Regional Development along the Former Inner-German Border after Unification

(Preliminary Version)

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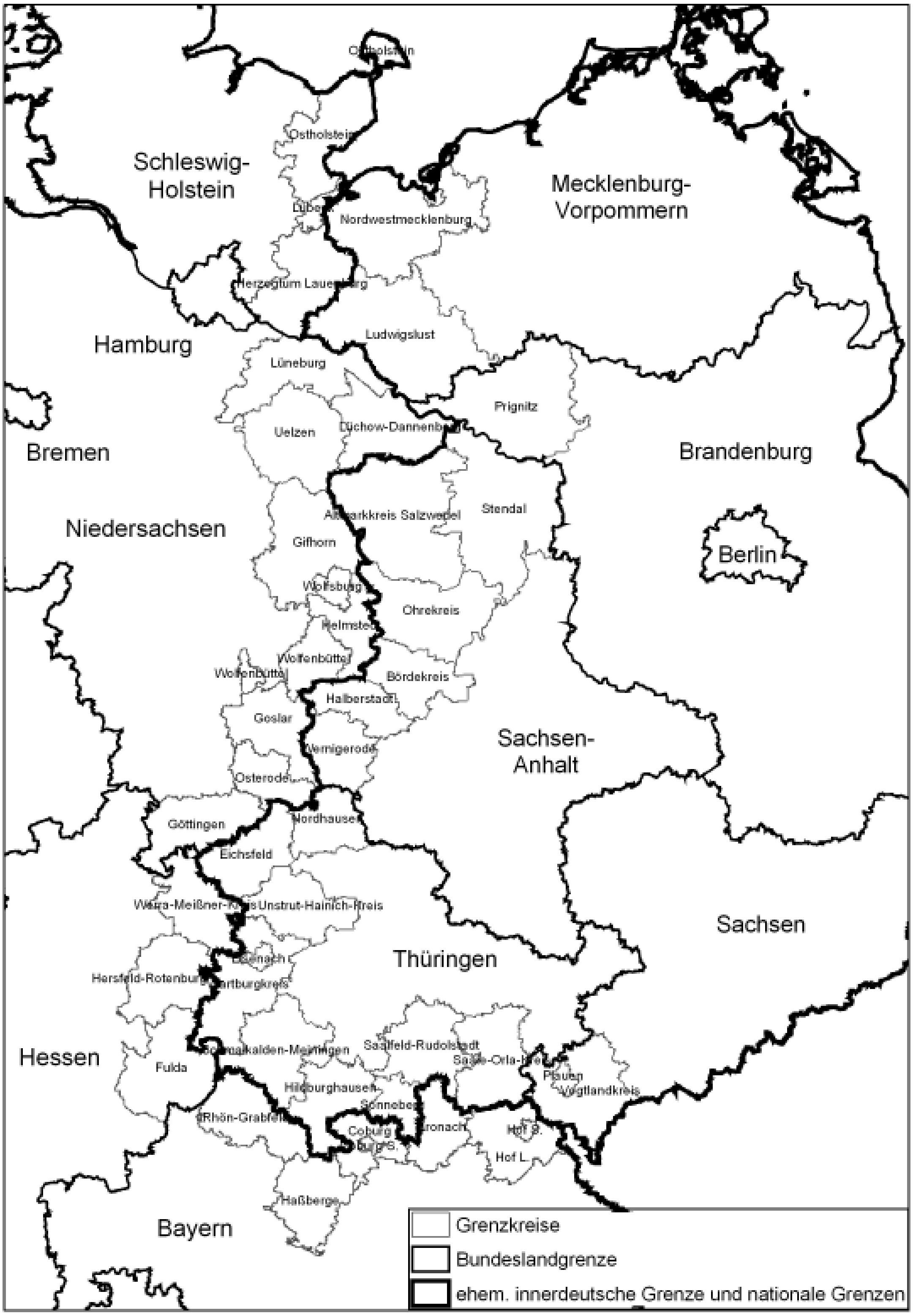
1. Introduction

With the coming enlargement of the European Union towards the east and also with the presently discussed question about deepening the EU, boundaries are a major topic in the contemporary academic setting. The *Institut für Wirtschaftsforschung Halle* (Halle Institute for Economic Research) attends to this subject since long. In this respect, the question about the impact of opening borders on the regions located in their direct vicinity is of high importance. These border regions are peripheral ones, and thus, they suffer of several problems, e.g. a truncated hinterland or a lack of infrastructure. Therefore, a basic hypothesis is that borders are obstacles to economic development. On the contrary, their opening should lead to a positive contribution to regional economic development, as the integration into a larger market must be generally seen as a benefit. This does not exclude the possibility that also negative impacts for some regions are possible.

