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413 Report by Kristina van Deuverden

Population decline creating constant pressure on eastern German states and municipalities on the expenditure side

- Unification in 1990 created deep holes in new states' public budgets, but most have recovered
- Population decline in eastern Germany posing fiscal policy challenges
- Necessary investments often hindered by pressure to consolidate
- Financial equalization must consider effects of shrinking, aging population

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AT A GLANCE

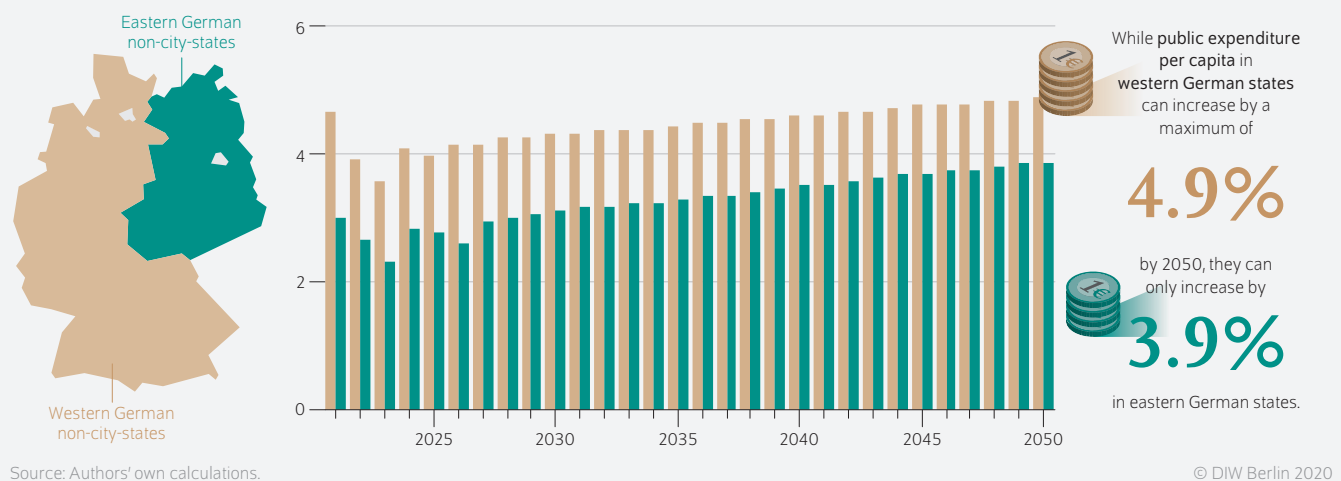
Population decline creating constant pressure on eastern German states and municipalities on the expenditure side

By Kristina van Deuverden

- German unification in 1990 created deep holes in the new states' public budgets
- However, most eastern German budgets have been showing surpluses for nearly 15 years now
- Strong population decline in eastern Germany poses fiscal policy challenges over the next years
- Pressure to consolidate public finance often hinders necessary investments; expenditure in the new states and municipalities will probably have to permanently lag behind those in western Germany
- Financial equalization should consider the effects of a shrinking and aging population

Spending scope will become permanently markedly lower in eastern German non-city-states than western German non-city-states

Change in adjusted expenditure per capita compared to previous year in percent



FROM THE AUTHORS

"Expenditure in eastern German states and municipalities will have to permanently remain behind that of western German states. There is little leeway for investments or other measures supporting growth. The existing differences in economic power will continue to increase over the years to come." — Kristina van Deuverden —

MEDIA



Audio Interview with Kristina van Deuverden (in German)
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Population decline creating constant pressure on eastern German states and municipalities on the expenditure side

By Kristina van Deuverden

ABSTRACT

As the German constitution aims for equal living conditions, a huge number of political measures to enhance the conditions in the new states¹ were undertaken after unification² (known as the "Aufbau Ost"). In the new states, expenditure per capita rose significantly over the average expenditure of the old states and their municipalities and huge budget deficits occurred. Beginning in the mid-1990s, expenditure in the new states developed noticeably more reservedly than in the old states. Although the gradual consolidation of public finances has been made significantly more difficult due to the population decline, the majority of budgets in the new states have had budget surpluses for nearly 15 years now. Despite this, the demographic change will soon again pose problems for eastern German budgets. The foreseeable population development will create permanent pressure on public expenditure, which will be much higher in the new states than in the old states. As a result, the eastern states' leeway in public budgets will be smaller compared to the western states', posing the danger that investments will be neglected and that regional policy measures for an economic catch-up process will be neglected. Therefore, policymakers should consider integrating the shrinking and aging German population as a factor in the federal fiscal equalization system.

