



Regional development studies

The spatial consequences of the integration of the new German Länder into the Community



European Union

Regional Policy and Cohesion

Regional development studies

The spatial consequences of the integration of the new German Länder into the Community

European Commission

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Preface

Each year, the European Commission's Directorate-General for Regional Policy and Cohesion launches a number of studies in the field of regional policy and regional planning. These studies mainly aim at providing a basis for policy formulation internally, as well as the preparation of programmes and initiatives and a basis for analysing the impact of current or planned activities. The most interesting or innovative of these are published in a series entitled *Regional development studies*.

With this series, the Directorate-General hopes to stimulate discussion and action in a wider sphere on the research results received. The publication of the studies is addressed to politicians and decision-makers at European, regional and local level, as well as to academics and experts in the broad fields of issues covered.

It is hoped, that by publicizing research results, the Commission will enrich and stimulate public debate and promote a further exchange of knowledge and opinions on the issues which are considered important for the economic and social cohesion of the Union and therefore for the future of Europe.

Readers should bear in mind that the study reports do not necessarily reflect the official position of the Commission but first and foremost express the opinion of those responsible for carrying out the study.

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1. Introduction

The process of German unification has reached a critical stage. The regional disparities between eastern and western Germany are still enormous in terms of standard of living, employment, business activity, infrastructure and environmental conditions, with the people in the east undergoing grave social hardship and problems. The transfer of capital to the new German *Länder*, which is meant to spur their economy and to promote the convergence of living conditions in the two parts of Germany, places a heavy burden on the population in the western *Länder*. Yet the effects in terms of improvement of the competitive situation of the new *Länder* lag behind expectations. In addition, in the present economic crisis, the new *Länder* are faced with a lack of investment and a fight for jobs between eastern and western Germany. Moreover, investors increasingly 'go further east' to save on labour costs.

However, the situation in the new German *Länder* which may seem uniform at first sight, is by no means homogeneous. Individual areas and regions differ greatly in terms of locational advantages, development potentials

and obstacles and are exposed to different degrees of adjustment pressure. The spatial development is characterized by great differences, ranging from slow progress to mounting instability. In general the North-South divide observed in western Germany is even more pronounced in the new *Länder*.

The study describes the socioeconomic situation of the new German *Länder*. Then determinants of spatial development, potentials and obstacles, trends and perspectives in the medium term are outlined for the various regions of the new German *Länder*. Moreover scenarios of future development in the new *Länder* are presented and their likely spatial impact is discussed.

2. Present economic situation and trends

General trends

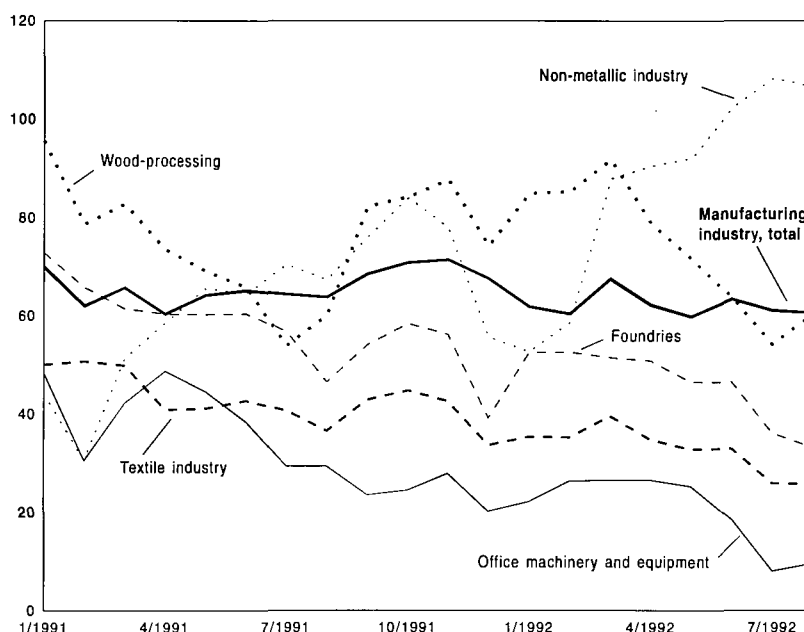
German unification and the sudden exposure of the east German economy to world trade as well as the simultaneous collapse of Comecon trade have produced a profound crisis of adjustment in the east German economy.

Net output of the manufacturing industry had dropped by January 1991 to 70% of its level of the

second half of 1990. While it remained relatively stable at this level until the end of 1991, it again declined at the beginning of 1992 to 61.8% of the original level (second half 1990) and stayed at this low level up to August 1992.

Only non-metallic industry has succeeded in raising output substantially since 1992. The greatest slumps in output have been recorded in wood-processing, tex-

**Figure 1. Net production index,
January 1991-July 1992
(Second half 1990 = 100)**



Source: DIW 52/1992.

tiles, foundries and manufacturing of office machinery and equipment (see Figure 1).

With regard to the labour-market, employment decreased substantially during 1990-93. Thus, for instance, employment in agriculture and in manufacturing is at present at about 50% of early 1990. Consequentially registered unemployment, underemployment (short-time work, for instance) and hidden unemployment (early retirement schemes, training programmes) increased up to a total of 3 million people of which as yet over 1 million are registered as unemployed.

In 1993 trends towards a halt of further deterioration of the socioeconomic situation are visible. Overall further substantial increases of unemployment and job losses are not expected for 1993. From a spatial perspective a clear North-South divide can be observed. In the larger agglomerations there are signs of economic stabilization.

Employment

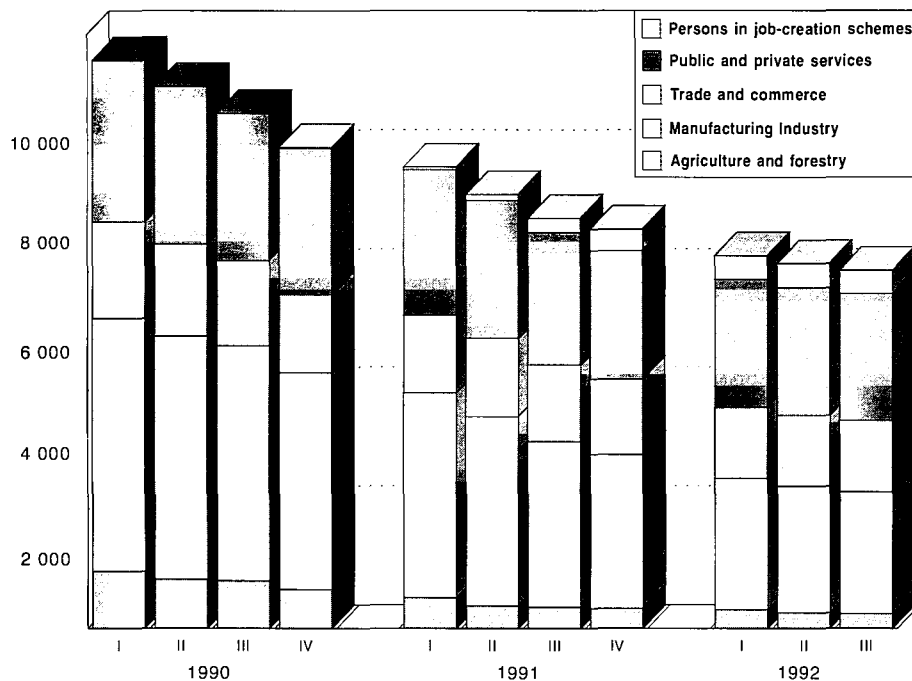
The breakdown of production has resulted in a drastic loss of employment. Between the first quarter of 1990

and the third quarter of 1992 employment in the new *Länder* decreased by more than a third. The most serious loss of jobs was suffered by agriculture which nowadays employs only 26% of the former workforce. (This is partly attributable to the deconcentration of the agricultural sector, i.e. activities made redundant which were included in agriculture in the former system, such as service units.) All other economic sectors have witnessed job losses too. Manufacturing industry at present employs less than 50% of the workforce it had in the first quarter of 1990, trade and transport just about 25% and services about 20% less than in the first quarter of 1990 (see Figure 2).

The share of industry has fallen to less than half the average west German level. Even the formerly highly industrialized *Länder* of Saxony and Thuringia nowadays show a level of industrial employment which is lower than that of the agriculturally oriented western *Länder* of Schleswig-Holstein and Lower Saxony. The service sector although expanding has not been able to offset the industrial job losses by far.¹

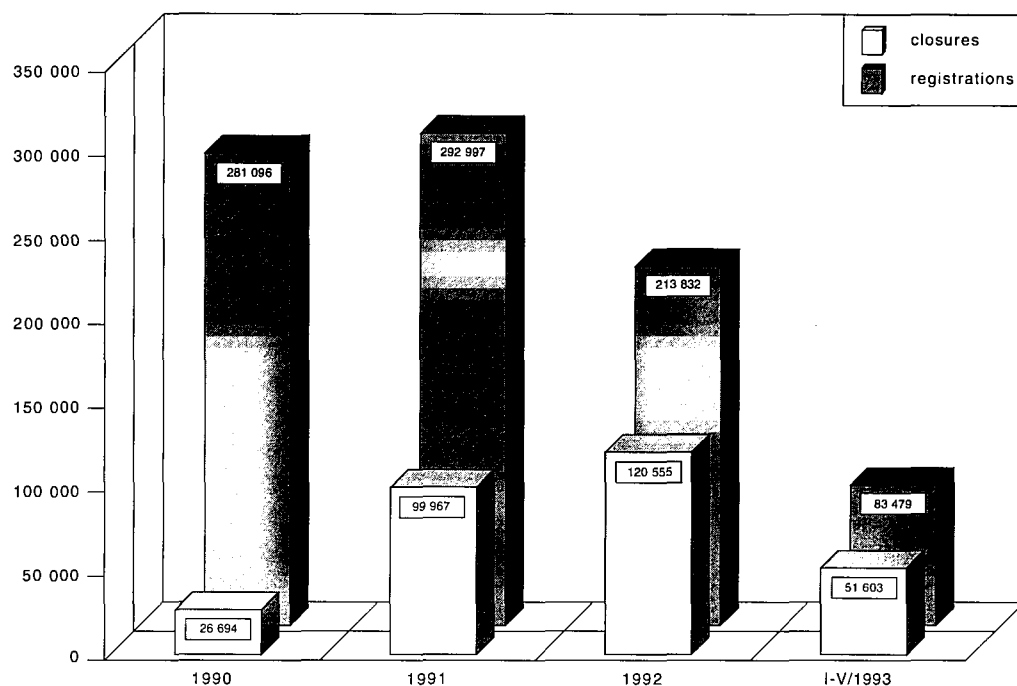
¹ WSI Mitteilungen 1993.

Figure 2. Employment by economic sectors in eastern Germany, 1990-92 (1 000 persons)



Source: DIW 52/1992.

Figure 3. Registration and closure of businesses
in the new German *Länder*, 1990-93



Source: Federal Statistical Office, August 1993.

Table 1. Registration and closure of businesses in the
new German *Länder*, January-May 1993

January-May 1993			
	Registrations	Closures	Closures as percentage of registrations
New German <i>Länder</i>	83 479	51 603	61.82
Brandenburg	13 096	8 118	61.99
Mecklenburg-Western Pomerania	9 061	5 145	56.78
Saxony	23 530	14 846	63.09
Saxony-Anhalt	14 442	9 240	63.98
Thuringia	14 043	9 804	69.81
Berlin (east)	9 307	4 450	47.81

Source: Federal Statistical Office, August 1993.

Business registrations and closures

The job creation and early retirement schemes launched to ease the pressure on the labour-market and the large flow of migrants and commuters to the western *Länder* could in no way offset the loss of jobs in the eastern *Länder*.

The problem of unemployment is aggravated by the fact that there are not enough private businesses generating additional employment. Moreover, many businesses are closing down shortly after their establishment thus not contributing to the reduction of unemployment (see Annex I, Table 14).

As can be seen from Figure 3, from 1990 to 1993 business registrations decreased from about 282 000 in 1990 to about 212 000 in 1992. During the same period business closures increased from about 27 000 to about 121 000. The data available for the first five months of 1993 indicate further deterioration of the relationship between closures and registrations. While in 1990 closures represented about 10% of registrations this ratio increased to about 56% in 1992 and 62% between January and May 1993.

Table 1 displays the recent situation for eastern Germany and the individual *Länder*. Business closures represent highest shares (as a percentage of registrations) in Thuringia (about 70%) and smallest shares in eastern Berlin (about 48%).

GDP, incomes and prices

The slump in production in the new *Länder* in 1991 resulted in a decrease of real GDP of 31.4% against the previous year. Even though in 1992 GDP rose by 4.5%, a comparison of per capita GDP in the western and the

new *Länder* shows the enormous lag of the latter (see Table 2).

Prices and wages have risen sharply in the new *Länder* since unification. The inflation rate in the new *Länder* was around 19.1% in 1991 and 16.5% in 1992, exceeding by far the inflation rate in the western *Länder* of 4.1 and 4.5% respectively and also the EC average of 5.5 and 5.0% respectively.

In pursuance of the objective of raising eastern wages and salaries to western levels as laid down in the unification agreement, there has been a strong increase since 1990. In 1991 wages and salaries rose by 9.3%, in 1992 by 21.5% compared to the previous year. Their rate of increase was thus far above that in the old *Länder* which stood at 7.9% (1991) and 6.0% (1992) as against the previous year (see Table 3). According to estimates by the DIW the monthly gross income per full-time employed person (employed minus short-timers) was about ECU 1 075 in the first quarter of 1992 which was equivalent to about 60% of the west German actual wage.¹ By the end of 1992 it should have reached just under 70%. Further increases were renegotiated in 1993. They will stretch, however, over a longer period than initially planned.

One of the greatest problems at present is that the increase in wages and salaries in many industries is not matched by an increase in labour productivity (see Table 4). It places the new German *Länder* in a dilemma: since labour productivity continues to be low, rising wages will reduce the region's attractiveness to foreign investors (see Table 36). These will either move to locations in Central and Eastern Europe, where labour productivity is similar to that of the eastern *Länder* but wage and other costs are much lower. Or they will invest in the

¹ DIW 1-2/1993.

Table 2. GDP level, 1991

	GDP total (billion ECU)	GDP per capita (ECU PPS)
New German <i>Länder</i>	91.5	7 460
Old German <i>Länder</i>	1 300.0	22 350
EUR 12 (including new German <i>Länder</i>)	5 293.5	19 210

Source: Institut für Wirtschaftsforschung Halle 1992.

**Table 3. Growth of income, prices and unit labour costs,
1991-92**
(percentage change compared to previous year)

	Real GDP		Prices		Income		Unit labour costs ¹	
	1991	1992	1991	1992	1991	1992	1991	1992
New German <i>Länder</i>	- 31.4	- 4.5	19.1	16.5	9.3	21.5	52.7	14.0
Old German <i>Länder</i>	3.7	1.5	4.1	4.5	7.9	6.0	4.2	5.5
EUR 12	0.7	1.1	5.5	5.0	7.1	6.7	6.0	5.3

¹ Unit labour costs: compensation per hour divided by the corresponding output per hour.

Source: DIW 1-2/1993.

western *Länder* where wage costs are admittedly still higher, but accompanied by much higher productivity levels. The other side of the dilemma is, however, that the wage differential between the new and old *Länder* leads many workers to commute to or leave for the western *Länder* (see Chapter 3.4).

A special problem is the rise in unit labour costs (compensation per hour divided by the corresponding output per hour) in the new *Länder*. They rose in 1991 by more than 50% and in 1992 by another 14%, which adds up to a far greater increase than in the western *Länder* or in the Community on average.

Despite a considerable reduction of employment, productivity (in terms of GDP per hour worked) has thus increased less than wages (gross income from dependent employment per hour worked).

Investment

Investment activities in the new *Länder* increased by 35.8% in 1991 and by another 29.8% in 1992. Altogether the investment made in the new *Länder* amounted to ECU 42.3 billion in 1991 and ECU 54.9 billion in 1992 which is equivalent to 14.7% (1991) and 18.0% (1992) of investment made in western Germany (see Table 5).

**Table 4. Development of wages and productivity
in eastern Germany, 1990-92**

(ECU per hour)

	1990		1991		1992
	first half	second half	first half	second half	first half
Wages ¹	5.54	6.23	8.18	11.59	10.76
Productivity ²	9.77	9.52	9.08	10.40	9.78

¹ Gross income from dependent employment per hour worked.

² GDP (in constant prices) per hour worked.

Source: DIW 39/1992.

Table 5. Investment in the new and old German *Länder*, 1991-92*(billion ECU at current prices)*

	1991		1992	
	New German <i>Länder</i>	Old German <i>Länder</i>	New German <i>Länder</i>	Old German <i>Länder</i>
Fixed asset investment	42.3	288.0	54.9	304.3
of which:				
in equipment	20.6	133.3	23.6	133.7
in plant construction	21.7	154.7	31.4	170.6

Source: DIW 1-2/1993.

While in 1991 investment in equipment with 98.6% recorded the highest growth rate in eastern Germany against the previous year, in 1992 the biggest increase was seen in plant construction where investment rose by 44.7% compared to the previous year.

Investment concentrated on industries such as road vehicle construction, rock and stones, food, tobacco and beverages, steel, mechanical engineering, chemicals and electrical engineering, which accounted for two thirds of total investment in 1991 and 1992.

Investment in manufacturing both in 1991 and 1992 were made to a major part by companies owned by west German entrepreneurs. According to DIW estimates, ECU 6.5 billion was invested in manufacturing in 1991 and investments in the order of ECU 9.5 billion were planned in 1992, which is an increase of 45% (see Table 6).¹

Considering the tremendous lag of the new *Länder*, capital spending so far has been rather moderate. It is expected that in 1993 private investment will increase again by 9%, a figure which may be too optimistic though in the light of the present economic slowdown in Germany as a whole and in the Community.

¹ DIW 52/1992.**Table 6. Investment in manufacturing by ownership, 1991-92***(as % of total enterprises)*

	1991	1992 ¹
Enterprises	100	100
of which:		
enterprises owned by the State Trust Agency	31	25
private enterprises ²	69	75
of which:		
independent entrepreneurs	26	24
west German-owned enterprises	34	43
foreign-owned enterprises	9	8

¹ Planned.² Including partly privatized enterprises.

Source: DIW 52/1992.

Generally one cannot yet speak of a self-sustained catching-up process in the new *Länder*. It has to be taken into account, moreover, that the positive developments in the economic branches which have been witnessing increases in output and investment are to be attributed largely to public procurement and purchasing. Against the background of the economic slowdown expected (in 1993 GDP growth is estimated at +3.5% in the new *Länder* and at -1.0% in the western *Länder*),¹ and of the current budgetary difficulties, these positive impulses rather threaten to subside in 1993.

Foreign trade

Not much is left of the former GDR's position in foreign trade. Exports by the new *Länder* in 1992 barely reached a third of the level held by the GDR in 1989, imports fell to a quarter of their 1989 level. This decline is attributable to the losses incurred in their trade with the countries of Central and Eastern Europe: trade with Bulgaria, Romania and Hungary is virtually non-existent while trade with the former Soviet Union, Poland and the Czech Republic and Slovakia has decreased by 70 to 80%.

Nevertheless, the former State-trading countries are still the most important trading partners for east German industry, more than half of their exports go to Central and Eastern Europe.²

The new *Länder* and the German capital, Berlin, are in a favourable geographical position as regards access to the north and East European countries. This is especially true for Berlin, the Baltic coast region, Brandenburg and Saxony. However, whether this locational factor is an advantage rather than a disadvantage depends on what use the regions make of their indigenous potential. There are relatively well-developed sea and railway connections, via which the former GDR had handled a large part of its extensive trade with the Central and East European countries.

Up to 1990, between 60 and 80% of foreign trade (exports and imports) of the former GDR was with Comecon countries. Even in 1991 about 66% of exports and almost 60% of imports still went to or came from Central and East European countries. The share of foreign trade with industrialized Western countries, among them EC countries, increased between 1990 and 1991, while the volume of foreign trade decreased with almost all trading partners (except imports from OPEC countries).

As can be seen from Figure 4 the structure of east German exports hardly changed between 1989 to 1991. A notable exception is livestock where exports increased considerably. This is mainly due to restructuring in agriculture and the collapse of large agricultural combines. As a consequence the meat processing industry in western Germany bought east German livestock in large quantities at low prices.

In general, it is not so much the structure of exports which changed after 1989 but the volume. The volume of exports, still at a high level in 1989, fell to 51% in 1991 (see Annex I, Table 18). Compared to the average volume of imports between 1985 and 1989, the volume of imports decreased to 54% in 1990 and to about 30% in 1991.

Table 7 shows the share of eastern Germany in total German foreign trade. In 1991 the share of exports from eastern Germany was 7.3%, in 1992 8.4%. Imports into the new *Länder*, by contrast, accounted for a large proportion of total German imports, reaching 27.4% in 1991 and 31.1% in 1992.

The major part by far of the demand in the eastern *Länder* was satisfied by supplies from the western *Länder*: 90.6% of imports into the new *Länder* came from the western *Länder* in 1991 (in 1992, 93.1%). This adds up to about 20% of the trade volume of the old *Länder*.

The structure of foreign trade of the former GDR in the 1980s, figuring high export shares of raw materials and heavy engineering, underlines the weakness of the east German economy. This must also be taken into account in assessing future prospects.

For 1993 exports from the new *Länder* are expected to increase in real terms by 10.5% against the previous year, at the same time a further increase in imports is expected (+7.5%). This means that a substantial trade balance deficit will persist. In 1992 it was ECU -93.5 billion (1991 prices) which exceeded the deficit of the two preceding years.³

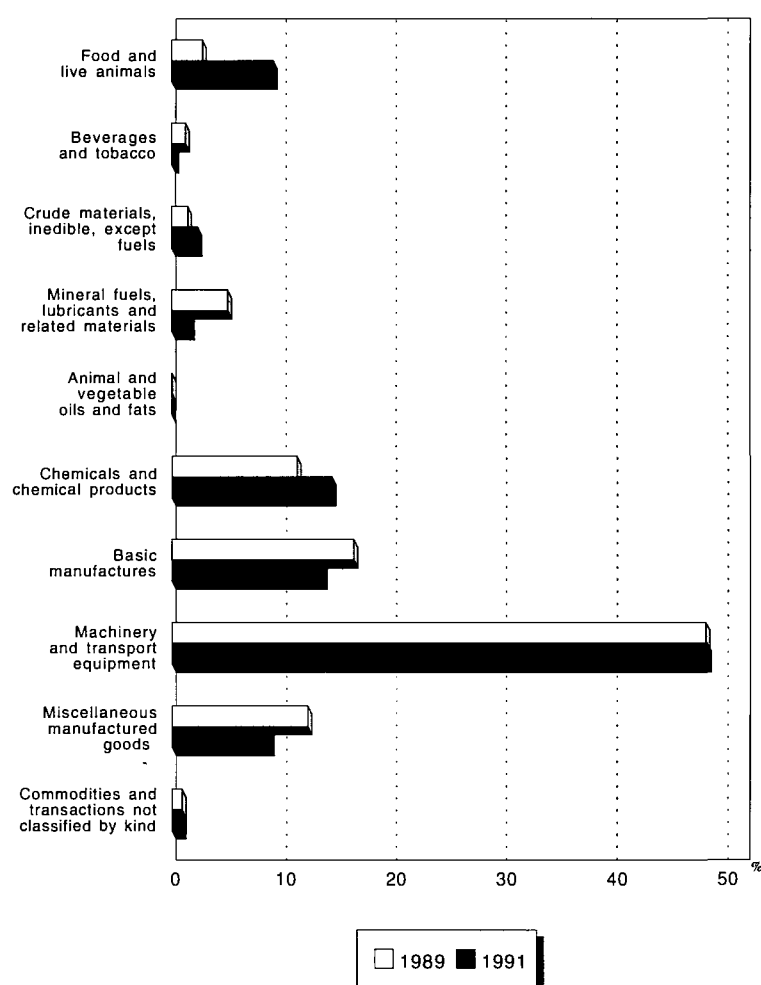
The future of east German foreign trade will much depend on the advances of restructuring and also to a large extent on the revival of the traditional export markets in Central and Eastern Europe. The prospects for future developments in foreign trade are discussed in Chapter 5.

¹ See DIW 1-2/1993.

² IWD 1993.

³ DIW 1-2/1993.

Figure 4. Distribution of east German exports by product groups, 1989-91 (as % of total)



Source: Federal Statistical Office, 1992.

Table 7. Foreign and intra-German trade, 1991-92

(billion ECU)

	Exports		Imports		Trade balance	
	1991	1992	1991	1992	1991	1992
Total German trade ¹	424.2	426.8	412.5	422.3	11.7	4.6
Old German <i>Länder</i>	516.4	540.7	421.6	440.7	94.8	99.9
of which:						
Exports to the new German <i>Länder</i>	103.3	122.2	19.9	27.8	–	–
New German <i>Länder</i>	30.8	35.9	113.9	131.3	– 83.1	– 95.4

¹ Intra-German trade not included.

Source: DIW 1-2/1993.

3. Spatial dimensions of global developments: a picture of trends and situations in the new German *Länder*

The dramatic changes in eastern Germany following unification can hardly be assessed systematically at present. Socioeconomic patterns and trends are subject to rapid change. In many fields official statistics and short-term economic forecasts are outdated before they are published. Against this background an assessment of spatial consequences is bound to be speculative to some extent.

In an effort to clearly discern medium-term forecasts (Chapter 5) and long-term scenarios (Chapter 6) from the available empirical evidence and in order to avoid the fallacy of subjective generalization, the present chapter is confined to a description of factual spatial trends and patterns as they appear in the light of official data and analyses.

Moreover, this chapter elucidates on spatial dimensions of general developments. Hence the analysis is directed towards spatial trends and patterns which can be observed in relation to global decisions and historical events which are not spatial or regional in nature, but which nonetheless result in certain spatial situations and developments.

The topics dealt with on this basis in the present chapter are:

- (i) the state of privatization of State-owned enterprises which, in spatial terms, indicates differentials in the propensity of investors to allocate resources;

- (ii) sectoral restructuring in combination with deconcentration of units of production and the spatial incidence of these global trends with regard to patterns of employment;
- (iii) spatial labour-market patterns resulting from macro-developments and adaptation processes in the new German *Länder*;
- (iv) population movements (natural and migratory) and consequential spatial patterns due to the integration process and the persisting prosperity gap;
- (v) patterns of commuting and the spatial impact of global wage differentials which were initiated politically.

In bringing together the spatial dimensions inherent in these topics an attempt has been made to deliver an analytical photograph of the state of the unification process. Chapter 4 deals with spatial trends, patterns and locational factors which do or will constitute obstacles to, or opportunities for, future spatial development in the new German *Länder*.

3.1. Privatization

In 1989 the so-called State Trust Agency (Treuhand) was established to initiate and implement the privatization of the State-owned enterprises of the former GDR. This has been regarded as one of the most important pre-

conditions for market economy and economic upswing. If its work is judged by the speed of the privatization process, the Agency has successfully discharged the task entrusted to it. Several of its regional branch offices at the end of 1992 had implemented the privatization projects assigned to them. By April 1992, 7 100 of the 11 500 enterprises existing in the new *Länder* in 1990 had been privatized.

Map 1 shows the regional distribution of the persons employed in enterprises held by the State Trust Agency in 1991. Most of them are located in southern regions which are strongly geared to such industries as metal works, mechanical engineering and chemicals, whereas relatively few of them are found in primarily agriculturally oriented Mecklenburg-Western Pomerania – with the exception of Rostock (shipyards).

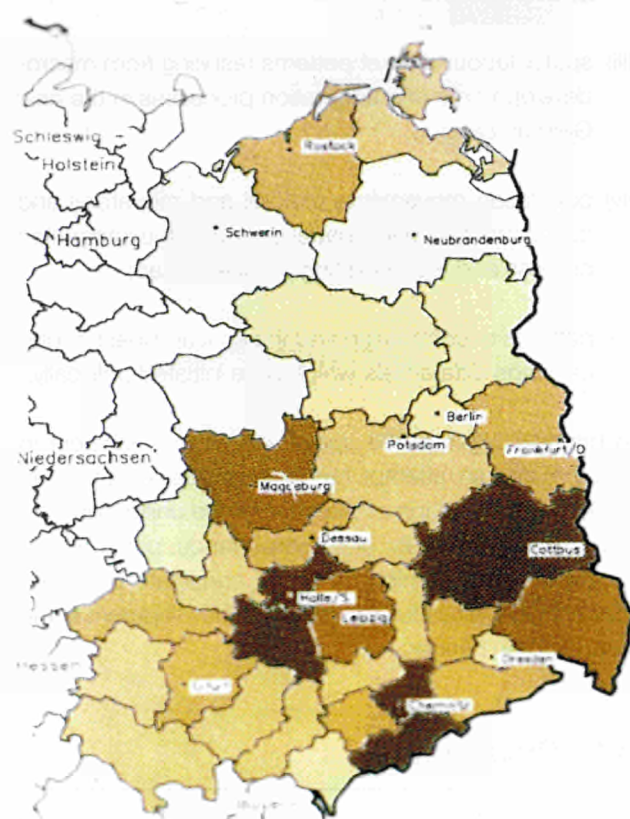
Commitments to invest, which have been made to date, involve a volume of about ECU 51 billion. Moreover commitments have been made to preserve 1 million

jobs. Saxony where 32% of all State Trust Agency enterprises are located is in the lead as regards investment and job maintenance commitments with 33.8 and 32% respectively. There is evidence, however, that commitments made with regard to job maintenance cannot be complied with by a substantial number of companies.

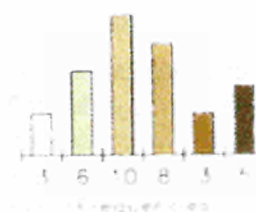
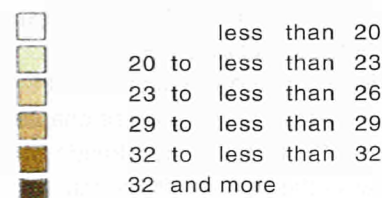
In terms of numbers of privatized enterprises the greatest progress in privatization has been recorded in Saxony: over 2 000 enterprises were privatized between 1990 and April 1992 (see Table 8).

However, there are two aspects which dim these obvious achievements. For one, the State Trust Agency has accumulated a pile of debts in the course of selling State-owned enterprises (some ECU 102 billion by late September 1992), which has put a further strain on the federal budget. Secondly, some of the newly privatized enterprises are not able to fulfil their commitments *vis-à-vis* the Agency (e.g. to preserve jobs, to invest) owing to the difficult economic situation in which they find

Map 1. Employment in State Trust Agency enterprises, October 1991 (as % of total)



Share of gainfully employed persons in State Trust Agency enterprises in October 1991 in total gainfully employed persons in 1990 as %



— Federal boundary
— Boundary of Employment

AB Werkstattbericht Nr. 1 6/15 6 1992
• Berlin data refer to East Berlin only

100 km



NB: Berlin data refer to East Berlin only.

Sources: State Trust Agency, February 1992 and July 1992; Spatial monitoring system of the BfLR IAB Werkstattbericht No 1.6/15.6.1992.

Map 2. Development of number of gainfully employed persons
in State Trust Agency enterprises

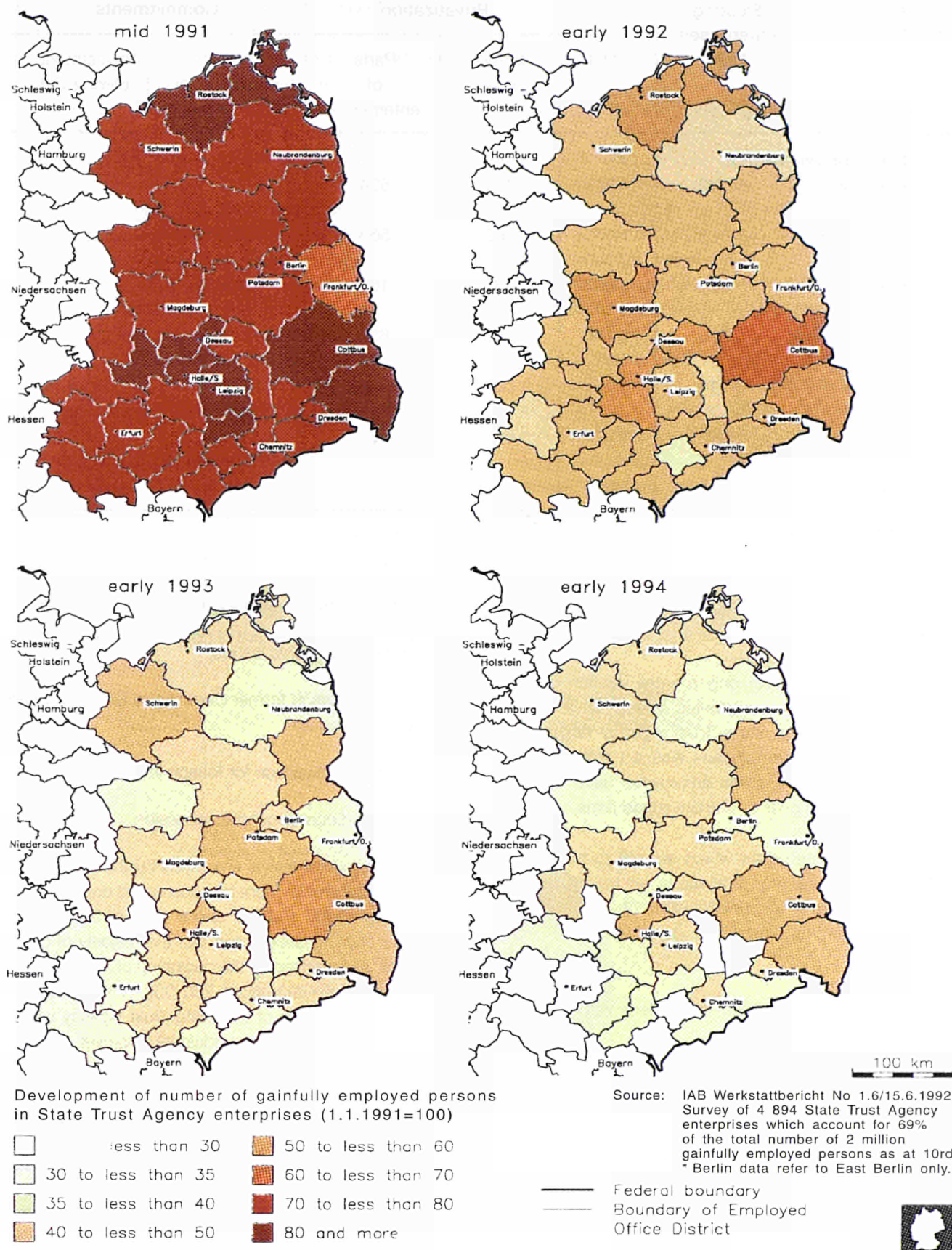


Table 8. Privatization by the State Trust Agency
(interim results April 1992)

Existing enterprises 1990	Total	Privatization		Commitments	
		Enterprises	Parts of enterprises	Job maintenance 1 000 persons	Investment billion ECU
Mecklenburg-Western Pomerania 1 339	978	444	534	90.1	2.8
Brandenburg 1 673	1 173	569	568	241.2	12.2
Berlin (East) 988	503	335	168	193.3	8.3
Saxony-Anhalt 1 825	1 146	516	630	138.5	6.2
Saxony 3 714	2 072	1 084	988	307.6	16.3
Thuringia 1 976	1 222	642	580	135.4	4.2
Total 11 515	7 056	-	-	1 016.1	97.9

Source: State Trust Agency, February 1992 and July 1992.

themselves. The present recession aggravates this problem.

The job guarantees cover only a small fraction of the former employees of companies which have been taken over. When the State Trust Agency began its work, the number of employees was 4.1 million. This means that about 3.1 million employees have not (or not yet) been taken over by the privatized firms.¹

As regards the enterprises which are still to be privatized, it may be assumed that many will be difficult to sell or only at a very low price because of unfavourable general conditions. Adverse conditions are for instance:

- (i) structural maladjustment in tandem with lack of efficiency;
- (ii) obsolete technologies and poor state of buildings;
- (iii) environmentally harmful technologies, polluted sites and the resulting costs of rehabilitation of the environment;

¹ State Trust Agency 2/1992.

(iv) shortcomings in regional infrastructure;

(v) unsolved ownership issues;

(vi) the breakdown of former Central and East European markets;

(vii) the low attractiveness for foreign investors;

(viii) the international economic recession.

The proportion of persons employed by the State Trust Agency in total employment has decreased considerably, amounting in early 1993 to about 40% of the level of 1 January 1991. It is expected that the majority of companies will be privatized by the beginning of 1994. Still, at the beginning of 1993 about 260 000 of the industrial jobs are in enterprises of the State Trust Agency which makes the Agency the major industrial employer.

3.2. Economic specialization, sectoral growth and decline

A general problem is the strong dependence of regions and locations on declining industries; in the first two

years following unification, agricultural restructuring was also a major problem (see Map 3). Several regions and counties in Mecklenburg-Western Pomerania, Brandenburg and Saxony-Anhalt, for example, have been characterized by a strong predominance of agriculture. Other regions like Saxony and in Saxony-Anhalt, especially the Halle-Bitterfeld area, have been dominated by large-scale industrial monostructures in mining and chemicals production. A rather large proportion of outdated industrial facilities is found in Saxony.

There are a variety of problem factors with which traditional industrial locations in the new German *Länder* have to cope. These relate mostly to the previous economic system and entail the low level of productivity compared with Western standards, the poor condition and age of plant and technical equipment, the predominance of large-scale companies characterized by inflexible and obsolete structures, the lack of market experience as well as insufficient product quality.

The special features inherent in problems of restructuring in the new German *Länder* can be illustrated by looking at the activities of the employed and their sectoral attribution in the economic system of the former GDR. As can be seen from Figure 5, nearly 50% of the agricultural workforce were engaged in activities which in the economic and statistical systems of Western Europe are not included in the primary sector but in the

building and construction industry or in services. A similar situation can also be observed in manufacturing industry.

An overview of employment trends in selected sectors is given subsequently.

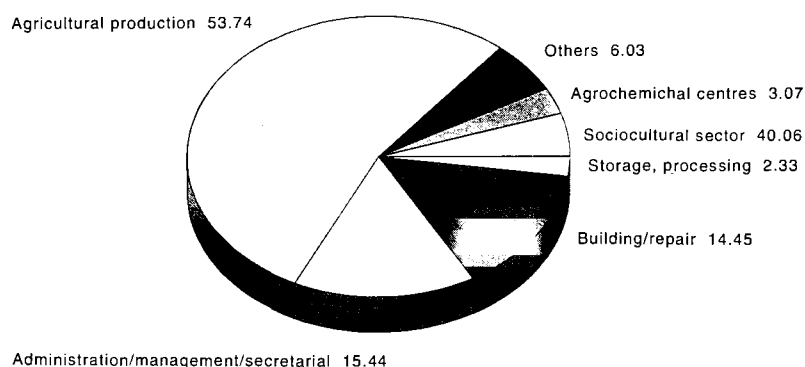
Agriculture under strong adjustment pressure

Similar to other sectors, agriculture in the new *Länder* is undergoing a painful restructuring process. Production has continuously shrunk both in terms of cultivated land and livestock numbers since 1989. It is true, though, that productivity increases of 24% in 1989 to 1991 – mostly through abandonment of marginal land – have led to increases in yields (see Table 9 and Annex I, Table 12).

Whether this process will lead to a regionally-differentiated economic development is difficult to assess at this stage. The situation in Mecklenburg-Western Pomerania and Brandenburg apart from the areas around Berlin is highly unfavourable, and especially for regions where natural conditions are poor and employment alternatives scarce.

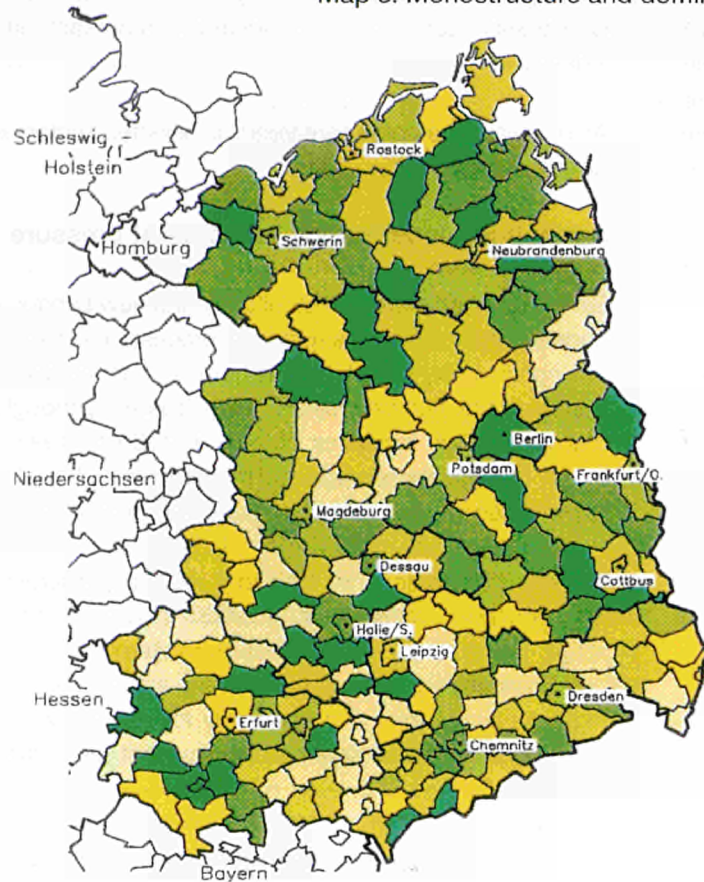
A survey conducted in the structurally weak rural areas of Neubrandenburg suggests that – according to optimistic estimates – merely 16.3% of the persons employed in agricultural producer cooperatives in 1989

**Figure 5. Example for the profile of activities:
agricultural employees in the former GDR, 1989**
(as % of total)



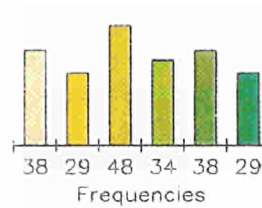
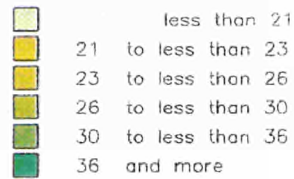
Source: Empirica sectoral adjustment model (SAM), empirica 1991b.

Map 3. Monostructure and dominant sectors of industry



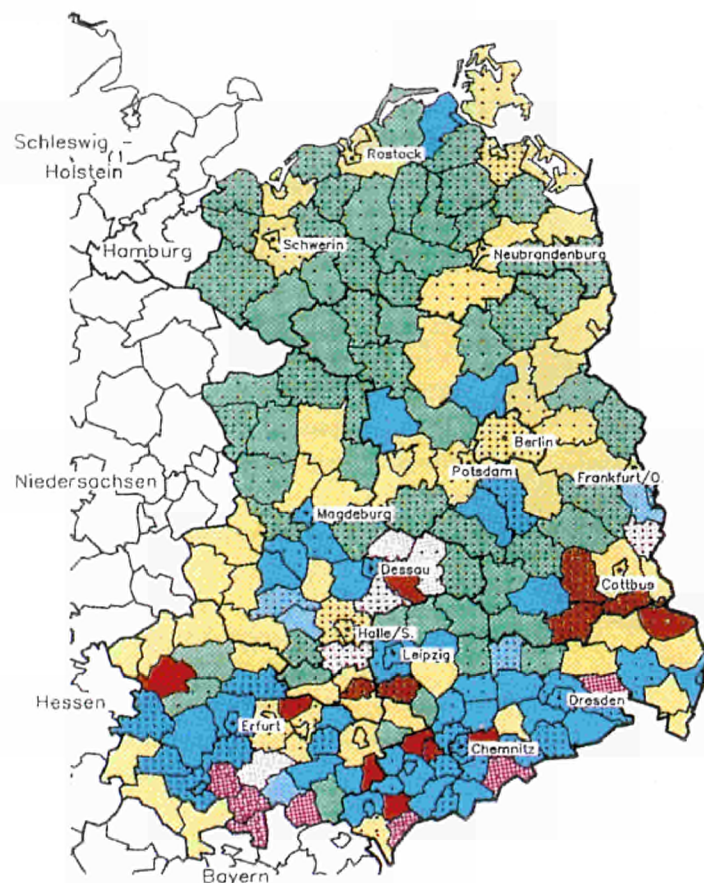
Monostructural problems

Share of economic sector with highest number of persons employed on total number of persons employed in 1989 in percent



Minimum: 16.8
Maximum: 62.0
Mean value: 27.5

- * Enclosed city counties are aggregated in surrounding counties.
- * Data on Berlin only East Berlin.

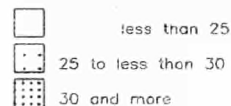


Dominant sectors of activity

Dominant sectors of activity in the county 1989



Share of dominant sector of activity in percent



- * Enclosed city counties are aggregated in surrounding counties.
- * Data on Berlin only East Berlin.

Source: Spatial Monitoring System of the BfLR boundaries county.

100 km



Table 9. Reduction in cultivated area, stock of cattle and stock of pigs, 1989-91
(percentage change)

	Stock of cattle	Stock of pigs	Cultivated area
Old German <i>Länder</i>	- 4.8	- 3.6	- 2.2
New German <i>Länder</i>	- 47.2	- 60.8	- 15.7
Brandenburg	- 36.6	- 62.0	- 11.6
Mecklenburg-Western Pomerania	- 42.6	- 58.0	- 13.6
Saxony	- 58.3	- 60.0	- 18.3
Saxony-Anhalt	- 53.3	- 64.4	- 13.3
Thuringia	- 39.5	- 59.6	- 23.9

Source: Lagemann 1992.

will retain their jobs by the end of 1993.¹ It will be difficult for these large numbers of dismissed workers to find alternative employment as jobs continue to be abolished in other economic sectors too.

Good chances of development are predicted for arable farming, in particular for the intensive production of cash crops, especially in the black soil and loess areas in the regions of Magdeburg, Halle, northern and central Thuringia, Leipzig up to the upper Lausitz and parts of Brandenburg (Fläming). In some parts of Mecklenburg-Western Pomerania there are opportunities for cash crops as well as for food processing. Agricultural areas in Brandenburg offer prospects for agricultural production close to consumers (Berlin), for extensive fodder production and for the cultivation of special crops. Few spatial differentiation trends are found at present in live-stock farming.²

The rural areas in particular lack a network of centres of higher-order centrality which could act as a focus attracting economic activity and production-related and sociocultural infrastructural facilities, benefiting the whole area. This is clearly evident in the regions of Schwerin, Neubrandenburg, Altmark as well as in the north and south of Brandenburg. Rural areas are inadequately supplied with such infrastructural facilities/ services, which constitutes an obstacle to the economic development of the rural regions.

