wiiw

FEBRUARY 2026

Working Paper 270

Macroeconomic and distributional effects of fiscal consolidation measures in EU countries

Philipp Heimberger and Anna Matzner

The Vienna Institute for International Economic Studies
Wiener Institut für Internationale Wirtschaftsvergleiche

Macroeconomic and distributional effects of fiscal consolidation measures in EU countries

PHILIPP HEIMBERGER
ANNA MATZNER

Philipp Heimberger and Anna Matzner are Economists at The Vienna Institute for International Economic Studies (wiiw).

The study benefitted from funding provided by the European Macro Policy Network (EMPN).

Data and replication files are available via https://github.com/heimbergecon/fiscalmacroEU.

The authors thank Bernhard Schütz and Robert Stehrer for helpful feedback. All remaining errors are those of the authors.

Abstract

We provide new evidence on the effects of fiscal consolidation measures on output, unemployment, income inequality and consumer price inflation. To identify causal impacts, we use a narrative-based instrumental variable strategy drawing on historical records of exogenous fiscal changes motivated by deficit reduction, covering 12 EU countries from 1980 to 2020. Our results for the short to medium run show that fiscal consolidations (a) lower real output; (b) raise the unemployment rate; (c) increase income inequality; and d) reduce consumer price inflation. Contractionary macroeconomic effects are stronger during recessions than during non-recession periods.

Keywords: Fiscal consolidation, austerity, growth, unemployment, income inequality, European Union

JEL classification: H60, E62

CONTENTS

TABLES AND FIGURES

1 Introduction

As fiscal deficits and public debt ratios remain elevated across many European Union (EU) countries relative to their levels before the COVID-19 and energy-crisis, national governments face substantial pressure to implement fiscal consolidation measures in order to comply with the EU's fiscal rules framework (Darvas et al., 2025; Heimberger, 2025). This renewed emphasis on restoring public finances through tax increases and expenditure cuts has intensified interest among researchers and policymakers in understanding the macroeconomic and distributional consequences of such measures. In this context, evidence on the effects of past fiscal adjustments is valuable for informing current policy debates (IMF, 2023, 2024).

This paper contributes to the literature by providing new empirical evidence on the macroeconomic and distributional effects of discretionary fiscal consolidation in the EU. In contrast to earlier seminal panel data studies (Guajardo et al., 2014; Alesina et al., 2015; Jordà & Taylor, 2016), which rely on data ending before 2010, our analysis exploits a longer sample spanning 1980–2020. We also adopt a broader perspective by examining not only output, but also the responses of unemployment, income inequality and consumer price inflation to fiscal consolidation shocks. To estimate causal effects, we employ an instrumental variable strategy in which changes in the cyclically adjusted budget balance are instrumented using the updated action-based IMF dataset on exogenous fiscal adjustments (Adler et al., 2024). Using a local projection framework (Jordà, 2005), we show that the small expansionary effects obtained when relying solely on cyclically adjusted fiscal balances are reversed once narrative information is incorporated. Consistent with previous research (Guajardo et al., 2014; Jordà & Taylor, 2016), we find that fiscal adjustments exert sizable contractionary effects on output in the short to medium run, which are larger during recessions. Moreover, our results show that fiscal consolidations in EU countries raise unemployment and income inequality while exerting downward pressure on consumer price inflation.

2 Econometric strategy

We use a local projection framework (Jordà, 2005) to trace out the dynamic response of macroeconomic and distributional variables to fiscal consolidation shocks. We estimate the following baseline model separately for each response horizon k (with k=0,...,5):

$$y_{i,t+k} - y_{i,t-1} = \beta_k F_{i,t} + \gamma_k Z_{i,t-1} + \delta_i^k + \theta_t^k + \varepsilon_{i,t+k}^k \tag{1}$$

$y_{i,t+k}$ denotes the outcome of interest – the logarithm of real GDP, the unemployment rate, the consumer price inflation rate, or the Gini coefficient of disposable income – observed k periods after the fiscal consolidation shock. The expression $y_{i,t+k} - y_{i,t-1}$ denotes the long difference in our outcome of interest and $F_{i,t}$ represents the fiscal consolidation shock for a given country at time t. Therefore, β_k shows the cumulative response of y at horizon k. We use the conventional approach in the literature to measure exogenous variation in fiscal policy (Alesina & Perotti, 1995) by looking at the change in the structural fiscal balance, i.e. the headline fiscal balance corrected for cyclical and one-off effects. However, to account for measurement and endogeneity issues in

