FISCAL AFFAIRS

The Future of Fiscal Policy
Fiscal and Debt Series

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SINGAPORE TRAINING INSTITUTE

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Data in the presentation uses Fiscal Monitor April 2023 & WEO April 2023

The Future Of Fiscal Policy

1

The Robust Power of Budget Constraints: economic and financial limits still apply even when r-g<0

2

Monetary-Fiscal Interactions

3

With Great Power Comes Great Responsibility

The Future Of Fiscal Policy

1 **The Robust Power of Budget Constraints: economic and financial limits still apply even when r-g<0**

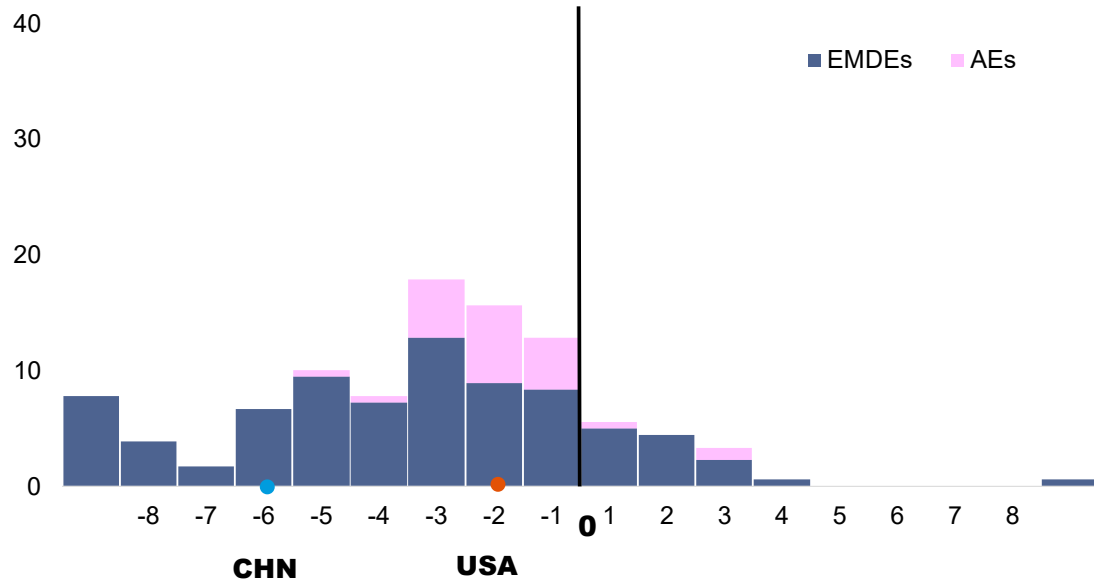**2** Monetary-Fiscal Interactions

3 With Great Power Comes Great Responsibility
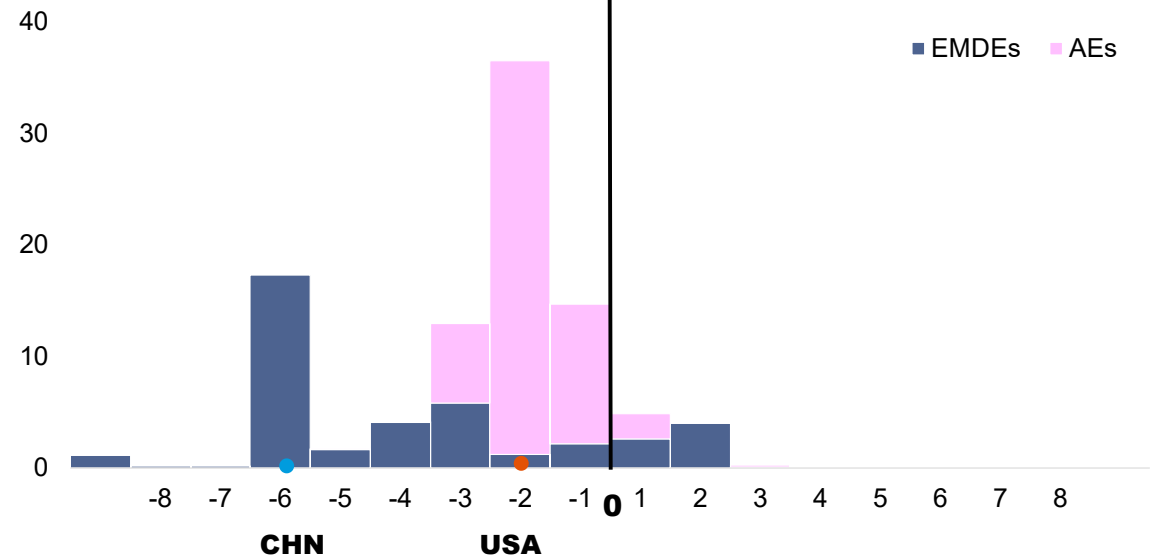
R-G Distribution In Debt Decomposition

2023 as Projected in 2019

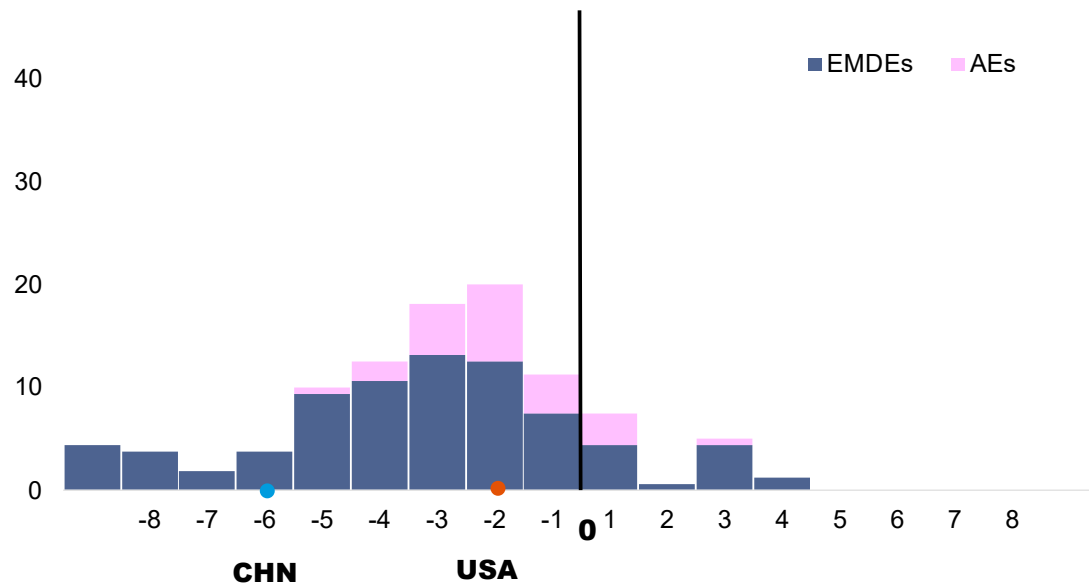**Percent of Countries**

Percent of World GDP

Source: IMF World Economic Outlook (October 2019) & IMF Staff Calculations.

Note: R-G in 2023 based on estimates from debt decomposition model: -1.1 (USA) & -5.2(CHN)
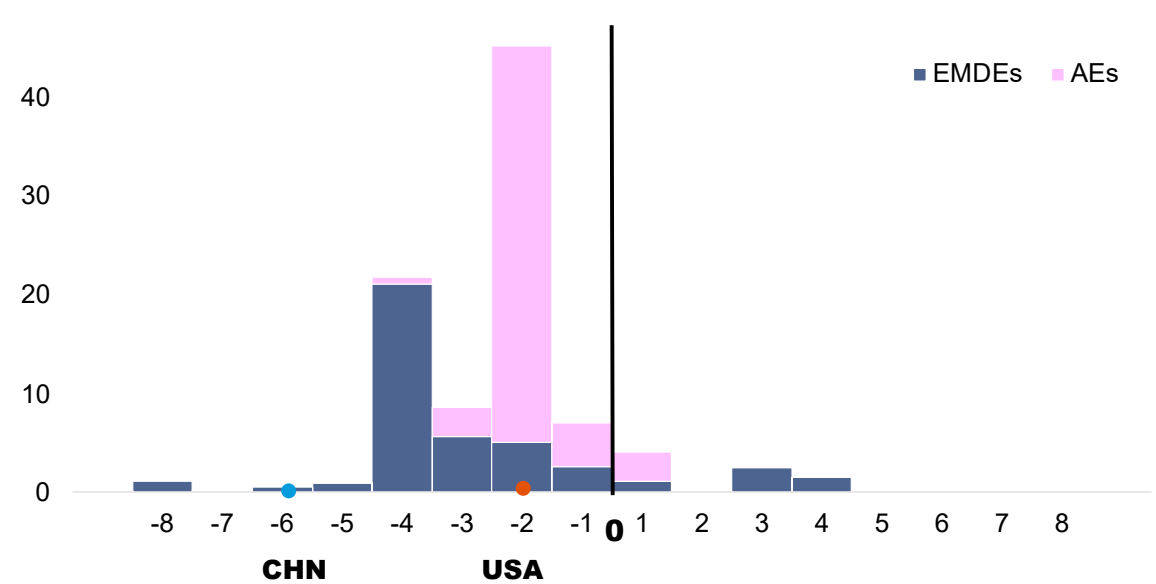
...And Projected To Continue Negative

2027 as Projected in 2023

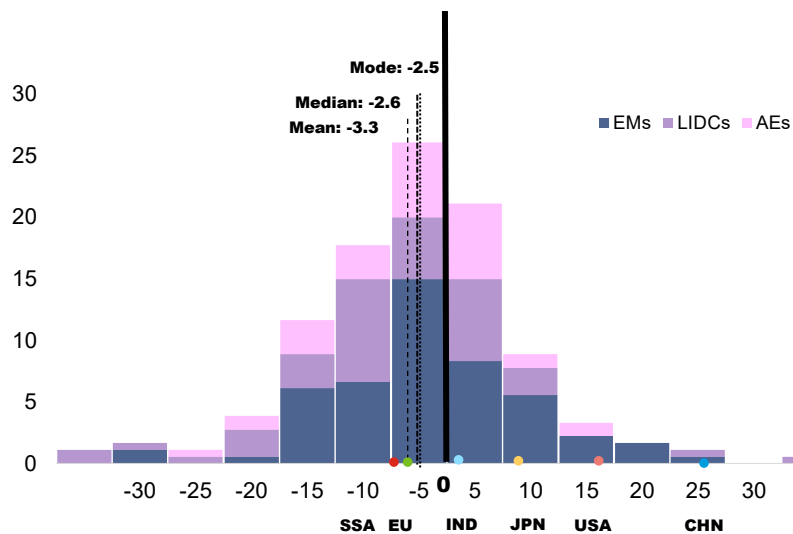**Percent of Countries**

Percent of World GDP

Source: IMF World Economic Outlook (April 2023) & IMF Staff Calculations.

Note: R-G in 2027 based on estimates from debt decomposition model : -1.0 (USA) & - 3.0 (CHN)
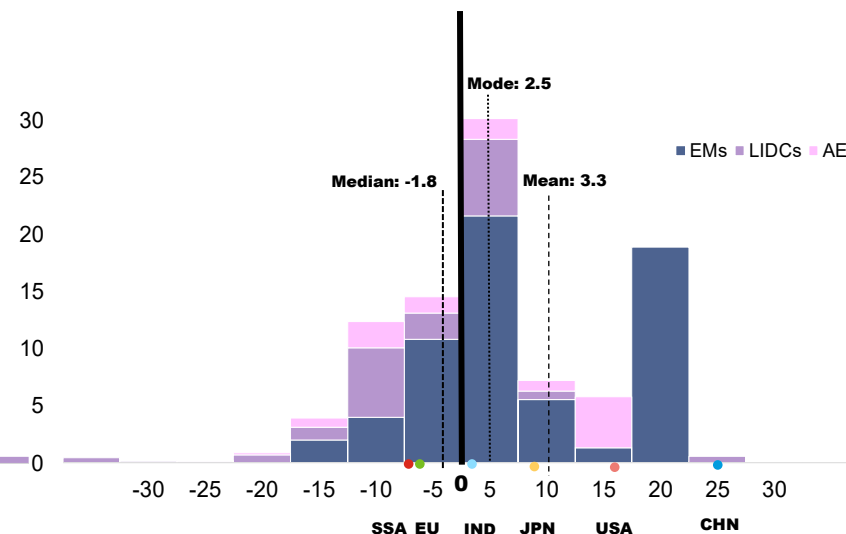
Debt Trends In The World
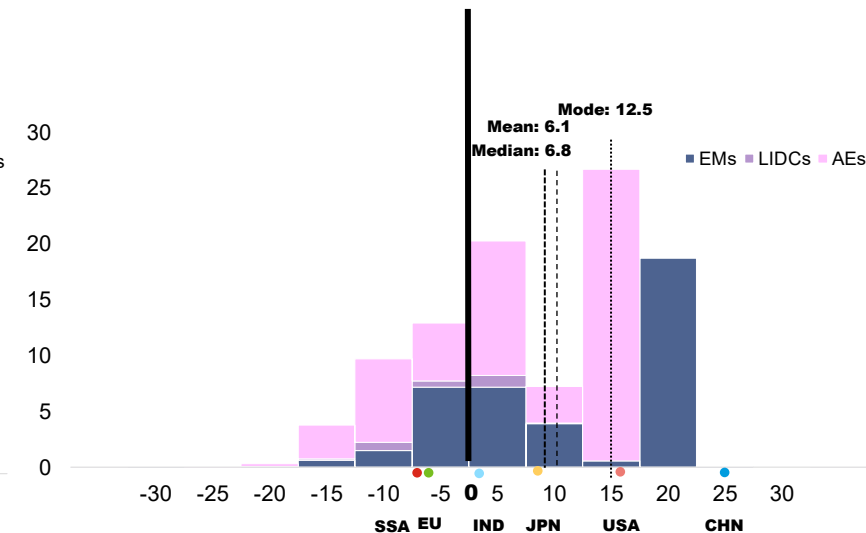
Gross Public Debt Changes in Percent of GDP, 2023-2027

Percent of Countries

Mode: -2.5
Median: -2.6
Mean: -3.3

EMs · LIDCs · AEs

SSA EU IND JPN USA CHN

Percent of World Population

Mode: 2.5
Median: -1.8
Mean: 3.3

EMs · LIDCs · AEs

SSA EU IND JPN USA CHN

Percent of World GDP

Mode: 12.5
Mean: 6.1
Median: 6.8

EMs · LIDCs · AEs

SSA EU IND JPN USA CHN

Source: IMF World Economic Outlook (April 2023) & IMF Staff Calculations.