¹ Bielski et al. 1992.

² See Lagemann 1992.

Up to now the productivity reserves of the rural areas have not been tapped. Activities outside agricultural production (e.g. ecology, nature conservation, preservation of rural communities, soft tourism) have been inadequately utilized.

Further decline in extractive and producer goods industries

From the beginning of 1991 to early 1992, extractive and producer goods industries suffered a decline in their turnover and in the number of orders, but they are expecting a slight increase in output and orders in the course of the year 1992.

The most favourable development is registered in extractive industries (rock, stone and related minerals with the exception of calcareous limestone and brickwork) which is largely attributable to company structure (a large number of smaller production units), strong links to local markets, and the big demand (by the building sector). Regions and locations in Saxony-Anhalt and Brandenburg and some regions in Saxony and Thuringia have profited especially from the favourable trend. By contrast, large parts of the chemical industry, particularly basic chemicals, are up against serious economic problems. Saxony-Anhalt, in particular the region of Halle-Bitterfeld, is strongly affected (see Map 4). The situation in the iron and steel industry as well as in the production of non-ferrous metals is similarly unstable as regards orders, output and turnover. Brandenburg and locations in Saxony,

Saxony-Anhalt and Thuringia are the most strongly affected. Lignite mining, by contrast, is at present in a relatively stable state, but it is necessary to prepare effectively for the necessary structural changes, especially in the regions of Halle-Leipzig and Cottbus.

Slight improvement in capital and consumer goods industry

The capital goods industry recorded a slight improvement in turnover and orders compared to early 1991, yet another decrease in output. However, the picture varies greatly among companies. Relatively favourable developments have been observed in several sensitive sectors such as steel and light-metal construction, some branches of iron, sheet-metal and metal goods production and the automobile industry, mainly benefiting locations in Saxony and Thuringia, and some locations in Saxony-Anhalt and in Brandenburg. The electrical industry, by contrast, is in a state of high instability, which affects particularly the region of Berlin-Frankfurt-on-Oder as well as locations in Thuringia and Saxony.

The consumer goods industry has registered growth in output as well as in turnover and orders compared with the beginning of 1991. This development is largely accounted for by the printing industry and paper production, and, to a lesser extent, by the plastics and leather goods industry. Also rubber and wood processing are doing fairly well, to the benefit of locations in all *Länder*. However, most recent surveys warn against too much optimism. The prospects especially in the textile and clothing industry and in glass production are highly uncertain, which will have a destabilizing impact on the Erzgebirge region and other regions of Saxony and, to some extent, on Brandenburg and Thuringia. There are indications that wood processing, too, may be facing harder times.

The relatively strongest economic recovery in the manufacturing sector has taken place in the food, beverage and tobacco industry, especially in beverage production and meat processing. It was triggered mainly by the increasing demand for locally produced foodstuffs which has been recovering since its slump after unification. The dairy industry and confectionery production, on the other hand, show no uniform trend so far. Their development prospects vary from location to location across all *Länder* and regions.

Dynamic development in the building sector

Given the huge demand for construction work, the building sector is experiencing a dynamic development.

It should be recalled, however, that east German firms have not participated in this development all along. A growing problem is that domestic construction workers have to compete more and more with cheaper foreign workers, so-called contract workers from neighbouring countries (such as Poland). It may be assumed that some of the losses of building jobs in Saxony-Anhalt (– 9.9%) and east Berlin (– 18.7%) between November 1989 and July 1991 are attributable to this competition.

Service sector: boom of private services but large surplus manpower in the public sector

The service sector has scored the best results on the way towards restructuring and adjustment to market conditions. In 1991 it accounted for two fifths of the gross value-added in the new *Länder*.¹ Growth has been particularly dynamic in retail trade, banking and insurance as well as in private service firms and in the liberal professions.²

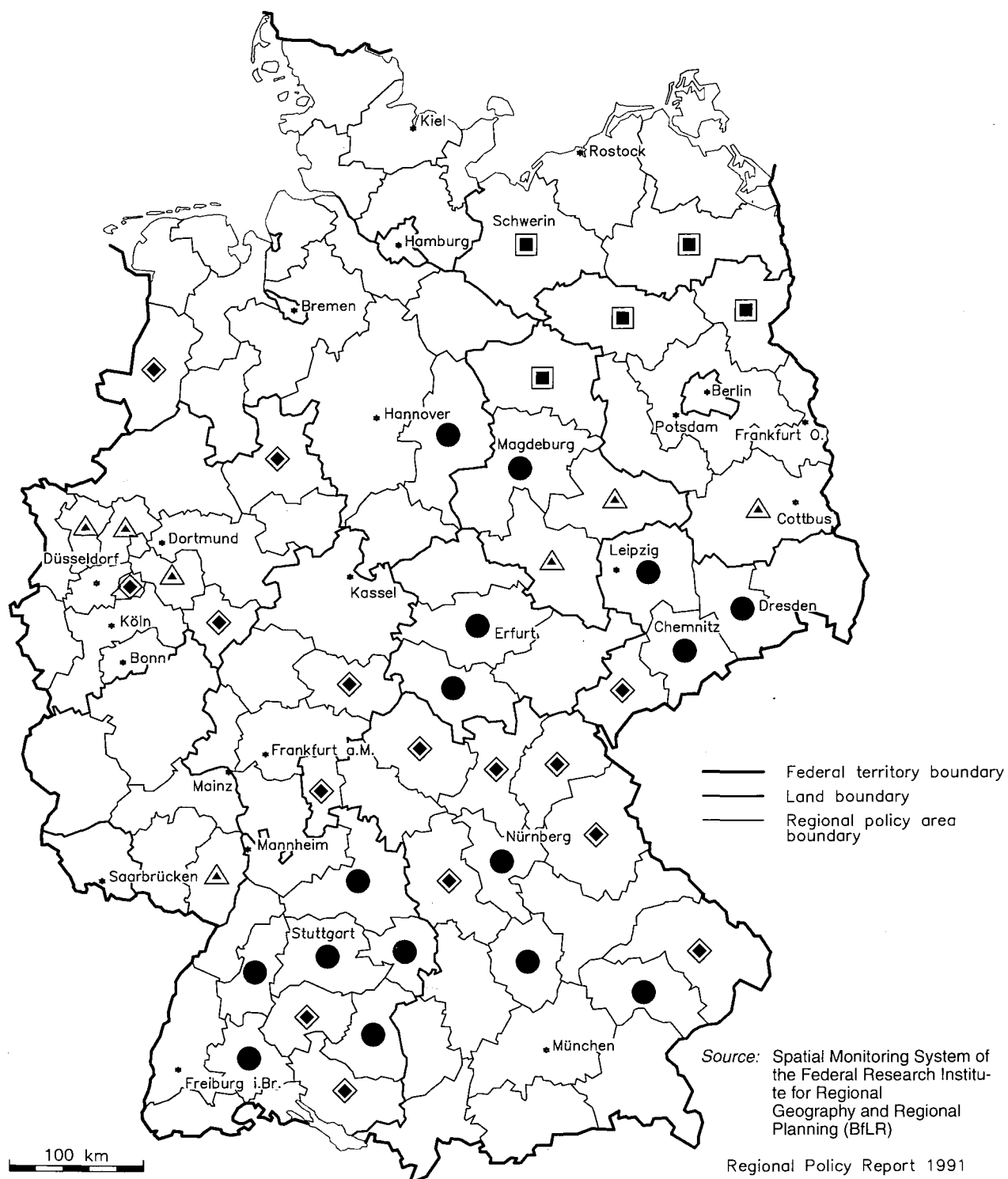
The latter especially have seen a steep increase in the number of both self-employed and employees (e.g. physicians, lawyers). While their number had been estimated at 6 000 to 7 000 in October 1990, it is assumed to have doubled by the end of 1990 and even risen 10-fold by mid-1992. In its catching-up process, the service sector, which had been underdeveloped in the former GDR, has thus been able to absorb some of the workers who have been laid off by other sectors. However, its absorptive capacity is not sufficient, in terms of structure, volume or prospects, to cope with redundancies in agriculture and industry.

Moreover, workers have become or are becoming redundant in the public sector or in the wake of closures of State enterprises in which services were incorporated. There are only estimates available on the original number of employees in the public sector (due to definition problems, fragmentary data). Yet it is assumed that by mid-1992 about 640 000 employees had been dismissed from the public sector.

Even though there is a considerable shortage of personnel, in particular with regard to civil servants experienced in some administrative core functions, 1.1 million personnel in the civil service in the new *Länder* constitute a large surplus manpower compared to the western *Länder* (see Table 10). It can be seen from the compari-

¹ DIW 12/13/1992.

² DIW 20/21/1992.



Economic branches employing more than 20% of wage and salary earners in primary and secondary sectors in 1989

- Agriculture and forestry
- △ Chemical industry, power supply, mining and metallurgical industries
- Mechanical engineering, motor vehicle industry and manufacturers of electrical appliances
- ◆ Light manufacturing and textile industry

**Table 10. Employees in the public sector,
30.6.1991**
(employees per 10 000 inhabitants)

	<i>Länder</i>	'Gemeinden'
Old German <i>Länder</i>	309	221
New German <i>Länder</i>	389	407
Brandenburg	312	498
Mecklenburg-		
Western Pomerania	355	491
Saxony	340	361
Saxony-Anhalt	322	403
Thuringia	329	346
Berlin (east)	1 039	—

Source: DIW 52/1992.

son at *Länder* and local levels (personnel per 10 000 inhabitants) that still more dismissals especially at local level are imperative.¹

Wholesale and retail trade

Restructuring in trade is still going on. Indications of this trend are:

- (i) the growing penetration of the markets by more competitive marketing chains, the opening of large-scale trading centres often on the outskirts of conurbations (e.g. Saale-Park between Halle and Leipzig);
- (ii) the decline of small-scale trading businesses at traditional urban locations (which is a consequence of the above trend but also of rising rents for premises);
- (iii) the disappearance of no longer competitive small establishments in retail trade;
- (iv) the large-scale discontinuance of small rural selling posts which are no longer profitable;
- (v) the new establishment of highly specialized retail stores in the city centres.

The restructuring of trade in the new German *Länder* is still characterized by a good deal of random and disor-

derly growth which needs to be consolidated in line with demand. This is especially true of retail trade.

Also the wholesale trade has not yet become stabilized since western trading chains with their relatively rigid cooperation relationships and product spectrum are still expanding, which had led to the elimination of suppliers in the new *Länder* already in 1990.

Tourism

Great hopes had been placed in many areas on tourism as an economic factor stabilizing the economic situation in the new *Länder*, but these have hardly materialized. What happened was that more people travelled abroad, from which travel agencies may have profited, while tourism at home declined. The number of holiday-makers in the new *Länder* has almost generally decreased compared with the preceding years. Thuringia, which formerly had many private caterers and Mecklenburg-Western Pomerania have been affected negatively. The decline in the indigenous demand in the new *Länder* could not be offset by visitors from the western *Länder*.

The causes for the unsatisfactory situation of tourism in the new *Länder* are complex. They include inadequate advertising/public relations, distorted price-performance ratios, or the poor image of some regions and inadequate local conditions (e.g. infrastructural and environmental shortcomings). Another underlying cause is that several enterprises, which are administered by the State Trust Agency, were not able to compete because of contentious ownership questions or pending privatization.

In general it is mostly price increases, sometimes without prior service and environmental improvements, that are to blame for lack of competitiveness of east German tourism as against other areas with similar profiles. The prospects are discussed in Chapter 6.

Summary of trends during 1989-91

During 1989 and 1991, the most recent years for which official employment data are available, the situation is characterized by considerable differences across *Länder* and economic sectors. Manufacturing industry, for instance, suffered an average decrease of its workforce of about 21.5% in the new *Länder* as a whole from November 1989 to July 1991. In some *Länder* the decrease was well above the average. Brandenburg, for instance, has lost almost 32% of the jobs in the metal

¹ DIW 52/1992.

and electrical engineering industries. Thuringia and east Berlin have seen the number of employees in mining and electricity decline by 34.1 and 47.0% respectively.

Also the agricultural sector of all the new *Länder* has suffered great losses of labour (on average – 42.2%). The building sector, in contrast, has registered an average rise of 4.4% in the number of employees, its performance varying greatly from region to region, though.

No uniform pattern can be spotted in the service sector. There has been a general decline in retail trade (– 15.2% on average), caused by a reorganization along western

lines (disappearance of stores in city centres, emergence of shopping centres at the outskirts) and by decreasing demand due to loss of purchasing power.

The transport and communication sectors have on average recorded a slight increase in the number of employees (+ 1.3%), as a result of the positive development in Brandenburg (+ 18.6%) and Saxony-Anhalt (+ 8.1%) (see Table 11).

More recent official employment figures are not available due to compilation and adjustment problems in the social security statistics. To analyse more recent trends

**Table 11. Development of persons employed
by sector of activity in the new German *Länder*,
November 1989-July 1991 (percentage change)**

	Agri- culture	Extrac- tion/ elec- tricity generation	Con- struc- tion	Metal/ elec- trical enginee- ring	Other manu- factu- ring industries	Trade	Trans- port/ communi- cation	Credit insur- ance	Other ser- vices
New German <i>Länder</i>	– 42.2	– 20.9	4.4	– 22.0	– 21.5	– 15.2	1.3	107.7	1.1
Brandenburg	– 40.5	– 13.6	11.6	– 31.8	– 20.8	– 4.7	18.6	199.1	0.3
Mecklenburg-Western Pomerania	– 39.5	– 21.4	– 3.8	– 13.3	– 12.3	– 22.9	– 3.7	72.2	1.2
Saxony	– 41.6	– 13.7	18.2	– 25.7	– 26.5	– 18.3	– 8.7	44.2	8.3
Saxony-Anhalt	– 47.1	– 21.9	– 9.9	– 19.4	– 17.9	– 13.6	8.1	205.5	3.7
Thuringia	– 45.3	– 34.1	11.8	– 12.6	– 27.7	– 8.4	– 2.6	84.2	– 11.2
Berlin (east)	– 8.1	– 47.0	– 18.7	– 23.8	25.5	– 18.6	– 2.6	172.9	– 0.2

Source: Bielski et al. 1992.

and patterns on the labour-market, the available data on unemployment are used.

3.3. Unemployment

Registered unemployment

Registered unemployment – an officially ignored phenomenon in the former GDR – rose to more than 1 million up to the end of 1992, representing an unemployment rate of 16.5%. Not considering seasonal vari-

ations, it has remained at this level since then (May 1993: 1 096 600 persons registered as unemployed, June 1993: 1 099 696). In addition to registered unemployment, 2 million persons are on short time or special labour-market schemes.

Comparing persons newly registered as unemployed during January to April 1993 as against the same period in 1992 the situation appears as displayed in Table 12.

As can be seen from this table new redundancies decreased by over 54% with regard to agriculture and manufacturing while they increased by 36% in the pub-

lic sector. Thus the relatively small reduction of redundancies in services is mainly due to increasing dismissals from the public sector. Increasing redundancies in building and finance and insurance are mostly frictional while redundancies in the public sector are more of a structural nature.

As can be seen from Table 13 (see also Map 5), highest levels of unemployment are recorded in both rural and mono-structured industrial areas. By contrast agglomerations and administrative centres incur lowest unemployment rates. At the level of *Länder*, Saxony records the lowest rates in eastern Germany with just below 13% of the workforce registered as unemployed in 1992.

At county level unemployment rates are lowest in Dresden, Leipzig, Spremberg, Potsdam, Jena, Merseburg, Magdeburg and Bitterfeld. They are generally highest in the rural areas of Mecklenburg-Western Pomerania, Gransee (a rural area in Brandenburg), or Altenburg (a declining industrial area in Thuringia).

Table 12. Persons newly registered as unemployed during January-April 1993 by comparison to the same period in 1992

	Redundancies during January-April 1993	Percentage change by comparison to January-April 1992
Agriculture	38 700	- 54
Manufacturing	129 200	- 54
Building	54 000	+ 20
Services	216 300	- 18
of which:		
finance and insurance	4 000	+ 27
public services	69 900	+ 36

Source: Bulletin No 48/8 June 1993.

Short-time work, job-creation schemes and related measures

The unemployment rates still reflect only a fraction of the serious labour-market problems in the new *Länder*. Many persons are still on short-time; whereby short-timers work only 50% of normal hours, which is considerably less than in the western *Länder* (70%). Others participate in job-creation schemes and training or retraining measures. Figure 7 shows the significance of these measures at regional level.

A comparison between the figures for the eastern and western *Länder* reveals the dramatic situation on the eastern labour-market: while only 9% of the working population are unemployed or threatened with unemployment in the western *Länder*, the rate is between 25 and 30% in the new *Länder*.

Short-time work, job-creation schemes and retraining programmes are thus making a significant contribution to mitigating the effects of the social changes. Since more jobs disappear than new ones are created, these labour-market instruments are being used much more extensively than in the western *Länder*. While they undoubtedly help to keep down present unemployment figures, they cannot prevent that many of the jobs provided in their framework prove eventually insecure and that many workers will be potentially threatened with unemployment in the medium term.

Map 6 shows the spatial distribution of unemployed and short-time workers at the beginning of 1993. It is evident that unemployment is highest with up to 21% in large areas of Mecklenburg-Western Pomerania and Brandenburg and in the western areas of Saxony-Anhalt and Thuringia. Whereas high unemployment can be found in various types of regions, the highest short-time rates with up to 6% of the employed are found in the industrial areas of southern Thuringia and Saxony and in the conurbations of Magdeburg, Frankfurt-on-Oder and east Berlin.

Unemployment of women

Women are more strongly affected by unemployment than men. A breakdown of the unemployed shows that women account for 62.9% of the unemployed in the new *Länder*. The female unemployment rate, i.e. the share of unemployed women in economically active women, was about 20% in April 1992 whereas the male unemployment rate was just over 10%.

**Table 13. Groups of *Länder* and counties (*Kreise*)
according to levels of regional unemployment,
1990 and 1992**

(%)

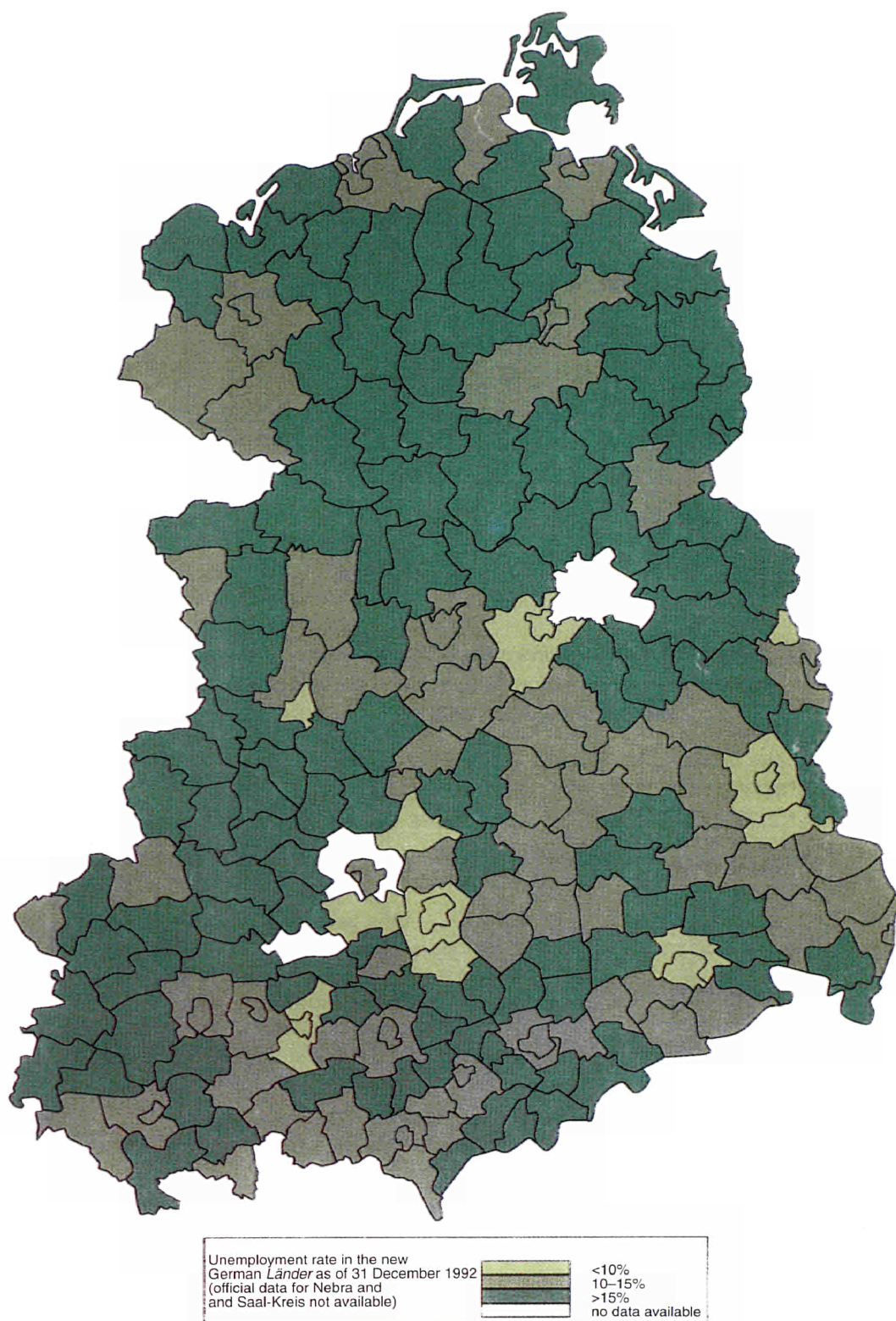
Land	County (Kreis)	Regional characteristics	Unemployment rate ¹	
			1990	1992
High unemployment (highest unemployment of new German Länder)				
Mecklenburg-Western Pomerania			8.7	15.7
Unemployment lowest in				
	Schwerin	capital	8.9	10.8
	Rostock	agglomeration, industrial monostructure	7.5	11.1
Unemployment highest in				
	Anklam	rural area	7.1	24.1
	Demmin	rural area	8.4	24.1
	Altentreptow	rural area	7.5	23.7
	Rügen	rural area	9.2	23.5
	Pasewalk	rural area	8.6	22.6
	Wolgast	rural area	11.8	22.3
Moderate unemployment				
Brandenburg			7.4	14.2
Unemployment lowest in				
	Spremberg	industrial area	2.2	6.1
	Potsdam	capital, administrative centre	6.3	8.1
Unemployment highest in				
	Gransee	rural area, industrial monostructure	11.6	24.6
	Prenzlau	industrial monostructure	8.8	21.1
	Templin	rural area	7.8	20.0
	Seelow	industrial monostructure	6.7	19.5
	Straußberg	industrial monostructure	12.2	19.5
	Bad Freienwalde	industrial monostructure	9.1	18.9
	Finsterwalde	industrial monostructure	9.0	18.9
Saxony-Anhalt			7.0	14.5
Unemployment lowest in				
	Merseburg	industrial area	2.6	8.9
	Bitterfeld	industrial area	3.8	9.1
	Magdeburg	capital, administrative centre	5.8	9.5

Land	County (Kreis)	Regional characteristics	Unemployment rate ¹	
			1990	1992
(Saxony-Anhalt cont.)				
Unemployment highest in				
	Oschersleben	rural area	9.1	22.3
	Zeitz	industrial monostructure	6.2	20.1
	Schönebeck	industrial monostructure	7.3	20.0
	Weißenfels	industrial monostructure	8.6	19.8
	Aschersleben	industrial monostructure	8.9	19.4
	Querfurt	industrial monostructure	7.6	19.4
Thuringia			7.3	14.5
Unemployment lowest in				
	Jena	service and administrative centre	4.3	8.5
	Weimar	service and administrative centre	5.9	10.5
	Erfurt	capital, service and administrative centre	6.7	10.6
Unemployment highest in				
	Altenburg	industrial monostructure	7.8	23.3
	Artern	industrial monostructure	8.4	20.4
	Langensalza	rural and industrial monostructure	9.4	19.3
Low unemployment				
East Berlin			9.3	13.0
Low unemployment (lowest unemployment of new German Länder)				
Saxony			6.2	12.7
Unemployment lowest in				
	Borna	industrial area	4.0	8.4
	Dresden	capital, service and administrative centre	5.7	8.4
	Leipzig	service and administrative centre	6.3	9.7
Unemployment highest in				
	Schwarzenberg	industrial monostructure	6.7	21.6
	Sebnitz	industrial monostructure	5.9	19.5
	Hohenstein-Ernstthal	industrial monostructure	10.2	18.7
	Werdau	industrial monostructure	9.6	18.7

¹ As of 31 December.

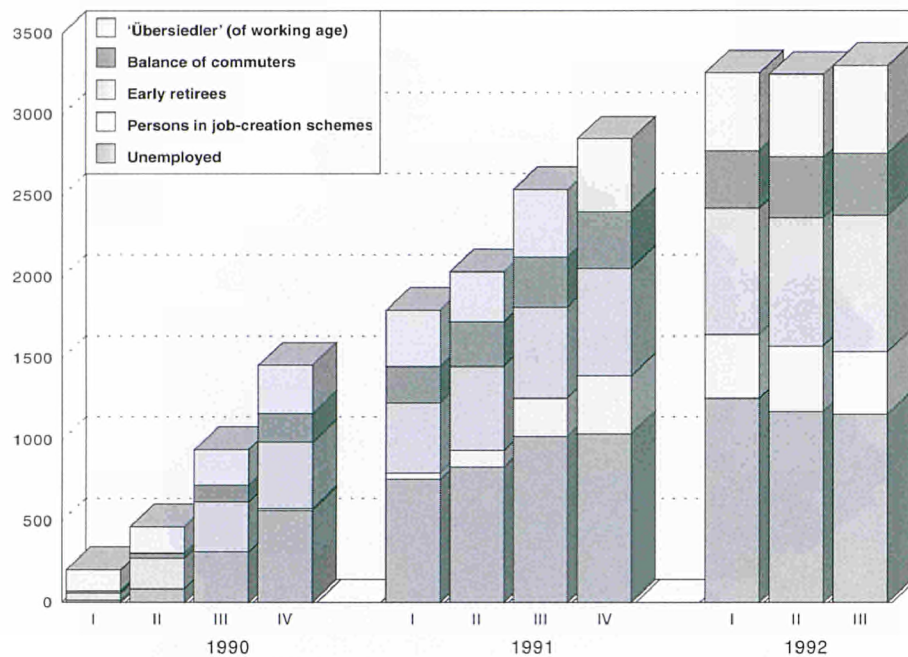
Source: Empirica regional monitor.

Map 5. Unemployment rates as of 31 December 1992 (in %)



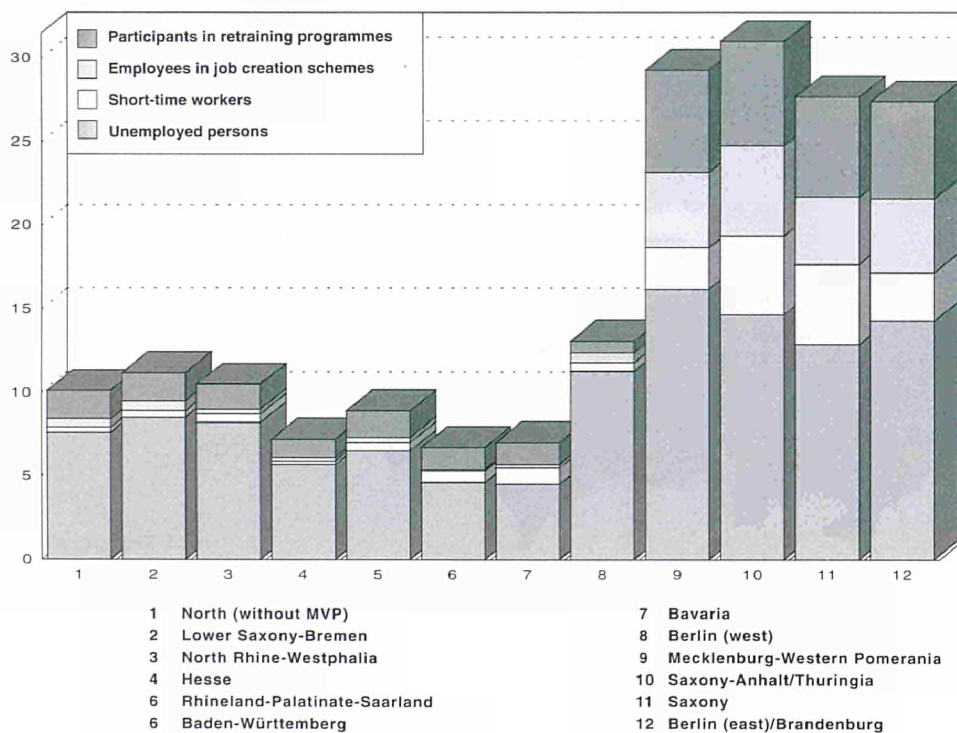
Source: Empirica regional monitor. © empirica

Figure 6. Unemployed, participants in job-creation schemes, early retirees, 1990-92 (1 000 persons)



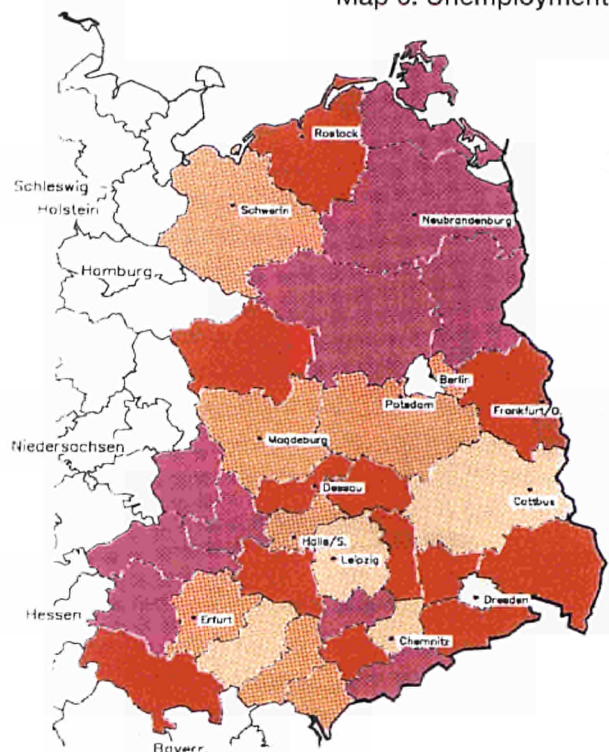
Source: DIW 52/1992.

Figure 7. Number of unemployed persons, short-time workers, employees in job-creation schemes and participants in retraining programmes, April 1992 (as % of labour force)

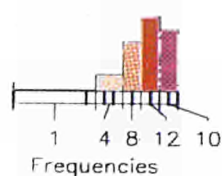
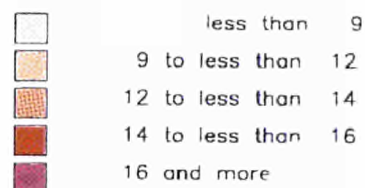


Source: Spatial monitoring system of the BfLR.

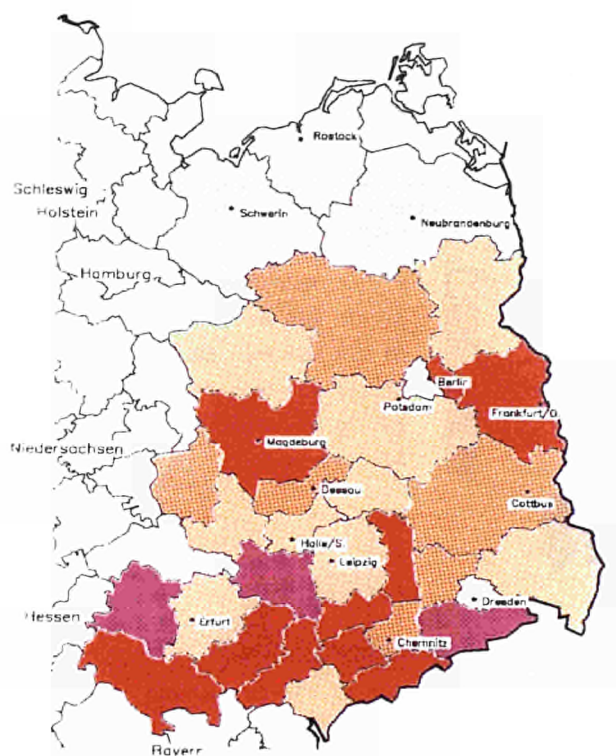
Map 6. Unemployment and short-time work



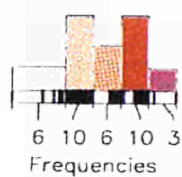
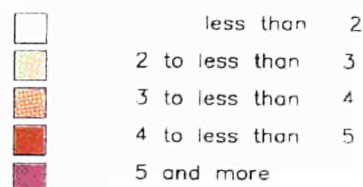
Unemployed persons per 100 gainfully employed persons in January 1993



Minimum: 8,4
Maximum: 21,0
New German Länder: 13,9



Short-time worker per 100 gainfully employed persons in January 1993



Minimum: 1,1
Maximum: 5,9
New German Länder: 2,9

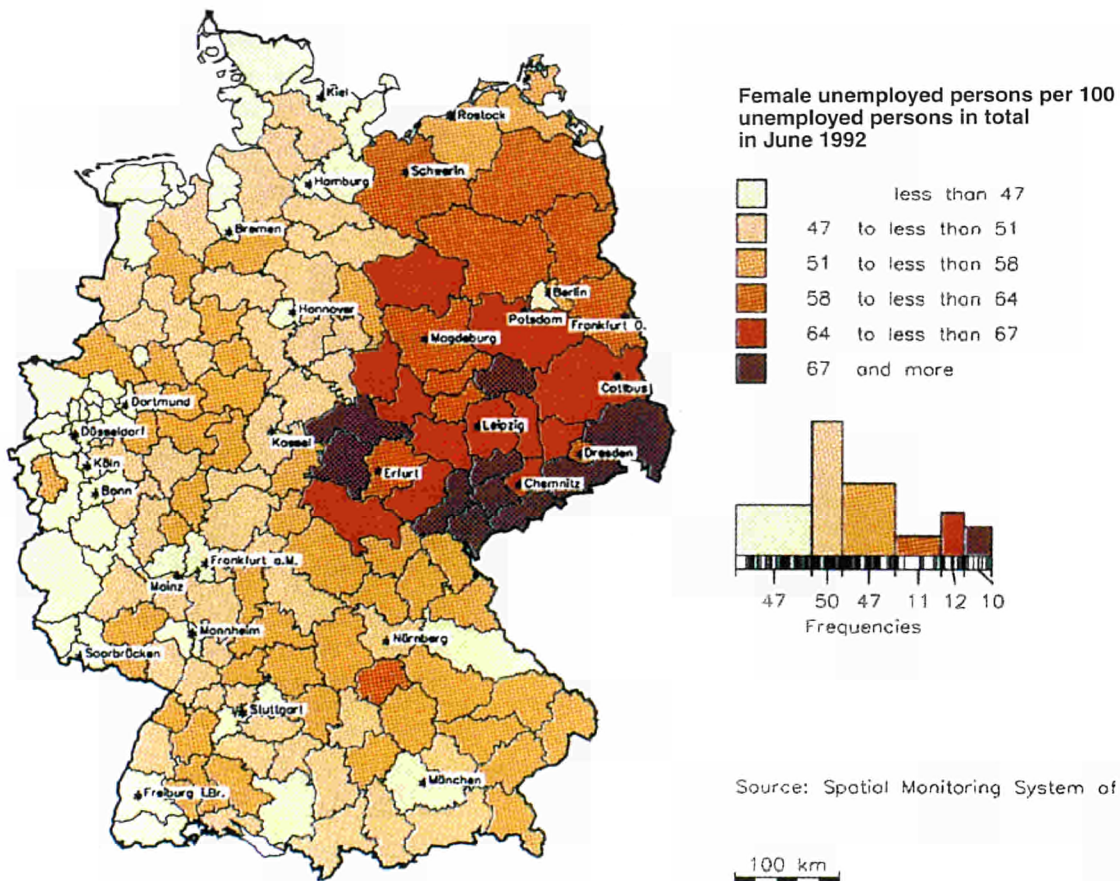
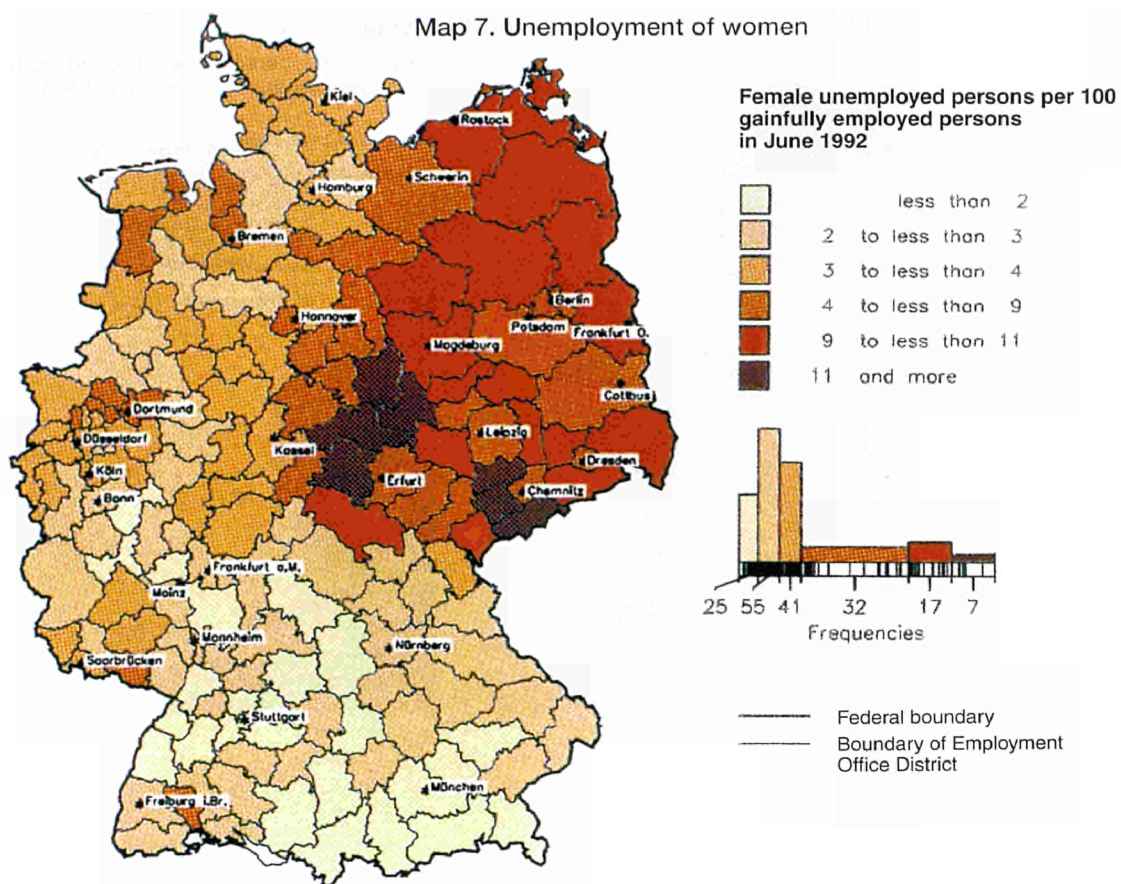
— Federal boundary
— Boundary of Employment Office District

100 km



Source: IAB Werkstattbericht No 1.1/15.1.1993.

Map 7. Unemployment of women



In the western *Länder* female unemployment is also higher than male. In 1992, it was 7%, i.e. 16.7% higher than the male unemployment rate, though its level and differential *vis-à-vis* the male rate is much lower than in the new *Länder* (see Figure 8).

Map 7 shows that the highest female unemployment rate (share of unemployed women in employed persons) is found in western Thuringia and in southern Saxony. There, women are affected by unemployment more than the average (accounting for over 67% of the unemployed). In the northern and western areas of the new *Länder* female unemployment was still relatively low (between 4 and 11% in June 1991), yet women here were also generally more affected than men (in no region was the share of unemployed women in the total unemployed, lower than 50%).

The reduction of the number of gainfully employed persons in the new German *Länder* was mitigated in various ways. As outlined in Chapter 2, a large number of persons who were made redundant left the labour-market under the provisions of special early retirement schemes. By April 1992, the number of recipients of early retirement pensions had reached about 810 000.

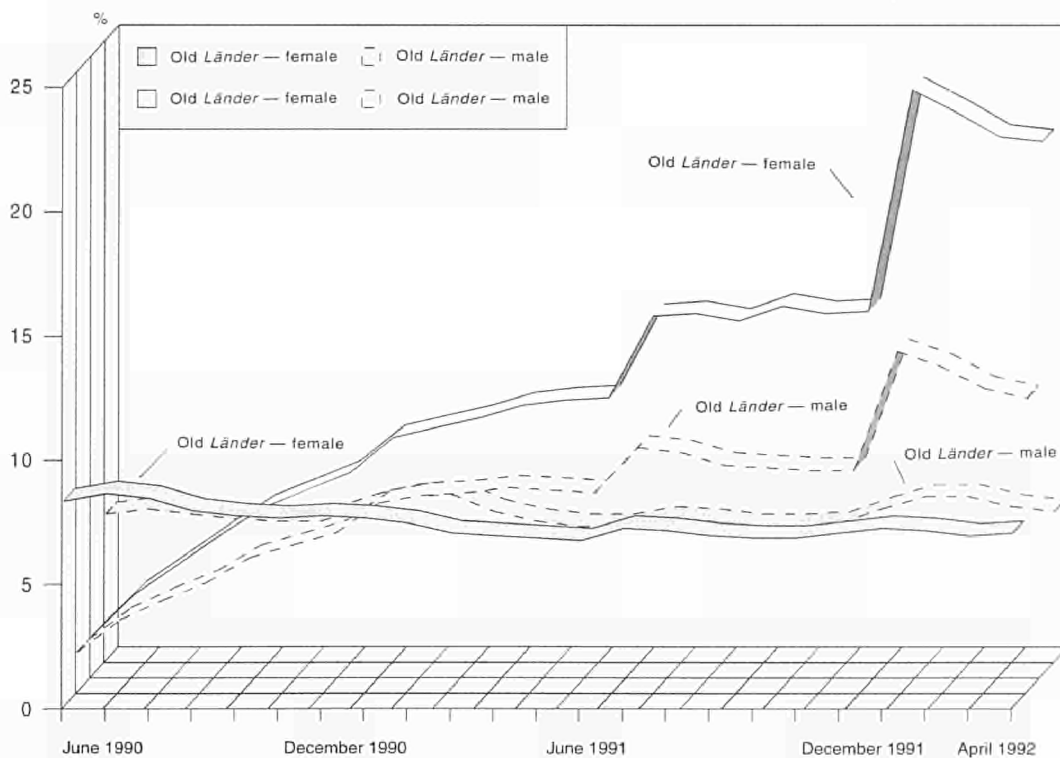
It can hardly be assumed, however, that such programmes will be continued at this rate let alone expanded in the years to come. Recent figures already indicate stagnating participation. It is understood that in 1993 the number of short-time workers will go down to 310 000 and that also the number of participants in job creation and training schemes will decrease slightly (to 380 000 and 370 000 respectively).¹ The pressure on the labour-market will remain high. This is not only the result of new waves of redundancies (e.g. present short-time workers) but also of the adaptation of social behaviour to the conditions of a market economy:

- in view of the insecure future, more women remain on the labour-market, indicated by less withdrawals for family reasons, and by falling birth rates. For instance, in 1991 the number of newborn children was 107 000, about 40% less than in the preceding year;²
- in view of falling purchasing power, many families need two incomes to cover their living expenses.

¹ Kuhl 1993.

² See Federal Statistical Office 4/1992.

Figure 8. Development of unemployment rates in the old and new *Länder* by sex, June 1990-April 1992 (in %)



Source: Spatial monitoring system of the BfLR.

Fewer labour-market schemes and steady or even growing pressure on the labour-market give rise to the phenomenon of structural unemployment. Long-term unemployment in the new *Länder* has become an urgent and lasting problem. The results of the labour-market monitor show that the proportion of long-term unemployed persons in the new *Länder* is continually rising. In November 1991, 24% of the unemployed or some 230 000 persons had been registered as unemployed for more than a year.¹

The recession in Germany and in Europe as a whole leads to additional labour-market problems and rising long-term unemployment.

3.4. Patterns of commuting

According to a survey conducted by the IAB (Institut für Arbeitsmarkt und Berufsforschung der Bundesanstalt für Arbeit) the number of people commuting from the new German *Länder* to work in the old *Länder* was 451 000 in May 1992. Of these:

- (i) 63% commuted to western *Länder*;
- (ii) 37% commuted to west Berlin.

The breakdown of commuters by *Länder* is displayed in Table 14.

¹ Bielenski et al. 1992.

Table 14. Commuters in the new German *Länder*, 1992
(as % of total and estimated number of persons)

	Commuters	
	as % of total of eastern Germany	approximate number of persons
Brandenburg	16.0	72 000
Mecklenburg-Western Pomerania	13.0	59 000
Saxony	11.0	50 000
Saxony-Anhalt	11.0	50 000
Thuringia	20.0	90 000
Berlin (east)	29.0	130 000

Source: IAB, May 1992.

The share of commuters to the west in the gainfully employed population resident in the new *Länder* is 6.7%. In east Berlin which accounts for 7% of the east German active population, the level is 29% – by far the highest among the new *Länder*, while Saxony has the smallest share.

At the time of the survey (May 1992) the commuters travelling to work in the west had a net income of ECU 1 040 on average. This is 136% of the average net income of the gainfully employed in the new *Länder* at that time.

Commuters aged between 16 and 24 account for 26% and those aged between 25 and 39 for 47%.

Between November 1990 and November 1991 the number of commuters steadily increased: by about 100 000 (+ 56%) until March 1991, by 140 000 (+ 45%) between March and July, by another 100 000 (+ 21%) between July and November when the peak of 540 000 commuters was reached; by May 1992 the figure dropped to 450 000.

3.5. Natural population movements and migration patterns

Since the breakdown of the former GDR regime eastern Germany has witnessed a slump in population. In the *Länder* of Mecklenburg-Western Pomerania, Brandenburg, Saxony-Anhalt, Saxony and Thuringia populations decreased during 1989-92 by about 1 031 000 persons:

- in 1989 by 235 000 persons,
- in 1990 by 403 000 persons,
- in 1991 by 243 000 persons,
- in 1992 by 150 000 persons.

