FISCAL AFFAIRS

12ᵗʰ IMF-Japan High-Level Tax Conference for Asian Countries
Tax Policy in Turbulent Times

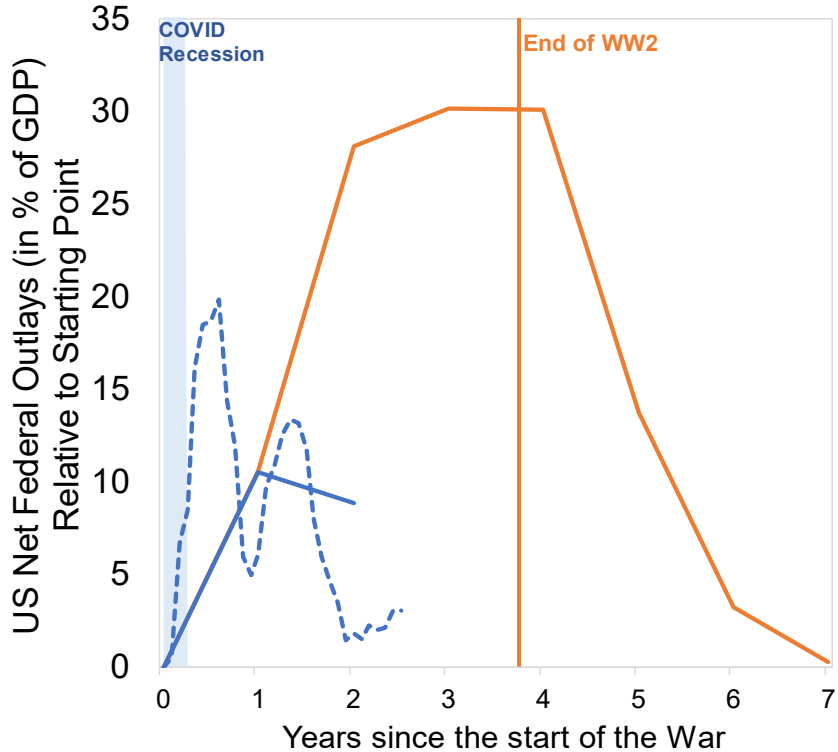**OCTOBER 25, 2022**

Vitor Gaspar
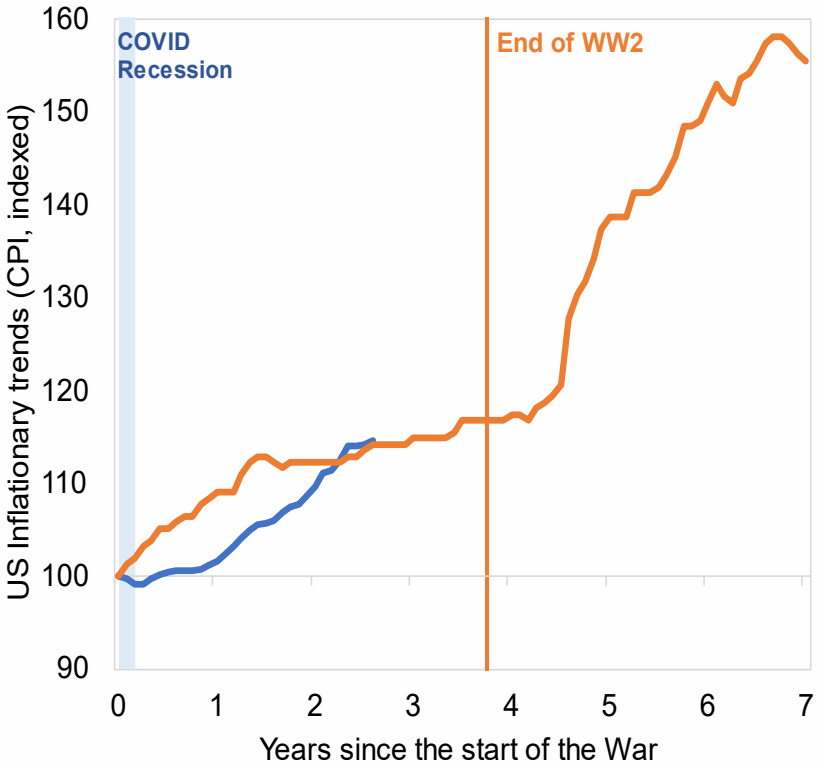
Director

Fiscal Affairs Department

Paying for The War on COVID

US Federal Government Spending

US Inflation (CPI)

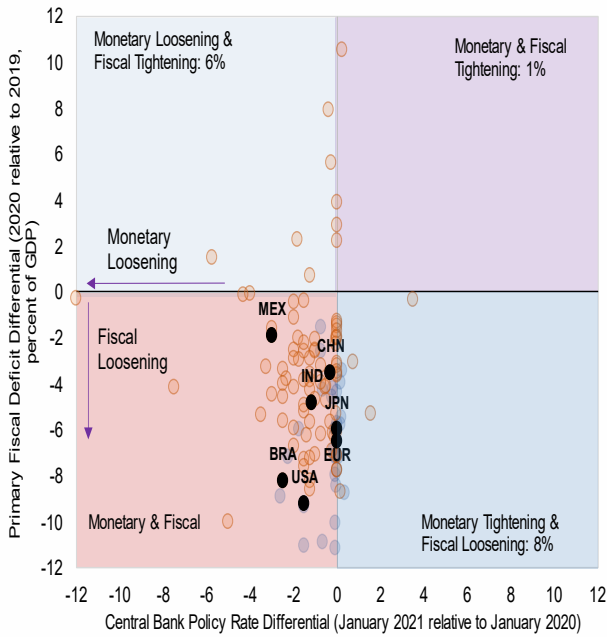— World War II (Dec 1941=100)　— COVID (Feb 2020=100)

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*' .
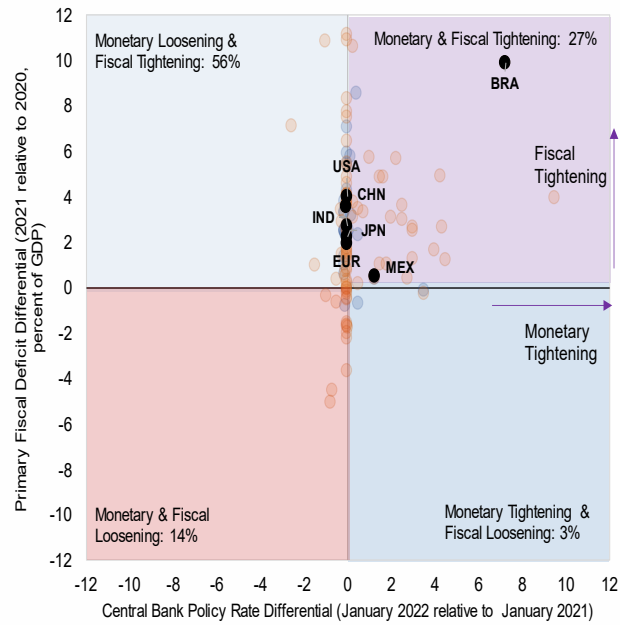
Note: Figures represent trends in the United States. In the right figure, data is in monthly frequency. In the left chart, data is in annual frequency, with the dashed line being federal government spending for COVID in monthly frequency. Federal Net Outlays (Spending) is shown as the difference relative 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.
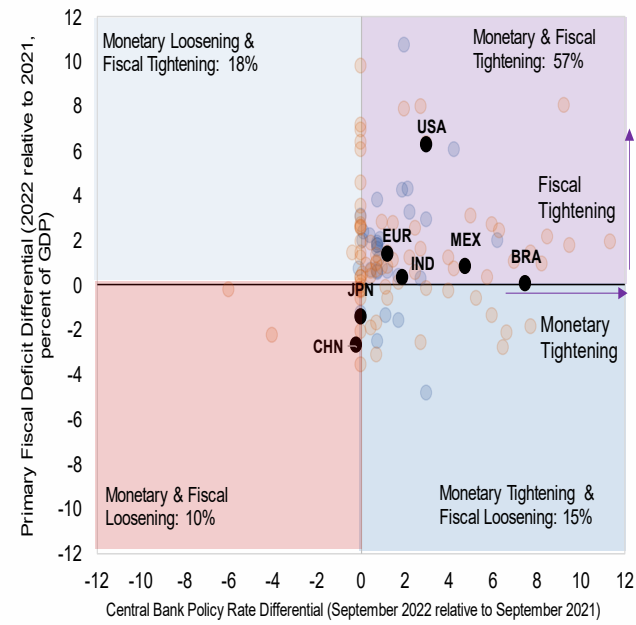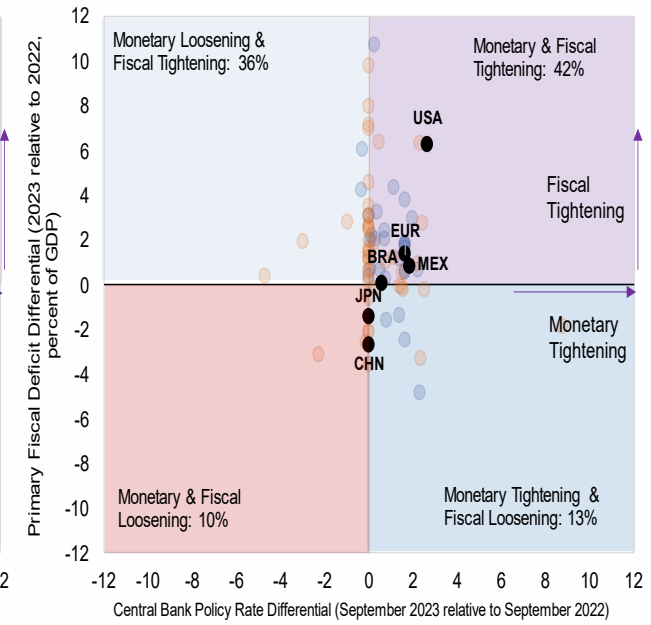
Policy Mix