Note: The sample covers 180 countries: 39 (AEs, 21.7%), 86 (EMs, 47.8%) & 55 (LIDCs, 30.6%), 99.9% of world GDP: 57.5% (AEs), 39.7% (EMs) & 2.6% (LIDCs), and 97.3% of the world population: 14.0% (AEs), 64.3% (EMs) & 19.0% (LIDCs). We expect that 36.7% of countries in the sample will experience a rising debt to GDP ratio between 2023-2028, a total of 73.2% of the world GDP and 66.7 % of world population. At the same time, we expect that 63.3% of countries in the sample will experience a declining debt to GDP ratio between 2023-2028, a total of 26.8% of the world GDP and 33.3% of world population. Debt change 2023-2028: -4.9 (SSA), -4.4 (EU), 0.3 (IND), 5.8 (JPN), 14.0 (USA) & 22.4 (CHN).

# r-g <0... But Increasing Debt Ratios In Many Countries
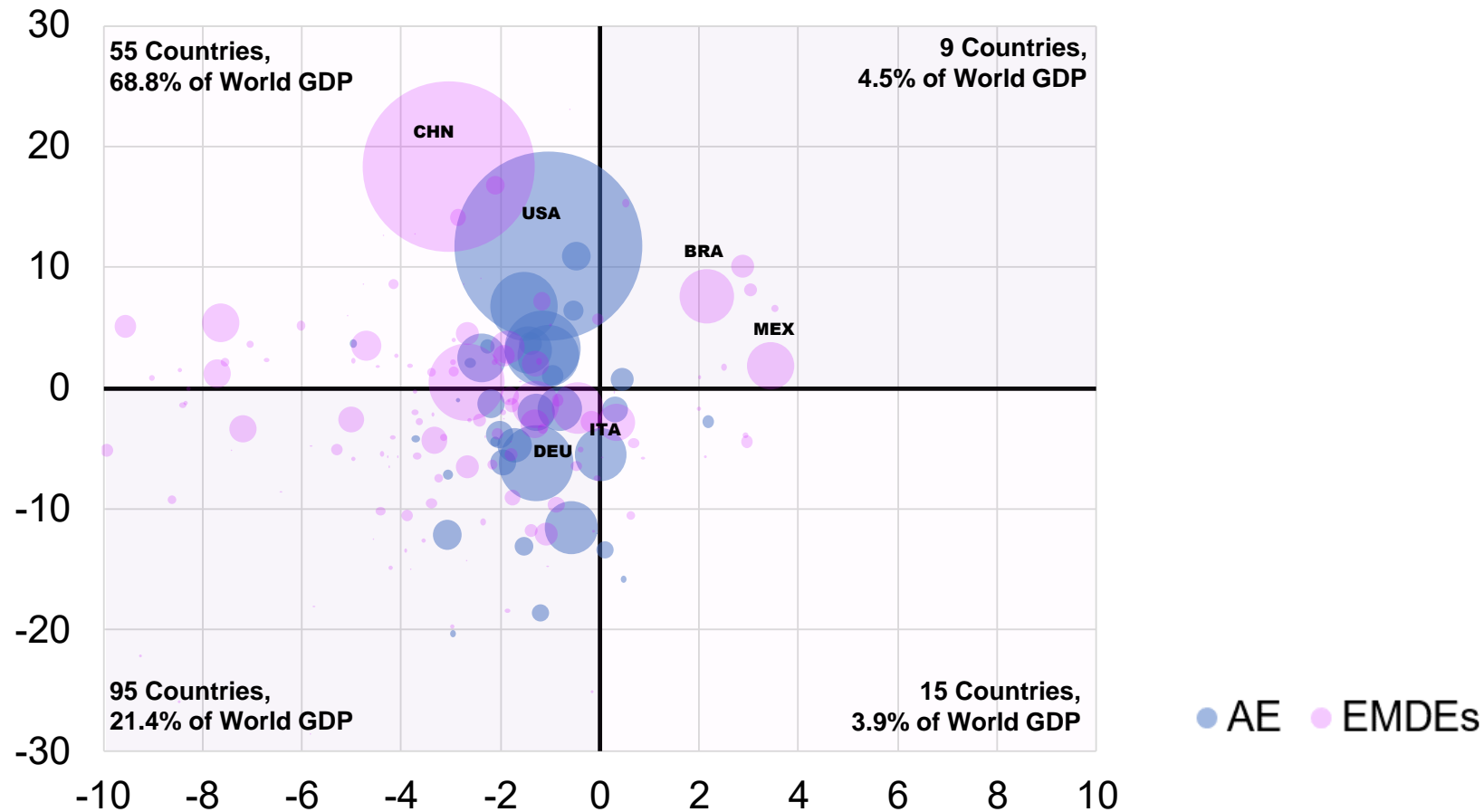
**Source: IMF World Economic Outlook (April 2023) & IMF Staff Calculations.**

Note: r-g in 2027, Using real effective interest rate as developed for debt decomposition analysis. Sample: 174 countries (AEs,13; EMDEs,42) & 98.6% of World GDP. First Quadrant (+,+): 9 countries (AEs,1; EMDEs,8) & 4.5% of World GDP, Second Quadrant (+,-): 55 countries (AEs,13; EMDEs,42) & 68.8% of World GDP, Third Quadrant (-,-): 95 countries (AEs,17; EMDEs,78) & 21.4% of World GDP, and Fourth Quadrant (-,+): 15 countries (AEs,5; EMDEs,10) & 3.9% of World GDP. For selected countries: USA (11.8,-1.0) & CHN(18.4,-3.0), ITA(-5.5,0.03), DEU(-6.2,-1.3), MEX(1.9,3.4), BRA(7.6,2.1). Bubble size: share in World GDP 2027.
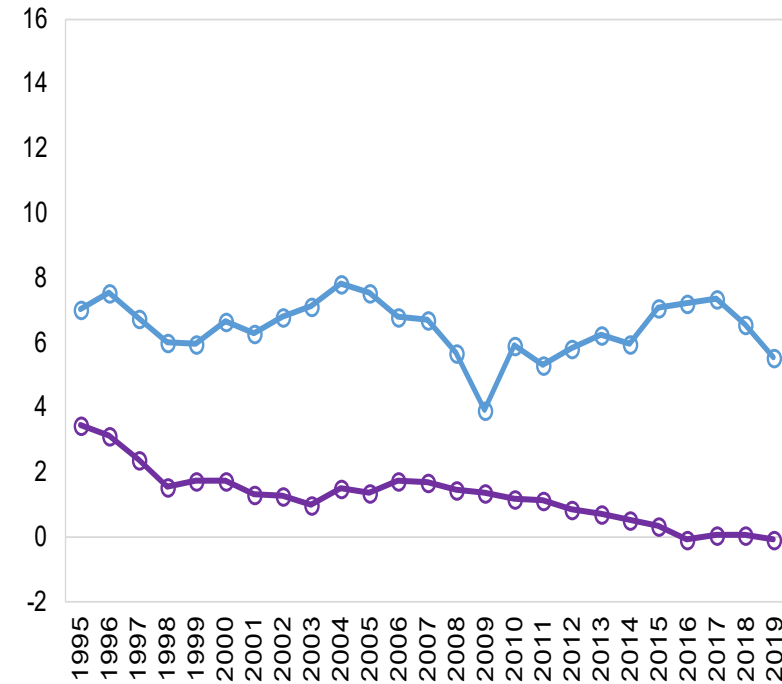
Return On Capital > g > r

United States
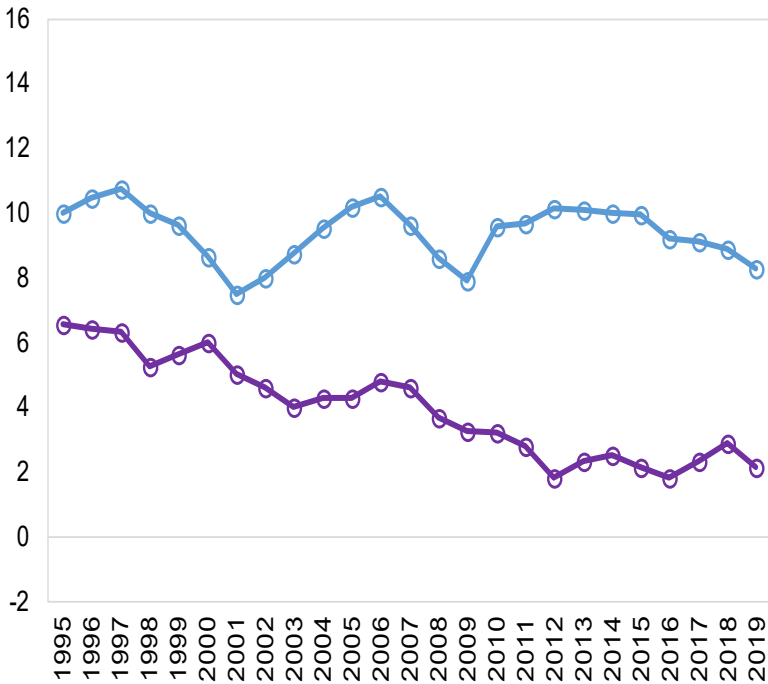
Euro Area
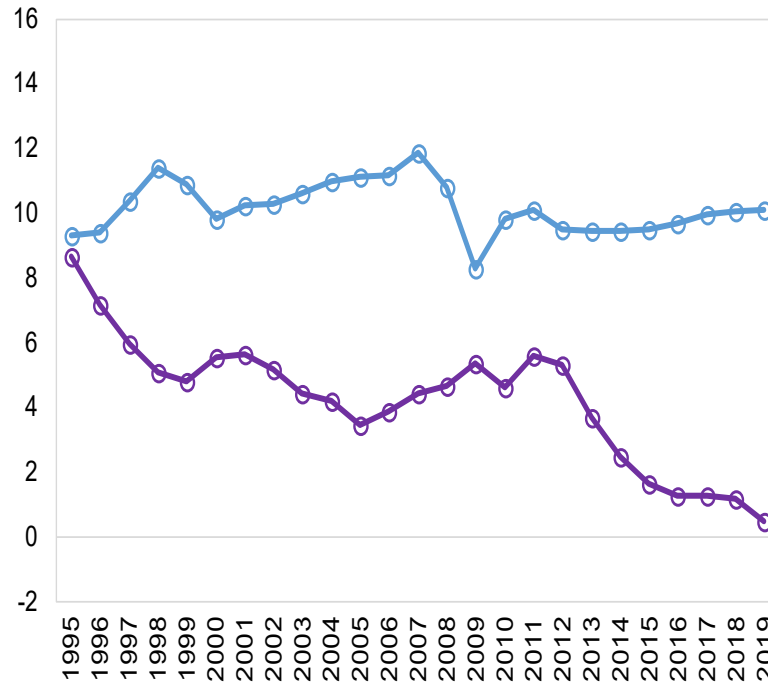
Japan

Earnings over capital at replacement cost (Non-financial corporations, in percent)
10-year bond yield (safe assets, in percent)

Sources: OECD and IMF staff calculations.

