FISCAL AFFAIRS

Fiscal Policy under Uncertainty

April 2025 Fiscal Monitor Conjunctural Chapter

SUERF BAFFI BOCCONI E-LECTURE

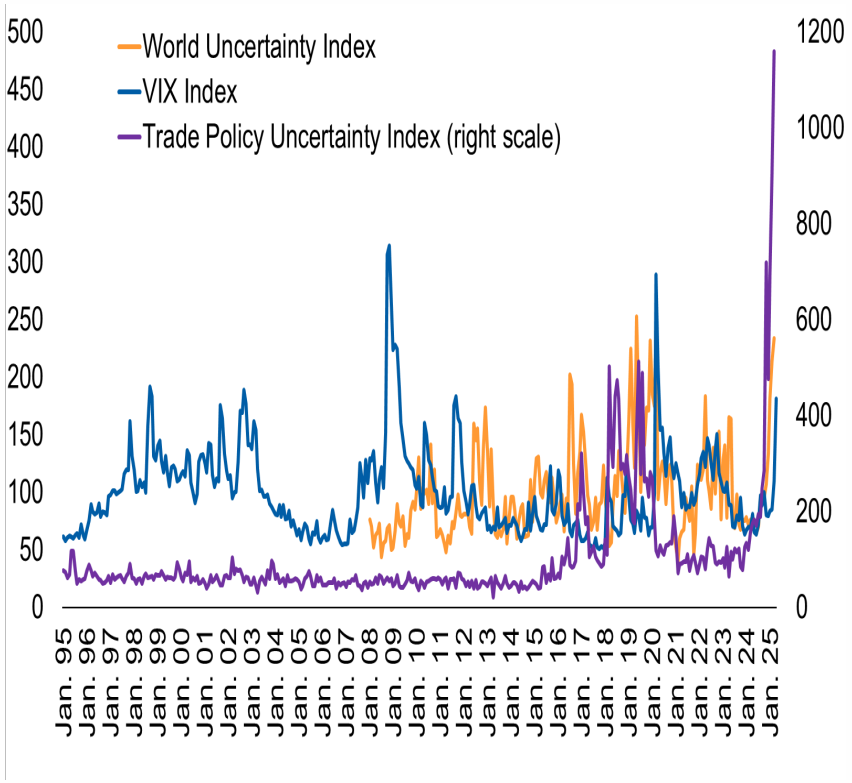
APRIL 29, 2025

Davide Furceri

Major policy shifts are reshaping the fiscal outlook...

Multidimensional uncertainty

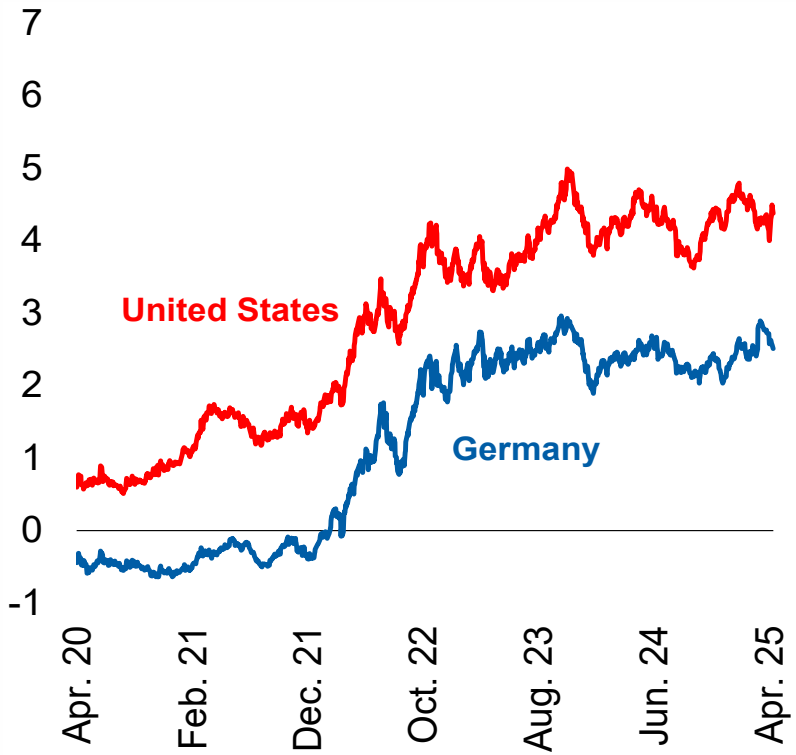
Uncertainty Indices



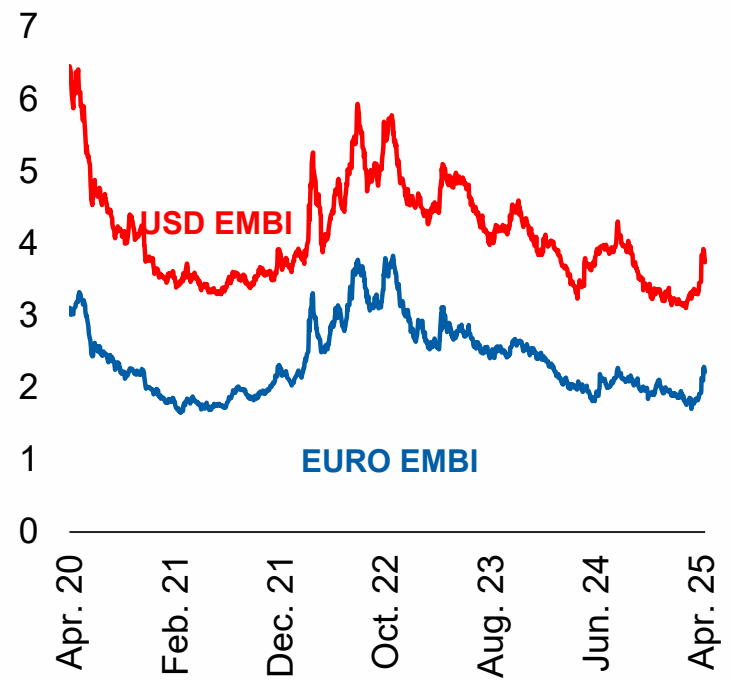
Source: Trade Policy Uncertainty Index : Caldara and others (2020); World Uncertainty Index: Ahir, Bloom, and Furceri (2022); Fiscal Policy Uncertainty Index: Hong, Nguyen, and Ke (2024); and Global Economic Policy Uncertainty Index: Davis (2016).
Note: The series are standardized with mean of 100 and standard deviation of 1.

Tighter and more volatile financial conditions

10-year Bond Yields *(Percent)*



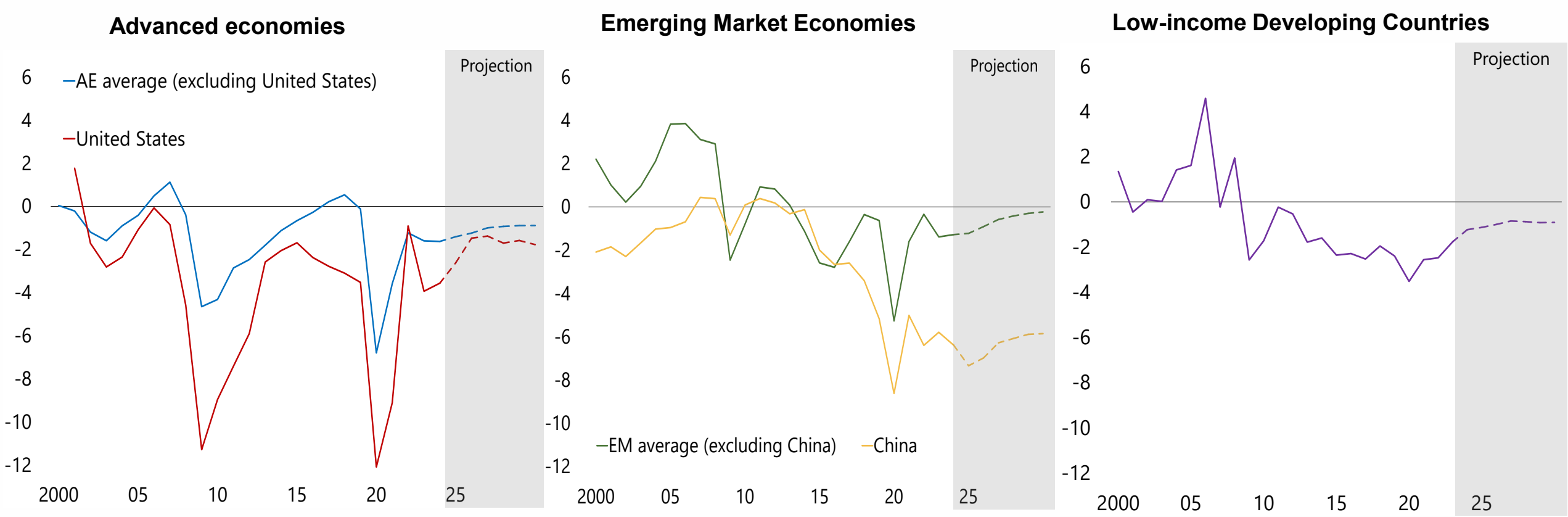
EMBI Spread *(Percent)*



Sources: Bloomberg Finance L.P.
Note: The data for panels 3 have April 14, 2025, as cutoff date. EMBI = Emerging Market Bond Index; USD = US dollars.

...with marked slowdown in fiscal adjustments...

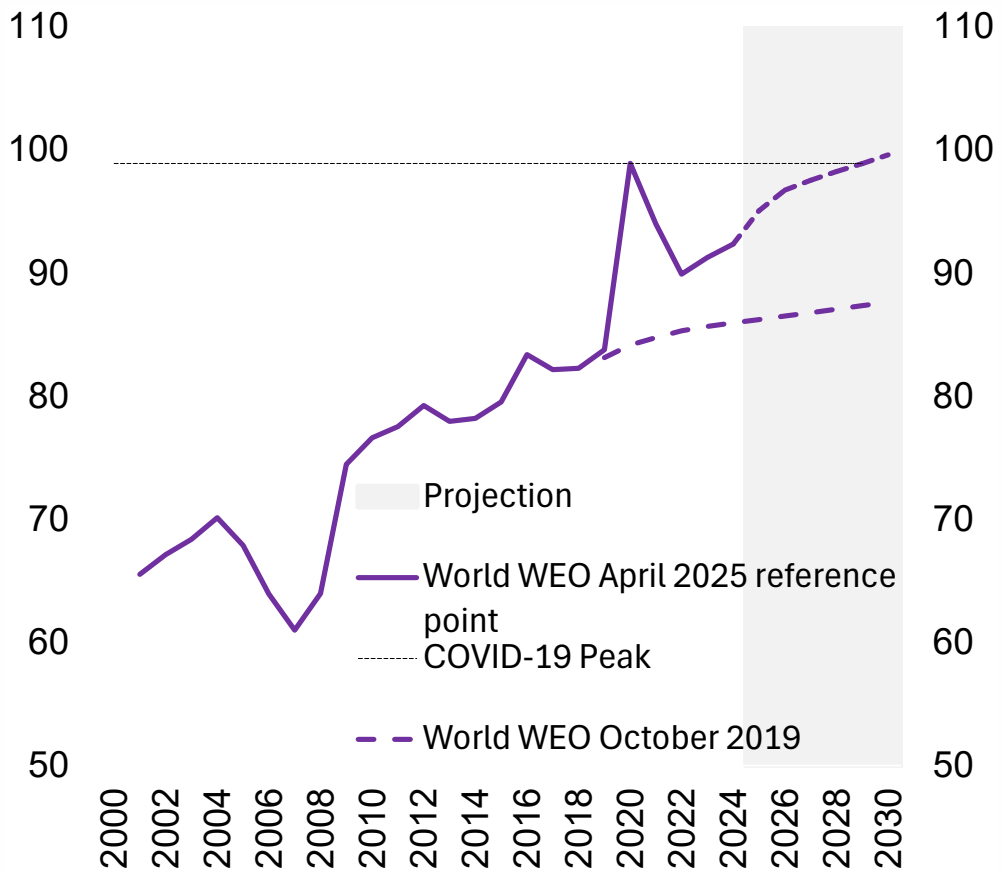
Primary Balances
(Percent of GDP)



Sources: IMF World Economic Outlook database; and IMF staff calculations.
Note: Afghanistan and Sudan are excluded from the sample of low-income developing countries. AE = advanced economy; EM = emerging market; LIDC = low-income developing country.

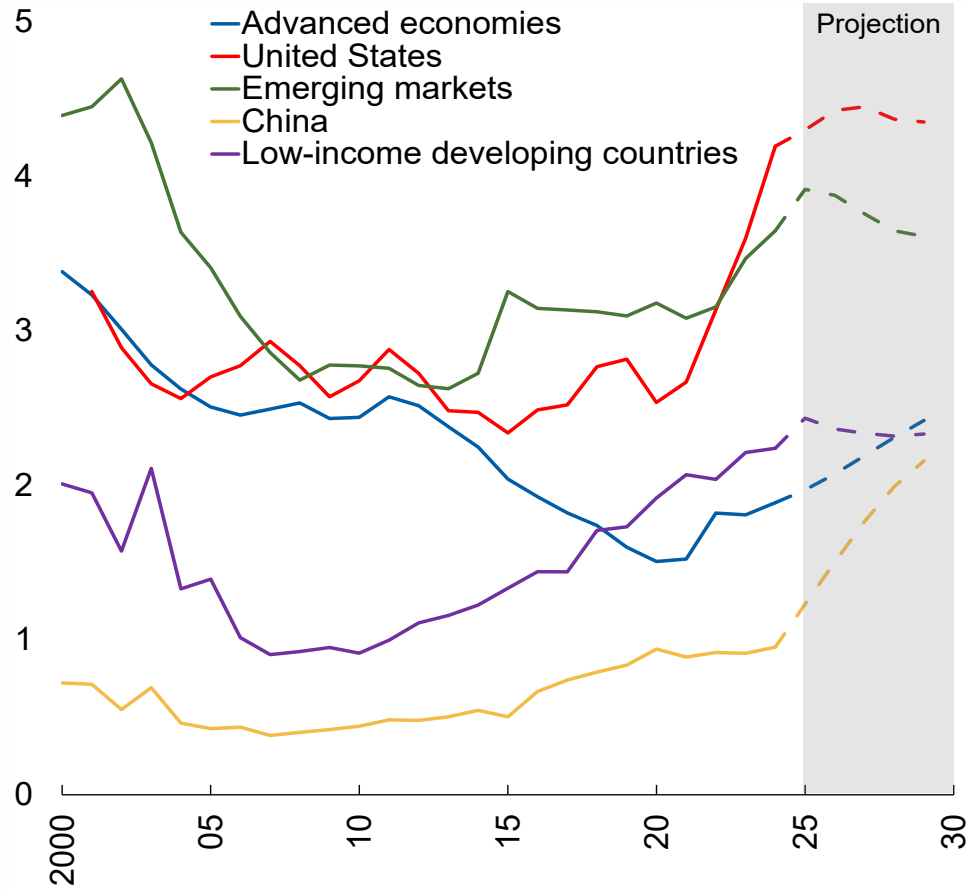
...increasing debt and interest expenses

Global Public Debt-to-GDP Ratios
(Percent of GDP)



Sources: IMF, April 2025 World Economic Outlook (WEO); and IMF staff calculations.
Note: Dashed lines are 2018 projections extended to 2024. The projection for 2024 is based on the October 2018 World Economic Outlook vintage.