The question about the consequences of a gradual opening or even the complete abolition of borders is not that easy to answer when an economic gradient between the regions on the one and on the other side of the border exists. This case matches to the very eastern regions in Germany next to Poland and Czechoslovakia. They fear to become the losers of the EU-enlargement, because the other nations can produce much cheaper. Similar expectations have the Polish and Czech areas near the border: they frighten foreign domination and a loss of competitiveness, as e.g. their industrial output often does not satisfy EU-standards (GUZ-VETTER 2002, 27). These fears may derive also from the fact that hardly any historical examples for an economic integration of two unequal partners can be found. In this respect an



Map1: Areas of study

interesting case study can throw some light on the possible effects of that kind of integration, namely the German unification in 1990.

The paper aims at describing and analysing the consequences of the German unification for the eastern and western regions (see map 1) along the former inner-German border during the first decade of the unified Germany. Even 13 years after unification, there are significant differences between the old and the new *Bundesländer*: Although the East experienced a higher annual growth rate during the years 1992 to 2000, e.g. the GDP per inhabitant and per employee, the unemployment rate, the ratio between inhabitants and employees, investment per employee in manufacturing and mining the number of business units per inhabitant, export share or the salary per employee in manufacturing and mining showed significantly worse results for the year 2000. With regard to the former border regions, nearly the same results apply. Therefore, it is still possible to speak of border regions – of course not in a political context, but still in an economic one. Thus, the basic question of the paper is whether the regions on one specific side of the former border notably profited from unification, whether it is a mutual benefit or whether only some regions on both sides benefited more than other areas.

2. Methodology

In the following, the economic situation of the western and eastern border region are analyzed. Due to a lack of data, no extensive analysis of the time before unification can be done and thus, the main focus is on the period after 1990. The statistical information for the border region as a whole and the individual areas there are interpreted by comparing the data with the averages for East and West Germany, respectively. Therefore, a 5% confidence interval is calculated around the average values to find out statistically significant differences between the border regions and the sub-national means. In Germany two major types of administrative units exist, namely the *Landkreise* (counties), which are more rural areas, and the *kreisfreie Städte* (towns not belonging to a county as they from an administrative unit of their own). As the economic performance between the *Landkreise* and *kreisfreie Städte* normally differs, the averages for East and West are calculated according to this classification. This set of information will enable to answer the question whether a) some general disparities between the border regions and the other parts of East and West Germany exist and b) with a look on the individual parts of the border region whether some areas show a different economic performance. Secondly, the connection between the border regions are under consideration. Hereby, the commuters and the investment in manufacturing and mining are looked upon. As strong economic disparities between the eastern and western border region in direct vicinity exist and comparative advantages can be easily exploited, it can be expected that strong linkages between those two parts exist.

3. Main Hypotheses

Border regions are mostly peripheral areas, and therefore they are often equated with laggard areas. Nevertheless, also major towns are often in vicinity of borders. Mostly, they show a better economic performance and may serve as growth poles for the rural hinterland. In the case of an integration of two market areas, it can be assumed that spread effect from these towns transcend the former border line and affect the now integrated hinterland. A second origin of these effect can be certain industrial agglomerations with a powerful economic performance. Therefore, the regions on the other side of the border may profit from these two kinds of growth poles. In these cases, distance is a major factor, and a gradient should be conceivable. Thus, the nearer is a weaker region to an economically stronger one, the higher the effects. Two kinds of interaction are important in this respect: investment flowing from the stronger side to the weaker one and commuting in the opposite direction.

4. Empirics I: The border regions before unification

4.1 Western Border Region

The West-German regions along the former iron curtain were subsidized since 1951 to compensate the sudden peripheral position after WW II and the poor integration into the West-German infrastructure due to the main East-West orientation of the roads or railway tracks. The goal of the *Zonenrandförderung* was to promote economic development in a peripheral area with various means, namely investment subsidies and the provision of infrastructure for both firms and households (cf. NUPPNAU 1974, 35ff.). After unification, or more correctly due to a phasing-out in 1994, this public in-flow of money was stopped, as the reason for fostering these regions became obsolete. Looking back to the 1980s[1] the growth rate of gross added value for the years 1986 to 1990 was significantly lower in the rural parts of the border region than in the other German *Landkreise*, but the variable gross added value per employee did show any significant differences. Of course, some parts of the western

[1] Due to some data limitations only the period 1986 to 1990 can be taken into account.

border region showed a significant better economic performance. Tab. 1 gives the data in detail.