Fiscal-Monetary Interaction in 2020

Monetary Loosening & Fiscal Tightening: 6%

Monetary & Fiscal Tightening: 1%

Monetary Loosening

Fiscal Loosening

Monetary & Fiscal

Monetary Tightening & Fiscal Loosening: 8%

Primary Fiscal Deficit Differential (2020 relative to 2019, percent of GDP)

Central Bank Policy Rate Differential (January 2021 relative to January 2020)

Fiscal-Monetary Interaction in 2021

Monetary Loosening & Fiscal Tightening: 56%

Monetary & Fiscal Tightening: 27%

Fiscal Tightening

Monetary Tightening

Monetary & Fiscal Loosening: 14%

Monetary Tightening & Fiscal Loosening: 3%

Primary Fiscal Deficit Differential (2021 relative to 2020, percent of GDP)

Central Bank Policy Rate Differential (January 2022 relative to January 2021)

Fiscal-Monetary Interaction in 2022

Monetary Loosening & Fiscal Tightening: 18%

Monetary & Fiscal Tightening: 57%

Fiscal Tightening

Monetary Tightening

Monetary & Fiscal Loosening: 10%

Monetary Tightening & Fiscal Loosening: 15%

Primary Fiscal Deficit Differential (2022 relative to 2021, percent of GDP)

Central Bank Policy Rate Differential (September 2022 relative to September 2021)

Fiscal-Monetary Interaction in 2023

Monetary Loosening & Fiscal Tightening: 36%

Monetary & Fiscal Tightening: 42%

Fiscal Tightening

Monetary Tightening

Monetary & Fiscal Loosening: 10%

Monetary Tightening & Fiscal Loosening: 13%

Primary Fiscal Deficit Differential (2023 relative to 2022, percent of GDP)

Central Bank Policy Rate Differential (September 2023 relative to September 2022)
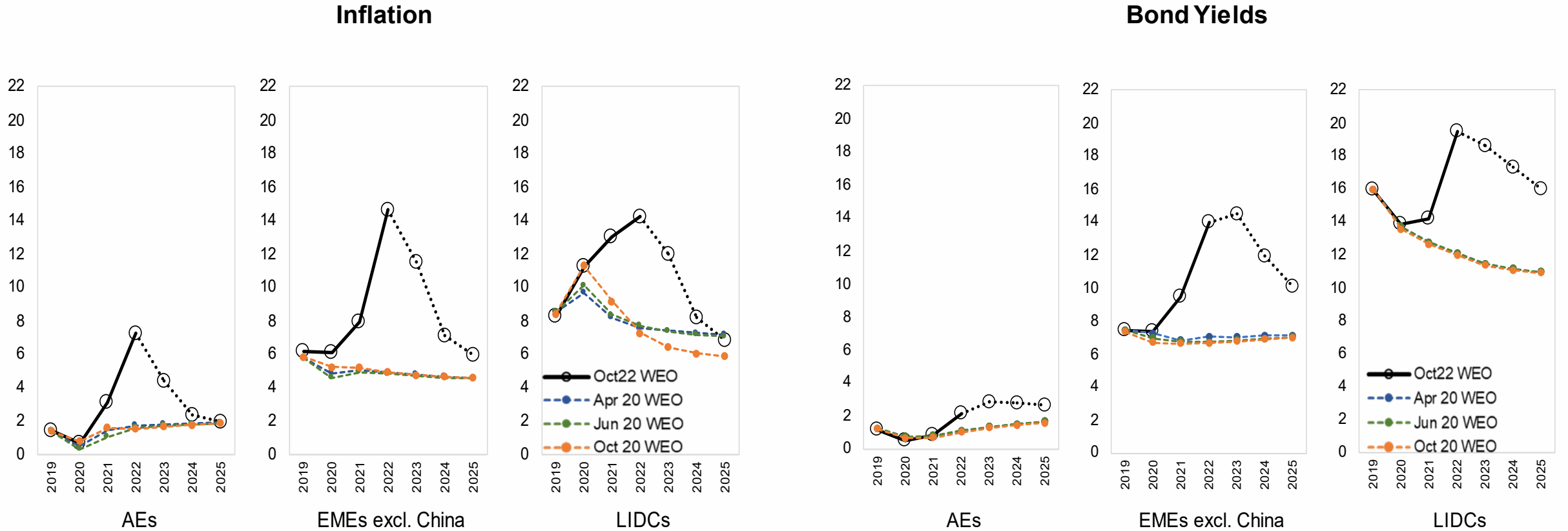
Fiscal Tightening Preceded Monetary Tightening in Most Economies

Source: IMF Fiscal Monitor & World Economic Outlook (October 2022); Consensus Economics National Sources/ Haver Analytics

Note: Countries in blue represent Advanced Economies and orange represent Emerging Market & Developing Economies (EMDEs). The Euro Area is shown as a singular entity. Around 60% of the sample is tightening monetary and fiscal conditions. The rightmost chart uses World Economic Outlook assumptions of interest-rate increases over 2023.

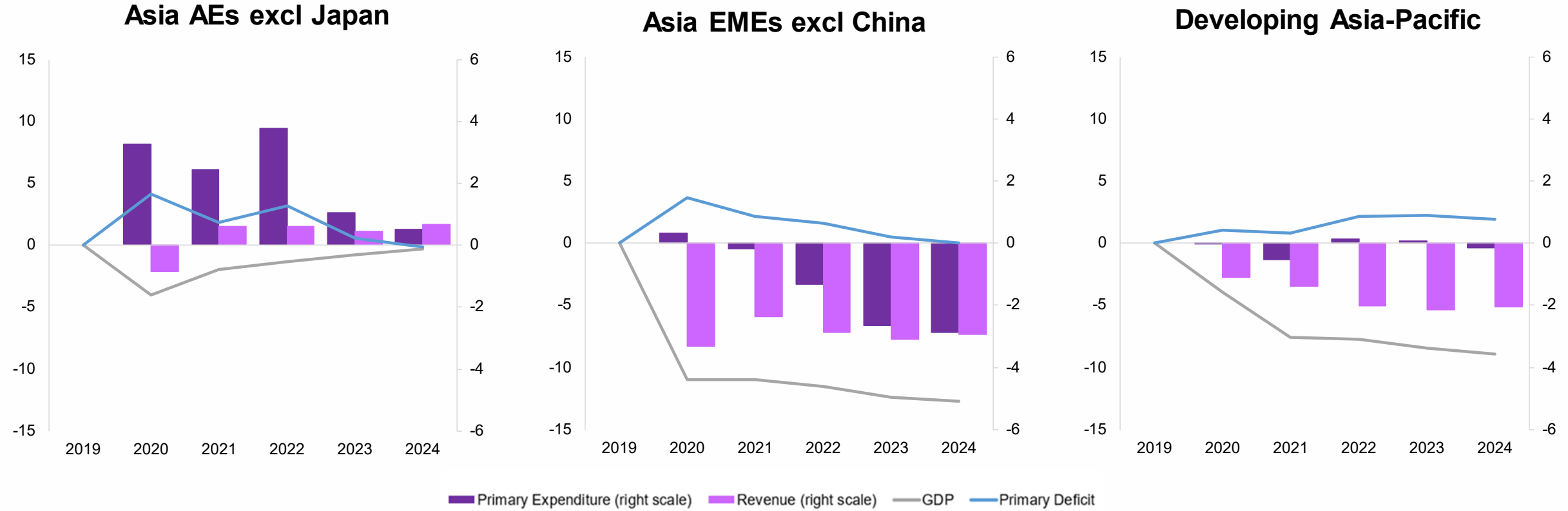# From Low For Long To Very High

Inflation

AEs   EMEs excl. China   LIDCs

Bond Yields

AEs   EMEs excl. China   LIDCs

Legend: Oct22 WEO, Apr 20 WEO, Jun 20 WEO, Oct 20 WEO

Source: IMF WEO (Various Vintages).