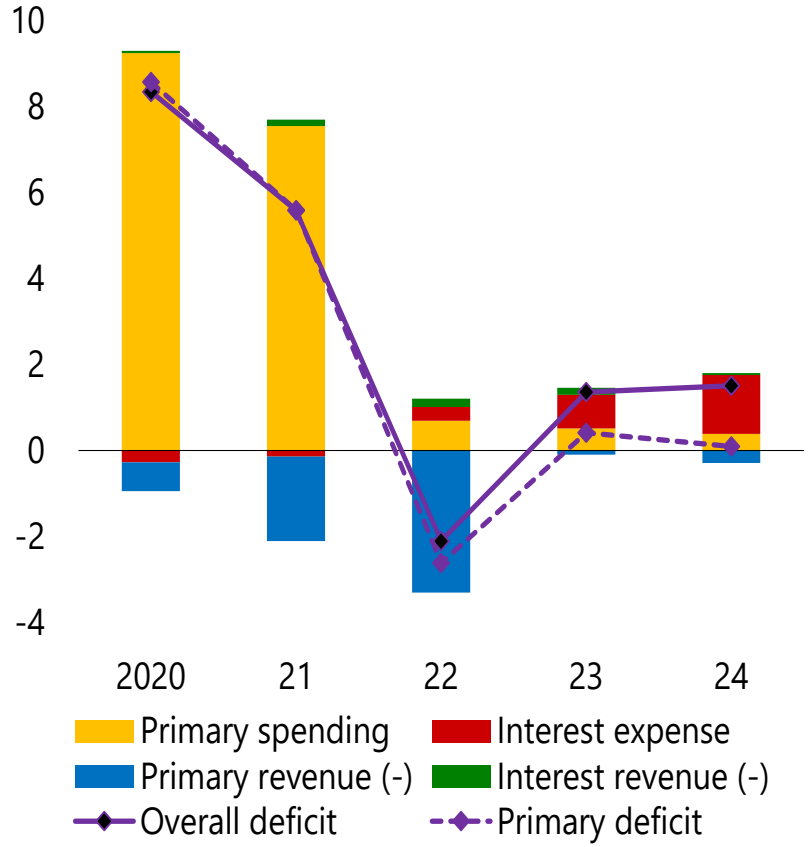
General Government Interest Expense
(Percent of GDP)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.

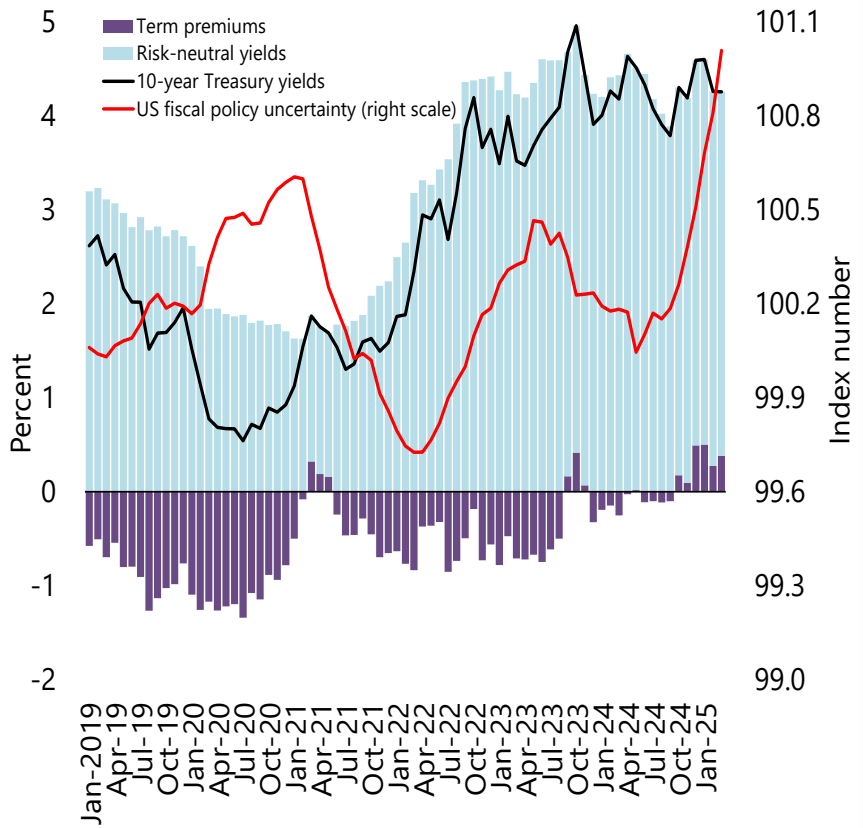
United States: uncertain deficit path amid high tariffs

Drivers of Changes US Fiscal Deficit Relative to Prepandemic
(Percent of GDP)



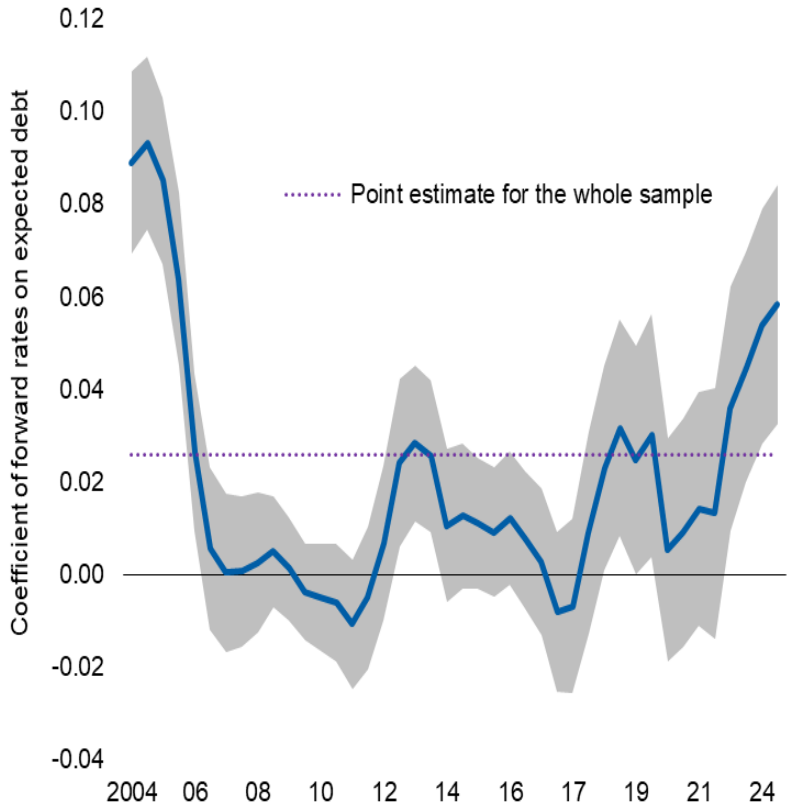
Sources: IMF, World Economic Outlook database; and IMF staff calculations.
Note: The figure shows changes in the general government overall deficit-to-GDP ratio and its components for the United States relative to 2019. Changes in the primary-revenue-to-GDP ratio contribute negatively to changes in the overall deficit.

US 10-Year Treasury Nominal Yields and Fiscal Uncertainty



Sources: Federal Reserve Bank of New York; Hong, Nguyen, and Ke 2024; and IMF staff calculations.
Note: The data in the figure have the cutoff date of April 10, 2025. The decomposition into monthly risk-neutral yields and term premiums is based on Adrian, Crump, and Moench (2013). Fiscal policy uncertainty is reported as a 12-month moving average.

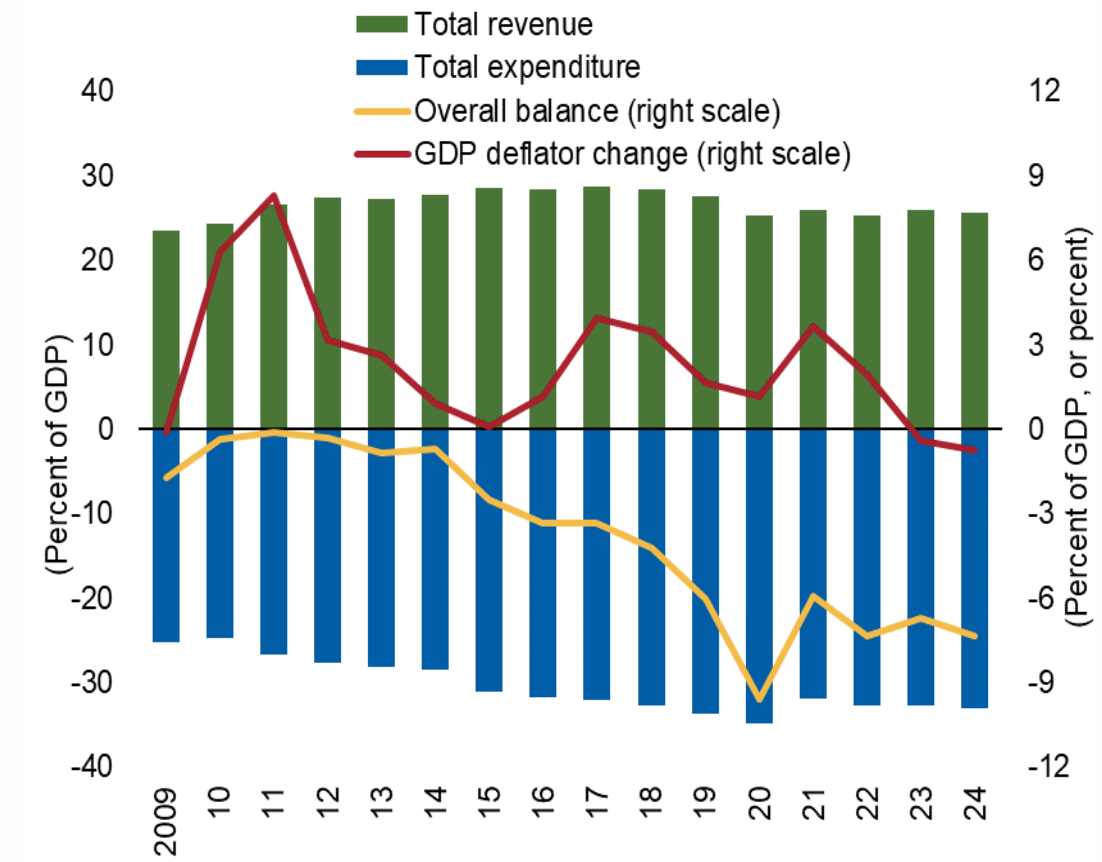
Expected Public Debt and Forward Interest Rates



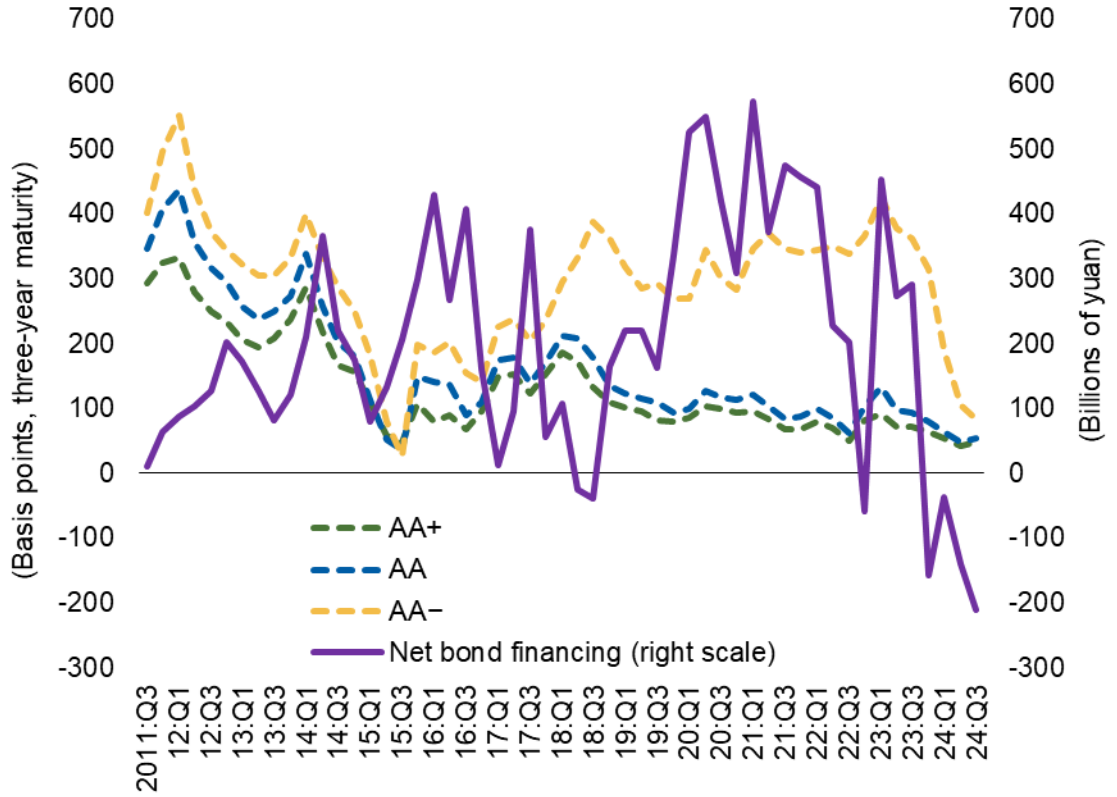
Sources: Furceri, Gonçalves, and Li forthcoming.
Note: Shaded area represents the 90 percent confidence interval. See Online Annex 1.2 for details.