cyclically-adjusted fiscal data (Blanchard, 1990; Heimberger & Kapeller, 2017) and to control for unobserved confounders, we provide instrumental variable estimations in which the IMF's narrative measure of fiscal consolidations motivated by a desire to reduce fiscal deficits and debt ratios (Adler et al., 2024) is used as an instrument. This narrative approach excludes fiscal actions taken to respond to current or prospective economic conditions. Following Guajardo et al. (2014) and Jordà & Taylor (2016), we estimate equation (1) using two-stage least squares. In the first stage, the change in the structural balance is regressed on the narrative fiscal shocks; in the second stage, the macroeconomic or distributional variable of interest is regressed on the instrumented change in the structural balance in the local projections. $Z_{i,t-1}$ is a vector of control variables, for which lags are included to capture their dynamic behaviour and limit omitted variable bias. The control variables include: real GDP growth, capturing past economic momentum; the output gap, accounting for economic slack; the real long-term government bond yield, which helps capture the influence of financial conditions and monetary policy; the real effective exchange rate, reflecting external competitiveness and foreign demand conditions; and the lagged dependent variable. Country fixed effects and time fixed effects absorb country-specific time-invariant characteristics and common shocks. $\varepsilon^{k}_{i,t+k}$ represents the stochastic disturbance. To ensure robust inference in the presence of serial correlation and cross-sectional dependence, Driscoll & Kraay (1998) standard errors are applied.

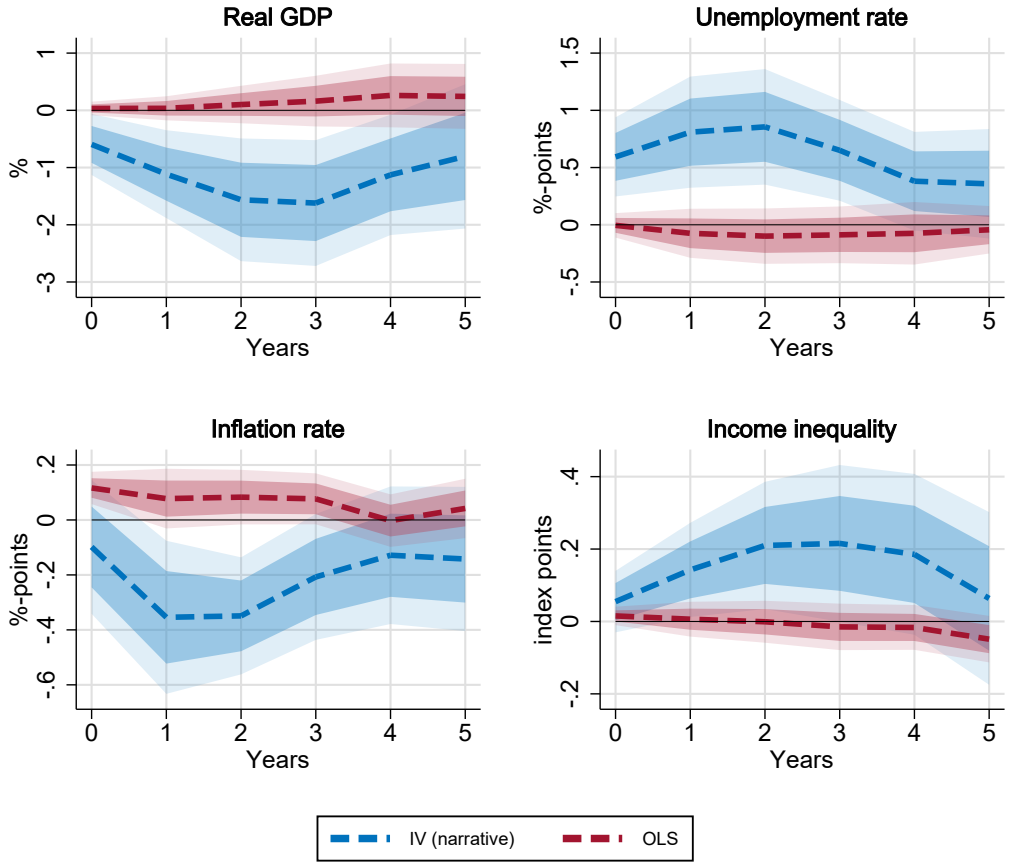
3 Data

Our sample consists of 12 EU member states over the period 1980–2020: Austria, Belgium, Germany, Spain, Finland, France, Denmark, Sweden, Italy, Ireland, Netherlands, and Portugal. The EU country coverage follows the narrative fiscal consolidation dataset compiled by Adler et al. (2024). The time span is constrained by data availability: the IMF's cyclically-adjusted fiscal data are only provided from 1980 onwards in the World Economic Outlook database, while the IMF narrative consolidation series is available up to 2020. The Gini index for disposable incomes was obtained from the SWIID database (Solt, 2020). Data for the remaining variables used in the econometric analysis were drawn from IMF and World Bank databases. Table A.1 in the appendix presents descriptive statistics.