Note: The figure compares the projected average annual inflation (CPI) & long-term local-currency bond yields for aggregates, across World Economic Outlook (WEO) vintage projections provide the prevailing sentiment and economic projections during 2020. The October 2022 WEO vintage provides the realized values for 2019, 2020 and 2021 and the latest projections for 2022, 2023, 2024 & 2025. All income groups follow WEO's methodology.

Fiscal Deficits Down But Lasting Scarring

Effect of the Pandemic on Revenue, Spending, Primary Deficit and GDP

Asia AEs excl Japan
Asia EMEs excl China
Developing Asia-Pacific

Legend: Primary Expenditure (right scale) — Revenue (right scale) — GDP — Primary Deficit
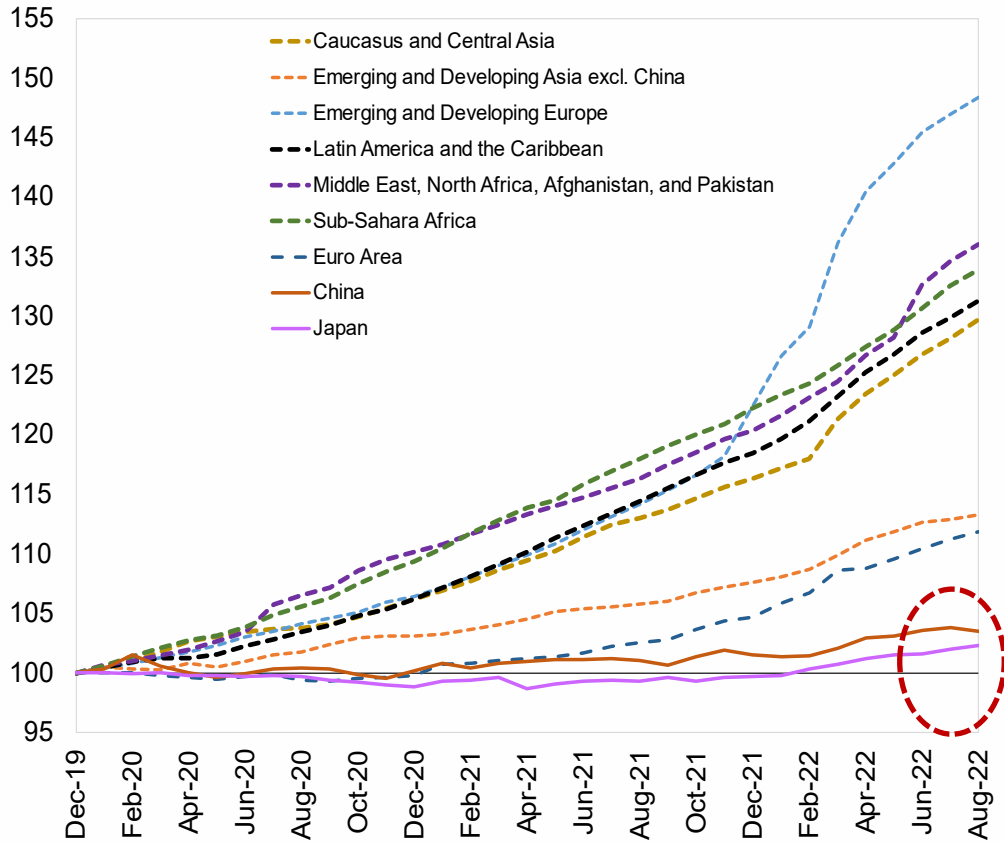
Source: IMF WEO; Fiscal Monitor (October 2019 and October 2022)
Note: All variables are weighted average real values, deviations from pre-pandemic projections as a percentage of WEO October 2019 vintage projected GDP.

What about Japan and China?

Effect of the Pandemic on Revenue, Spending, Primary Deficit and GDP
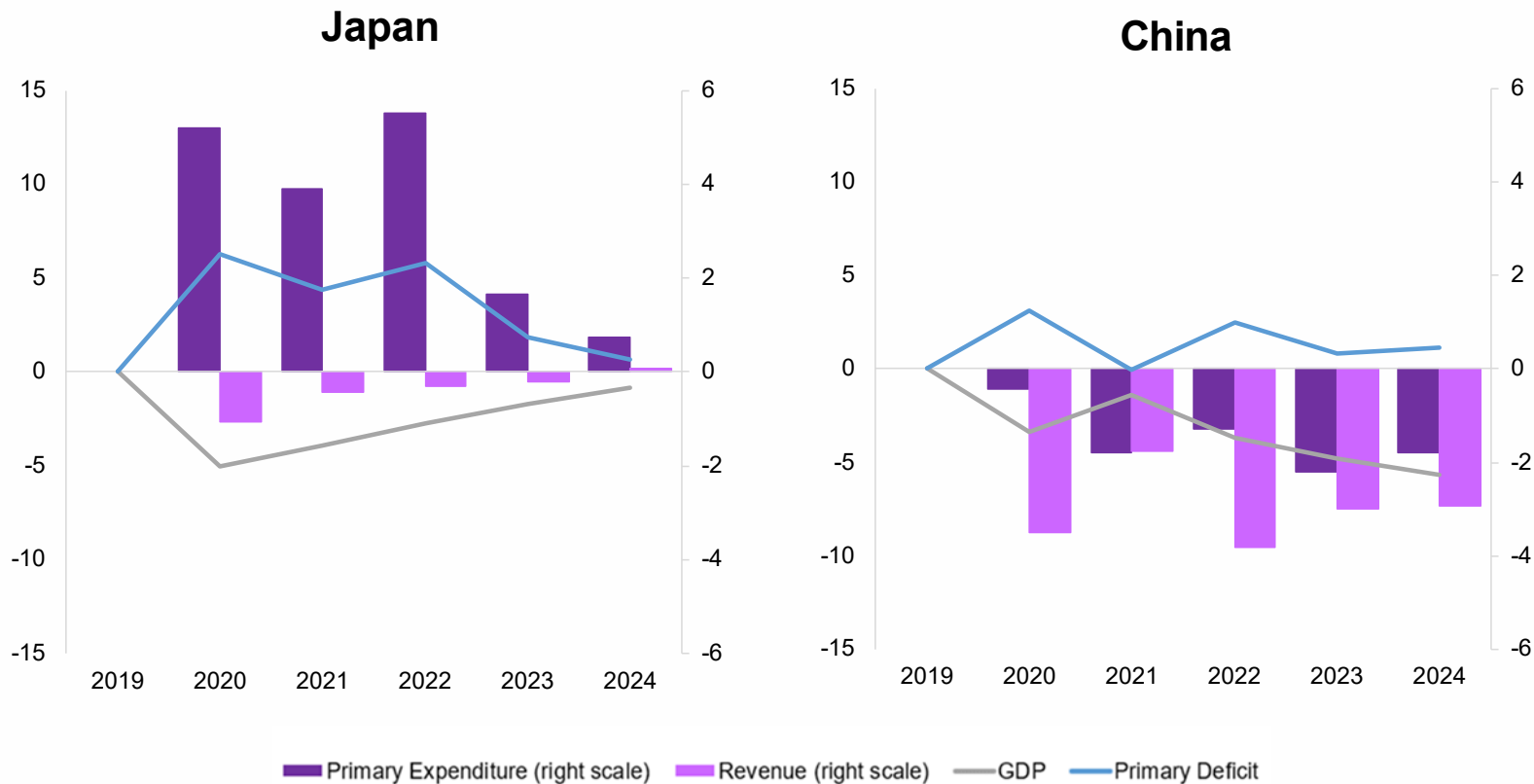
Japan

China

Primary Expenditure (right scale)   Revenue (right scale)   GDP   Primary Deficit

Source: IMF WEO; Fiscal Monitor (October 2019 and October 2022)
Note: All variables are weighted average real values, deviations from pre-pandemic projections as a percentage of WEO October 2019 vintage projected GDP.