¹ Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, and Thuringia are the new states from the territory of the former GDR. The old states according to this report's classification are Baden-Württemberg, Bavaria, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, and Schleswig-Holstein. The city-states of Berlin (partly on the territory of the former GDR), Hamburg, and Bremen (which belong to the old states) are excluded from the analysis.

² While the phrase "German unification" more commonly refers to German unification in 1871, in this report, it refers exclusively to the event in 1990.

German unification in 1990 was a historic chance as well as a major challenge. During the 40 years East Germany and West Germany existed, both countries developed in significantly different directions. The wealth gap was large. The economic power of the eastern German states was only a third of that of the western German states. Infrastructure in the east was inadequate, most firms were not competitive, and unemployment rose quickly. It was costly for policymakers to combat these issues and revenue in the new states was low as a result of their weak economic power. As a result, a high number of transfer payments were sent to eastern Germany.

The issues caused by unification were reflected in the budgets at multiple levels: federal and, most notably, the new states and their municipalities.³ High budget deficits quickly became apparent. This report outlines fiscal development since 1991. Due to the marked differences in budgetary structure, this report excludes German city-states (Berlin, Hamburg, and Bremen) and only refers to the non-city-states. Furthermore, the analysis uses aggregated budget data for the states and their municipalities. This is a reasonable approach because the municipal fiscal equalization and the assignment of fiscal responsibilities among the states and their municipalities is a state matter in Germany, with each state having their own regulations. Finally, this report examines the likely differences in the development of scope for expenditure in the new and old states.

This development can only be analyzed using the currently available data, which covers up to the end of 2019. Thus, the effect of the coronavirus recession cannot be included in a regional comparison of the future growth of public budgets. The power of the regional comparative statements are not diminished if the recession affects the states similarly. However, it is clear that the pressure to consolidate will be markedly higher than can be depicted in this report.

³ A large part of the financial burden was absorbed by the social security system.

High redistribution of tax revenue benefits the new states

When the newly founded states joined the Federal Republic of Germany, they adopted its laws and institutional policies, including its tax laws. However, complete integration in the federal financial equalization system—the complex process of distributing tax revenue between the states on the one hand and between the Federal Government and the states on the other—was not immediate.

While the tax revenue of a region is generally closely tied to its economic development,⁴ this only applies to a limited extent to the available tax revenue in public budgets. Financial equalization results in largely converging tax revenue per capita in the states' budgets.⁵ This means that the more the states' tax revenues diverge, the higher is the volume of redistribution.

After unification, this gave rise to the concern that incorporating the new states immediately would overtax the old states, especially the financially weak ones, given the existing differences. Instead, the German Unity Fund was established and distribution of tax revenues per capita was suspended temporarily. With the resources provided by the fund, per capita revenue in the new states was 113.5 percent of the revenue in the old states in 1994.

After the new states were integrated into the financial equalization system in 1994, they received higher federal grants and the amount of redistribution increased significantly. However, to not overburden the old states, the redistribution between the states was limited by lowering the degree of convergence. Moreover, the federal level made an even greater contribution with the Solidarity Pact I; per capita revenue in the eastern states was a good 1,000 euros higher than in the western states in 1995 (Figure 1). The Solidarity Pact II followed in 2005, with declining federal grants with a fixed end date in 2019.

Development of expenditure and budget balances

German state policymakers have little power in shaping the future of revenue. Policymakers' influence on tax revenues after distribution is limited, especially in the short term.⁶

⁴ However, tax revenue remains markedly lower in the new states compared to the old states, as their economic power would suggest. This is due to many things, such as the progressive tax system and the fact that incomes are lagging behind the level in the old states more than economic power. Cf. Kristina van Deuverden, "Auch nach 20 Jahren: Steuereinnahmen in den Neuen Ländern schwach," *Wirtschaft im Wandel 2* (Leibniz-Institut für Wirtschaftsforschung Halle: 2010): 91–104 (in German; available online).

⁵ Tax revenue is redistributed both between the states and from the Federal Government to the states. For a detailed description of the financial equalization system between 2005 and 2019, cf. Marius Bickmann, Kristina van Deuverden, "Länderfinanzausgleich vor der Reform: Eine Bestandsaufnahme," *DIW Wochenbericht*, no. 28 (2014): 671–682 (in German; available online). For an analysis of the measures that came into effect in 2020, cf. Kristina van Deuverden, "30 Jahre nach dem Mauerfall: Finanzschwäche der neuen Länder hält auch die nächsten drei Dekaden an," *DIW Wochenbericht*, no. 43 (2019): 782–790 (in German; available online).

