attributed to different initial stages (train performance before the railway reform) nor to the regulations for responsibility for railway passenger transport. The increase in the supply of railway passenger transport is rather the result of basic decisions in transport policy by the Länder (like in Rheinland-Pfalz, Bayern or Brandenburg) as well as the result of distinctive pre-conditions and initiatives at the regional level. Until 1999 the non-state-owned railways (also called private railways) were able to more than double the train-kilometres travelled from 15 million to 34 million. The leader is the Land Baden-Württemberg, where transport services were however mostly placed without an invitation to bid. With almost 30 %, projects in the new Länder have a disproportional share in this increase in performance. In the new Länder, co-operation between the DB and non-state-owned railways plays a special role (division of labour in services on lines in the east of Mecklenburg and in southern Sachsen-Anhalt).

The competition in railway passenger transport has opened up completely new possibilities in the management of regional railways (DB, private railways; see DEITERS 1999). Despite the considerable success of private railways in competition with the Deutsche Bahn AG, the operation of DB-owned lines by the DB itself (by order of a Land or an administrative union) is still the prevailing form of regional railway passenger transport. Realisation of the DB's concept of an integral basic interval timetable, which follows the model of the Swiss concept of "Railway 2000", in the whole of the Land Rheinland-Pfalz is an example of how railway reform and regionalisation can over-come out-of-date railway operational structures and open up completely new marketing opportunities for railway passenger transport. The increase in demand, which had been expected for the years 1994 to 1998 in the rail traffic (38 %), exceeded by 80 % all expectations by far. It is remarkable that the increase in train-kilometres, run during the same period, of circa 40 % amounted to half of the increase in demand. Rheinland-Pfalz is in the lead among those Länder which have effectively made use of their new responsibility for railway passenger transport by giving orders for additional train provision. The efficiency of railway passenger transport is to be increased in the future by intensified public invitations to tender across the whole of Europe (KUCHENBECKER and SPECK 1998).

The new competitive situation in regional railway traffic becomes clearer when a private railway or a communal transport company operates a line previously taken over by the Land or a territorial authority from the DB. The operation of a former DB-line by the WEG, Württemberg's first communal railway, is considered as a "swabian success story". The line was taken over in 1992 by the communal administrative union "Verkehrsverband Wieslauftalbahn" and has been operated by the WEG since 1995. The number of passengers since then has almost quadrupled, while the cost-covering percentage of 82% is outstanding. The Rurtalbahn in Kreis Düren (Nordrhein-Westfalen) is another typical example. For some time, the closure of the DB-lines Düren-Jülich and Düren-Heimbach was threatened, until in 1993 the Dürener Kreisbahn GmbH was able to buy both lines from the Bundesbahn and started operating them at first with modernised ex-DB railway buses, but with considerably increased service frequency on a basic interval timetable. From 1995 onwards new energy-efficient light railcars, of the Regio-Sprinter model, were put into service, reducing the operating costs by half. The total number of passengers has tripled since the change in 1993, while the operating deficit only amounts to a quarter of the earlier DB-operation's deficit.

A third possibility, which had already been used previous to the regionalisation, is growing in significance. The operation of a line owned by the DB (which itself is not interested in passenger traffic any more because of high deficits) is taken over by another (private or communal) railway company in exchange for payment of a track duty to the DB. The first to start was the Süddwestdeutsche Verkehrs-AG which started operating a DB-line in Baden-Württemberg (Kraichgau) in 1983. With the take-over of two DB-lines in the Vogtland in Sachsen by the Bavarian Regental-Bahnbetriebs-Gesellschaft (RBG), the first line was handed over to a private railway company in the new Länder. With the light diesel railcar Regio-Sprinter, already be tested by the Kreisbahn in Düren, such vehicles were for the first time licensed on DB-lines in Germany according to the operational regulations for tramways and not as before according to the regulations for railway construction and operation (see MEISSNER 1998).

The initial stage was marked by a drastic decline in the number of railway passengers, resulting from the rapidly increasing private car ownership and out-of-date unattractive offers from the railways. After lengthy negotiations, operation of the branch lines Zwickau-Adorf and Reichenbach-Klingenthal could be taken up in November 1997. By offering 1.3 million train kilometres per year, the number of passengers multiplied until 1999 – though with a low cost-covering

percentage (below 25 %). There is at the moment an attempt with "Euregio Bahn" to extend the Vogtlandbahn for trans-national short-distance traffic shared with the Czech Republic (Karlovy Vary, Cheb). As an external project, this is intended to attract visitors to the world exhibition Expo 2000 in Hannover. This solution is seen as applicable to numerous rurally structured regions within Germany and abroad (Barteld 1999).