Note: Earnings over capital at replacement cost is calculated by dividing Net Operating Surplus by Net Fixed Assets for the Non-Financial Corporate Sector. All values in the figures are in percent annum. The Euro Area aggregate is an unbalanced simple average for earnings over capital at replacement cost. The figures cover the period from 1995-2019 and all values are in annual frequency. 10-year bond yields are annual averages.

Interest Rates Can Jump Unexpectedly
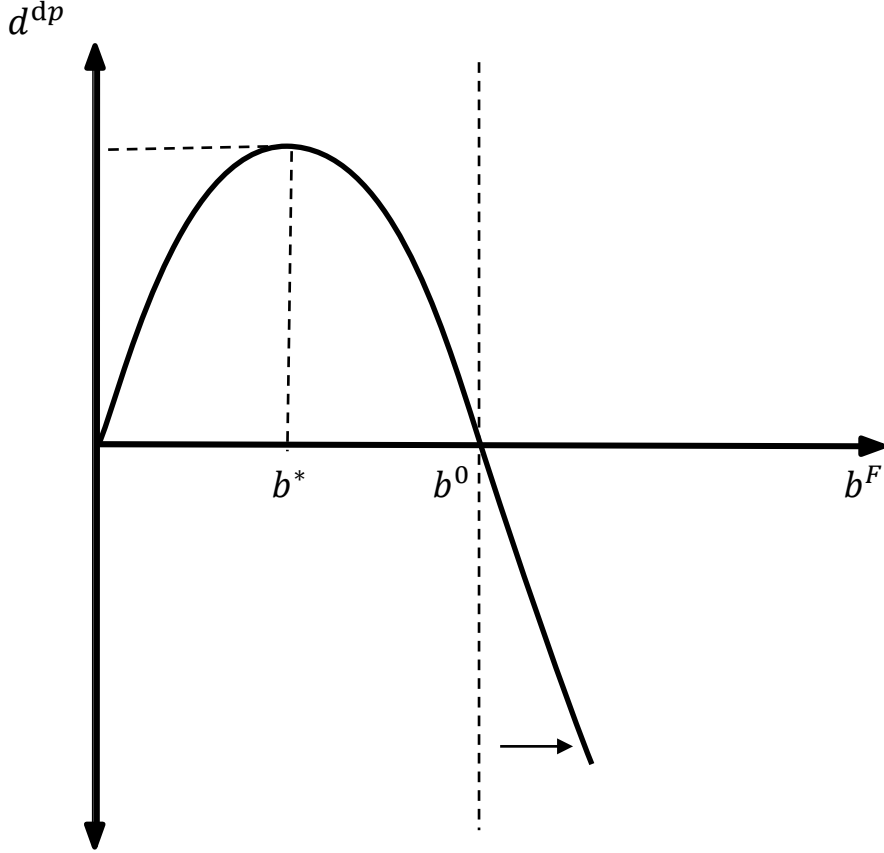
UK 10-year Gilt Yields (%)

Selected Low Income Countries – Spreads (bps)
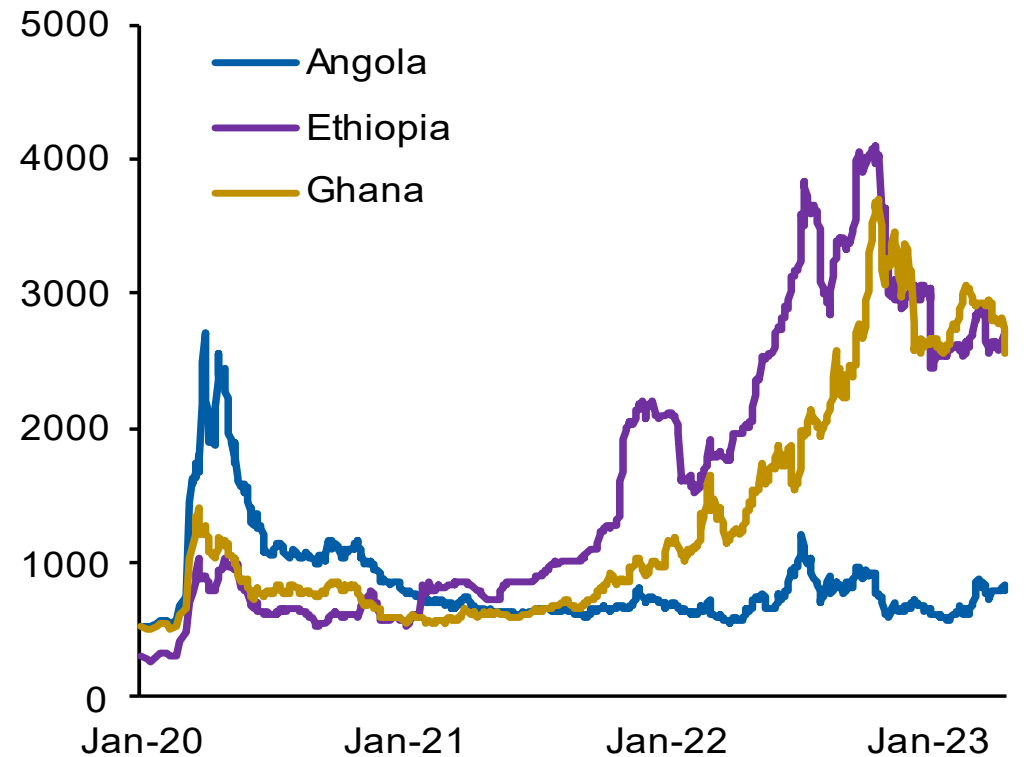
Source: Haver Analytics.
Note: Data are in daily frequency. Last data point is May 26, 2023.

Note: Spreads are over US treasuries of same maturity.

Budget Limits And The Endogeneity Of r-g
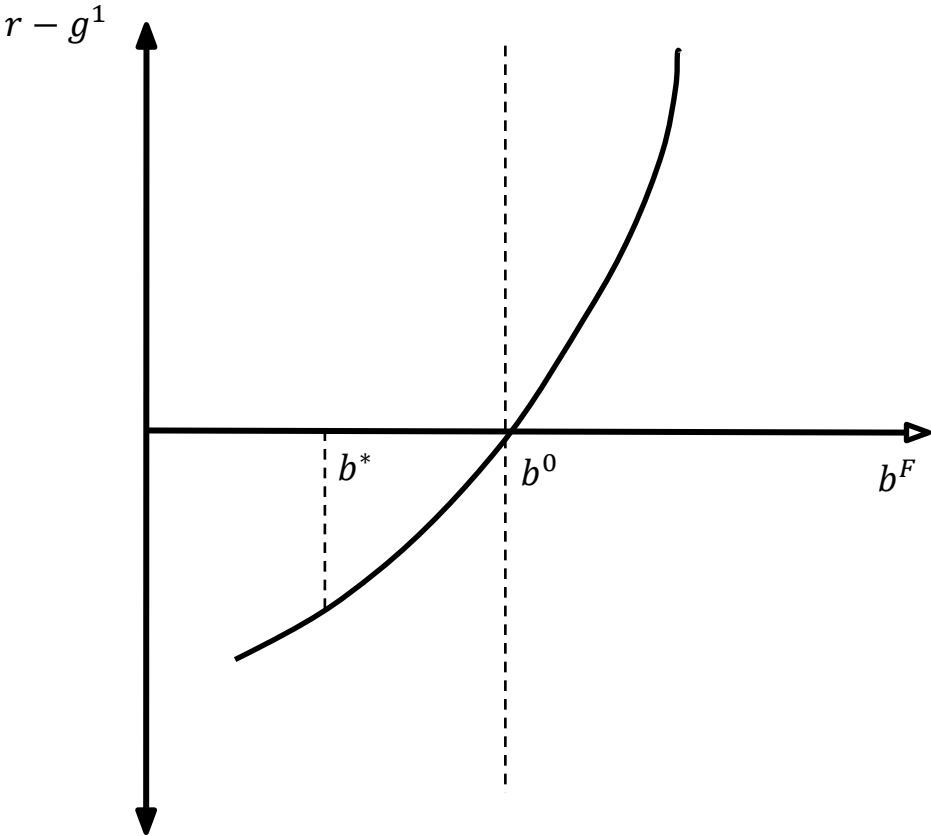
Note: Elaboration on Mian, Straub, and Sufi (2021).

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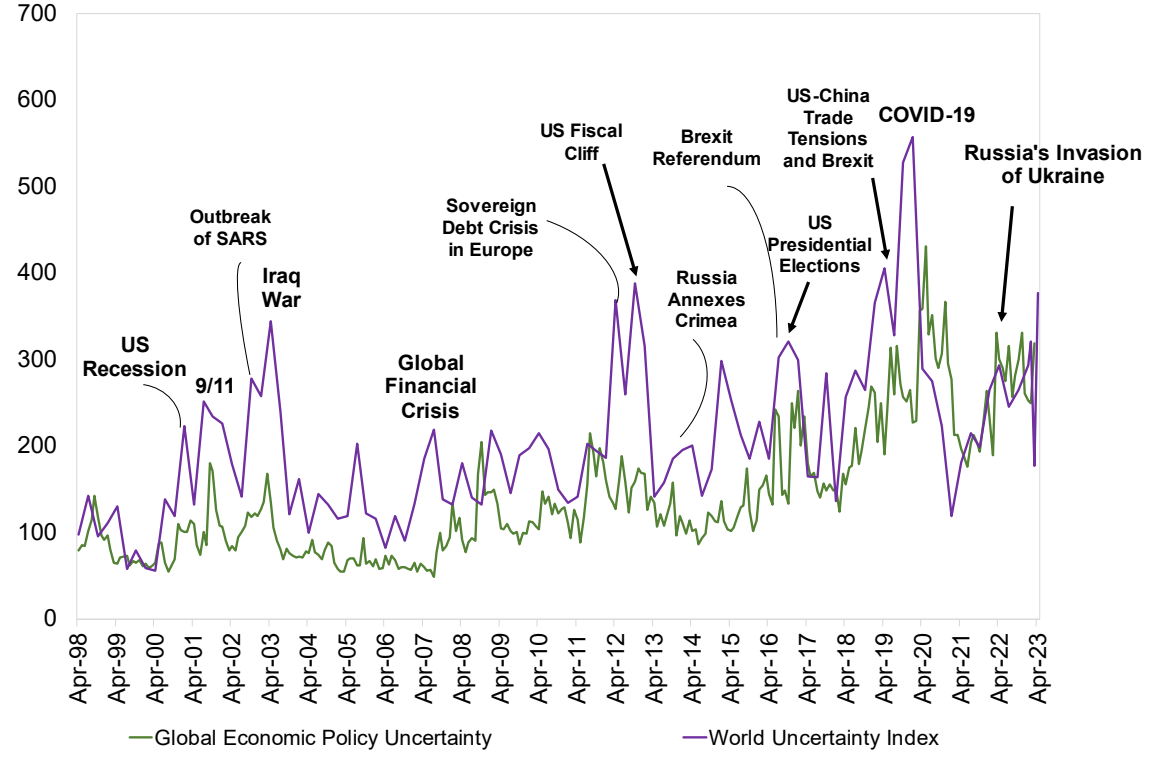
2

Monetary-Fiscal Interactions

3

With Great Power Comes Great Responsibility

The Pandemic Stands Out

World Uncertainty Index & Global Economic Policy Uncertainty

Legend: Global Economic Policy Uncertainty — World Uncertainty Index

Annotations: US Recession, 9/11, Outbreak of SARS, Iraq War, Global Financial Crisis, Sovereign Debt Crisis in Europe, US Fiscal Cliff, Brexit Referendum, Russia Annexes Crimea, US Presidential Elections, US-China Trade Tensions and Brexit, COVID-19, Russia's Invasion of Ukraine

Geo-Political Risk Index

Legend: Geo-political risk index

Annotations: 9/11, Iraq War, Russia Annexes Crimea, COVID-19, Russia's Invasion of Ukraine

COVID As War

US Federal Government Spending

COVID Recession

End of WW2

US Net Federal Outlays (in % of GDP) Relative to Starting Point

Years since the start of the War

— World War II (Dec 1941=100)   — COVID (Feb 2020=100)

US Inflation (CPI)

COVID Recession

End of WW2

US Inflationary trends (CPI, indexed)

Years since the start of the War

US Government Expenditures Shares & Transfer Payments

Recession
— Personal Current Transfer Receipts (SAAR, percent of GDP)
— Federal Government Nondefense Consumption & Gross Investment (SAAR, percent of GDP)
— National Defense Consumption & Gross Investment (SAAR, percent of GDP)