⁶ While the municipalities can use tax factors for their most important taxes and have some autonomy for minor taxes, the states only have the right to determine the tax factor of the real estate transfer tax, which is only about five percent of total states' tax revenue, and they have only had this right since 2006.

State policy is conducted largely on the expenditure side, with corresponding consequences for budget balances.

In hindsight, despite all their differences, the development of the eastern German state and municipal budgets can be divided into three phases of development.

Phase I (early to mid 1990s): Inheritance from former GDR and "Aufbau Ost" cause large deficits

Despite the fact that allotments from the German Unity Fund raised revenue per capita in the new states significantly above the national average, their financial strength was rather low in light of the unification-related expenditure requirements.⁷ States and municipalities had to shoulder expenses with causes rooted in the past, such as the initially high number of employees due to the integration of former GDR institutional employees compared to the former West German states. They also had to shoulder the expenses due to country-wide social laws and had to finance a huge number of political measures to improve the equality of living conditions ("Aufbau Ost").

The key to the "Aufbau Ost" was mainly viewed in investments. Therefore, from the very beginning, investment expenditure per capita was markedly higher in the eastern states than in the western states (Figure 2). However, this also applied to other expenditures. For example, considerable resources had to be provided for the establishment of administration, especially local self-administration, which had not existed in the former GDR.⁸ Compared to spending per capita on intermediate consumption in the old states in 1996, expenditure in the new states was 123.5 percent. Personnel expenditure per capita was, despite the low wage level due to the high number of employees, about the same level as in the old states until 1996. However, interest expenses still played a subordinate role.

As a result, budget deficits per capita in the new states were about four times as high as the deficits in the old states until 1994. This is likely also due to the population loss. Emigration from the former GDR, which was significantly greater than expected, made it more difficult to adhere to budget plans.

Phase II (1995 to 2010): Solidarity Pact stabilizes public budgets

Although population loss in the eastern states grew over the 1990s (Table 1),⁹ the revenue situation in the new states improved with their integration in the financial equalization

⁷ This was partly the result of a political decision. When it was decided how the German Unity Fund would be endowed, it was taken into account that the new states and municipalities started without old debts in 1991. Thus, it had been assumed that there was leeway in terms of debt.

⁸ Cf. Stefan Bach and Dieter Vesper, "Finanzpolitik und Wiedervereinigung — Bilanz nach 10 Jahren," *Vierteljahresshefte zur Wirtschaftsforschung* 69, no. 2 (2000): 194–224 (in German).

⁹ Until 2010, the population in the former East German states (excluding city-states) was over 13 percent lower than it was in 1991. In Saxony-Anhalt, it had dropped by 19 percent.

Figure 1

Development of state and municipal budgets per capita¹

In euros



¹ Non-city-states only. Adjusted revenue and expenditure are shown. Due to the unavailability of consolidated data, the budget results of the states and municipalities had to be added together for the years 1995 and 2000, so there will be double counting to some degree.

Sources: Arbeitskreis VGR der Länder as of March 2020, destatis (2001–2010: accounting results, otherwise cash results); authors' own calculations.

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With the exception of 2010, due to the financial crisis, the budgets of eastern German states have been showing surpluses since 2006/2007.

system, primarily after the Solidarity Pact I came into effect in 1995. Nevertheless, the states and municipalities switched to more restrained spending behavior.

This change was primarily reflected in personnel expenditure and intermediate consumption. Despite the somewhat stronger wage increases in the new states, personnel expenditure per capita declined significantly compared to its level in the western German states, as the workforce was cut back considerably. In 2010, personnel expenditure per capita was at 85 percent of the corresponding expenditure in the former West German states. Intermediate consumption per capita declined from 123.5 percent of the expenditure of the old states in 1996 to over 88.5 percent in 2010.