While in the beginning (1989) the population trend was still politically influenced, in the following years it was increasingly determined by the developments on the labour-market and by economic and social factors which had a decisive effect on birth rates.

The demographic development in the new German *Länder* displays a number of common characteristics:

- (i) the decrease in population is caused by both natural (declining births) and spatial factors (negative migration balance) with the exception of Mecklenburg-Western Pomerania which recorded a positive birth balance up to 1990;
- (ii) compared to natural population movements outmigration plays a diminishing role in population development (see Figure 9); while in 1989 and 1990 about 350 000 people left eastern Germany for the western *Länder*, in 1991 their number declined to below 200 000 and continues falling to date;
- (iii) population development is increasingly determined by natural demographic factors; since the breakdown of the former regime the number of live births has drastically decreased by almost half and stabilized at this low level;
- (iv) the greatest initial population losses have been suffered by the cities and agglomerations especially in the years 1989 and 1991. In the meantime the demographic trends in the urban and rural areas have converged.

In the light of the labour-market situation in the new German *Länder*, it is not surprising to find massive migratory flows into regions with an attractive job market. In the past, migration between the former GDR and the Federal Republic of Germany was characterized by virtual one-way migratory flows towards the west. Migration in the opposite direction was negligible. After the opening of the borders, outmigration into the western *Länder* greatly expanded. In 1990, 330 400 east Germans went to the west while only 20 000 west Germans went to the east (see Annex I, Table 16). A breakdown of migrants by destinations shows that in 1989 51% of the migrants leaving their counties headed for western *Länder*, in 1991 their share increased to almost 59%.

The composition of migratory flows were strongly influenced by certain factors such as:

- (i) geographical proximity to the regions of destination and easy access to interregional traffic routes;
- (ii) the regional economic structure and levels of prosperity.

The western *Länder* which recorded the largest influx of migrants from the new *Länder* in 1991 were Bavaria (21%), Baden-Württemberg (17%), North Rhine-Westphalia (17%) and Lower Saxony (16%). Most migrants

came from Saxony and Brandenburg (30 and 22% respectively). At the bottom of the 'migration scale' were Saarland (1%), Bremen (1%), Hamburg (2%) as immigration regions and Mecklenburg-Western Pomerania (13%) as an outmigration region (see Map 8).

In terms of percentage of population, however, Mecklenburg-Western Pomerania as well as Saxony-Anhalt is affected by above average outmigration, while Thuringia and Brandenburg have seen less outmigration to the western *Länder*. Net immigration has had an above-average impact on the development of population figures in Schleswig-Holstein and Lower Saxony.

On balance, interregional migration between the old and the new *Länder* is clearly dominated by large migratory flows from the new *Länder*.

Map 9 shows the balance of internal migration at county level. A salient feature is the above-average inflow into the areas along the former East German/German border in the north (East Holstein, eastern areas of Lower Saxony) and in the south (Oberfranken).

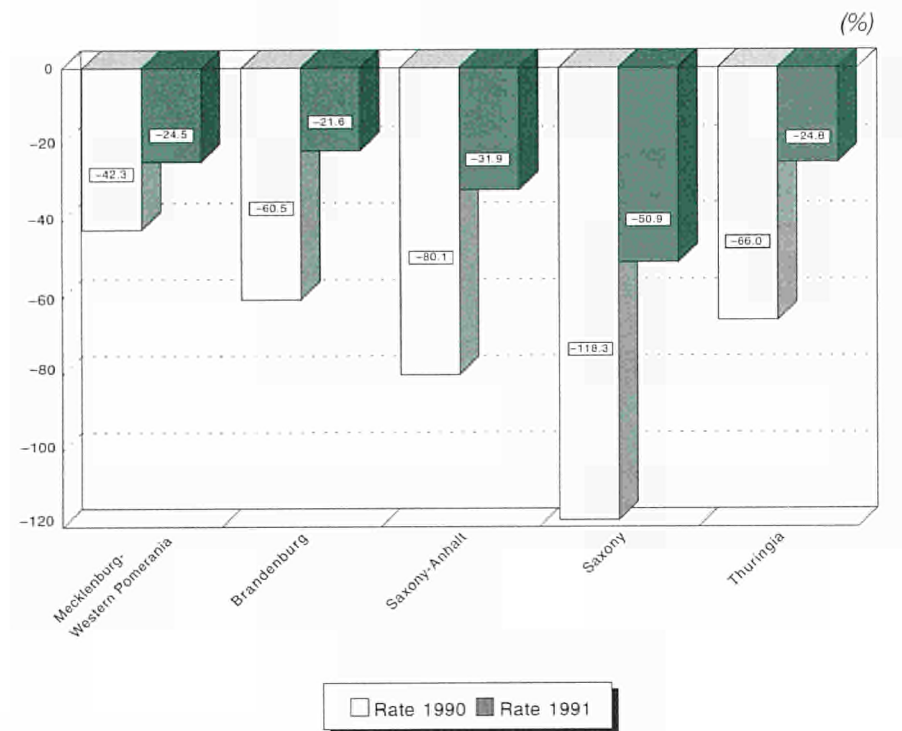
Other favourite destinations have been Mittelfranken, the conurbations of southern Bavaria or Baden-Württemberg, whereas no significant inflow of migrants from the new *Länder* has been registered in the western parts of North Rhine-Westphalia, Hesse, Rhineland-Palatinate, Saarland as well as Upper Palatinate and Lower Bavaria.

The area of Greater Berlin and the adjoining zones of Brandenburg have had a positive migration balance too, which also points to the new role of Greater Berlin as the German capital and its surroundings (the so-called *Speckgürtel*). The general pattern observed is that the most prosperous regions attract the highest shares of migrants.

As a consequence of the lack of jobs and lower levels of income in the new German *Länder*, the stream of migrants to the Western *Länder* is still large with an average of about 15 000 persons leaving Eastern Germany every month. The majority of migrants are less than 25 years old, people aged over 50 represent the lowest proportion. This means a substantial loss of workforce potential – especially of the more highly skilled – in the medium term.

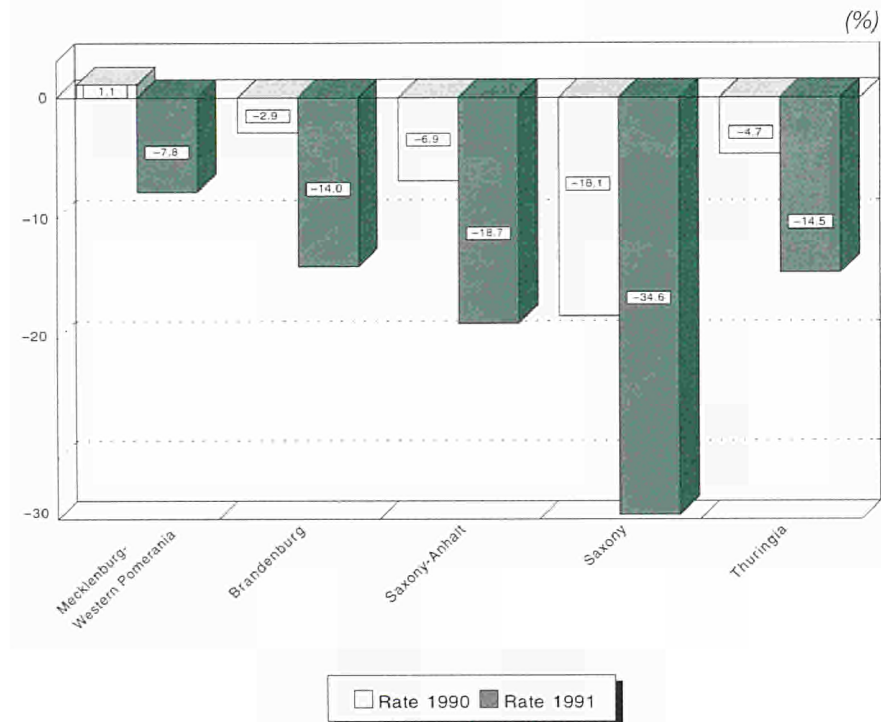
The extent of migration since 1989 and its impact on certain regions has been substantial. However, the neg-

Figure 9a. Natural population movements and migration in the new German *Länder*, 1990 and 1991



Source: Empirica regional monitor.

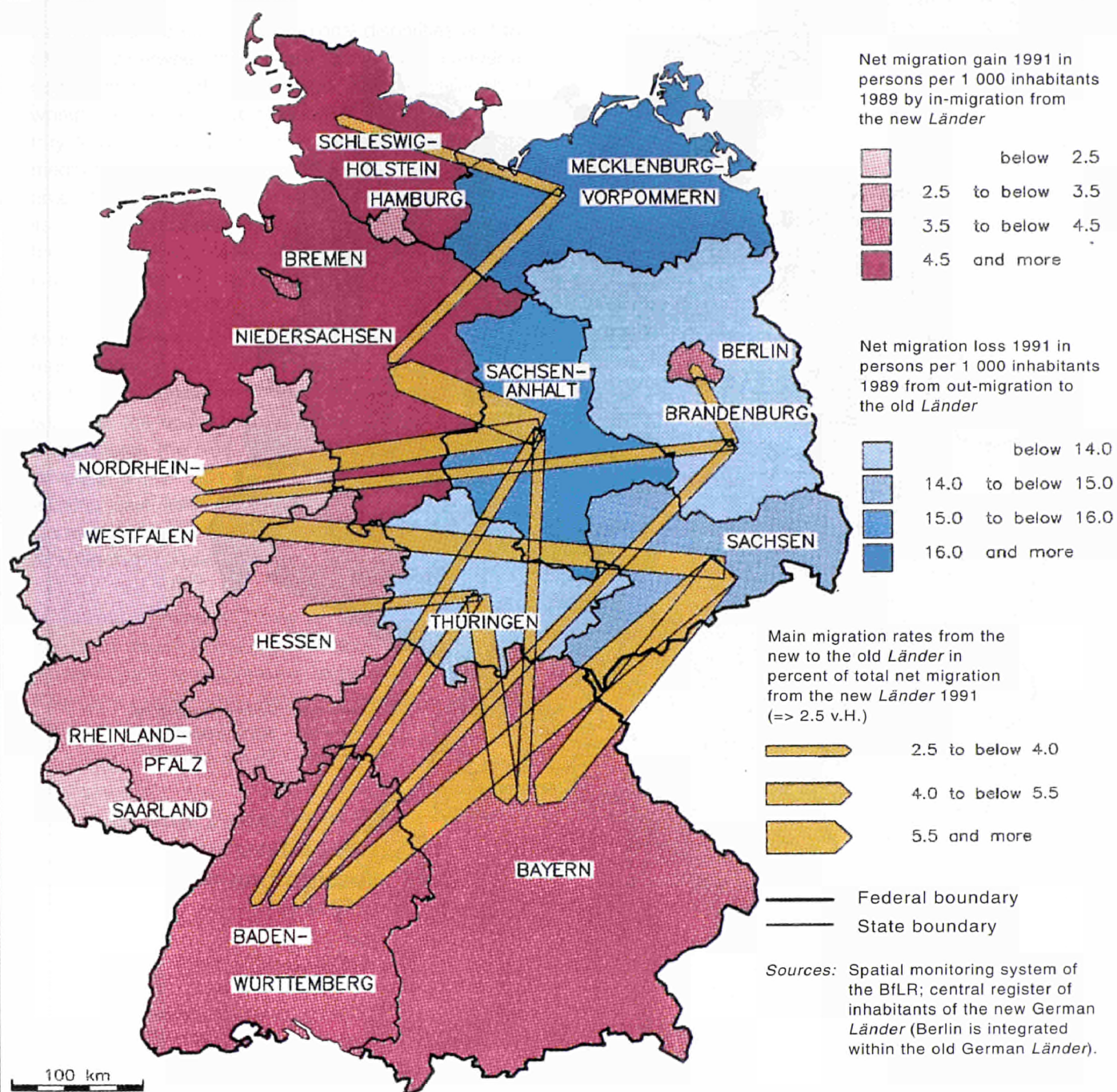
Figure 9b. Demographic movements – live births in relation to mortality in the new German *Länder*, 1990 and 1991



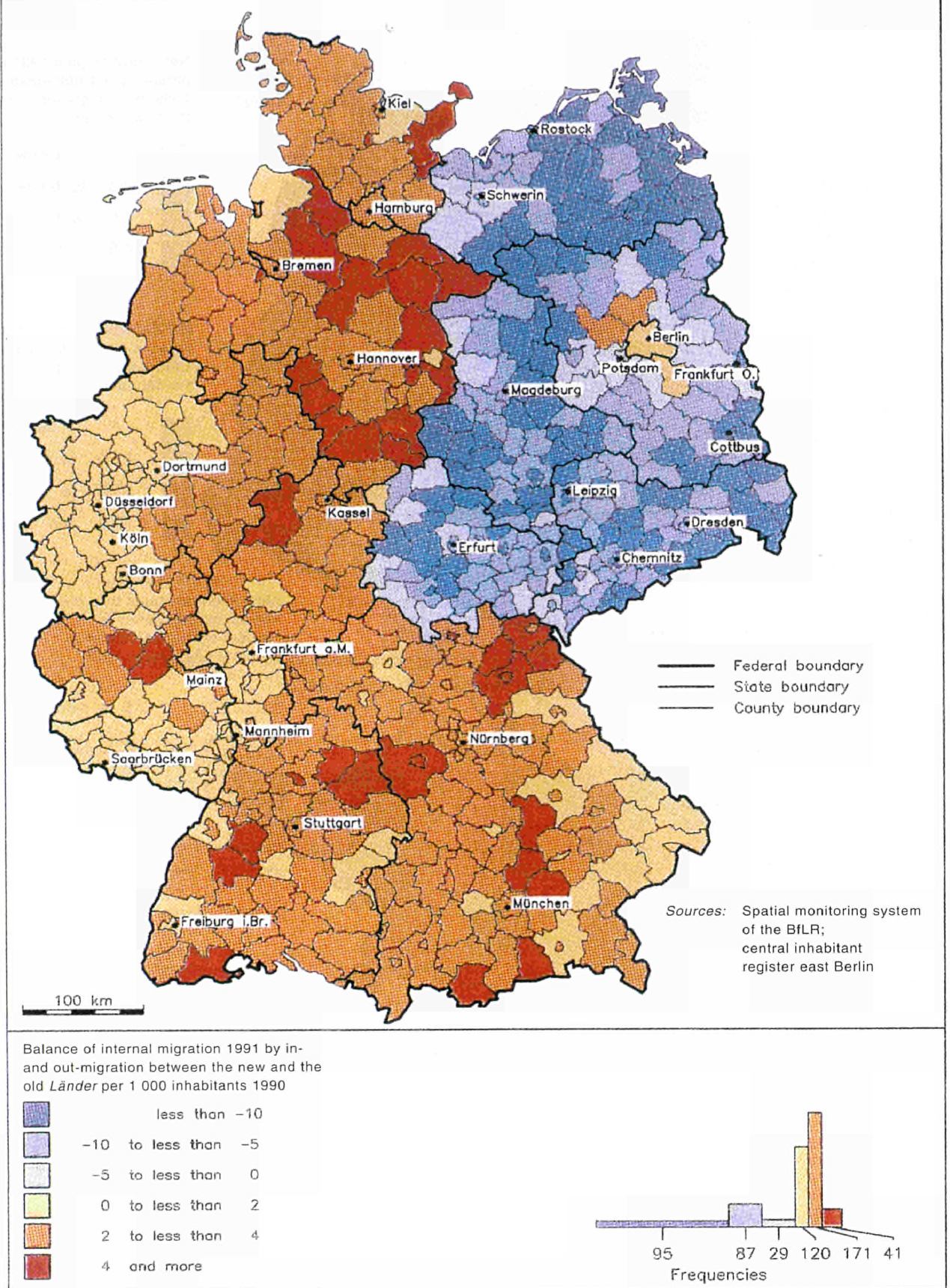
Source: Empirica regional monitor.

Map 8. Migration from the new to the old German *Länder*

notizgibt, ist die Zahl der



Map 9. Internal migration



ative economic and social effects appear to be greater in the new German *Länder* (as regions of outmigration) than in the western *Länder*.

Considering the substantial regional disparities and the differential between the eastern and western *Länder* as regards labour-markets and especially the availability of workplaces, there is good reason to assume that migratory flows in Germany will be east-west even in the medium term. While the recession may reduce the volume of migration, intra-German migration, in particular its structure, is bound to remain unbalanced as long as the great regional disparities between the old and the new *Länder* persist.

Migration in Germany will continue to show definite regional focuses. Since the migrants both from the eastern to the western *Länder* and within eastern Germany will seek the economically attractive regions as their destinations, the regional divergence in demographic development will increase, thus deepening the presently existing east-west divide between the new and old German *Länder* and the northeast-south divide in the new German *Länder*.

In a positive scenario, it may be expected that people will go (or return) to the eastern *Länder* once the development there is progressing favourably. The Greater Berlin and Leipzig areas especially, should see immigration from the west.

3.6. Spatial patterns in the new German *Länder*: situation and outlook

Taken together, the factors discussed in this chapter are indicative of the spatial dimension of developments in eastern Germany since unification. Labour-market indicators can serve as global indicators of the economic situation of regions: differences in trends and levels of unemployment, or of migration reflect structural weaknesses and potentials of regions. Commuting patterns, demographic trends or privatization add to this.

To give a general overview the new German *Länder* can be grouped as follows:

- (i) Mecklenburg-Western Pomerania shows the most severe structural problems among the new *Länder*. Its unemployment rate has from the start been 2 to 3

percentage points above that of the others; in 1992 it was at 15.7%;¹

- (ii) the *Länder* of Brandenburg, Saxony-Anhalt and Thuringia hold a middle position among the new *Länder*;
- (iii) Saxony has the most favourable economic conditions compared to the others;
- (iv) east Berlin's conditions are similar, however, Greater Berlin has a special position generally.

This classification of the new German *Länder* is also indicative of their development opportunities which are gradually beginning to show contours.

Mecklenburg-Western Pomerania

This federal State is disadvantaged compared to the other new German *Länder*.

Its locational disadvantages are:

- (i) a low population density (lowest of all *Länder*);
- (ii) an exceptionally high share of farming and traditionally low share of manufacturing compared to other *Länder*;
- (iii) a relatively uneven regional distribution of industrial locations;
- (iv) strongly monostructural patterns, a low degree of industrial diversification, lack of sufficient technical and social infrastructure.

Moreover Mecklenburg-Western Pomerania still has to cope with the GDR legacy of underdevelopment in its border areas along the Polish border and the former East German-German border.

Its locational advantages are:

- (i) a strategic position from a European viewpoint (junction between Germany and Scandinavia and also in West-East traffic);
- (ii) a wide range of transport links (including shipping links);

¹ December 1992.

- (iii) other assets are seashores, a beautiful countryside and mostly unspoilt environment.

In view of links to Scandinavia Hamburg and its surroundings might, however, be in a better competitive position.

Unlike other new *Länder*, Mecklenburg-Western Pomerania has seen no sign of a halt in the unemployment trend: both in terms of absolute figures and rates unemployment is increasing almost everywhere.

Relatively many areas of Mecklenburg-Western Pomerania are among those with the highest levels of unemployment in Germany. These are in particular areas located along the border with Poland and on the Baltic Sea. Also the agriculturally dominated areas record extraordinarily high unemployment rates.

In Mecklenburg-Western Pomerania urban agglomerations contribute relatively little to the provision of employment compared to the contribution they make in other new German *Länder*. Only in the capital city of Schwerin and in Rostock are unemployment rates (but not the rate of increase of numbers unemployed) comparable to those of other *Länder*. In the cities of Greifswald, Wismar and Stralsund (and their respective counties) the unemployment rates are in line with the regional average and thus markedly above the levels of the other new *Länder*.

This lagging performance of Mecklenburg-Western Pomerania in comparison to other new *Länder* is mainly due to the fact that in Mecklenburg-Western Pomerania:

- (i) the loss of jobs in the farming and fishing industry has been far in excess of the job losses in other *Länder*;
- (ii) industrial monostructures have collapsed in areas where virtually no alternative employment opportunities exist (e.g. nuclear power plant in Greifswald, shipyards in Rostock);
- (iii) locational disadvantages of the region have proved an obstacle to establishing new industries;
- (iv) the provision of alternative employment for the workforce, for example, in the service sector is restricted, also because of low population density;
- (v) it has not yet been possible in the short period since German unification to make tourism an attractive industry.

These factors explain both regional divergencies within Mecklenburg-Western Pomerania and divergencies *vis-à-vis* other *Länder*. Their impact is persistent and will also in the medium term restrict the development opportunities of Mecklenburg-Western Pomerania, with the exception of Schwerin (municipality and county) and to a certain extent of Rostock. Throughout Mecklenburg-Western Pomerania there is as yet no indication of existing or emerging growth poles based on industry and crafts.

Brandenburg, Saxony-Anhalt and Thuringia

In these *Länder* the economic structure is characterized by an average share of farming in total employment (7 to 11% as of 30 November 1990), while the share of industrial employment in total employment is 30%. Unlike in Mecklenburg-Western Pomerania, industrial locations are more evenly spread, industries are more diversified although there are also monostructures in some areas. The technical infrastructure is of a medium standard but has been considerably improved in terms of both quantity and quality since unification. In some areas the environmental conditions were very poor (e.g. in the cross-*Länder* 'chemical triangle' of Halle-Leipzig-Bitterfeld). A legacy of the past is the underdevelopment of the border areas to Poland and along the former East German-German border.

The process of economic restructuring had the following effects on the labour-market in the three *Länder*:

- (i) unemployment in terms of both numbers and rates is on average markedly lower than in Mecklenburg-Western Pomerania; in these three *Länder* unemployment is exceptionally high in only a few areas, such as Gransee in Brandenburg (24.6%; rural area, industrial monostructure), Oschersleben in Saxony-Anhalt (22.3%; rural area) or Altenburg in Thuringia (23.3%; industrial monostructure);
- (ii) in some areas the process of economic consolidation has made good progress and has prompted the emergence of growth poles around which unemployment is either stabilizing or even decreasing;
- (iii) in the main urban agglomerations of the three *Länder*, apart from a few exceptions, unemployment is falling to and staying at, a level below the average of the respective *Land*;
- (iv) in some counties of Brandenburg, Saxony-Anhalt and Thuringia, which have traditionally had a diver-

sified industrial structure, economic consolidation has made considerable progress with the number of unemployed decreasing in 1992 compared to 1991;

- (v) there are problem areas in Brandenburg, Saxony-Anhalt and Thuringia, too, but in contrast to Mecklenburg-Western Pomerania they are spatially limited and not spread throughout the territory (see below).

First signs of emerging growth poles are :

- (i) in Brandenburg: Potsdam (municipality and county) which also benefits from its location within the Greater Berlin area; a few areas in the wider environs (especially in the east) of Berlin;
- (ii) in Saxony-Anhalt: the city of Halle/Saale as part of the agglomeration of Leipzig/Halle, the city of Magdeburg, and to a certain extent the area south-east of Halle (Eisleben);
- (iii) in Thuringia: the areas around the cities of Erfurt and Weimar, and in a lesser degree areas in southern Thuringia (Werra area, Meiningen, Hildburghausen).

Problem regions are:

- (i) in Brandenburg: almost all counties along the Polish border and the towns of Eisenhüttenstadt and Schwedt (these towns are strongly affected by the collapse of their monostructured industry and lack of alternative jobs);
- (ii) in Saxony-Anhalt: problem areas are found throughout the *Land*, mainly areas which were formerly characterized by industrial monostructures (Merseburg, Hohenmösen, Zeitz, Gräfenhainichen, Staßfurt);
- (iii) in Thuringia: the areas round Altenburg, Sömmerda.

In Brandenburg, Saxony-Anhalt and Thuringia, the pressure on the labour-markets from redundancies in agriculture has been less pronounced than in Mecklenburg-Western Pomerania. Moreover, they have profited from their regionally spread and diversified industries. In tandem with an infrastructure which is generally rated as superior to that of Mecklenburg-Western Pomerania,

this seems to provide a better basis for redevelopment and new settlement of industries and crafts.

In these *Länder* economic growth may spring from impulses triggered by industry. Such growth will mainly be engendered by growth poles which are expected to develop around large urban agglomerations. As a potential growth pole, Frankfurt-on-Oder is in a special position: due to its location on the Polish border a variety of development problems emerge which are discussed in Chapters 4 and 6.

Conditions for creating new jobs in private services are gradually improving, especially near the growth poles. This will help to facilitate the shifting of employment from agriculture and industry towards these sectors.

Saxony

In Saxony the share of agriculture in the economy is smallest compared to the other new German *Länder* with the exception of east Berlin while the share of industry is one of the highest. Traditionally the Saxon industrial structure is characterized by large-scale enterprises. Industrial locations are evenly distributed more or less throughout the *Land*, many of them have been long-established. Industrial monostructures are found with regard to heavy machinery construction, textile industry, vehicles/wagons construction.

Saxony has a high density of population. The settlement structure is characterized by three urban agglomeration areas: Dresden, Chemnitz and Leipzig. This has encouraged the development of the tertiary sector. Moreover, conditions in Saxony are favourable for expanding and improving the tourist industry (such as the Sächsische Schweiz) and for playing the role of a junction point in East-West and North-South trade thanks to its location. Another asset is its dense transport network whose quality has been considerably upgraded after German unification; the same holds true for the telecommunications network and energy supply systems which have been modernized.

Development problems are mainly the high degree of environmental pollution in traditional industrial areas; the state of underdevelopment of some areas (areas bordering on Poland and the Czech Republic and along the small area of the former East German-German border).

In the process of economic restructuring up to now, Saxony, compared to the other new German *Länder*:

- has been much less affected by the orientation of agriculture towards market systems and the entailing redundancies of its former workforce;
- has had more favourable conditions for newly settling and redeveloping industries;
- has had more opportunities for creating alternative employment outside agriculture and industry;
- has benefited from its locational and traditional advantages (East-West junction, availability of infrastructure).

The positive factors set forth above have been reflected in the rates of unemployment which are lower almost throughout Saxony than in the other new German *Länder*.

In Saxony the number of areas in which the growth of unemployment has come to a halt or is decreasing is unparalleled in the new German *Länder*.

Taken together, Saxony is a little ahead of the neighbouring new *Länder* as regards economic development, which is not least due to the combination of many locational factors.

As regards Saxony's problem regions, they are for the most part situated in the Erzgebirge and in eastern area. Their difficulties are largely due to the collapse of the former monostructured industrial combines.

The main pillars of the economic development will be the emerging growth poles in and round the urban agglomeration centres of Leipzig, Dresden, Chemnitz (the latter with a certain time lag). Impulses to growth will come also from several counties which are beginning to prosper (especially in western Saxony, e.g. Eilenburg).

In Saxony economic growth is promoted more organically by all branches of the economy than is the case in other new *Länder*. Yet regional disparities will persist also in Saxony in the medium term.

East Berlin

With east and west Berlin two formerly separated economic and political centres are merged in one metropolitan area. This entails specific spatial development problems such as harmonization between the eastern and western part (e.g. of physical infrastructure), integration

and appropriate division of functions with the surrounding areas, positioning of Greater Berlin as a European metropolis, etc.

With regard to East Berlin, at the time of the collapse of the former GDR regime, the number of economically active people was about 700 000; at the time of the first labour-force survey of the new *Länder* (30 November 1990) it had fallen to 640 000, equivalent to 8.4% of the economically active population of the new German *Länder*. By May 1992 the figure had further decreased to an estimated 435 000 and is supposed to have fallen under 400 000 to date.

Like the other new *Länder*, east Berlin has seen a process of de-industrialization. This process has been accompanied by considerable job losses. Between January 1991 and June 1992 the total number of jobs in industry (establishments with 20 or more employees) decreased from 118 000 to 53 000.

East Berlin industries do not differ markedly from those of other new *Länder* as far as essential performance criteria are concerned. Compared to the western part of the city their productivity lags enormously behind, the unit labour costs are comparatively high.

In April 1993, 82 500 people were registered as unemployed in east Berlin, the unemployment rate of 13.6% was the lowest in the new *Länder*. About 190 000 people altogether were unemployed, on short-time work, participating in labour-market schemes (job creation schemes, training schemes) or subject to early retirement arrangements.

To get a clear picture of the labour-market situation of east Berlin one has to bear in mind that some 130 000 people commute to work in the western part of the city.

While to date there is still a tangible differential between the eastern and western parts of the city in terms of living standard and employment level – as the data outlined above have shown – the conditions for convergence are improving in the medium term. This results from:

- (i) the gradual integration of Berlin and its environs into a large conurbation area of Berlin/Potsdam;
- (ii) the emergence of this area as an economic growth pole.

General picture of spatial patterns

Map 10 displays a joint picture of spatial patterns in the new German *Länder* as presented in this chapter.

As can be seen from this map regional weaknesses cumulate and form spatial clusters. Most regions with high unemployment are also dependent upon weak industries or upon agricultural monostructures. Only a few regions are characterized by relatively low levels of unemployment (by comparison to east German levels) and less problematic structures.

Overall a clear North-South divide becomes apparent. Areas of rural depopulation are concentrated in Mecklenburg-Western Pomerania and partly Brandenburg as well as Saxony-Anhalt. By contrast the southern areas of Brandenburg and Saxony are characterized by industrial restructuring and lower unemployment. Trends towards stabilization can be observed mostly in urban centres.

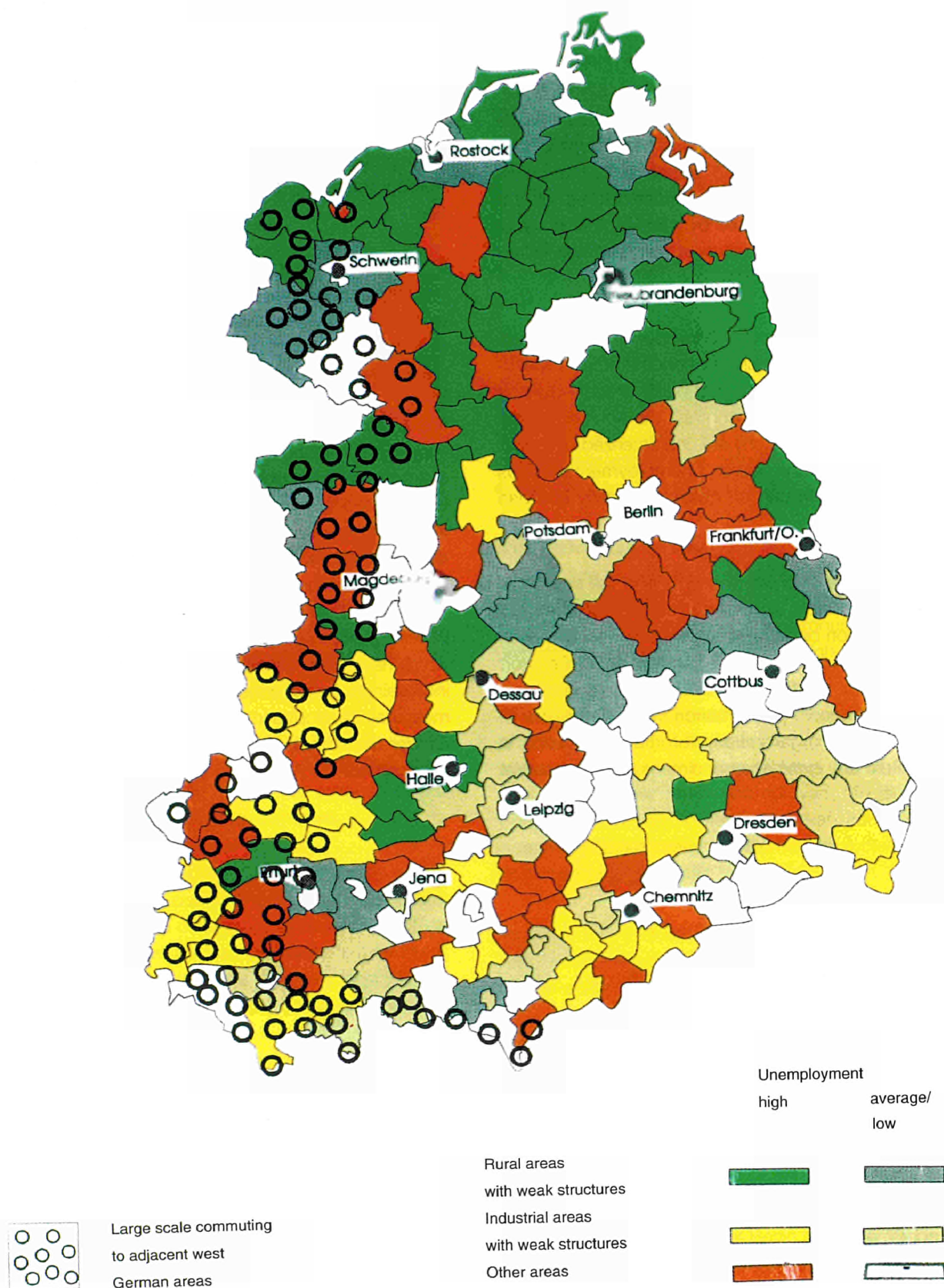
In the light of the sluggish economy and the prosperity gap between eastern and western Germany, commuting and migration patterns represent another dimension which is relevant from a spatial perspective. While short distance commuting from the hinterland into agglomerations is a well known phenomenon in the framework of functional spatial organization, commuting patterns in eastern Germany entail another dimension too. A salient

feature which illustrates the special situation in the new German *Länder* is for instance the level of commuting from eastern to western Berlin. Moreover, commuting patterns along the former East German-German border are characterized by distances to adjacent west German workplaces beyond the currently accepted radius of 40 to 60 km. More distant regions suffer from outmigration which together with generally negative demographic movements leads to growing depopulation.

The new border regions and in the main those neighbouring Poland incur additional pressure due to the existing wage differentials – despite the sluggish economy and persisting problems of restructuring, gross wages are six to eight times higher in eastern Germany than in Poland. Companies located in border regions find it difficult to survive in the light of low wage competition in the neighbouring regions across the border. This distracts new investment too. Moreover, new investment is hardly allocated in the neighbouring Polish regions for fear of approximation of wages to east German standards. Therefore, border areas on both sides risk further deindustrialization.

While it is uncontested that the labour-market measures which have been carried out so far are remarkable, it is increasingly being questioned whether the traditional measures developed in the particular situation of the old *Länder* are suitable to help the new *Länder* out of their predicament.

Map 10. Spatial patterns in the new German *Länder*



Source: Empirica regional monitor.

4. Locational strengths and weaknesses

At the time of German unification, the main shortcomings of the new German *Länder* were the poor quality of infrastructure in terms of transport networks and telecommunications, severe problems of pollution, the inadequacy of housing, outdated industrial equipment and machinery, and the low level of labour productivity in most fields. The highly qualified workforce, male as well as female, in contrast, was always seen as an asset which could help to promote economic development.

The 'human capital' in the new German *Länder* is an asset to the extent that the labour-market is characterized by increasing job creation and flexibility. It turns into a bottleneck for future development if the brain drain continued, if structural unemployment further increased and persisted in the new German *Länder* or if it concentrated in certain parts of the territory.

Other aspects, such as the low degree of suburbanization, large areas becoming available for new purposes in the framework of military conversion, previous agricultural structures and their inherent problems – but also their productive capacity, to mention only some examples, are of an arbitrary nature. In the short term these factors represent locational weaknesses. Depending upon spatial development strategies in the new German *Länder* they may turn out as long-term deficits or as locational assets.

With regard to infrastructure, the major deficiencies and bottlenecks hampering progress in the new German *Länder* during the initial phase of German unification are already or will soon be removed. Major trunk roads connecting eastern Germany with western Germany and with the other Community countries have been modernized or are under construction. A similar situation can be observed

with regard to major railway links: the modernization of the Hamburg-Berlin or Berlin-Hanover lines is about to be completed; other important links are under construction; telecommunication networks have been built up and expanded. Substantial improvements with regard to communication were made through mobile telephony too.

Therefore, a clear distinction between locational weaknesses or bottlenecks and advantages cannot be drawn without due consideration of the manifold interactions among locational factors, developments taking place now and in the future and the spatial incidence of problems and of opportunities.

In the present chapter the analytical basis is laid with regard to a selected set of issues for future spatial development in the new German *Länder*. These form the basis for the subsequent chapters in which medium-term prospects, scenarios and likely paths of future development are discussed.

Hereinafter locational strengths and weaknesses of the new German *Länder* are presented as follows.

Firstly the results of a business survey among companies in eastern Germany are discussed. In particular, the assessment of quality and availability as well as the development of locational factors are examined (Chapter 4.1); against this background assets for future development (Chapter 4.2), main development obstacles (Chapter 4.3), and factors with rapid improvements (Chapter 4.4) are presented; then the special situation of the new east German border regions is discussed (Chapter 4.5); the analysis turns next to a European comparison of the position of the new German *Länder* with regard to a selected

set of locational factors (Chapter 4.6); finally the chapter ends with a summary of findings in the light of settlement structures in the new German *Länder* (Chapter 4.7).

4.1. The new German *Länder* in comparison with EC problem regions: business survey on factors of location in eastern Germany

In the following, the strengths and weaknesses in respect of infrastructure in the new German *Länder* and in the three main types of region as considered by the Federal Ministry for Regional Planning, Building and Urban Development are assessed. These are agglomerations, regions with agglomeration tendencies and rural regions (see also Map 23). The analysis is based on a survey of 1 500 companies in the new German *Länder* conducted by the IFO Institute in the early summer of 1992.

The analysis is presented in three steps:

- (i) first, the assessment of the quality and availability of a total of 28 investigated factors;
- (ii) the importance of the individual factors for the competitiveness of each company;
- (iii) in an additional category, the development of the different locational factors is examined. Here companies had to assess whether a locational factor had developed more positively or more negatively since 1990.

Assessment of locational quality

Comparing at first the results at the *Länder* level, a relatively homogeneous strength/weakness profile emerges on the whole (see Table 15), with the exception of Mecklenburg-Western Pomerania which in general is rated lower than the other new German *Länder*.

A salient feature also in an international comparison is the overall positive assessment of availability both of qualified and less-qualified labour. Even though this finding is not surprising in the light of the layoffs of the past few years, it is a clear indication of a locational advantage. Another notable finding is the positive assessment of the social climate on the part of the employers. In the light of present socioeconomic developments this assessment, however, is not likely to last.

The lack of office space and industrial sites is much less a problem in the new *Länder* than in other comparable European regions and prices also seem to be reasonable outside agglomerations. (Only Saxony's industrial companies were slightly negative on this point.)

With the exception of eastern Berlin a particularly negative assessment was passed on transport infrastructure, with criticism directed not so much at the major routes but rather at the inadequate regional network provision. The lowest marks were given to the housing situation which is assessed just as negatively by companies in western locations, though in the new *Länder* the complaint is lack of availability and low housing standard rather than extravagant prices. The lack of housing accommodation is judged particularly negatively in the metropolitan areas but is also a central bottleneck in the less-densely populated types of region. Another weakness is seen in interregional air transport.

Both quality and availability of social, cultural and leisure facilities – not to be confounded with the factor 'social climate' which was defined in the survey as the relationship with labour organizations – were assessed very negatively. This is one of the strongest locational disadvantages in the new *Länder*, not only in the peripheral but also the agglomeration areas, as a comparison with western agglomerations shows. One comparative figure shall suffice in this context: in cities such as Hamburg, Berlin, London or Copenhagen, the quality of social and cultural facilities is assessed at between +110 and +140 as against an average –29 and –34 in the new German *Länder*. While it may be argued that such a comparison with western centres is too ambitious, it is uncontested that potential investors will not accept such disadvantages unless there are signs of approaching western standards in the foreseeable future.

With regard to types of region (see Table 16) the major differences in the assessment of companies are the following:

- (i) in the opinion of companies, as can be expected, the availability of industrial sites is abundant in rural regions while agglomerations incur bottlenecks;
- (ii) local transport and in the main, regional transport is assessed negatively in rural areas whereas the assessment is positive in agglomerations;
- (iii) the quality of higher education and training is assessed more positively in agglomerations than in rural regions.

Table 15. Quality and availability of infrastructure, 1992
(company assessment of infrastructure endowment in eastern Germany)

<i>All new Länder</i>	<i>Mecklenburg- Western Pomerania</i>	<i>Brandenburg</i>	<i>Saxony-Anhalt</i>	<i>Thuringia</i>	<i>Saxony</i>	<i>Eastern Berlin</i>
Less-qualified labour 70	Less-qualified labour 69	Availability of offices 73	Proximity to customers 78	Less-qualified labour 74	Third level education 79	Third level education 100
Social climate 64		Availability of industrial sites 70	Less-qualified labour 68	Qualified labour 68	Managerial training 73	Social climate 96
Qualified labour 63		Social climate 68	Qualified labour 67	Availability of industrial sites 65	Qualified labour 69	Managerial training 93
Managerial training 60		Less-qualified labour 65	Social climate 65		Less-qualified labour 69	Proximity to customers 91
		Managerial training 60	Managerial training 65		Social climate 63	Interregional air transport 84
			Proximity to services 61			Proximity to industrial sites 78
Availability of housing -71	Availability of housing -102		Interregional air transport -77	Interregional air transport 84	Availability of housing -78	Regional transport 77
	Interregional air transport -95		Leisure facilities -73	Regional transport -73	Leisure facilities -66	Less-qualified labour 73
	Housing prices -83		Availability of housing -63	Availability of housing -67		Housing prices -88
	Leisure facilities -70					Availability of housing -63

NB: Answers ranged from -102 to 100 points on a total scale from -200 to 200 points. The figures under the kinds of infrastructure above give the respective points scaled.

The higher the value, the better the firm's assessment of the factor's quality/availability. The following weighting was used: ≥ 60 points (+), ≤ -60 points (-).

Source: IFO business survey, 1992.

Table 16. East German company assessment of the quality of regional infrastructure endowment by spatial types, 1992

(Balances-weighted¹ by *Länder* and BfLR classification²)

	<i>All new Länder</i>	Regions in major aggro- merations ²	Regions with conurbational features ²	Ruraliv- structured regions ²
Property market				
Offices:				
availability	54	52	51	69
prices	15	8	23	23
Industrial sites:				
availability	49	42	49	86
prices	0	18	5	39
Housing:				
availability	-71	-86	-61	-61
prices	-45	-61	22	-42
Transport infrastructure				
Local transport	6	17	-1	
Regional transport	-32	9	-51	
(Inter)national transport:				
roads	19	15	24	29
rail network	19	28	4	19
aviation	-38	-1	-86	
Labour-market				
Availability of:				
qualified labour	63	63	67	
less-qualified labour	70	68	77	
Economic structure				
Proximity to industry	31	48	25	
Proximity to customers	54	61	52	
Proximity to suppliers	15	19	10	11
Proximity to business services	55	67	42	41
Political infrastructure				
Cooperation with local/regional authorities	-1	0	3	
Local/regional taxes/fees	-11	-7	-14	
Communication/energy				
Availability and costs of:				
modern communication systems	-15	-14	-20	-12
energy	32	42	20	
waste disposal facilities	11	20	2	1
Education/training/research				
Quality of:				
third level education	57	85	36	
managerial training	60	80	40	25
Social/cultural/leisure facilities				
Social climate	64	68	58	
Quality/availability of:				
leisure facilities	-55	-52	-67	-37
social facilities	-29	-25	-46	-5
cultural facilities	-34	-16	-57	-49

¹ The findings are balances, i.e. the difference between positive and negative reports. Given the weighting used (very positive +2 positive +1 negative -1 very negative -2) the balances may vary between +/- 200. The most negative or less positive results of the *Länder*/region comparison are marked.

² Classification according to the settlement structure elaborated by BfLR. See BfLR. Spatial monitoring system, Bonn, 1992.

Source: IFO survey 1992.

Measuring the relative locational advantages and disadvantages of the new *Länder* in comparison to other types of problem regions (see Table 17), it becomes obvious that there are tremendous differences in infrastructural profiles. In terms of the dimension of the problem, the situation in the new *Länder* is comparable to that in Objective 1 regions in the Community, even though the causes (related to the former centrally-planned economy) are different.

Importance of locational factors

In all regions of the new German *Länder* highest importance is attached to telecommunications as a locational factor (see Table 18). Other important factors are inter-regional road transport, proximity to customers and qualified labour. Locational factors assessed as 'not important' by companies are mostly interregional rail and air transport as well as the availability of less-qualified labour.

Trends in the assessment of locational strengths and weaknesses

As can be seen from Table 19, in all new *Länder* greatest improvements are seen with regard to telecommunications, while it is mainly housing prices and cultural facilities which are assessed more negatively in 1992 than in

1990. With regard to prices of housing and industrial sites the assessment soared most significantly in eastern Berlin.

Priorities for improvement

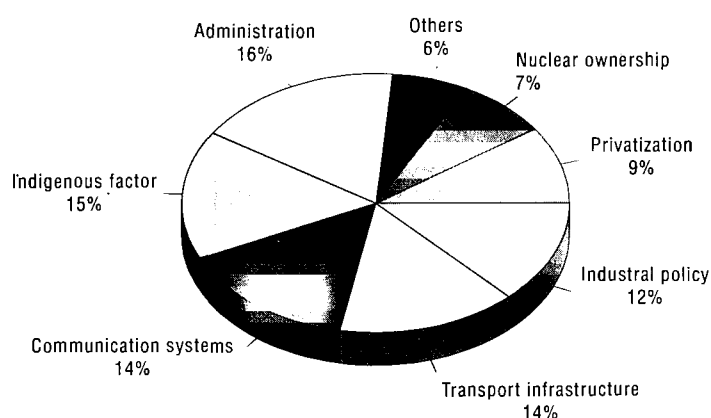
As regards priorities for improvement, transport infrastructure, communication systems, indigenous factors and administration are the main areas of concern. Nearly one firm out of five regards public administration as a factor that has the highest priority for improvement (see Figure 10). Non-transparent structures, incompetence and inefficiency and, above all, too long delays are the deficits mentioned most often.

As can be expected, the value attached to functioning administrative structures is highest where these do not exist, and particularly low where relatively good administrative work is performed. In this respect, the assessments by business and industry in the new *Länder* hardly differ from those of their counterparts in Eastern or parts of southern European locations.

Self-assessment and external assessment

The discrepancy between self-assessment and external assessment is surprising, i.e. the assessment of the location 'new German *Länder*' by companies outside

Figure 10. Factors with the highest priority for improvement for east German companies, 1992 (as % of total)



Source: IFO survey 1992.

