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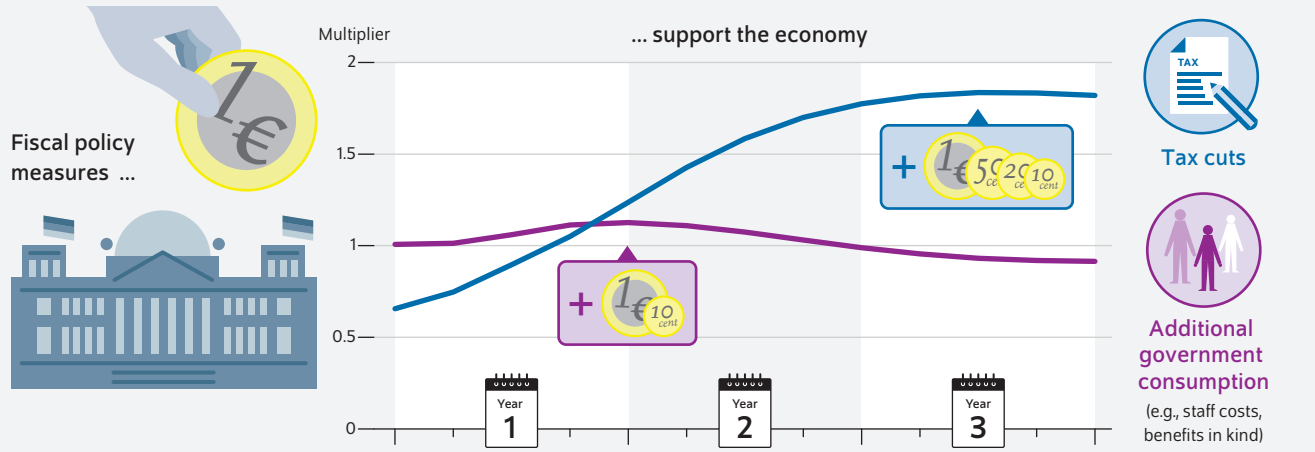
AT A GLANCE

Government consumption stabilizes the economy in the short run; tax cuts have a stronger albeit delayed effect

By Geraldine Dany-Knedlik, Alexander Kriwoluzky, Jo-Ya Kung, and Ruben Staffa

- The fiscal policy shift towards a more expansionary fiscal stance comprises not only the special fund and a relaxed debt brake but also tax relief – the impact of the instruments is decisive
- An additional euro of government consumption raises Gross Domestic Product (GDP) by around one euro in the short run; the maximum effect is already reached within one year
- Tax cuts take effect more slowly but have stronger effects over the medium run: for each euro of relief, GDP rises by around 1.80 euros after roughly two years
- Government consumption is particularly suited to stabilizing the economy in the short run, tax relief to providing stronger stimulus over a longer period
- Public investment, government consumption, and tax relief serve different economic policy objectives and should be combined in a targeted manner

An additional euro of government consumption increases gross domestic product by around one euro in the short run, while a one-euro tax cut has a delayed albeit stronger effect



Source: Own calculations.

FROM THE AUTHORS

"The fiscal policy shift comprises spending and tax relief. Our analysis makes clear that different instruments serve different objectives: Government consumption stabilizes the economy in the short run, while tax relief generates stronger macroeconomic stimulus over the medium run."

— Ruben Staffa —

MEDIA

Audio Interview with Ruben Staffa (in German)
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Government consumption stabilizes the economy in the short run; tax cuts have a stronger albeit delayed effect

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ABSTRACT

The reform of the debt brake and the special fund for infrastructure and climate neutrality have considerably expanded Germany's fiscal space. The associated fiscal policy shift not only opens up opportunities for additional public investment: The new funds can also be used for more government consumption. At the same time, the federal government has also provided revenue-side stimulus through tax relief for companies and private households. Since the different instruments compete for the same limited fiscal space, the question arises as to which approach yields the greatest macroeconomic effect per additional euro. The study finds that an additional euro of government consumption raises economic output by around one euro in the short run. The effect unfolds in the short run, reaching its maximum within one year. Tax changes, by contrast, have stronger albeit delayed effects: A tax cut of one euro raises economic output by around 1.80 euros over the medium run, with the maximum effect only reached after around two years. The analysis suggests that government consumption can stabilize the economy in the short run, while tax relief can generate larger macroeconomic stimulus over the longer run. When using the new fiscal space, it is therefore not only the volume that matters, but also how the measures are designed.