In 1994, investment expenditure per capita was over 190 percent of the corresponding expenditure in the old states. While it remained markedly higher than in the western states, it declined gradually and was 128.5 percent by 2010. This gradual decline is partly a result of the Solidarity Pact II's degressive design and of the fact that its grants must be used for investments. On the other hand, it is also due to financing constraints of the eastern German states, which repeatedly used the investment grants to finance non-investment expenditure.¹⁰

In contrast, interest expenditure per capita grew until 2005. If this type of expenditure only played a small role at the beginning of unification, this changed quickly in light of the high level of credit financing, especially in the early 1990s, and the high interest rates during this period. By 2000, interest expenditure per capita was already at the same level as in the western German states and by 2005, it had achieved a level of 112.5 percent of the corresponding expenditure before beginning to gradually decline. After this, their level decreased gradually, as fiscal consolidation soon resulted in the first surpluses.

In 2005, Saxony was the first new state to experience a surplus, followed by Mecklenburg-Western Pomerania in 2006 and all other new states in 2007. The fixed amounts in the Solidarity Pact II, which the shrinking population did not influence, probably also contributed to budget stabilization. In the same way, however, both the degressive structure and the set end date of the Solidarity Pact II likely also played a role, as these factors probably incentivize consolidation.

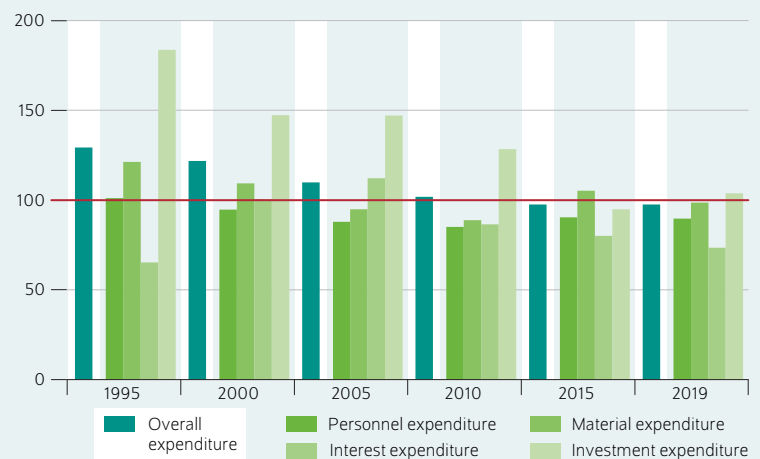
Phase III (from 2011): Surpluses for most eastern German budgets

Aside from the impact of the financial crisis, the aggregated budgets of the former East German states and their municipalities closed with surpluses until 2019.¹¹ Single expenditure items largely continued their development of the previous years.

Figure 2

Selected expenditure of eastern German states and their municipalities¹

In percent of the corresponding expenditure in western Germany



1 Non-city-states only. Adjusted revenue and expenditure are shown. Due to the unavailability of consolidated data, the budget results of the states and municipalities had to be added together for the years 1995 and 2000, so there will be double counting to some degree. Sources: Arbeitskreis VGR der Länder as of March 2020, destatis (2001–2010: accounting results, otherwise cash results); authors' own calculations.

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Despite convergence, expenditure per capita in eastern and western non-city-states differ markedly still.

Table 1

Population development in the states following unification

In percent, change compared to 1991

	1995	2000	2005	2010	2015	2020
Baden-Württemberg	3.2	4.6	6.2	5.8	9.0	14.6
Bavaria	3.5	5.2	7.1	7.4	10.9	16.8
Hesse	3.0	3.7	3.9	3.0	5.8	10.4
Lower Saxony	3.9	5.6	6.2	4.8	6.0	8.2
North Rhine-Westphalia	2.1	2.5	2.4	0.8	1.9	3.5
Rhineland-Palatinate	4.5	6.2	6.9	5.5	6.3	8.3
Saarland	0.5	-1.1	-3.0	-6.5	-7.6	-8.9
Schleswig-Holstein	2.7	4.9	6.4	6.2	7.9	11.1
Brandenburg	-1.1	0.8	-1.1	-3.7	-3.5	-1.9
Mecklenburg-Western Pomerania	-4.5	-7.2	-11.2	-15.1	-15.8	-16.5
Saxony	-3.5	-6.7	-10.5	-13.6	-13.8	-13.7
Saxony-Anhalt	-3.8	-8.2	-13.8	-18.9	-21.3	-24.8
Thuringia	-3.4	-6.5	-10.6	-14.9	-16.5	-18.8
Berlin	-0.1	-4.0	-5.1	-4.7	1.7	12.1
Bremen	-0.7	-3.7	-3.8	-4.4	-2.3	1.3
Hamburg	1.8	0.8	1.3	2.6	7.0	12.5
Old states (non-city-states only)	3.0	4.1	4.9	4.0	6.1	9.6
New states non-city-states only)	-3.2	-5.7	-9.6	-13.3	-14.2	-15.1
Germany (non-city-states only)	1.7	1.9	1.7	0.4	2.1	5.2

Sources: Arbeitskreis VGR der Länder, data as of March 2020; 14th coordinated population projection of the Federal Statistical Office, GZ-L2-W2 variant, authors' own projection and calculations.