**Table 17. Infrastructure endowment in eastern Germany
in comparison with EC problem regions, 1992**

(Balances-weighted)¹

	All new German <i>Länder</i> in comparison to				
	All new <i>Länder</i>	Objective 1 regions EC ²	Objective 2 regions EC ²	Objective 1 regions EC ^{2,3}	Objective 2 regions EC ²
Property market					
Offices:					
availability	54			–	0
prices	15			–	–
Industrial sites:		–3	10		
availability	49			0	0
prices	0			+	+
Housing:					
availability	–71	–18	18	–	–
prices	–45			+	+
Transport infrastructure		(17)	(70)		
Local transport	6			+	–
Regional transport	–32			0	–
(Inter)national transport:					
roads	19			0	–
rail network	–38			0	0
aviation	19			+	0
Labour-market					
Availability of:					
qualified labour	63	–18	–29	+	+
less-qualified labour	70	14	15	+	+
Economic structure					
Proximity to industry	31			0	–
Proximity to customers	54	51	68	0	0
Proximity to suppliers	15	22	45	0	–
Proximity to business services	55	(18)	(40)	+	0
Political infrastructure					
Cooperation with local/regional authorities	–1	–18	0	0	0
Local/regional taxes/fees	–11	–32	–56	0	+
Communication and energy					
Availability and costs of:					
modern communication systems	–15	30	74	–	–
energy	32	–17	18	+	0
waste disposal facilities	11	21		+	0
Education/training/research					
Quality of:					
third level education	57	–	42	+	0
managerial training	60	–15	21	+	+
Social/cultural/leisure facilities					
Social climate	64	16	20	+	+
Quality/availability of:					
leisure facilities	–55	14	21	0	–
social facilities	–29	(–13)	(16)	0	–
cultural facilities	–34	(–13)	(16)	0	–

¹ For methodological explanations see Table 3. Data in brackets are not completely comparable.
Comparison to EC regions is based on data and experts assessment.

² + better, 0: no difference, – worse

³ See IFO Institute. *An empirical assessment of factors shaping regional competitiveness in problem regions*, Munich, 1990.

Sources: IFO survey 1992, IFO survey 1990.

Table 18. Importance of the kinds of infrastructure for the respective company, 1992
(company assessment of infrastructure endowment in eastern Germany)

All new <i>Länder</i>	Mecklenburg/ Western-Pomerania	Brandenburg	Saxony-Anhalt	Thuringia	Saxony	Eastern Berlin
Communication systems 87	Communication systems 96	Communication systems 86	Communication systems 86	Communication systems 83	Communication systems 88	Communication systems 89
Interregional road transport 69	Proximity to customers 84	Interregional road transport 68	Proximity to customers 70	Qualified labour 69	Interregional road transport 69	Qualified labour 77
Proximity to customers 69	Qualified labour 70	Qualified labour 66	Interregional road transport 68	Proximity to customers 68	Proximity to customers 69	Proximity to customers 71
Qualified labour 66		Proximity to customers 64	Social climate 66	Interregional road transport 67	Qualified labour 65	Interregional road transport 70
			Availability and prices of energy 61		Social climate 60	
Interregional air transport -34	Interregional air transport -47	Interregional air transport -28	Interregional air transport -47	Interregional air transport -44	Interregional air transport -30	Interregional air transport -10
Less-qualified labour -12	Less-qualified labour -7	Less-qualified labour -5	Less-qualified labour -17	Less-qualified labour -14	Less-qualified labour -15	Leisure facilities -7
Interregional rail transport -6				Regional transport -11	Interregional rail transport -9	

NB: Answers ranged from -47 to 96 points on a total scale from -200 to 200 points. The figures under the kinds of infrastructure above give the respective points scaled. The higher the value, the more important the firm's assessment of the factor. The following weighting was used: ≥ 60 points (+), ≤ -5 points (-).

Source: IFO business survey, 1992.

Table 19. Trends in the assessment of infrastructure, 1990-92
(company assessment of infrastructure endowment in eastern Germany)

All new Länder	Mecklenburg/ Western-Pomerania	Brandenburg	Saxony-Anhalt	Thuringia	Saxony	Eastern Berlin
Communication systems 53	Communication systems 65	Communication systems 45	Communication systems 48	Communication systems 55	Communication systems 54	Communication systems 53
Managerial training 35	Availability of industrial sites 36	Managerial training 35	Availability of offices 36	Interregional road transport 47	Interregional air transport 40	Proximity to services 46
	Proximity to services 34	Interregional road transport 32	Managerial training 31	Availability of industrial sites 38	Managerial training 38	Proximity to suppliers 43
	Availability of offices 30			Managerial training 33		Managerial training 43
				Proximity to services 30		Regional transport 32
						Interregional air transport 32
Housing prices -45	Social facilities -45	Housing prices -42	Housing prices -46	Housing prices -39	Housing prices -46	Housing prices -64
Cultural facilities -31	Cultural facilities -45	Cultural facilities -32	Cultural facilities -39		Social facilities -31	Prices of industrial sites -60
	Leisure facilities -43		Social facilities -31		Prices of industrial sites -30	Office prices -50
	Housing prices -43					Social facilities -38

NB: Answers ranged from -64 to 65 points on a total scale from -200 to 200 points. The figures under the kinds of infrastructure above give the respective points scaled. The higher the value, the better the firm's assessment of the factor's development from 1990-92. The following weighting was used: ≥ 30 points (+), ≤ -30 points (-).

Source: IFO business survey, 1992.

the region. Although this was not examined by the IFO Institute in the context of this study, an investigation by GfK market research of the summer of 1992 can be drawn on for making certain comparisons. Questioned on the strengths and weaknesses of the new *Länder*, some 200 company representatives from the West saw the greatest strengths in customer proximity and in the 'soft' factors leisure time and culture. Ranked among the most important weaknesses were office space, industrial sites and housing, the availability of a skilled workforce, transport links and proximity to suppliers.

Leaving the question of comparability out of consideration, external and self-assessment are nearly diametrically opposed. This could be due to a marketing deficit, for instance when an assumed strength is seen as a weakness by outsiders. But on the other hand, it could lead to a false assessment of the competitive position of competing companies in other locations.

Summary of findings

In the light of the findings of the survey the new German *Länder* can be divided into four groups according to their development potentials.

According to the survey among companies, the weakest *Länder* are Mecklenburg-Western Pomerania and Brandenburg, Saxony-Anhalt is in a middle position, Thuringia and Saxony show the best development potentials. East Berlin is assessed more positively than the other new *Länder*. It should be borne in mind, however, that with regard to east Berlin the regional delimitation certainly bears impact upon this result (consideration of agglomeration without broader catchment area).

To proceed further it is important to note the following results of the survey:

- (i) companies in eastern Germany generally make positive assessments of available labour;
- (ii) unanimous progress is recorded in all new *Länder* with regard to communications infrastructure;
- (iii) socio-cultural facilities and housing prices are assessed negatively;
- (iv) with regard to infrastructure a criticism which is particularly relevant from a spatial perspective is not so much on interregional routes but rather on the inadequate regional network provision;

- (v) administration is regarded as the factor with the highest priority for improvement.

4.2. Assets for future development

Skills of the workforce

One of the greatest potentials of the new *Länder* is seen in the highly-skilled labour-force. The large proportion of employees with university education or vocational training (including women) and the small share without completed vocational training are unequalled in Germany and in Europe.¹ There are marked differences though among the various regions as can be seen from Map 11 which shows the structure of qualifications at regional level. Regions in which up to 15.7% of the gainfully employed have a high professional qualification are found in Saxony, Saxony-Anhalt and western parts of Thuringia and in east Berlin. Mecklenburg-Western Pomerania displays a remarkable east-west differential in the qualifications structure of its workforce: the level of skills is markedly above average in the Neubrandenburg region, whereas its western areas and the Rostock region belong to the group of regions with a relatively low qualification level of the workforce.

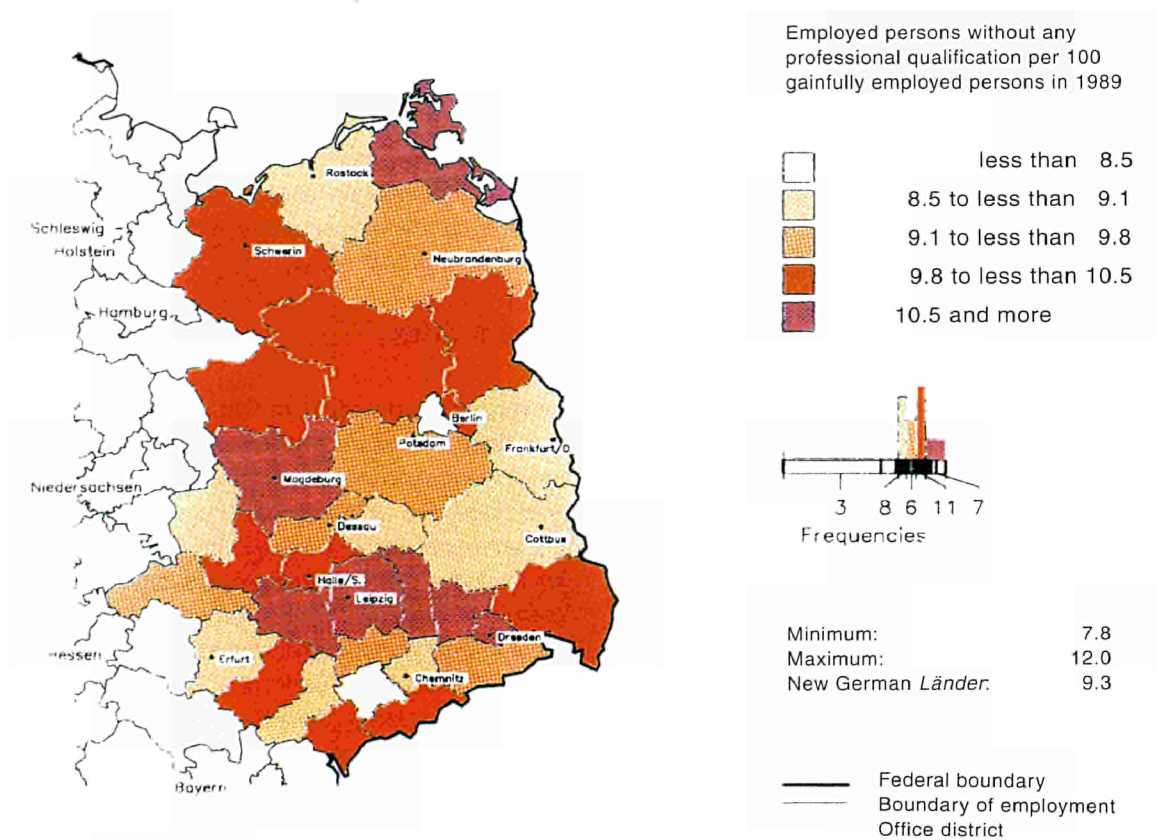
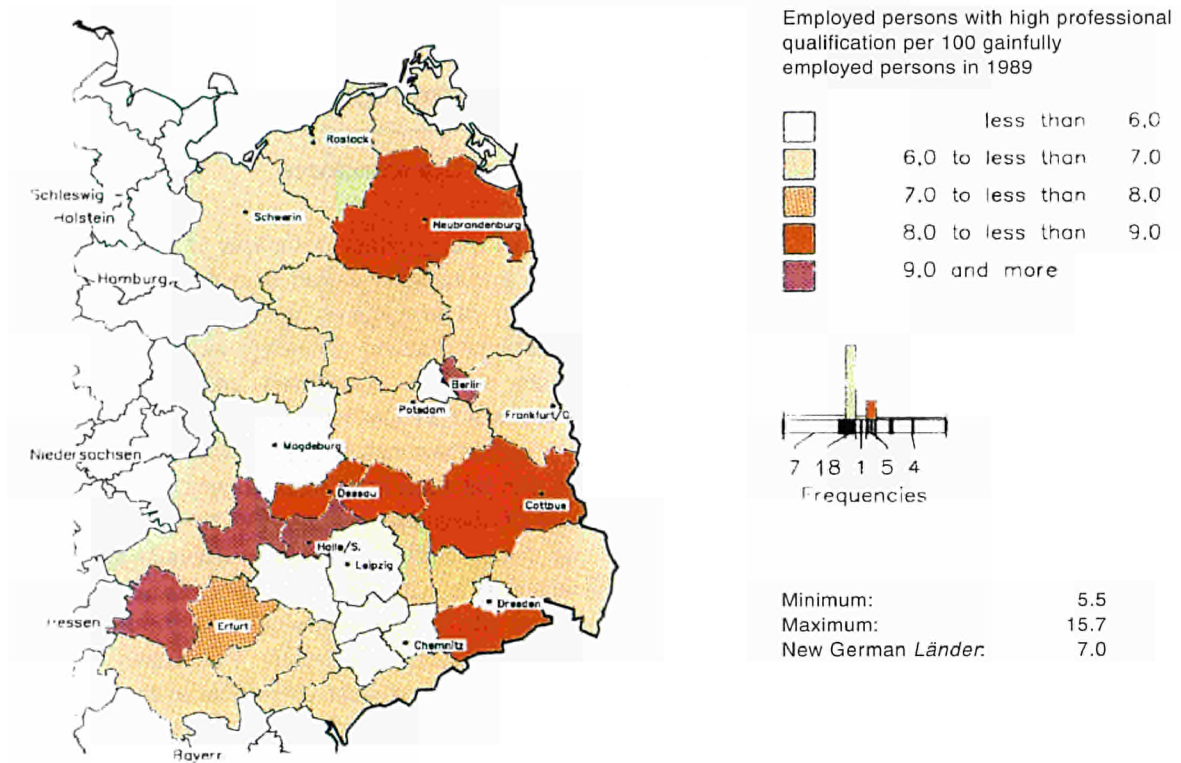
In order to be able to properly assess the performance potential of the workforce, one has to bear in mind, however, that a good deal of the qualifications need adapting to the requirements of a modern economy and its state of technology.

R&D activities

The regional distribution of R&D personnel and business-related research institutions is determined by the previous location of industrial conglomerates and of universities and colleges. There are distinct points of concentration and a certain North-South differential: two thirds of the former research staff are concentrated in 16 towns of the former GDR; their number is lowest in the *Länder* of Mecklenburg-Western Pomerania and Brandenburg. Berlin and Saxony have the largest university-related capacities. This is where most of the research institutions are based, where above-average R&D funds flow and where above average shares of the workforce are employed in R&D (more than 0.35% in April 1992) (see Map 12).

¹ Federal Statistical Office, Statistical yearbook 1991.

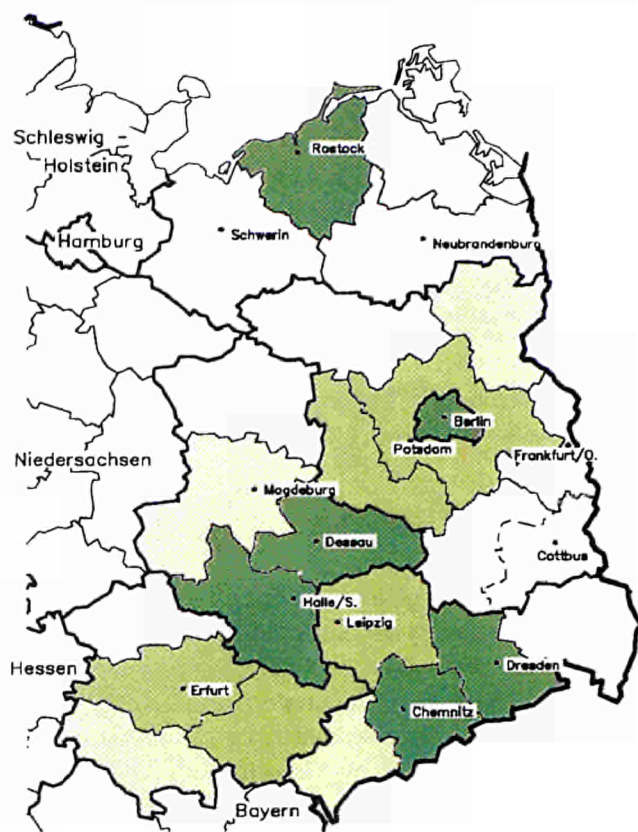
Map 11. Employment by level of qualification



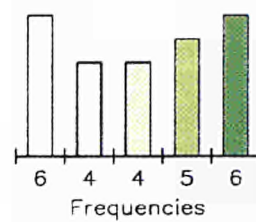
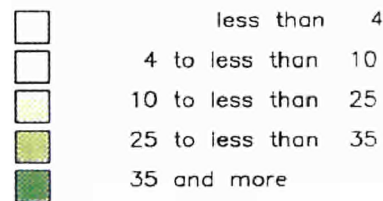
Source: Spatial monitoring system of the BfLR.

100 km

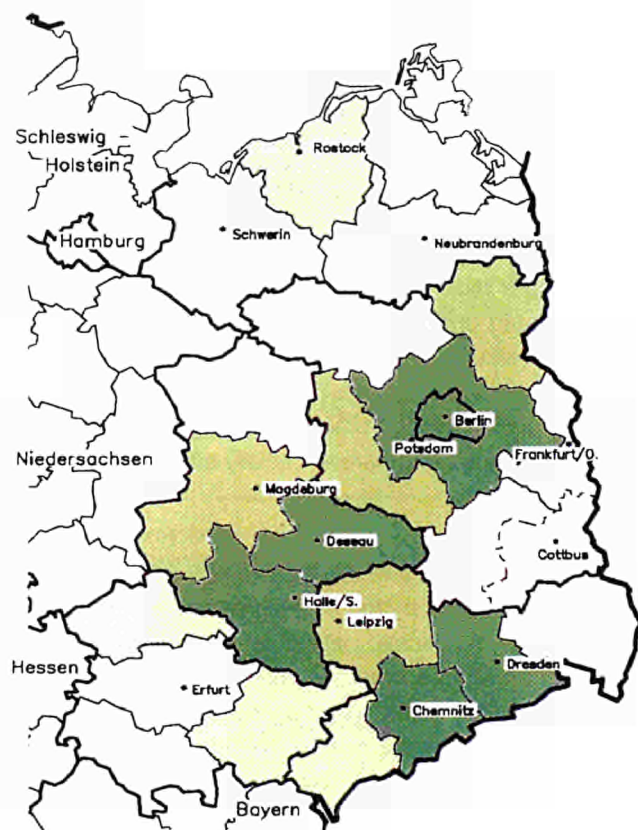
Map 12. Industry-related research and development



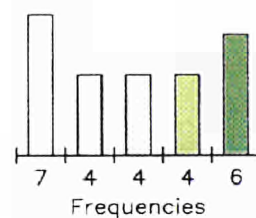
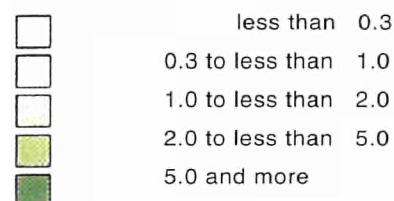
Employed persons in industry-related research and development of 10 000 gainfully employed persons in April 1992



— Federal boundary
— Land boundary
— Boundary of regional policy area
- - - Boundary of parts of regional policy areas



Share of funds available to industry-related research and development in total funds available to industry-related research and development in the new *Länder* as % in April 1992



NB: Berlin data refer to East Berlin only.
Source: Forschungsagentur Berlin GmbH.

100 km



Research and development institutions are presently having considerable difficulty in reorienting themselves to new objectives. A large part of their former activities has become redundant and sources of finance are no longer available. As a consequence the number of R&D personnel has been substantially reduced since 1990. In April 1992, only about 50 000 to 55 000 of the former 140 000 employees in research and development still had work contracts. The number of staff engaged in economically relevant research and development was reduced from 86 000 to 20 000 to 24 000 in April 1992 (which is equivalent to about 18 000 to 20 000 full-time jobs). The share of employees in research/development/construction in enterprises administered by the State Trust Agency was 3.7% in April 1992.¹

Policies aim to achieve a more balanced spatial distribution of research and development activities, for example through the establishment of technology centres as well as through the reorientation of research (especially to environmental research and technology, energy research and cleaning-up of old pollution).

4.3. Main development obstacles

Among the development obstacles, housing and the environment stand out as prominent factors. Additional factors also include energy production and consumption patterns as well as military conversion.

Energy

Energy consumption differed fundamentally between the new and the old *Länder* in terms of consumption structure and levels of per capita consumption. With 68.8%, lignite had the lion's share in the new *Länder* in primary energy consumption and with 78.7% in power generation even in 1990 (western *Länder*: 8.2 and 19.6% respectively). Many of the lignite-fuelled power stations are obsolete and inefficient. They add a severe problem to air pollution too.

With regard to private energy consumption 60% of the living space is heated by brown coal with emissions being relatively unimportant as a share of total pollution, but nevertheless they are a serious health-hazard because of their local and seasonal concentration.

¹ IAB 7/92.

To reduce the enormous waste of energy and the resulting environmental pollution, a number of energy management projects have been tabled which include measures such as modernization of heating systems and thermal insulation in buildings (expected to save 50% of energy), modernization of heating systems (about 60% of the flats are not yet equipped with devices to regulate heat individually), installation of smaller, more flexibly adjustable energy supply systems. In addition it is planned to link the electric power supply mains of the new *Länder* to those of the western *Länder* at several points to guarantee supplies.

The distribution systems for electricity and gas are displayed in Annex I, Maps 8 and 9.

Environmental pollution

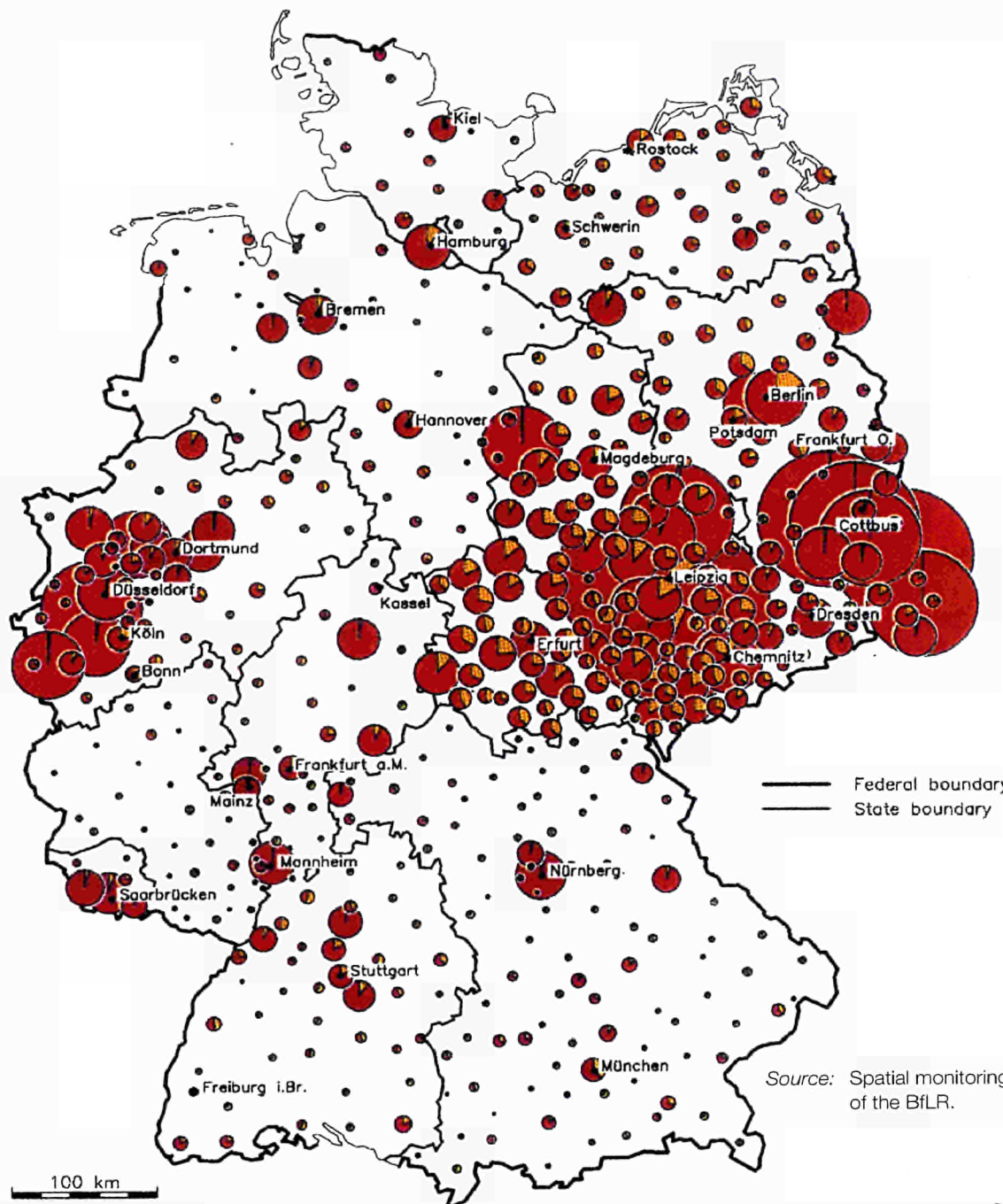
Environmental pollution in the new German *Länder* is one of the most serious in Europe. There is heavy air pollution from dust and sulphur dioxide and water resources are contaminated and badly managed. Soils are also contaminated by pollutants deposited in the past and by run-off from present waste dumps.

In wide areas air pollution constitutes a serious health hazard (see Map 13). The annual emission of 320 kg/inhabitant of sulphur dioxide and 135 kg/inhabitant of air-borne dust resulting mainly from industrial plants and power stations run on indigenous low-quality brown coal is about 15 times higher than the respective figure in the old *Länder* and affects about 40% of the population.

Smog is most likely to occur in the agglomerations of the south and Berlin. As a consequence of constantly high levels of air pollution the share of badly damaged forest area amounts to 36% and is twice as high as in the old *Länder*. The areas of Harz, the Thuringian forest and the Erzgebirge are especially affected (see Annex I, Map 10).

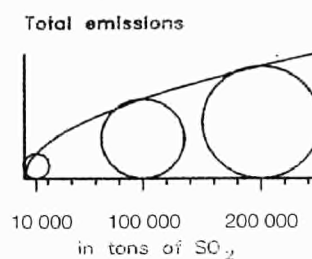
Apart from this general situation some areas are additionally affected by the emissions from industries – such as basic chemicals, petrochemicals, fertilizers, ferrous and non-ferrous ores and metals, etc. – the pollutants being mainly heavy metals and certain organic compounds. This is the case in the Mansfeld and Freiberg areas, in Riesa and the city of Brandenburg, in Bitterfeld, Buna and the Dresden area.

Map 13. Sulphur dioxide emissions

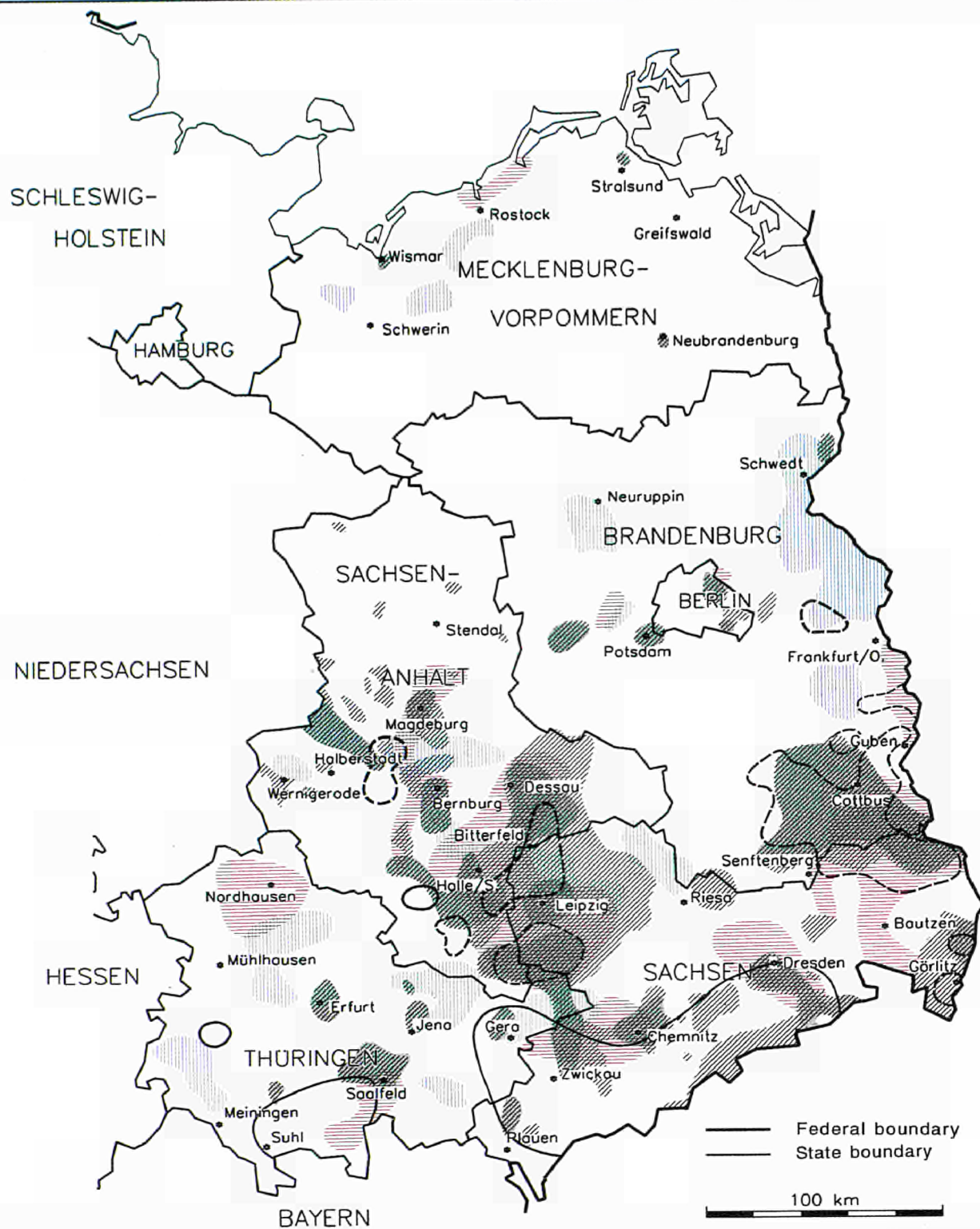








Distribution of emissions according to source groups:
(old federal States: 1986
new federal States: 1989)

- Private households and minor energy users
- Power stations and industry



Map 14. Contaminated areas in the new German Länder



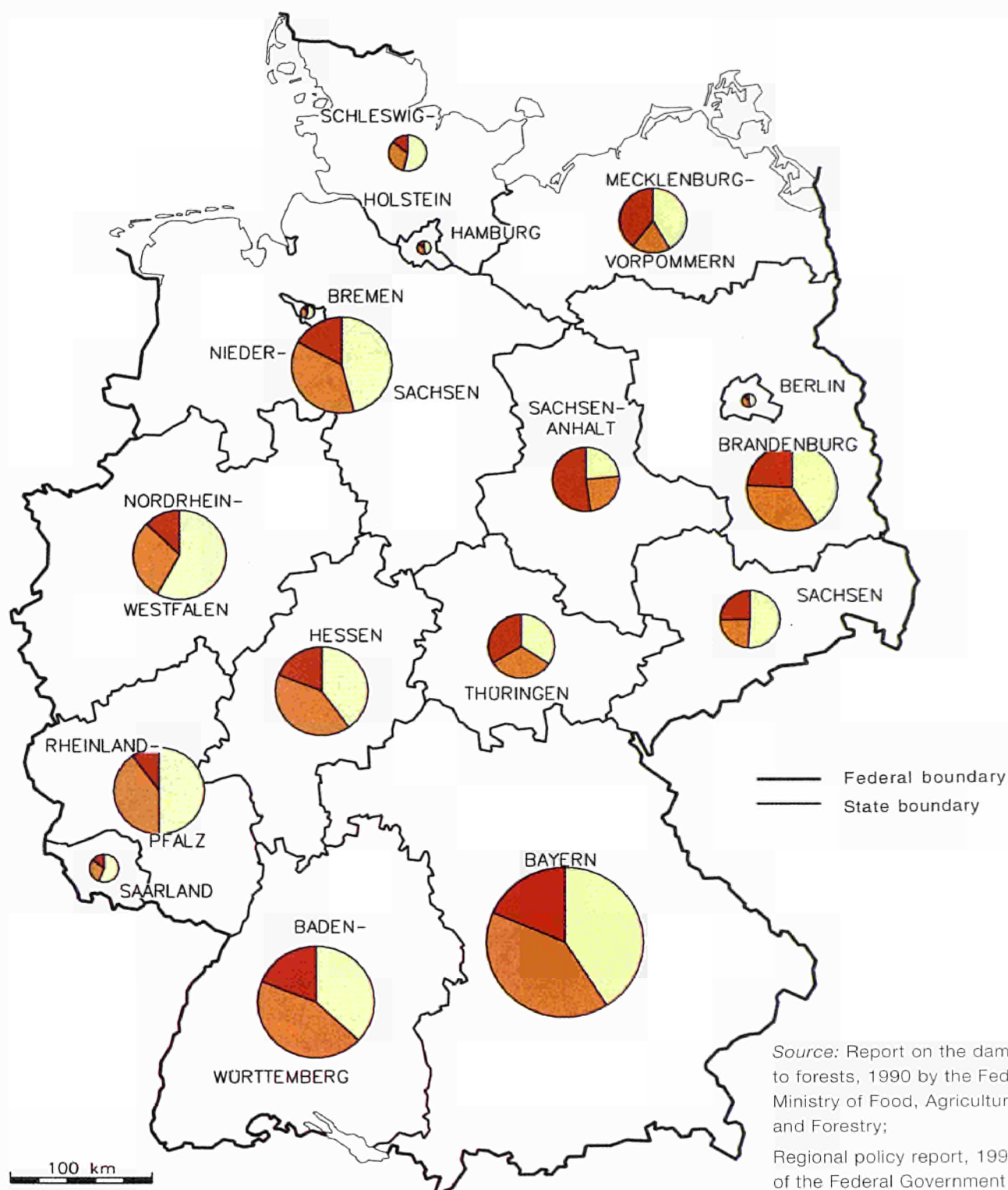
-  Contaminated areas with moderate to high emission levels especially of air pollutants
-  Contaminated areas with high emission levels of air pollutants (more than 200/km²/year)
-  Areas with relatively high density of disposal locations of industrial, special and toxic waste
-  Areas with high density of livestock production plants and fodder silos
-  Areas of lignite mining
-  Areas where waste from uranium mining is assumed to have been disposed

Sources:

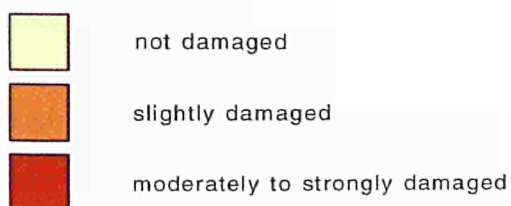
- Society for environmental and economic geography, Berlin, commissioned by the Ministry of environment, nature conservation and nuclear safety
- Raw material consulting, Dresden, commissioned by the Research centre for geography and regional planning

Regional policy report, 1991
of the Federal Government

Map 15. Damage to forests

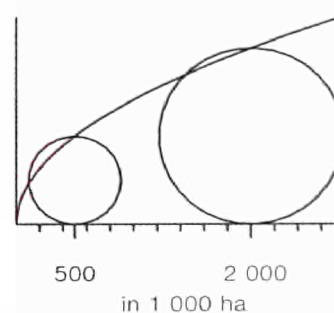


Shares of forest area *
by degree of damage

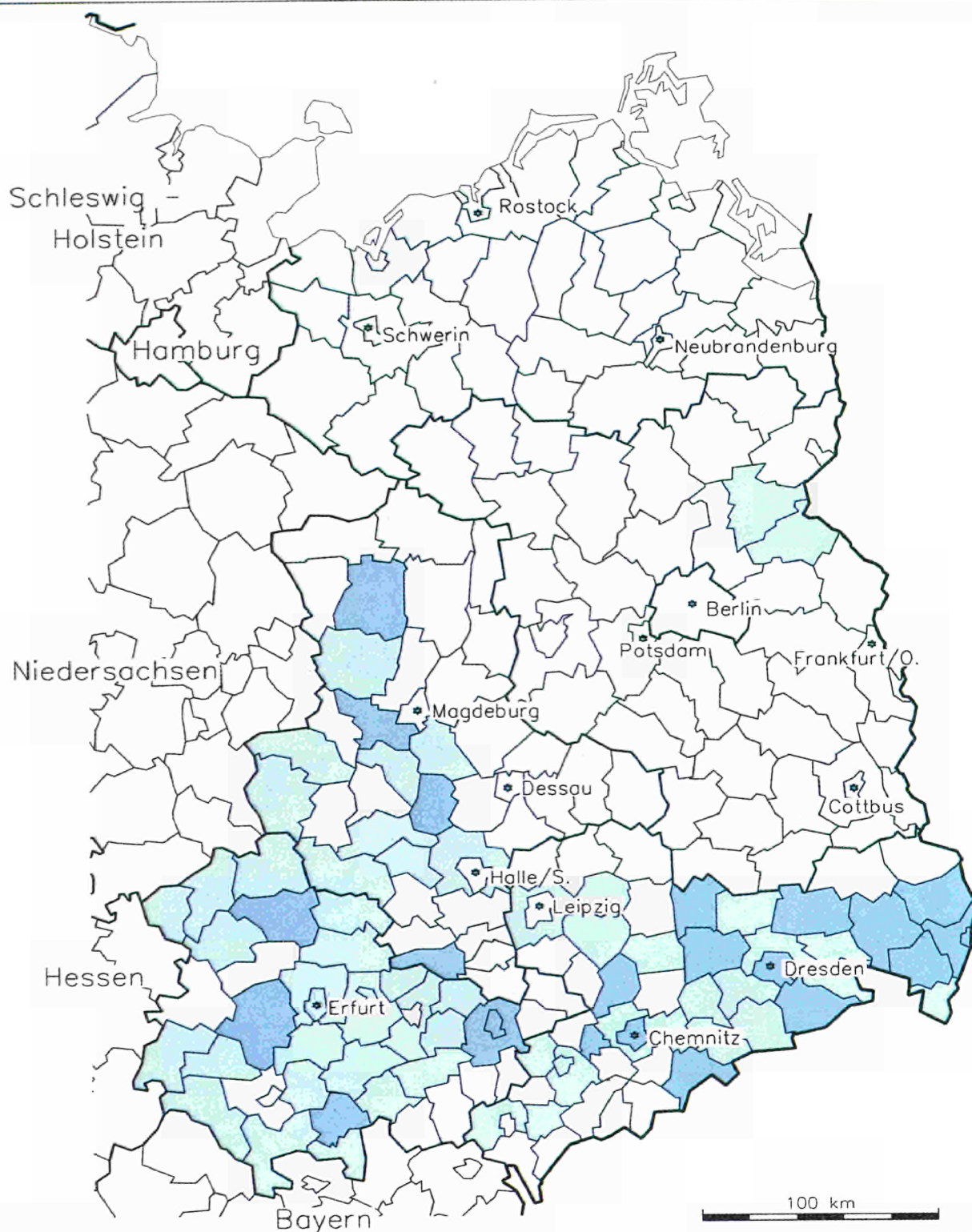


* Common symbol for Berlin, Bremen and Hamburg.

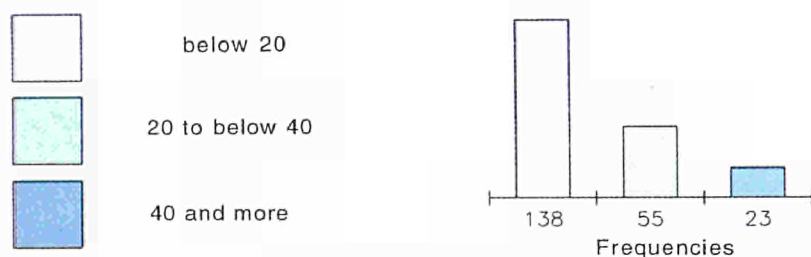
Forest area 1988



Map 16. Groundwater contamination with nitrates



Groundwater quality in the new German Länder
by hygienic classes, 1990
(NO₃ mean values of counties in mg/l)



— Federal boundary
— State boundary
— County boundary

Source: Environmental report
of the GDR, 1990; Regional
policy report, 1991 of the
Federal Government

Special problems relate to the emission of atmospheric gases, especially carbon dioxide, which cause global warming. Due to high energy consumption and inefficient energy transformation the emission of carbon dioxide per inhabitant amounted to about 21.2 t in 1986, giving the former GDR the worst standing worldwide.

With regard to air pollution, the situation improved somewhat. As 88% of these emissions derive from industry, 10% from domestic fuel and only 2% from traffic, the densely populated and industrialized regions of the south where centres in Cottbus, Halle and Leipzig are especially affected. Recently industrial air pollution has been reduced as a result of the widespread closure of old factories. Within the next two years west German standards of permissible emission levels will take effect and contribute to a further reduction of industrial air pollution whereas the amount of traffic has already risen considerably and is expected to worsen air pollution, mainly raising the once low emissions of nitrogen oxides.

The area of the new German *Länder* is provided with the lowest natural potential water-supply in Central Europe. The supply of drinking water has to cope with problems in all regions because of the poor quality of untreated water. In all 9.6% of the population are supplied intermittently or permanently with drinking water of low quality. Areas with intensive agriculture and livestock breeding such as the Magdeburg area, the 'Harzvorland', the basin of Thuringia, the hill country of Saxony and wide areas of Mecklenburg-Western Pomerania have to put up with serious nitrate contamination. The quality of drinking water is alarming also in the areas of Chemnitz, Cottbus, Erfurt and Gera.

There are other deficiencies, too. The pipe systems for drinking water are in a poor state, with losses of water of up to 30%. The sewage systems and waste water purification plants are inadequate, requiring substantial modernization and repair investment (about ECU 30 billion). The cleaning of surface waters is a top priority in the areas of Dresden, Leipzig, Chemnitz (Saxony) and Halle/Bitterfeld (Saxony-Anhalt).

The main contributor to soil contamination is the run-off from inadequate waste deposits which is a problem throughout the new German *Länder*. The amount of waste was once low but has already increased with rising living standards so that the situation is expected to worsen in the near future. Pollution from former and present waste deposits is worst in the Halle-Bitterfeld

area. This area is not only heavily polluted generally, it also accounts for more than a third of all noxious and toxic by-products produced and deposited in the new German *Länder*. Another heavily polluted area lies between Gera and Zwickau where former uranium mining was concentrated.

Conversion

The extent of military conversion in the new German *Länder* is substantial. Two and a half percent of total area were military sites of the former Soviet army. In total 4.8% of the territory was used for military purposes.

The largest military premises are located in Brandenburg (the military zone of Lieberose with an area of 238 km²) and in Saxony-Anhalt (232 km² in the Letzinger Heide and 179 km² near Altengrabow). With regard to the former Soviet forces as can be seen from Map 17, the highest share of the military in total area can also be found in Brandenburg and Saxony-Anhalt.

The problem of reconversion is severe, in particular with regard to the following aspects:

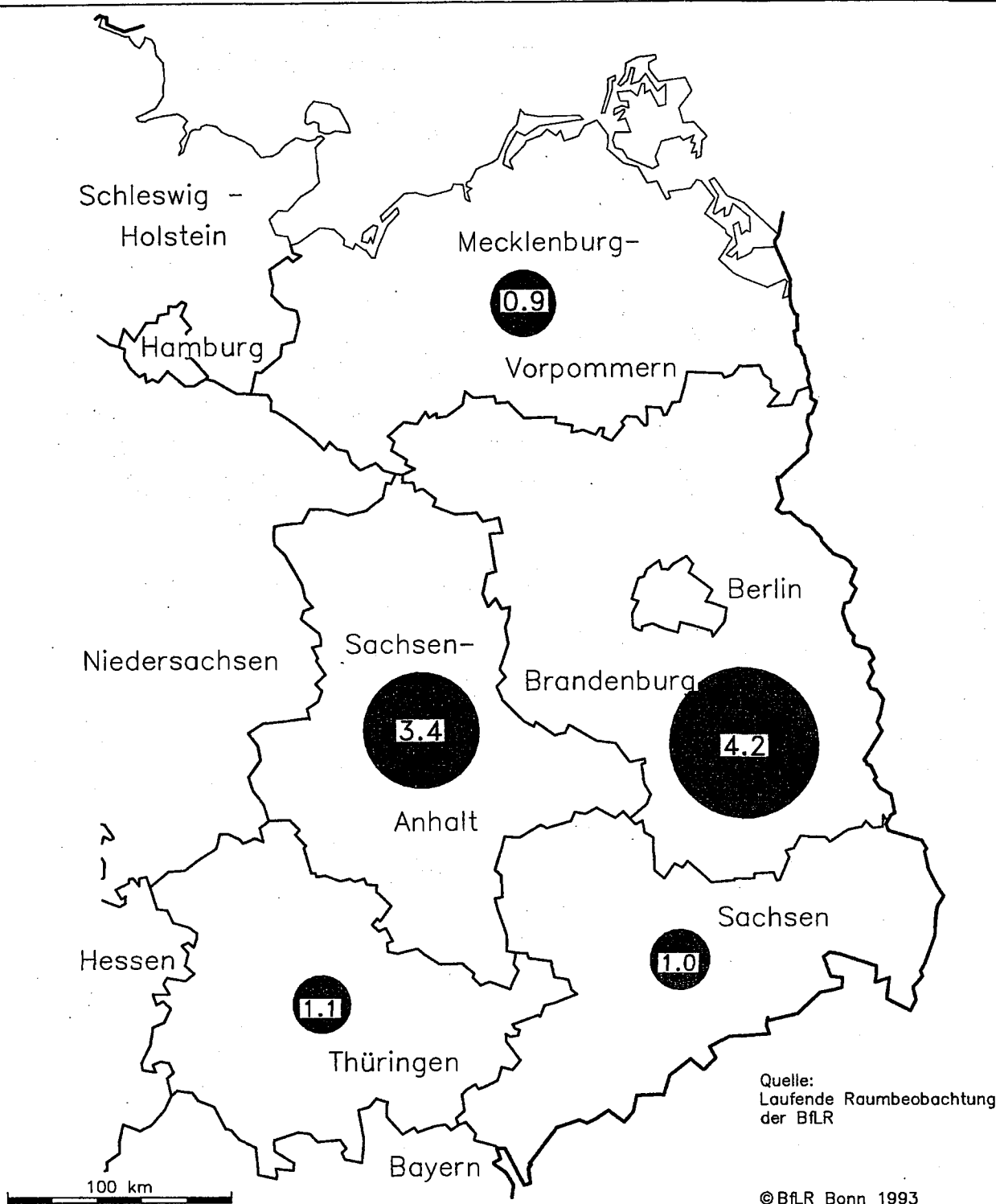
- (i) ground contamination, military equipment and ammunition left behind;
- (ii) former military industries with additional risk potentials for the environment;
- (iii) employment in former upstream and downstream industries;
- (iv) moreover, about 100 000 employees in over 100 establishments previously engaged in military production lost their jobs.