China: expansionary fiscal policy in the face of growth headwinds

General Government Fiscal Variables and GDP deflator



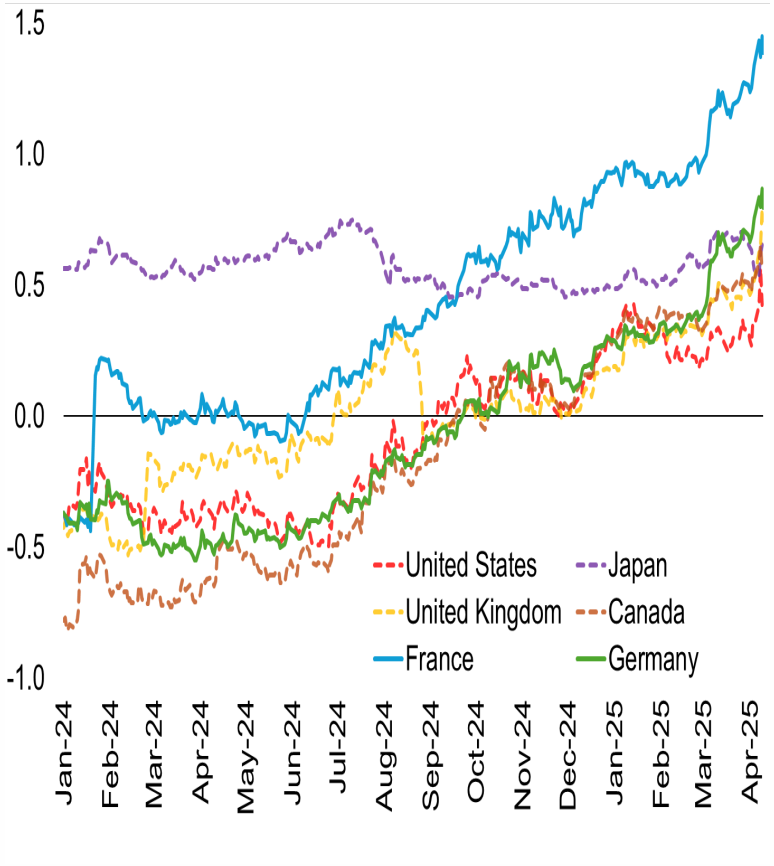
Local Government Financial Vehicle Net Bond Financing and Credit Spread of Bonds by Credit Rating



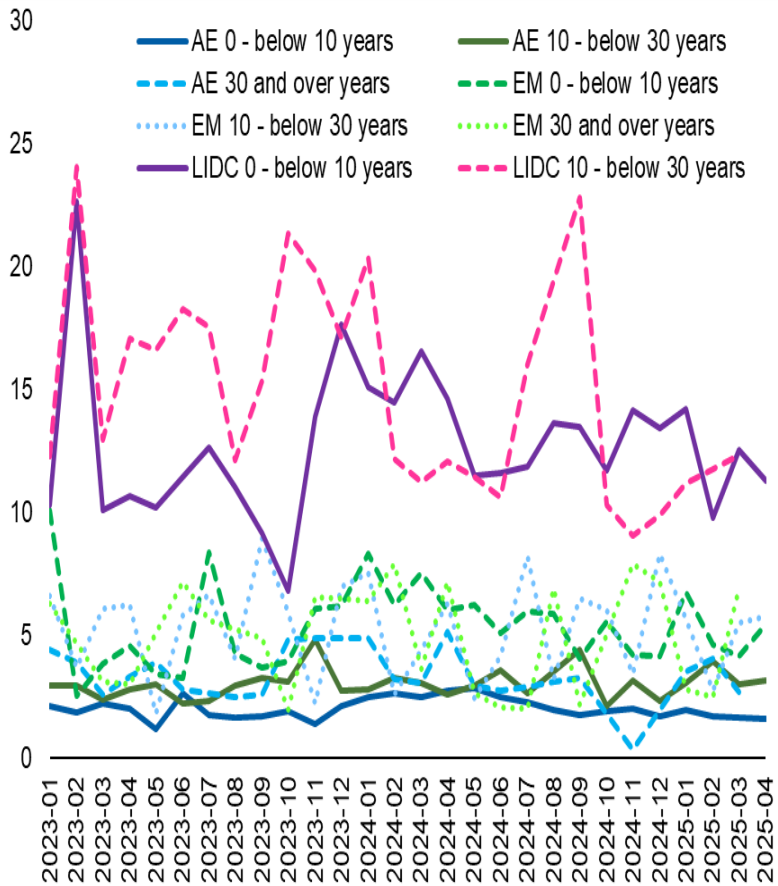
Sources: IMF, World Economic Outlook database; Wind; and IMF staff calculations.
Note: AA+, AA, and AA– denote the credit rating.

AEs (excluding US): debt is stabilizing but with significant heterogeneity

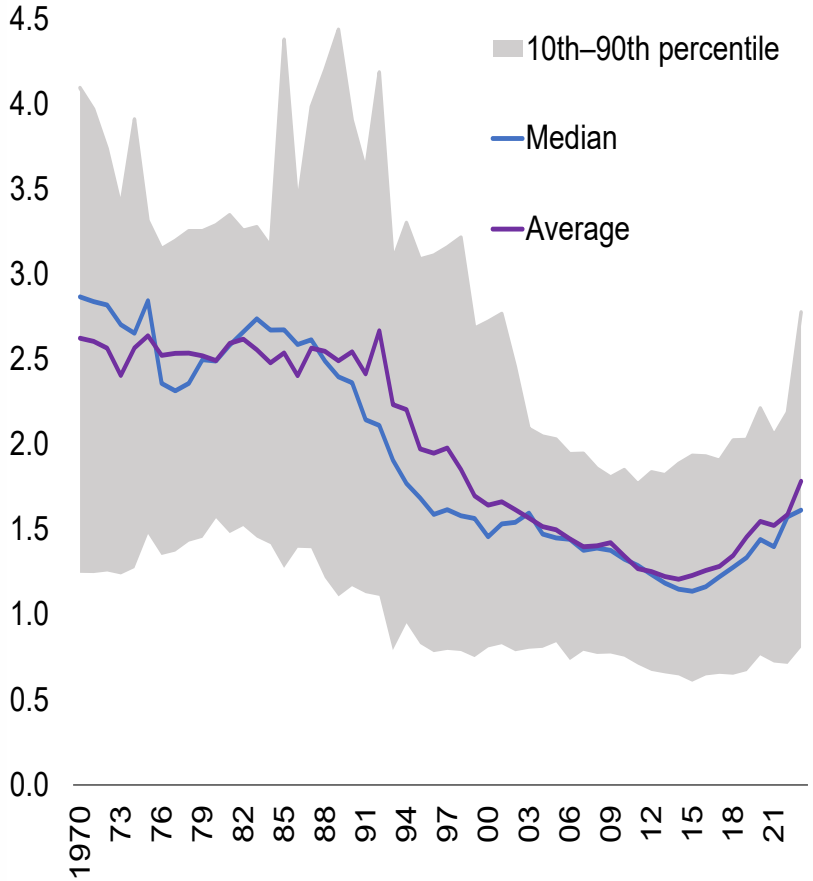
Evolution of Term Spreads for Select Advanced Economies *(Percent)*



Weighted Average of Yield to Maturity of Recent Government Bond Issuances *(Percent)*



Military Spending Overtime in Europe *(Percent of GDP)*



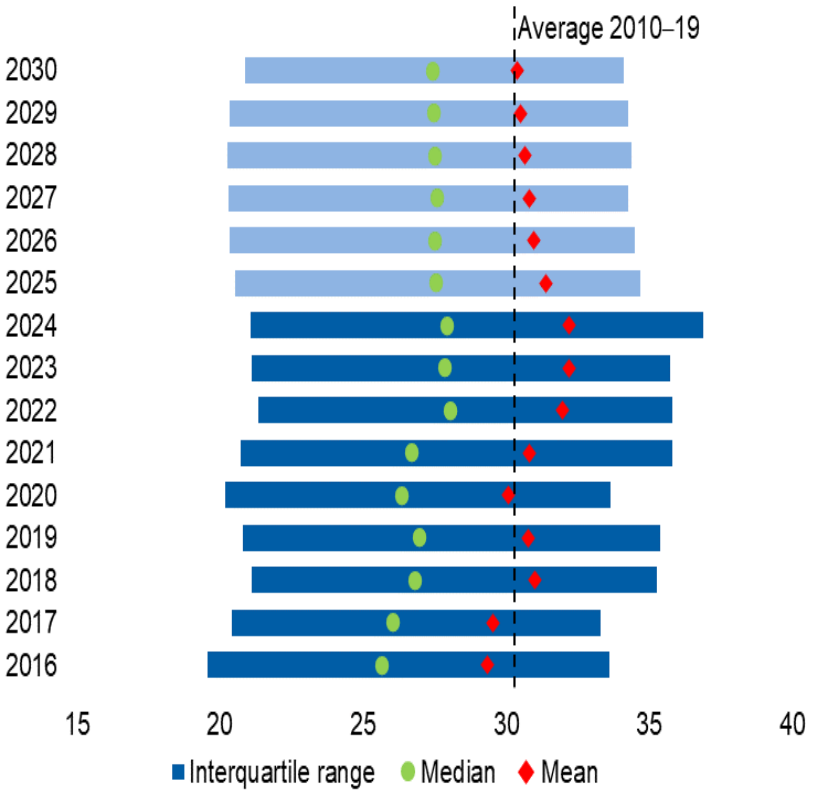
Sources: Bloomberg Finance L.P.; and IMF staff calculations.
Note: The data in the figure have the cutoff date of April 10, 2025. Lines in panel 1 show the difference between the 10- and 2-year yields for each selected advanced economy. Lines in panel 2 show the weighted average for all primary domestic and external debt issuance yield to maturities for distinct country groups across different maturity categories. AE = advanced economy; EM = emerging economy; LIDC = low-income developing country.

Source: SIPRI and IMF staff estimates.
Note: The figure excludes military and defense spending of Russia, Ukraine, and Israel, but include other non-EU countries.

EMDEs (exc. China): tighter financial conditions, challenging aid landscape

Fiscal Revenues in Emerging Markets (exc. China) per Year

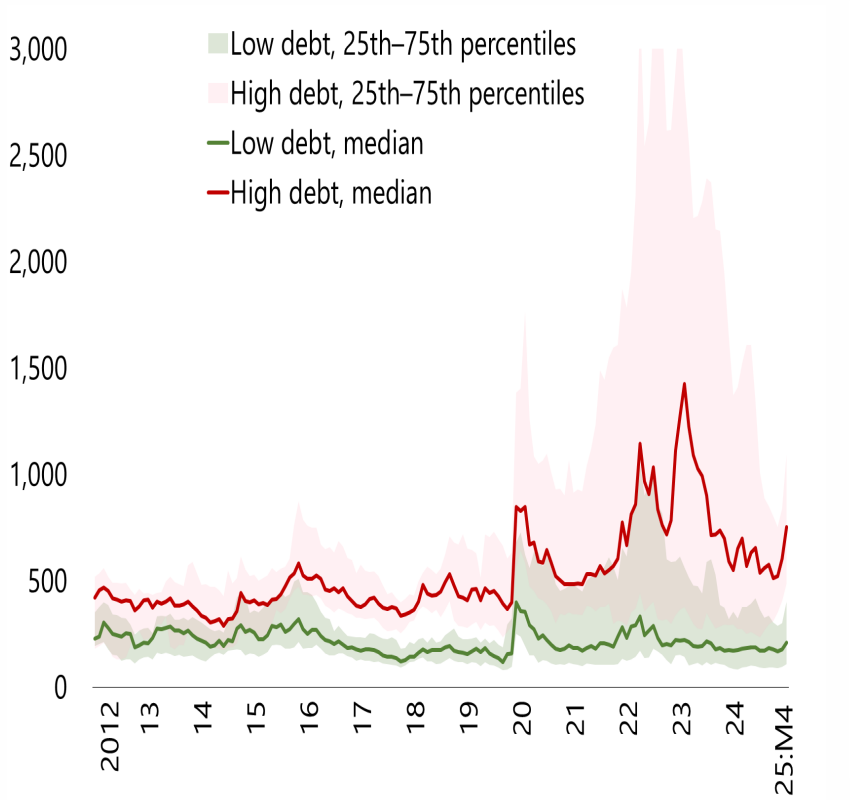
(Percent of GDP)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.
Note: Light-toned blocks indicate projections.

Foreign-Currency Sovereign Spreads in EMDEs

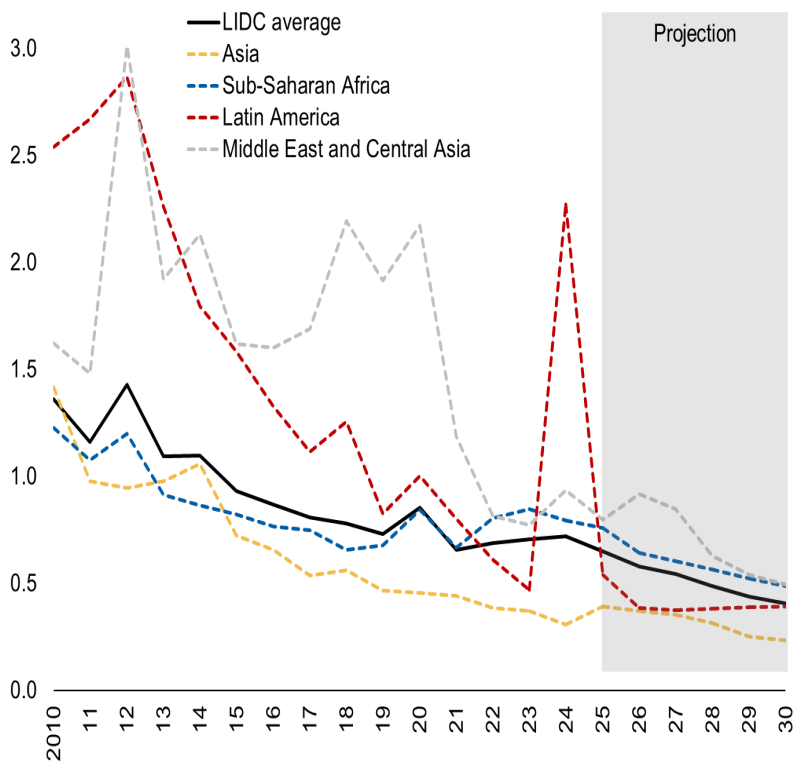
(Basis points, monthly)



Sources: Haver Analytics; and IMF staff calculations.
Note: The data in the figure have the cutoff date of April 10, 2025. "Low debt" refers to countries whose public debt levels are in the bottom third of the sample; "High debt" refers to countries whose public debt levels are in the top third. Solid lines correspond to the median distribution of foreign-currency spreads, whereas shaded areas correspond to the interquartile range.

Foreign Grants in LIDCs

(Percent of GDP)

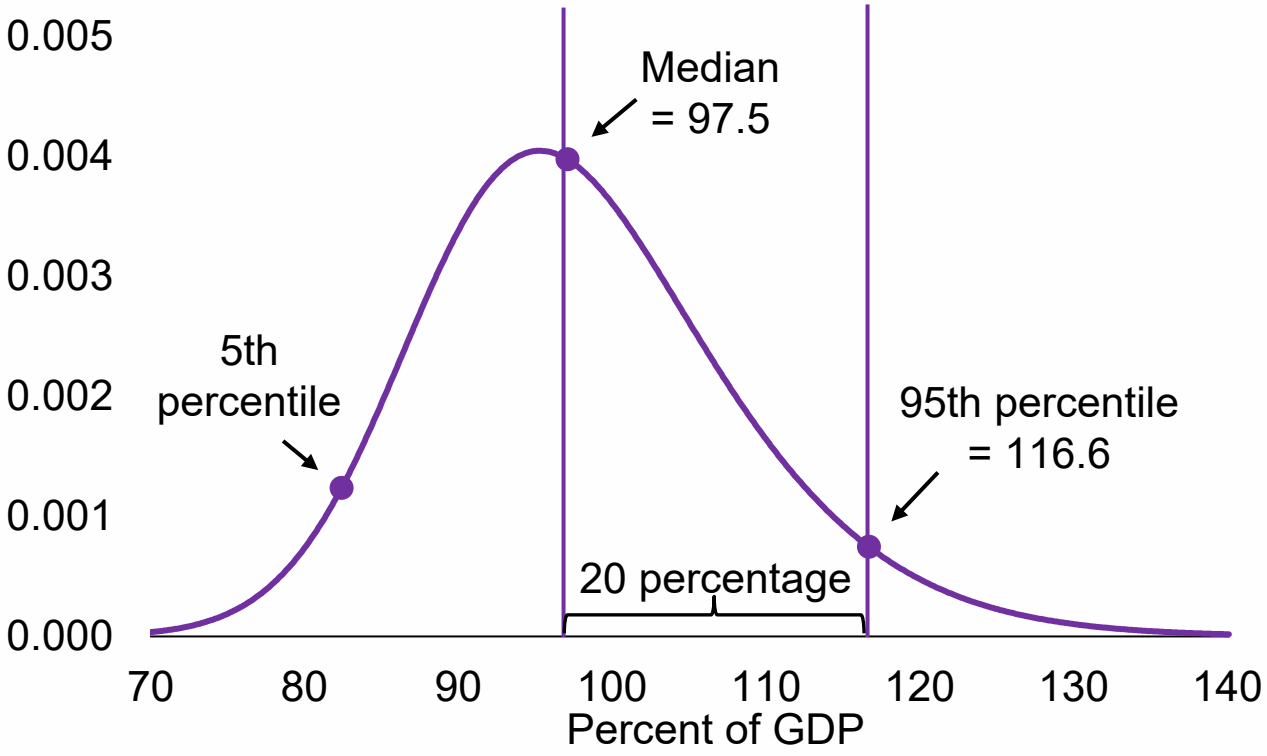


Sources: IMF, World Economic Outlook (WEO) database; and IMF staff calculations.
Note: The spike in 2024 for the Latin American regional average reflects a sharp increase for Haiti, where grants in 2024 include debt forgiveness granted by Venezuela for USD 1.7 billion in exchange for a lump-sum payment of USD 500 million.