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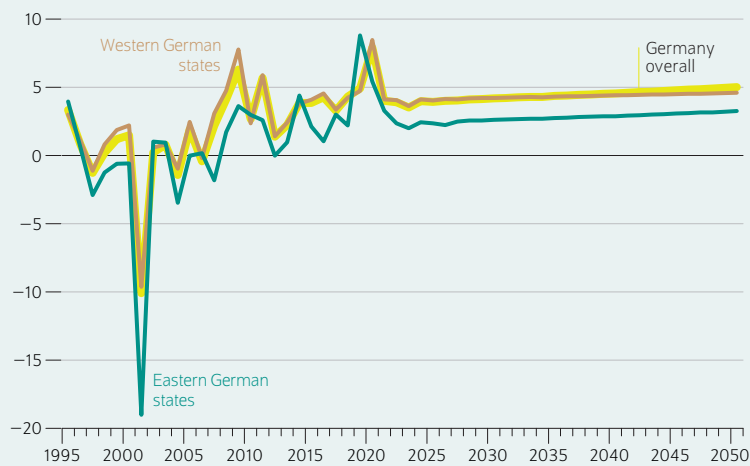
¹⁰ The use of the Solidarity Pact funds was regularly evaluated and misappropriation was frequently admonished in the reconstruction progress reports.

¹¹ Singular events caused the budget deficits for Mecklenburg-Western Pomerania in 2012 and Brandenburg in 2019.

Figure 3

Development of adjusted expenditure in the eastern and western non-city states

In percent, in current prices, change compared to previous year



1 Adjusted income and expenses are shown. Due to the unavailability of consolidated data, the budget results of the states and municipalities had to be added together for the years 1995 and 2000, so some results are included twice.

Sources: Arbeitskreis VGR der Länder as of March 2020, destatis (2001–2010: accounting results, otherwise cash results); authors' own calculations.

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Spending leeway will remain permanently lower in the eastern German states.

The improvement of public budgets in the new states was supported by the employment-intensive upswing in Germany, which led to a strong expansion of tax revenues and created budgetary leeway at all levels and in all regions.

However, institutional changes may have also played a role. With the introduction of the debt brake, the states have to present structurally balanced budgets beginning in 2020, increasing consolidation pressure for each of the German states. Ultimately, the demographic change during the 2010s did not burden the development of public budgets in the new states as heavily as they had been previously. From 2014 to 2016, the new states were even able to record temporary population gains due to refugee migration. However, demography will soon again be a factor impeding budgetary equilibrium.

Little fiscal leeway in the years to come despite strong starting point

Although they have experienced marked economic and financial weaknesses, eastern German budgets have generally improved over the past 15 years. However, the question is whether or not this is enough in order to equip the eastern states for the future. As a simulation shows, the answer is no.

However, the following scenario must not be understood as a forecast of future development. It is only intended to show the differing pressure to adjust budgets in the new and the old states in the years to come if the legal situation remains

unchanged, the historical correlation between economic development and tax revenue remains stable, and the population develops as predicted. These reported differences will remain when a sufficient amount of data is available to incorporate the impact of the coronavirus pandemic in the scenario. However, budgetary leeway in the coming years will remain significantly lower at all levels.

To calculate this, the development of tax revenue in the individual states is simulated in the first step.¹² In the second step, the regional tax revenue is distributed to the federation, states, and municipalities according to the fiscal equalization rules currently in force. Therefore, a medium-variant population projection by the Federal Statistical Office is used here.¹³ Finally, it is assumed that the state budgets are managed without structural new debt, as the debt brake provides for, and that the municipalities show balanced budgets, as stipulated in the municipal regulations. In this way, revenue determines the states' expenditure limit.

As in the past, total expenditure (Figure 3) as well as expenditure per capita in the new states will have to remain on a more restrained course than in the old states.

This is again driven by the population development. The population is shrinking and aging in all of Germany, but the new states will be disproportionately affected by these changes, as they experienced an especially high loss of young people following unification. This not only worsened the age structure visibly, but the birth rate declined as well. Thus, those of child-bearing age are relatively low in number, resulting in a low number of births today. Moreover, the unfavorable age structure is causing the population to shrink.