4 Results

Figure 1 presents the effects of a 1 percentage point of GDP fiscal consolidation shock based on equation (1). Consistent with earlier findings (Alesina & Perotti, 1995; Guajardo et al., 2014; Jordà & Taylor, 2016), we observe (small) expansionary effects in EU countries when using OLS estimation and data on changes in cyclically adjusted fiscal balances to measure fiscal consolidation. However, these effects disappear when we instrument with the IMF's narrative measure. This pattern is consistent with the presence of both attenuation bias and endogeneity in the OLS-based local projection estimates. Attenuation bias can arise when changes in the structural balance are measured with error or do not fully capture genuinely exogenous policy actions, pushing OLS coefficients toward zero. Endogeneity is also a concern, since fiscal tightening may be implemented

Figure 1: The cumulative effects of a fiscal consolidation shock of 1%-point of GDP



Notes: Authors' estimations based on equation (1). IV (narrative) uses the IMF's narrative measures as an instrument for the cyclically adjusted fiscal balance. Shaded (dark) blue/red areas represent 90 percent (68 percent) confidence bands.

in response to contemporaneous or anticipated economic developments, causing the consolidation shock to be correlated with underlying macroeconomic disturbances. Consequently, OLS estimates are likely to understate not only the magnitude but also the persistence of the effects, whereas the IV strategy is better suited to identifying the causal impact.

Notably, the first-stage regressions in our IV local projections are strong. We test for weak instruments using the Kleibergen–Paap rk Wald F statistic using the horizon $k = 0$. The value of the statistic equals 30.0, which exceeds the conventional threshold of 10, indicating that the instrument is strong.This allows us to reject the null hypothesis that the narrative instrument has no predictive power for changes in the structural balance. Our identification assumption is that the IMF's narrative consolidation measures capture fiscal actions that are orthogonal to contemporaneous or anticipated macroeconomic conditions and affect real GDP only through their impact on the structural balance. This assumption is supported by the construction of the narrative series in Adler et al. (2024), who explicitly exclude measures taken in response to the business cycle.

The IV-2SLS results show that fiscal consolidations are contractionary: real GDP falls by 0.6 percent on impact and by 1.6 percent three years after the shock, i.e. the impact multiplier is 0.6 and the cumulative three-year multiplier is about 1.[1] The cumulative output response reverts back and amounts approximately to 1 percent five years after the shock. After five years, however, the confidence bands do not exclude a zero effect. Unemployment rises by 0.6 percentage points on impact, reaching a cumulative peak of 0.9 after two years, before gradually declining to 0.3 after five years. Income inequality, measured by the Gini index, increases by about 0.2 points three years post-shock; the confidence band does not exclude a zero effect five years after the shock. Fiscal consolidations reduce consumer price inflation. The peak response amounts to 0.35 percentage points and is reached after one year. Three years after the shock, the inflation effect starts to revert and the confidence interval includes zero after five years.

We conduct several robustness checks. First, to address potential endogeneity of fiscal adjustments – since they may be more likely to be implemented in adverse economic conditions – we apply a quasi-experimental approach using the Augmented Inverse Probability Weighted (AIPW) estimator, giving greater weight to less endogenous consolidation episodes (Jordà & Taylor, 2016). Second, we use the IMF narrative measure as a binary treatment variable rather than a continuous one. We continue our robustness exercises by excluding different (sets of) controls from our regression. In our third exercise, we exclude all output controls. Fourth, we exclude the lagged endogenous variable. Lastly, we exclude Ireland from the sample because its GDP figures are affected by multinational corporate activity, which may reduce their reliability. Figure 2 shows that real GDP responses remain robust: the peak effect is similar using the binary treatment or the AIPW estimator. Results with the AIPW estimator are somewhat more persistent compared to our baseline results. Propensity-score weighting shifts the estimand toward the average treatment effect for consolidation episodes that, based on observables, would typically imply a low probability of adjustment. If such episodes involve more persistent fiscal measures or less policy reversal, the associated impulse responses may display greater persistence. The peak response is somewhat