Source: Federal Reserve (FRED); Bureau of Labor Statistics (BLS); Global Financial Database (GFD); Office of Management & Budget (OMB)/Haver Analytics; NBER & IMF Staff Calculations based on the comparison in Hall, G. J., & Sargent, T. J. (2022). '*Three world wars: Fiscal–Monetary Consequences';* Right chart is based on Figure 6 from "*The COVID-19 Pandemic an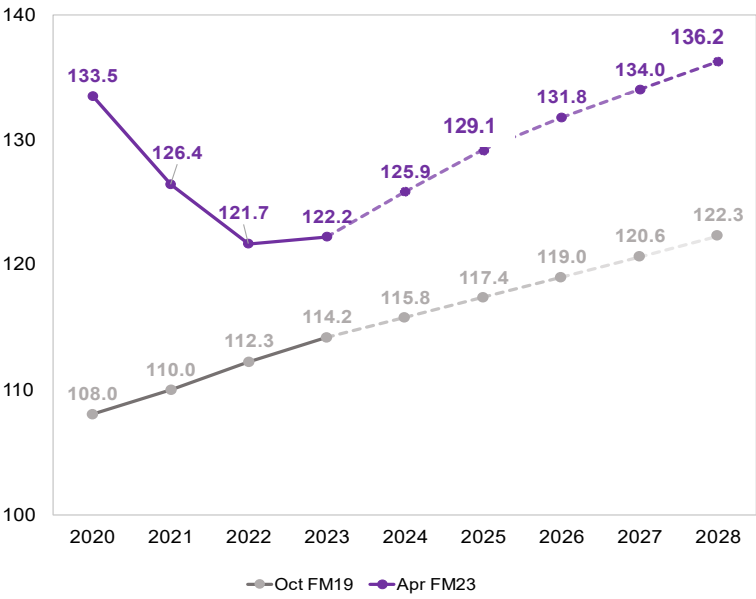d Inflation: Lessons from Major U.S. Wars*", Kliesen and Wheelock (2022). Data comes from Bureau of Economic Analysis (BEA), Haver Analytics; Federal Reserve Economic Data (FRED) & IMF Staff Calculations
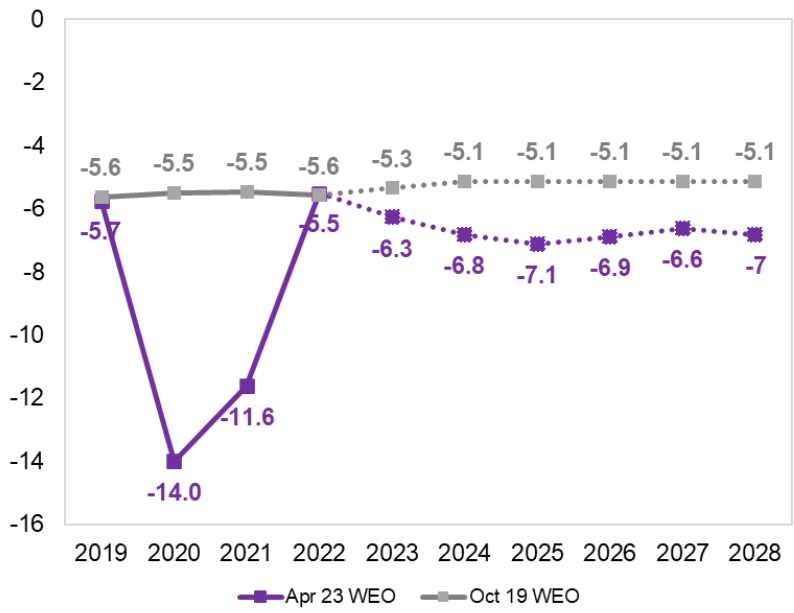
Note: Figures represent trends in the United States. In the right figure, data is in monthly frequency. In the left chart, data is in annual frequency, with the dashed line being federal government spending for COVID in monthly frequency. Federal Net Outlays (Spending) is shown as the difference relative to federal spending at the start (point 0, which is the 12-month rolling average of federal government spending). The COVID Recession, classified based on NBER's definition of recessions, is shaded in light blue, and includes the months of February, March and April 2020. The last date for federal spending is the month of August 2022, and for inflation is the month of September 2022.
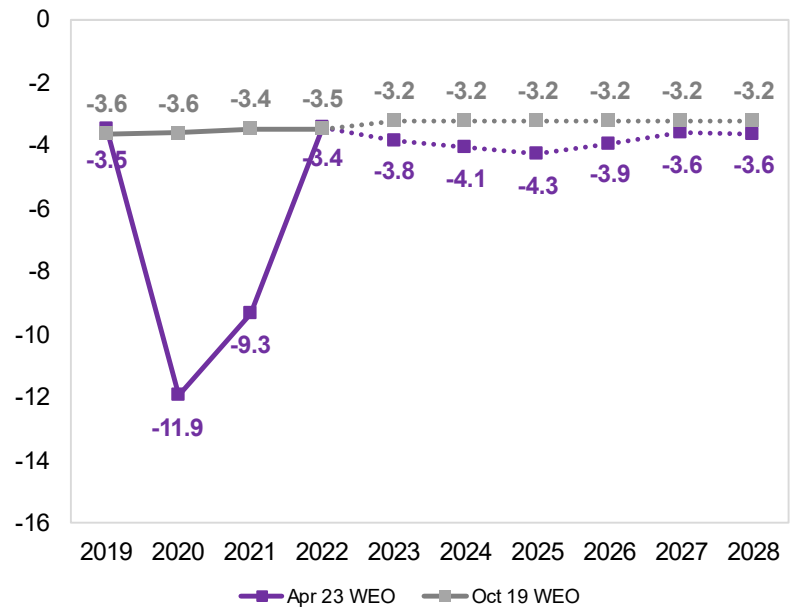
Mounting Public Debt In The US

Public Debt
(in Percent of GDP)

133.5, 126.4, 121.7, 122.2, 125.9, 129.1, 131.8, 134.0, 136.2

108.0, 110.0, 112.3, 114.2, 115.8, 117.4, 119.0, 120.6, 122.3

2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028

Oct FM19 — Apr FM23

Overall Balance
(in Percent of GDP)

-5.6, -5.5, -5.5, -5.6, -5.3, -5.1, -5.1, -5.1, -5.1, -5.1

-5.7, -14.0, -11.6, -5.5, -6.3, -6.8, -7.1, -6.9, -6.6, -7

2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028

Apr 23 WEO — Oct 19 WEO

Primary Balance
(in Percent of GDP)

-3.6, -3.6, -3.4, -3.5, -3.2, -3.2, -3.2, -3.2, -3.2, -3.2

-3.6, -11.9, -9.3, -3.4, -3.8, -4.1, -4.3, -3.9, -3.6, -3.6

2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028

Apr 23 WEO — Oct 19 WEO

Source: IMF World Economic Outlook (October 2019 and April 2023) & IMF Staff Calculations.
Note: WEO October 2019 provides estimates until 2024, therefore figures for 2025-2028 are calculated assuming the same debt-growth rate as in 2023/24.
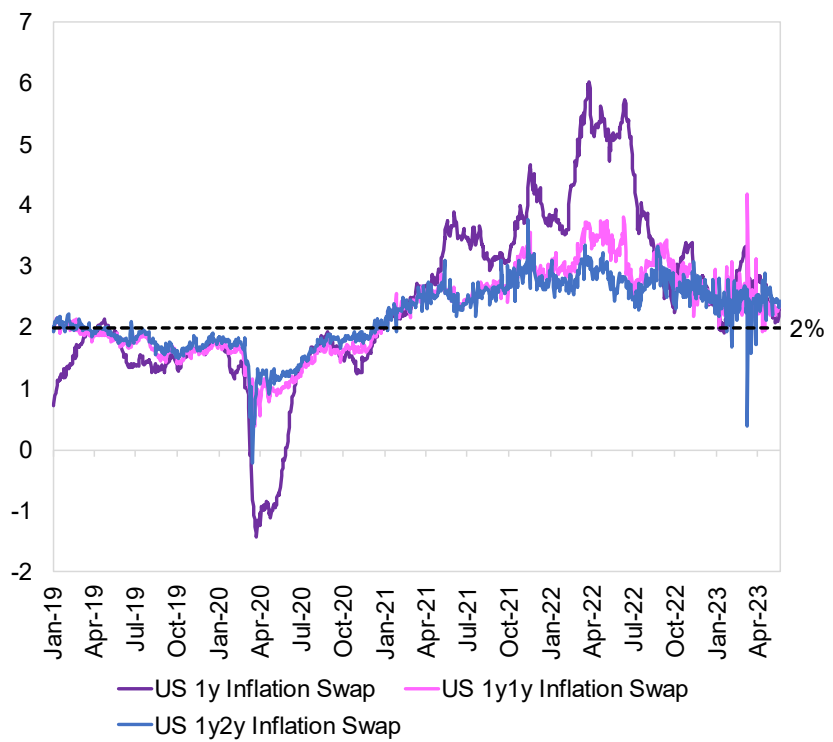
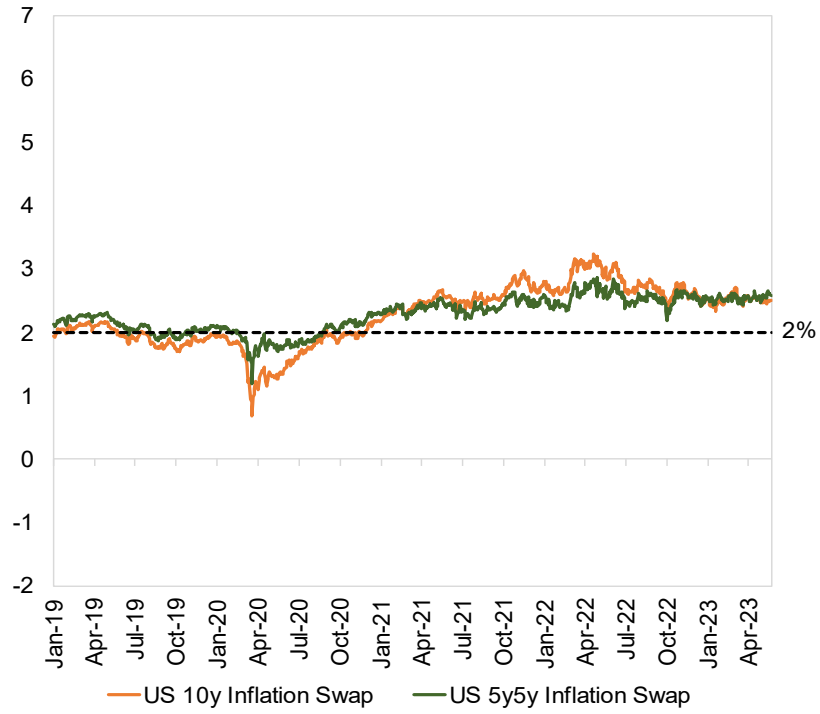# After The Post-Pandemic Price Surge Back To The Inflation Target?