Partly the existing military premises will be used for military purposes in the future too. While conversion in the short and medium term entails a variety of obstacles, it also offers long-term potential for regional development. In city areas premises for new construction are becoming available. Many military premises are located in attractive landscapes. The transformation of such premises in areas of natural conservation is envisaged.

Housing

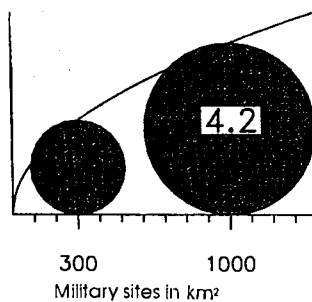
The small size and quality of dwellings and the often unattractive housing environments constitute another locational weakness. Major problem areas are the regions of Saxony, especially Chemnitz-Zwickau and

Map 17. Military sites of CIS forces



Military sites of the CIS forces in km²
(as of 31 July 1990)

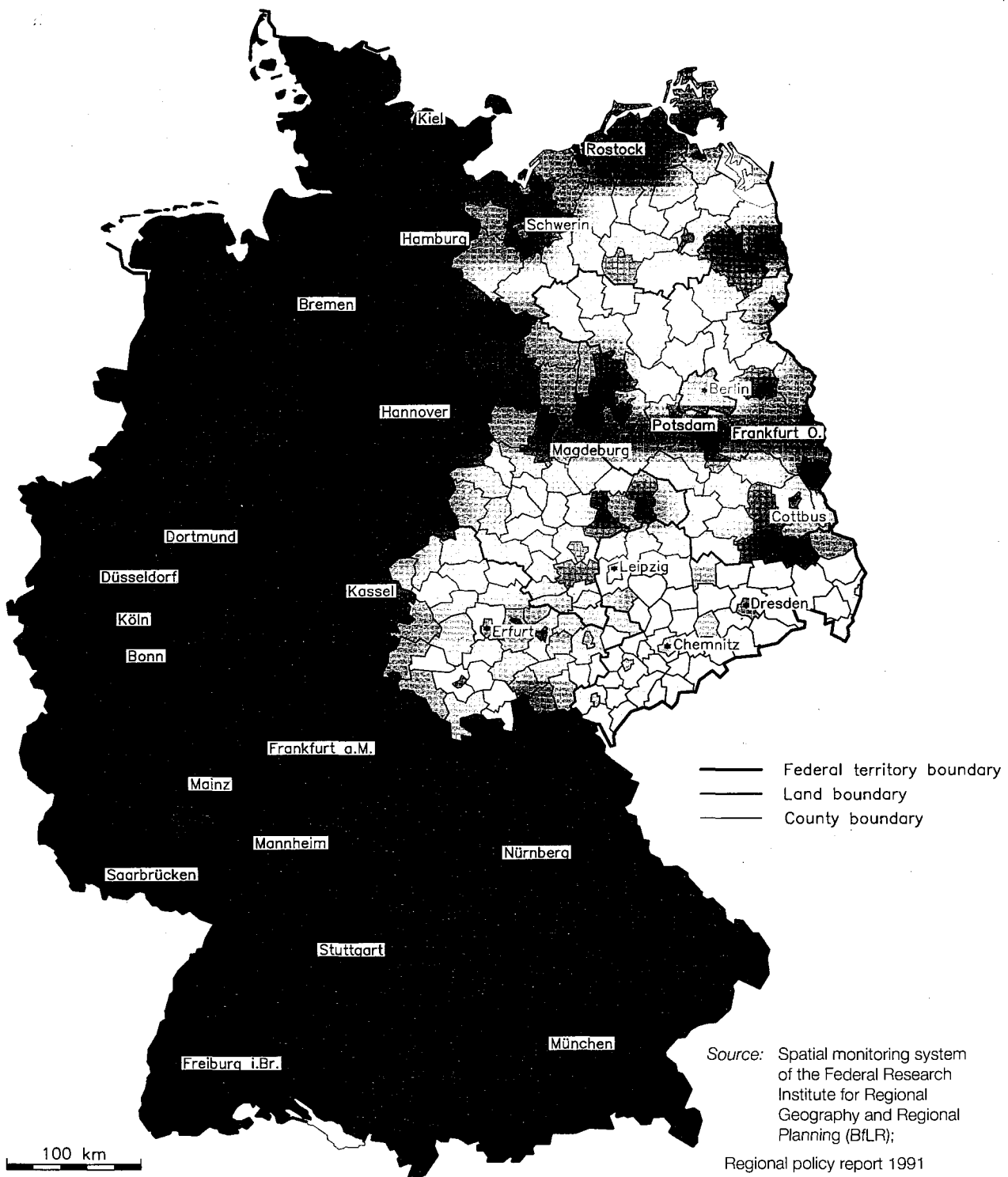
Mecklenburg-Western Pomerania	218
Brandenburg	1170
Saxony-Anhalt	689
Saxony	187
Thuringia	170



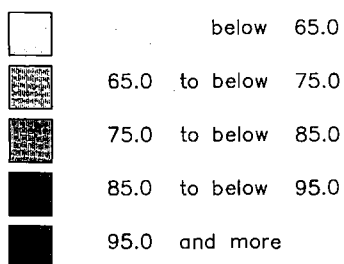
— Federal boundary
— State boundary

Share of military sites
in land territory as %

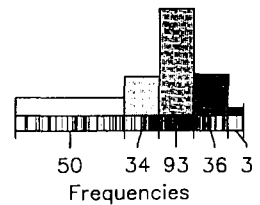
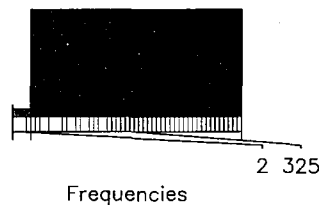
Map 18. Housing standards



Percentage of housing with indoor lavatory (Old Länder: 1987; New Länder: 1989)



	Old Länder	New Länder
Minimum:	94.6	33.5
Maximum:	99.7	99.6
Average:	98.3	75.6
Federal average:	93.5	



Dresden as regards the state and equipment of dwellings, and Halle-Bitterfeld with respect to housing environment, while better conditions are found in the northern and central regions and in Thuringia (see Map 18).

As can be seen, needs for modernization are most significant generally in the eastern areas of the new German *Länder*. Because of predominant local authority ownership and slow progress in administrative Reform, modernization of housing lags behind in these areas, and mostly so in eastern Saxony. In Saxony for instance the share of public ownership of housing is at 30% while it is significantly below 20% in the other new *Länder*.

Recent developments (until June 1993) in loans for modernization from the Reconstruction Loan Organization (KfW), however, indicate that these areas are catching up. Thus from the beginning of the housing modernization programme until June 1993, despite initial problems, Saxony now represents the highest share of loans (35%) committed for modernization of housing among the new German *Länder*.

4.4. Factors with rapid improvements

Transport infrastructure

At the moment of German unification the greatest bottlenecks in the new *Länder* were transport and telecommunications infrastructure. The situation was the following:

- (i) road and rail networks in terms of density compared rather favourably with those of other European countries but lagged far behind in terms of quality;
- (ii) the structure of the networks was strongly influenced by the political situation of the past 40 years. For instance, in terms of transport infrastructure there were few East-West routes and a radial orientation on Berlin (see Annex I, Maps 11 and 12);
- (iii) the condition of roads in the new *Länder* was and partly still is considerably poorer than in the western *Länder*. Since hardly any modernization investment was made during the 1980s, the proportion of trunk

roads which were in a bad or very bad condition rose from 14 to 28% during this period, of ordinary highways even from 28 to 41%. Of all local roads 69% were heavily or very heavily worn. More than 30% of the road bridges were over 70 years old, about 40% of them were badly in need of repair;

- (iv) the rail network showed considerable deficiencies: the stability and load capacity of the tracks were greatly reduced, the security installations were obsolete and prone to break down. Some 17% of the network tracks could only be traversed at reduced speed because of their derelict state;
- (v) also the state of inland waterways was poor. For instance, 12% of the locks on the Elbe river were badly damaged or not operable hydraulically.

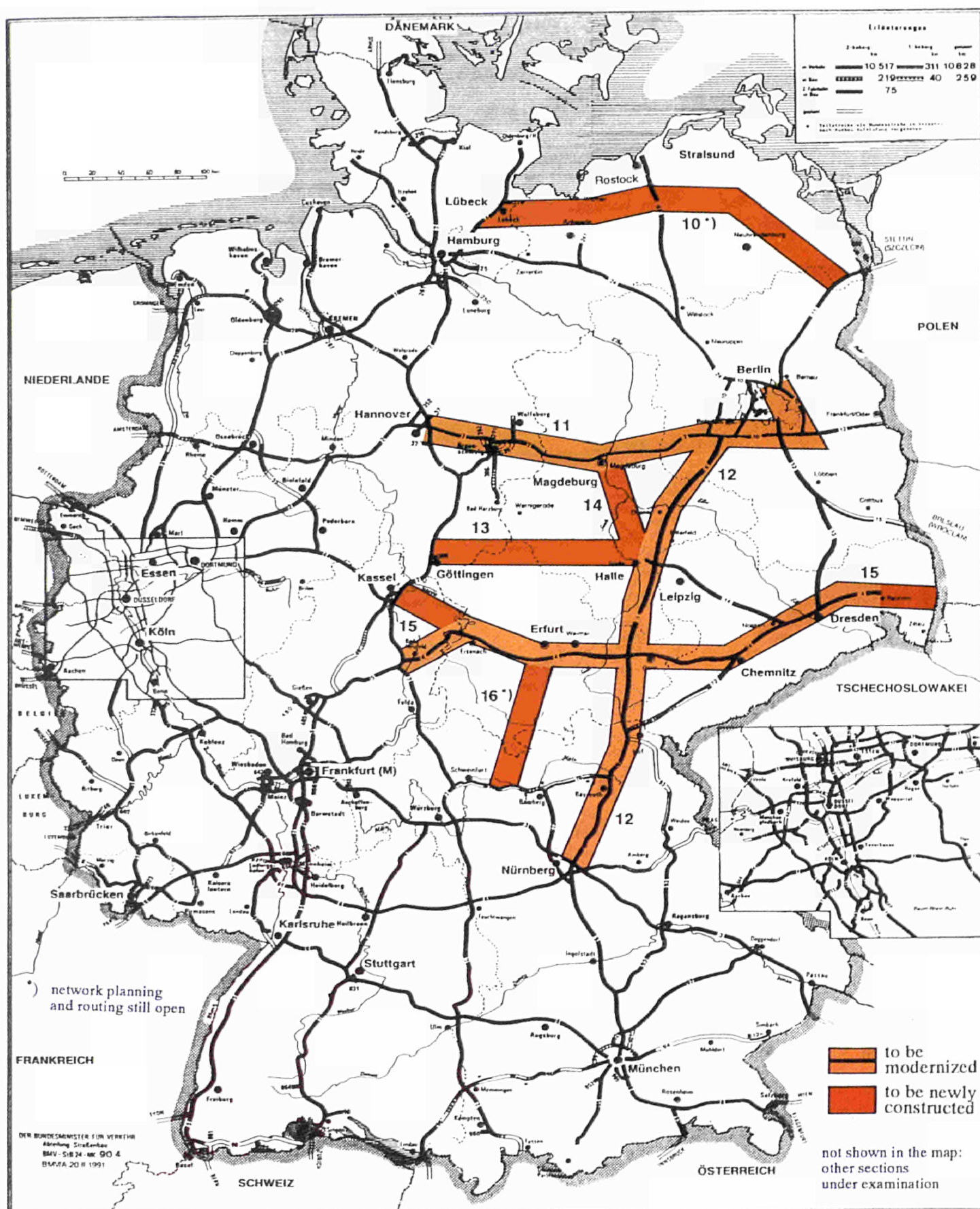
In 1991 the German Government decided on a package of infrastructural measures as part of the programme of German unification designed to remove the most serious transport/traffic bottlenecks in the new *Länder*. It comprises 17 projects (nine relating to railways, seven to roads and one to inland waterways) requiring an aggregate amount of ECU 28 billion. The sections which are planned to be newly built or modernized are described in Table 21 (see also Maps 19, 20 and 21).

Telecommunications

Of all the indicators used in comparisons between the old and the new *Länder*, telephone provision was the one with the greatest divergence in the past. In 1989 there were almost 50 telephone connections per 100 inhabitants in the western *Länder* as against only 10 in the new *Länder*. Another divergence was the strong regional imbalance of telephone supply in the latter. Up to 1990 every second household in the eastern part of Berlin had a telephone, while in Dresden or Rostock it was only 1 in 10. About 2 000 villages had no telephone line at all. Basically in the previous system of the new German *Länder* the spatial distribution of telecommunications was not the result of supply and demand but of political decisions.

By 1991 the rate of connections had gone up significantly (to approximately 15 connections per 100 inhabitants), but there are still bottlenecks. A great improvement came from the region-wide provision of mobile telephony since 1992 (C-net).

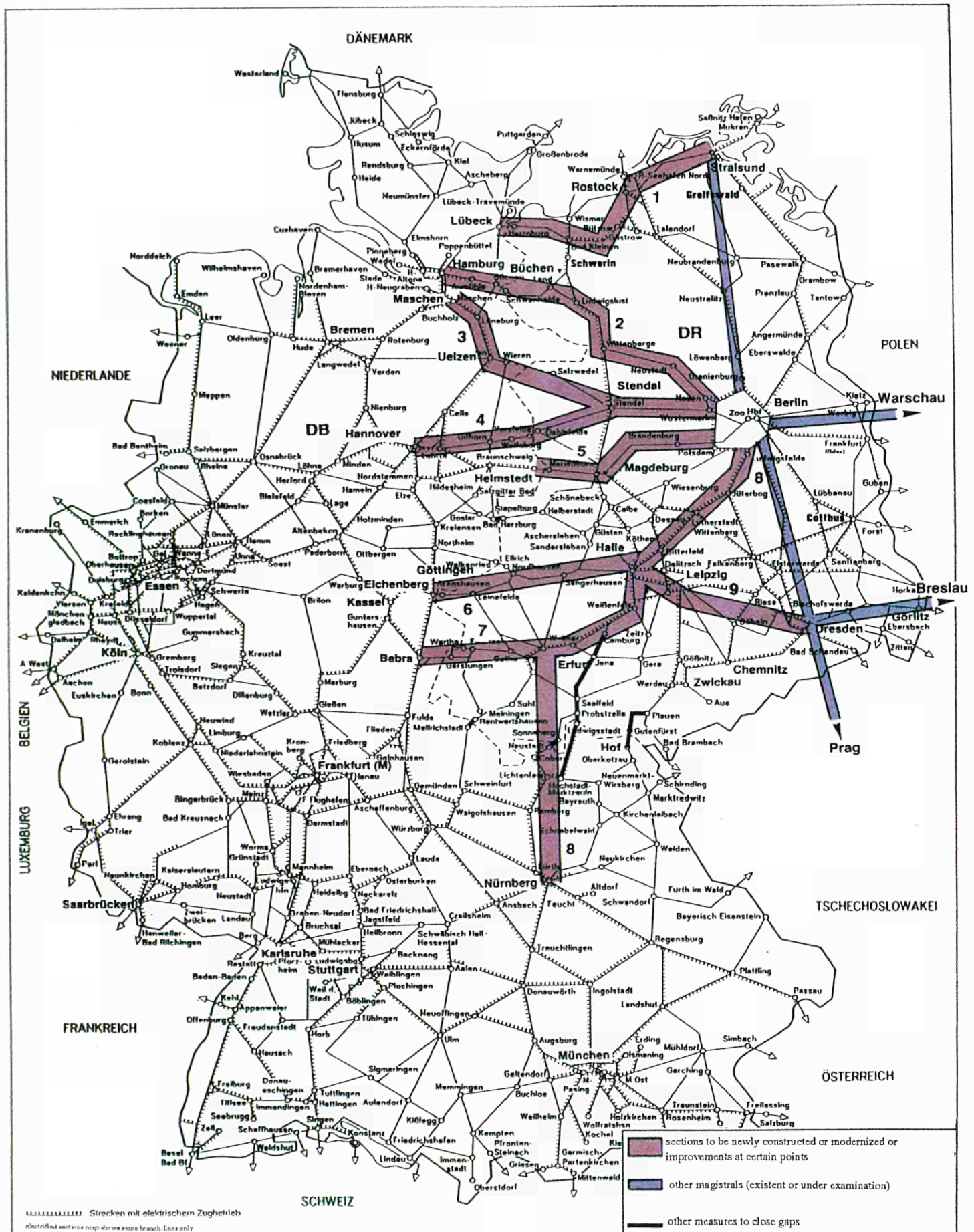
Map 19. Infrastructure projects – trunk roads
(within the framework of the programme on German unification)



NB: Not shown in the map: other sections under examination.

Source: Federal Ministry of Transport, Regional planning report 1991.

Map 20. Infrastructure projects – railways
(within the framework of the programme on German unification)



Map 21. Infrastructure projects – inland waterways
(within the framework of the programme on German unification)

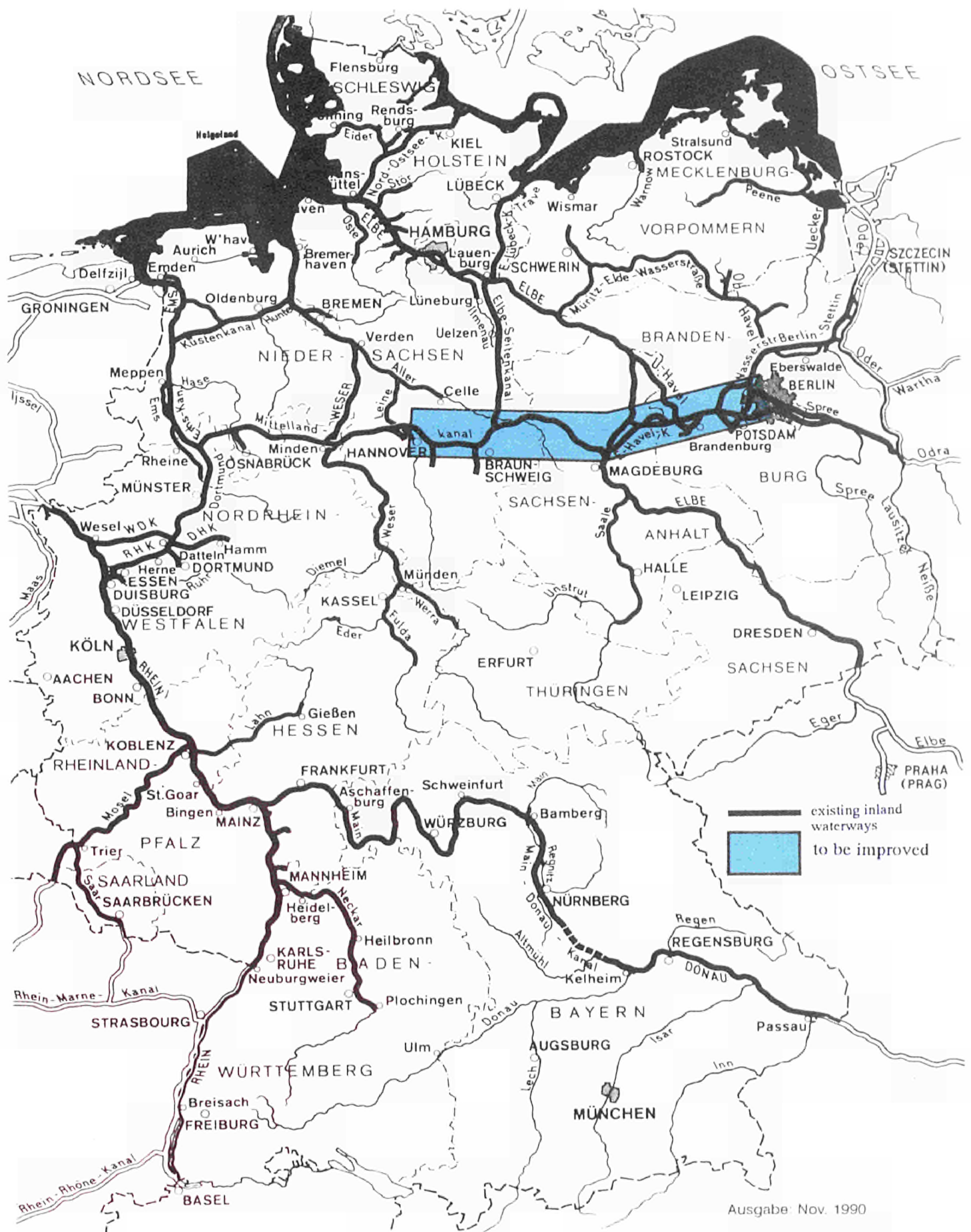


Table 20. Network density, 1990
(inhabitants per km², km per 1 000 inhabitants)

	Rail		Road		Motorway	
	Density inh./km ²	Supply km/ 1 000 inh.	Density inh./km ²	Supply km/ 1 000 inh.	Density inh./km ²	Supply km/ 1 000 inh.
New German Länder ¹	0.13	0.85	0.44	2.87	0.02	0.11
Old German Länder	0.11	0.43	1.04	2.82	0.04	0.14

¹ 1989.

Sources: Statistical yearbooks of FRG (1990) and GDR (1990), UN 1992.

**Table 21. Infrastructure projects within the framework
of the programme on German unification, 1990**

Rail	
1	Lübeck/Hagenow-Stralsund
2	Hamburg-Büchen-Berlin
3	Uelzen-Salzwedel-Stendal
4	Hanover-Stendal-Berlin
5	Helmstedt-Magdeburg-Berlin
6	Eichenberg-Halle
7	Bebra-Erfurt
8	Nuremberg-Erfurt-Halle/Leipzig-Berlin
9	Leipzig-Dresden
Total	approximately ECU 14.5 billion
Road	
10	Lübeck-Federal boundary (Szczecin)
11	Hanover-Magdeburg-Berlin
12	Nuremberg-Leipzig-Berlin
13	Göttingen-Halle
14	Magdeburg-Halle
15	Bad Hersfeld/Kassel-Erfurt-Dresden-Görlitz
16	Erfurt-Schweinfurt
Total	approximately ECU 11.5 billion
Inland waterways	
17	Mittellandkanal/Elbe-Havel-Kanal/Havel
Total	approximately ECU 2 billion
Total	approximately ECU 28 billion

Source: Federal Ministry of Regional Planning, Building and Urban Development 1991.

Until 1997 the Federal PTT (Postal, Telegraph and Telephone Administration) will invest ECU 15.3 billion to modernize and expand telecommunications in eastern Germany. With the new D-net the coverage of 97% of the total population at the end of 1993 is envisaged. D-net has also the advantage of a Europe-wide system with harmonized technical standards.

Moreover, in 1993 ISDN (integrated services digital network) and IDN will have the same coverage as in western Germany. The planned expansions and nodes of telecommunications networks are displayed in Annex I, Maps 13 and 14.

4.5. The special situation of border regions in eastern Germany

Although the new border regions of eastern Germany are dealt with in Part I of this Study (see Chapter 2.7 of Part I), it is worth illustrating their special situation here.

In considering the areas along the German-Polish border, on both sides population density is on average relatively low with 89 to 94 inhabitants per km², with the exception of a few agglomerations. Only the border area in the south-east of the new *Länder* is more densely populated with 120 to 200 inhabitants per km².

The eastern border areas which are close to the German-Polish border and those further to the west around the agglomeration of Berlin are characterized by high levels of agricultural employment. The same is true for Mecklenburg-Western Pomerania. On the Polish side, the areas along the central and northern sections of the border, with the exception of Poznań, are generally still more determined by agriculture and forestry. This is true especially of the areas of Pila, Koszalin and Slupsk. The predominantly rural areas on the German and the Polish side show a similar picture. Generally the share of employment in agriculture and forestry is at 12% and more.

Unlike the border areas along the central and northern parts of the German-Polish borderline, the southern areas are much more characterized by manufacturing. The share of manufacturing in total employment in the areas of Cottbus, Dresden, Upper Lausitz on the German side and in the regions of Jelenia Gora, Walbrzych and Legnica on the Polish side is around 45%.

Spatial development potential

Based on settlement and economic patterns, three groups of border areas can be discerned (see also Map 22):

- (i) the northern area – the *waywodeships* of Gorzow and Zielona Gora and the spatial planning regions of Stralsund, Greifswald and Neubrandenburg;
- (ii) the central area – the *waywodeships* of Gorzow and Zielona Gora and the spatial planning regions of Eberswalde, Frankfurt-on-Oder and Cottbus;
- (iii) the southern area – the *waywodeship* of Jelenia Gora and the spatial planning region of Upper Lausitz.

The northern border areas on both sides of the border are predominantly rurally oriented and strongly influenced by the Baltic Sea coast, the Usedom-Oder Haff and, on the German side, by the Lower Oder National Park. The Polish northern border area is dominated by the economic centre of Szczecin and its shipbuilding and harbour industries as well as fish processing. The development on the German side may receive substantial impetus from the growth axis of Berlin-Szczecin. Thanks to its natural environment and nature protection reserves, the area offers good prospects for tourism development. The infrastructure already in place (there are three road border-crossing points and one rail-crossing point) is insufficient to cope with the present road traffic. In view of the anticipated transport load it is necessary to find prudent solutions for distributing transport on both road and rail.

The areas along the central section of the border while being generally agricultural are determined by industrial centres on the German side. These centres comprise large-scale companies such as Petrochemie und Kraftstoff AG, Schwedt Karton und Papier GmbH, EKO Stahl in Eisenhüttenstadt, Frankfurt-on-Oder and Cottbus. A locational advantage of these areas is their location on the development axes of Berlin-Szczecin, Berlin-Frankfurt-on-Oder and Berlin-Cottbus. On the Polish side, the border area is determined mainly by agriculture. With these natural conditions the Polish border areas can act as recreation areas for the nearby agglomerations. Their development will depend to a large extent on the expansion and improvement of the transport network and the border-crossing points (at present there are five crossing points for road transport and three for rail) to cope with the growing traffic between Western and Central and Eastern Europe.

1. What is the purpose of the document?
 2. What are the main findings of the study?



The southern border areas geographically make part of the triangle formed by Germany, Poland and the Czech Republic. The economic structures on both sides of the borders are characterized by high industrial density. In the German area of Upper Lausitz the dominant features are the industrial centres – mostly in need of restructuring. Lignite mining and energy generation have produced characteristic monostructures in the region. An asset of the region is the existing transport infrastructure at the junction of the East-West and North-South trading routes which represents an asset for the development of cross-border relations. As regards the prospects of tourism, conditions are favourable in the areas of Görlitz and Zittau on the German side while the Polish southern border area can benefit from its proximity to the Riesengebirge.

While the 'old' border regions along the former East German-German divide have benefited to a large extent from unification, the east German regions along the Polish and Czech border are in a difficult situation:

- (i) the 'old' border regions have benefited, partly, in terms of accessibility and relative stabilization of settlement patterns (in order to find attractive jobs people started commuting and migrated to a lesser extent);
- (ii) the new eastern border regions lose attractiveness in terms of accessible market potential due to deteriorating market conditions and increasing cost differentials as regards the adjacent Polish and Czech regions.

Moreover, the new border regions suffer as:

- (i) they have hardly benefited from rapid improvements in technical infrastructure;
- (ii) regions on both sides of the border, are structurally weak (prevailing agriculture and/or declining industries);
- (iii) new investors generally consider locations away from border areas for fear of increasing wages (for example in the western Bohemia area bordering Germany, wages in June 1993 were already twice the Czech average; thus investors consider areas at a distance of at least 50 to 80 km from the border).

In the medium and the long term this situation may change due to increasing cross-border cooperation and

Community membership of Poland and the other Visegrad countries. The prospects resulting from these developments are discussed further in Chapter 6.

4.6. The position of the new German *Länder* in Europe: a comparison of selected factors of location

In the Community – and also in a broader pan-European perspective – the new German *Länder* appear as a special group of regions with distinct characteristics.

- There are no other regions so close to the market centre in the Community which, at the same time, apart from their locational proximity to this centre, have inherent structural deficits comparable to the peripheral regions in need of development.
- With the notable exception of Greek regions no other disadvantaged Community regions are so close to the opening of Central and Eastern Europe.

Based upon a recent study the 'Janus face' of integration of the new German *Länder* in the Community can be illustrated. In this study, for the first time, locational factors relevant to potential investors are analysed for the regions of the Community, EFTA and Central and East European countries.¹

Method

The analysis is based upon data for Nuts II regions in the European Community (183 units) and corresponding regional levels in EFTA countries (91 units) and Central and Eastern Europe (197 units).

The analysis proceeds as follows:

- (i) in a first analytical step the locational factors which are relevant to the propensity of investors to choose locations are specified in quantitative statistical terms. The analytical basis is provided by a regression model tailored according to this perspective;¹
- (ii) in a second step the new German *Länder* are analysed for each locational factor with respect to their relative position by comparison to EC regions as well

¹ See Empirica 1993b.

as the regions of EFTA countries and Central and Eastern Europe;

- (iii) by bringing together these two analytical steps, the relative position of the new German *Länder* in the regional environment of the Community but also in the broader European framework is determined.

Locational factors

The locational factors considered in the analysis are:

- (i) labour costs: gross wages in industry in ecu per month;
- (ii) human resources: ratio of population entering (below 15 years) and leaving the labour force (population 65 years and older), universities and students in sciences;
- (iii) accessibility: accessible market potential in million of persons accessible within eight hours of goods transport and within three hours of combined transport (joint use);
- (iv) manufacturing density: employment in industry as percentage of population;
- (v) business services: employment in market-oriented services as percentage of population.

Labour costs

Without considering productivity differentials, the new German *Länder* rank among the regions with lowest labour costs in the Community. The statistical picture is displayed in Table 22.

Only the Greek regions, the majority of Portuguese regions as well as Extremadura and Calabria register lower wages than Thuringia. Andalusia is placed between Thuringia and the next eastern German regions. In between Saxony-Anhalt and Brandenburg, Galicia can be found. Basilicata and Ireland rank between Mecklenburg-Western Pomerania and Saxony

The overall picture which appears with regard to the position of the new German *Länder* is that they can be found among the peripheral Community regions with similar levels of labour costs. Only Berlin ranks among high wage and high value-added locations such as Cologne and Hanover.

It should, however, be noted that two major factors intervene with regard to the position of the new German *Länder*:

- (i) increases in labour costs are predetermined. According to the present state of negotiations there will be a stepwise increase of labour costs up to the level of the old *Länder* during the next few years.

Table 22. Relative regional position of the new German *Länder* with regard to labour costs, 1992

<i>Land</i>	Rank EC ¹	Rank total Europe ²	Most similar Community regions
Thuringia	21	180	Calabria, Andalusia
Saxony-Anhalt	23	183	Andalusia, Galicia
Brandenburg	25	187	Galicia, Basilicata
Mecklenburg-Western Pomerania	26	187	Galicia, Basilicata
Saxony	29	191	Ireland, Campania
Berlin ³	155	378	Cologne, Hanover

NB: The region with the lowest labour costs ranks 1.

¹ Rank out of 183 regions.

² Rank out of 471 regions.

³ East and west Berlin.

Source: Empirica 1993b.

Together with low labour productivity this may further aggravate the economic problems of the new German *Länder*;

- (ii) if one takes into account levels of labour costs in the Central and East European regions, eastern Germany and also the other low cost areas of the Community fall far behind:

Thuringia ranks 180 instead of 31;
 Saxony-Anhalt ranks 183 instead of 34;
 Brandenburg and Mecklenburg-Western Pomerania both rank 187 instead of 38;
 Saxony ranks 191 instead of 42.

Whereas in this regard the regions concerned in Spain or Portugal are far away from the Central and East European low cost areas, in particular the Greek and eastern German regions see competitive wage levels being offered to investors just 'next door'.

Human resources

With regard to human resources two aspects are discerned:

- (a) long-term availability in demographic terms;
- (b) availability of highly-skilled labour.

The demographic component

In this respect the new German *Länder*, with the exception of Berlin, range among the top 100 regions of the Community (see Table 23).

In terms of human resources, if spatial policies succeeded in equilibrating the settlement system, a valuable asset for future development should be available in the new German *Länder*. Again, however, their position deteriorates when EFTA and Central and Eastern European regions are considered too.

The know-how component

As indicated in Chapter 4.2 the skills of the workforce in the new German *Länder* are a locational asset. With respect to formal criteria (R&D centres, university degrees, professional qualifications, etc.) eastern Germany ranks among the areas with high levels of skills in Europe.

A general indication of the relative position of the new German *Länder* in Europe with regard to the available know-how potential – which should however not be interpreted too narrowly – can be obtained from numbers of students in natural sciences. As can be seen

Table 23. Relative regional position of the new German *Länder* with regard to the demographic component, 1992

<i>Land</i>	Rank EC ¹	Rank total Europe ²	Most similar Community regions
Mecklenburg-Western Pomerania	23	138	Champagne-Ardenne, Extremadura
Brandenburg	39	192	Centre (F), Luxembourg (B)
Thuringia	56	237	Greater Manchester, Cleveland/Durham
Saxony	57	240	Greater Manchester, Cleveland/Durham
Saxony-Anhalt	75	280	Salop/Staffordshire, Auvergne
Berlin ³	170	409	Upper Bavaria, Brabant

NB: The region with the highest value ranks 1.

¹ Rank out of 183 regions.

² Rank out of 471 regions.

³ East and west Berlin.

Source: Empirica 1993b.

from Table 24, Berlin ranks among the best European regions both with and without consideration of EFTA and Central and Eastern Europe. The new German *Länder*, in general, are well placed in this respect. Only

Saxony assumes a position below the top 100 regions in the Community which moreover deteriorates significantly when EFTA and Central and East European regions are also considered.

Table 24. Relative regional position of the new German *Länder* with regard to the know-how potential, 1992

<i>Land</i>	Rank EC ¹	Rank total Europe ²	Most similar Community regions
Berlin ³	24	61	Gelderland, Greater London
Mecklenburg-Western Pomerania	66	102	Cheshire, Attiki
Thuringia	79	123	Aquitaine, Extremadura
Saxony-Anhalt	89	137	Castile-La Mancha, Hampshire/Isle of Wight
Brandenburg	93	153	Navarre, Gwent/Mid, West and South Glamorgan
Saxony	103	182	Limburg (B), Merseyside

NB: The region with the highest value ranks 1.

¹ Rank out of 183 regions.

² Rank out of 471 regions.

³ East and west Berlin.

Source: Empirica 1993b.

Table 25. Relative regional position of the new German *Länder* with regard to accessibility in terms of transport of goods, 1992

<i>Land</i>	Rank EC ¹	Rank total Europe ²	Most similar Community regions
Thuringia	44	49	Oberfranken, Flevoland
Saxony-Anhalt	47	51	Lower Bavaria, North-Holland
Saxony	54	62	Overijssel, Bremen
Brandenburg	55	63	Overijssel, Bremen
Berlin ³	68	87	Greater London, Lombardy
Mecklenburg-Western Pomerania	69	93	Greater London, Lombardy

NB: The region with the highest value ranks 1.

¹ Rank out of 183 regions.

² Rank out of 471 regions.

³ East and west Berlin.

Source: Empirica 1993b.

**Table 26. Relative regional position of the new German *Länder*
with regard to accessibility in terms of
joint use, 1992**

<i>Land</i>	Rank EC ¹	Rank total Europe ²	Most similar Community regions
Berlin ³	26	28	Luxembourg, North Brabant
Saxony	86	96	West Yorkshire, Tuscany
Thuringia	93	103	Drenthe, Champagne-Ardenne
Saxony-Anhalt	116	132	Friesland, Limousin
Brandenburg	122	149	Umbria, Oberpfalz
Mecklenburg- Western Pomerania	137	175	Dorset/Somerset, Sardinia

NB: The region with the highest value ranks 1.

¹ Rank out of 183 regions.

² Rank out of 471 regions.

³ East and west Berlin.

Source: Empirica 1993b.

Accessibility

Accessibility in terms of transport of goods

With regard to this indicator the new German *Länder* are to be found among the top 100 regions in the Community (see Table 25).

By taking into account the Central and East European as well as EFTA regions the new German *Länder* virtually maintain their position.

This locational factor clearly discerns eastern Germany from peripheral Community regions. The accessible market potential is a clear asset for the development of the new German *Länder*. Moreover in this respect all new German *Länder* remain among the top 100 regions when EFTA and Central and East European regions are included.

In general, the accessible market potential correlates highly with the economic performance of regions¹. At present there is a notable divergence between accessible potential and economic performance in the new German *Länder*. Further improvements in physical infrastructure in eastern Germany, however, will lead to fur-

ther increases in accessibility and thus lay the grounds for future economic growth.

While with regard to accessibility the eastern German fringe regions benefited most from German unification (see also Chapter 5.2), the construction and expansion of transit routes has induced positive effects on the accessibility of the large agglomerations such as Greater Berlin, Halle/ Leipzig, Dresden and Erfurt.

Accessibility in terms of joint use

In this respect the new German *Länder* are broadly scattered. Berlin clearly assumes a position among the highly accessible regions in the Community (rank 26); Saxony and Thuringia are to be found among the first 100, Saxony-Anhalt, Brandenburg are in middle positions. Mecklenburg-Western Pomerania tends towards a position mostly taken by peripheral Community regions (see Table 26). With the inclusion of EFTA and Central and East European regions, the position of the new German *Länder*, however, hardly deteriorates (with the exception of Mecklenburg-Western Pomerania which moves from position 137 to 175).

Manufacturing density

With regard to manufacturing density west German, north Italian and UK regions assume leading positions.

¹ See Empirica 1993b.

Table 27. Relative regional position of the new German *Länder* with regard to manufacturing density, 1992

<i>Land</i>	Rank EC ¹	Rank total Europe ²	Most similar Community regions
Saxony	3	20	Oberfranken, Tübingen
Thuringia	4	25	Oberfranken, Tübingen
Saxony-Anhalt	8	41	Detmold, Freiburg
Brandenburg	32	123	Navarre, Saarland
Mecklenburg- Western Pomerania	59	201	Antwerp, Upper Normandy
Berlin ³	137	354	Hainaut, Brabant

NB: The region with the highest value ranks 1.

¹ Rank out of 183 regions.

² Rank out of 471 regions.

³ East and west Berlin.

Source: Empirica 1993b.

The new German *Länder* can be found among the first 100 regions of the Community. If the EFTA and Central and East European regions are included only Mecklenburg-Western Pomerania and Brandenburg lose ground (see Table 27).

Thuringia, Saxony and Saxony-Anhalt maintain a position among the first 50 regions. Berlin figures rather among service-oriented regions.

While manufacturing density mostly is high in the southern areas of eastern Germany, the new German *Länder* risk losing ground due to rapid de-industrialization after unification.

Business services

In terms of business services which are vital to the development of productive industrial activities, the new

Table 28. Relative regional position of the new German *Länder* with regard to business services, 1992

<i>Land</i>	Rank EC ¹	Rank total Europe ²	Most similar Community regions
Thuringia	99	163	Weser-Ems, Leicestershire/Northampton
Berlin ³	110	185	Koblenz, Münster
Mecklenburg- Western Pomerania	155	255	Cleveland/Durham, Drenthe
Brandenburg	156	256	Cleveland/Durham, Drenthe
Saxony-Anhalt	160	260	Central Macedonia, Clwyd/Dyfed/Gwynedd/Powys
Saxony	174	376	West Macedonia, Alentejo

NB: The region with the highest value ranks 1.

¹ Rank out of 183 regions.

² Rank out of 471 regions.

³ East and west Berlin.

Source: Empirica 1993b.

German *Länder* – with the notable exception of Thuringia – range among the weakest regions of the Community (see Table 28).

Here again mostly Greek, Spanish, Portuguese – but in addition even UK regions – show the weakest performance. If in this case the Central and East European regions are taken into account too, the position of the new German *Länder* does not deteriorate too much (with the notable exception of Saxony which would move from position 174 down to 376). With regard to business services it is mostly the EFTA regions which are significantly better equipped with this locational factor.

Efficiency costs

In taking together the factors which determine the costs of locations to companies two 'prices' can be discerned:

- (a) the price of a location in terms of actual costs (of labour, premises, energy, estates, etc.);
- (b) the price of a location in terms of structural determinants of relevant cost factors (the so-called shadow price of a location). These determinants are: business services, accessibility in terms of transport of

goods and in terms of joint use, know-how potential, demographic component, quality of living standard and environment.

The efficiency costs of locations can be determined as the difference between actual costs (a) to structurally determined costs of locations (b). The correlation coefficient between structural and actual costs is at 0.84 (adjusted squared correlation coefficient). Therefore, the shadow price represents actual cost determinants quite well.

With regard to this indicator the new German *Länder* are in favourable positions. Thuringia ranks third in the Community, all new *Länder* can be found among the top 20 regions, only Berlin is less well-placed (rank 138 in the Community). With the notable exception of Thuringia, however, the new German *Länder* lose substantial ground when EFTA and Central and East European regions are included, mostly so due to the latter.

This profile points to the necessity of rapid restructuring in eastern Germany. If the east German regions and the companies in these regions specialized on product markets under competitive pressure from Central and Eastern Europe, they could hardly succeed in the long term. This competition relates mostly to standardized mass production for which the regions in Central and Eastern

Table 29. Relative regional position of the new German *Länder* with regard to efficiency costs, 1992

<i>Land</i>	Rank EC ¹	Rank total Europe ²	Most similar Community regions
Thuringia	3	29	Lisbon and Vale do Tejo, Ipeiros
Saxony-Anhalt	12	133	Alentejo, Anatoliki Macedonia/Thrace
Mecklenburg- Western Pomerania	13	153	Alentejo, Anatoliki Macedonia/Thrace
Brandenburg	16	165	Extremadura, Ireland
Saxony	20	172	Andalusia, Luxembourg (L)
Berlin ³	138	356	Derbyshire/Nottinghamshire, Cleveland/Durham

NB: The region with the highest value ranks 1.

¹ Rank out of 183 regions.

² Rank out of 471 regions.

³ East and west Berlin.

Source: Empirica 1993b.

Europe avail of comparative advantages as against most Community regions including eastern Germany.

Summary of findings

While on the basis of the locational factors considered in this analysis mostly Thuringia seems to be well equipped to face the challenges of interregional competition, as yet there are few signs of economic consolidation.

It appears from the analysis that the new German *Länder*, on the one hand, are characterized by a profile of locational factors which correspond to the central and prosperous regions in the Community. Examples are the accessible market potential and human resources. On the other hand the new German *Länder* appear for several factors among the peripheral Community regions in need of development. This holds true for the availability of business services and labour costs.

Yet with regard to labour costs the ambiguous nature of German unification becomes apparent. Labour costs are too high to compete with Central and East European regions. At the same time industrial structures are not, or not yet, at a stage to bring the new German *Länder* in a position to compete with the advanced Community and EFTA regions. In this respect it is mostly business related services which need to be developed. Further wage increases without simultaneous structural change may bring the new German *Länder* in an even more difficult competitive position in the medium and long term.

4.7. Settlement structure and locational weaknesses

The settlement structure according to spatial type is displayed in Map 23. As can be seen from this map there is a marked contrast between the less-densely populated and mostly rural areas in the north of the new German *Länder* and the densely populated areas of Halle, Leipzig, Chemnitz and Dresden in the south. Only Berlin with the adjacent areas (the so-called *Speckgürtel*) is situated as a large agglomeration amidst rural areas between the industrial south and the agricultural north.

The specific situation of the new German *Länder* with regard to spatial types of settlement becomes apparent in looking at the average size of communes (see Map 24). Whereas in western Germany the average population per commune is about 10 800 inhabitants, it is, below 2 500 in the new German *Länder*. Moreover,

clearly disequilibrated structures become apparent: Greater Berlin is almost placed like an island surrounded by low density areas – with lower population density than any area in western Germany. Only Saxony (except the Görlitz/Bautzen area) registers densities in terms of inhabitants per commune which come close to the west German average.

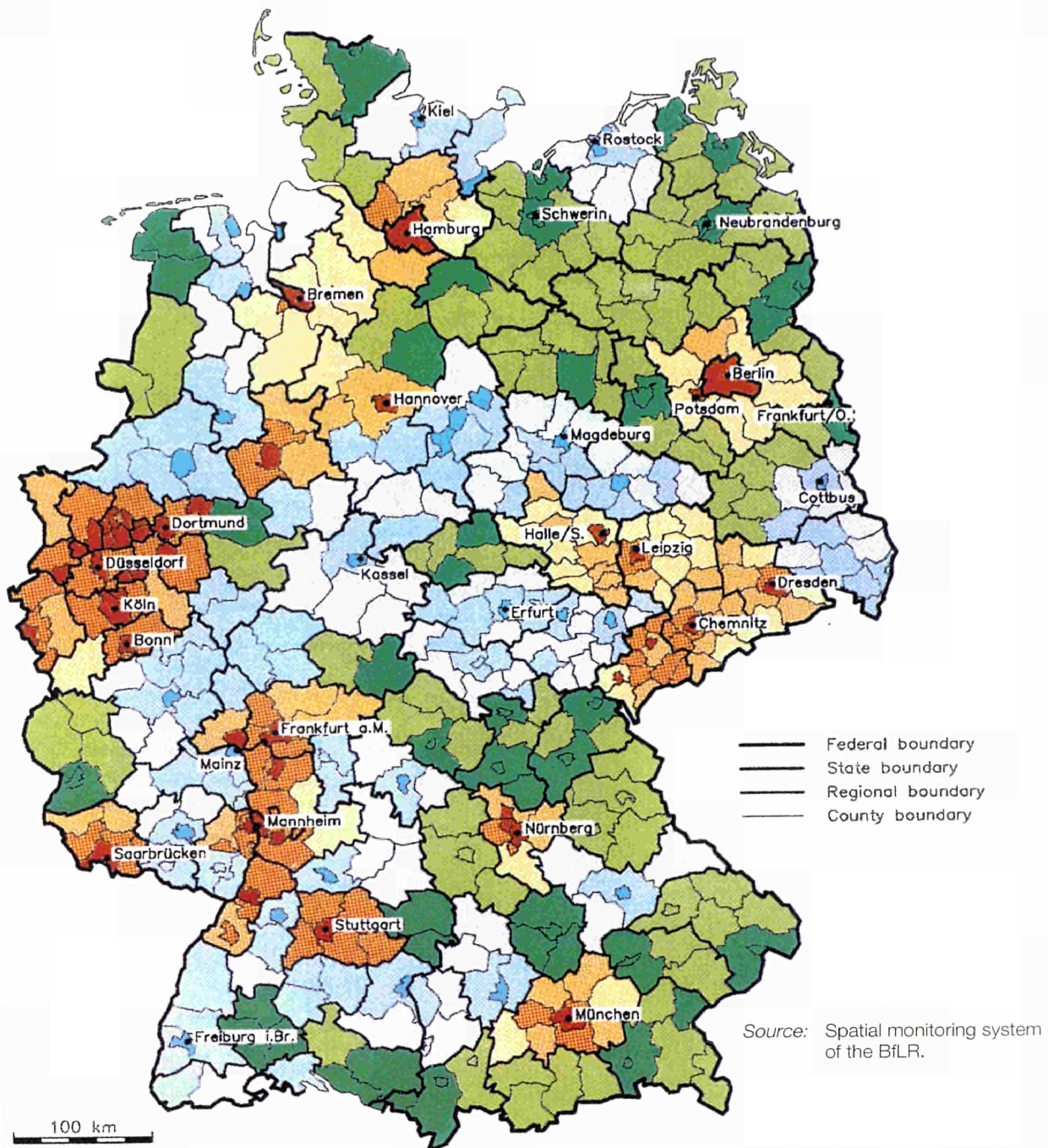
On the one hand these patterns are due to the absence of a reform of local authorities in eastern Germany during the past which took place in the West. On the other hand they are indicative of specific settlement structures in the new German *Länder*.