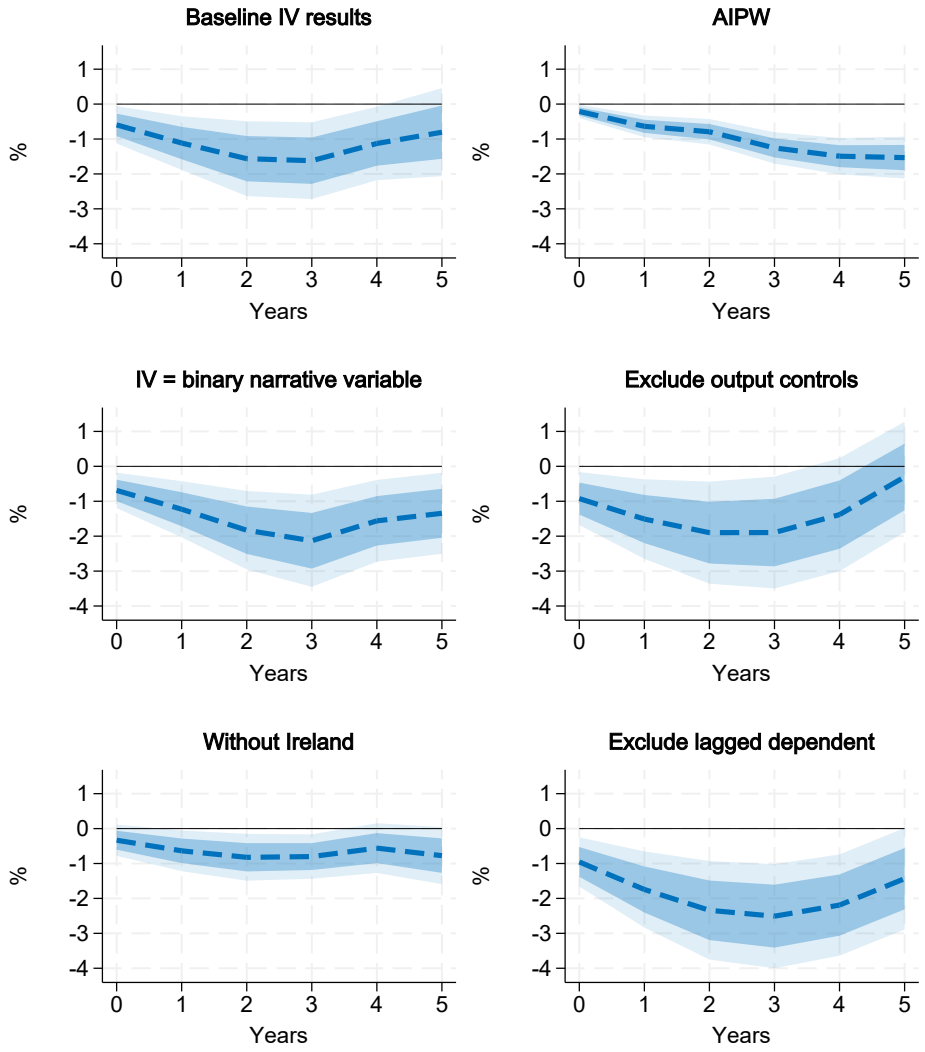
[1] The cumulative change in real GDP three years after the consolidation shock is -1.62 percent, while the cumulative change in the structural balance is 1.46 percentage points of GDP. Thus, the fiscal multiplier after three years is 1.11 (1.62/1.46).

larger when excluding output controls or the lagged dependent variable. Figure A.1, A.2 and A.3 depict robustness for the unemployment rate, consumer price inflation and income inequality results, respectively. The only notable deviation occurs in the AIPW inflation estimates, which show an initially positive response.

We extend the analysis by estimating state-dependent local projections following Jordà & Taylor (2016). We introduce two regimes according to the IMF's output gap estimates. Similarly to Auerbach & Gorodnichenko (2012), we assume that the economy spends about 20 percent of the time in a recessionary regime and therefore take the 20th percentile of the output gap distribution to split the sample into an upper and lower regime. Figure 3 shows that contractionary macroeconomic effects are stronger in the lower regime (recessions), where the cumulative multiplier three years after the shock exceeds 2.5, than in the upper regime, where the corresponding three-year cumulative multiplier is 0.5.[2] Figure A.4 shows that our results are robust to choosing a different threshold for the regime split.

[2]For the lower regime, the cumulative change in GDP after three years is -2.23 percent, while the cumulative change in the structural balance is 0.79 percentage points of GDP. Thus, the fiscal multiplier after three years is 2.84 (2.23/0.79). For the upper regime, the multiplier is 0.46 (0.88/1.94).