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Summary

Traffic infrastructure, car mobility and public transport

There have been far-reaching changes in the traffic situation in East Germany since re-unification. After the borders opened, the few cross-border roads between the Federal Republic and West Berlin, which had existed until 1989, were entirely unable to cope with the dramatic increase in West-East traffic. This is why primary importance was given to the development of the most significant East-West axes within the framework of the "Traffic Projects German Unity". This was one way in which Germany was to grow together. Surveys carried out on the regional effects of the traffic projects have revealed that the expansion of the rail network has improved the accessibility of East German regions to a much greater extent than the planned road development. None-theless, a motorway connection in the close vicinity is of special importance for the economic development in regions of the new Länder.

Fundamental structural change took place in the transport of goods in East Germany. During the GDR, all transports in excess of 50 km were carried out by rail. Road transport of goods had a less important role. When industry collapsed after re-unification, the German railway lost more than half of its previous volume of transports. Since 1992, road transport of goods, accounting for 60 % of all transport services, has had a similar position as in the old Länder. The transport prognoses 2010, basis for the traffic infrastructure investments of the national government (Bund), no longer correspond to the actual circumstances. Road traffic, and not rail or domestic shipping, is enjoying the greatest growth in the transport of goods.

The development of personal transport in the new Länder is characterised by a previously unseen growth in motorised individual traffic and huge losses in pub-lic transport passengers. Surveys on everyday mobility in East Germany reveal that this is a "catching up" development. Private motorisation would have developed similarly in East and West Germany, if there had been a functioning market for vehicles in the GDR, and if the population had had sufficient purchasing power. The consequence of the rapid catching up process was that, at the pinnacle of the motorisation boom in 1990/91, the number of fatalities in road traffic had increased twofold in comparison to the middle of the eighties in the GDR. In 1995, it was still 70 % greater than in the old Länder.

The development of local public transport at the start of the nineties was characterised by considerable increases in passenger figures in West Germany and a massive collapse in the passenger demand for East German transport companies. This situation still has not been fully remedied. In addition to fast motorisation, the necessity for commercial management with sometimes drastic price increases is the main cause of this development. In the German regional railway traffic, the reform of the railway system and the regionalisation of local public transport have created new competitive circumstances. Since then, tender invitations must be announced for services in regional rail transport. The use of newly developed, attractive light diesel engines has lead to an increase in passengers, which nobody would have thought possible to this extent. In many cases, private rail companies have taken over the operation of DB routes or co-operate, as in the new Länder, with Deutsche Bahn AG.

Zusammenfassung

Verkehrsinfrastruktur, Automobilität und öffentlicher Verkehr

Seit der Wende haben sich die Verkehrsverhältnisse in Ostdeutschland tiefgreifend verändert. Die wenigen grenzüberschreitenden Verkehrsverbindungen zwischen dem Bundesgebiet und Berlin-West bis 1989 waren nach Öffnung der Grenzen dem dramatischen Anstieg des West-Ost-Verkehrs überhaupt nicht gewachsen. Dem vordringlichen Ausbau der wichtigsten Ost-West-Achsen im Rahmen der "Verkehrsprojekte Deutsche Einheit" wurde daher eine Schlüsselstellung für das Zusammenwachsen Deutschlands beigemessen. Untersuchungen der räumlichen Wirkungen der Verkehrsprojekte haben ergeben, dass der Ausbau des Schienennetzes deutlich mehr zur Verbesserung der Erreichbarkeit ostdeutscher Regionen beiträgt als der geplante Straßenbau. Dennoch kommt der Nähe zu einem Autobahnanschluss für die Wirtschaftsansiedlung in den neuen Ländern eine besondere Bedeutung zu.

Im Güterverkehr vollzog sich in Ostdeutschland ein grundlegender Strukturwandel. Zu DDR-Zeiten mussten alle Transporte über 50 km mit der Eisenbahn durchgeführt werden; der Straßengüterverkehr spielte eine untergeordnete Rolle. Mit dem Zusammenbruch der Industrie nach der Wende verlor die Bahn mehr als die Hälfte ihres bisherigen Transportaufkommens. Seit 1992 nimmt der Straßengüterverkehr mit mehr als 60 % der Verkehrsleistung eine ähnliche Stellung wie in den alten Ländern ein. Die Verkehrsprognosen 2010, Grundlage der Verkehrsinfrastruktur-Investitionen des Bundes, entsprechen nicht mehr der Realität. Nicht die Bahn oder die Binnenschiffahrt, sondern der Straßenverkehr weist die höchsten Zuwächse im Güterverkehr auf.