Debt risks tilted to the upside

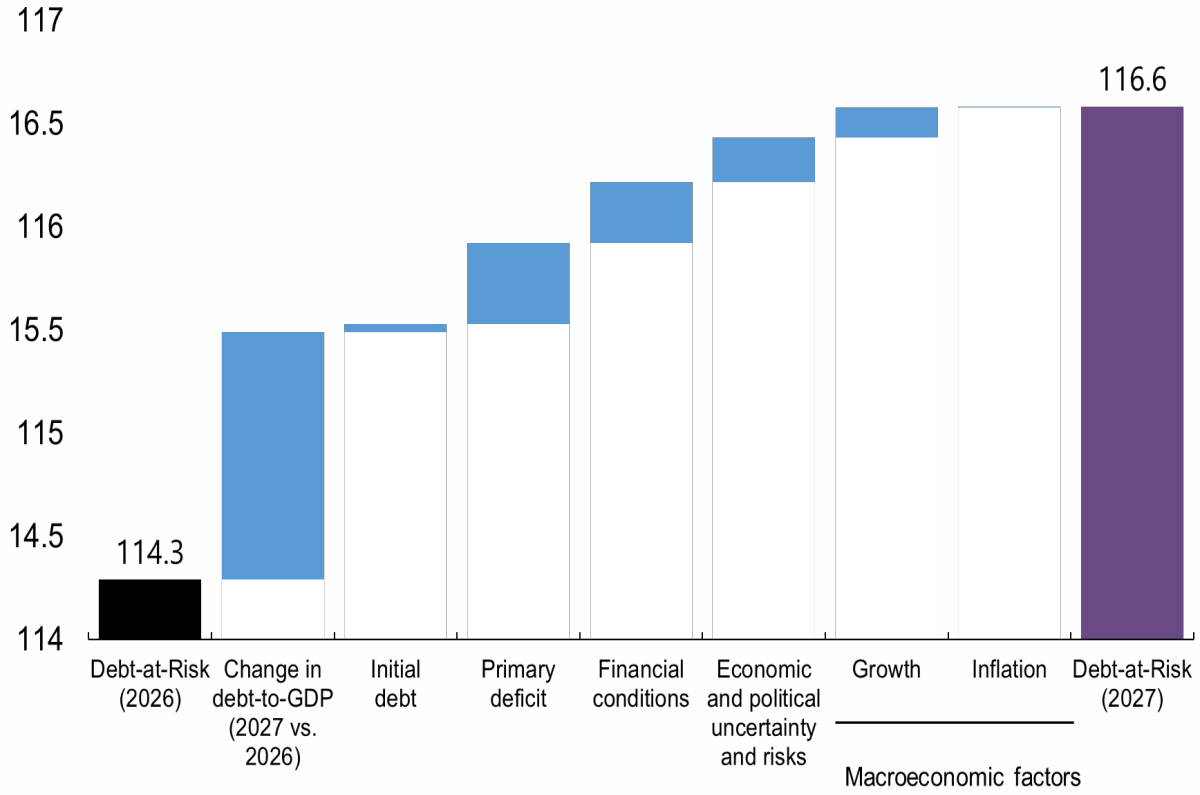
Global Public Debt-at-Risk 2027

(Probability density of the debt-to-GDP ratio forecast three years ahead)



Drivers of the Change in Global Debt -at-Risk between 2026 and 2027

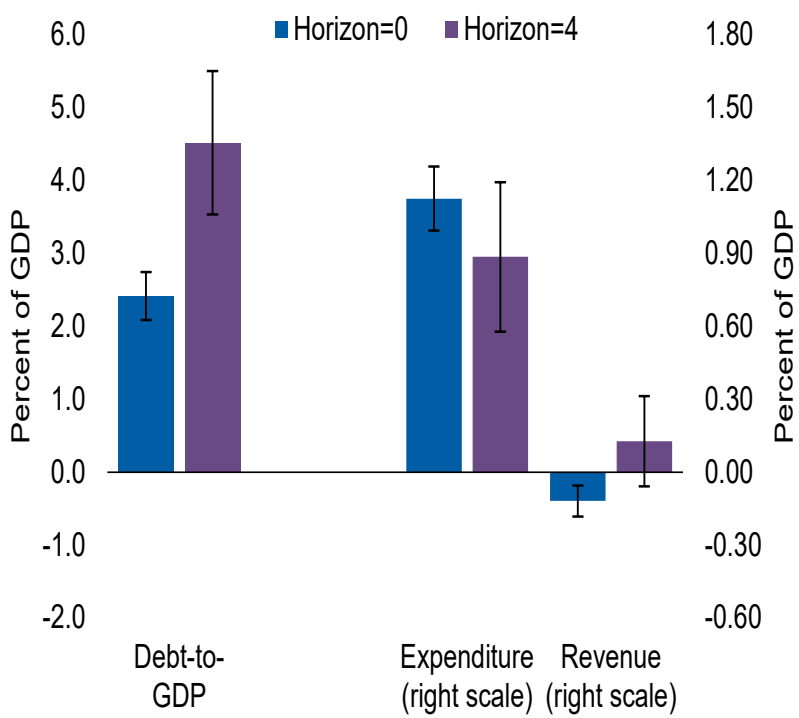
(Percentage points)



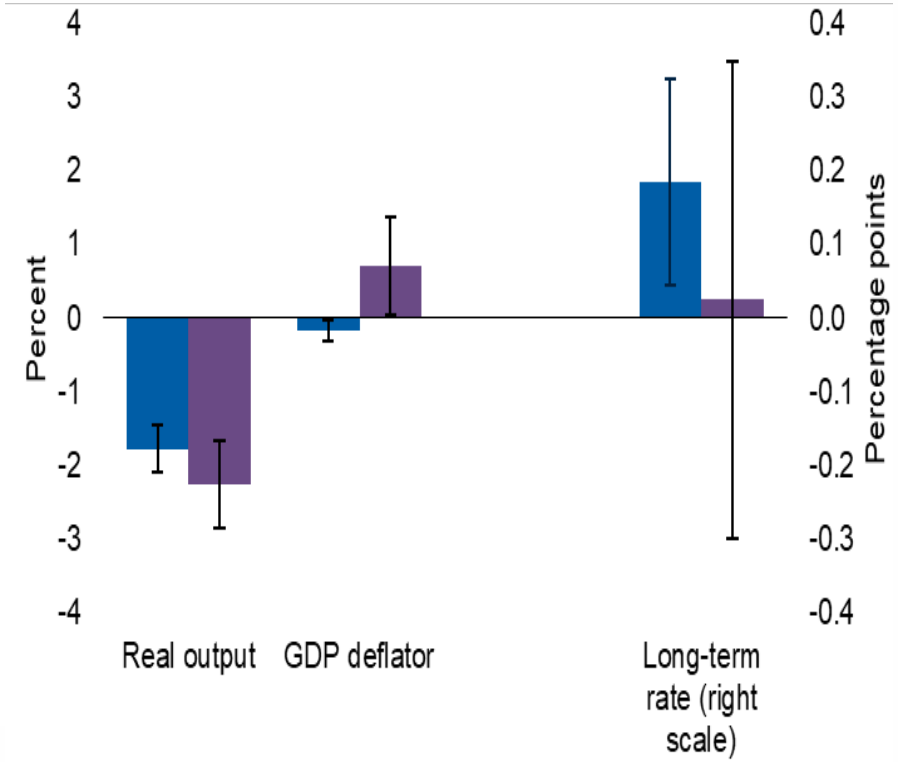
Sources: IMF World Economic Outlook database; and IMF staff calculations.
Note: Figure 1 displays the probability density function, which is estimated using panel quantile regressions of the debt-to-GDP ratio on various political, economic, and financial variables. The global sample is comprised of 47 countries, accounting for more than 90 percent of global debt. Dots indicate the predicted 5th, 50th (median), and 95th percentiles of the debt-to-GDP ratio (October 2024 Fiscal Monitor, Online Annex 1.2). Figure 2 plots the contributions from the conditioning variables used for the debt-at-risk model to the estimated level of debt-at-risk. The black bar denotes the debt reference point from the April 2025 World Economic Outlook. Blue bars refer to contribution from the conditioning variables. The purple bar indicates the value of the global debt-at-risk.

Escalating geoeconomic uncertainty could further amplify debt risks

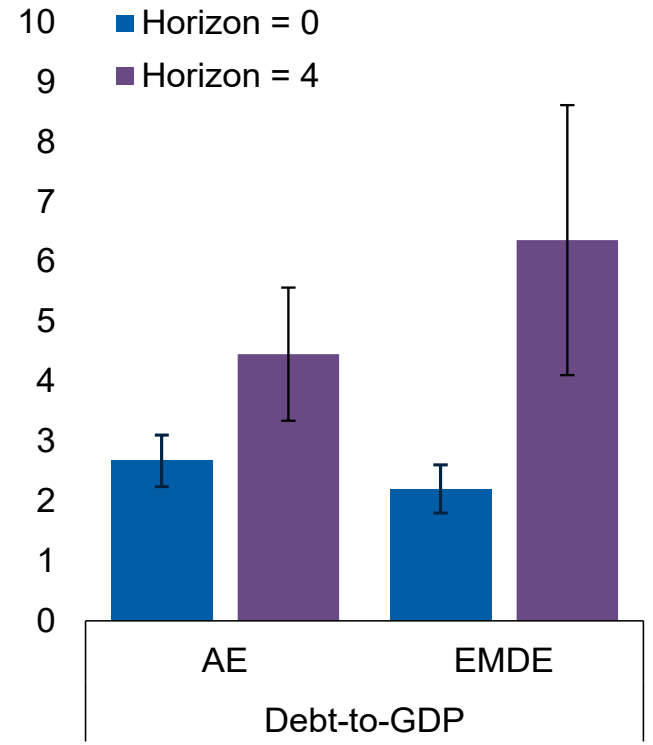
Fiscal Effects of Geoeconomic Uncertainty
(Percentage points of GDP)



Macro Effects of Geoeconomic Uncertainty



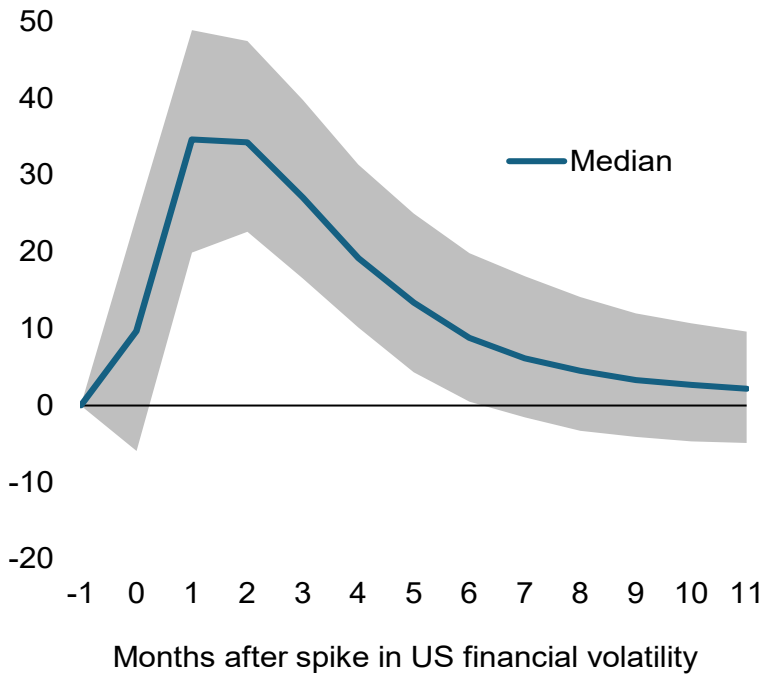
Effects of Geoeconomic Uncertainty by Income Level
(Percentage points of GDP)



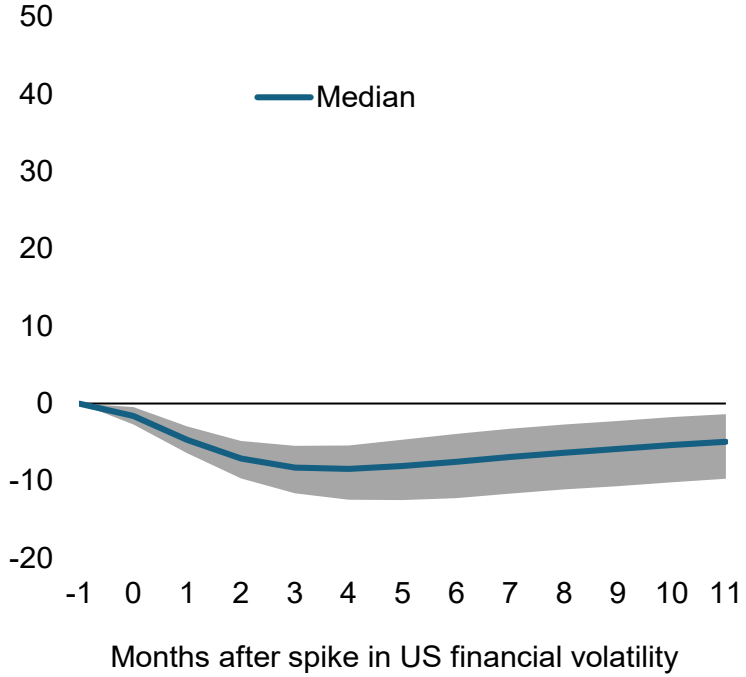
Sources: Fernández-Villaverde, Mineyama, and Song (2024); IMF, World Economic Outlook database; and IMF staff calculations..
Note: The bars indicates the response to a one standard deviation increase in the Geopolitical Fragmentation Index (Fernandez-Villaverde, Mineyama, and Song 2024). The lines represent the 90 percent confidence band. Horizons denote the years after the shock. AE = advanced economy; EMDE = emerging market and developing economy.