With the special fund for infrastructure and climate neutrality as well as the reform of the debt brake, Germany considerably expanded its fiscal space in 2025. While the special fund is primarily intended to enable additional public investment, the relaxation of the debt brake opens additional borrowing capacity, in particular for defense spending and for the federal states. The fiscal policy shift – from a consolidation path to a considerably more expansionary stance – is not limited to the expenditure side: With tax relief for companies – including expanded depreciation allowances and a gradual reduction of the corporate income tax – as well as further planned relief measures and reforms to strengthen growth and employment, the federal government is also providing revenue-side stimulus. This raises not only the question of the volume of the additional funds, but above all that of the appropriate mix of instruments: How strongly do expenditure-side and revenue-side measures each affect economic output? The impact of these measures is frequently described using so-called fiscal multipliers. They show by how many euros gross domestic product (GDP) rises or falls when the government spends an additional euro on consumption or provides private households and companies with more or less income through tax changes.[1] The size of these multipliers determines how effectively government stimulus can stabilize the economy or promote economic development.

The empirical literature shows that the size of fiscal multipliers can depend considerably on the assumptions made about the short run interactions between government consumption, tax revenue, and economic output.[2] This report estimates fiscal multipliers for Germany using an approach that systematically draws on theoretical insights and the institutional features of the German fiscal system in order to explicitly take these short run interactions into account.

1 The revenue measure considered here comprises net social contributions in addition to taxes. For readability, the following refers to taxes for short.

2 Karel Mertens and Morten O. Ravn (2014): A Reconciliation of SVAR and Narrative Estimates of Tax Multipliers. Journal of Monetary Economics 68(S), S1–S19 (available online, accessed July 6, 2026. This applies to all online sources in this report, unless otherwise noted).

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On this basis, it examines how strongly changes in government consumption[3] and taxes affect GDP in Germany (Box).

Germany's fiscal policy is becoming considerably more expansionary

Expectations regarding Germany's future fiscal policy course have changed within a short period of time (Figure 1). While DIW Berlin still assumed a gradual consolidation of public finances in its winter 2024 forecast,[4] it now expects considerably higher deficits. The structural primary deficit – the government's negative fiscal balance adjusted for cyclical effects and excluding interest expenditure – was revised upward by around 1.4 percentage points of potential output in the DIW forecast for 2026 after the special fund and the reform of the debt brake became known.[5] The expected orientation of German fiscal policy has thus shifted from consolidation to a considerably more expansionary course.

How the additional fiscal space affects economic development depends largely on the instruments through which it is used. Additional funds can be deployed in the form of higher public investment, higher government consumption, or tax relief. Since even the expanded fiscal space is limited, not least by the European fiscal rules, these instruments compete for the same funds: Every euro used for additional government consumption is not available for investment or tax relief. While earlier DIW Berlin studies have examined the macroeconomic effects of public investment,[6] this report focuses on two further important fiscal policy instruments: changes in government consumption and in taxes. In order to determine their macroeconomic effects, however, cyclical and politically induced changes must be separated from one another.