China and Japan Have (Relatively) Low Inflation

Weighted Average Price Index
(Dec 2019=100, Dec 2019-Aug 2022)

Legend:
- Caucasus and Central Asia
- Emerging and Developing Asia excl. China
- Emerging and Developing Europe
- Latin America and the Caribbean
- Middle East, North Africa, Afghanistan, and Pakistan
- Sub-Sahara Africa
- Euro Area
- China
- Japan

Inflation in Asia-Pacific Economies: Distribution Over Time

JPN CHN

Source: National Authorities/Haver Analytics.
Note: Venezuela is excluded from calculations for LATAM.
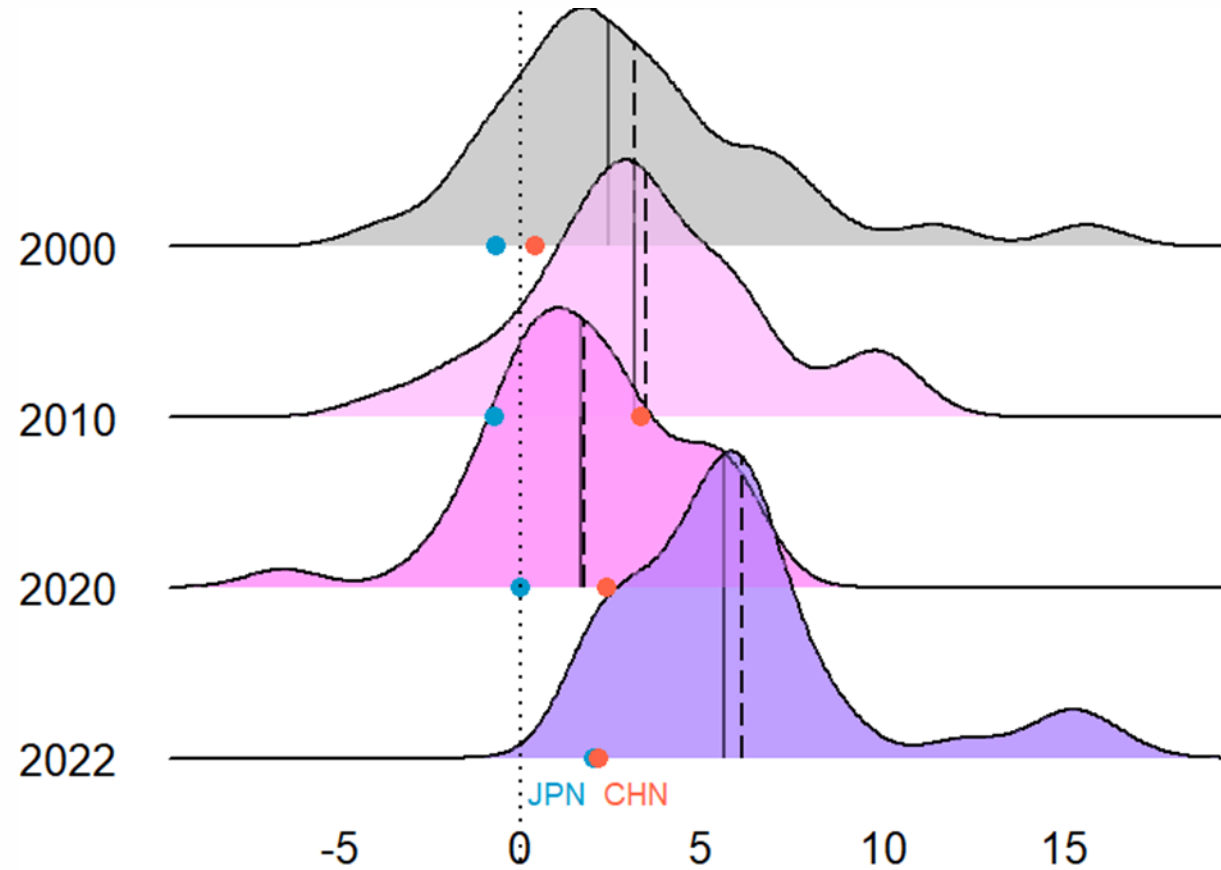
Source: IMF World Economic Outlook (October 2022)

Wages & Price Level

United States: Private Sector Hourly Earnings & Price Level
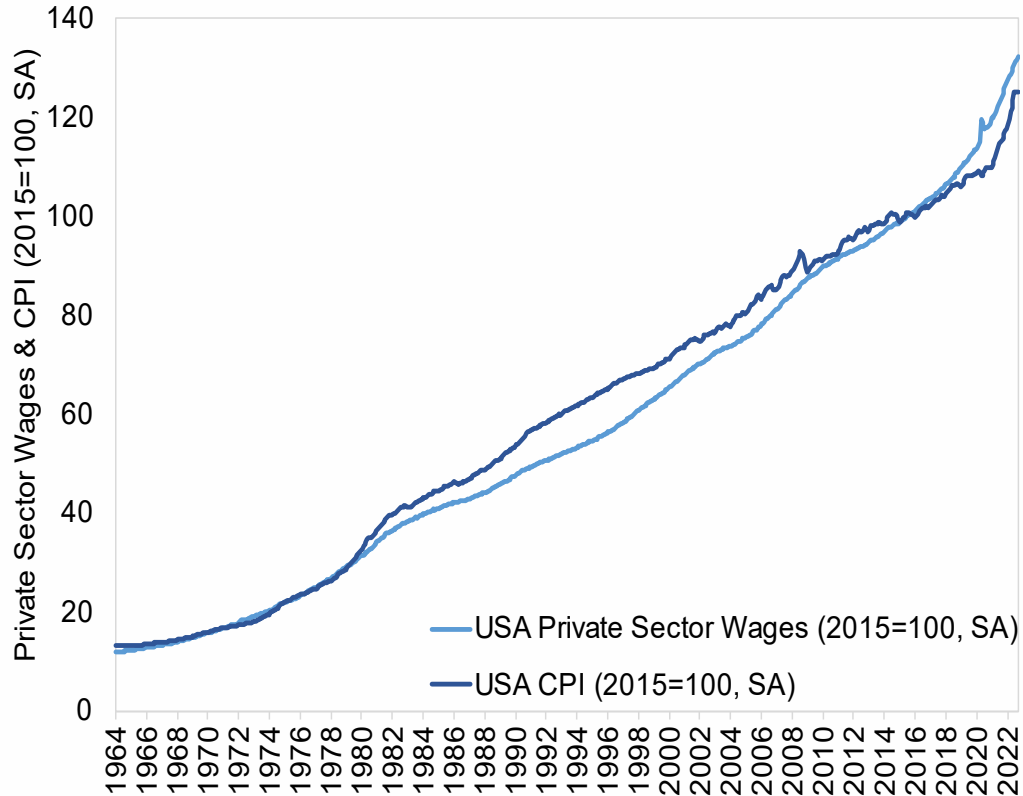
Japan: Private Sector Hourly Earnings & Price Level