Potential spillovers from more volatile US financial conditions

Effect of US Financial Volatility on EMs Bond Yield Volatility
(Percent)

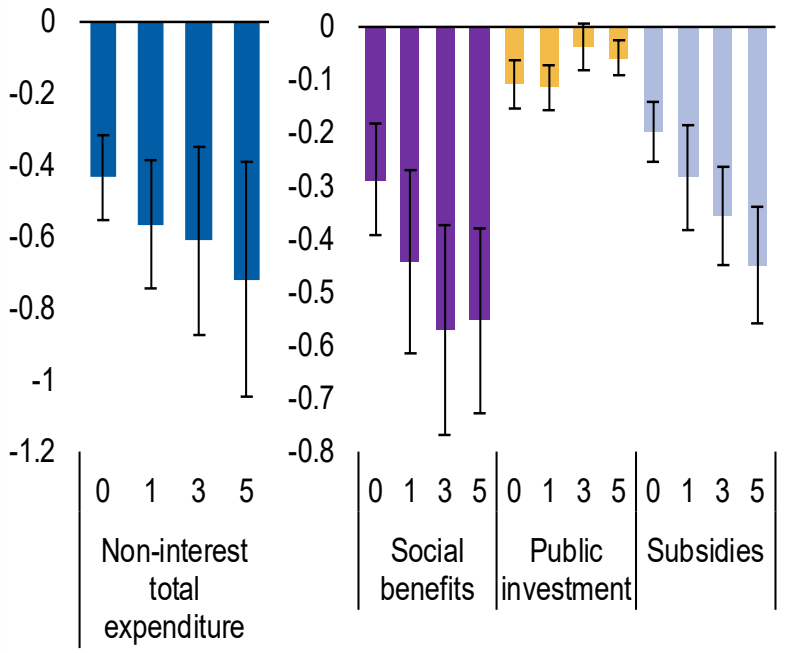


Effect of US Financial Volatility on Global Commodity Prices
(Percent)



Sources: Federal Reserve Economic Data; JPMorgan; Ludvigson, Ma, and Ng (2021); and IMF staff calculations.
Note: The figure shows the impulse response functions from a Bayesian Vector Autorregressive model including U.S. financial volatility, commodity price, the Chicago Board Options Exchange (CBOE) gold volatility, CBOE crude oil volatility, the volatility of sovereign bond yields in advanced economies (excluding the United States), and the volatility of sovereign bond yields in emerging market economies. The sample is from June 2008 to December 2024. The advanced economies and emerging market sovereign bond yield volatility is the standard deviation of daily Global Bond Index yields and Emerging Market Bond Index yield in the month, respectively. The US financial volatility is from Ludvigson, Ma, and Ng (2021). The financial volatility shock is scaled to be about two standard deviations. Shaded areas represent the 90th confidence interval.

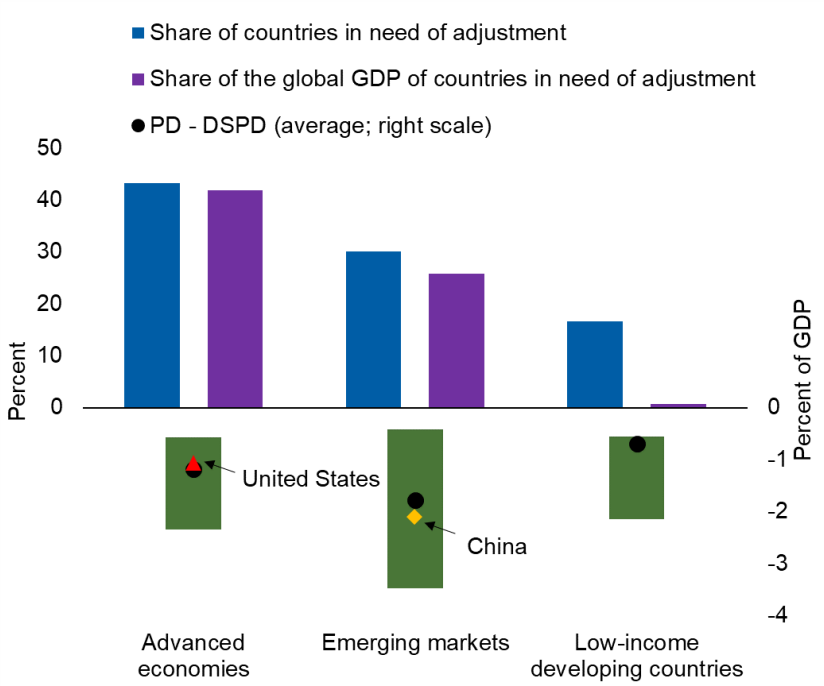
Crowding-Out Effects of Interest Expenses on Other Public Spending
(Percent of potential GDP)



Sources: IMF, Global Debt Database; IMF, Government Finance Statistics, IMF, World Economic Outlook; and IMF staff calculations.
Note: The figure shows the effect of a 1 percent of potential GDP increase in interest expenditures on selected budget categories 0, 1, 3, and 5 years ahead. The vertical lines show 68 percent confidence intervals (see Online Annex 1.5).

Needed fiscal adjustment reduces debt risks

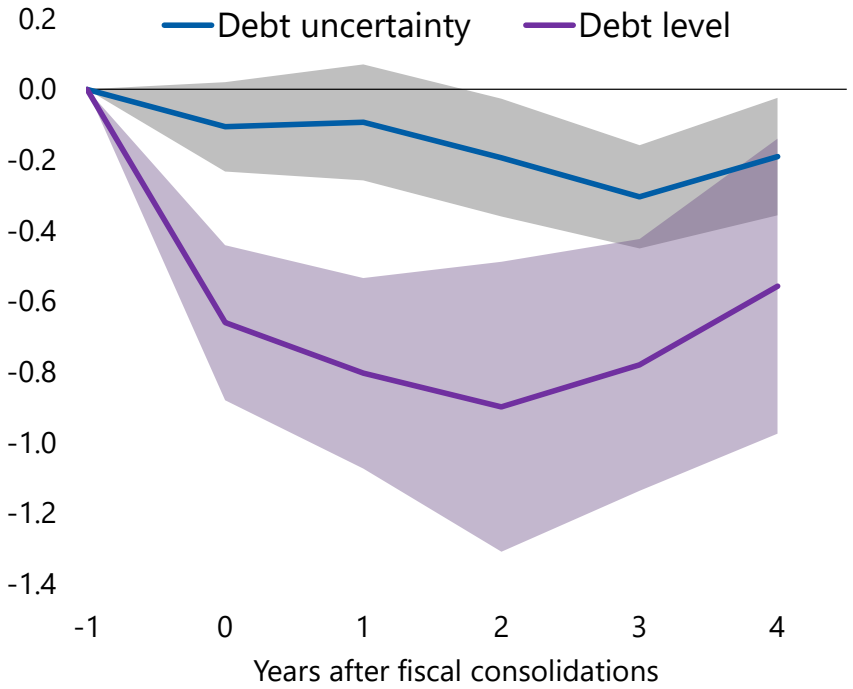
Share of Economies with PB above the Debt-Stabilizing Level in 2030, and the Adjustment Required in the PB



Sources: World Economic Outlook database; and IMF staff calculations.
Note: Values in the bars indicate the share of economies with PB < DSPB in 2030. Adjustment needs (yellow dots for the average for the income group, unless stated otherwise) indicate the necessary change in primary deficits to stabilize debt for economies with PD < DSPD in 2030.

Average Effect of Fiscal Adjustment on the Level and Uncertainty about Debt

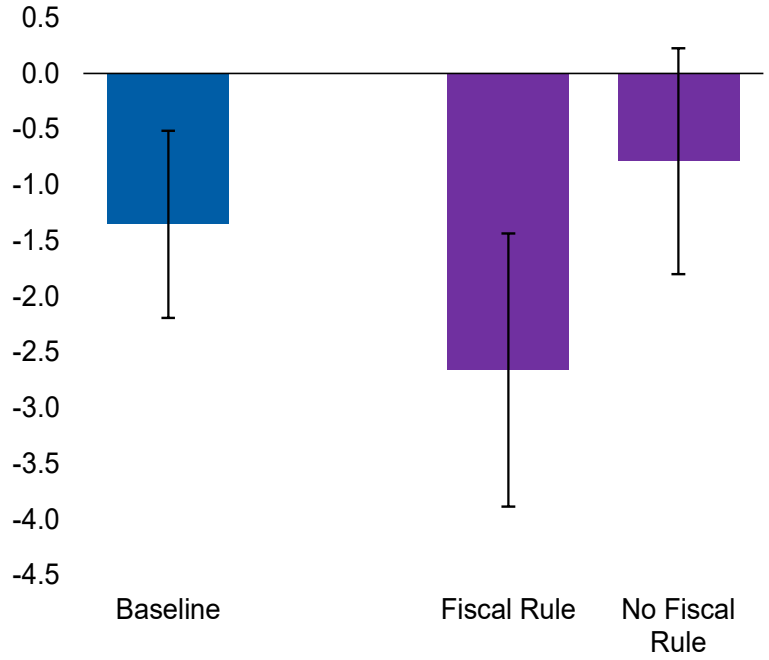
(Percent of GDP)



Sources: Frangiamore, Furceri, and Pizzuto (forthcoming); World Economic Outlook database; and IMF staff calculations.
Notes: Shaded areas represent the 90 percent confidence interval.
impulse response functions of debt-at-risk to fiscal consolidation over time.

Average Effect of Fiscal Adjustment on Debt-at-Risk in the Baseline and in the Presence of Fiscal Rule

(Percent of GDP)



Sources: Frangiamore, Furceri, and Pizzuto (forthcoming); World Economic Outlook database; and IMF staff calculations.
Notes: Bars represent the point estimate and lines the confidence intervals.

Build fiscal buffers against new risks

- **Gradual fiscal adjustment within a credible medium-term framework remains essential in most countries,** balancing the pace and timing of debt reductions with economic growth.

- **Advanced economies** should reprioritize expenditures, advance pension, health care, and tax reforms, and pursue active labor policies for their working-wage labor force.

- **Emerging markets and developing economies** should reform tax systems, broaden tax bases, improve revenue administration, while phasing out energy subsidies and rationalizing the wage bill.

- **If necessary, offer timely, targeted, and temporary support to communities** affected by trade disruptions.

- **Advancing fiscal and structural reforms is crucial** to reignite growth and mitigate debt-growth trade-offs.

FISCAL MONITOR
April 2025

Analytical Chapter

Public Sentiment Matters: The Essence of Successful Energy Subsidies and Pension Reforms

The authors Chapter 2 are Davide Furceri (co-lead) and Mauricio Soto (co-lead), Hussein Bidawi, Christoph Freudenberg, Mengfei Gu, Emine Hanedar, Radhika Goyal, Samir Jahan, Julieth Pico Mejía, Diala Al Masri, Delphine Prady, Ana Pessoa, and Alexandre Sollaci; with contributions from Miyoko Asai, Nusrat Chowdhury, Kardelen Cicek, Yomna Gaafar, Victoria Haver, Sultan Orazbayev, Huy Nguyen, Vishal Parmar, Ervin Prifti, Irene Rausell, Jiemin Ren, Arash Sheikholeslam, Zobaed Sm, and Nate Vernon.

Energy subsidy and pension measures are key to reducing deficits and creating fiscal space but challenging to implement


EL UNIVERSO

El Mayor Diario Nacional

Viernes 17 de junio de 2022

Más sectores se juntan a las manifestaciones

Presidente Guillermo Lasso firmó ayer un decreto para el control de precios de productos de primera necesidad.

Derogatoria parcial de ley humanitaria

Animales de granja, en el Malecón

Byron Castillo se sumó al club mexicano León

Guayaquil alista ordenanza para prohibir el porte de armas en espacios públicos

The New York Times

Nigerians Protest Rise in Oil Prices

Share full article

Nigerians in Lagos on Monday protested a sharp rise in fuel prices after subsidies ended. A strike shut down much of the country. Pius Utomi Ekpei/Agence France-Presse — Getty Images

By Adam Nossiter

Jan. 9, 2012

DAKAR, Senegal — Tens of thousands of Nigerians took to the streets in cities across the country on Monday to protest a sudden sharp rise in oil prices after the government abruptly ended fuel subsidies. At the same time, a national strike over the oil price increase shut down much of the country.


Le Monde

Retraites : les syndicats en appellent à Macron

Les nouveaux scénarios pour l'électricité en France d'ici à 2035

Géorgie Tbilissi ouvre la chasse aux « agents étrangers »

Tribune « Les droits des femmes régressent sous nos yeux »

Associations Les Français continuent de faire des dons malgré la crise

LA GAUCHE DÉPASSÉE PAR LES SYNDICATS

The New York Times

With Death in Streets, Nicaragua Cancels Social Security Revamp

Share full article

Students clashed with the riot police during a protest against social security changes in Managua, Nicaragua, on Saturday. Inti Ocon/Agence France-Presse — Getty Images

By Frances Robles

April 22, 2018

Leer en español

MANAGUA, Nicaragua — President Daniel Ortega of Nicaragua announced on Sunday that he was reversing a social security overhaul that had prompted days of protests in which up to two dozen people died.

Key questions

I. **Historical experience with energy subsidies and pension measures.** How have energy and pension reform measures evolved across regions, and countries, and over time?

II. **Sentiment toward reform measures.** What factors affect energy and pension measures at different stages of the reform process (announcement, implementation and sustainment/reversal)? What is the role of stakeholder perceptions (sentiment)?

III. **How to improve the sentiment toward measures.** What key factors affect sentiment following reform announcements?

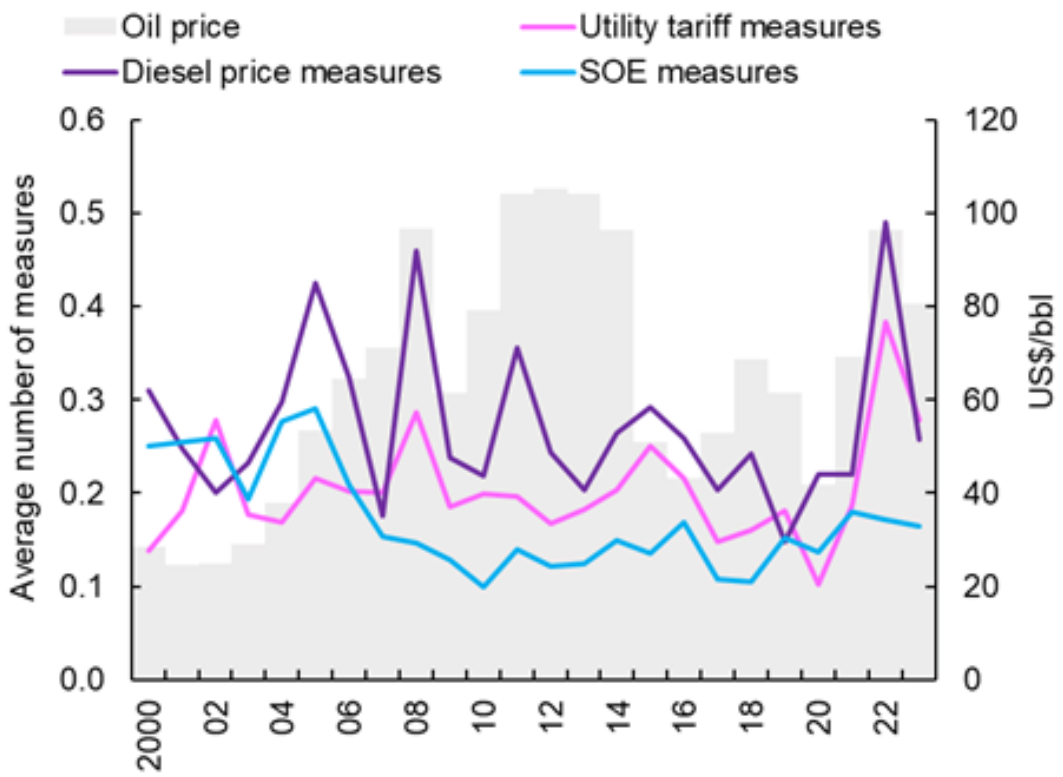
Building blocks of analysis

	Energy subsidies	Pensions
Reform measures	• 10K IMF Staff Reports (AI) • Fuel, Utility and SOE-reforms • 170 countries, 1998-2023	• EIU reports & US SSA (NLP) • Retirement age changes • 160 countries, 1960-2023
Stages of reform measures ***A: Announcement*** ***I: Implementation*** ***R: Reversal***	• A: data + news spikes • I: price/passthrough changes • R: reversal in price in admin. set prices countries	• A: commissions + news spikes • I: legislation & implementation • R: legislative adjustments
Sentiment towards reform measures	• 1.4M Factiva articles • Stakeholder extraction (AI/NLP) • Topic and sentiment (AI)	• 600K Factiva articles • Stakeholder extraction (AI/NLP) • Topic and sentiment (AI)