Tab. 1: Gross added value per employee 1990 and growth rate of gross added value 1986 to 1990 in the western border region

	GDP per employee 1990 in DM	**Growth rate GDP 1986 – 1990 in %**
Lübeck	74.427 (-)	4,6 (-)
Herzogtum Lauenburg	75.206 (+)	3,2 (-)
Ostholstein	69.137 (-)	6,6 (o)
Wolfsburg	82.613 (o)	4,1 (-)
Gifhorn	66.982 (-)	7,7 (+)
Göttingen	73.175 (o)	6,0 (-)
Goslar	62.918 (-)	5,5 (-)
Helmstedt	69.581 (-)	0,9 (-)
Osterode am Harz	68.155 (-)	5,8 (-)
Wolfenbüttel	67.995 (-)	5,5 (-)
Lüchow-Dannenberg	63.929 (-)	6,3 (o)
Lüneburg	65.365 (-)	7,0 (+)
Uelzen	72.956 (o)	4,2 (-)
Fulda	73.193 (o)	7,2 (+)
Hersfeld-Rotenburg	78.191 (+)	5,7 (-)
Werra-Meissner-Kreis	69.803 (-)	9,0 (+)
Coburg (town)	69.581 (-)	6,3 (+)
Hof (town)	84.457 (+)	10,8 (+)
Coburg	67.859 (-)	6,3 (-)
Hof	63.343 (-)	5,2 (-)
Kronach	56.727 (-)	6,5 (o)
Rhön-Grabfeld	61.936 (-)	7,4 (+)
Hassberge	53.849 (-)	5,8 (-)

Source: Statistisches Landesamt Baden-Württemberg, calculation of IWH.

+: siginificantly higher than West German average, $\alpha = 0,05$
o: no siginificant differences to West German average, $\alpha = 0,05$
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Averages for rural and urban areas calculated separately.

Only two regions, namely Fulda and the town of Hof, showed for both variables normal or even significantly higher expressions than average. On the contrary, eight parts of the western border region, i.e. Lübeck, Goslar, Helmstedt, Osterode am Harz, Wolfenbüttel, Coburg, Hof and Hassberge had lower values than the West German means. Further data to characterize the economic situation during the 1980s are presently not available, therefore only these two values give hints about the position of the western border region in comparison to West Germany.

4.2 Eastern Border Region

Economic development was constricted in the eastern border region due to political decisions. To compilicate reaching the border to West Germany and to prevent refugees from east to west, access to the border region was restricted. This had, of course, also an impact on the economic development. Unfortunately, only very limited data on the eastern border region are presently available on the level of the counties. Information on the next higher aggregated area, the so called *Bezirke*, are widely distributed (e.g. STAATLICHE ZENTRALVERWALTUNG FÜR STATISTIK 1989), but due to the spatial shape of the *Bezirke*, they do not give any valuable hints on the economic development in the border region. The only information presently available on the county level is on professions. Due to some definitorial differences between the statistics of the GDR and of today´s Germany, these data should not be compared with up-to-date information on professions (e.g. ISCO-88). Nevertheless, they can show whether the occupational structure of the time before unification influenced the present economic performance, e.g. whether those counties with a formerly higher share of employees in industry and a smaller one in agriculture could better react on the transformation process in East Germany. Tab. 2 gives a selection of some branches. The branches not taken into account are construction, post, telecommunication and transport, commerce, the so called non-productive branches, light industry and energy. It has to be noted that the counties then and now are not completely identical so that these figures give only hints.