United States

Consumer Prices, Period Average
Base year 2019=1
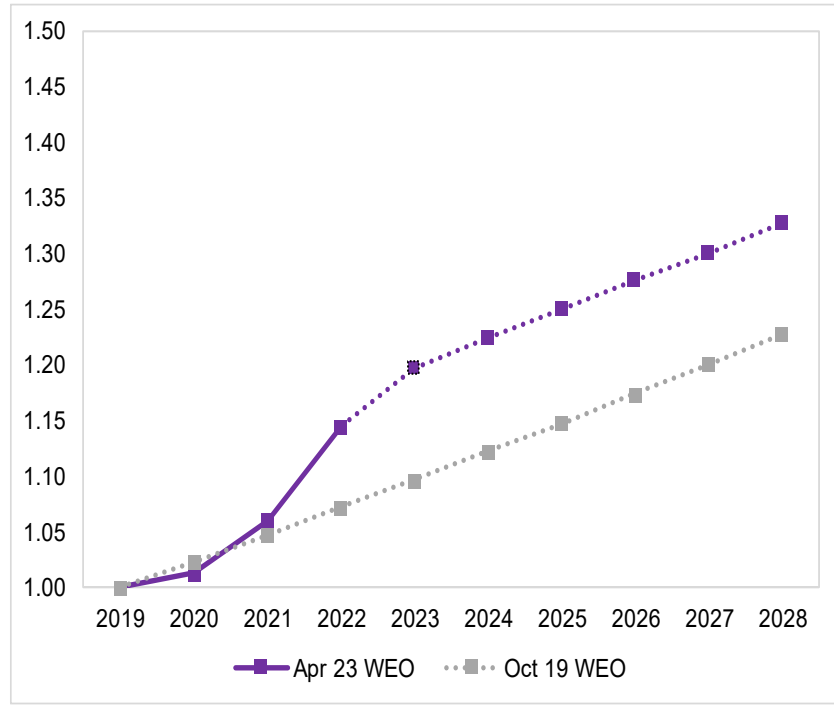
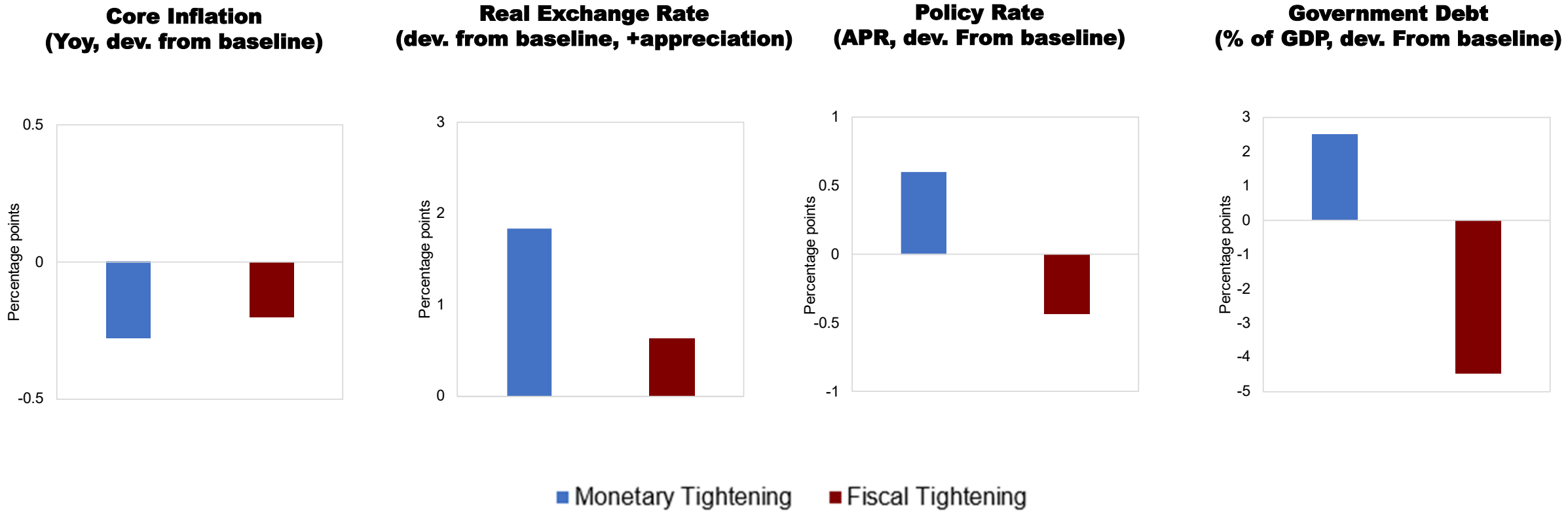### 1y, 1y1y, and 1y2y Inflation Expectations

5y5y, and 10y Inflation Expectations

Sources: WEO (October 2019 & April 2023 vintages) & IMF Staff Calculations; Refinitiv Eikon Datastream & IMF Staff Calculations.
Note: The last data point is 5/22/2023

More Traction For Fiscal To Reduce Inflation In EMs

Core Inflation
(Yoy, dev. from baseline)

Real Exchange Rate
(dev. from baseline, +appreciation)

Policy Rate
(APR, dev. From baseline)

Government Debt
(% of GDP, dev. From baseline)
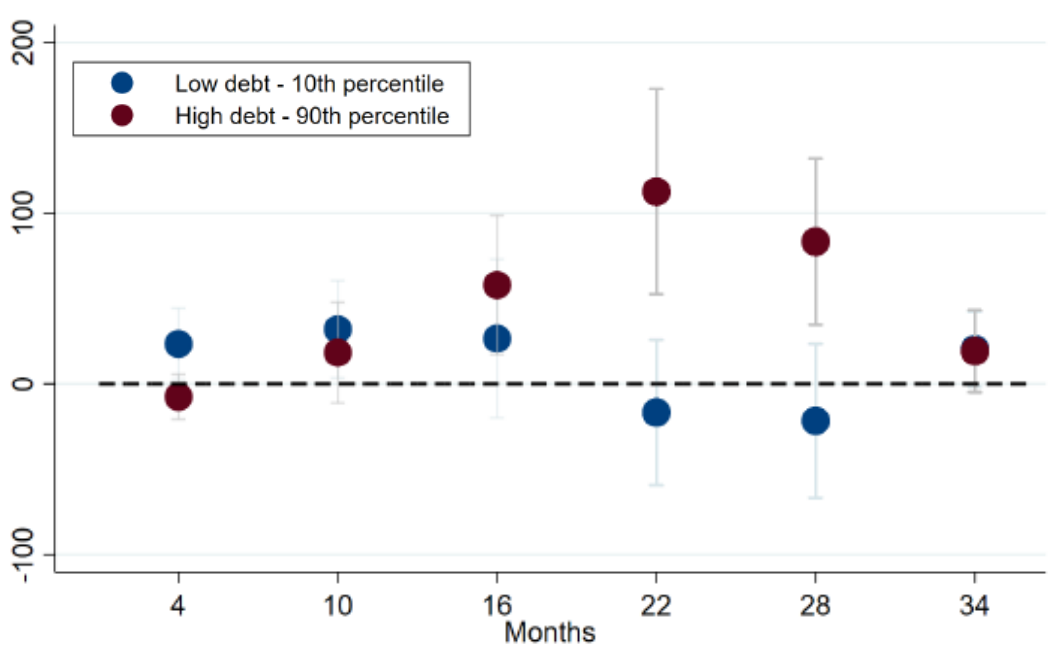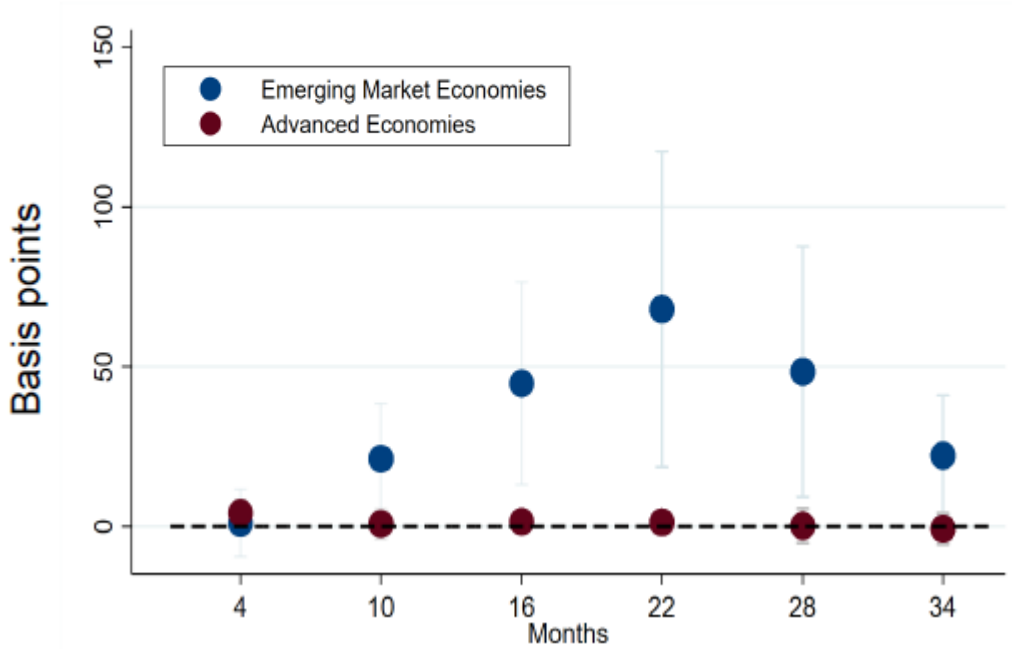

■ Monetary Tightening ■ Fiscal Tightening

Source: Erceg and Linde, 2012; and IMF Staff calculations.
Note: The simulations by IMF staff use a two-country dynamic stochastic general equilibrium model. The chart for core inflation is average of 12 quarters. The chart for real exchange rate is average of first 4 quarters. The chart for policy rate is average of first 4 quarters. The chart for government debt is deviation from baseline after 5 years.

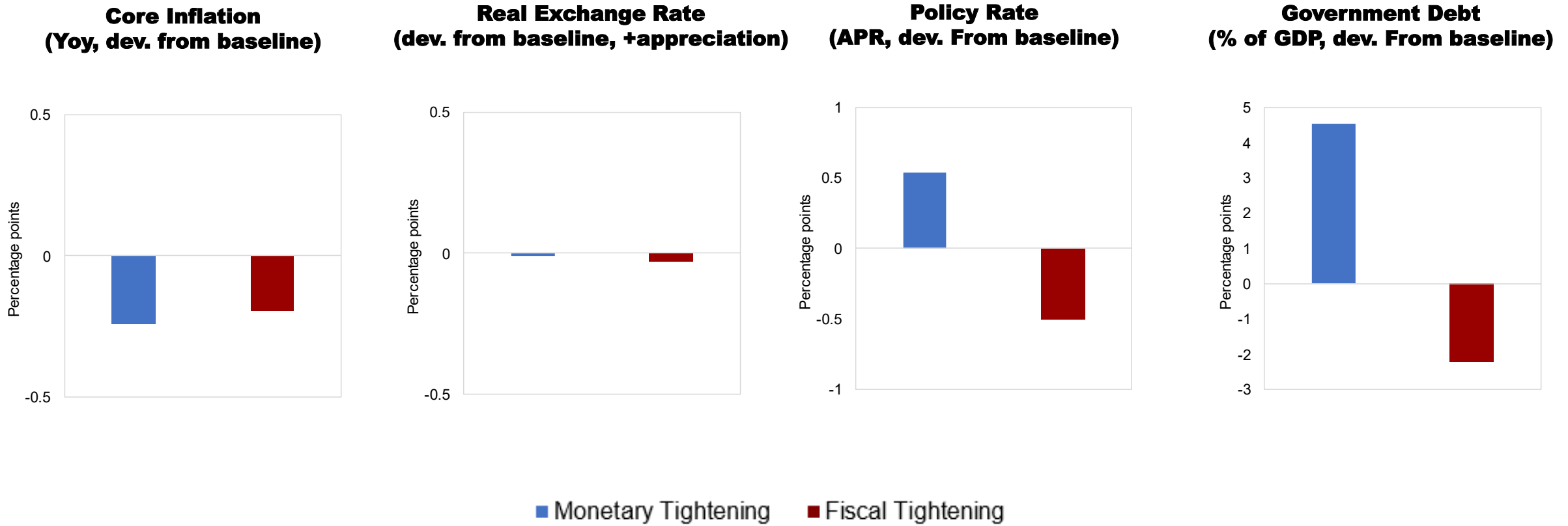# Public Debt Reduction May Help EMs Reduce Inflation

Debt surprises cause an increase in medium-term inflation expectations

The effect is more pronounced for high-debt EMs than for low-debt EMs

Source: Brandao-Marques, Casiraghi, Gelos, Harrison, Kamber (2023) Note: t=0 is the quarter of the shock. The whiskers represent 90 percent confidence intervals. Note: For the LHS chart the 5-year ahead inflation expectations response to a 10 percent surprise in the debt-to-GDP ratio. For the RHS chart conditions on the initial debt level for a sample of emerging market economies only

Fiscal Outcomes Similar To Monetary If All Countries Tighten

Core Inflation
(Yoy, dev. from baseline)

Real Exchange Rate
(dev. from baseline, +appreciation)

Policy Rate
(APR, dev. From baseline)

Government Debt
(% of GDP, dev. From baseline)

■ Monetary Tightening   ■ Fiscal Tightening

**Source: Erceg and Linde, 2012; and IMF Staff calculations.**
Note: The simulations by IMF staff use a two-country dynamic stochastic general equilibrium model. The chart for core inflation is average of 12 quarters. The chart for real exchange rate is average of first 4 quarters. The chart for policy rate is average of first 4 quarters. The chart for government debt is deviation from baseline after 5 years.
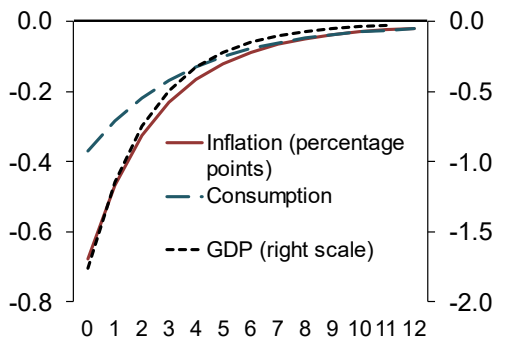
Fiscal Policy And Inflation