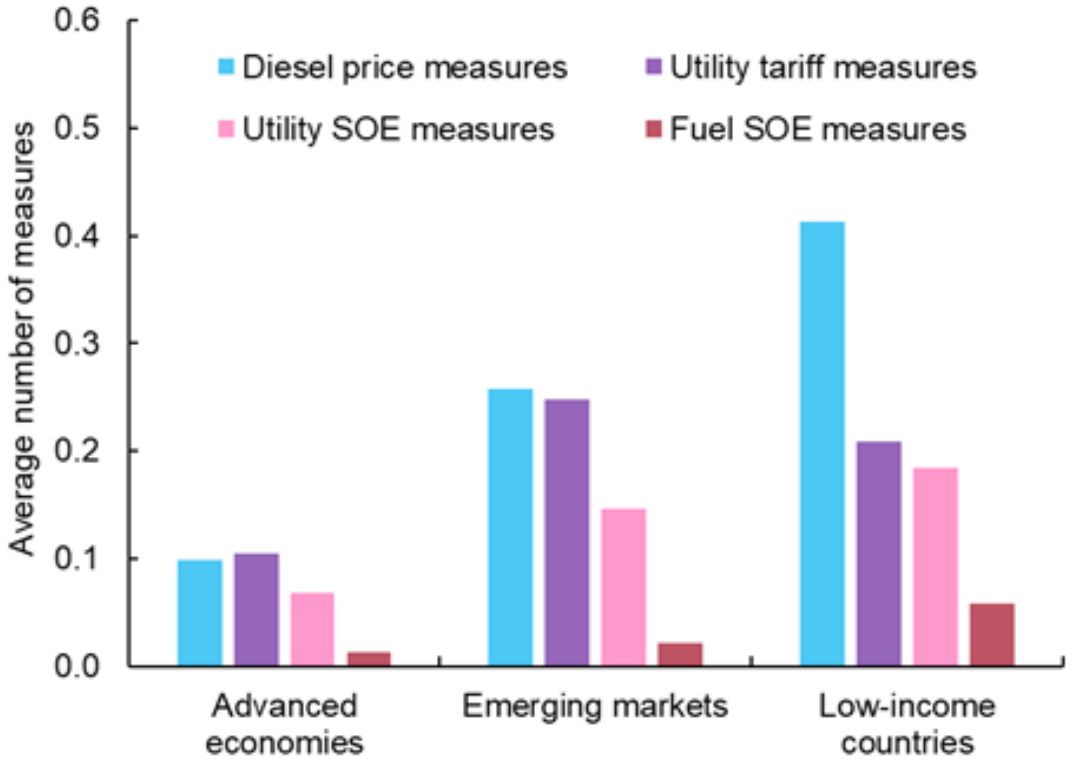
I. Stylized facts

Energy subsidy measures are common and more frequent in EMDEs

Average Number of Measures per Year



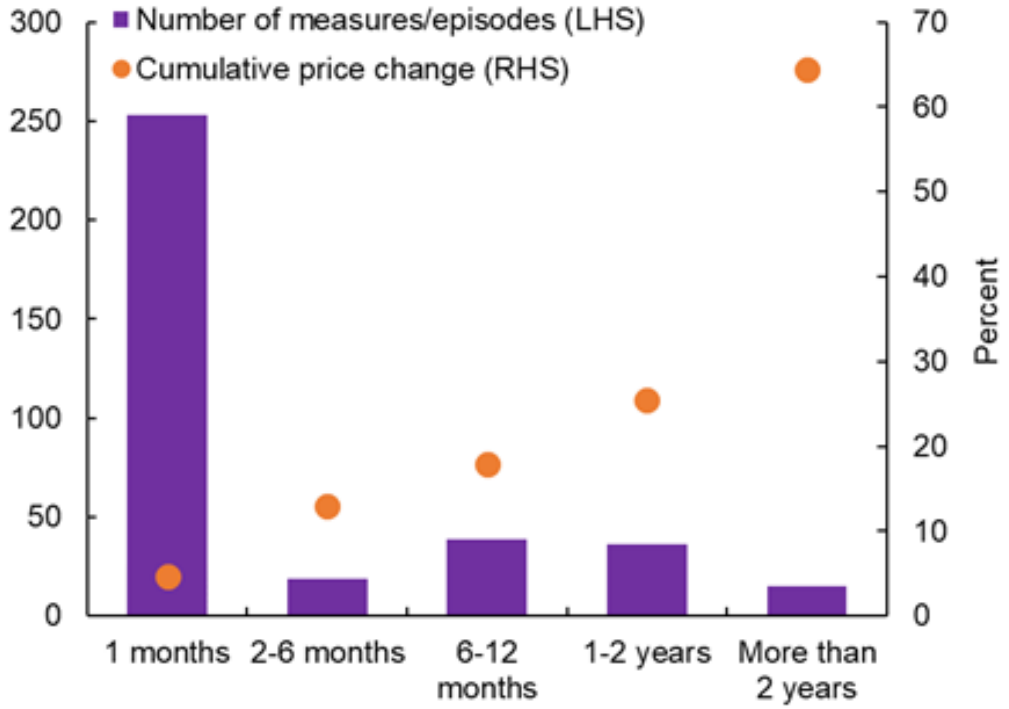
Average Number of Measures by Income Group



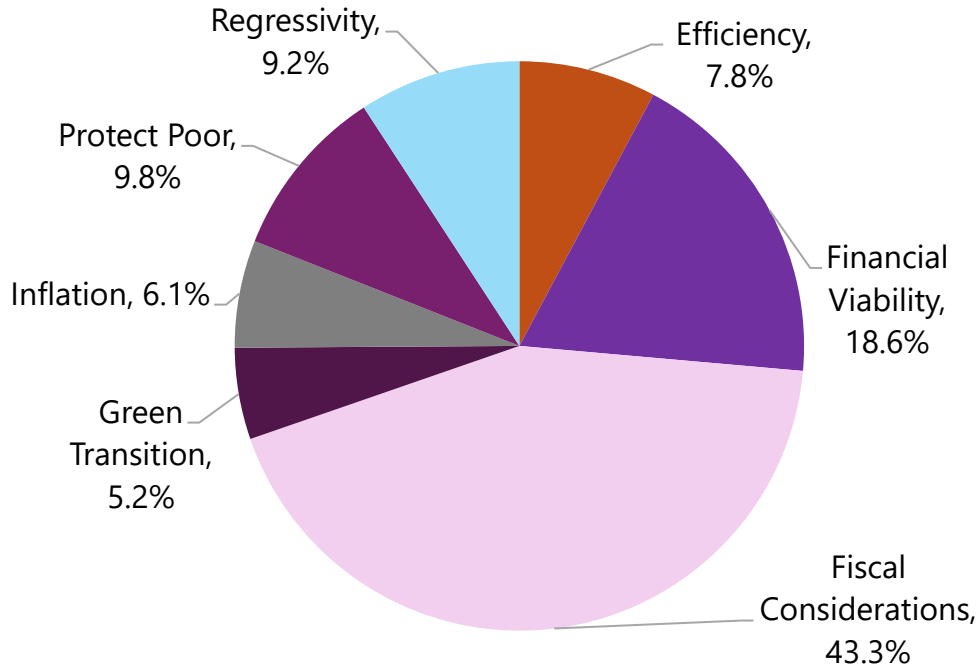
Sources: Energy Subsidy Reform Measures database; Retail Fuel Price database; and IMF staff calculations.
Note: The left-side figure plots the average number of diesel price measures, utility tariff measures, and state-owned enterprise (SOE) measures per year. Diesel measures are implemented. Utility tariff measures could be either implemented or planned. The average is calculated as the total number of measures per year across countries divided by the number of countries that had a staff report or fuel price data. The units for the right-hand vertical axis are US dollars per barrel of crude oil (US$/bbl). The right-side figure plots the average number of measures for advanced economies, emerging markets, and low-income countries between 2000 and 2023. The average is calculated as the total number of measures per year across countries divided by the number of countries within each income group that had a staff report or fuel price data. SOE = state-owned enterprises.

Fuel price measures typically ad hoc and minor, driven by fiscal concerns

Duration and Intensity of Diesel Price Measures



Distribution of Rationales for Measures

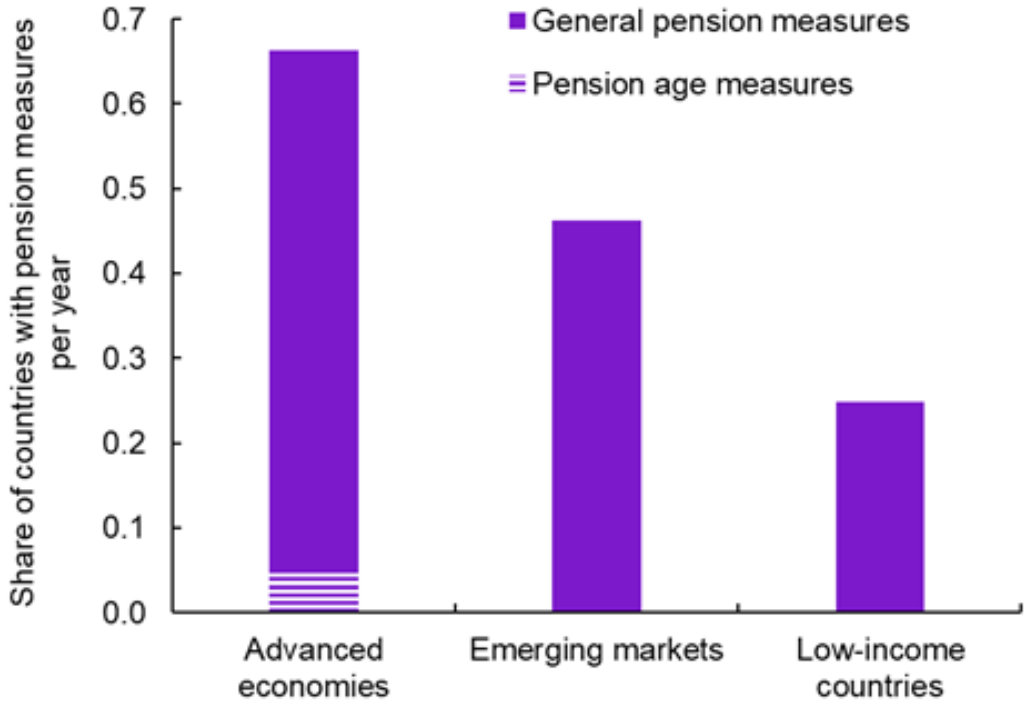


Source: Energy Subsidy Reform Measures database and IMF staff calculations.
Note: The left graph plots the distribution of cumulative diesel price changes for single measures versus reform episodes (left hand side) and the frequency of duration of a reform episode against the median of the cumulative price change (right hand side). A single measure is an isolated measure that is not part of a reform episode. A reform episode is defined as a series of diesel price measures taken within 12 months of each other. Counts show for all episodes or measures even if price change is missing. Episodes and measures may have a negative cumulative price change if they contain price-decreasing ESREM measures (that are kept regardless of their impact on prices), or a price decrease occurring mid-episode that does not meet the definition of a measure. The right graph show the distribution of rationales for fuel price measures.

Pension measures are common and more frequent in advanced economies

Share of Countries with Pension Measures, 1990–2023

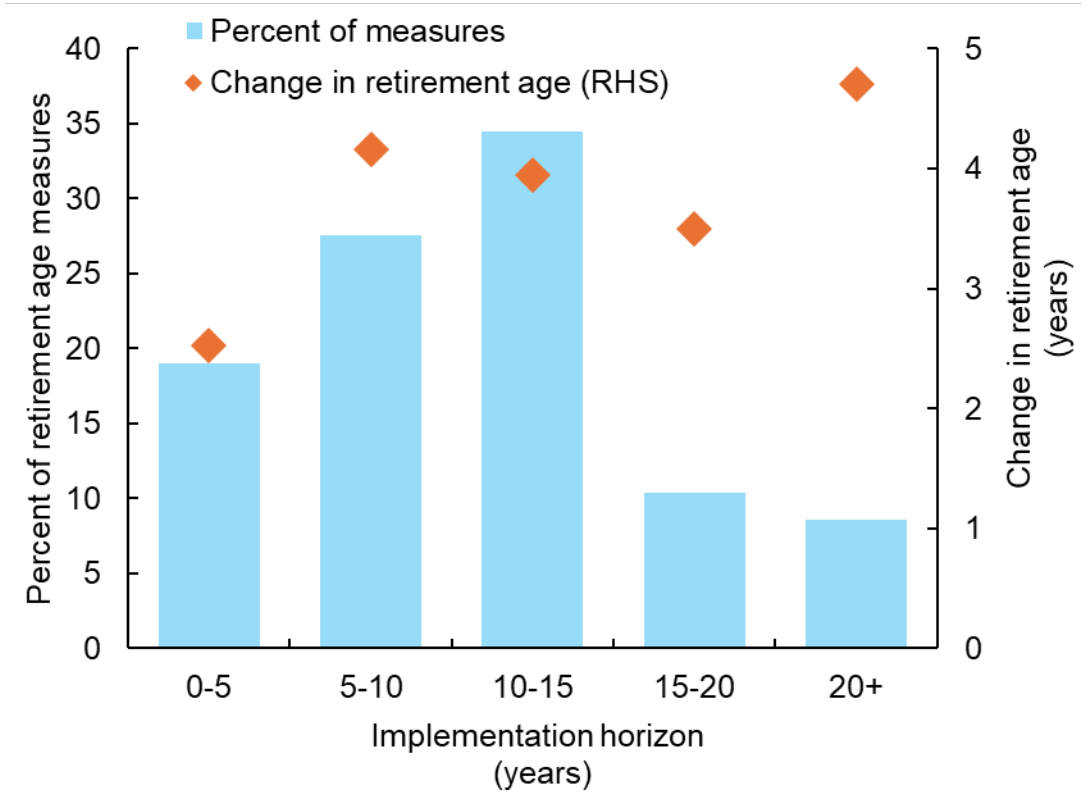
Share of Countries with Pension Measures, by Income Group



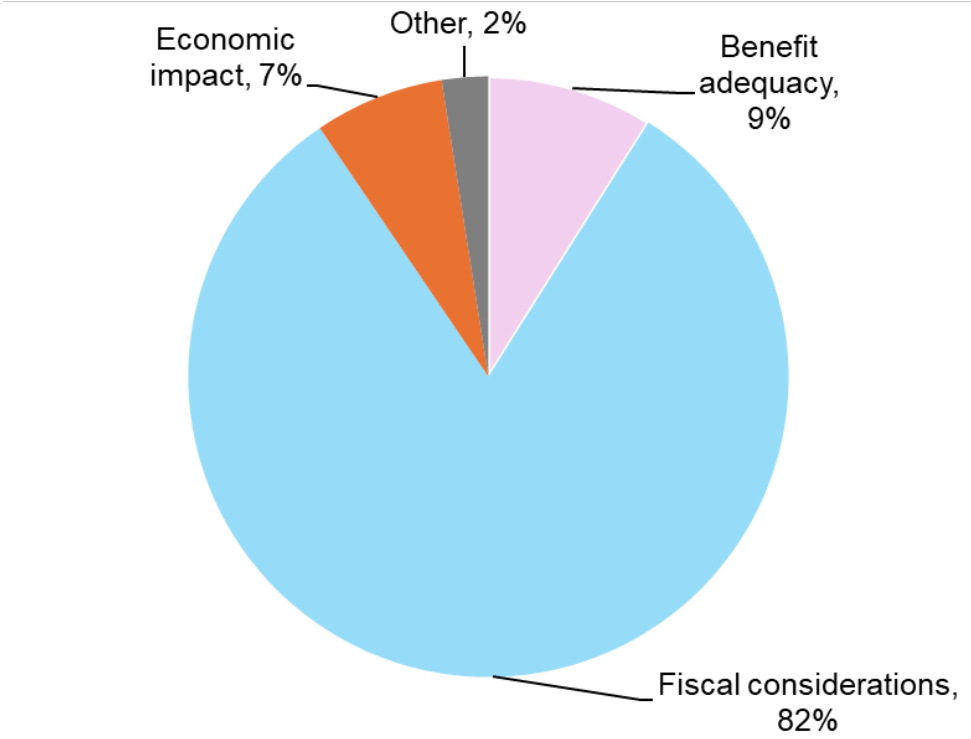
Sources: Global Pension Reform Database; and IMF staff calculations.
Note: The left figure shows the share of countries with pension measures over time in a sample of 134 countries and identifies the share of advanced economies (AEs) with pension age measures over time. The right figure presents the average share of countries with pension measures per year and within each income group. The figure plots the average over 2000–23 for a sample of 134 countries. Pension age measures are reported only for advanced economies.