There are considerable differences between the old and new German *Länder* generally, if the distance of communes from central places of higher-order and intermediate-order centrality is considered. While only 21.8% of the communes of the old *Länder* are located at a relatively great distance from such central places (distances of 12 km and more), this percentage is 33.9% in the new *Länder*.

A comparison of the percentages of population living within the various distance ranges shows the following:

- (i) as a result of comprehensive suburbanization in the old *Länder*, 61.8% of the population live close to central places of higher-order centrality (distance of less than 20 km) while only 18.9% live at a great distance from such centres (distance 30 km and more). In the new *Länder* in contrast, only 52% live within a distance of less than 20 km against 25.8% within 30 km and more;
- (ii) still more salient are the differences with respect to central places of higher-order and intermediate-order centrality and the population distribution within the respective distance ranges. While in the old *Länder* the share of people who live within a distance of less than 6 km from such centres stands at 66.2%, it is 59.5% in the new *Länder*. Conversely, the share of people in the new *Länder* living within a distance of 9 km and more is considerably higher at 28.8% than the old *Länder*'s 18.2%. These population shares indicate that the environs of the central places of higher-order and intermediate-order centrality in the new *Länder* are less-densely populated than in the old *Länder* because they have seen hardly any suburbanization processes in the past.

Map 23. Cities and counties according to settlement structure



Regions in major agglomerations

- Core-cities
- very densely populated counties
- densely populated counties
- rurally structured counties

Regions with conurbational features

- Core-cities
- densely populated counties
- rurally structured counties

Rurally structured regions

- more densely populated counties
- rurally structured counties

Map 24. Average size of communes (numbers of inhabitants)



Average number of inhabitants 1989



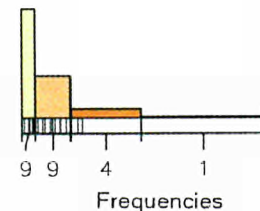
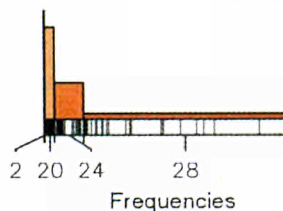
Old Länder

New Länder

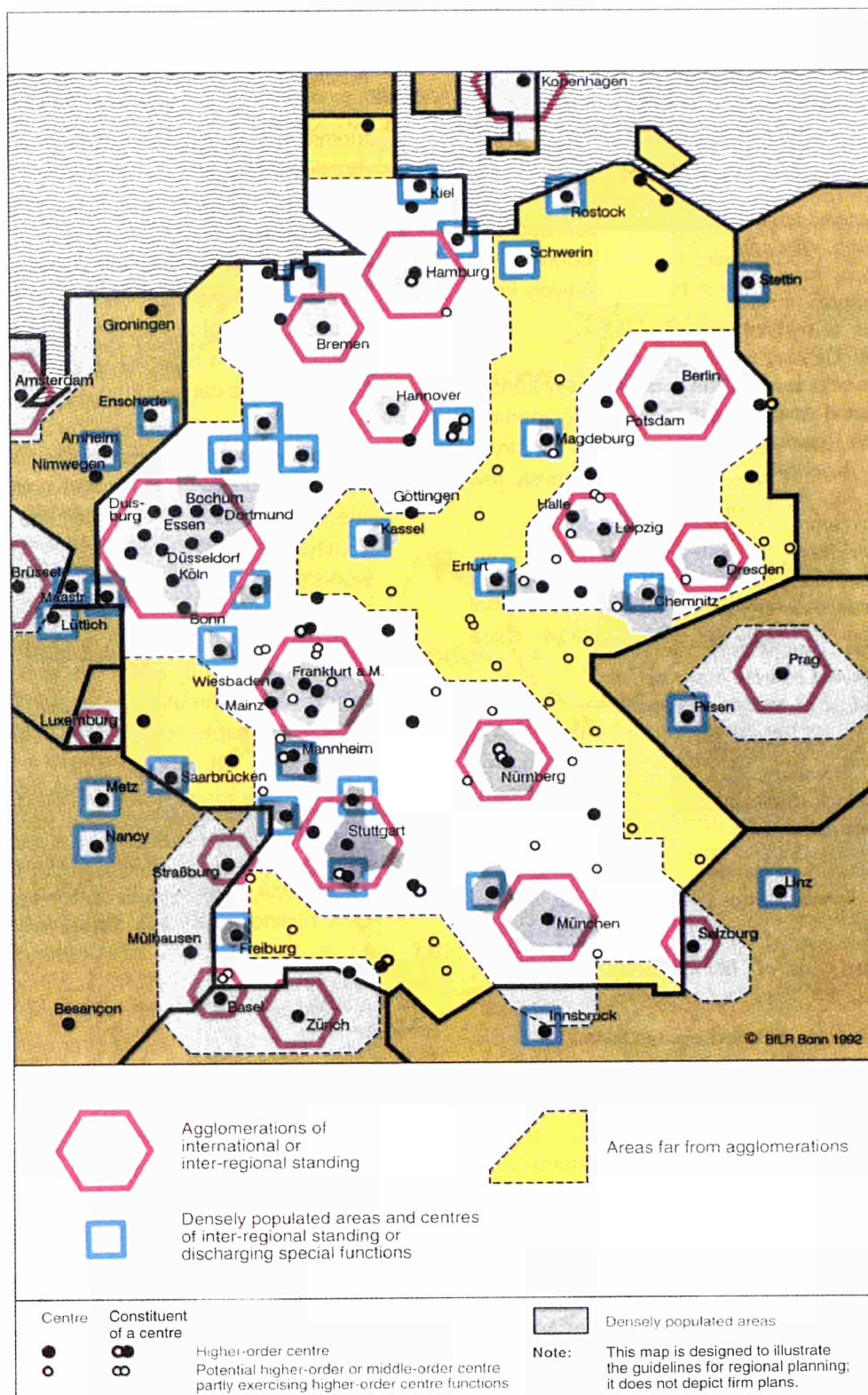
Minimum: 2 747
Maximum: 284 763
Average: 10 834

919
11 298
2 454

Bundeswert: 6 014



Map 25. Settlement structure



Source: Federal Ministry for Regional Planning, Building and Urban Development 1993.

The central place hierarchies in the new German *Länder* are presented in an overview and individually in Annex I, Maps 2 to 7.

On the whole, the new *Länder* are characterized by a low degree of suburbanization. The large conurbations (e.g. Berlin, Halle, Leipzig, Dresden, Chemnitz) – unlike in the old German *Länder* – are situated almost like islands amidst the surrounding countryside (see Map 25). As a rule there is clear demarcation between densely-populated urban areas and the countryside. This also means that the towns have a relatively large settlement potential in their environs.

The low degree of suburbanization in the new *Länder* was mainly a result of the regulated housing markets with low rents in urban areas, the large scale construction of new dwellings at city fringes and relatively few owner-occupiers in the environs of the towns.

Seen against the settlement structure in the new German *Länder* and their environs the major locational weaknesses can be summarized as follows (see Map 26):

- (i) infrastructure – as the survey carried out by IFO in the framework of the present study illustrates, it is not so much the major routes but rather the inadequate regional network provision being assessed negatively by companies, mostly so in rural regions. The generally low extent of suburbanization further substantiates this finding. This involves the risk of disequibrated spatial structures persisting in the long term. With regard to Greater Berlin, there is also a particular need for harmonization of metropolitan transport of the eastern and the western part of the area;
- (ii) environment – the uranium mining areas, mostly located in southern Saxony, the areas around Cottbus and the chemical triangle of Leipzig-Halle-Bitterfeld are severely contaminated by industries; it is to be noted, however, that the real extent of contamination is still controversial;¹
- (iii) housing – availability and prices are assessed negatively in all areas of the new *Länder*; according to the

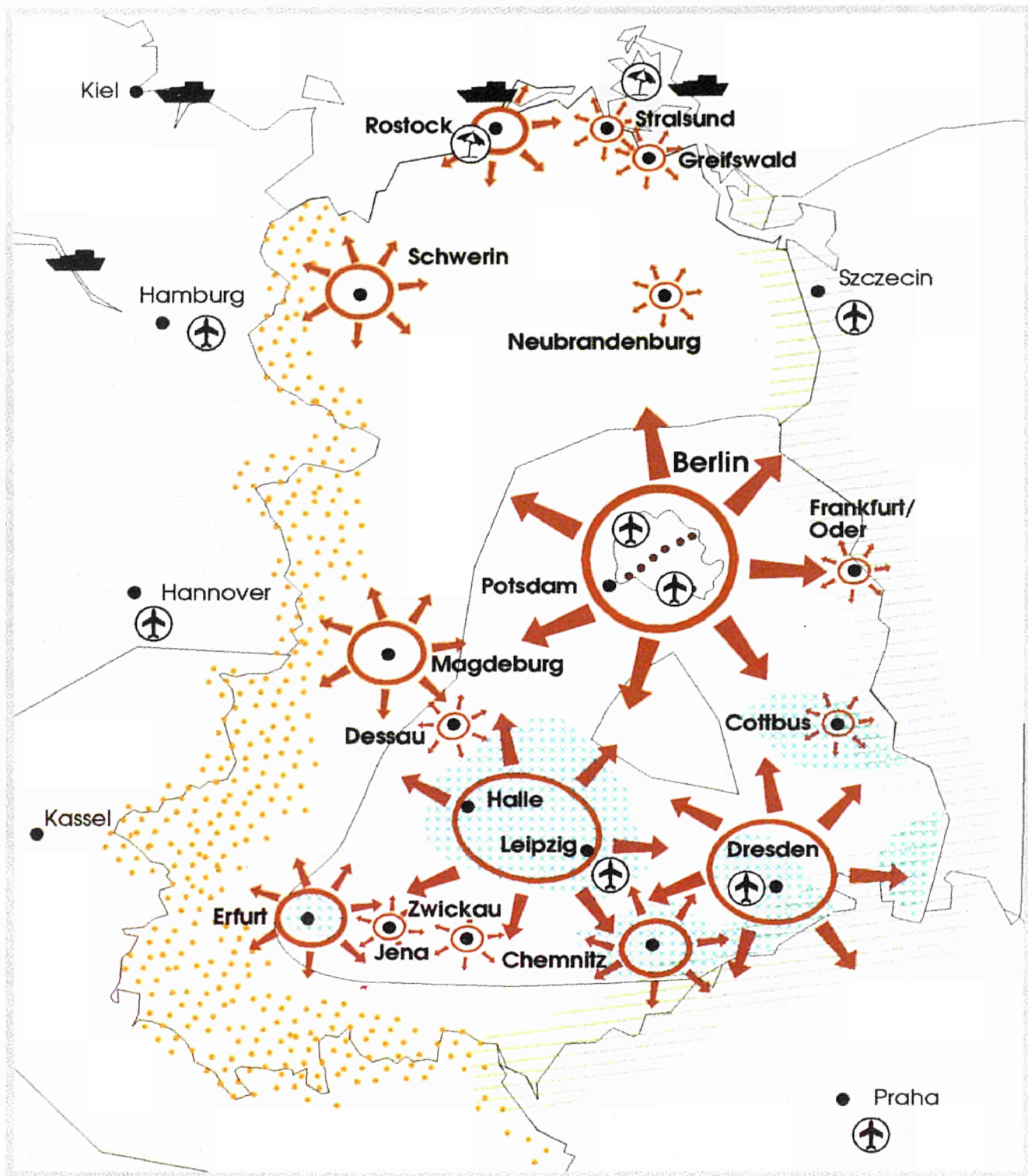
available official statistics housing standards are poorest in Saxony;

- (iv) former military areas – these represent short-term obstacles but also productivity reserves which are largely untapped as yet. In addition areas lending themselves for tourism development can be found mostly in Mecklenburg-Western Pomerania;
- (v) border areas – these areas are in a special situation since improvements in infrastructure mostly aim at links between the more central eastern and western locations (see also Maps 19-21). Moreover, wage differentials with regard to the adjacent Polish and Czech regions cause further de-industrialization;
- (vi) fringe areas – in terms of accessibility these areas benefited most from German unification and the integration of the new German *Länder* into the Community. With the expansion of transregional networks (railways and roads) they risk, however, being overrun by transit traffic. For these areas the expansion of regional transport networks of Schwerin, Magdeburg and of Erfurt are essential to reduce large scale commuting to adjacent west German areas (see Chapter 3.6);
- (vii) European perspective of locational factors – a comparative analysis of the new German *Länder* and EC, EFTA and Central and East European regions illustrates major shortcomings in fields such as availability of business services and manufacturing density. As a consequence of de-industrialization, for instance, Saxony which was traditionally highly industrialized, at the moment incurs manufacturing density similar to the predominantly agricultural areas in western Germany.

In addition to these factors, progress and development in the new *Länder* are hampered by administrative shortcomings and inefficiency. The implementation of regional development programmes, required in many areas, is hampered by the prevalence of relatively small, often inefficient administrative units at the local and county level. Communes in the western *Länder* on average comprise twice the area and have three times as many inhabitants. The same ratios are found at county level.

¹ See Handelsblatt 15.6.1993.

Map 26. Main locational factors in the new German Länder



	Areas in need of development of tourism, recreation, agribusiness		Airports
	Highly industrialized areas with severe contamination		Seaports
	Locations of higher order centrality		Principle bathing areas
	Need for expansion of regional transport networks		Need for harmonization of metropolitan transport
	Growth poles		Areas in need of cross-border development
			Additional development potentials due to unification

5. Medium-term prospects of the new German *Länder* in the Community

The manifold facets of traditions, socioeconomic structures and settlement patterns as they developed during the forty years of the previous system in the new German *Länder*, to quite an extent are at the fulcrum of locational strengths and weaknesses. From a spatial perspective, to understand present problems of adaptation, several aspects are worth mentioning.

Large combines beyond reasonable economies of scale in agriculture and in industry resulted in monostructures without precedence. In addition these structures were perpetuated by Comecon production and trading patterns. Lack of environmental protection, radial transport corridors oriented towards Berlin, planning for politically defined needs as against demand oriented development are further aspects to be considered in this framework. It is unlikely that the consequential culture of dependency can be overcome in the short and medium term.

While significant progress can be recorded in the new *Länder* in terms of infrastructure, to date, there are few signs for an improvement of the competitive situation in the east German industries. The present situation is characterized by

- (i) high wages;
- (ii) a marked recession in the western *Länder* as well as in Europe and worldwide;
- (iii) a persisting lack of competitiveness evidence of this fact is that west German enterprises, despite production slumps, increased their exports to the for-

mer State-trading countries by 19% in 1992; while east German enterprises suffered a decrease of 36% in the same period.

In late 1992 unit labour costs in east German industries were on average almost double the west German level. In 1993 and 1994 wages will rise again as the wage settlements reached so far suggest. The consequence, *ceteris paribus*, will be a further reduction of employment. Thus the Kiel Institute forecasts a decrease of numbers of employees from 5.78 million in 1992 to 5.50 million in 1993.¹

Despite the weakness of the industrial sector, GDP will grow slightly in the new German *Länder* in 1993 thanks to the growth in the building and service sectors. However, it will grow more slowly than in the previous year.

Overall, medium-term prospects in the new German *Länder* are characterized partly by contradictory trends. On the one hand the technical and human prerequisites for economic growth are there or will be available in the medium term: transport infrastructure, telecommunications, skills of the workforce do not constitute bottlenecks – at least not in the medium term. Improvements can be observed with regard to the accessible market potential, not only for the new German *Länder* but also for west German and other Community regions.

¹ Kiel Institute for World Economics 13/1993.

On the other hand the labour-market in the new German *Länder* has been sluggish, sectoral restructuring has been slower than expected, productivity reserves have hardly been tapped. The present recession further aggravates adjustment problems.

Against this background the present chapter establishes a patchwork of selected medium-term prospects rather than a coherent forecast.

Firstly medium-term prospects as they result from a business survey in Eastern Germany are presented (Chapter 5.1); then developments in accessibility (Chapter 5.2), benefits to economic growth in the Community from the new German *Länder* (Chapter 5.3) and future

investment needs (Chapter 5.4) are discussed; finally the chapter ends with a presentation of medium-term prospects for spatial development in the new German *Länder* (Chapter 5.5).

5.1. Medium-term prospects – results of a business survey

Research and development

With regard to medium-term prospects research and development plays a crucial role. While improvements in the physical infrastructure lay the grounds for economic

Table 30. Research and development in east German enterprises, 1992

Interregional comparison of present and future R&D activities

(%)

	All new <i>Länder</i>	Mecklenburg- Western Pomerania	Branden- burg	Saxony- Anhalt	Thuringia	Saxony
Firms with own and in a mid-term perspective constant or increasing R&D activities	35 (44)	23 (34)	32 (44)	30 (41)	40 (50)	36 (43)
Firms with own but in a mid-term perspective decreasing R&D activities	2 (2)	4 (4)	3 (0)	3 (4)	2 (3)	2 (2)
Firms which plan own R&D activities	7 (8)	6 (8)	8 (4)	4 (4)	8 (7)	9 (11)
Firms without R&D activities	46 (44)	67 (54)	57 (50)	63 (47)	50 (38)	43 (42)
Share of R&D staff in industry on total employment (mid-1992)	(0.36)	(0.11)	(0.14)	(0.39)	(0.51)	(0.41)
Firms with increasing demand for R&D staff	18	14	9	17	19	22
Experts assessment of future R&D potentials in comparison to average	0	–	–	0	+	+

NB: All firms. Data for industry only in brackets ().

Source: IFO survey 1992.

development, R&D activities are to be seen as investments in the non-material capital stock, thus determining future competitiveness of companies and regions.

To analyse the R&D situation in the new German *Länder* and future prospects, a business survey of 1 000 companies was carried out by the IFO Institute. This survey is summarized in what follows (the values in Table 30 are partly IFO's own calculations, based on the survey results as documented in Annex II).

According to the survey results, the share of R&D personnel can be assumed to be 0.36% on average related to the total number employed in industry, a ratio which is comparable to the weaker R&D regions in western Germany, for example Lower Saxony or Schleswig-Holstein. (The research companies which were established as spin-offs from the collective-combines as a result of privatization are not included here. This gives a more realistic picture since the integration of their R&D activities into the activities of industry is still by no means successfully completed and will be impossible in numerous cases.) However, this figure may have to be reduced for two reasons. Firstly, an albeit relatively small group of companies indicated that they only employed 'part-time researchers' who were entrusted also with other responsibilities. Secondly and most important, the concept of R&D had a much broader meaning in the former GDR, going far beyond the Frascati definition used in the west. According to the Frascati definition R&D is a term covering three activities: basic research, applied research and experimental development. Since not all companies are aware of this definition, it is likely that the figures for R&D personnel are somewhat exaggerated.

A more realistic estimate of the proportion of R&D personnel in total numbers of employees in industry will thus be below the abovementioned percentage, approximately between 0.32 and 0.34%.

If the commonly used indicator for companies with in-house R&D activities – which is R&D personnel in total number of employed – is applied, Saxony (8%) is above the average for west German industry for 1989.¹ Thuringia ranks second with a comparatively high rate of 6%, Saxony-Anhalt (4%), Brandenburg (2%) and Mecklenburg-Western Pomerania are below the west German as well as the east German average ascertained by the IFO survey (5%).

This result may indeed be optimistically interpreted, since the share of companies which will reduce or give up their R&D activities is relatively low (2%). It is especially low in comparison to the 8% of all surveyed industrial companies which are planning to establish R&D departments which they did not have in the past or also in comparison to the 18% of all industrial companies which expect an increase in R&D personnel requirements in the near future.

Among the new *Länder* there are considerable differences. Especially in the case of Mecklenburg-Western Pomerania, the predominately agricultural structure is fully and negatively reflected in the R&D figures: a share of 0.11% of R&D personnel in the industrial workforce; only 23% of companies surveyed, or about one third of the industrial companies, have their own R&D departments at present; twice as many companies (4%) as the average in the new *Länder* plan to abandon or reduce their R&D activities.

In the case of Brandenburg which likewise presents a poor picture, it is to be feared, moreover, that the conurbation of Berlin will attract the major portion of new R&D activities.

The situation in Saxony and Thuringia is above average. Here, in addition to the high proportion of R&D personnel (0.41% and 0.51% respectively), the high share of companies expanding in this area is to be noted above all. The relatively better performance of these two regions can be partly explained by their industrial traditions, even if this industrial experience of the past is certainly not decisive in a situation of complete structural adjustment.

To sum up it can be said that the well-known north-south differential in the new *Länder* shows particularly sharp contour lines in R&D. This applies not only to the present but increasingly also to future interregional structures, if one takes the medium-term expectations of the companies into consideration.

A positive trend clearly reflected in the survey is that a further decline in R&D personnel in industry seems to have been halted.

This observation is also indirectly supported by the recent results of the IFO innovation survey of east German industry.²

¹ 6.8% according to Stifterverband Wissenschaftsstatistik.

² IFO Schnelldienst, 15/1992.

The results of this survey are:

- (i) compared to 1990 the share of companies with product innovations in processing industry increased from 36 to 59% in 1991. The share of process innovations rose from 22 to 46% respectively;
- (ii) the turnover structure has improved. Thus the share of products in the market introduction phase (1990: 12%, 1991: 21%) and the share of goods in the growth phase (1990: 11%, 1991: 20%) have increased; hence it may be concluded that in 1991 the product mix of east German industry has improved.

Even if both effects were considerably influenced by the disappearance of non-innovative companies with an 'old' product mix, the results show that companies which have remained in the market are those having intensified their innovation activities.

A potential danger is to be seen, however, in the above-average share (21%) of newly-launched products in total turnover, since these products can make no profit contribution owing to the necessary investment in production, distribution and marketing. The same survey shows for 1991 an above-average share of innovation-oriented companies in the manufacturing industry (with product and/or process innovations) of Saxony (77.9%) and Thuringia (75.7%). Here, Saxony-Anhalt lies in the middle, with Brandenburg (60.9%) and Mecklenburg-Western Pomerania (60.6%) assuming the weakest positions.

Medium-term personnel needs by qualification profiles

The medium-term expectations of the companies surveyed with regard to their need for technicians, sales personnel and temporary staff, in general, indicate a stabilization. Especially as regards skilled technical staff, the share of companies that have reported an increase in demand is far greater than the share of companies that expect further lay-offs of skilled technicians in the medium term (see Figure 11).

A look at the balance, i.e. the difference between positive (increases) and negative responses (decreases), also shows above-average positive values for Mecklenburg-Western Pomerania in an interregional comparison. Thus the few companies engaged in R&D in this region with regard to skilled technical personnel, show positive trends.

The medium-term demand for commercial staff, by contrast, is markedly lower with substantial lay-offs still to be

anticipated. A main problem is that many commercial/business functions were either not performed in the former GDR or performed in a way which does not meet the needs of market conditions.

It is to be expected that the demand for less-qualified workers will continue to decline substantially. This can be seen from the survey results especially for Saxony-Anhalt and Brandenburg. In the case of Saxony, the expectations regarding manpower needs and redundancies are more or less counterbalanced, in Thuringia (+1) and Mecklenburg-Western Pomerania (-2) they are nearly counterbalanced.

In the medium term (up to 1996/97) the demand for adequately trained commercial staff and mostly so for engineers is expected to increase, while the demand for less-qualified labour will further decline. This indicates a further shift of qualification profiles towards higher skills.

Competitors and markets

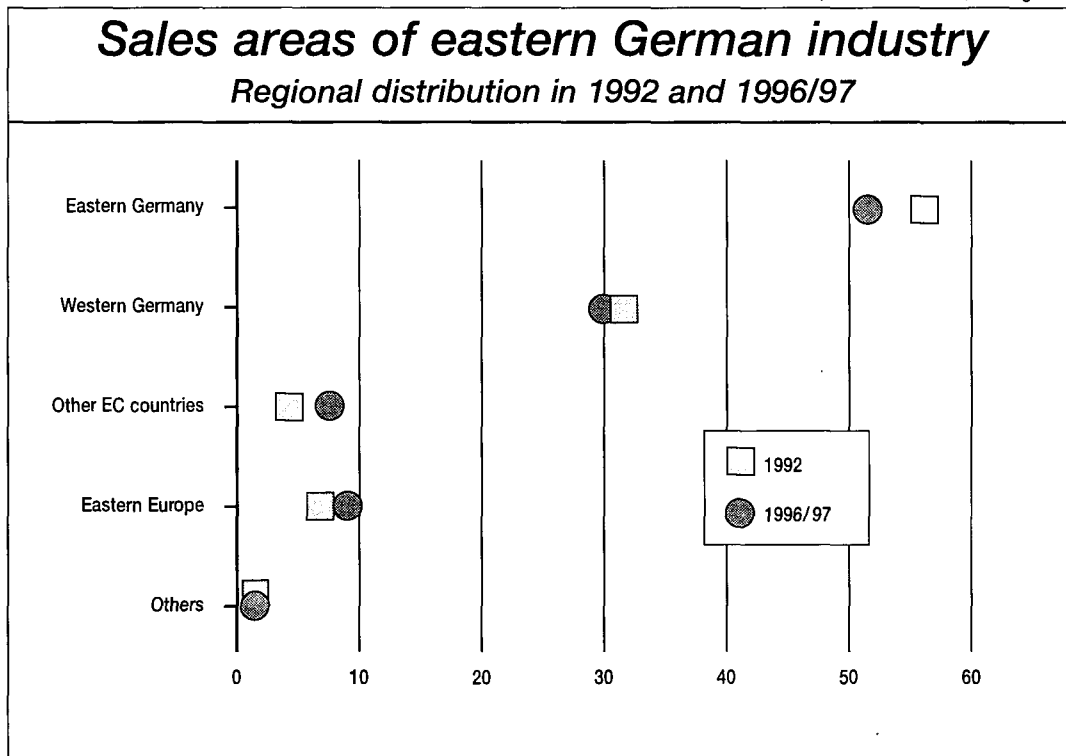
The present and future (1996/97) structure of sales and procurement markets in industry is displayed in Figure 12. Table 31 contains the data for selected markets at the *Länder* level. (The complete data are found in Annex II, Tables 3 to 4).

The export share of the new German *Länder*, defined as the share of foreign sales in total turnover, is at about 12% (in 1992) according to the survey. However, the survey does not intend to ascertain exact export shares. The actual export share in 1992 is likely to be around 16%, i.e. more or less in line with the official result of 15.8% for 1991. The survey results are attributable to the fact that the data were not weighted and that hence the small and medium-sized companies, which are usually less engaged in foreign trade, are somewhat overrepresented.

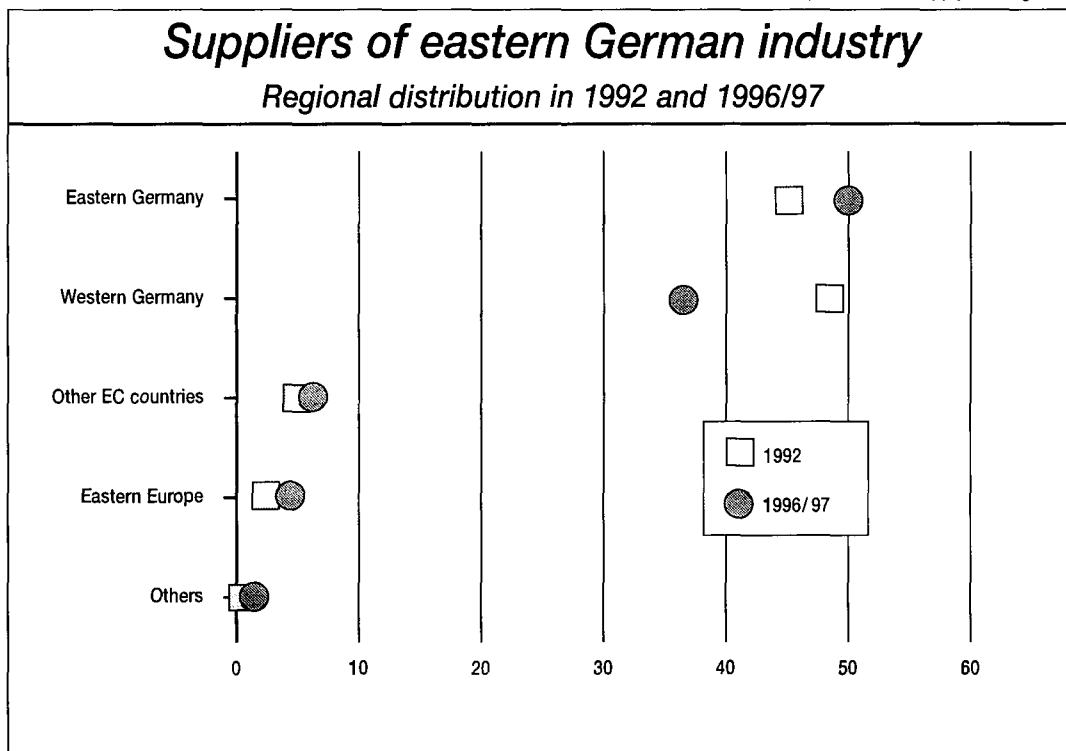
The focus of interest of the survey is, after all, on the relative importance of individual markets at present and in the future. The findings of the survey suggest that the Central and East European markets will be more important than the EC market also in the future. For 1992, industries in the new German *Länder* expect to attain a share of 4% of their turnover on EC markets, while 6% of their total turnover is accounted for by Central and East European markets (and the remaining 2% by other foreign markets). The respective figures for 1996/97 are 8% for the EC and 9% for Central and Eastern Europe.

Figure 11. Mid-term recruitment demand of east
German firms by qualification profiles, 1992

(in % of total sales, unweighted)

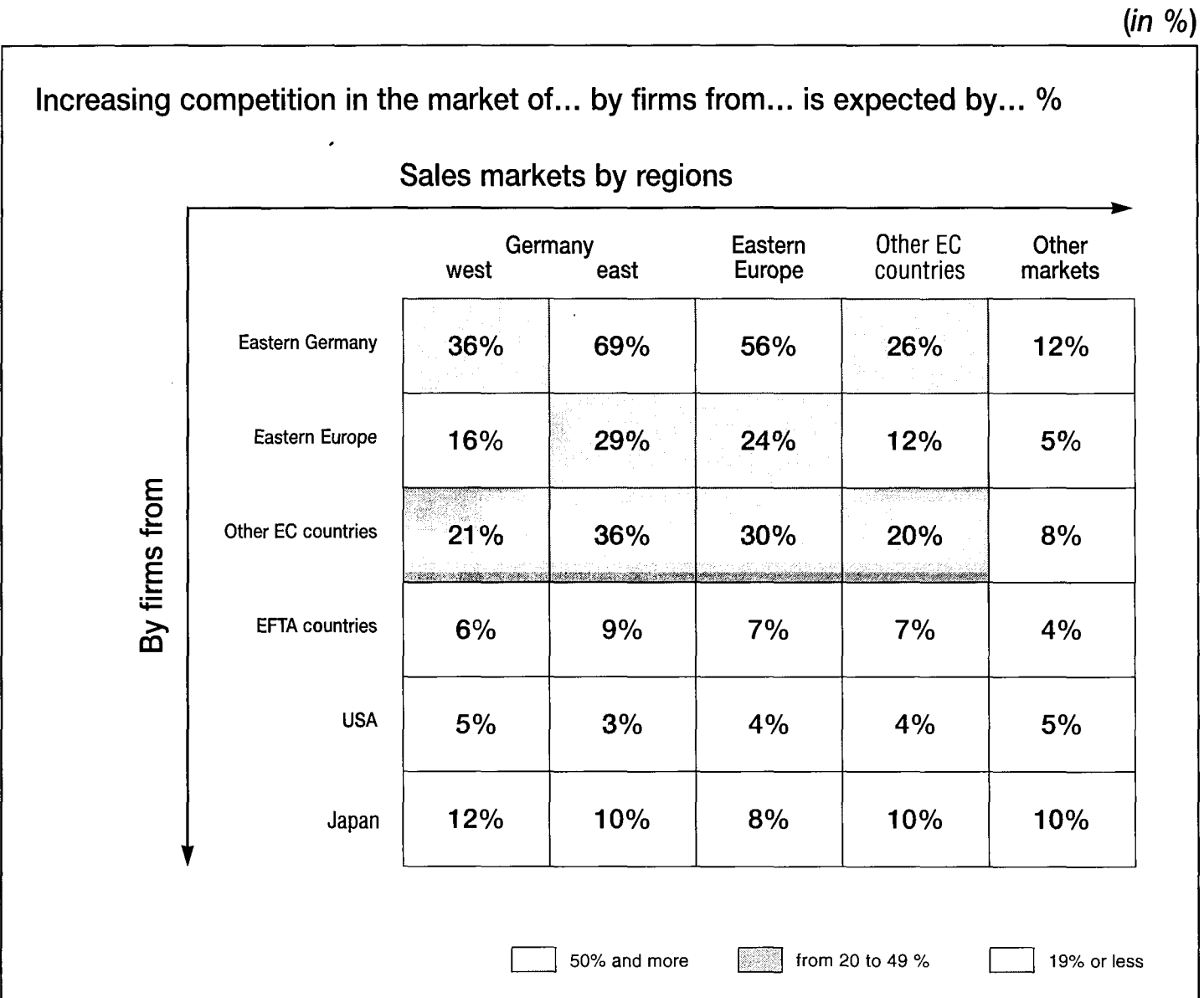


(in % of total supply, unweighted)



Source: IFO survey 1992.

Figure 12. Regional distribution of sales areas and suppliers of east German industry, 1992 and 1996/97



Source: IFO survey 1992.

Table 31. Share of selected markets in total sales and regional distribution of east German suppliers, 1996/97

(interregional comparison of the future importance of EC and East European markets)

(%)

	All new Länder	Mecklenburg- Western Pomerania	Branden- burg	Saxony- Anhalt	Thuringia	Saxony
<i>Share of selected markets on total sales in 1996/97</i>						
EC market	6 (8)	3 (4)	4 (5)	6 (8)	8 (10)	6 (8)
East European market	8 (9)	7 (6)	7 (9)	8 (10)	8 (9)	9 (9)
<i>Regional distribution of east German suppliers in 1996/97</i>						
EC market	6 (7)	6 (6)	5 (6)	4 (5)	6 (7)	7 (7)
East European market	4 (5)	5 (7)	4 (5)	3 (4)	3 (3)	4 (5)

NB: All firms. Data for industry in brackets.

Source: IFO survey 1992.

These figures show that while industries in the new German *Länder* expect to double their share *vis-à-vis* the EC, the Central and East European markets will nevertheless continue to play a more important role.

This orientation towards Central and Eastern Europe could doubtlessly become a locational asset. Not least because the network of contacts and experience – well developed in comparison to other regions of the Community – can give east German companies a start over competitors with less experience in Central and East European markets.

In a comparison of *Länder*, the medium-term expectations of the companies in Thuringia, Saxony and Saxony-Anhalt with respect to export to EC countries are clearly higher, on average double those of companies in Mecklenburg-Western Pomerania and Brandenburg.

Also with regard to the dynamics of development, measured in terms of their present position, Thuringian

companies and those of Saxony ventured more optimistic expectations: accordingly, the relative importance of EC markets for total turnover will double in these two regions by 1996/97 (Thuringia from 4 to 8%, Saxony from 3 to 6%). It is arguable whether this assessment is realistic in the light of trade patterns observed during the past few years.

On the procurement side, the companies at present import 8% of their intermediate goods and services from abroad, or more precisely, about 4% from EC countries (except western Germany), about 2% from Central and Eastern Europe and about 1% from the rest of the world. Here as well, the most dynamic developments in the medium term are expected for intermediate products and services from Central and Eastern Europe (1996/97: 4%), however, without jeopardizing the EC's leading role as a supply market (1996/97: 6%). Working on the assumption that the internationalization of a firm's procurement structure has a favourable effect on its cost structure, especially in a high-wage area (which the new

German *Länder* will undoubtedly be in five years), the results for industrial companies in Brandenburg (foreign procurement share 1996/97: 12%), in Saxony-Anhalt (10%) and Thuringia (10%) are below average. Mecklenburg-Western Pomerania (15%) and Saxony (14%) show above-average results. The new German *Länder* themselves will be used increasingly as a procurement market, the share rising from the present 45 to 50%, whereas the share of the western *Länder* is likely to drop from 50 to 40%. They may draw additional impulses to growth from being more strongly integrated into intra-EC trade.

As regards the expectations of east German companies on competition, documented in Figure 13, it is striking to see the high share of responses from companies which expect competitive pressure from Central and Eastern Europe to increase in their domestic markets (29%). The anticipated increase in competition from Central and Eastern Europe on other markets is considerably less, by contrast. With regard to intra-German competition – which is assessed to be substantial inside Germany – it becomes apparent that competitive advantages of east German companies are seen with regard to Central and Eastern Europe but also with regard to other Community regions. Outside Germany the number and strength of competitors is estimated highest with regard to other companies of the Community.

5.2. Accessibility and developments of accessible market potential

The accessible market potential is a key element in the attractiveness of regions for investors. As the analysis presented in Chapter 4.6 indicates, the new German *Länder* are in a good position with regard to their accessibility. Rapid improvements in transport infrastructure and telecommunications further consolidate locational advantages in this respect.

In looking at changes in accessibility in eastern Germany two phases can be distinguished.

- (i) In the initial phase, changes in accessibility can be attributed to the very fact of German unification. In the new German *Länder* it becomes apparent that Berlin and locations along the former East-West divide benefited most while the eastern parts hardly took advantage (see Map 27).
- (ii) In a second phase, changes in accessibility are due to construction and modernization of major road and

railway links. In this phase improvements in accessibility have been more widely spread.

The second phase of changes in accessibility is not yet complete. Therefore, a full picture of effects in eastern Germany cannot be given at present. The following example may, however, illustrate the nature and scope of improvements in accessibility.

Map 28 displays the spatial effects of the new railway link between Bebra and Kassel (connecting Kassel and Eisenach in Thuringia). As can be seen from this map the effects of the Kassel-Bebra link extend far beyond the directly adjacent areas. Measurable improvements in accessibility spread throughout Thuringia and Saxony but are also noticeable in western Germany, the Netherlands and the Czech Republic.

This example generated by the Verena system is indicative of medium- and long-term effects resulting from improvements in transport infrastructure in eastern Germany and with regard to the major links between western Germany and the adjacent Community counties and regions.

5.3. Benefits to economic growth in the Community from the new German *Länder*

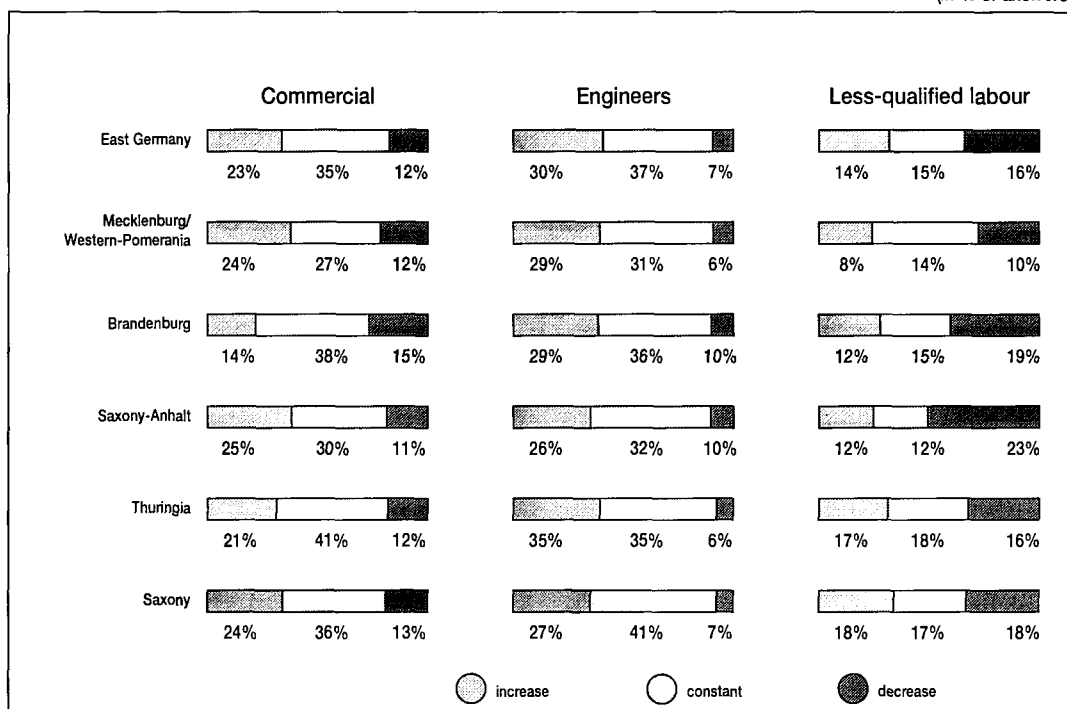
Global growth effects

Despite the relatively low significance of the new *Länder* in terms of area (108 000 km²) and population (approximately 16.7 million people, i.e. the EC's total population increased by around 5% following German unification), clear growth effects have been produced not only in western Germany but also in other EC countries.