Figure 2: Cumulative real GDP responses to a fiscal consolidation shock of 1%-point of GDP: Baseline and robustness checks

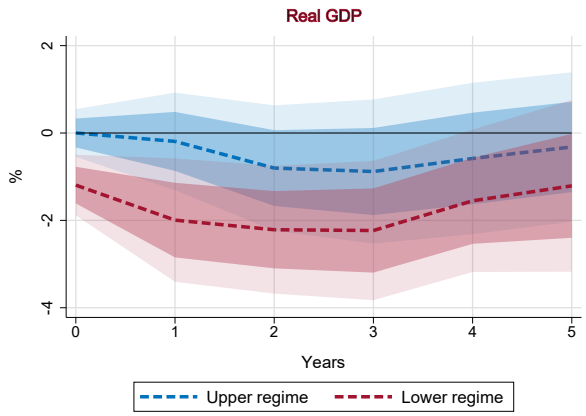


Notes: Authors' estimations. Shaded (dark) blue areas represent 90 percent (68 percent) confidence bands.

5 Discussion and conclusions

We provide new empirical evidence on the short to medium run effects of discretionary fiscal consolidations in EU countries. Using the IMF's narrative measures in an instrumental variable estimation approach, we show that consolidation shocks are contractionary: they lower output, raise unemployment and income inequality, and reduce consumer price inflation. Our estimated real GDP effects point to an average consolidation multiplier close to unity - but with multipliers substantially above 1.0 during recessions and below 1.0 in the upper regime. These findings broadly align with meta-analytic evidence on the effects of fiscal policy (Gechert & Rannenberg, 2018) and support the Keynesian view that periods of economic weakness are not suitable for consolidation efforts.

Figure 3: Cumulative real GDP effects of fiscal consolidation in upper regime and lower regime



Notes: Authors' calculations. Shaded (dark) blue/red areas represent 90 percent (68 percent) confidence bands. We use the 20th percentile of the output gap distribution to split the sample.

Future research should aim to deepen our understanding of the specific components of fiscal adjustment packages that drive macroeconomic and distributional outcomes, moving beyond the rough spending-based versus tax-based distinction, which offers limited analytical insight. Historically, many governments have relied on measures with regressive effects—such as cuts to public investment, increases in VAT rates, and broad reductions in social spending (Blyth, 2013). A more carefully designed policy mix could mitigate these adverse consequences. Recent IMF research (IMF, 2024) indicates that although fiscal adjustments generally dampen output, cuts to public investment are especially detrimental, whereas progressive tax measures tend to generate comparatively smaller losses. These findings point to several promising avenues for empirical work, including a granular assessment of consolidation multipliers across different instruments, an evaluation of how compositional choices shape outcomes, and an examination of how macroeconomic transmission channels condition the success of consolidation efforts in achieving fiscal objectives such as debt reduction (Ando et al., 2025).

References

Adler, G., Allen, C., Ganelli, G., & Leigh, D. (2024). An updated action-based dataset of fiscal consolidation. *IMF Working Paper No. 24/210*.

Alesina, A., Favero, C., & Giavazzi, F. (2015). The output effect of fiscal consolidation plans. *Journal of International Economics*, 96(S1), S19–S42.

Alesina, A. & Perotti, R. (1995). Fiscal Expansions and Adjustments in OECD Countries. *Economic Policy*, 10(21), 207–247.

Ando, S., Mishra, P., Patel, N., Peralta-Alva, A., & Presbitero, A. (2025). Fiscal consolidation and public debt. *Journal of Economic Dynamics and Control*, 170(1), 104998.

Auerbach, A. J. & Gorodnichenko, Y. (2012). Measuring the output responses to fiscal policy. *American Economic Journal: Economic Policy*, 4(2), 1–27.

Blanchard, O. (1990). Suggestions for a new set of fiscal indicators. *OECD Working Paper No. 79*.

Blyth, M. (2013). *Austerity: The History of a Dangerous Idea*. Oxford: Oxford University Press.

Darvas, Z., Welslau, L., & Zettelmeyer, J. (2025). Sovereign debt and fiscal integraton in the European Union. *Journal of Economic Surveys*, 39(4), 49–74.

Driscoll, J. C. & Kraay, A. (1998). Consistent covariance matrix estimation with spatially dependent panel data. *Review of Economics and Statistics*, 80(4), 549–560.

Gechert, S. & Rannenberg, A. (2018). Which fiscal multipliers are regime-dependent? a meta-regression analysis. *Journal of Economic Surveys*, 32(4), 1160–1182.

Guajardo, J., Leigh, D., & Pescatori, A. (2014). Expansionary austerity: New international evidence. *Journal of the European Economic Association*, 12(4), 949–968.

Heimberger, P. (2025). Fiscal consolidation and its growth effects in euro area countries: Past, present and future outlook. *Review of Evolutionary Political Economy*, 6(3), 589–617.

Heimberger, P. & Kapeller, J. (2017). The performativity of potential output: pro-cyclicality and path dependency in coordinating european fiscal folicies. *Review of International Political Economy*, 24(5), 904–928.