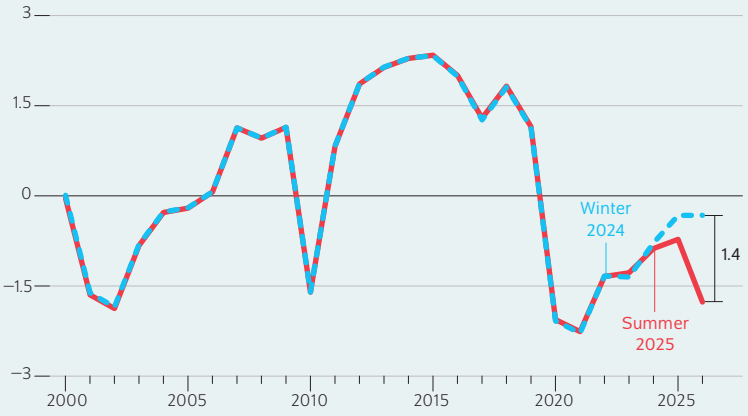
Determining fiscal multipliers

Tax revenue as well as government consumption relative to gross domestic product have at times fluctuated considerably since reunification (Figure 2).

This is particularly evident in the tax ratio, i.e., the share of government tax revenue including net social contributions in GDP. It regularly declines during economic downturns, while it increases in phases of strong growth. This relationship arises largely automatically: When employment, wages, and corporate profits rise, tax revenue increases even without any change in tax rates. Due to progressive taxation, of the income tax in particular, tax revenue often rises more strongly than economic output, such that the tax ratio increases as well. Conversely, it declines in recessions, even if no tax policy measures are adopted. A considerable share of the observed fluctuations in the tax ratio therefore reflects cyclical developments.

Figure 1

Structural primary balance before and after the revision of the DIW economic forecast as a result of expansionary fiscal policy
As a percentage of potential output

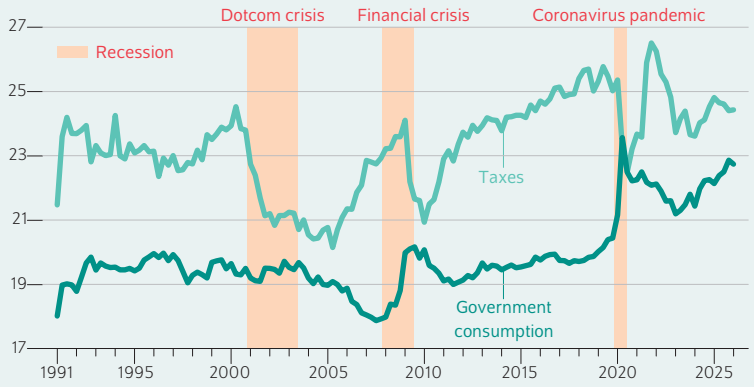


Source: Federal Statistical Office and DIW Berlin forecasts.

German fiscal policy is likely to shift from consolidation to a considerably more expansionary course.

Figure 2

Development of taxes and government consumption as a share of total GDP
Share of GDP in percent



Source: Federal Statistical Office.

Taxes and government consumption are subject to considerable fluctuations.

3 Government consumption comprises the government's current consumption expenditures as reported in the national accounts, in particular compensation of employees (such as for teachers, police, or administrative staff), as well as purchases of intermediate goods and in-kind benefits (such as IT services or procurements for day-to-day operations). It does not include public investment or monetary transfers such as pensions.

4 Geraldine Dany-Knedlik et al. (2024): Deutsche Wirtschaft dümpelt vor sich hin – Handelskonflikte bedrohen Weltwirtschaft. DIW Wochenbericht no. 50, 797–832 (in German; available online).

5 Cf. Geraldine Dany-Knedlik et al. (2025): Zollchaos überschattet Weltwirtschaft – Finanzpaket stützt deutsche Konjunktur. DIW Wochenbericht no. 24, 349–385 (in German; available online).

6 Geraldine Dany-Knedlik, Alexander Kriwoluzky, and Malte Rieth (2025): Sondervermögen für Infrastruktur: 500-Milliarden-Euro-Investitionspaket würde deutsche Wirtschaft aus der Krise holen. DIW Aktuell 111 (in German; available online).