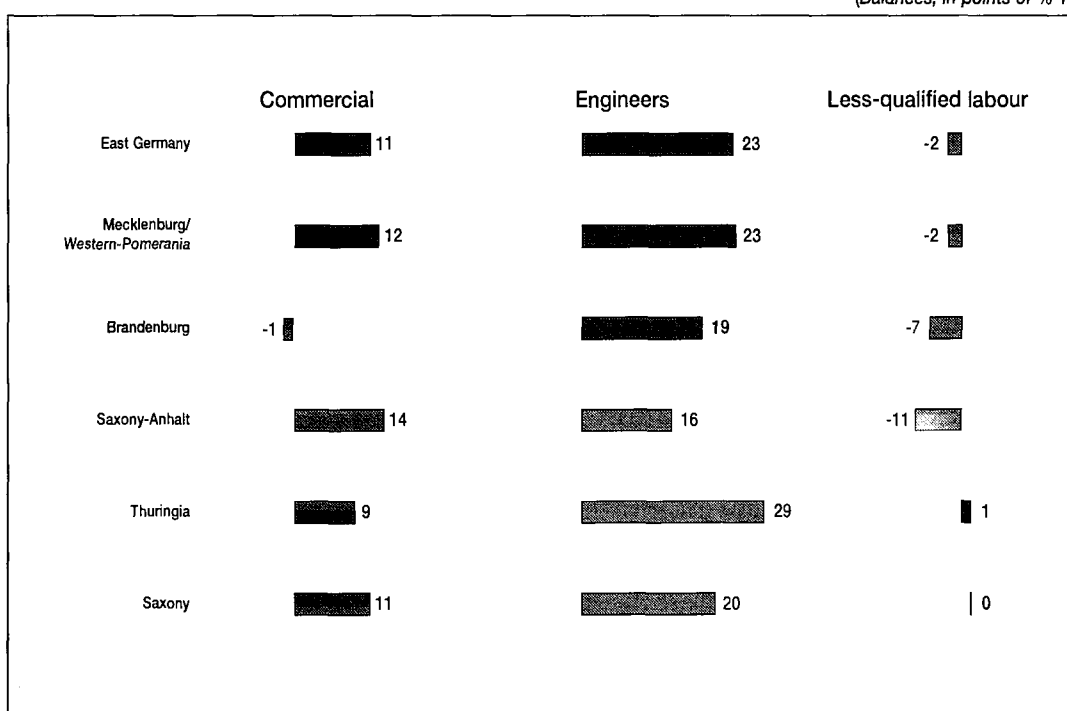
Similar to the positive impulses with regard to accessibility, German unification has contributed to growth of GDP in several countries of the Community. Additional growth effects resulting from the surge in demand from eastern Germany following the fall of the Berlin Wall were of course experienced mainly by west German manufacturers. Deliveries from western to eastern Germany increased by around 160% in 1990 and 120% in 1991 to a total of ECU 12.1 billion, or just under one third of the real growth in western Germany's GDP. Yet the other EC Member States also benefited either directly or indirectly (for example as a result of west German export being deflected from foreign markets to the

Figure 13. Competitors and markets in east German industry, 1992

(in % of answers)

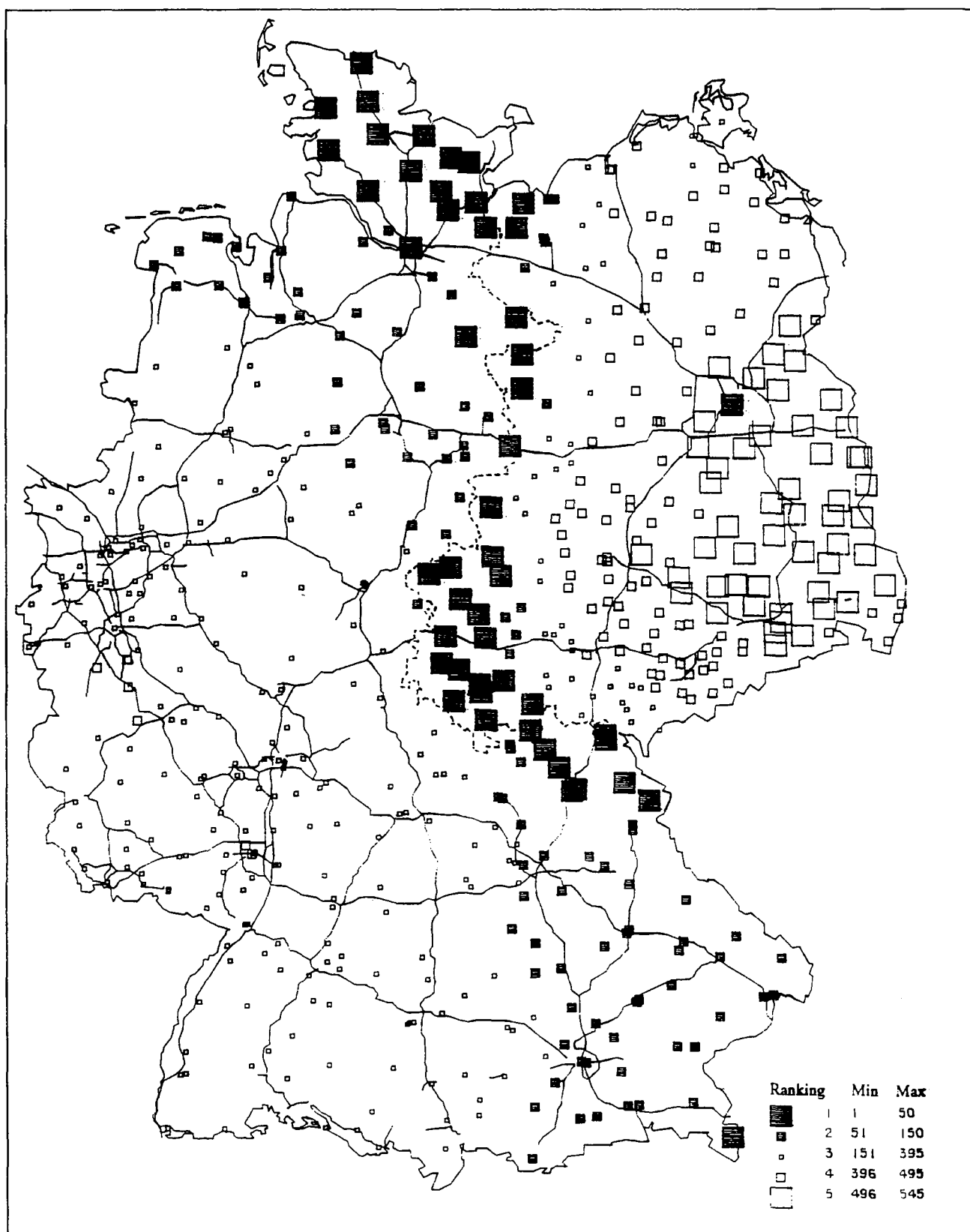


(Balances, in points of % 1)



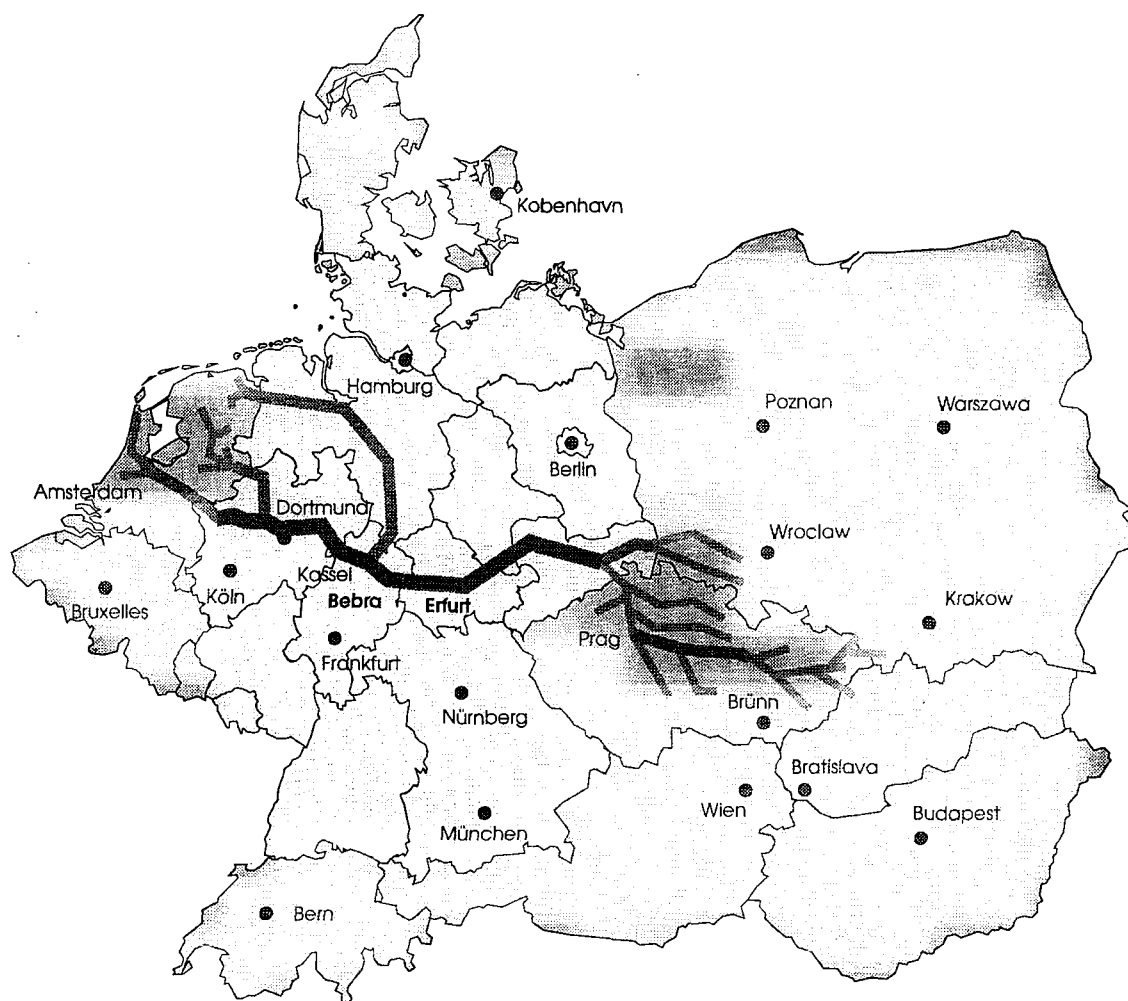
Source: IFO survey 1992.

Map 27. Changes in accessibility of counties in Germany in private transportation due to German unification



Sources: Verena, Eckey/Horn 1991.

Map 28. Changes in accessibility of counties in international transport due to the Kassel-Bebra railway link



Representation of modal-link quantity				
	Type	Min	Max	Quantity*
	1	10	100	62
	2	100	1 000	81
	3	1 000	10 000	24

* Number of locations reached.

Sources: Verena, Eckey/Horn 1993.

**Table 32. Contribution of German unification to growth of GDP
in selected EC countries, 1990-91**

(in %)

	Contribution to growth by change (surplus) in bilateral trade balance		Contribution of change (surplus) in trade balance to total growth	
	1990	1991	1990	1991
Belgium/Luxembourg	+ 1.2	+ 2.0	31	137
Denmark	+ 1.0	+ 1.1	59	96
Spain	+ 0.2	+ 0.1	5	3
France	+ 0.4	+ 0.7	16	54
Greece	- 0.1	- 0.1	-	-
Ireland	+ 1.3	+ 0.9	18	59
Italy	+ 0.4	+ 0.4	16	27
Netherlands	+ 1.1	+ 1.3	28	63
Portugal	+ 0.2	- 0.8	4	-
United Kingdom	+ 0.4	+ 0.7	38	-
EUR 11	+ 0.4	+ 0.6	33	88

NB: To give a percentage is either not possible or not meaningful since the figures for the GDP change or bilateral trade balance are negative.

Source: Deutsche Bundesbank 1992c.

new *Länder*) from this surge in demand. According to German Bundesbank estimates, the surge in German import contributed an average 0.4% to the growth of real GDP in EC Member States in 1990 and 0.6% in 1991: i.e. one third or almost 90% of total GDP growth in these countries (see Table 32).

Belgium, Luxembourg, the Netherlands, Ireland and Denmark derived particular benefits from this, whereas France, the United Kingdom and Italy experienced only an average impetus for growth. Portugal and Spain were also able to substantially increase their supplies to Germany but the economic effects were reduced by increasing imports from Germany.

In 1992 export from the other EC Member States to Germany again increased (approximately 4% compared to the previous year), although less sharply than before.

Medium-term effects

In the medium term it is likely that there will be a decline in the growth effects on the other EC Member States as

a result of German unification. According to model calculations by Harasty and Le Dem, the EC Member States would experience total additional growth of 0.2% over the period 1990-2000. The initially positive growth effects in western Germany would be reversed even by 1992 and, in the medium term, (by the year 2000) would become slightly negative.¹ In general this forecast has been confirmed by recent developments and the sluggish economic climate.

5.4. Investment needs in the medium and long term

Commissioned by the German Building Industry Association, the IFO Institute conducted a survey on building and construction needs in the new *Länder* in various fields of infrastructure.² This survey shows that the new

¹ See Harasty and Le Dem 1992.

² See IFO Institut für Wirtschaftsforschung 1992a.

Länder lag behind the western *Länder* as regards availability and condition of installations and of buildings. At the same time it shows that the East-West differential can be overcome only in the long term.

For the purposes of the survey 10 fields were selected and the building activities (maintenance/repair and new construction) and hence capital expenditure that would be required to achieve equal conditions in eastern and western Germany by 2005 were studied. These fields are the following:

- (i) housing;
- (ii) transregional traffic/transport;
- (iii) intraregional traffic/transport;
- (iv) environmental protection;
- (v) economic structure;
- (vi) energy;
- (vii) water;
- (viii) telecommunications;

(ix) sociocultural infrastructure;

(x) other infrastructural areas.

According to the assessment of needs, a gigantic amount of about ECU 1 200 billion would have to be spent up to 2005 if largely similar conditions were to be achieved in the above fields (prices of 1990). This would mean investment totalling ECU 79 billion per annum over a period of 15 years.

Table 33 shows that maintenance/repair investment totalling ECU 712 billion clearly prevails (60%) over new investment which is indicative of the largely poor condition of buildings and installations. Exceptions are environmental protection and the communications sector, where large-scale new investment is required.

About 41% of total investment (ECU 487.5 billion) would have to go into housing, while the other fields make up ECU 697 billion or some 59% of the assessed investment sum.

These estimates are aggregate estimates for the new *Länder* as a whole. To break down needs further to individual regions, the results of the analysis of locational factors presented in the preceding chapter can be used.

Table 33. Investment needs in the new German *Länder*, 1991-2005
(constant prices, 1990)

Field	Maintenance/ repair		New investment		Total invest- ment need	
	billion ECU	%	billion ECU	%	billion ECU	%
Housing	309.0	43	178.5	38	487.5	41
Transregional Transport	47.0	8	46.5	10	103.5	9
Intraregional Transport	67.0	9	31.0	7	98.0	8
Environment	28.0	4	59.0	12	87.0	7
Economic structure	133.5	19	97.5	20	231.0	20
Energy	25.0	4	8.0	2	33.0	3
Water	6.5	1	4.0	1	10.5	1
Communications	5.0	1	20.0	4	25.0	2
Social care/culture	64.0	9	20.0	4	84.0	7
Others	17.0	2	8.0	2	25.0	2
Total	702.0	100	472.5	100	1 184.5	100

Source: IFO 1992a.

5.5. The positioning of the new German *Länder* in the Community – medium-term spatial prospects

Most east German companies expect their sales markets to grow most significantly in the medium term in Central and Eastern Europe. At the same time competition on domestic east German markets is feared mostly from companies in Central and Eastern Europe.

In a negative interpretation the survey finding entails that investments in the new German *Länder* were made predominantly in the perspective of selling 'old products to old clients'. In this case market expansion is a vehicle to increase sales volume without simultaneous product and process innovations. If this negative interpretation held true, the competitive position of the new German *Länder* would deteriorate in the medium and long term. It is indeed of crucial importance for the future of the industrial base in eastern Germany whether and how trade with Central and Eastern Europe will develop. For instance the positioning of Leipzig as an East-West turntable, future transport links, etc. are decisive parameters in view of spatial development strategies in this respect.

Increasing trade, by the very nature of market expansion, implies new competitive pressure and the need for specialization of companies and regions on their comparative advantages. In the light of existing wage differentials, rapid structural change is of crucial importance for the future competitive position of the new German *Länder*. Considering innovation activities as an indicator for the extent of structural change, on the whole companies in Saxony and Thuringia seem to improve their competitiveness in the medium term.

The new German *Länder* are in a favourable geographical position for increased trade with Central and Eastern

Europe. In the medium term, however, lack of purchasing power in these countries will not allow the generation of sufficient growth of exports.

With respect to spatial prospects in the medium term it can be assumed that further improvements in major transport links will contribute to additional increases in accessible potential. As illustrated in Chapter 5.2, the effects of investments in major road and rail connections reach far beyond the new German *Länder* thus benefiting other Community countries and regions too.

From a spatial perspective, however, several risks are becoming apparent. Given the generally low extent of suburbanization in eastern Germany (see Map 23) and the criticism of companies directed mainly towards intraregional transport (and not so much transregional transport), spatial spread effects from the major agglomerations to their surroundings seem unlikely in the medium term. Moreover, the generally sluggish economic climate is not conducive to suburban expansion. Therefore, in a spatial perspective aiming at long-term equal conditions for economic development, the emphasis is to be put more on investment in improved intraregional transport.

In the medium term and with regard to the spatial prerequisites for economic growth it is mostly the new German border regions which can be expected to suffer from protracted locational weaknesses. This becomes evident from changes in accessibility due to German unification. In east Germany locations in Thuringia close to the former intra-German border benefited most (see Map 27), while locations in Brandenburg and most of eastern Saxony hardly took advantage. Improved transport links in the framework of modernization and new construction, with few exceptions, are directed towards the West and not towards the eastern border regions.

6. Scenarios of spatial development in the new German *Länder* in the long term

Long-term spatial developments in the new German *Länder* will depend on the one hand on locational factors and their development. On the other hand, they are a function of future economic trends and have a consequential impact on regional labour-markets, patterns of migration or of commuting, the environment, etc. In addition other factors such as military areas becoming available for new purposes, productivity reserves of rural zones open up possibilities for active restructuring in a spatial development perspective.

While spatial policies cannot promote economic development directly, they can lay the grounds for growth and equal living conditions by providing the territory of the new German *Länder* with the appropriate intra- and interregional links, by increasing the attractiveness of regions or by establishing a balanced spatial distribution of functions.

In the present chapter the question is not so much what the new German *Länder* precisely will look like at the beginning of the next millennium, but rather what spatial patterns will be likely in the long term in a trend scenario and, alternatively, in a policy scenario. In a trend scenario present patterns are projected in the future; in a policy scenario locational strengths are optimized while weaknesses are minimized. In identifying the margin between the trend scenario and the policy scenario the scope for real change can be determined.

The first subsequent section turns to recent economic forecasts and the spatial consequences which can be derived (Chapter 6.1). On this basis, spatial trend sce-

narios are drawn (Chapter 6.2). Then principles for future spatial development as advocated by the Federal Government are presented (Chapter 6.3). Against this background a policy scenario – assuming active spatial development efforts – is discussed (Chapter 6.4). The chapter ends with a juxtaposition of likely and of desirable trends (Chapter 6.5).

6.1. Forecasts of economic development and consequential trends

It is extremely difficult to forecast the long-term prospects of the new *Länder* and their individual regions. Even the five leading economic research institutes in Germany are rather cautious with forecasts. Yet they almost unanimously express the view in their expertise of last spring that no rapid convergence of the living conditions in the eastern and western *Länder* can be expected in either economic or financial terms.¹

Considering the dimension of the present prosperity gap and in the light of the most recent figures on economic activity it is to be assumed that east and west German standards of living will not be on a par by 2005.

Taking the per capita GDP of 1991 (measured in purchasing power parities) as a benchmark, the new *Länder* would have to achieve average annual growth rates of between 10% (east Berlin) and 14.5% (Mecklen-

¹ DIW 16/17/1992.

Table 34. Annual growth rate in the new German *Länder* ensuring equalization of GDP per capita between the new and old German *Länder*¹

(PPS)

Initial income in new German <i>Länder</i> as % of GDP per capita in old German <i>Länder</i>	5 years	Period of adaptation		
		10 years	15 years	20 years
		% per annum		
30	29.2	14.5	10.0	7.8
35	25.2	12.7	8.8	6.9
40	21.9	11.3	7.9	6.2
45	19.1	9.9	7.1	5.6

¹ It is assumed that GDP per capita grows at 1.5% p.a.

Source: Empirica.

burg-Western Pomerania and Thuringia) in order to reach the level of the western *Länder*. For these an average growth rate of 1.5% per annum is assumed, which is markedly below the expectations cherished by the Federal Government despite the recession (see Table 34).

As regards employment trends continued redundancies will be a salient phenomenon. As a consequence the present brain drain will continue – i.e. outmigration of highly qualified workers, including large numbers of research staff. It must be feared that pressure on the

labour-market will persist in the coming years and that hence the 'devaluation' of human resources will continue.

According to a model simulation conducted by the Institut für Wirtschaftsforschung Halle there will be further job losses up to 1996 (–2.9%); from then on (during the following four years) total employment is expected to go up slightly (+1.4%) in the new *Länder* provided the objective of adjusting eastern wage and salary levels to western levels is realized in the long term (see Table 35). Even in conditions of moderate wage increases in the

Table 35. Scenario of wage and employment growth in the new German *Länder*, 1993-2000
(percentage change)

	Status quo scenario ¹		Moderate-wage- increase scenario ²	
	1993-96	1997-2000	1993-96	1997-2000
Percentage change of wages:				
Old German <i>Länder</i>	5.0	5.0	4.0	4.0
Percentage change of wages:				
New German <i>Länder</i>	16.2	7.8	6.8	7.1
Percentage change of employment:				
New German <i>Länder</i>	–2.9	+1.4	+2.8	+5.4

¹ Assumption: increase of east German per capita gross wages to reach 90 and 100% of the west German level by 1996 and 2000 respectively. Increase of labour productivity by 10% p.a. in the east and 2.5% p.a. in the west.

² Assumption: increase of east German per capita gross wages to reach two thirds and three quarters of the west German level by 1996 and 2000 respectively. Increase of labour productivity by 7.5% p.a. in the east and 2% p.a. in the west.

Source: Institut für Wirtschaftsforschung Halle 1992.

western *Länder* (4% per annum) and of a wage level in the new *Länder* which is equivalent to two thirds and three quarters of the west German levels up to 1996 and 2000 respectively, increases in employment of 2.8% up to 1996 and of 5.4% up to 2000 would not compensate for the redundancies to date.

General trends which will be seen in the new *Länder* in the coming years are:

- (i) removal of infrastructural deficits,
- (ii) environmental improvement,
- (iii) reform of administration.

Intervening developments, which are mostly a function of future economic trends, regard the following fields:

- (i) migration trends,
- (ii) adjustment pressure from reform processes in Central and Eastern Europe.

Removal of infrastructural deficits

It can be noted that progress has been made in removing structural deficits through large-scale investment. This trend towards a profound restructuring of the economy and modernization of infrastructure with the aid of public and private investment will continue also in the coming years. This is particularly true for telecommunications and other technical infrastructure which already have been expanded and improved. It is also manifest in the modernization and renovation of buildings.

With regard to infrastructure the question remains, however, to what extent progress will be made in regional network provision.

Environmental improvement

Things are not so clear-cut, though, when it comes to evaluating the trends in environmental rehabilitation. While air pollution from dust and sulphur dioxide and river pollution has been reduced remarkably as a result of the closure of industrial and agricultural sites, pollution from automobile exhausts has increased dramatically due to increasing motorization. Ecological improvement and renewal is thus still to be expected in many areas.

Positive environmental effects are to be expected for the Community territory following the restructuring of the

energy industry and the restructuring or closure of environmentally damaging installations. Besides western Germany, Scandinavia will benefit above all from the consequential decrease in SO₂ emissions – the Scandinavian countries were, or still are, substantially affected by SO₂ emissions from the former GDR (together with those from Poland and the Czech Republic) and from the resultant acid rain (see also Part I of the study, Chapter 4).

In a pessimistic perspective, rehabilitation of the environment will hardly advance, in particular because measures to sanitize contaminated areas are often postponed because few investors are interested in locating there. In a policy scenario the approach is different: environmental rehabilitation is given priority because it increases the propensity of investors to locate in the areas concerned.

Reform of administration

Progress is being made with the development of an efficient administration. However, the controversy about the territorial reform at local and county levels (e.g. merging Berlin and Brandenburg into one federal State) and the rapid succession of changes have often kept administrative staff preoccupied so that other urgent tasks could not be tackled sufficiently. It is estimated that in the framework of a reform of the current administrative structures considerable further redundancies in the public service will occur, affecting mostly Mecklenburg-Western Pomerania, Saxony-Anhalt and Brandenburg.

Migration trends

As long as the East-West differential in standards of living and income levels prevails, the present migratory flow from the eastern into the western *Länder* will continue – though on a subsiding scale. According to present extrapolations, altogether some 1.6 million people will have left the new *Länder* for the West up to the year 2000. At the same time migratory flows from the West to the East will grow. But the expected total of 620 000 people moving eastward will by no means offset the migration losses in the new *Länder* which are estimated at some 900 000 people by the year 2000, 90% of which will have occurred up to 1995.¹ While outmigration mostly affects the structurally weak northern areas in the new German *Länder*, immigration is

¹ See BfLR 1992b.

expected to concentrate in the southern agglomerations.

In addition to migration, in the light of the economic forecasts presented above, commuting to western Germany will remain substantial primarily along the former intra-German border. Moreover, demographic trends will bear considerable impact upon settlement structures in the new German *Länder*. As illustrated in Chapter 3 the downswing in birth rates tends to cause higher depopulation than outmigration. The continued sluggish economy will reinforce this trend in the long run.

Adjustment pressure from reform processes in Central and Eastern Europe

Several treaties and agreements have been concluded with Central and East European countries which have created favourable preconditions for a growing interpenetration between these countries and the new German *Länder*. However, the present weakness of the Central and East European markets does not permit making full use of these growth potentials. Conversely, these countries may emerge as competitors in a number of fields. Moreover, the analyses conducted within Part I of the study have shown that the new *Länder* generally belong to the group of EC regions which are (on the basis of their current situation) hardly able to face the challenges created by the developments in Central and Eastern Europe. It may be assumed that the structural and socioeconomic pressure to adjust will rather intensify as a consequence (see Part I, Chapter 5). There is, for instance, the danger that potential investors divert their capital into the neighbouring Czech Republic and Poland, because of lower cost of production and less stringent regulations.

In the light of the economic forecasts discussed above, there are few prospects for growth in the new German *Länder* through increased exports to Central and Eastern Europe. In contrast, competition on product markets, generally will be to the detriment of east German companies because of cheaper labour costs in Central and Eastern Europe.

6.2. Trend scenario of spatial development in the new German *Länder*

In a trend scenario and in the light of recent economic forecasts of future trends, spatially unbalanced development is to be expected in the new *Länder*. Some areas

are emerging with agglomeration advantages thanks to their geographical position and their integration within Germany and the Community. They are also in a relatively favourable situation in terms of economic and infrastructure potentials.

If present trends continue it can be assumed in the long term that few areas will experience comparatively dynamic development.

Development centres in a trend scenario

Development centres will only develop to a limited extent and spatial spread effects will hardly occur for several reasons:

- (i) available forecasts (see Chapter 6.1) indicate slow growth which will not be sufficient to reduce or absorb unemployment in eastern Germany in the long term;
- (ii) comparatively dynamic development will therefore continue to concentrate in some agglomerations with administrative and service functions;
- (iii) due to weak suburbanization and continued bottlenecks in regional network provision growth will remain limited to urban core regions;
- (iv) productivity reserves in rural regions remain untapped thus increasing the gap between urban core regions and the rest of the east German territory.

In a trend scenario significant growth impulses can only be discerned with regard to Greater Berlin and the area of Leipzig. Relative stabilization is also likely in the other east German agglomerations – however, clearly inferior to the development of Berlin and Leipzig. Notable exceptions are the agglomerations along the Polish border, which – in a trend scenario – show no signs of rapid improvement. This is mostly due to their geographical remoteness and direct wage competition with the adjacent Polish regions.

The example of the Berlin/Potsdam metropolitan area in a trend scenario

The Berlin/Potsdam metropolitan area will be particularly prominent in the coming years. It can be assumed that structural change in the eastern part of the city will be completed more rapidly than in other agglomerations as a result of the immense economic and infrastructural

potential of Greater Berlin as a whole. Berlin will further consolidate its current position as a centre of services and administration and also of research and innovation. Berlin's role as the capital of Germany and as the seat of the Federal Government will send out additional impulses for development and renewal of the poorly-developed parts of Berlin.

However, the metropolitan area's present problems will tend to intensify. The major bottlenecks will be, above all, the housing shortage, exploding rents and property prices and the increasing traffic volume, with the resulting negative impact on the environment. Furthermore, the city centre will become deindustrialized in the long term, with a significant part of the manufacturing enterprises which were formerly based there moving out to the surrounding areas or to other parts of the new *Länder*.

- According to a survey carried out by the Deutsches Institut für Wirtschaftsforschung in 1992, 10% of all companies active in this sector intended to relocate to out-of-town areas around Berlin/Potsdam in the near future, i.e. into the Brandenburg countryside.
- A further 4% intend to move to other regions in the new *Länder* and an additional 10% plan medium-term changes in manufacturing location, but have not yet made any firm decision as to future location.

Almost one quarter of manufacturing enterprises at present based in Berlin intend to move away from the city. The eastern part of the city, where only one quarter of all former industrial employees are still employed in this sector, is hit hardest by this development. Since the main reason for these trends is scarce and extremely expensive commercial space, this trend could intensify if commercial rents (at present up to ECU 30 to 40/m² per month at inner city locations) and property costs continue to soar.¹

To some extent the relocation of industry in the surrounding areas of Berlin is the consequence of the fact that companies in western Berlin did not have this possibility before. If, however, it is not complemented with the expansion of service functions at inner city locations, this trend may lead to urban decay; mostly in the eastern part of the city.

Although Berlin's service sector is booming it cannot absorb the workforce released from other sectors (including public administration). Furthermore, there is a risk that the gap between eastern and western Berlin will widen further. A delay of several years of moving the capital function from Bonn to Berlin would further aggravate this problem.

A major bottleneck over the coming years will remain the high traffic volume in the inner city area, which has reached chaotic proportions in some places. This could increase even further if the decentralization processes (migration of residential population into the suburbs and in surrounding areas, relocation of production centres) were not coordinated in a way to match the geographical distribution of population and industry. Today around 130 000 employees commute from eastern to western Berlin, mostly using private transport. According to DIW estimates the number of private cars could double to around 2.4 million over the next few years, if the migratory trend continues among the residential population. This would have a fatal impact on road transport unless suitable regional networks (expansion of the rail networks, standardization of systems in east and west Berlin, etc.) counter these effects.¹

Problem regions in a trend scenario

The main problems will be demonstrated by regions dependent upon declining industries and upon agriculture. These are facing particularly high competitive pressure from the integration into the European Community. Moreover, there is the legacy of old pollution and environmentally damaging industries which represent major locational disadvantages and an urgent need for environmental rehabilitation. These regions include, for example, mining areas in Thuringia, huge areas used for lignite mining and processing in Brandenburg, Saxony and Saxony-Anhalt – in the long term, lignite mining is to be reduced from the present level of 150 million tonnes to 80 million tonnes – and the so-called chemical triangle in Saxony-Anhalt.²

In the long term, bottlenecks will also be seen in regions or locations where the economy is dominated by individual industries which are under great pressure to adjust. This includes the steel-manufacturing locations in Brandenburg – privatization processes are linked to further limitations on output and to job-losses – the shipbuilding locations in Mecklenburg-Western Pomerania (despite

¹ See *Wirtschaftswoche* 17. 4. 1992.

² Institut für Wirtschaftsforschung Halle 1992.

the temporary EC commitments to high subsidies) and textile locations in Saxony – turnover, investment and also employment in the textile and clothing industry is experiencing a strong downward trend.

Due to the structural change in agriculture, a severe adjustment crisis is evident in particular in those parts of Mecklenburg-Western Pomerania and Brandenburg where agriculture plays an especially important role. It may be assumed that the rural areas will remain the major problem regions in the new *Länder*, alongside locations of declining industries.

Apart from weak economic structures, one of the main problems in the rural regions will be the lack of centres of higher-order centrality. Moreover, the rural regions continue to suffer from poor provision of transport infrastructure (a lack of direct rail links from Stralsund to Berlin, poor road links between Schwerin and Magdeburg, etc.).

Finally, extensive parts of the regions bordering Poland and the Czech Republic and Slovakia must also be included in the list of problem regions (lignite-mining locations, steel-manufacturing locations, areas characterized by agriculture and textile industry); an additional disadvantage is their remote situation *vis-à-vis* the EC growth centres. Due to persisting wage differentials and since the regions on the Polish or Czech side are also structurally weak or are suffering severe adjustment problems it cannot be assumed, in the long term, that the border locations on the German side will experience a positive impetus from their proximity to Poland or the Czech Republic. In the long term there are definitely chances that reciprocal advantages and impulses for growth may be drawn from an intensified process of cross-border cooperation. This would, however, require active spatial policies.

Growth axes in a trend scenario

Several factors point to the existence of a North-South gap as regards possible future growth axes. This can be drawn back to more dynamic adjustment processes in Saxony and Thuringia, but also to the denser location of agglomerations in the south of the new *Länder*. In contrast, potential growth axes are rarer in the north. The most important long-term growth axes in the northern parts could run from Rostock along the Baltic coast in a western direction (to Hamburg) and in an eastern direction (to Stralsund/Greifswald) and also via Neubrandenburg to Szczecin. In a trend scenario these axes, however, lead to the situation of the adjacent east German

areas being overrun by transit traffic instead of benefiting from them.

The radial development of infrastructural links from Berlin/Potsdam is particularly notable, underlining the great importance of this metropolitan area as regards future spatial development in the new *Länder*. Here the axes run towards major industrial metropolitan areas in both western Germany (e.g. Hamburg/Hanover/Nuremberg) and in eastern Germany (Halle/Leipzig, Dresden) and also to the Polish centres with high development potentials (Szczecin, Poznan-Warsaw, Wroclaw-Crakov). In a trend scenario, however, it is unlikely that these will engender an impetus for growth for the predominantly rural, structurally weak regions of Brandenburg apart from the so-called *Speckgürtel* (the region around Berlin). On the contrary, there is a risk that they will be 'overrun' by transit traffic too and that, due to lack of indigenous potentials, the current relocation effects pulling business towards Greater Berlin and other development centres will increase even more.

Regional competitiveness

The analysis in Part I of the study of development status and development dynamics in the EC regions have shown that the new *Länder* are currently among the least competitive regions in the European Community. As already indicated above, in the long term they run the risk of not being able to cope with the new challenges produced by the opening up of the East. They may come under additional adjustment pressure as a result of the development processes in the relatively advanced countries of Central and Eastern Europe (Hungary, Czech and Slovak Republics, Poland).

Although the analysis presented in Part I of the study does not focus on the direct impact of German unification on the rest of the Community territory, some conclusions can be drawn regarding possible spatial effects.

The relations of competition and cooperation with other locations in the EC will also tend to be weak in the long term. In view of, in EC terms, the relatively high wage level (see Table 36) and relatively low labour productivity, the new *Länder* will not become serious competitors either, for the so-called low-wage locations in Spain, Portugal and Greece, which have similar sectoral focuses (coal and steel, textiles, agriculture) or for locations which are characterized by high wages but also high labour productivity.

Table 36. Comparison of unit labour costs between new German *Länder* and other EC Member States, 1991
(index old German *Länder* = 100)

	Adjusted unit labour costs in manufacturing, 1991
Portugal	63
Italy	69
Spain	76
France	90
Old German <i>Länder</i>	100
United Kingdom	105
Netherlands	109
Belgium	109
Denmark	125
Luxembourg	127
New German <i>Länder</i>	approx. 170

Source: Institut für Wirtschaftsforschung Halle 1992.

This is true for common sales markets and also for locational decisions made by potential investors.

As regards possible investment decisions, as has already been mentioned, the new *Länder* will tend to compete with neighbouring Poland and the Czech Republic rather than with locations in the Community territory.

The spatial development in the new *Länder* has positive impact as regards the infrastructural improvements already achieved and to be made over the coming years. The major transit routes for the north-western parts of the Community territory (for both rail and road networks) will increase the accessibility of Central and East European countries; the planned expansion of the north-south transversals (Rostock-Berlin) will provide an alternative transit route from/to the Scandinavian countries to the route via Hamburg.

In a trend scenario, however, this will hardly entail impulses for spatial development in the new German *Länder*.

Trend scenario: summary of spatial implications

In a trend scenario there are few prospects for equilibrated long-term spatial development in the new Ger-

man *Länder* (see Map 29). Against the background of weak economic growth, only few major urban areas such as Greater Berlin or Leipzig will consolidate their economic position. In general suburban expansion will be limited, rural areas will continue to suffer from growing depopulation, restructuring in declining industrial areas will not be sufficient to offset additional job losses. The development of tourism and recreation will remain limited, principal bathing areas will hardly be expanded, which is mostly to the detriment of Mecklenburg-Western Pomerania and the rural areas of Brandenburg and Saxony-Anhalt. In addition the new border regions will suffer from wage competition with the neighbouring Polish and Czech regions; their present remoteness will not be overcome on the basis of planned infrastructural links (see Maps 19-21).

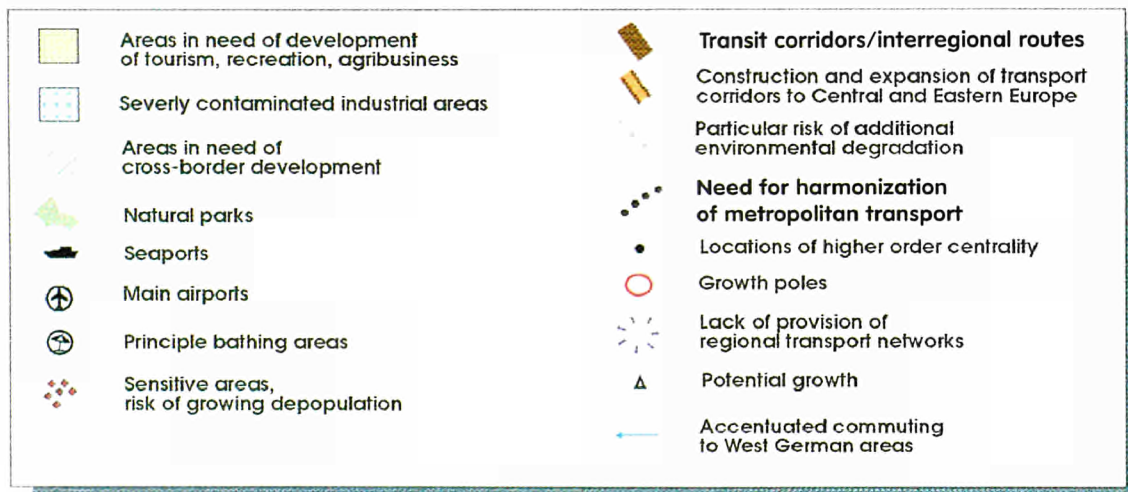
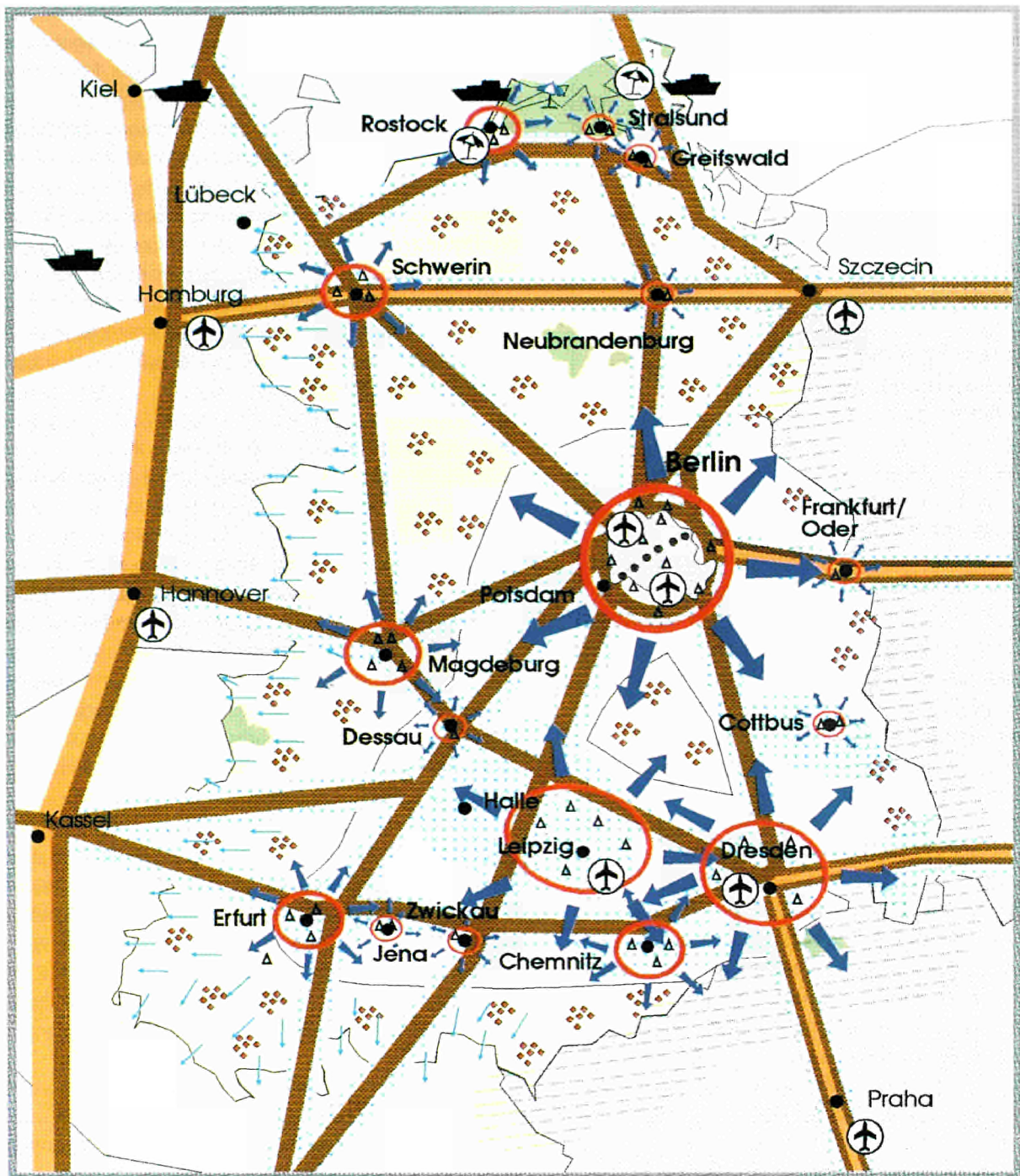
While accessibility will further increase through continued modernization and expansion of major routes, regional networks will not be provided at a level required for equilibrated spatial development. With regard to the environment some improvements will take place – however, rather because of continued deindustrialization than due to pro-active environmental policies. Moreover, construction and expansion of transport networks will lead to additional pollution due to increased traffic flow. The development of combined transport is not sufficiently advanced in terms of quality and quantity to offset the negative effects of increased traffic.

With regard to transport infrastructure the Cottbus area especially will be in a peculiar situation: while the federal spatial policy recognizes the need for better integrating this centre in the transport network, for instance by connecting it to an expanded Berlin-Wrocław route, the German unification programme (see Table 21) does not contain plans for expansion of this route.

Commuting in the east German fringe areas to work places in the adjacent west German areas will continue to play an important role due to lack of spatial spread effects from growth poles in the new German *Länder*.

Assuming a delay of several years in moving the administrative capital functions to Berlin, this area will see a sluggish process of relocation of industries (manufacturing companies moving in surrounding areas and service functions not being generated at sufficient scale to absorb unemployment in the centre). Thus Greater Berlin is likely to be hampered in its role as a motor of growth.

Map 29. Trend scenario – long-term spatial patterns in the new German *Länder*



In summary, in a trend scenario for the new German *Länder*, it seems unlikely that spatial structures enabling harmonious economic development will evolve in the long term.

6.3. Principles for future spatial development

Expected future trends do not automatically lead to desirable spatial structures. This is the general lesson to be learned from the trend scenario. To equip the new German *Länder* with spatial structures conducive to economic growth in the long term, it is imperative to design and implement a series of development strategies.

In this chapter elements for the policy scenario (Chapter 6.4) are drawn out by presenting the guidelines for future spatial development as advocated by the German Federal Government and the *Länder*.¹

The guidelines for regional planning

The guidelines for regional planning published by the Federal Ministry for Regional Planning, Building and Urban Development provide an outline of the new spatial strategies for the whole of Germany, also considering European aspects. A particular focus is on the situation in the new German *Länder*, and on what needs to be done for the East to catch up with the West.

These guidelines are intended:

- (i) to promote equivalent living conditions in all parts of the federal territory and above all in the new *Länder*;
- (ii) to integrate the fundamentally changed situation in Europe (completion of the internal market/opening of Central and Eastern Europe) into a spatial concept;
- (iii) to safeguard and develop 'polycentral' spatial and settlement structures;
- (iv) to protect the environment and natural resources.

In the new *Länder*, priority is given to ensuring an efficient settlement structure by strengthening and devel-

oping the system of central places. The spatial distribution of the large centres and the favourable development of small and medium-sized centres of industry and services in the old federal *Länder* prove that the principle of decentralized concentration very much meets the population's accommodation requirements and industry's need for commercial sites.

- The decentralized settlement structure has contributed considerably to the good or even very good locational conditions for business in Germany.
- This structure will ensure that most people will continue in future to have a share in the general prosperity.
- Further spatial concentration would, on the one hand, aggravate spatial overcongestion in a few growth areas and, on the other, would markedly reduce the development of areas located far from agglomerations.
- Excessive spatial concentration would, in most cases, favour the old *Länder*, thus rendering the improvement of living conditions in the territory of the new *Länder* more difficult.

The guidelines for regional planning characterize future spatial structures in terms of the following main areas:

- (i) settlement structures;
- (ii) environment and land use;
- (iii) transport planning.

The main principles for future spatial development contained in the guidelines are reported in the following.

Principles for settlement structures

The spatial and settlement structures in Germany are highly interdependent. In spatial terms, the division of labour and exchange of services between the various regions are increasing. At the same time, the differences between urban and rural areas are narrowing in wide areas of the country. City networks, urban landscapes, urbanization, suburbanization, concentration trends, changing spatial functions, as well as a growing differentiation among rural areas and increasing cross-border cooperation are among the basic determinants underlying recent spatial development trends.

¹ See Federal Ministry for Regional Planning, Building and Urban Development 1993.

The larger agglomerations in Germany are motors of economic growth for spatial development in the entire country. Yet at the same time their efficiency is being increasingly impaired by expanding passenger-car traffic and the deteriorating environment. Problems of supply and waste disposal, pronounced bottlenecks in the housing sector, lack of premises and generally rising prices, are the consequence.

The following agglomerations are subject to particular pressure thus requiring relief (see Map 30):

- (i) Greater Berlin,
- (ii) Hamburg,
- (iii) the Ruhr area,
- (iv) the Düsseldorf/Cologne area,
- (v) Greater Frankfurt,
- (vi) Greater Stuttgart,
- (vii) Greater Munich.

Other agglomerations suffering certain pressures can be found in and around Bremen, Hanover, Saarbrücken, Mannheim and Nuremberg, as well as in the new *Länder*, in Leipzig, Dresden and Halle.

With regard to settlement structures the main future strand of action in the new German *Länder* is the development of urban systems. As can be seen from Map 30, the following urban systems – located entirely in the new *Länder* or linking old and new *Länder* – are seen as the basis for decentralized concentration by the Federal Government.

- (i) Hanseatic urban systems of Bremen, Hamburg, Kiel, Lübeck, Schwerin, Wismar, Rostock, Stralsund, Greifswald, extending further towards Szczecin (Stettin).
- (ii) Urban system of Hanover, Braunschweig, Magdeburg, Brandenburg, Potsdam, Berlin, Frankfurt-on-Oder.
- (iii) Urban system of Brandenburg/Greater Berlin (known as the Third ring).
- (iv) Urban system of Halle/Leipzig/Dessau.
- (v) Urban system of Dresden/upper Elbe valley, Chemnitz, Zwickau and extending further towards Plauen

and Hof (as well as towards the Thuringian network).

- (vi) Thuringian urban system of Gera, Jena, Weimar, Erfurt, Eisenach, linking up with Bad Hersfeld, Fulda and Kassel.