Source: OECD
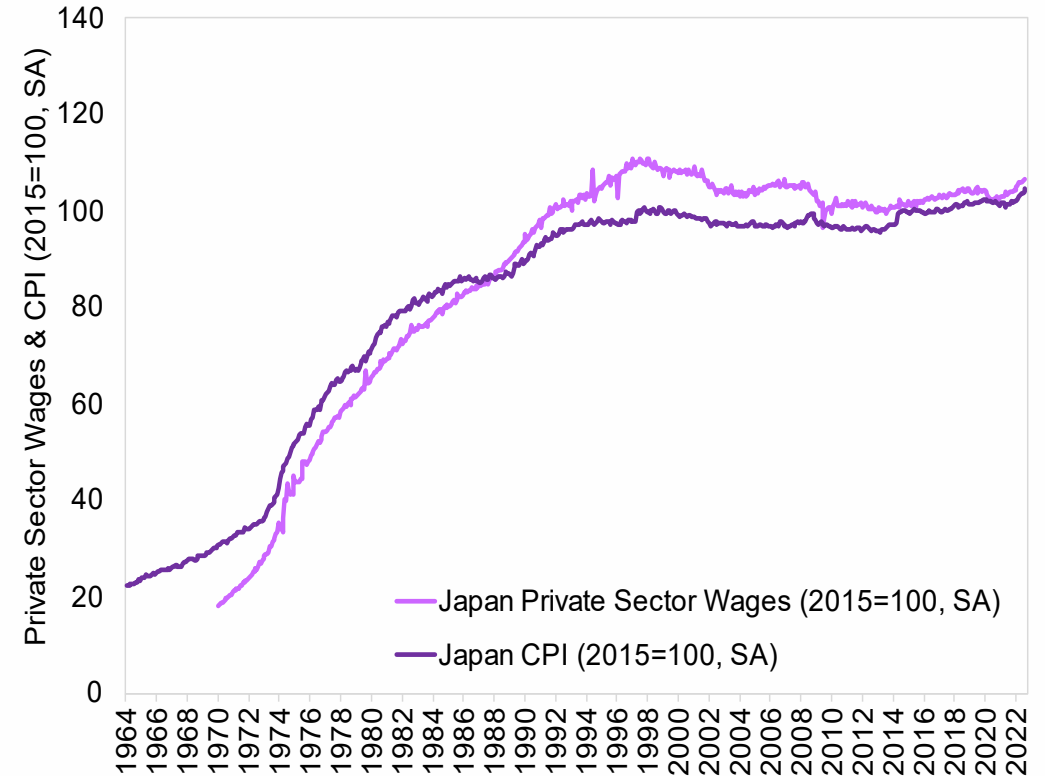
Debt Vulnerabilities on the Rise

Comparison of Debt Vulnerabilities:
EMDEs Spreads & Ratings (Pre-Pandemic and Current)
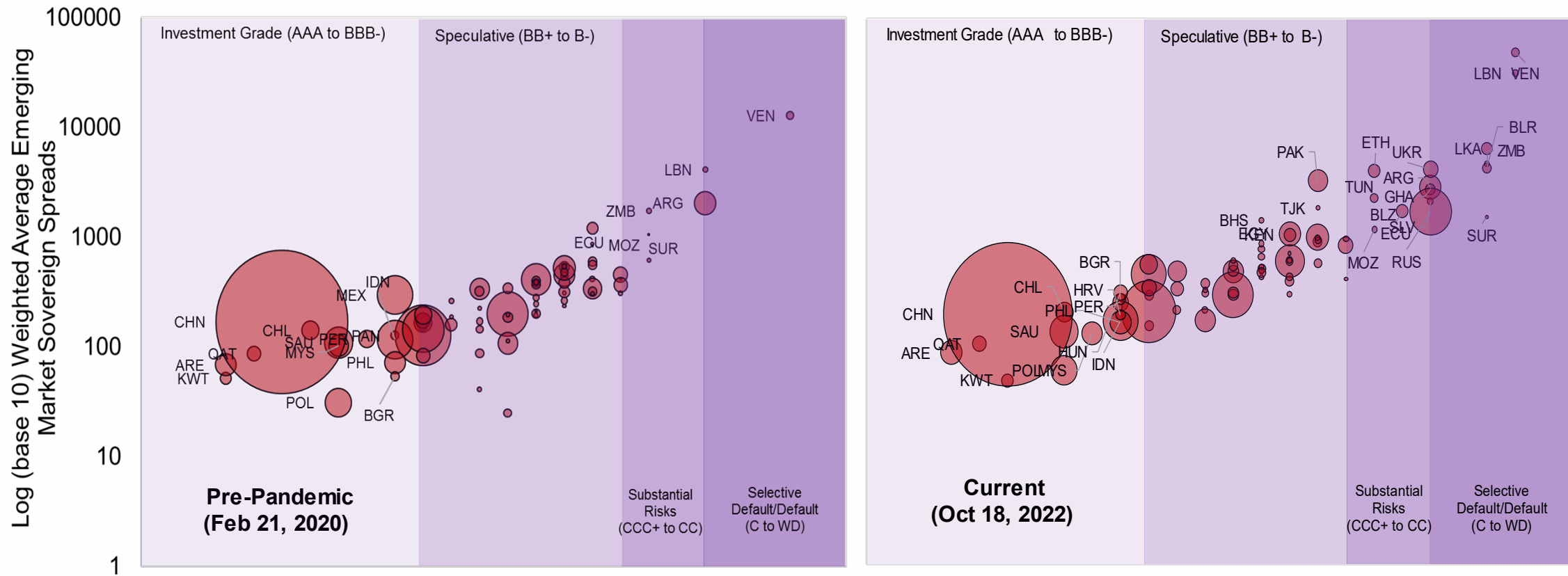
Source: JP Morgan EMBI Sovereign Spreads, Bloomberg Finance, Moody's Ratings, S&P Sovereign Ratings, Fitch Ratings & IMF Staff analysis

Note: The figures use the JP Morgan EMBI Sovereign Spreads and supplements with the MCM dataset prepared using Bloomberg. Coverage for the Spreads and Ratings figures span across 63 EMEs and 16 LIDCs. The figures use the Log (base 10) scale on the vertical axis, representing weighted average sovereign spreads on Eurobonds. Bubble sizes represent the country's gross domestic product, in USD, current prices. Labels are only shown for Investment Grade, Substantial Risks or Selective Default/Default categories or countries with spreads over a 1000 bp (in Distress). The credit ratings are the lowest end of month credit ratings on the previous month across all three major credit agencies (S&P, Moody's & Fitch). The Ratings classification are standardized to the Fitch Rating hierarchy nomenclature. The figure here includes 79 EMDEs of which: 12 are low-credit risk (15% of sample, 55% of the EMDEs GDP); 37 are performing (47% of sample, 25% of the EMDEs sample GDP); 9 are stressed (11% of sample, 2% of the EMDEs GDP) and 21 are distressed (27% of sample, 10% of the EMDEs sample GDP). In cumulative, 30 EMDEs (38% of sample, 12% of the EMDEs GDP) are considered stressed or distressed. The figure uses the JP Morgan EMBIG Sovereign index for classification to allow for the inclusion of India and Venezuela.

Fiscal Crises?

Main Predictors of Fiscal Crises in Emerging Markets
(Mean Difference of Shapley Values)
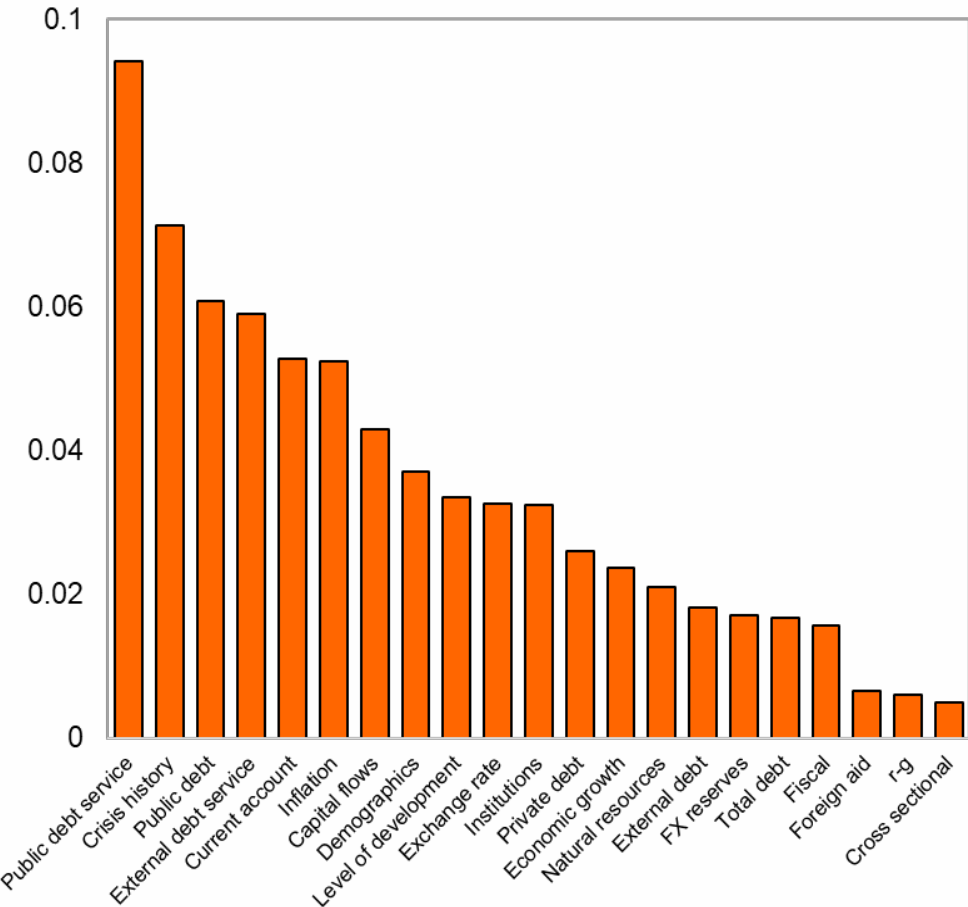