Disinflating via Different Policy Tightening Options in the HANK Model
(Deviation from long-term value, unless stated otherwise)
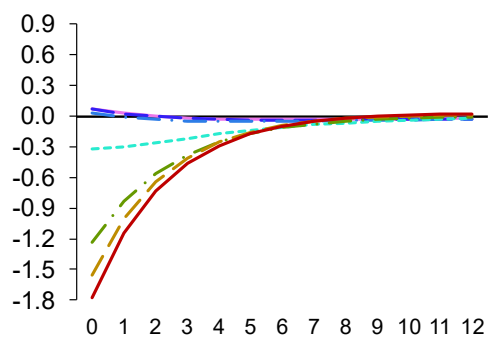
Variation In Interest Rates
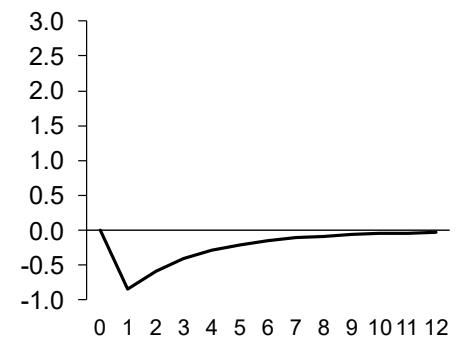
Impact on Inflation, Consumption, and Output

Consumption by Income Bracket Percentile

1. Fiscal Restraint Only

2. Fiscal Restraint with Targeted Transfers
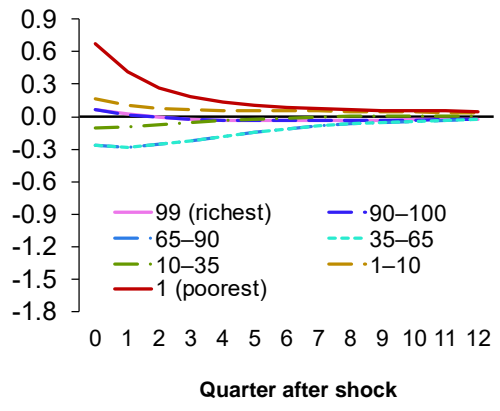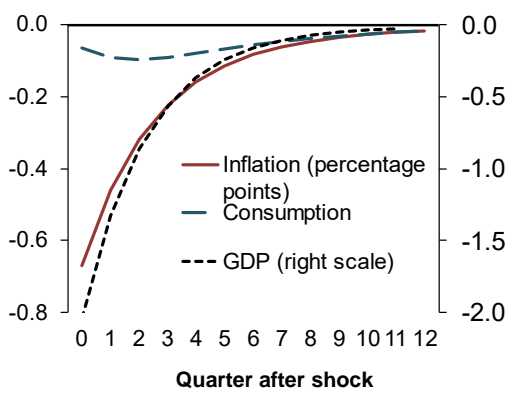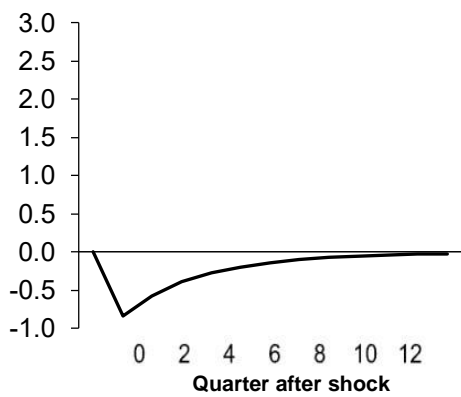
Source: IMF Fiscal Monitor: On the Path to Fiscal Normalization (April 2023); Auclert et al. (2021) & IMF Staff Calculations.
Note: HANK = Heterogenous-Agents New Keynesian.

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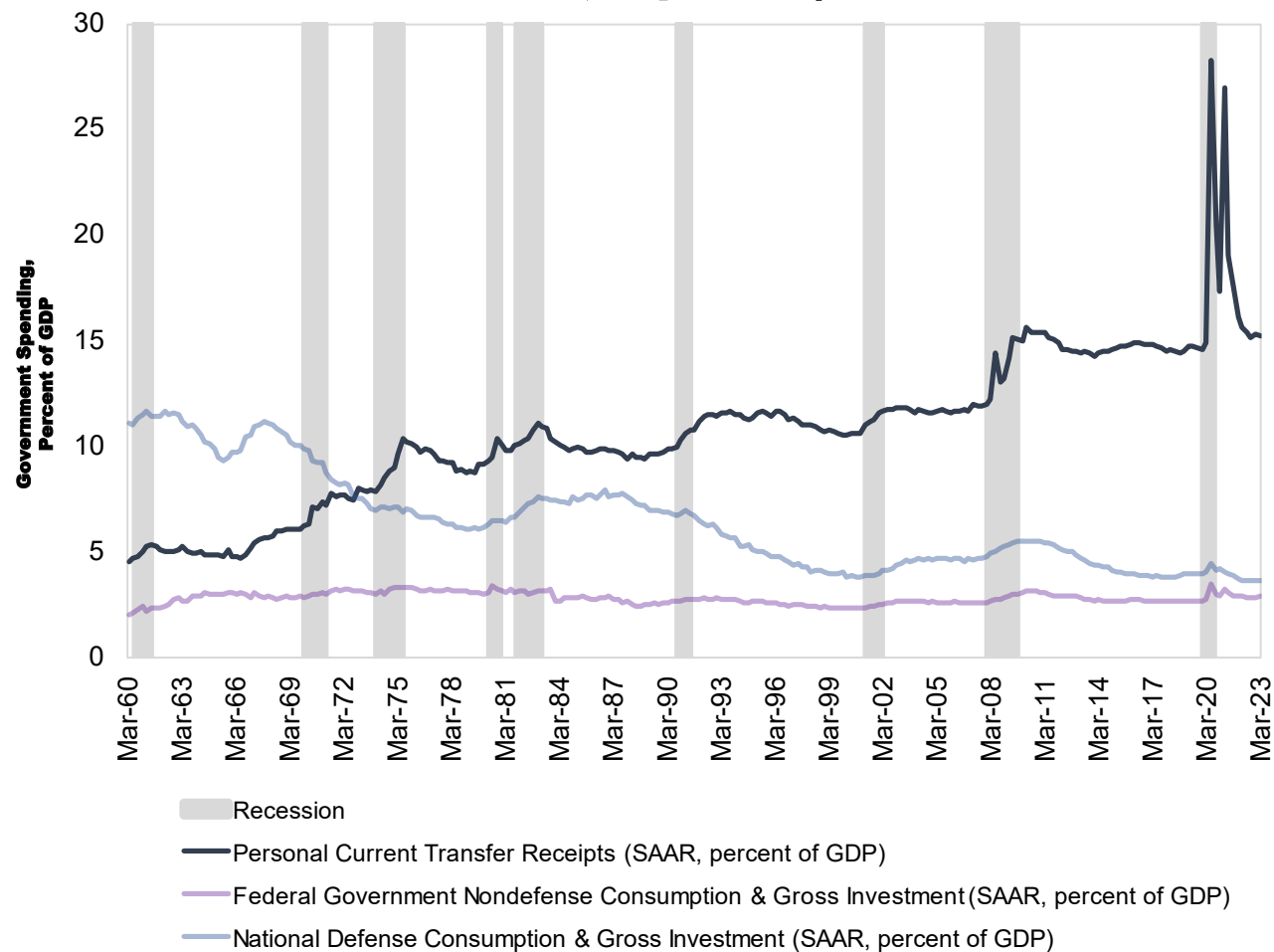
2

Monetary-Fiscal Interactions

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With Great Power Comes Great Responsibility

The Power of Fiscal Policy I: Helping People Bounce Back

US Government Expenditures Shares, Transfer Payments (1960-2023, in percent)

Legend:
- Recession
- Personal Current Transfer Receipts (SAAR, percent of GDP)
- Federal Government Nondefense Consumption & Gross Investment (SAAR, percent of GDP)
- National Defense Consumption & Gross Investment (SAAR, percent of GDP)

Source: Based on Figure 6 from "*The COVID-19 Pandemic and Inflation: Lessons from Major U.S. Wars*", Kliesen and Wheelock (2022). Data comes from Bureau of Economic Analysis (BEA), Haver Analytics; Federal Reserve Economic Data (FRED) & IMF Staff Calculations
Note: Shaded areas indicate periods of recession.

The Power of Fiscal Policy II: Helping Firms Bounce Back
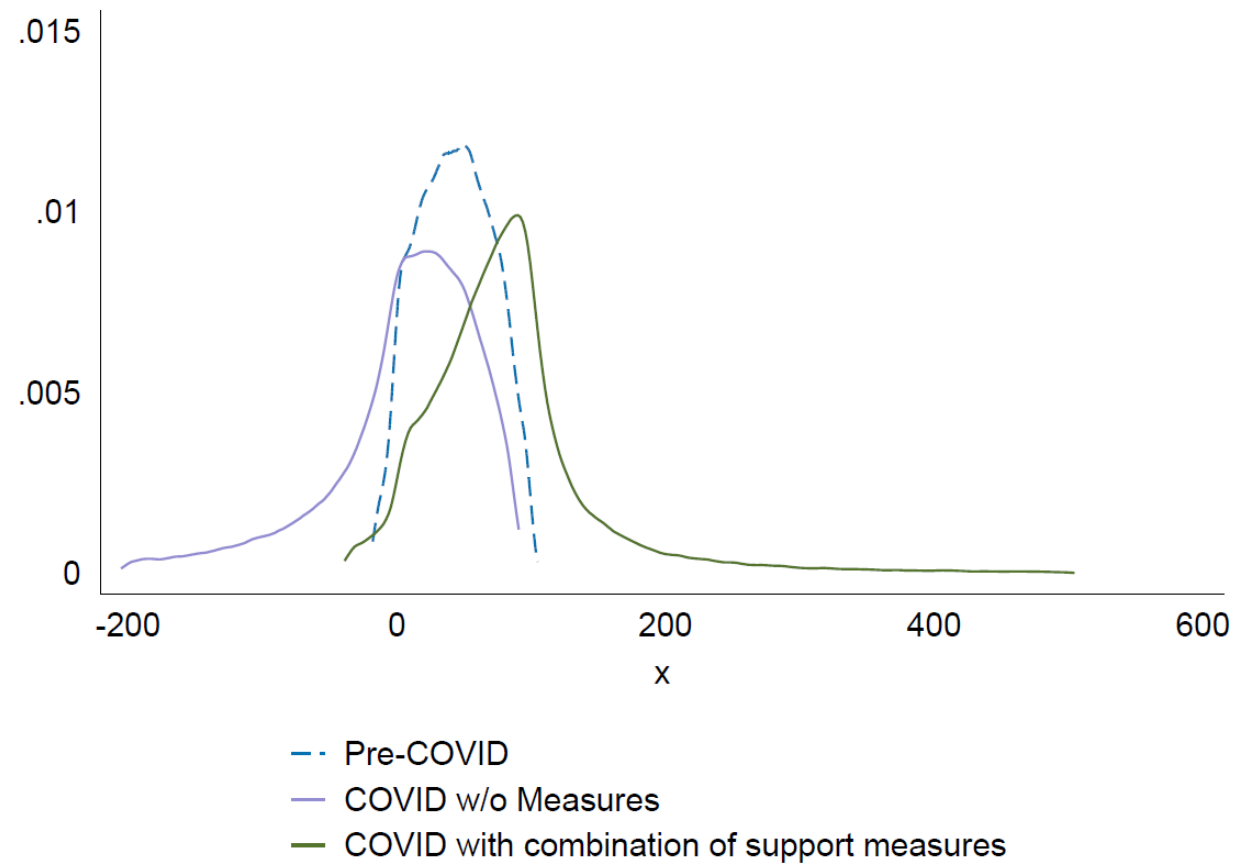
**Subsidy Transfers
(USD Billions)**

**Subsidy Transfers
(Percent of GDP)**
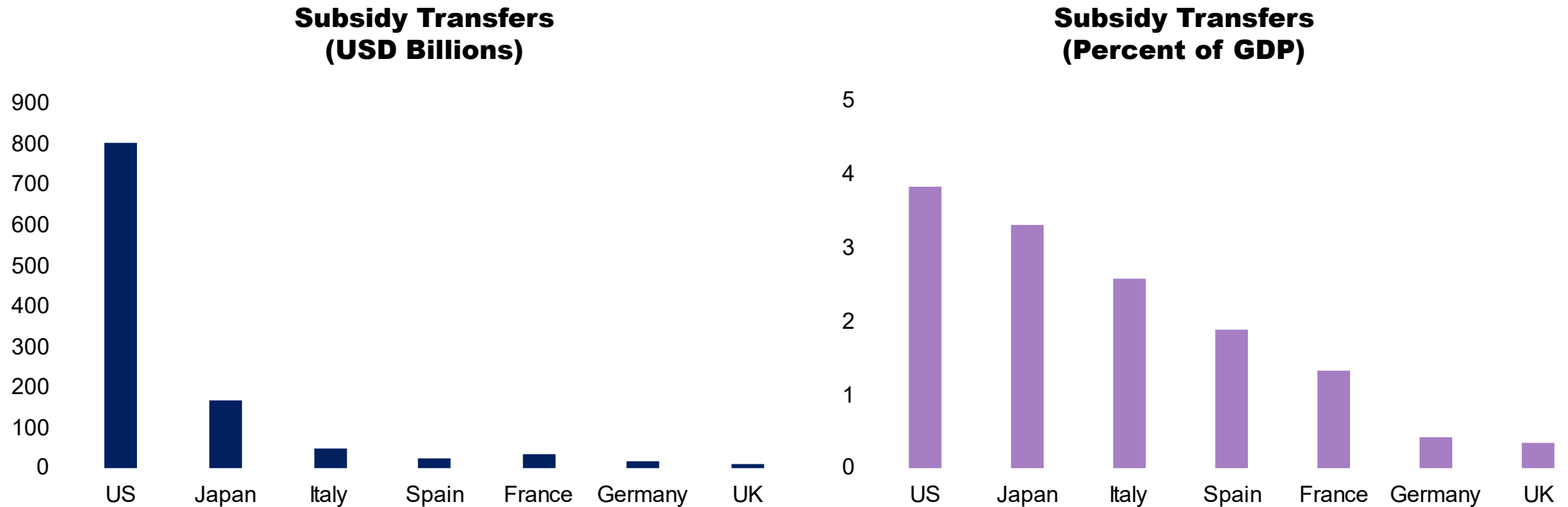
Source: Hong, G. H., & Lucas, D. (2023). Evaluating the Costs of Government Credit Support Programs during COVID-19: International Evidence.