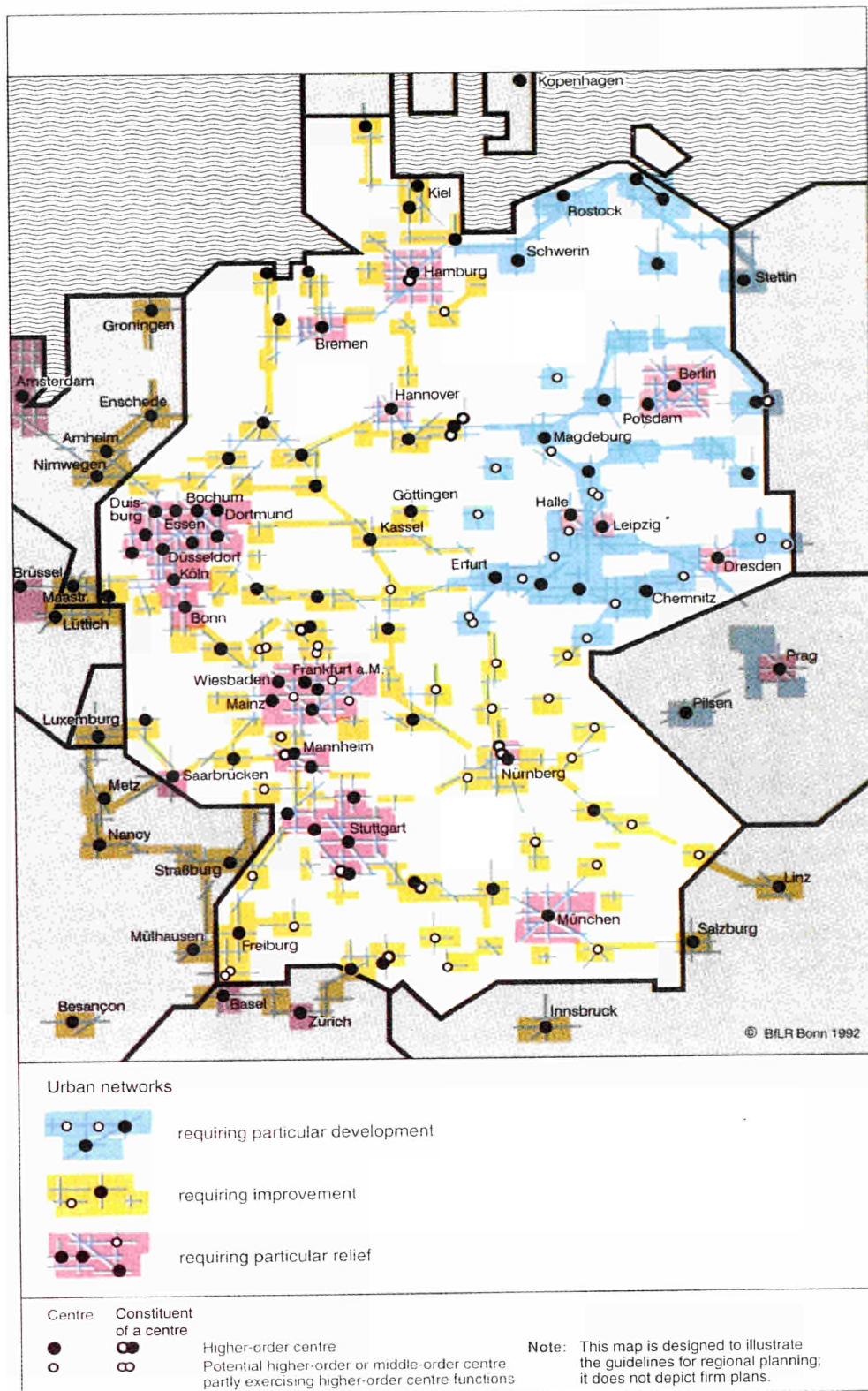
From the federal viewpoint, some sparsely-populated regions are facing particularly pressing structural difficulties and adjustment problems. In the old *Länder*, this applies mainly to parts of northwest Germany (East-Friesland), to the Eifel region and to the Oberpfalz (Upper Palatinate), and, in the new *Länder*, to large parts of north-east Germany, but also to districts east and south-east of Berlin. It is particularly true for the regions bordering on Poland and the Czech Republic.

The sparsely-populated regions in the new *Länder* are comparable with those in the old *Länder* only to a certain extent: by Central European standards their population density is low, and their structural weaknesses are distinct, both quantitatively and qualitatively.

In order to safeguard and ameliorate the spatial and settlement structures in these regions, the following endeavours must be made:

- (i) concentrating development schemes on selected focal points that may be expected to exercise a profound effect on their hinterland;
- (ii) combining infrastructure and high-quality workplaces in well-developed central places;
- (iii) safeguarding basic levels of supply, for instance by defining lower population density thresholds, above which supply facilities are considered reasonable;
- (iv) designing promotion schemes selectively, orienting them specifically to the bottlenecks and potentials encountered in individual regions;
- (v) strengthening intercommunal cooperation and supporting regional development concepts;
- (vi) consolidating planning and administration capacities through territorial and administrative reforms in the new *Länder*;
- (v) balancing the distribution of funds to assist the protection of natural resources throughout the country.

Map 30. General principles for settlement structures



Source: Federal Ministry for Regional Planning, Building and Urban Development 1993.

Principles for the environment and land use

The high degree of interdependence in Germany's spatial and settlement structures has resulted in a marked increase in land use conflicts. Having in mind the general objective that natural resources must be safeguarded the priorities in the free spaces differ substantially depending on their geographical location, either close to, or far away from, agglomerations.

According to the guidelines, around agglomerations, the top priority is to preserve and improve the (remaining) free spaces in order to safeguard efficient spatial structures at regional level. In areas of national importance for their natural resources, water or scenery, the use of free spaces must be increasingly oriented to the protection of resources. If land is attributed to any purpose in areas of outstanding ecological importance the priority must be given to protection and maintenance of resources. These areas sometimes fulfil important functions as recreation areas. In areas that suffer from particular environmental burdens, whether situated close to agglomerations or not, precedence is given to the reduction and remedy of environmental damage. Such areas need to be relieved and/or redeveloped.

Ecological redevelopment and economic development are not mutually exclusive, but mutually enhancing. Particularly in the new German *Länder*, the elimination of serious damage to the environment (mainly soil and groundwater pollution) is a prime goal – mainly in traditional monostructural areas around Leipzig, Halle, Chemnitz and Dresden (see also Map 31).

As can be seen from Map 31, in the new German *Länder* emphasis is put on preservation and improvement of environmental conditions in and around the major urban areas of Rostock, Greater Berlin, Magdeburg/Dessau, as well as Erfurt, Halle/Leipzig, Chemnitz and Dresden. Moreover, transregional recreational functions are to be developed along the coastal area in Mecklenburg-Western Pomerania, on the axes between Greater Berlin and Neubrandenburg, Szczecin, Magdeburg and Cottbus. Nature conservation is a priority in Mecklenburg-Western Pomerania, northern Saxony-Anhalt as well as the areas adjacent to the Czech border.

Principles for transport planning

The unification of Germany and the end of the division of Europe are opening up new prospects of increased traffic flows from west to east and vice versa which require efficient transport axes. The existing infrastructure in

Germany cannot serve such needs. Especially in the agglomerations and urban networks the transport infrastructure is currently under pressure from the concentration of local, regional and interregional traffic.

Accordingly, means of transport with high transportation capacities (railways and buses) must be given priority in large conurbations. In areas of high population density, integrated spatial and traffic planning must attach priority to local public transport and ensure relief from transit road haulage traffic. This also implies that communes on the periphery must be serviced by rapid, highly efficient local public transport systems. The envisaged regionalization of local public transport is intended to make a valuable contribution to this end.

In future, 'combined goods transport' (road, rail and waterway) is given priority. The main north-south lines but also the main east-west connections (Hanover-Berlin, Ruhr area to Dresden) afford potential for transferring interregional traffic from road to rail (see also Map 32).

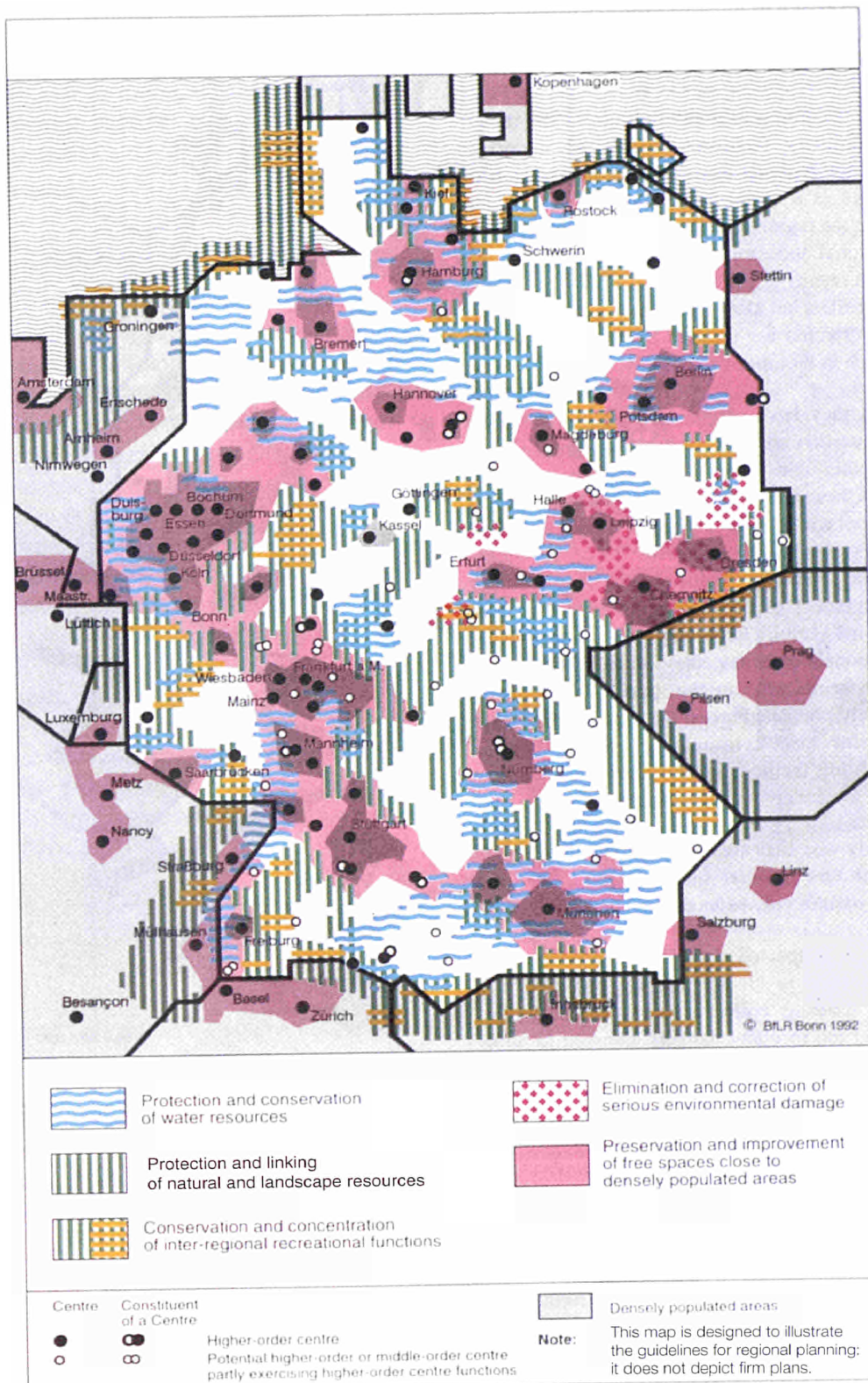
As can be seen from Map 32, at European level, and with regard to the new German *Länder* construction of a route across the Fehmarn Belt to southern Scandinavia but also the establishment of a new route from Hamburg to Szczecin and from Scandinavia via Mecklenburg-Western Pomerania, Berlin, Dresden and Prague to Vienna is given priority, which in turn might cause environmental problems in the areas along this route.

6.4. Policy scenario

The principles for future spatial development deliver elements for the policy scenario presented in this chapter. While in a trend scenario there is clear evidence for developments towards unbalanced spatial structures taking place, in a policy scenario future strands of action are assumed in order to equip the new German *Länder* with appropriate locational strengths, thus providing for harmonious spatial patterns in the long term.

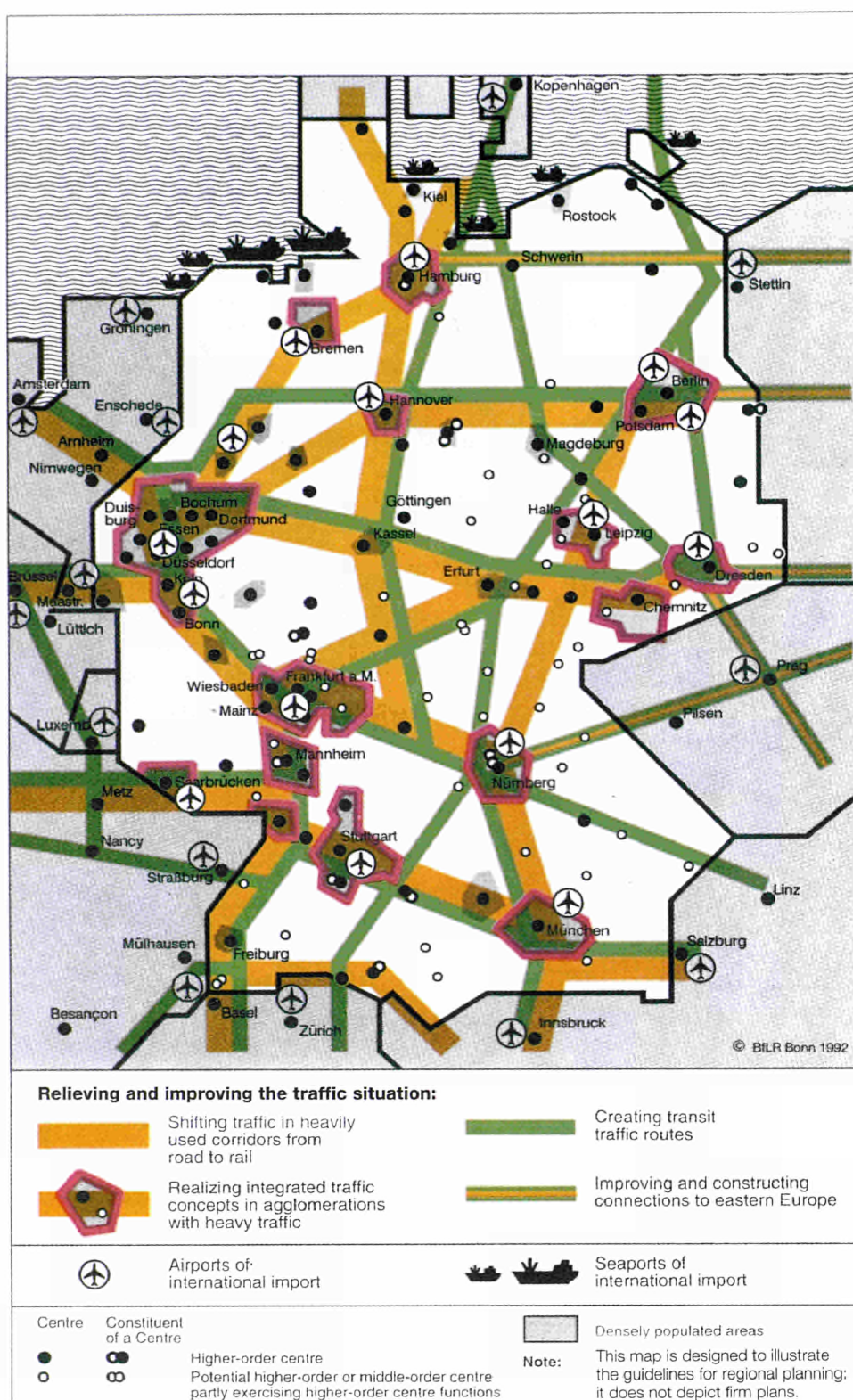
Whereas general economic trends bear impact upon spatial structures too, the focus of the policy scenario is on those aspects which can be influenced by spatial policies. Moreover, interactions between spatial and macroeconomic trends are not mono-directional. On the one hand spatial labour-market trends, migration or sectoral patterns are a result of macroeconomic developments. On the other hand balanced spatial structures

Map 31. General principles for the environment and land use



Source: Federal Ministry for Regional Planning, Building and Urban Development 1993.

Map 32. General principles for transport planning



Source: Federal Ministry for Regional Planning, Building and Urban Development 1993.

facilitate economic growth. Thus, for instance, decentralized concentration in western Germany always has been considered as one of the 'motors' of economic growth.

In a policy scenario the principal aim is to lay the grounds for equilibrated spatial development thus providing for the necessary preconditions of economic growth.

The general direction of long-term strategies for spatial development in the new German *Länder* is the establishment of a harmonious hierarchy of 'polycentral' development poles. With regard to physical infrastructure the basis for suburban expansion and for improved regional network provision is to be provided, in order to facilitate regional spread effects. Urban renewal, environmental rehabilitation, tourism development, mostly in attractive rural areas and smaller centres, natural resorts and preservation of free spaces, are additional dimensions to be considered. Moreover, in a policy scenario, the potential role of the east German border regions in the long term deserves particular attention. These facets are discussed in more detail in the following.

Development centres in a policy scenario

The following Map 33 shows development centres in the long term together with the pattern of possible growth axes which could prove particularly important for spatial development in the new *Länder*.

In a policy scenario, the most important development centres in the process of structural and spatial reorganization in the new *Länder* will be:

- (i) Greater Berlin – the Berlin/Potsdam metropolitan area;
- (ii) the cities Leipzig, Chemnitz and Dresden in Saxony;
- (iii) the cities Erfurt, Jena and Weimar in central Thuringia;
- (iv) Magdeburg and Halle in Saxony-Anhalt, whereby Halle is considered as a development centre together with Leipzig in Saxony;
- (v) Schwerin, Neubrandenburg, Rostock as well as Stralsund/Greifswald in Mecklenburg-Western Pomerania;
- (vi) Frankfurt-on-Oder and Cottbus in Brandenburg.

A complete overview of central places according to the order of centrality is displayed in Annex I, Maps 3 to 7.

If policies towards sustained suburbanization succeeded and if moreover regional transport networks became effective, several areas of excellence could take shape. These are presented in the following.

Greater Berlin: the new megalopolis

In a policy scenario, Greater Berlin will become an urban area of worldwide importance. This development can only be fostered, however, if the regional transport network is harmonized (between east and west Berlin) and brought up to high quality standards with sufficient reach. On this basis urban spread effects, a functioning regional division of labour and harmonious development of the core region can be realized, thus avoiding spillover effects and over-congestion.

The negative aspects of long-term prospects of Greater Berlin in a trend scenario are presented in Chapter 6.2. To avoid developments towards unbalanced regional growth, rapid structural change is imperative. Manufacturing industries previously attracted to locate in the now inner-core region of Berlin are to be relocated in a broad radius in the surroundings, service functions in the core need to be built-up instead, a competitive market position among the most important metropolitan areas in Europe and worldwide needs to be defined.

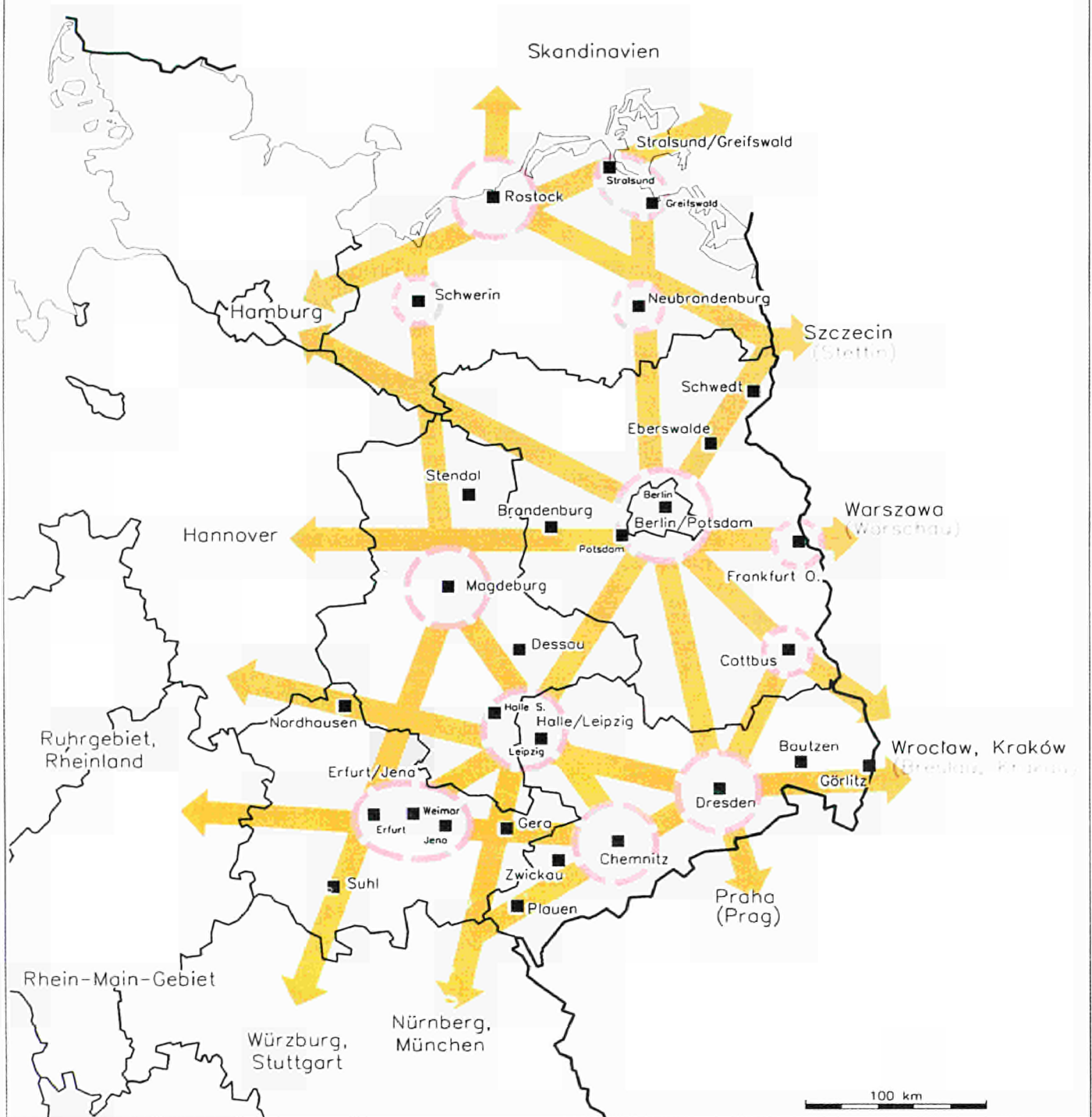
In the light of unification a 'natural' comparative advantage of Berlin can be seen in the proximity of human resources from the eastern and the western part of the city. The combination of know-how of the formerly separated workforce, for instance, could be used to establish Berlin as the focal point of East-West relations worldwide.

In the case of Greater Berlin positive prospects are there; autonomous growth effects are visible too. In the long run, however, much remains to be done with regard to spatial development strategies. A new megalopolis is not born over-night. Paris, London or New York have clear positions and profiles in the highly competitive market of centres of worldwide importance – not yet, the case of Berlin.

The Saxon triangle: Leipzig/Halle, Dresden, Chemnitz

In Leipzig there is clear evidence for substantial growth potentials in the long term. Over the last three years 83 banks settled in Leipzig, 60 of which run operational

Map 33. Development centres of the new German *Länder*
 The spatial planning concept drawn up by the Federal Building Ministry



Development centres
 (graphic representation)

Position at 1 October 1991

Borders:

Development region

■ Important place
 (selection)

— Federal Republic
 of Germany

— Land (State)



interregionally significant axis
 and/or growth axis

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 Geography and Regional
 Planning, Bonn 1991

business. This now makes Leipzig the second location in Germany for financial services (after Frankfurt). Moreover, large investments are undertaken in the field of retail trade. Thus, for instance, Quelle, a major mail order retail company, invests over ECU 500 million for a new distribution centre; the Leipzig fair will be modernized in a similar order of magnitude; other large-scale investment projects in related sectors add to this.

Therefore, a clear competitive profile of Leipzig takes shape. In the long run, improved regional transport networks provided, spatial spread effects could be realized.

The Leipzig/Halle, Dresden and Chemnitz conurbations could evolve into a so-called cooperating triangle in the long term. A positive sign for this development perspective is the agreement between the Government of Saxony and of Saxony-Anhalt to establish the joint Halle-Leipzig development area which may trigger growth effects in the long term. Despite considerable adjustment problems they have coped relatively well with the recent upheavals in comparison with other cities in the new *Länder*. All four centres enjoy above-average development potential and are currently among the most preferred investment locations in the new *Länder*. Despite the present economic and structural changes they will each maintain their characteristic profile in the long term: Dresden in its role as Saxony's regional capital, as an administrative and service centre with a high degree of research activity; Leipzig as an important industrial and trade location and a trade fair centre, and also one of the most densely-populated urban agglomerations in Germany as a whole; Chemnitz as an important business area, particularly in mechanical engineering; Halle as a research and industrial centre.

It may be assumed that the degree of business and socioeconomic or cultural interpenetration between these centres will increase. This trend will intensify if, with the aid of expansion measures in transport infrastructure (for example by the construction of suburban railway links with a maximum travelling time of one hour between each city, and of ring roads around the inner cities), this triangle becomes more closely integrated. Furthermore, as in Berlin, more companies and some of the residential population will move out of the inner cities and into nearby surrounding areas in the long term – a trend which is already evident today in parts of Leipzig.

If movements of population and of industry coordinated in a long-term development perspective, spatial spread effects are likely to occur. These could also help to reduce urban congestion and consequential environmental problems.

The centres close to western Germany: Magdeburg, Erfurt, Weimar, Jena

Compared to other cities in the new *Länder* the cities of Magdeburg, Erfurt, Weimar and Jena in central Thuringia also have relatively good development prospects. They benefit from a proximity to west German industrial centres and from their position on transport infrastructure axes (towards Hanover/Kassel/Frankfurt/Nuremberg, to Halle/Leipzig and towards Berlin/Chemnitz/Dresden). Links to these conurbations will be further improved by the planned extension and new construction of road and rail networks in the new *Länder* (see Chapter 4.4). The cities' relatively favourable development perspectives stem from their high research potential (above all in the traditional university city Jena), the comparatively high level of qualification among the workforce (due to the importance of the optical precision engineering, electronic and pharmaceutical industry) and the resulting above-average attractiveness for investors. Furthermore, as cities rich in tradition, they also have a largely unexploited tourism potential. The prerequisites for the development of this potential include considerable improvements in urban development and particularly in the conservation of historical monuments.

Thus, apart from the Berlin/Potsdam metropolitan area, the centres with the greatest chance of catching up with industrial locations in western Germany in the long term are concentrated in the south of the new *Länder*. Magdeburg, in Saxony-Anhalt, ranks in an intermediate position as a development centre. With its technical university and research centres it benefits both from its location with good transport links (rail, road and water) and its function as the administrative centre of Saxony-Anhalt.

Compared to these centres development prospects in the northern parts of the new *Länder* tend to be different. There are, of course, centres in Brandenburg and Mecklenburg-Western Pomerania which are important in terms of long-term growth and development, but in comparison with the aforementioned centres these will develop less dynamically.

Rostock: a special case

Rostock is a special case in view of the problems it is currently experiencing as a port and shipbuilding centre, and also as regards its development potential and bottlenecks. In the long term it can be expected that, once its current adjustment problems are overcome, Rostock

will consolidate its role as the most important industrial centre in Mecklenburg-Western Pomerania and as one of the present European Community's main Baltic Sea ports. A positive impetus for development will result from the expansion of existing road and rail links and the construction of new links, providing better connections to both the cities of Lübeck and Hamburg in western Germany and to the major seaport and industrial centre Szczecin in western Poland. This should consequently diminish one of the main development obstacles in the northern parts of the new *Länder* – their poor integration into the infrastructure network.

Moreover, Rostock avails of potential for tourism development. Thus, for instance, in the former GDR, Rostock was already recognized worldwide for architectural solutions in urban renewal.

Much will depend, however, on the specialization of Rostock with regard to both the surrounding, mostly rural areas and potentially competing areas with a similar profile, such as Szczecin.

Frankfurt-on-Oder – the most important location on the Polish border

A further development centre which may gain greater importance in the long-term, is Frankfurt-on-Oder on the border to Poland. As regards accessibility and potential for innovation, this city avails of locational advantages compared to other border locations in the new *Länder*. Provided cross-border cooperation is intensified, it could become a catalyst for the restructuring and adjustment processes taking place on both sides of the border. However, its insular position in a predominantly sparsely-populated rural environment could lead to relocation effects draining the surrounding regions and also to increased flows of commuters over the German-Polish border. The city's present problems – high unemployment, high transport volumes, extensive environmental pollution and a poor housing market – could consequently intensify. However, the expansion of the rail and road links to Berlin – and thus to the important economic centres in eastern and western Germany – will generate positive impulses. The same is true of the planned infrastructure projects on the Polish side (Frankfurt-on-Oder-Wrocław-Katowice and Poznań-Warsaw) which, if realized, will engender a considerable improvement in transport links to Polish centres of economic activity, to the Baltic States and the CIS. However, the increasing volume of transit traffic (see Part I) will produce negative effects, leading to further environmental problems in the Frankfurt-on-Oder area.

In the long term much will depend upon laying the grounds for integrated cross-border development. Similar to the positive effects of German unification on the accessibility of areas along the former border between eastern and western Germany, the accession of Poland to the Community could release growth effects for this region.

Intermediate centres of importance to spatial development

The Schwerin, Neubrandenburg and Greifswald/Stralsund or Cottbus development centres shown on Map 33 remain important in future development processes in comparison with their sparsely-populated surrounding areas. Compared to the centres described above their future growth prospects will be relatively low if not complemented with appropriate structural policies, since they are experiencing major adjustment problems (Cottbus) and/or possess below-average potential (Stralsund/Greifswald, Schwerin, Neubrandenburg).

With regard to these intermediate centres the locations in Mecklenburg-Western Pomerania (Schwerin, Stralsund, Greifswald, Neubrandenburg) are in particular need of restructuring. After unification the previous industrial monostructure in Mecklenburg-Western Pomerania (shipbuilding represented 27% of industrial employment in this *Land*) started shifting towards food industries. In combination with tourism development, this sectoral shift could lead to the stabilization of the intermediate centres in Mecklenburg-Western Pomerania. The surroundings of these centres are attractive (seaside with agricultural hinterlands in the case of Stralsund/Greifswald; natural resorts and largely unpolluted environment in the case of Schwerin and Neubrandenburg). Schwerin benefits, moreover, from its position as the administrative centre of Mecklenburg-Western Pomerania. In the long term, this facilitates the establishment of additional service functions.

For the development of intermediate centres in Mecklenburg-Western Pomerania, construction and expansion of the routes indicated in Map 34 is an important precondition to increase accessibility.

With regard to Cottbus, prospects are different. On the one hand Cottbus avails of a more diversified economic structure with some growth in industries such as building and construction, trade, transport and communications. On the other hand, however, contamination of the environment is severe (for example, lignite mining areas in Lausitz), and investments risk

being distracted either to nearby Polish areas or to Greater Berlin. In the long term for Cottbus, much will depend upon sustained environmental sanitation and establishment of a clear profile with regard to competing areas. Cross-border division of industrial activities, similar to the 'Oder-Neisse Grenzland' concept might be part of this profile.

Rural areas in a policy scenario

Mecklenburg-Western Pomerania and Brandenburg have to bear less industry-related burdens than other *Länder*. In the case of rural areas in Mecklenburg-Western Pomerania, long-term improvement can only be brought about by development of tourism and ancillary structures, including environmental protection and agribusiness. In the long run, the region could also be of interest to small and medium-sized high-tech companies, as has been the case in Schleswig-Holstein. A prerequisite would be, however, that 'soft factors' display better quality, and that transport conditions improve.

Brandenburg, with the exception of the surroundings of Berlin, will have to face a different situation. For this region it will be of decisive importance whether regional planning succeeds in channelling impulses from Berlin in a way to generate spread effects throughout the rural areas of Brandenburg. It goes without saying that the institutional and political preconditions for this process would be better if Berlin and Brandenburg were merged into one federal State.

Although net outmigration has been considerable, the villages of the northern regions have remained relatively stable especially where agricultural functions have been retained. As more and more such functions are becoming obsolete, ever more villages are becoming areas in need of development.

In rural areas, the major challenges for the new *Länder* are the rehabilitation of small and medium-sized towns and the further development of intermediate centres in the northern regions.

More diversified economic structures are needed with agriculture as an integral part and additional adequate functions based on prevailing geographical conditions. The emphasis could be laid on tourism, services, agriculture and fisheries, small and medium-sized industries. Efforts are to be made to provide a wider range of jobs and a more attractive variety of social and leisure facilities.

The development potentials of the rural areas in the new German *Länder* can be tapped if a functioning spatial division of labour can be achieved among the various regions. This entails, for instance, making available facilities for recreation in the rural areas of Brandenburg surrounding Greater Berlin, or the development of coastal tourism in Mecklenburg-Western Pomerania servicing nearby agglomerations such as Schwerin or Neubrandenburg. The eastern areas of Mecklenburg-Western Pomerania and the north-eastern parts of Brandenburg, in the long term, might also be established as recreation zones for Szczecin.

Long-term prospects of the border regions in a policy scenario

The breakdown of the Central and East European markets has hit producers in the new German *Länder* severely, all the more since most of their products can hardly compete in western markets in the short term. Promoting economic and trade relations between the new German *Länder* and the countries of Central and Eastern Europe in the long term would serve a double purpose. It would support economic recovery in eastern Germany and it would help to stabilize the economies in Central and East European countries and diminish disparities between the East and the West, an important aspect with a view to future integration processes in Europe.

In a policy scenario spatial development is to be organized in such a way as to put the new German *Länder* in a position of a turntable of the East-West trade relations. In the long term, the Visegrad countries will be members of the Community. This development can be used to prepare for spatial structures in the new German *Länder* which can constitute valuable assets in this light.

The effects of Poland and the Czech Republic and Slovakia joining the Community could be similar to the effects of unification upon the fringe regions along the previous intra-German divide: accessibility would increase significantly for the border regions on both sides. In combination with modernization and expansion of appropriate transport links, additional locational advantages could accrue to the border regions.

Cross-border cooperation

In a policy scenario, cooperation between the border regions should focus on:

- (i) joint utilization of comparative advantages,

- (ii) the expansion and improvement of the transport and communications infrastructure as a prerequisite of harmonious spatial development,
- (iii) environmental protection,
- (iv) preservation of areas for recreation and as nature reserves.

Some cross-border cooperation has developed between regional and local authorities. Such links are necessary in order to coordinate development concepts and projects which affect both sides of the border.

An essential precondition for intraregional and interregional economic relations to develop the German border regions is an efficient transport and communications infrastructure. It is true that these areas have relatively dense road and rail networks, but to meet the requirements in the wake of structural change these need to be modernized and linked to the transport networks of the neighbouring countries.

The regions of eastern Mecklenburg-Western Pomerania, Cottbus and Upper Lausitz especially but also the neighbouring Polish regions have seen economic restructuring accompanied by substantial redundancies. The emergence of a common labour-market with strongly divergent wage levels, while offering the chance of adjusting living conditions, also implies considerable social risks.

On the one hand, the favourable investment conditions in Poland may lead to a drain of investment capital from Germany into Poland. This may cause problems for the economic recovery of the regions of the new German *Länder*. On the other hand there are chances for joint German-Polish ventures in new markets. In a policy scenario it is conceivable, for instance, that Germany and Poland agree on a division of labour with labour-intensive sectors concentrating on the Polish side and capital- and research-intensive sectors on the German side.

Compared to the restructuring process in the new German *Länder* the transition to market economy structures in the neighbouring countries of Poland and the Czech Republic lags behind – which is attributable to the lack of market economic know-how. The human capital available in the regions along the border offers the possibility to install, for instance, regional training facilities and to organize the transfer of know-how between the regions. The centres of such transfers could be the uni-

versities of Szczecin, Frankfurt-on-Oder, Cottbus and Zittau.

Additional fields of collaboration include, for instance, environmental protection through the utilization of the Oder river for inland navigation, for drinking water supply and for industrial or agricultural use.

The major towns in the areas close to the border like Szczecin, Schwedt, Frankfurt-on-Oder, Cottbus, Görlitz need to develop their relations with their environs in order to strengthen their economic attractiveness. Progress of their economic development will also benefit the surrounding areas on both sides of the border.

In the areas along the borders between Germany, Poland and the Czech Republic, there are extensive nature reserves and recreation areas. Utilization of these potentials would be greatly facilitated by cross-border tourism concepts, such as the project 'Grenzlandkooperation Oder-Neisse'. This programme aims at cross-border tourism development (for example cross-border hiking trails), as well as joint industrial activities (across the German, Polish, Czech borders), environmental protection, transport planning and scientific collaboration.

There are also rather close cross-border relations between the Czech Republic and the *Länder* of Saxony and Bavaria. For instance there is close cooperation at the ministerial level (between the economics and environment ministries) to develop 'guidelines and targets for an environmentally benign development of the Saxon-Bohemian border area' and a 'trilateral development concept for the Bavarian, Saxon and Czech border area'. Moreover, there is cross-border cooperation at the district and local levels.

In the light of further European integration and of imperative structural change especially in the neighbouring countries of Poland and the Czech Republic, the targets and principles of cross-border spatial development should be defined soon. It is conceivable for example, to define the border areas as a particular spatial category, as a 'transborder development area' and to promote their development accordingly. This could help to prevent the emergence of an economic vacuum in the east German border area.

Policy scenario: summary of spatial implications

Map 34 displays the main spatial patterns emerging in a policy scenario in the long term. With regard to

development centres, improved regional transport networks induce spatial spread effects thus also benefiting the surrounding, mostly rural areas. Major growth impulses will be generated in Halle/Leipzig and Dresden as well as in and around Greater Berlin. With regard to Berlin, the policy scenario assumes timely transfer of administrative functions to the capital, consequential expansion of services in the core region, relocation of industry in the surroundings (the so-called *Speckgürtel*), and harmonization of metropolitan transport in the eastern and western part of the area.

Rural areas and intermediate centres benefit from tourism development, upgraded recreational facilities and expanded agribusiness. Coastal tourism is expanded mostly due to increased accessibility in the framework of construction and expansion of appropriate transport routes.

The new border areas take advantage of increased cross-border development on the lines of the 'Oder-Neisse Grenzland' concept outlined above. Also the Cottbus area is equipped with the necessary locational prerequisites for growth through expansion of the route from Berlin to Wrocław.

With regard to the environment, additional pollution through increased traffic flow is reduced to the extent possible by pronounced development of combined transport for major transit routes. Moreover, rapid sanitation of contaminated areas, mostly located in the southern industrial zones of the new German *Länder*, provides additional premises for economic development.

In general the policy scenario entails equilibrated spatial structures in the new German *Länder* in the long term. There are, however, two areas of concern which become apparent also in the policy scenario.

- (i) On the one hand the construction and expansion of transport networks generally involves the risk of additional environmental pollution. Besides the development of combined transport, the only feasible solution to reduce additional pollution is a sustained shift from road to rail not only for goods but also for passenger transport. The existing conflict between increased accessibility and environmental improvement can be illustrated by coastal tourism

development which cannot be expanded without increased accessibility which in turn, however, reduces natural attractiveness.

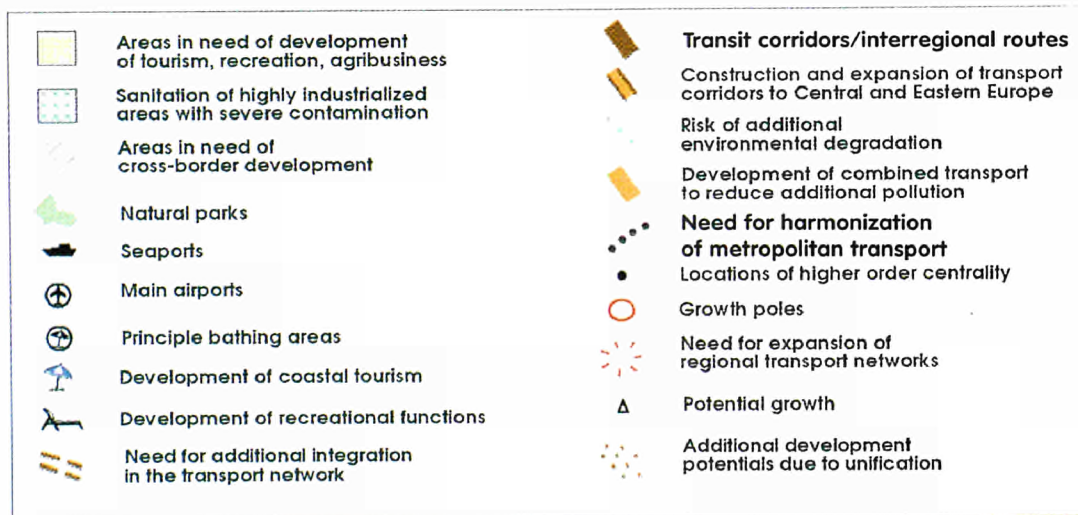
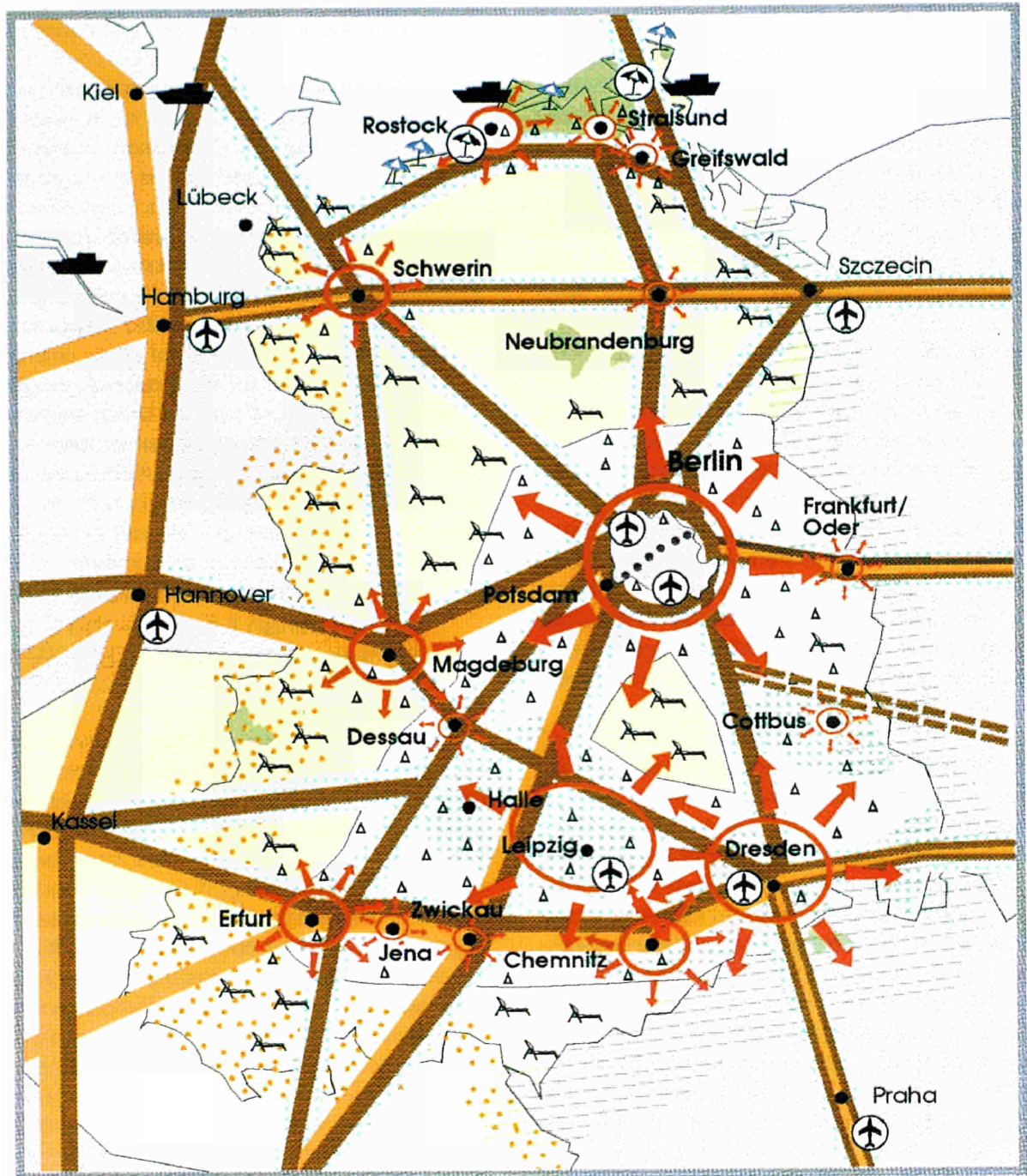
- (ii) On the other hand the planned transit routes to Poland and the Czech Republic are in need of coordinated development. According to current official plans and programmes there is a notable discrepancy between perceived needs for improved transit corridors from the point of view of spatial planning and actually envisaged construction and expansion of transport links between Berlin and Warsaw, Cottbus and Wrocław, or Dresden and Prague as well as Katowice. It appears that there is little emphasis on extending traffic routes beyond the agglomerations up to the respective borders. Under these circumstances it is questionable whether the integrative development towards Central and East European countries is likely to take place.

6.5. Likely and desirable trends in the new German *Länder* – the scope for long-term spatial policies

The subsequent overview displays the margin for real change through spatial policies in the new German *Länder*. As can be seen, in the absence of active spatial development policies few signs point to desirable long-term trends. The low degree of suburbanization, lack of high quality regional transport networks, contaminated areas in need of redevelopment, large military areas becoming available for new purposes, alternative and additional economic activities needed in rural and declining industrial areas, the special problems of the new border regions, are examples for aspects of spatial development which are unlikely to result in desirable spatial patterns according to present and foreseeable future trends.

Against this background serious efforts to achieve equilibrated spatial structures in the new German *Länder* are imperative. As indicated in the above overview, the scope for spatial policy includes the development of rural areas, cross-border cooperation, expansion of regional transport networks, environmental protection and rehabilitation and coordinated planning of major routes.

Map 34. Policy scenario – long-term spatial patterns in the new German *Länder*



	Trend scenario	Policy scenario
Coastal area	Some coastal tourism near Rostock and on the island of Rügen	Broadening of coastal tourism through construction of transport infrastructure (e.g. Lübeck-Greifswald, Berlin-Stralsund/Greifswald route)
Rural areas, north	Pronounced depopulation, only highly-selective stabilization	Development of recreational functions, tourism, agribusiness, small and medium-sized industries
Rural areas, south, and rural areas around Berlin	Some impulses from recreational functions, accompanied by depopulation	Sustained development of recreational functions; social and economic stabilization
Fringe areas to western Germany	Continued commuting to adjacent western regions	Integration into the labour-market of nearby centres through expansion of catchment areas
New border areas	Destabilization through wage competition, persisting remoteness due to lack of appropriate transport infrastructure	Impulses through cross-border cooperation, increased accessibility through construction of new routes
Central places of higher-order centrality	Insularity persists	Suburban expansion and regional transport networks ease spatial spread effects
Intermediate centres	Persisting economic problems	Development of industrial and service functions for rural surroundings, promotion of tourism
Dominant growth poles Greater Berlin/Potsdam	Overcongestion, persistently sluggish labour-market due to industry moving into surrounding areas and service functions not being built-up to sufficient scale, continued commuting from east to west Berlin; delay in moving administrative capital functions to Berlin for several years	Coordinated suburbanization (moves of industry and of population); sustained development of service functions in the inner city; steady harmonization of metropolitan transport; spinoffs for surrounding areas (so-called <i>Speckgürtel</i>)
Halle/Leipzig/ Dresden/Chemnitz	Stabilization of core areas mostly in Leipzig and Dresden, insular growth, overcongestion	Active development of cooperating triangle; expansion of regional transport networks; spatial spread effects
Environmentally-damaged industrial areas	Continued environmental problems	Rapid sanitation of contaminated areas; consequential increased availability of sites
Areas adjacent to transit routes	Additional strain on the environment through increased transit traffic	Reduction of additional damage in adjacent areas through development of combined transport



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