Source: Moreno Badia et al. (2022).
Note: Predictor importance using Random Forest. The charts show the mean difference of Shapley values (crisis versus non-crisis observations) by income groups. The Shapley value represents the contribution of each respective variable towards the predicted valued compared to the average prediction for the data set.
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Global Public Debt and Interest Payments
(in percent of GDP)
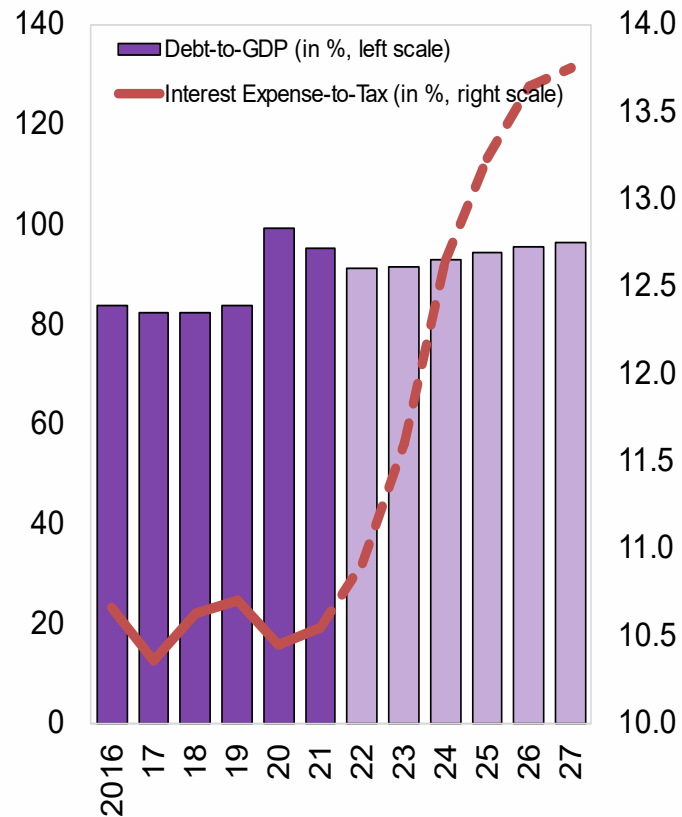
Source: IMF Fiscal Monitor (October 2022)

Euro and Yen Exchange Rates vs Dollar since 2020 (EUR and GBP left scale, JPY right scale)
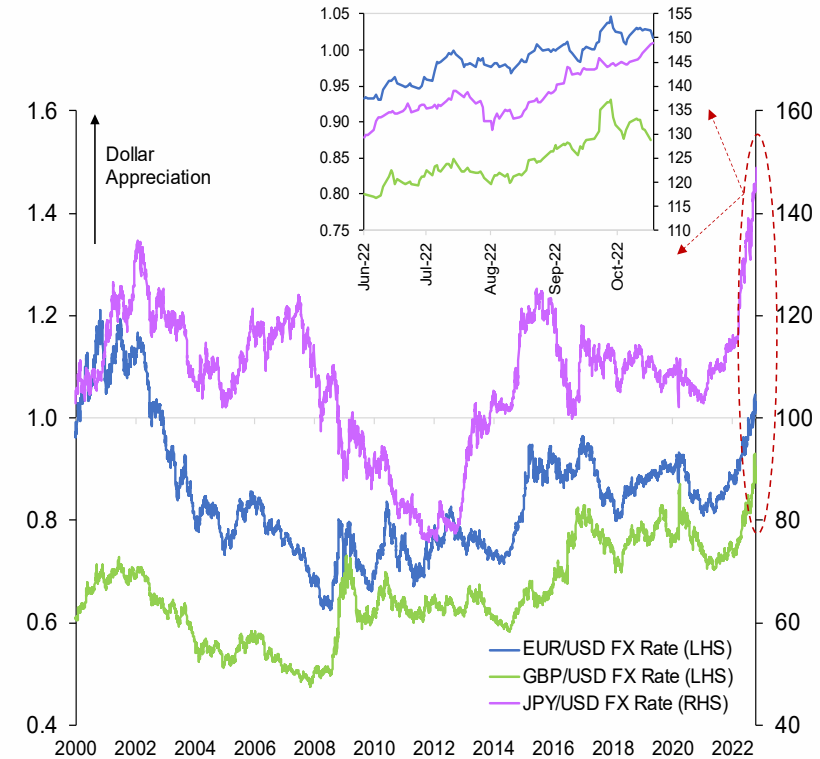
Source: Bloomberg Finance; National Sources/ Haver Analytics
Note: Data as of October 17, 2022