Tab. 2: Selected occupational structure in the eastern border region 1989, values in %

	Agricul-ture, hunting, forestry	Manufacture of chemicals	Manufacture of metal and metal products	Manufacture of cars and electro products	Light Industry	Manufacture of textile products	Manufacture of food products and beverages
Prignitz	26,9	4,6	0,0	12,9	3,3	0,0	7,1
Ludwigslust	27,4	0,2	0,0	13,4	5,8	0,4	6,5
Nordwestmecklenburg	42,3	0,0	0,0	5,1	4,6	0,4	4,4
Plauen	0,1	2,1	0,1	23,3	6,8	16,5	4,7
Vogtlandkreis	8,9	1,2	0,0	14,7	15,7	17,3	3,6
Bördekreis	23,9	1,8	0,0	14,6	6,3	0,0	6,3
Halberstadt	17,4	0,6	0,0	13,3	4,6	0,1	7,3
Ohrekreis	26,1	7,6	0,0	10,9	5,6	0,3	4,1
Stendal	25,8	1,5	0,0	7,6	5,6	0,1	4,4
Wernigerode	9,2	1,0	3,9	22,7	8,7	0,6	3,3
Altmarkkreis Salzwedel	31,0	6,2	0,0	7,6	3,8	0,1	5,3
Eisenach	Included in Wartburgkreis						
Eichsfeld	12,8	3,8	0,0	12,8	11,2	13,0	4,5
Nordhausen	11,3	8,0	5,5	18,1	3,7	1,7	6,9

Wartburgkreis	9,9	8,8	2,5	33,2	4,6	1,0	3,8
Unstrut-Hainich-Kreis	17,9	2,5	0,0	12,4	7,0	15,3	4,4
Schmalkalden-Meiningen	9,1	0,9	0,6	30,6	10,1	1,0	3,2
Hildburghausen	16,9	0,3	0,0	15,3	19,9	1,3	4,8
Sonneberg	5,5	3,7	0,6	24,3	31,2	0,1	2,2
Saalfeld-Rudolstadt	8,3	13,5	8,6	16,2	8,2	0,0	4,6
Saale-Orla-Kreis	19,8	1,0	0,2	16,0	16,1	2,9	4,4

Source: Bundesamt für Bau und Raumforschung, calculation of IWH

As tab. 2 shows, the northern parts of the border region had extraordinary high shares of employees in agriculture, i.e. Prignitz, Ludwigslust, Nordwestmecklenburg, Bördekreis, Ohrekreis, Stendal and Altmarkkreis Salzwedel. A second sector was dominant in some regions, namely manufacturing of cars and electro products. The *Kreise* Plauen, Wernigerode, Wartburgkreis, Schmalkalden-Meiningen and Sonneberg were specialized in these products. It can be expected that latter regions had a better position for economic development as former.

5. Empirics II: The border regions after unification

5.1 Western Border Region

Aggregating all rural parts of the western border region, they showed a remarkably poor economic development in 2000 compared to the other *Landkreise* in West Germany: E.g. there were significantly lower values for GDP per employee and the growth rate of GDP from 1992 to 2000, the unemployment rate was significantly higher there. Furthermore, the number of plants in manufacturing and the average salary per employee in this sector were much lower than the West German means. But a closer look on the individual parts of the border region shows a different image, as the border region is not a homogeneous belt. Tab. 3. gives the exact values.

Tab. 3: Economic indicators for the western border region

	Real annual growth rate GDP 92-00 in %	GDP per employee 2000 in Euro	Unemployment rate in %	Firms in Man. + Min. per 1.000 inhabitants 2000	Investment per employee in man. + Min. 2000 in Euro	Export share in man.+ min. 2000 in %	Salary per employee in man. + min 2000 in Euro
Lübeck	-0,6 (-)	23.992 (-)	13,6 (+)	2,8 (-)	5.280 (-)	27,9 (-)	34.000 (-)