Die Entwicklung des Personenverkehrs in den neuen Ländern ist gekennzeichnet durch ein beispielloses Wachstum des motorisierten Individualverkehrs und massive Fahrgastverluste im öffentlichen Verkehr. Untersuchungen zur Alltagsmobilität in Ostdeutschland zeigen, dass es sich dabei um eine "nachholende Entwicklung" handelt. Die private Motorisierung in West- und Ostdeutschland hätte sich annähernd gleich entwickelt, wenn es auch in der DDR einen funktionierenden Markt für Kraftfahrzeuge bei entsprechender Kaufkraft der Bevölkerung gegeben hätte. Der rasante Aufholprozess hatte zur Folge, daß sich die Anzahl der im Straßenverkehr Getöteten auf dem Höhepunkt der Motorisierungswelle 1990/91 gegenüber den achtziger Jahre in der DDR mehr als verdoppelt hatte; 1995 lag sie noch um 70% über dem Niveau der alten Länder.

Die Entwicklung des öffentlichen Personennahverkehrs Anfang der neunziger Jahre war gekennzeichnet durch beträchtliche Fahrgastzuwächse in Westdeutschland und massive Einbrüche der Fahrgastnachfrage bei den ostdeutschen Verkehrsbetrieben, die bis heute zumeist noch nicht überwunden sind. Neben der raschen Motorisierung ist die Notwendigkeit wirtschaftlicher Betriebsführung mit zum Teil drastischen Fahrpreiserhöhungen die Hauptursache für diese Entwicklung. Im Regionalverkehr der Bahn haben Bahnreform und Regionalisierung des öffentlichen Nahverkehrs neue Wettbewerbsbedingungen geschaffen. Leistungen im Schienennahverkehr müssen seitdem öffentlich ausgeschrieben werden. Der Einsatz neuentwickelter, attraktiver Dieselleichttriebwagen führte zu Fahrgastzuwächsen, die in diesem Ausmaß kaum für möglich gehalten wurden. Privatbahnen haben vielfach den Betrieb von DB-Strecken übernommen oder kooperieren – wie in den neuen Ländern – mit der Deutschen Bahn AG.

Résumé

Infrastructure de trafic, automobilisme et transports publics

Depuis l'effondrement du Mur, la situation des transports en Allemagne de l'Est s'est modifiée radicalement. Les quelques voies transfrontières entre le territoire de la RFA et Berlin-Ouest existant jusqu'en 1989 n'étaient pas du tout à la hauteur des exigences de l'accroissement spectaculaire des échanges Ouest-Est après l'ouverture de la frontière. L'aménagement rapide des principaux axes Est-Ouest dans le cadre des «Projets de voies de circulation Unité allemande» devenait l'un des éléments clés de l'unification de l'Allemagne. Les études sur les retombées régionales des projets de voies de circulation ont établi que l'aménagement du réseau ferroviaire contribuait nettement plus à l'amélioration d'accessibilité des régions est-allemandes que les projets routiers. Malgré cela, la proximité d'un raccordement à l'autoroute garde une importance primordiale pour les implantations économiques dans les nouveaux Länder (Allemagne de l'Est).

Les transports marchandises ont connu une mutation radicale en Allemagne de l'Est. A l'époque de la RDA, tous les transports sur une distance supérieure à 50 km devaient être effectués par le train et les transports routiers occupaient une place secondaire. Avec l'effondrement de l'industrie après la chute du Mur, les chemins de fer ont perdu plus de la moitié des marchandises transportées jusque-là. Depuis 1992, les transports routiers de marchandises se situent à 60% du total, soit une position identique à celle du reste de l'Allemagne (anciens Länder). Les prévisions des transports pour 2010, qui constituent la base des investissements d'infrastructures du Bund (administration fédérale), ne sont plus réalistes. Les taux de progression les plus forts pour le trafic marchandise seront enregistrés par les transports routiers et non par la voie ferrée et la navigation fluviale.

L'évolution du transport voyageurs en Allemagne de l'Est, à savoir dans les nouveaux Länder, est marquée par une croissance sans pareille des déplacements individuels en voiture et une perte massive de voyageurs pour les transports publics. Les études sur les déplacements quotidiens des Allemands de l'Est établissent qu'il s'agit d'un «rattrapage». Le parc privé de véhicules personnels se serait développé sensiblement de la même manière en Allemagne de l'Ouest et en Allemagne de l'Est s'il y avait eu en RDA un marché viable des véhicules automobiles et un pouvoir d'achat suffisant. Ce rattrapage accéléré a eu pour conséquence que le nombre des tués par accidents de la route en 1990-1991, au plus fort de la croissance, était en RDA

deux fois plus élevé que dans les années quatre-vingts et restait en 1995 de 70% supérieur au reste de l'Allemagne (anciens Länder).