Debt and Interest Distributions in Asia-Pacific

Debt/GDP in Asia-Pacific Economies: Distribution Over Time

Interest/Tax in Asia-Pacific Economies : Distribution Over Time
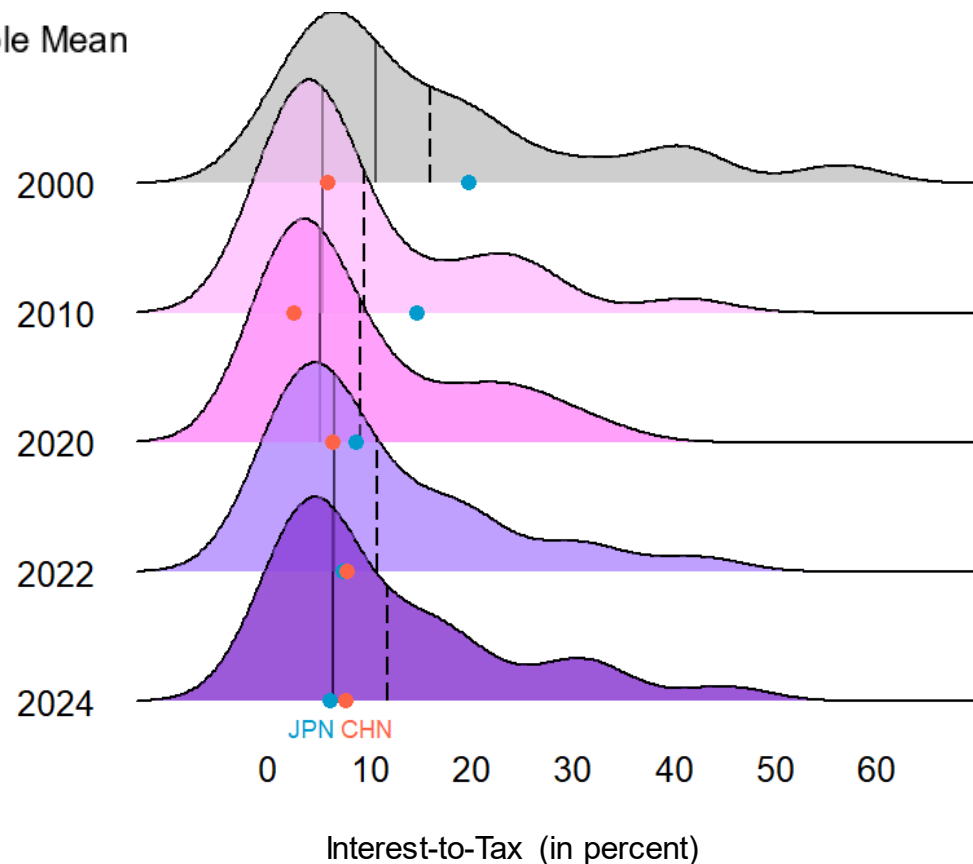
Debt-to-GDP (in percent)
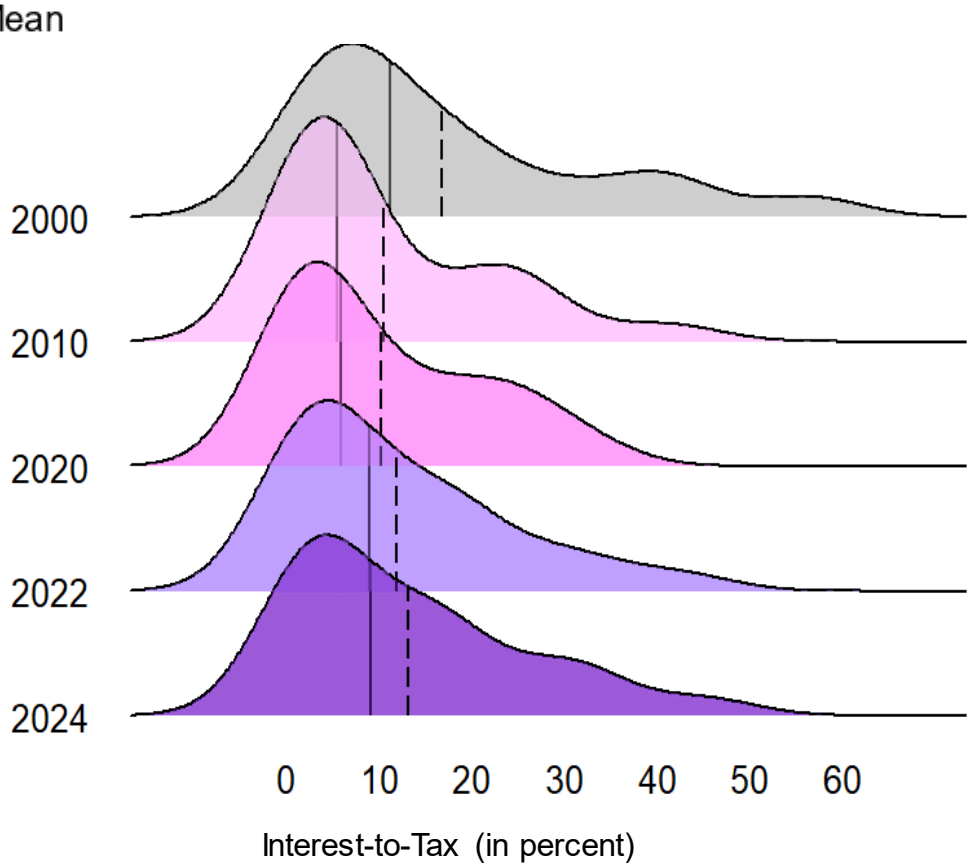
Interest-to-Tax (in percent)

Source: IMF World Economic Outlook (October 2022); IMF WoRLD Database & IMF Staff Calculations

Higher Debt Service in Asia-Pacific EMDEs excluding China

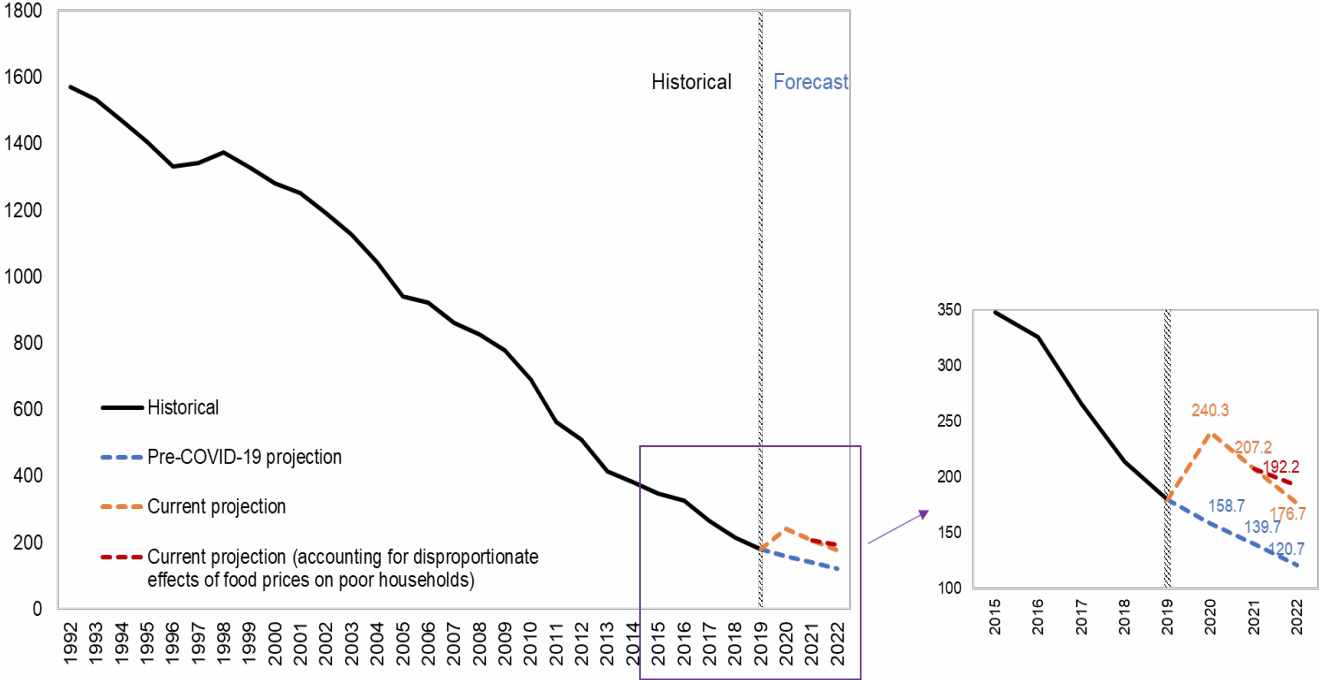**Debt/GDP in Asia-Pacific EMDEs excl China: Distribution Over Time**
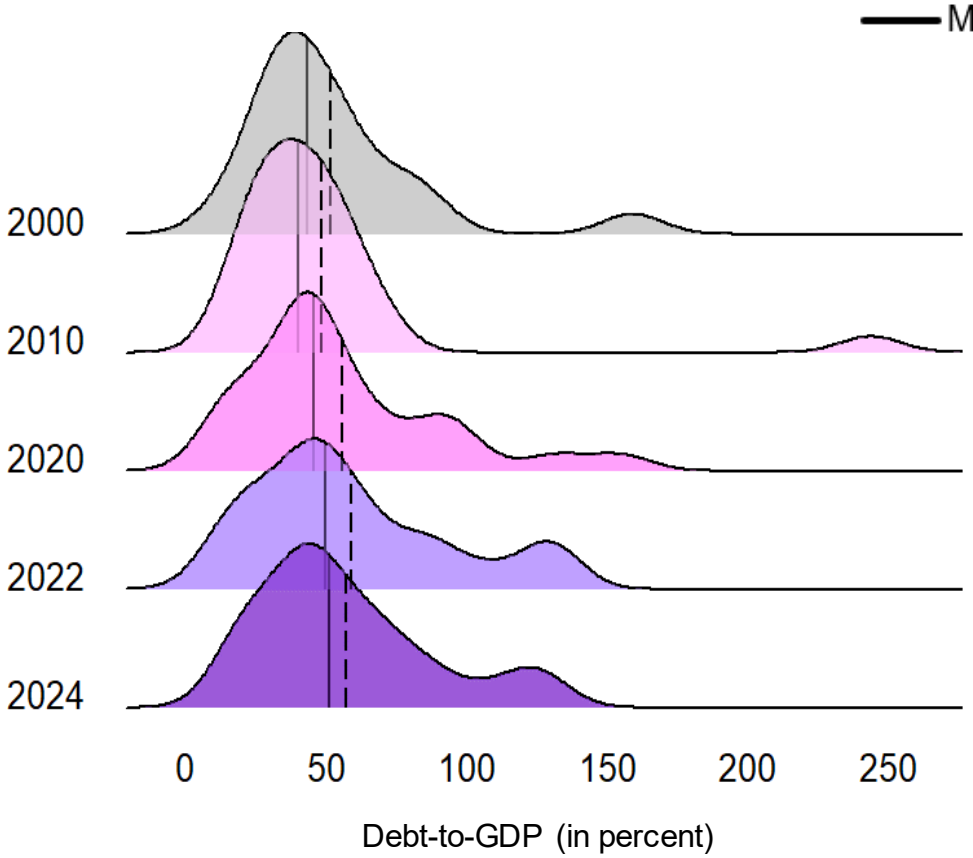
Interest/Tax in Asia-Pacific EMDEs excl China : Distribution Over Time

Source: IMF World Economic Outlook (October 2022); IMF WoRLD Database & IMF Staff Calculations
Note: EMDEs = Emerging Market and Developing Economies based on the IMF WEO Classifications.