The variant of the population projection used here predicts a population decline in the new states until 2050 that is only slightly less in percentage terms compared to the years since unification. With the population in 2019 at almost 14.5 percent below its level in 1991, in 2050 it will be almost 14 percent less than in 2020 (Table 2). As previously, this affects the individual states to different degrees. Saxony-Anhalt will be hit the hardest, as it has lost almost 23 percent of its population compared to 1991. Compared to 2020, its population will have shrunk by a further 21 percent in 2050.

¹² The estimation corresponds to scenario 1 in Kristina van Deuverden, "30 Jahre nach dem Mauerfall: Finanzschwäche der neuen Länder hält auch die nächsten drei Dekaden an," *DIW Wochenbericht*, no. 43 (2019): 782–790 (2019) (in German; available online). The estimate is updated using data from until the end of 2019. Revenue from economic activity is also expected to increase by 3.5 percent per capita in all states. The remaining revenue will be projected based on their development in the years 2005 to 2019.

¹³ Variant 2 G2-L2-W2 assumes a stable birth rate of 1.55 children per woman, a moderate increase in life expectancy to 84.4 years for men and 88.1 years for women, and an average migration balance of 221,000 persons. Federal Statistical Office, 14. *koordinierte Bevölkerungsvorausberechnung* (2019) (in German; available online).

Conclusion: Demographic development particularly impacting eastern Germany

Overall, the demographic change will put significantly more pressure on the new states than on the old, not only in individual years, but permanently. This is not without issues.

On the one hand, the new states are increasingly facing a similar price development as the old: The wage level in the new states will be similar to the level in the old states as labor markets continue to empty, and prices for purchases in the common German market will also develop in line with western German states. On the other hand, the importance of cost stickiness—costs are decreasing in percentage terms by less than by per capita—is likely to play an increasing role. In addition, only expenditures that are also at the discretion of the state or municipality offer potential for cutbacks. This creates the risk that savings will be made, especially in investments, or that fewer funds will flow into regional policy support measures. Failure to spend on growth enhancing items, however, would be fatal.

Policymakers could combat this by considering the population loss when distributing tax revenue in course of the fiscal equalization system. For example, weighted population figures for the past three years could be used instead of the figure of the current year. In addition, a new kind of special grant could be established in case of suspected cost stickiness.

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Table 2

Population development in the states until 2050

In percent, change compared to 2020

	2025	2030	2035	2040	2045	2050
Baden-Württemberg	0.2	0.7	0.9	0.8	0.5	0.0
Bavaria	-0.1	0.5	0.5	0.1	-0.6	-1.6
Hesse	-0.2	-0.1	-0.3	-0.5	-0.9	-1.6
Lower Saxony	-0.2	-0.7	-1.5	-2.5	-3.7	-4.9
North Rhine-Westphalia	-0.6	-1.3	-2.2	-3.2	-4.4	-5.8
Rhineland-Palatinate	0.0	-0.4	-1.1	-2.4	-3.9	-5.6
Saarland	-1.6	-4.0	-6.3	-8.7	-11.2	-13.7
Schleswig-Holstein	0.0	-0.1	-1.0	-2.5	-4.5	-6.6
Brandenburg	0.5	0.2	-1.3	-3.9	-7.0	-10.0
Mecklenburg-Western Pomerania	-0.6	-2.4	-4.7	-7.4	-10.4	-13.5
Saxony	-0.7	-2.3	-4.1	-6.0	-7.9	-9.7
Saxony-Anhalt	-2.1	-6.0	-9.7	-13.0	-16.2	-19.2
Thuringia	-2.1	-5.6	-8.9	-11.8	-14.6	-17.3
Berlin	-0.2	0.9	1.7	2.7	3.7	4.4
Bremen	-1.2	-2.2	-2.9	-2.9	-2.5	-2.2
Hamburg	-0.4	-0.8	-1.1	-1.1	-0.9	-0.8
Old states (non-city states only)	-0.2	-0.3	-0.8	-1.5	-2.4	-3.5
New states (non-city states only)	-0.9	-3.0	-5.4	-7.9	-10.6	-13.2
Germany (non-city states only)	-0.3	-0.6	-1.3	-2.1	-3.1	-4.4

Sources: Arbeitskreis VGR der Länder, data as of March 2020; 14th coordinated population projection of the Federal Statistical Office, G2-L2-W2 variant, authors' own projection and calculations.

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