Box

Estimating fiscal multipliers

To estimate fiscal multipliers, a model is used that describes the joint development of government consumption (g_t), economic output (y_t), and tax revenue together with net social contributions (t_t):

$$g_t = \alpha_{gy} y_t + \alpha_{gt} t_t + b_1' x_{t-1} + u_t^g$$
$$y_t = \alpha_{yg} g_t + \alpha_{yt} t_t + b_2' x_{t-1} + u_t^y$$
$$t_t = \alpha_{tg} g_t + \alpha_{ty} y_t + b_3' x_{t-1} + u_t^t$$

The coefficients (α.) describe the short run interactions between fiscal policy and economic output. For example, (α_{ty}) indicates how strongly tax revenue reacts immediately to changes in economic output. The vectors (x_{t-1}) contain lagged values of the variables considered, while the terms (u_t) capture unexpected changes in government consumption, economic output, and tax revenue.

The economics literature shows that assumptions about these short run relationships are decisive for the size of the estimated fiscal multipliers.[1] Instead of fixing individual coefficients, this report uses theoretical insights as well as institutional knowledge about the German tax and expenditure system to derive plausible value ranges for these relationships.[2] For example, it is taken into account that tax revenue reacts positively to higher economic output in the short term, while changes in government consumption can only be influenced to a limited extent by the current business cycle within a quarter. In addition, the exceptional observations of the coronavirus year 2020 are treated separately in the estimation so that the pandemic-related swings do not dominate the estimated relationships.[3]

The estimates are based on quarterly data for Germany from 1991 to 2025. Government consumption comprises the consumption expenditure of the general government according to the national accounts. Government revenue consists of tax revenue and net social contributions. For the estimation, all variables are considered as price-adjusted, logarithmized per capita values. The reported multipliers are accordingly to be interpreted in real terms (price-adjusted euros per price-adjusted euro). A Beveridge-Nelson filter adapted to large shocks is used to separate long run trends from short run cyclical fluctuations; the adjustment takes particular account of the exceptional swings of the pandemic years.[4] The analysis thus focuses on the cyclical components of government consumption, economic output, and government revenue.

Cumulative multipliers are calculated from the estimated responses by relating the accumulated response of economic output to the accumulated response of the respective fiscal variable and converting it into euros per euro using the variable's average share of GDP:

$$\mu_f^H = \frac{\sum_{h=0}^{H} \beta_{y/f}^h}{\sum_{h=0}^{H} \beta_{f/f}^h \times \frac{\bar{F}}{\bar{Y}}}, f \in \{t, g\}.$$

Here, μ_f^H is the cumulative multiplier of the fiscal variable *f* (revenue or government consumption) over a horizon of *H* quarters. $\beta_{y/f}^h$ denotes the response of economic output *h* quarters after an unexpected impulse of the fiscal variable *f*, and $\beta_{f/f}^h$ the response of the fiscal variable to its own impulse. The factor $\bar{F}/\bar{Y}$ corresponds to the average share of the respective fiscal variable in GDP over the estimation period (around 20 percent for government consumption, around 23 percent for revenue) and converts the ratio into euros per euro.

1 Cf. Karel Mertens and Morten O. Ravn (2014): ibid.

2 The approach follows Christiane Baumeister and James D. Hamilton (2015): Sign Restrictions, Structural Vector Autoregressions, and Useful Prior Information. Econometrica 83(5), 1963–1999. The study uses theoretical and institutional information as a priori knowledge for the identification of structural VAR models.

3 So-called pandemic priors are used for this purpose; cf. Danilo Cascaldi-Garcia (2022): Pandemic Priors. International Finance Discussion Papers 1352, Board of Governors of the Federal Reserve System (available online).

4 Cf. Güneş Kamber, James Morley, and Benjamin Wong (2025): Trend-cycle decomposition in the presence of large shocks. Journal of Economic Dynamics and Control 173, 105066 (available online).