Pension age measures implemented gradually, driven by fiscal considerations

Implementation Horizon of Retirement Age Increases



Distribution of Rationales for Pension Age Measures



Sources: Global Pension Reform Database; and IMF staff calculations.
Note: The left graph plots shows the distribution of the implementation years of retirement age changes (LHS), and the average change in retirement ages (RHS). The right graph shows the most frequent reasons for pension age reforms mentioned in Factiva news articles.

II. What drives reforms - the role of sentiment

What are the drivers of each reform measure stage?

		Stages of Reform Measure Process		
		From Status Quo to Announcement	**From Announcement to Implementation**	**From Implementation to Stay/Reverse**
Key factors affecting the reform process	**Macroeconomic factors**	Weak macroeconomic conditions, including fiscal situation, provide impetus for reform.	Larger imbalances may force the implementation of substantial reforms.	Strong macro conditions can make reforms more palatable to the public.
	Institutional and political environment	Reform timing could be influenced by political cycles.	Building trust can facilitate implementation of reforms.	Strong institutional capacity facilitates the durability of reforms.
	Sentiment regarding reforms	Public appetite for change can facilitate the introduction of reform proposals.	Stakeholder inputs can shape reform characteristics, making reforms more acceptable.	Strong opposition may affect the durability of reforms.

Defining and measuring stakeholder sentiment

Why Sentiment

- Stakeholder sentiment toward reform crucial during reform process

What Sentiment Covers

- Stakeholder opinions on reforms in print media
- Reactions to policy changes and broader views

Why Print Media

- Global coverage for historical reform analysis and real-time insights

Methodology

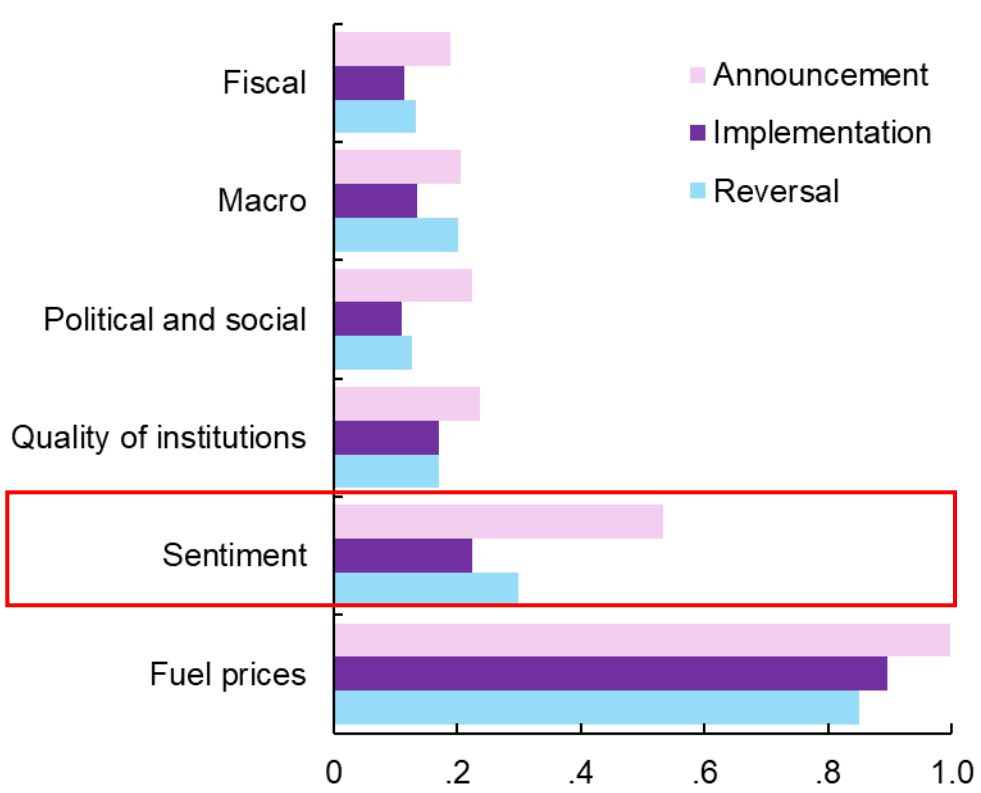
- Data Source: Articles from Factiva (9,000+ outlets)
- Analysis Method: Manually validated LLMs
- Scale: Sentiment score from -5 to +5

Measurement Considerations

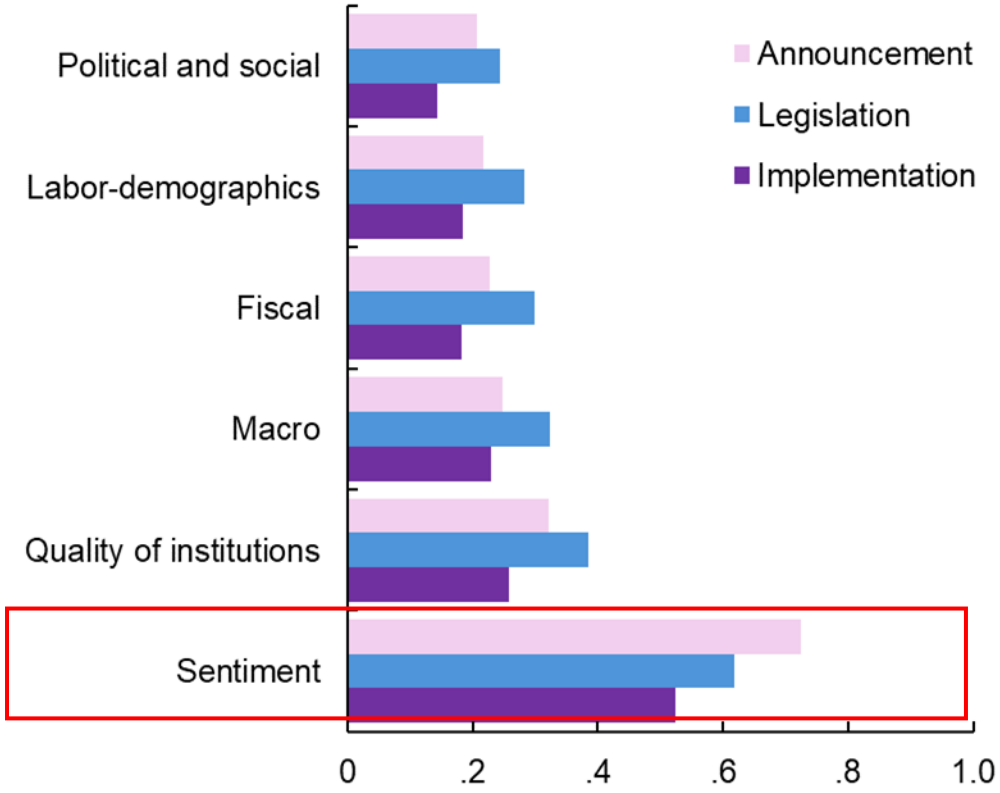
- Bias: May reflect editorial biases and contextual influences
- Granularity: Reflects public sentiment, may miss organized voices

Sentiment is a key predictor across all reform stages

Average Importance Score of Fuel Price Measures for Predicting Reform Stages (0=not important; 1=most important)



Average Importance Score of Pension Age Measures for Predicting Reform Stages (0=not important; 1=most important)

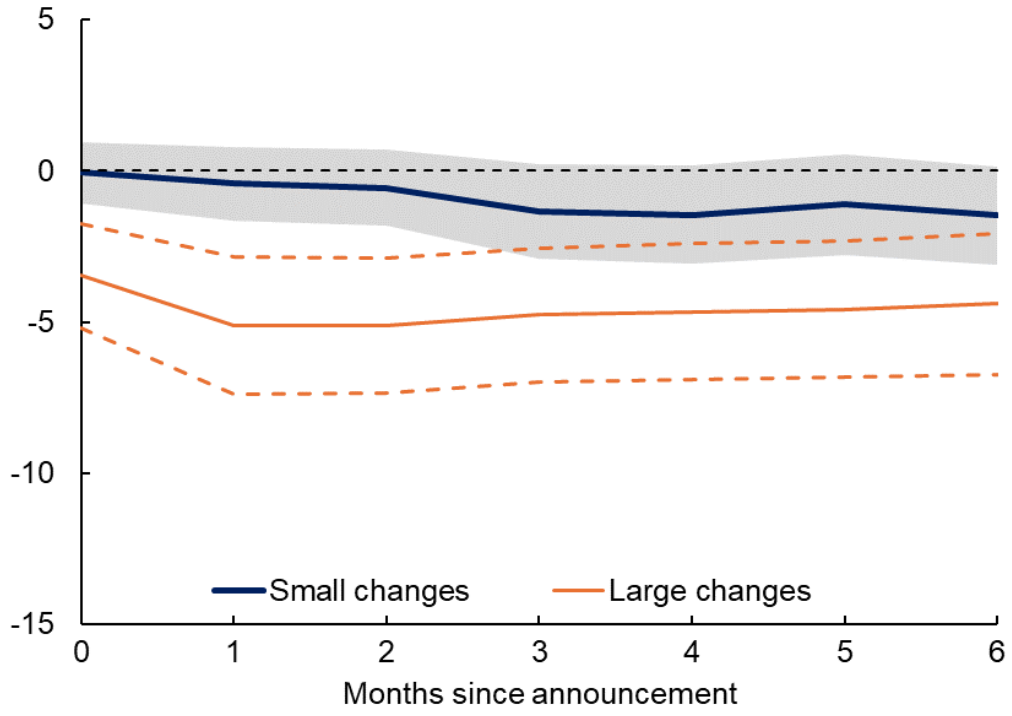


Sources: Energy Subsidy Reform Measures database; Factiva; Global Pension Reform Database; and IMF staff estimates.
Note: Importance scores show the relative importance of each regressor for the model's predictive performance. All scores were normalized, divided by the maximum score, so that 1 is the maximum importance and 0 means no importance. The panels show simple averages of the importance of individual regressors.

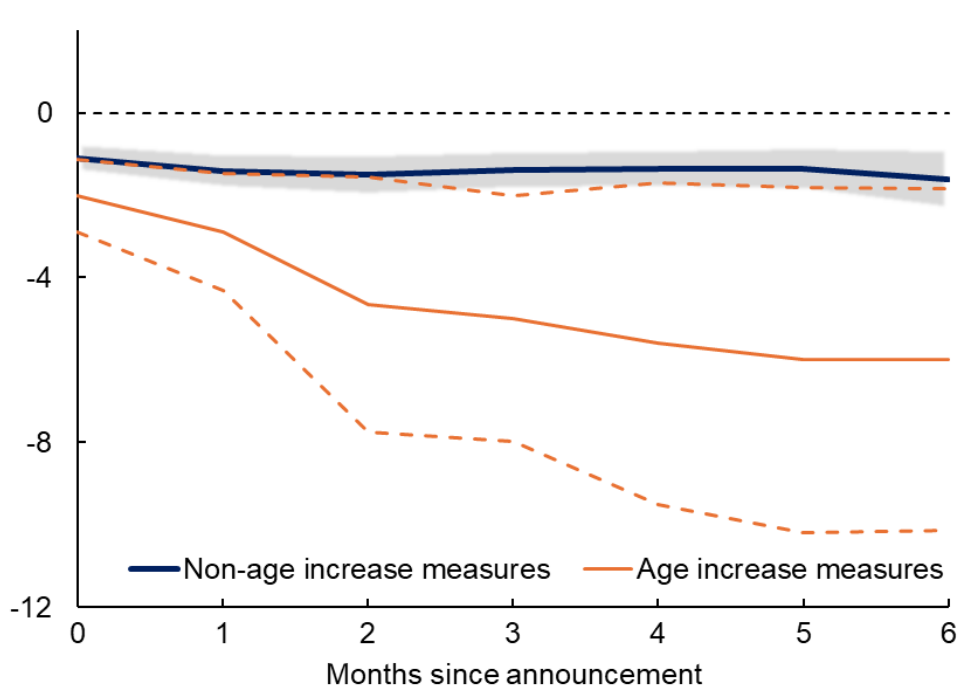
III. Factors that affect sentiment towards energy subsidy and pension measures

Reform features: gradual fuel measures and pension measures other than changes in retirement ages have less intense negative sentiment

Fuel Price Measures
(Change in sentiment index)



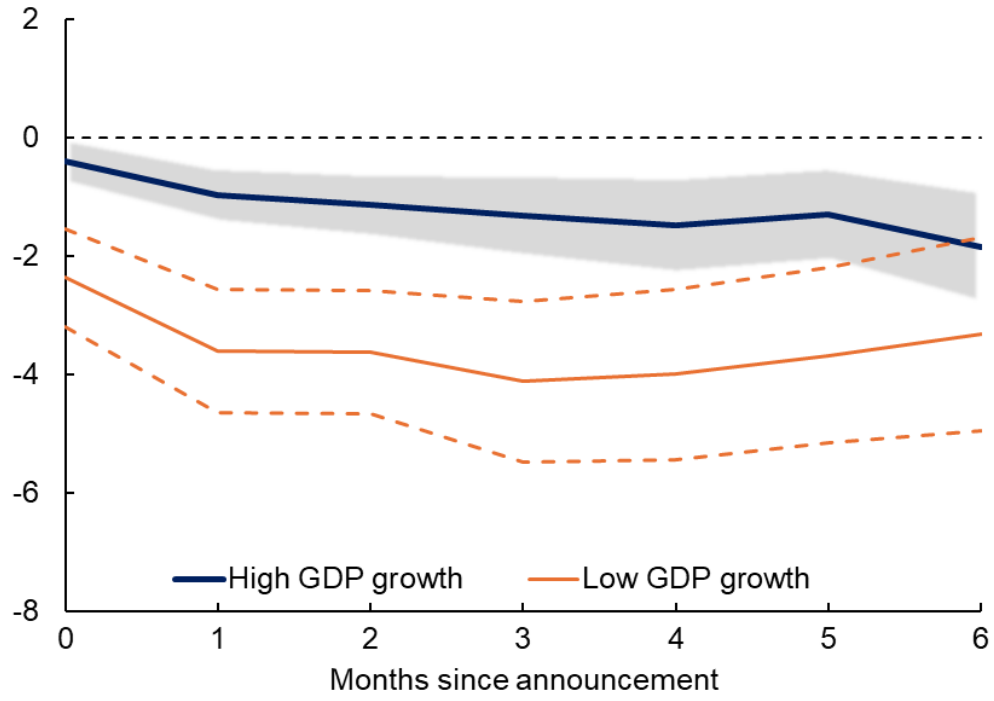
Pension Age Measures
(Change in sentiment index)