L'évolution des transports publics suburbains dans les années quatre-vingt-dix a été marqué par une perte considérable de voyageurs en Allemagne de l'Ouest et par l'écroulement de la demande pour les entreprises de transport est-allemandes, auquel il n'a pas été porté remède jusqu'à présent. Cette évolution s'explique principalement par les progrès du parc de véhicules particuliers mais aussi par une montée vertigineuse des prix rendue nécessaire par les contraintes de rentabilité. Au niveau des transports régionaux, la réforme des chemins de fer et la régionalisation des transports régionaux à courte distance ont créé de nouvelles conditions sur le marché des transports. Les prestations des chemins de fer régionaux doivent désormais faire l'objet d'appels d'offres publics. L'utilisation de nouvelles motrices Diesel de conception intéressante a entraîné un accroissement du nombre des voyageurs dans des proportions que l'on aurait difficilement imaginées. Dans de nombreux cas, des sociétés privées assurent la desserte des lignes de Deutsche Bahn et coopèrent avec Deutsche Bahn AG comme c'est le cas dans les nouveaux Länder (Allemagne de l'Est).

Резюме

Транспортная инфраструктура, автомобильные перевозки и общественный транспорт

После объединения страны и последовавших социально-экономических преобразований в транспортной системе Восточной Германии произошли глубокие изменения. Немногочисленные трансграничные транспортные коммуникации между ФРГ и Западным Берлином, существовавшие до 1989 года, оказались совершенно не готовы к гигантскому росту транспортных потоков между Западом и Востоком, произошедшему после открытия границ. Ключевое значение для дальнейшего срастания, объединения страны придавалось в связи с этим первоочередному формированию транспортных осей по линии Восток-Запад в рамках транспортных проектов «Немецкое Единство». Исследования пространственного значения и роли указанных транспортных проектов показали, что создание развитой железнодорожной сети даёт значительно больше для улучшения транспортной доступности восточногерманских регионов и городов, чем запланированное автодорожное строительство. Однако наличие автобана всё же имеет в новых федеральных землях большое экономическое значение. В области развития грузового транспорта в Восточной Германии произошли принципиальные структурные изменения. Во времена ГДР перевозки грузов на расстояния более 50 км должны были в плановом порядке осуществляться железнодорожным транспортом, автомобильный грузовой транспорт играл при этом подчинённую роль. С наступившим после объединения развалом социалистической промышленности в Восточной Германии железная дорога потеряла более половины поступавших для перевозки грузов. С 1992 года автомобильный грузовой транспорт имеет в новых федеральных землях в общем объёме перевозок приблизительно такую же долю, как и в старых – более 60%. Прогнозы развития транспорта на 2010 год, являющиеся основой федеральных инвестиций в транспортную инфраструктуру, более не соответствуют реальной действительности. Не железнодорожный или речной, а именно автомобильный транспорт демонстрирует наибольший прирост объёма грузоперевозок. Развитие пассажирского транспорта в новых федеральных землях характеризуется колоссальным ростом количества личного автотранспорта и весьма существенным сокращением пассажирооборота общественного транспорта. Исследования повседневной транспортной подвижности населения Восточной Германии показывают, что речь идёт о навёрстывании имевшегося ранее отставания в развитии личного автотранспорта. Автомобилизация населения в Западной и Восточной Германии получила бы приблизительно одинаковое развитие, если бы и на востоке страны существовал развитый автомобильный рынок при соответствующей сопоставимой покупательной способности населения. Бурный процесс автомобилизации, догоняющей западные стандарты, привёл в результате к тому, что количество погибших в автомобильных авариях на пике волны автомобилизации в 1991/1992 годах увеличилось в бывшей ГДР по сравнению с 80-ми годами более чем вдвое; в 1995 году этот показатель здесь на 70% превышал уровень старых федеральных земель. Развитие общественного пассажирского пригородного транспорта в начале 1990-х годов характеризовалось заметным ростом пассажирских перевозок в Западной Германии и существенным спадом на восточногерманских транспортных предприятиях, ещё непреодолённым вплоть до настоящего времени. Причиной такого развития, наряду с быстрой автомобилизацией населения, является необходимость проведения политики экономии, сопровождающейся иногда значительным ростом цен на билеты. На транспорте регионального значения реформа и регионализация общественного

пригородного транспорта создали принципиально новые условия конкуренции. С этого периода объёмы и заказы на перевозки пригородным железнодорожным транспортом должны распределяться на открытом конкурсе (тендере). Использование новейших дизельных моторных вагонов облегчённой конструкции привело к увеличению пассажирооборота, которое едва ли можно было ожидать в таком масштабе. Частные железнодорожные транспортные предприятия во многих случаях либо полностью, либо как в новых федеральных землях на основе кооперации взяли на себя эксплуатацию участков, принадлежащих государственной железнодорожной сети.