Precisely for this reason, the determination of fiscal multipliers should abstract from these automatic cyclical movements. The aim is to determine the economic effects of discretionary measures – that is, changes in government consumption or taxes that are politically decided and do not follow automatically from the business cycle. Only such politically induced changes allow conclusions to be drawn about how changes in government consumption or taxes affect economic activity. This is complicated by the fact that government consumption, tax revenue, and GDP react to one another simultaneously. Higher incomes, for example, increase tax revenue, while tax relief or additional government demand can affect economic output.

The estimation method underlying this report uses theoretical insights and institutional knowledge about these short-term interactions in order to separate the independent effects of fiscal policy measures from general cyclical developments (Box). On this basis, the macroeconomic effects of changes in government consumption and taxes can be determined for Germany.

Government consumption stabilizes in the short run, tax cuts have a more lasting effect

The estimated cumulative multipliers for government consumption and taxes indicate, over time, by how many euros economic output changes when the government spends an additional euro on consumption or reduces the tax burden

by one euro (Figure 3).[7] The estimated multipliers differ both in their magnitude and in their profile over time.

Immediately after an increase in government consumption, the government consumption multiplier is around one. An additional euro of government consumption raises GDP by around one euro already in the quarter of the measure. In the following quarters, the effect initially increases slightly and reaches its peak of around 1.10 euros after about one year. Subsequently, the multiplier declines slightly again and stabilizes close to one. The results thus point to a fast effect of government consumption, but provide no evidence of substantial amplification effects beyond the original demand stimulus.

The effects of tax changes, by contrast, unfold more slowly. In the quarter of a tax cut,[8] economic output initially rises by around 0.70 euros per euro of lower tax burden. In the following quarters, however, the multiplier increases continuously and reaches values of around 1.8 after roughly two years. Tax measures thus have stronger macroeconomic effects in the medium run than changes in government consumption.

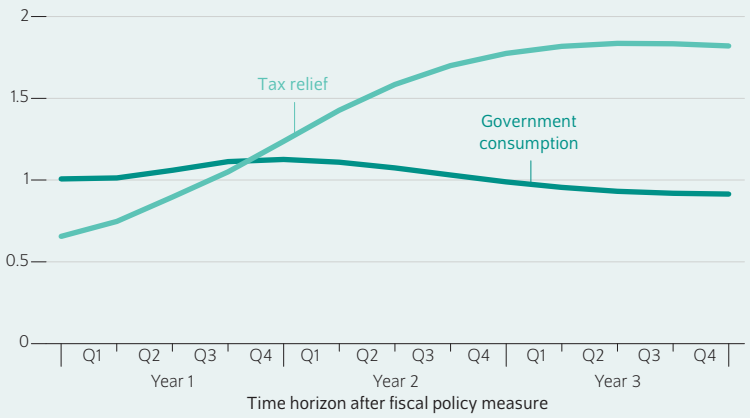
The different time profiles can be explained by the different transmission mechanisms of the two instruments. Additional government consumption raises demand for goods and services immediately in the quarter of the measure and therefore takes effect in the short run. The additional demand can stimulate incomes, private consumption, and investment. At the same time, households and companies may adjust their decisions, for example by saving part of the additional income or postponing investment if they expect higher taxes in the future. How strongly the original demand stimulus is amplified or dampened ultimately depends on which of these effects prevails.

Tax changes, by contrast, operate primarily through the decisions and expectations of private households and companies. Lower taxes initially increase their financial scope and can stimulate consumption, labor supply, and investment. At the same time, they improve the incentives for additional work, production, and investment. What is decisive, however, is how permanent the relief is perceived to be. If households and companies expect today's tax cuts to be offset by higher taxes or lower government spending in the future, they may initially save part of the additional funds or postpone investment. Only when consumption, labor, and investment decisions gradually adjust do tax changes unfold their full macroeconomic effect.