IMF (2023). Coming down to earth: How to tackle soaring public debt. In *World Economic Outlook: April 2023* (pp. 69–89). Washington, DC: International Monetary Fund.

IMF (2024). Putting a lid on public debt. In *Fiscal Monitor: October 2024* (pp. 1–23). Washington, DC: International Monetary Fund.

Jordà, O. (2005). Estimation and inference of impulse responses by local projections. *American Economic Review*, 95(1), 161–182.

Jordà, O. & Taylor, A. M. (2016). The time for austerity: Estimating the average treatment effect of fiscal policy. *Economic Journal*, 126(590), 219–255.

Solt, F. (2020). Measuring income inequality across countries and over time: The standardized world income inequality database. *Social Science Quarterly*, 101(3), 1183–1199.

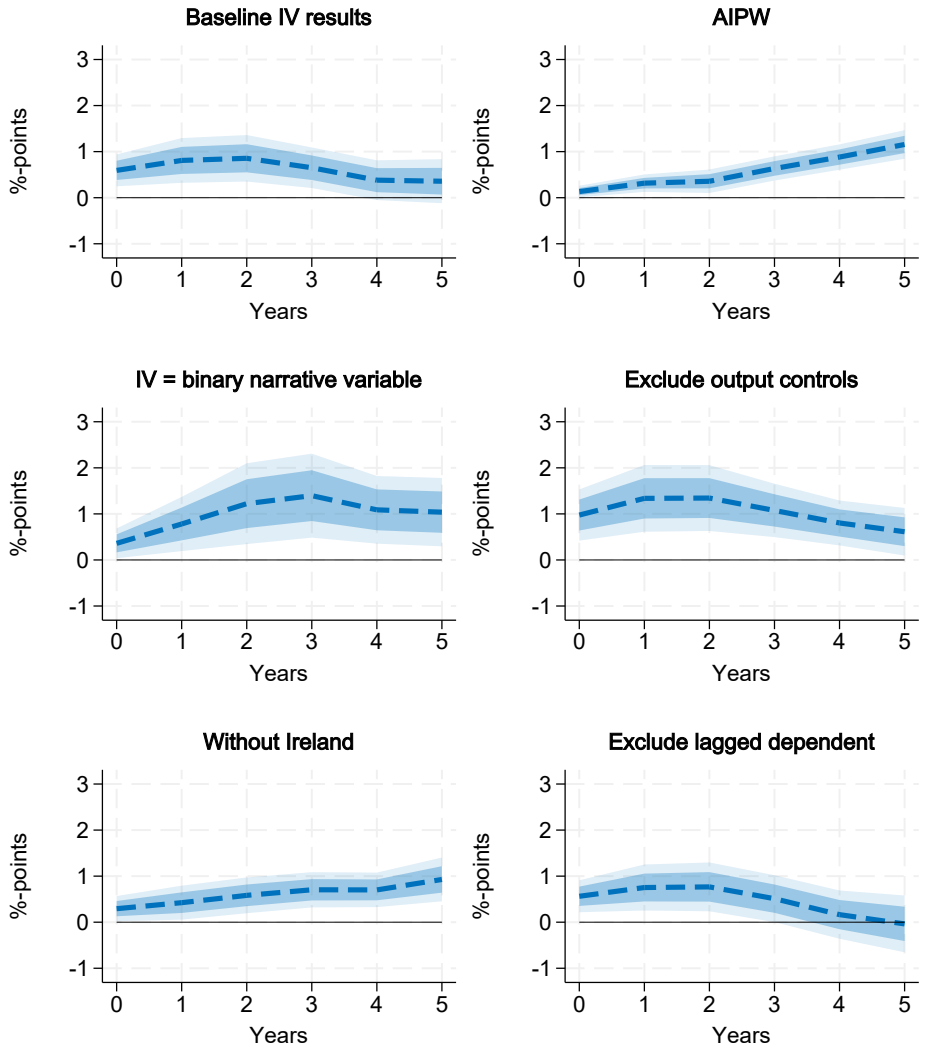
Appendix

Table A.1: Descriptive statistics

	Mean	SD	Min	Max
Narrative fiscal consolidation (in % of GDP)	0.45	0.91	-0.75	5.23
Output gap (in % of GDP)	-0.29	2.81	-8.95	11.03
Inflation rate (annual change in consumer prices in %)	3.52	4.01	-1.68	29.3
Real GDP growth (annual change in %)	2.2	2.54	-8.1	24.5
Real government bond yield (in %)	3.08	2.75	-7.8	10.82
Unemployment rate (in % of active population)	8.48	4.24	1.6	26.09
Change in structural balance (in %-points of GDP)	0.14	1.35	-5.91	6.56
Real-effective exchange rate (2010=100)	101.4	10.52	72.77	147.73

