

Press Release 2/2024

Halle (Saale), January 12, 2024

Green transition and the debt brake: Implications of additional investment for public finances and private consumption in Germany

The German Climate Protection Act stipulates, among other things, that greenhouse gas emissions in Germany are to be reduced by 65% by 2030 compared to 1990 levels. The green investments required to achieve this target are likely to amount to around 2.5% of gross domestic product each year. According to the medium-term projection of the Halle Institute for Economic Research (IWH), the associated additional government spending on public investment and support measures cannot be financed from projected tax revenues. It is therefore to be expected that the tax burden on households will increase and private consumption will be curbed accordingly, if both the current form of the debt brake and the greenhouse gas reduction targets are maintained.

The German Climate Protection Act requires drastic reductions in greenhouse gas emissions that have far-reaching consequences for overall economic development and public finances. Investment has to increase by about 2.5% in relation to gross domestic product. A macroeconomic growth model helps assessing the consequences for private consumption and public households. A scenario in which there is no investment in climate emissions reduction beyond the current trend and the climate protection targets are missed serves as a benchmark. In this case, gross domestic product increases by 0.75% per year up to 2030, which is slightly less than in previous years.

In order to achieve the emission reduction targets, the use of fossil fuels must decrease more than is to be expected without further policy action. In principle, this could be achieved by accelerating the expansion of renewable energies. "Even if we assume that the rate of expansion of renewable energies doubles, gross domestic product will grow at an annual rate of just under 0.5%, which is slower than in the scenario without further emission reduction measures," says Oliver Holtemöller, head of the Macroeconomics Department and vice president at IWH. To estimate the effects on private consumption, it is assumed that the increase in the costs of green investments that are borne by the private sector is at the expense of other private investment activity. Furthermore, the state bears two thirds of the total investment costs by subsidising private investments and expanding public investments, and taxation on private households increases in order to comply with the debt brake. In

[no press embargo](#)

Press contact:
Stefanie Müller-Dreißigacker
Tel +49 345 7753 720
presse@iwh-halle.de

Research contact
Oliver Holtemöller
Tel +49 345 7753 800
oliver.holtemoeller@iwh-halle.de

Keywords
business cycle, climate protection,
debt brake, demography, economic
growth, emissions, Germany,
greenhouse gas, medium-term
projection, potential output, public
finances

Halle Institute for Economic
Research (IWH) – Member of the
Leibniz Association
Tel +49 345 7753 60
Fax +49 345 7753 820
Kleine Maerkerstrasse 8
D-06108 Halle (Saale)
Germany

P.O. Box 11 03 61
D-06017 Halle (Saale)
Germany

www.iwh-halle.de/en/

this case, the higher investments are at the expense of private consumption, which stagnates per capita, while it would increase by 0.2% annually in the scenario without the climate targets. The government revenue ratio increases in this case from 47% in 2022 to just under 51% in 2030 (49% in the scenario without further political measures). Burdens on private consumption would be less if investments were financed via public deficits. In this case and to the extent that foreign investors invested in the government bonds issued, the high German current account surplus would be somewhat reduced. This, however, means higher government interest expenditure in the future. If no additional investments are made but the climate targets are nevertheless met by restricting the use of fossil fuels, gross domestic product will stagnate and private consumption will fall slightly.

The extended version of the forecast contains three boxes (all in German):

[Box 1: On the revision of the production potential](#)

[Box 2: On the assumptions used for the projection](#)

[Box 3: On the formal structure of the growth model used](#)

Long version (in German)

Andrej Drygalla, Katja Heinisch, Oliver Holtemöller, Axel Lindner, Alessandro Sardone, Christoph Schult, Birgit Schultz, Götz Zeddies: Grüne Transformation und Schuldenbremse: Implikationen zusätzlicher Investitionen für öffentliche Finanzen und privaten Konsum, in: IWH, Konjunktur aktuell, Jg. 11 (4), 2023, 141–159. Halle (Saale) 2023.

Research contact

Professor Dr Oliver Holtemöller
Tel +49 345 7753 800
Oliver.Holtmoeller@iwh-halle.de

Press contact

Stefanie Müller-Dreißigacker
Tel +49 345 7753 720
presse@iwh-halle.de



IWH on X (Twitter)



IWH on LinkedIn



IWH on Facebook

The [IWH list of experts](#) provides an overview of IWH research topics and the researchers and scientists in these areas. The relevant experts for the topics listed there can be reached for questions as usual through the [IWH Press Office](#).

The Halle Institute for Economic Research (IWH) – Member of the Leibniz Association was founded in 1992. With its four research departments – Financial Markets; Laws, Regulations and Factor Markets; Macroeconomics; Structural Change and Productivity –, IWH conducts economic research and provides economic policy recommendations, which are founded on evidence-based research. With the IWH's guiding theme "From Transition to European Integration", the institute's research concentrates on the determinants of economic growth processes with a focus on efficient capital allocation in a national and European

context. Particular areas of interest for the institute are macroeconomic dynamics and stability, microeconomic innovation processes, productivity and labour markets, the dynamics of structural adjustment processes, financial stability and growth and the role of financial markets for the real economy.

The Leibniz Association connects 97 independent research institutions that range from the natural, engineering and environmental sciences via economics, spatial and social sciences to the humanities. Leibniz institutes address issues of social, economic and ecological relevance. They conduct knowledge-driven and applied basic research, maintain scientific infrastructure and provide research-based services. For further information, see <https://www.leibniz-gemeinschaft.de/en/>.