The results of this report confirm two central findings of the recent literature. First, additional government consumption takes effect in the short run and raises economic output considerably already in the short run. At around one, the estimated government consumption multiplier is in the range of previous estimates for Germany.[9] Second, tax relief only reaches its greatest effect with a time lag, but can then trigger stronger macroeconomic stimulus. The estimated tax multiplier is close to recent work for Germany that takes anticipation effects into account, as well as to international studies based on narrative identification approaches.[10] The uncertainty of the estimates increases with the time horizon. However, the results robustly indicate that tax changes have a stronger effect over several years than changes in government consumption.

Figure 3

Fiscal multipliers for tax relief and expansions of government consumption
Cumulative fiscal multiplier



Note: Cumulative fiscal multipliers over time following an unexpected expansionary increase in government consumption or a tax cut.

Source: DIW Berlin calculations.

Government consumption stabilizes economic output in the short run; tax cuts have a stronger, albeit slower, effect.

Conclusion: Targeted use of fiscal policy resources is decisive

The results of this report make clear that measures affecting private households and companies via incentives typically take effect more slowly than additional government consumption, but can trigger larger macroeconomic stimulus in the long run. The current economic policy debate, however, goes beyond the two instruments examined in this report:

7 In the underlying model, the corresponding relationships also apply, mirror-inverted, to spending cuts and tax increases.

8 The estimate refers to aggregate changes in government tax revenue including net social contributions. Differences between individual types of taxes, such as income, corporate, or value-added tax, are not examined in this report.

9 Christian Breuer and Thiess Büttner (2010): Fiscal Policy in a Structural VAR Model for Germany. Beiträge zur Jahrestagung des Vereins für Socialpolitik 2010: Ökonomie der Familie (available online); Tim Oliver Berg (2015): Time Varying Fiscal Multipliers in Germany (available online).

10 Désirée I. Christofzik, Angela Fuest, and Robin Jessen (2022): Macroeconomic Effects of the Anticipation and Implementation of Tax Changes in Germany: Evidence from a Narrative Account. Economica 89 (353), 62–81 (available online); Christina D. Romer and David H. Romer (2010): The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks. American Economic Review 100(3), 763–801; Mertens and Ravn (2014): ibid.

With the special fund for infrastructure and climate neutrality, public investment is increasingly taking center stage; according to earlier studies, it can strengthen not only short-term demand but also potential output and long run growth prospects.[11]

The recently agreed reform package of the federal government shows how important the choice of fiscal policy instruments is. In addition to tax relief, the package comprises measures to strengthen work incentives, labor market reforms, and further steps to promote growth and employment. The results of this report suggest that the use of the expanded fiscal space should not be geared solely toward short run demand effects. Rather, it will be decisive to combine public investment, tax relief, and further growth-enhancing reforms in such a way that both short run economic stabilization and the long run strengthening of potential output are supported.

11 For an estimate and decomposition of the investment multiplier, cf. Malte Rieth, Marius Clemens, and Claus Michelsen (2025): An Estimation and Decomposition of the Government Investment Multiplier. DIW Discussion Paper no. 2106 (available online), and, for an overview of the productivity-enhancing effects of public capital, Pedro R. D. Bom and Jenny E. Ligthart (2014): What Have We Learned from Three Decades of Research on the Productivity of Public Capital? Journal of Economic Surveys 28(5), 889–916.

Geraldine Dany-Knedlik is Deputy Head of the Macroeconomics Department at DIW Berlin | gdanyknedlik@diw.de

Alexander Kriwoluzky is Head of the Macroeconomics Department at DIW Berlin | akriwoluzky@diw.de

Jo-Ya Kung is a Ph.D. Student at DIW Berlin | jkung@diw.de

Ruben Staffa is a Research Associate in the Macroeconomics Department at DIW Berlin | rstaffa@diw.de

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DIW Berlin — Deutsches Institut für Wirtschaftsforschung e. V.
Anton-Wilhelm-Amo-Straße 58, 10117 Berlin
www.diw.de
Phone: +49 30 897 89–0 Fax: –200
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