The Power of Fiscal Policy II: Helping Firms Bounce Back

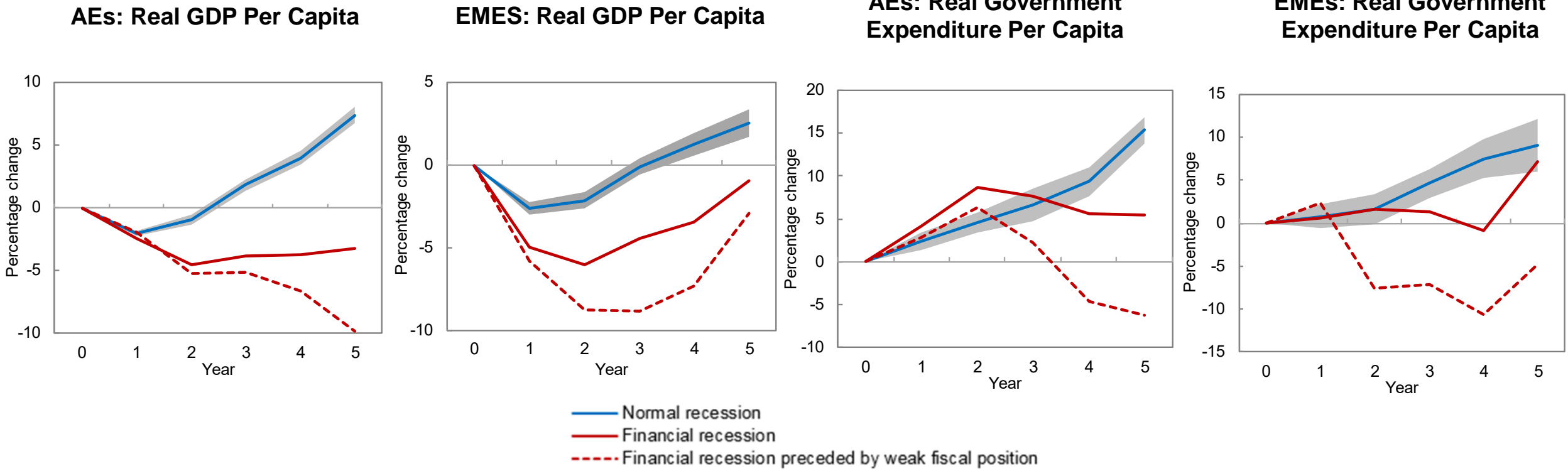**Effect of the Pandemic and FSMs on "Surplus Liquidity"**
(Density Across Firms)

Legend:
- - - Pre-COVID
— COVID w/o Measures
— COVID with combination of support measures

The Power of Fiscal Policy III: Recovery From Financial Crises

The Role of Fiscal Policy during Recessions

Source: IMF Fiscal Monitor: Debt: Use It Wisely (October 2016) & IMF staff calculations

Note: The figure shows the dynamics of real GDP per capita (panels 1 and 2) and real total government expenditure per capita (panels 3 and 4) in advanced economies and emerging market economies, starting from the year preceding a recession (peak). The solid lines show the path in normal (blue) and financial (red) recessions. The shaded area around the blue line represents the 95 percent confidence interval. The dashed red lines show how the path deviates from its baseline if debt as a percentage of GDP at the peak is 25 percentage points greater than the cross-country average for advanced economies and if the change in debt as a percentage of GDP in the five years before a crisis is on average 5 percentage points higher than the mean for emerging market economies.

Are Fiscal Interventions Getting Larger?

Fiscal Responses in Large Crises
(Estimated Coefficients)
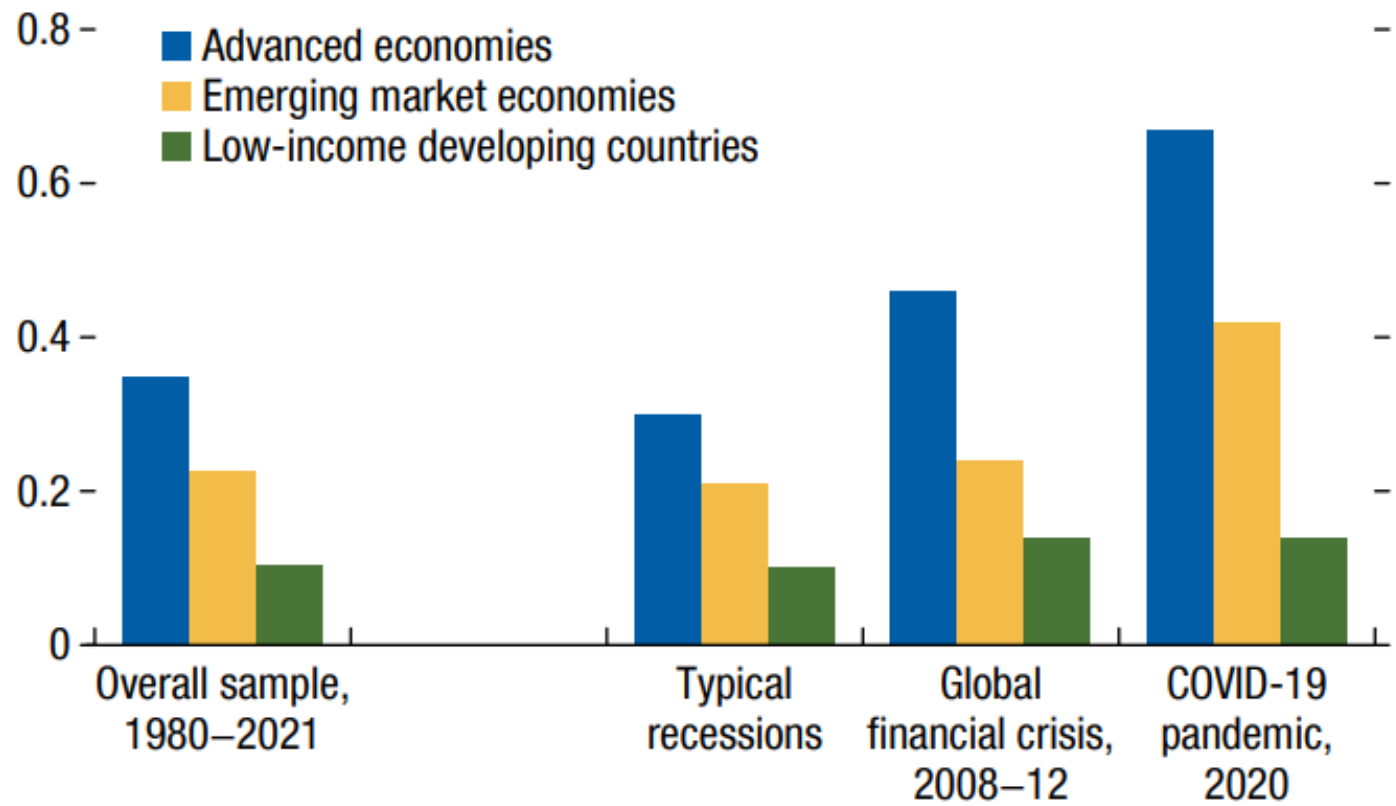
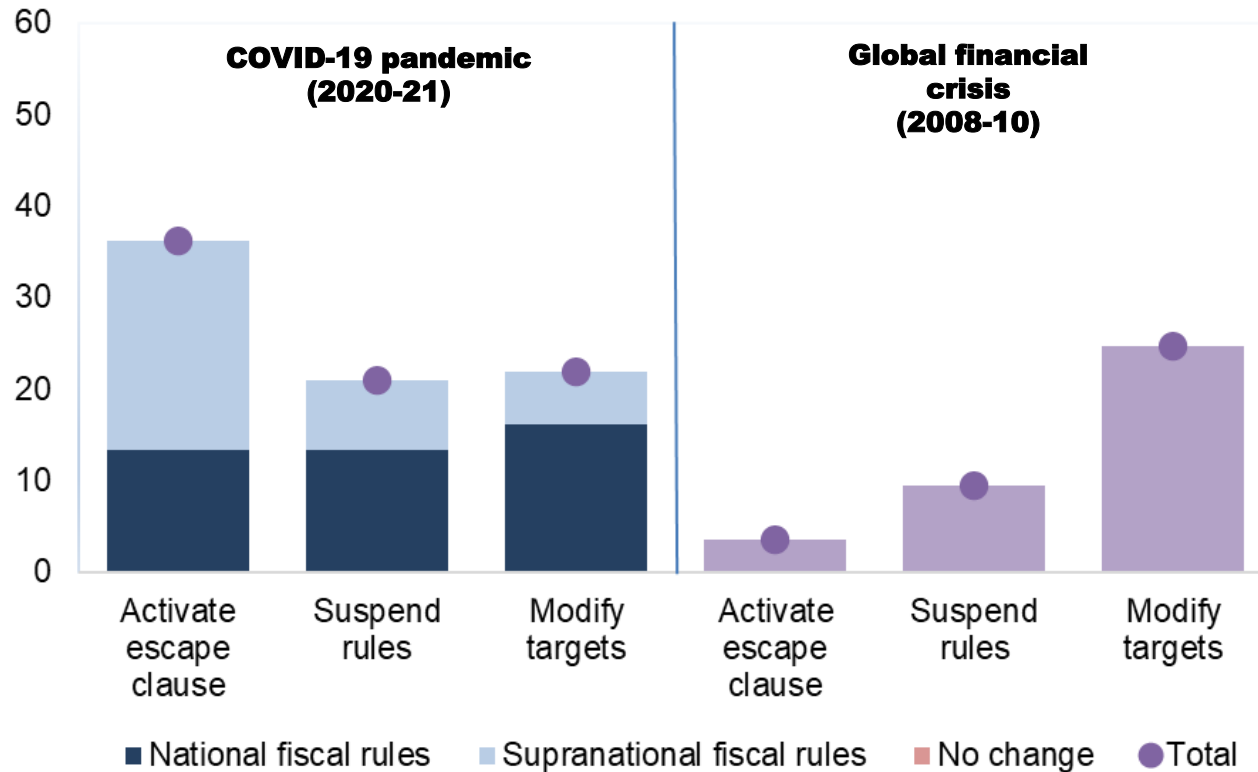Source: IMF Fiscal Monitor: Helping People Bounce Back (October 2022)
Note The figure shows the average of time-varying coefficients by country income groups, based on panel regressions estimated on the sensitivity to GDP growth of the deficit-to-GDP ratio from 1980 to 2021. Typical recessions are defined as periods when individual countries' growth rates are below their own average levels over the previous three years.