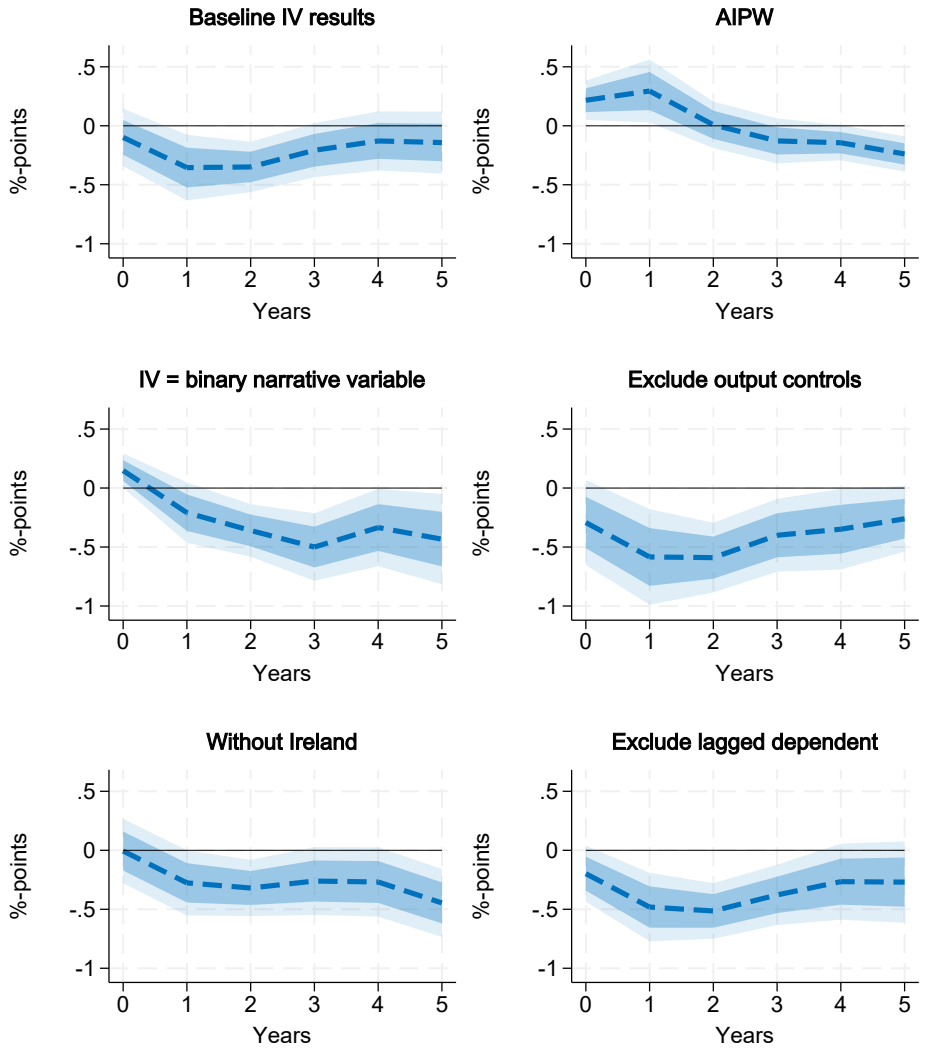
Notes: Authors' calculations.

Figure A.1: Unemployment responses to fiscal consolidation: Baseline and robustness checks