Herzogtum Lauenburg	0,7 (o)	15.631 (-)	8,4 (+)	3,4 (-)	5.347 (-)	30,4 (o)	32.150 (o)
Ostholstein	-0,3 (-)	16.658 (-)	10,3 (+)	3,0 (-)	6.674 (-)	19,1 (-)	28.320 (-)
Wolfsburg	3,0 (+)	64.390 (+)	10,5 (o)	1,8 (-)	17.680 (+)	n.a.	n.a.
Gifhorn	0,9 (+)	12.786 (-)	12,5 (+)	2,3 (-)	5.750 (-)	n.a.	n.a.
Göttingen	-0,4 (-)	21.968 (o)	13,3 (+)	3,4 (-)	7.147 (o)	47,7 (+)	32.480 (o)
Goslar	-1,2 (-)	17.987 (-)	12,7 (+)	3,8 (-)	8.919 (+)	38,9 (+)	30.850 (-)
Helmstedt	-1,0 (-)	12.949 (-)	11,8 (+)	2,6 (-)	8.598 (+)	n.a.	n.a.
Osterode am Harz	-0,3 (-)	20.568 (o)	9,7 (+)	4,8 (o)	6.088 (-)	37,8 (+)	32.910 (o)
Wolfenbüttel	-0,1 (-)	12.522 (o)		2,9 (-)	4.366 (-)	n.a.	n.a.
Lüchow-Dannenberg	1,2 (+)	16.043 (-)	18,1 (+)	4,5 (o)	4.066 (-)	32,5 (+)	29.370 (-)
Lüneburg	0,1 (-)	17.642 (-)	10,8 (+)	3,2 (-)	7.358 (o)	22,4 (-)	29.860 (-)
Uelzen	-1,7 (-)	17.314 (-)	11,0 (+)	3,9 (-)	11.204 (+)	3,3 (-)	26.290 (-)
Fulda	1,1 (+)	23.656 (o)	7,9 (+)	4,2 (-)	6.106 (-)	19,8 (-)	28.030 (-)
Hersfeld-Rothenburg	0,2 (-)	21.780 (o)	10,4 (+)	4,1 (-)	7.237 (o)	43,6 (+)	31.580 (o)
Werra-Meißner-Kreis	-1,2 (-)	17.513 (-)	13,3 (+)	4,8 (o)	4.986 (-)	28,4 (-)	28.330 (-)
Coburg (town)	0,3 (+)	41.826 (o)	10,2 (o)	4,8 (+)	9.787 (+)	44,1 (+)	32.840 (-)
Hof (town)	-1,3 (-)	30.703 (-)	12,5 (+)	4,8 (+)	3.111 (-)	25,1 (-)	26.790 (-)
Coburg	-0,6 (-)	21.038 (+)	7,3 (+)	6,3 (+)	4.479 (-)	27,0 (-)	26.600 (-)
Hof	-1,2 (-)	19.179 (-)	8,9 (+)	6,1 (+)	4.811 (-)	29,4 (-)	26.840 (-)
Kronach	0,6 (o)	20.598 (-)	8,0 (+)	7,8 (+)	6.410 (-)	28,4 (-)	25.410 (-)
Rhön-Grabfeld	0,5 (-)	20.013 (-)	8,6 (+)	4,9 (+)	4.753 (-)	38,9 (+)	29.180 (-)
Haßberge	2,7 (+)	19.233 (-)	6,8 (-)	5,0 (+)	4.845 (-)	22,8 (-)	28.950 (-)

Source: Statistisches Landesamt Baden-Württemberg, calculation of IWH.

+: siginificantly higher than West German average, $\alpha = 0,05$
o: no siginificant differences to West German average, $\alpha = 0,05$
-: siginificantly lower than West German average, $\alpha = 0,05$
Averages for rural and urban areas calculated separately.

n.a.: not available due to data protection

Ten years after unification, many parts of the border region show poor values concerning the economic development. Especially the very north, i.e. Ostholstein, Lübeck, partly Herzogtum Lauenburg, Lüneburg and Uelzen are examples in this respect. But also more to the south, some parts like Werra-Meißner-Kreis or Hof (town) cannot be regarded as economically prosperous. Only few *Landkreise* and *kreisfreie Städte* of the western border region have a significant better development concerning most indicators. These are Wolfsburg, Coburg (town) or Haßberge.

5.2 Eastern Border Region

A similar clear picture like in the western border region cannot be detected in the eastern one. Generally speaking, only the unemployment rate is significantly lower there due to the possibility to commute to the West (cf. ROSENFELD/KAWKA 2002, 61f.). Nevertheless, many spatial disparities can be detected within this belt, too. The data are given in tab. 4.