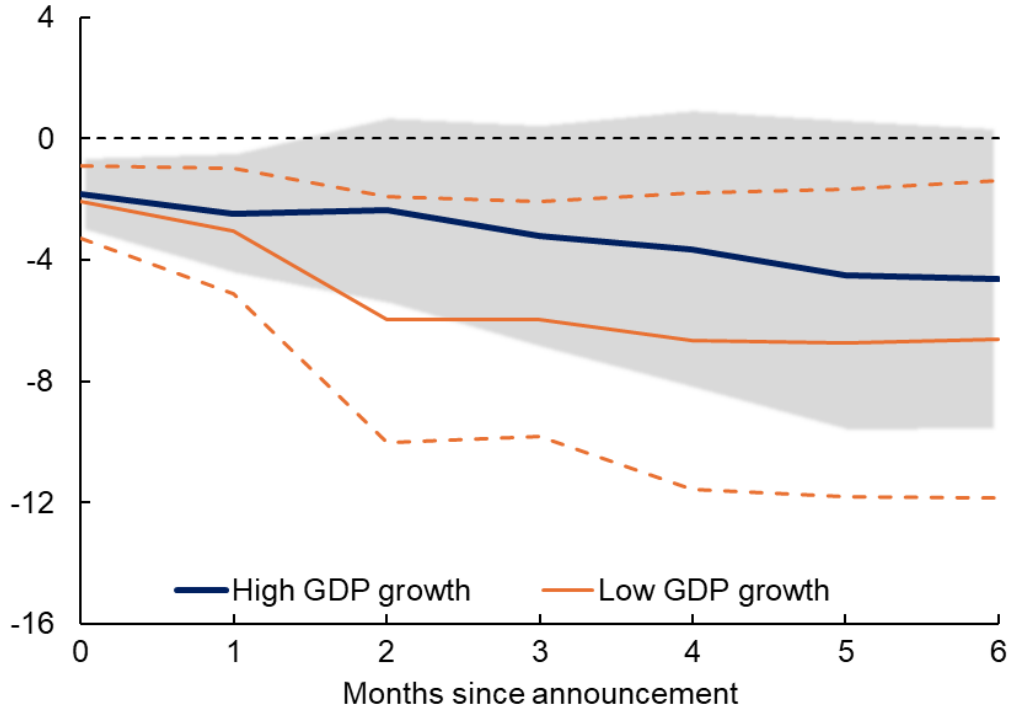
Sources: Energy Subsidy Reform Measures database; Factiva; Global Pension Reform Database; and IMF staff estimates.
Notes: The graphs depict the dynamic response of stakeholder sentiment (households, CSOs, unions, and opposition groups) to announcements of fuel price and pension age measures under different conditions, including 90 percent confidence bands (shaded bands and orange dashed lines). Impulse response functions are estimated using local projections with a smooth transition function (see Annex). The horizontal axis represents months since announcements (t = 0). CSOs = civil society organizations.

Macroeconomic conditions: measures in periods of high growth associated with less negative sentiment

Fuel Price Measures
(Change in sentiment index)



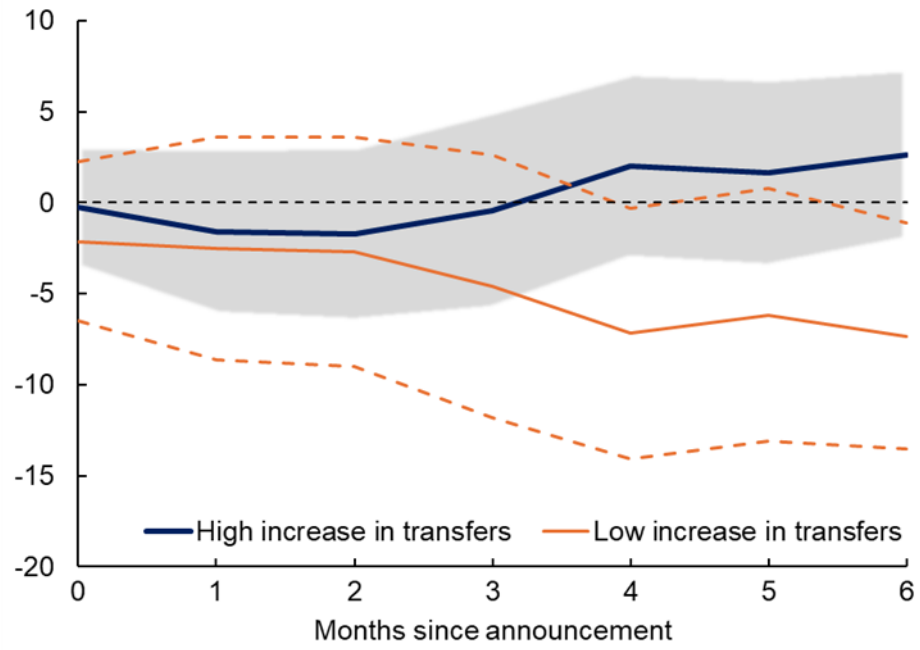
Pension Age Measures
(Change in sentiment index)



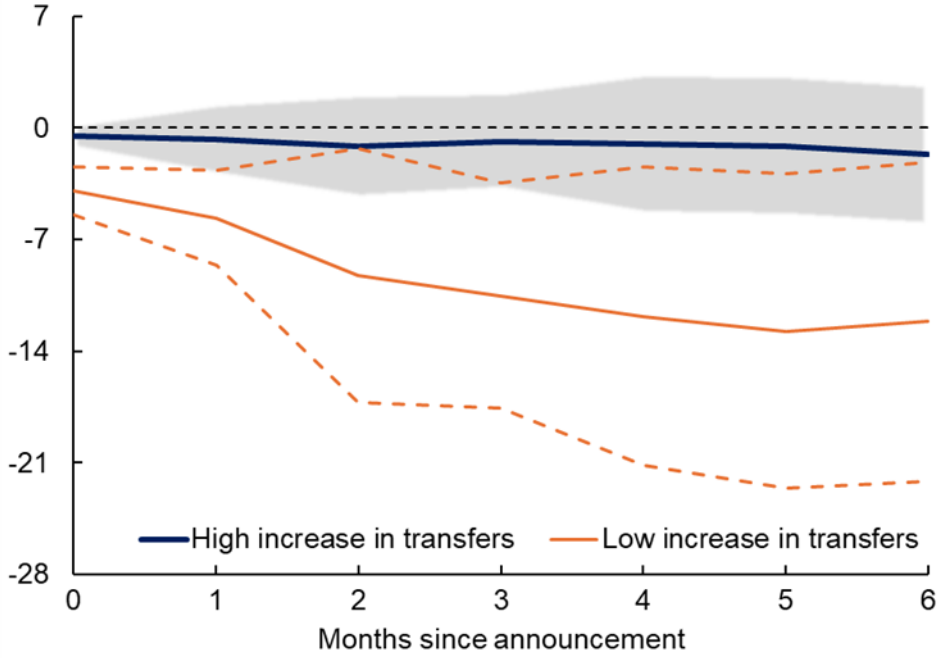
Sources: Energy Subsidy Reform Measures database; Factiva; Global Pension Reform Database; and IMF staff estimates.
Notes: The graphs depict the dynamic response of stakeholder sentiment (households, CSOs, unions, and opposition groups) to announcements of fuel price and pension age measures under different conditions, including 90 percent confidence bands (shaded bands and orange dashed lines). Impulse response functions are estimated using local projections with a smooth transition function (see Annex). The horizontal axis represents months since announcements (t = 0). CSOs = civil society organizations.

Accompanying measures: larger government transfers help mitigate negative sentiment towards fuel price and pension age measures

Fuel Price Measures



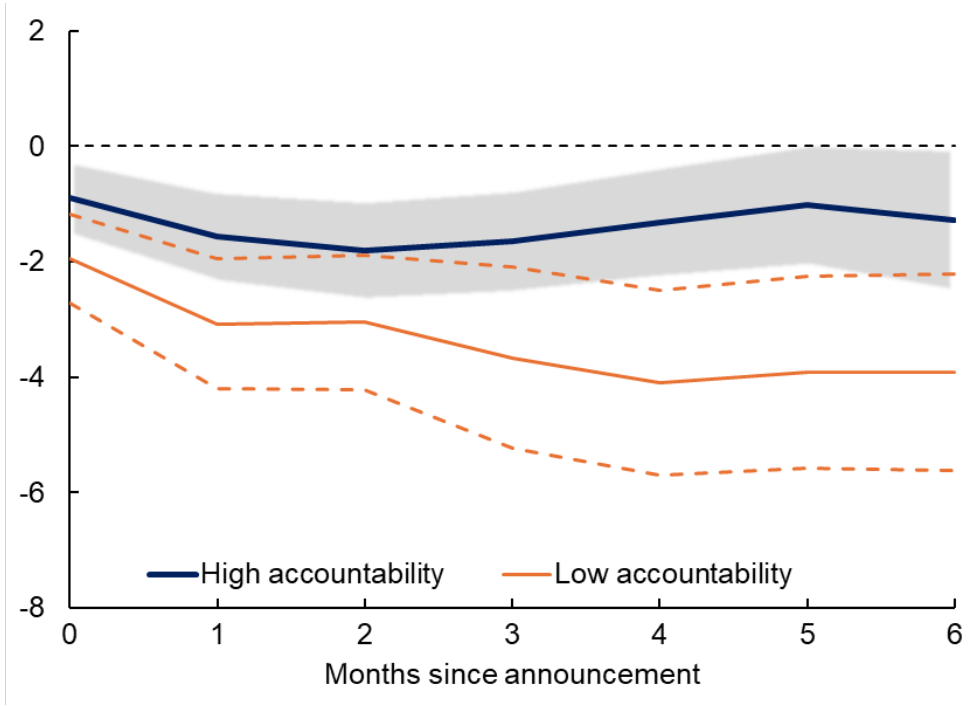
Pension Age Measures



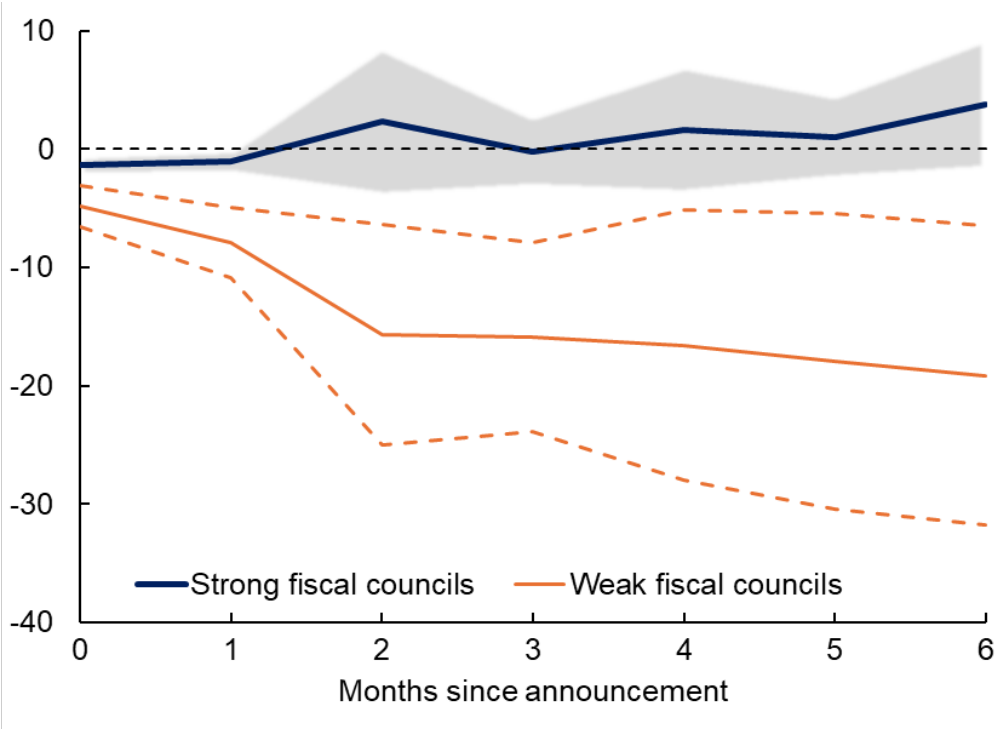
Sources: Energy Subsidy Reform Measures database; Factiva; Global Pension Reform Database; and IMF staff estimates.
Notes: The graphs depict the dynamic response of stakeholder sentiment (households, CSOs, unions, and opposition groups) to announcements of fuel price and pension age measures under different conditions, including 90 percent confidence bands (shaded bands and orange dashed lines). Impulse response functions are estimated using local projections with a smooth transition function (see Annex). The horizontal axis represents months since announcements (t = 0). CSOs = civil society organizations.

Institutional Framework: government accountability and strong institutions can reduce opposition to fuel price and pension age measures

Fuel Price Measures
(Change in sentiment index)



Pension Age Measures
(Change in sentiment index)



Sources: Energy Subsidy Reform Measures database; Factiva; Global Pension Reform Database; and IMF staff estimates.
Notes: The graphs depict the dynamic response of stakeholder sentiment (households, CSOs, unions, and opposition groups) to announcements of fuel price and pension age measures under different conditions, including 90 percent confidence bands (shaded bands and orange dashed lines). Impulse response functions are estimated using local projections with a smooth transition function (see Annex). The horizontal axis represents months since announcements (t = 0). CSOs = civil society organizations.

Reform Design Considerations under Different Conditions

	Pace and Intensity of Measures	Accompanying Measures	Communication and Ownership
Negative macroeconomic conditions	Prioritize front-loaded efforts that set a clear path of adjustment to tackle distortions and fiscal costs.	Compensatory measures are essential to address the needs of those most affected by broad macroeconomic shocks. It is important to articulate reforms within broader structural agendas.	The effect of measures in restoring macroeconomic stability, and potentially as part of a wider reform agenda should be stressed.
High inequality	The pace of the reform might be less of a concern because fast actions to counter inequities might be well received.	Strengthening social safety nets is crucial for effectively delivering benefits to the most vulnerable as reforms progress. Policies should be implemented to enhance redistribution and governance.	Communications that illustrate the unfairness of the status quo and potential distributional impact of reforms should be prioritized, alongside compensatory measures.
Low trust	Credibly demonstrating commitment to reforms may require some front-loading of measures.	Early and visible investment in social programs and infrastructure should be prioritized. Steps should be taken to improve governance and reduce corruption while enhancing spending efficiency.	Communication must be handled with care—actions speak louder than words. Efforts should aim to show tangible results.

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