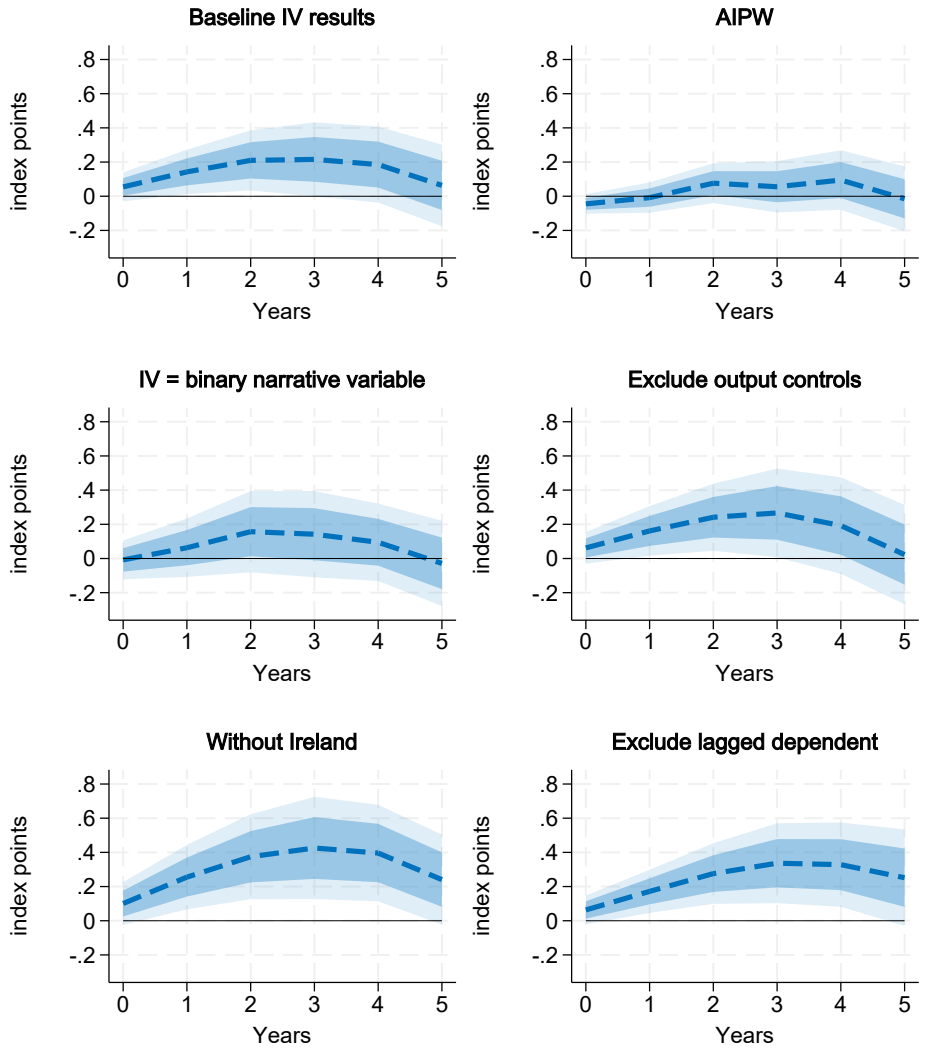
Notes: Authors' estimations. Shaded (dark) blue areas represent 90 percent (68 percent) confidence bands.

Figure A.2: Consumer price inflation responses to fiscal consolidation: Baseline and robustness checks



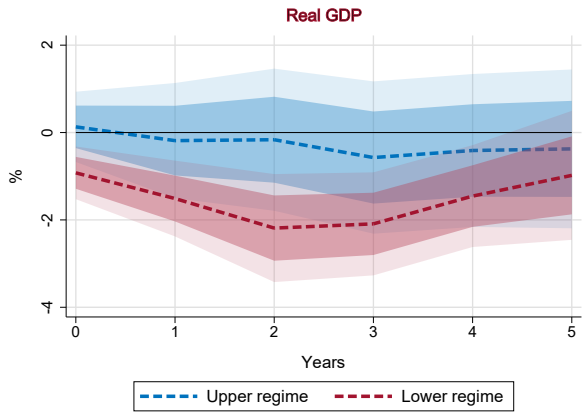
Notes: Authors' estimations. Shaded (dark) blue areas represent 90 percent (68 percent) confidence bands.

Figure A.3: Income inequality responses to fiscal consolidation: Baseline and robustness checks



Notes: Authors' estimations. Shaded (dark) blue areas represent 90 percent (68 percent) confidence bands.

Figure A.4: Cumulative real GDP effects of fiscal consolidations in upper regime and lower regime



Notes: Authors' calculations. Shaded (dark) blue/red areas represent 90 percent (68 percent) confidence bands. We use the 40th percentile of the output gap distribution to split the sample.

IMPRESSUM

Herausgeber, Verleger, Eigentümer und Hersteller:
Verein „Wiener Institut für Internationale Wirtschaftsvergleiche“ (wiiw),
Wien 6, Rahlgasse 3

ZVR-Zahl: 329995655

Postanschrift: A 1060 Wien, Rahlgasse 3, Tel: [+431] 533 66 10, Telefax: [+431] 533 66 10 50
Internet Homepage: www.wiiw.ac.at

Offenlegung nach § 25 Mediengesetz: Medieninhaber (Verleger): Verein "Wiener Institut für Internationale Wirtschaftsvergleiche", A 1060 Wien, Rahlgasse 3. Vereinszweck: Analyse der wirtschaftlichen Entwicklung der zentral- und osteuropäischen Länder sowie anderer Transformationswirtschaften sowohl mittels empirischer als auch theoretischer Studien und ihre Veröffentlichung; Erbringung von Beratungsleistungen für Regierungs- und Verwaltungsstellen, Firmen und Institutionen.

wiiw

wiiw.ac.at

https://wiiw.ac.at/p-7525.html