Tab. 4: Economic indicators for the eastern border region

	Real annual growth rate GDP 92-00 in %	GDP per employee 2000 in Euro	Unemployment rate in %	Firms in Man. + Min. per 1.000 inhabitants 2000	Investment per employee in man. + Min. 2000 in Euro	Export share in man.+ min. 2000 in %	Salary per employee in man. + min 2000 in Euro
Prignitz	4,7 (o)	35.104 (o)	20,7 (+)	4,7 (o)	8.948 (o)	20,5 (+)	21.650 (o)
Ludwigslust	3,5 (-)	34.743 (o)	13,8 (-)	4,9 (o)	8.232 (-)	7,5 (-)	20.200 (-)
Nordwestmecklenburg	5,5 (+)	36.242 (+)	15,6 (-)	3,8 (-)	7.669 (-)	5,9 (-)	21.450 (-)
Plauen	3,6 (o)	33.693 (-)	17,5 (o)	5,6 (-)	4.573 (-)	32,1 (+)	27.330 (o)
Vogtlandkreis	4,6 (-)	30.560 (-)	14,8 (-)	7,0 (+)	6.017 (-)	13,0 (-)	20.320 (-)
Bördekreis	6,9 (+)	38.849 (+)	18,3 (-)	4,2 (-)	7.903 (-)	23,6 (+)	21.880 (o)
Halberstadt	6,1 (+)	35.071 (o)	21,1 (+)	3,6 (-)	5.999 (-)	7,9 (-)	21.750 (o)
Ohrekreis	8,1 (+)	40.235 (+)	15,2 (-)	4,9 (o)	14.430 (+)	27,1 (+)	25.890 (+)
Stendal	3,5 (-)	36.961 (+)	22,0 (+)	3,5 (-)	15.969 (+)	7,6 (-)	21.080 (-)
Wernigerode	4,9 (o)	39.379 (+)	17,9 (-)	3,8 (-)	21.932 (+)	15,4 (o)	27.910 (+)
Altmarkkreis Salzwedel	5,7 (+)	36.204 (+)	17,1 (-)	4,3 (-)	11.407 (+)	11,1 (-)	20.070 (-)
Eisenach		30.975 (-)	14,8 (-)	4,0 (-)	14.494 (o)	n.a.	28.760 (o)
Eichsfeld	4,6 (-)	31.525 (-)	14,8 (-)	6,3 (+)	8.512 (-)	14,1 (-)	20.620 (-)
Nordhausen	2,6 (-)	36.816 (+)	19,5 (o)	4,1 (-)	6.095 (-)	12,7 (-)	22.990 (+)
Wartburgkreis	7,4 (+)	35.525 (+)	13,7 (-)	4,4 (-)	10.479 (o)	21,3 (+)	23.560 (+)
Unstrut-Hainich-Kreis	4,0 (-)	33.649 (-)	16,4 (-)	5,1 (+)	7.498 (-)	12,1 (-)	19.620 (-)
Schmalkalden-Meiningen	5,2 (-)	32.116 (-)	14,4 (-)	7,4 (+)	11.607 (+)	13,0 (-)	20.780 (-)
Hildburghausen	6,1 (-)	31.513 (-)	12,8 (-)	6,1 (+)	7.392 (-)	15,2 (o)	20.190 (-)
Sonneberg	5,8 (-)	30.482 (-)	10,8 (-)	7,4 (+)	6.568 (-)	26,9 (+)	20.360 (-)
Saalfeld-Rudolstadt	5,4 (-)	35.377 (o)	16,8 (-)	4,9 (o)	6.961 (-)	29,3 (+)	22.740 (o)
Saale-Orla-Kreis	5,2 (-)	33.434 (-)	15,0 (-)	6,0 (+)	8.666 (-)	22,8 (+)	21.060 (-)

Source: Statistisches Landesamt Baden-Württemberg, calculation of IWH.

+: siginificantly higher than West German average, $\alpha = 0{,}05$
o: no siginificant differences to West German average, $\alpha = 0{,}05$
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Averages for rural and urban areas calculated separately.

n.a.: not available due to data protection

The Landkreise Ohrekreis, Wernigerode, Altmarkkreis Salzwedel and Wartburgkreis show a much better economic performance than the East German average, but the values for Prignitz, Plauen, Vogtlandkreis, Stendal, Eisenach, Eichsfeld, Norhausen, Unstrut-Hainich-Kreis and Schmalkalden-Meiningen indicate that these regions had a significant poorer development after unification.

6. Connections between the regions

6.1 Investment

6.2 Commuters

To be included later.

7. Conclusion

The analysis of the border regions has shown that even in this belt consisting of 23 and 21 *Landkreise* as well as *kreisfreie Städte* spatial disparities are detectable. Apart from some areas, the western border region did not profit generally from unification. The findings are more positive for the eastern side of the former border. Here, the share of *Landkreise* and *kreisfreie Städte* with a positive economic development is higher. Those parts are in vicinity to the stronger areas on the western side. The existence of spread effects can be assumed. This should be a topic on the future research agenda.

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