Back to Normal: The Return To Fiscal Rules

Adjustments in Fiscal Rules during Crises
(Percent of countries with at least one fiscal rule)

Adjustments Planned
(Percent of countries with at least one fiscal rule)

COVID-19 pandemic (2020-21)

Global financial crisis (2008-10)

COVID-19 pandemic (2020-21)

Activate escape clause · Suspend rules · Modify targets · Plans to revise fiscal rule framework · No change

■ National fiscal rules ■ Supranational fiscal rules ■ No change ● Total
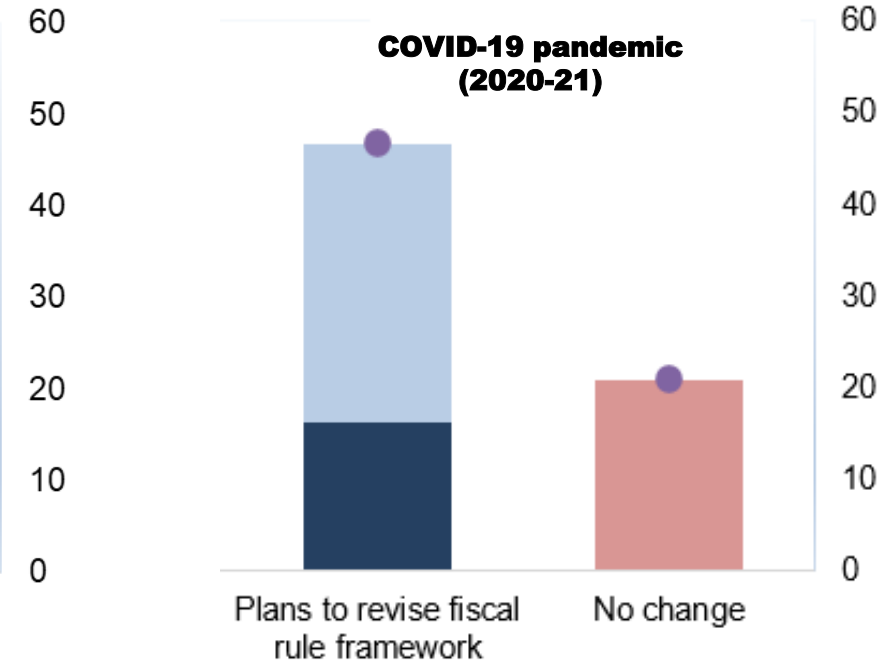
Source: Davoodi et al. (2022), ' Fiscal Rules and Fiscal Councils: Recent Trends and Performance during the COVID-19 Pandemic '.
Note: The database includes 105 countries in total.

The Role Of Rules

Governments tend to react to increases in debt and in the interest bill by tightening the primary balance

Response of Primary Balance to Debt

Response of Primary Balance to Interest

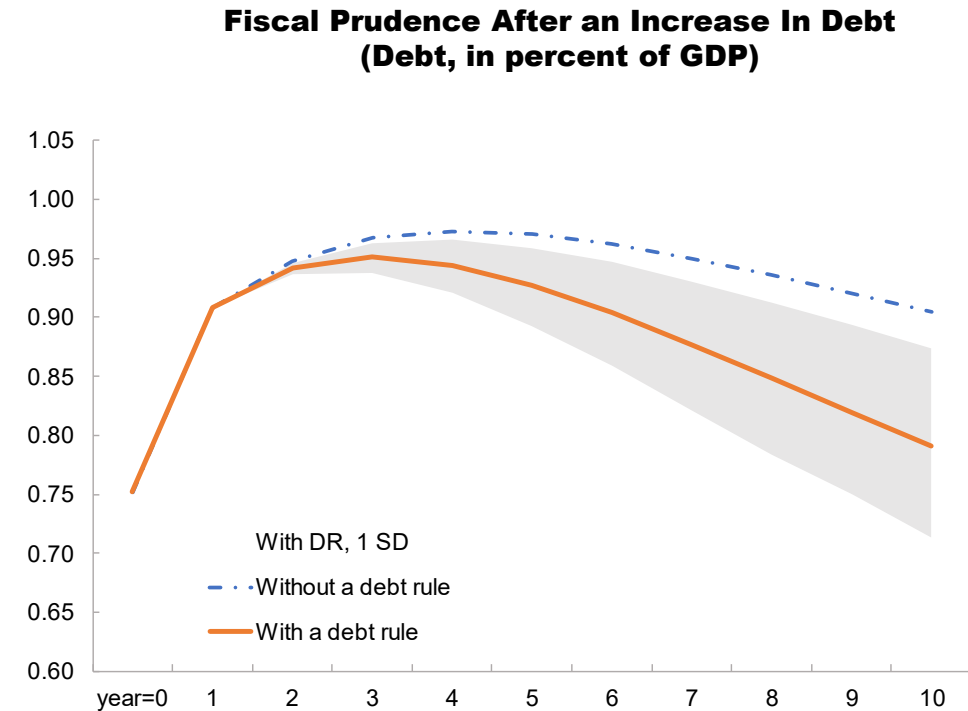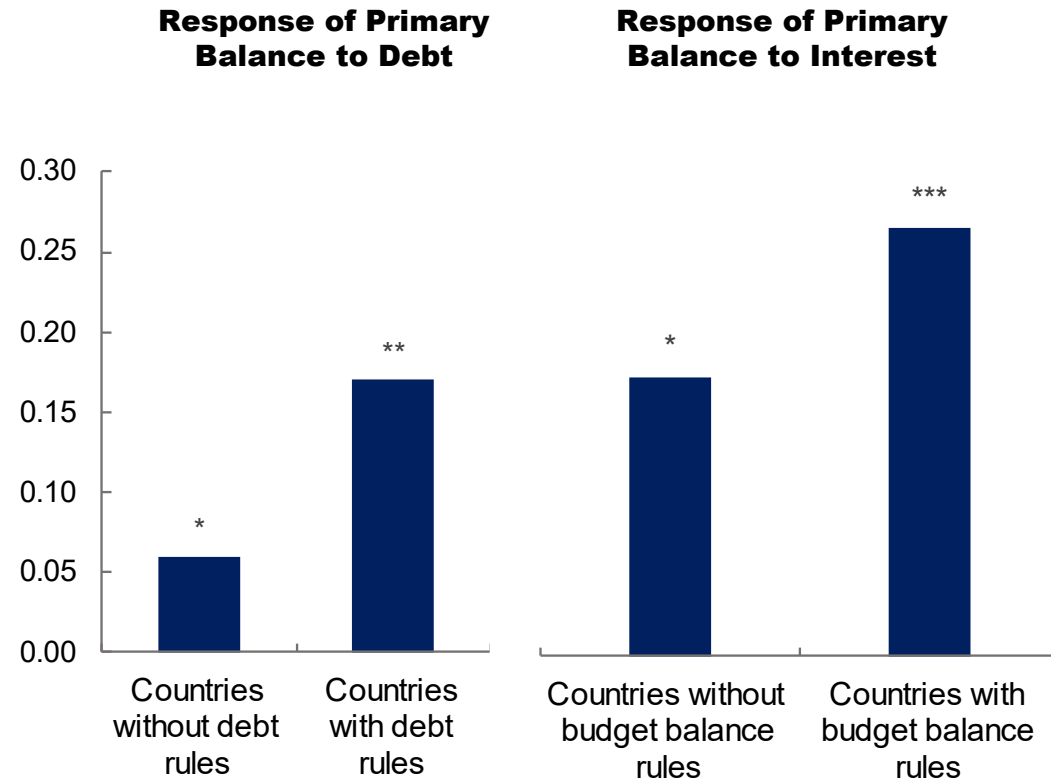**Fiscal Prudence After an Increase In Debt (Debt, in percent of GDP)**

Source: Fiscal Monitor: Strengthening the credibility of Public Finances (October 2021) extract based on David, Goncalves, and Perrelli (forthcoming).
Note: (LHS) This figure is based on panel estimation of fiscal reaction function for 55 countries over 1970–2018. *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$. (RHS): Based on panel estimation of fiscal reaction function linking primary balance to past debt, for 55 countries over 1970-2018. Illustrative simulation using estimated coefficients from the panel estimation and calibrated to average debt of advanced economies in 2019 and their average debt increase in 2020

Risk-Based Flexible Approaches Work Best

Debt Anchor with Sufficient Buffers
(Percent of GDP)
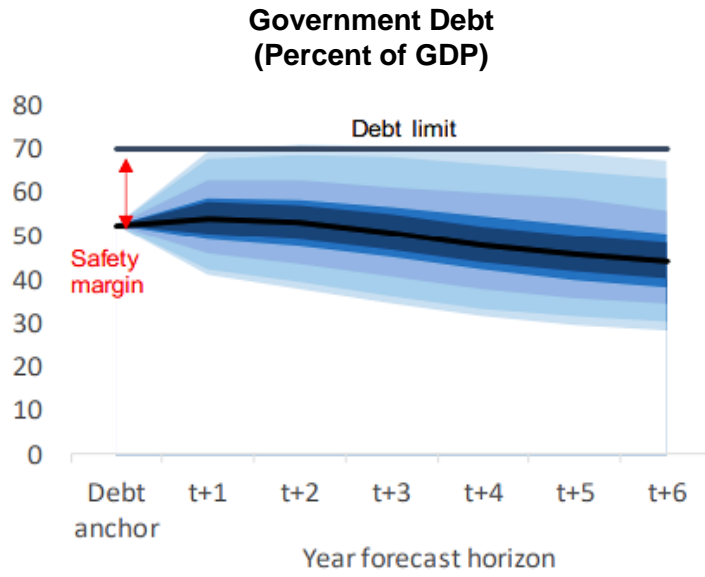
Countries With More Flexible Rules Tend to Have
a More Countercyclical Policy Response

Government Debt
(Percent of GDP)

1. Flexible vs. Rigid Rules

2. Flexible vs. No Rules
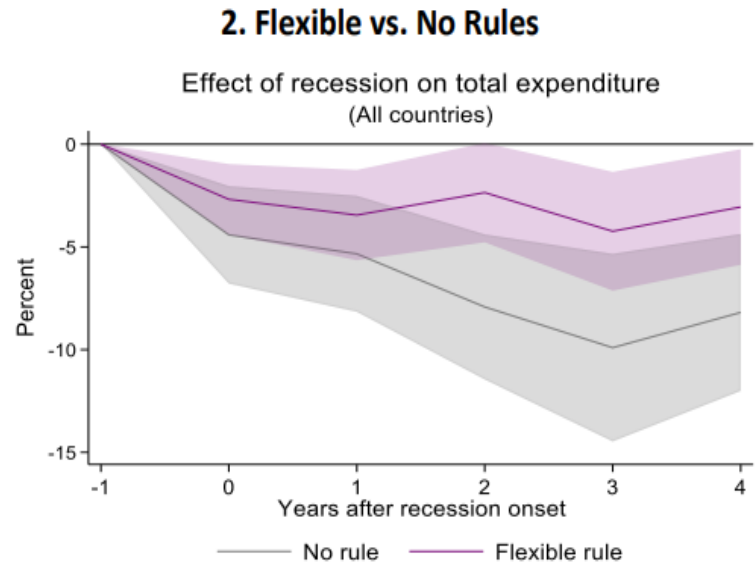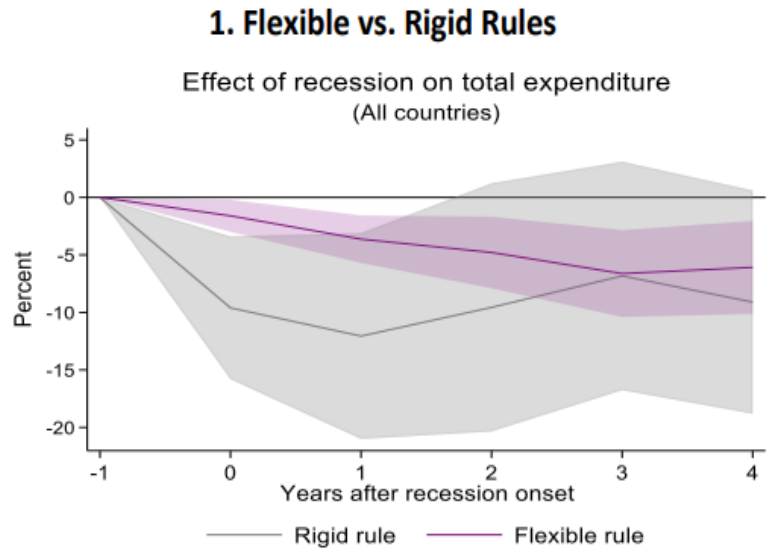
Source: Caselli et al. (2022), 'The Return to Fiscal Rules', IMF SDN No. 2022/002
Note: The buffer is calculated by simulating shocks based on historical data (see 'How to Calibrate Fiscal Rules: A Primer', 2018, IMF Note No. 2018/002)

Source: Caselli et. al (2022), 'The Return to Fiscal Rules', IMF SDN No. 2022/002
Note: The panels in the figure report the cumulative effect of a recession on the outcome variable, for countries with flexible versus rigid fiscal rules (panel 1) and versus no rules (panel 2). The error bands correspond to 90 percent confidence intervals. The analysis focuses on recession episodes to observe the behavior of fiscal policy under an exogenous shock. The authors address endogeneity issues for the economic cycle and fiscal rules adoption by measuring the response of real government expenditure in years post-recession, employing a difference-in-difference approach (see Annex 3). The analysis is robust to an alternative methodology, samples, and different types of rules.

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