Poverty Reduction Experienced a Setback in Asia-Pacific

Estimates of Extreme Poverty in East Asia & Pacific and South Asia (Millions of People, 1992-2022)

Legend:
- Historical
- Pre-COVID-19 projection
- Current projection
- Current projection (accounting for disproportionate effects of food prices on poor households)

Inset chart values: 240.3, 207.2, 192.2, 158.7, 176.7, 139.7, 120.7

SDG Financing Gap (in percent of 2030 GDP)

EMEs in Asia-Pacific countries

LIDCs in Asia-Pacific countries

SDG Spending (in percent of 2030 GDP)
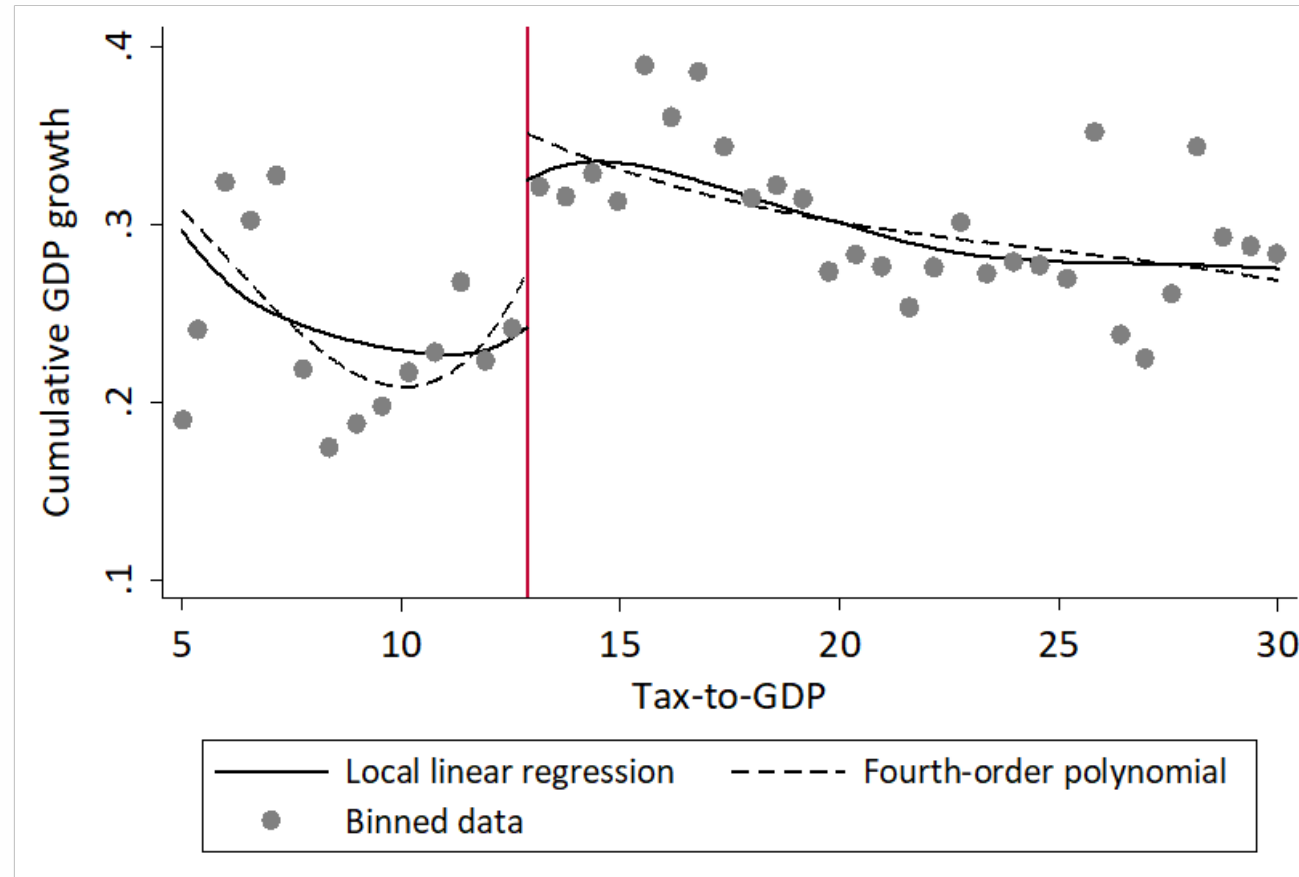
Categories: Health, Education, Water & Sanitation, Electricity, Roads

State Capacity and Economic Development

The Tax State and Economic Growth

**Impact of Tax Threshold on 10-year Cumulative Growth**

Source: Gaspar, Jaramillo and Wingender (2016), '*Tax Capacity and Growth: Is there a Tipping Point?*', **IMF Working Paper WP/16/234**
Note: The scatter plot shows average GDP growth in 0.5-percentage-point bins. The solid line is a local linear regression fit separately on either side of 12.88 using an Epanechnikov kernel and a bandwidth of 1.5. The dashed line is a global fourth order polynomial estimated separately on either side of the tipping point.

Total Tax Revenue in Asia-Pacific Economies

**Total Tax Revenues
(2000-2022, in percent of GDP)**
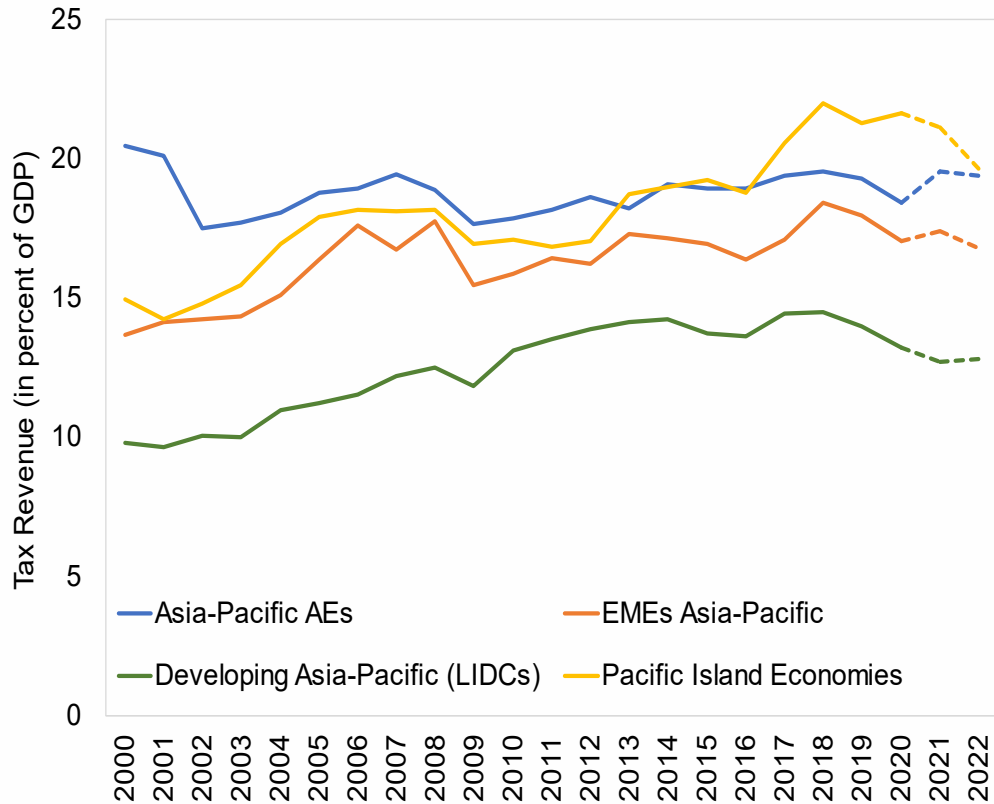
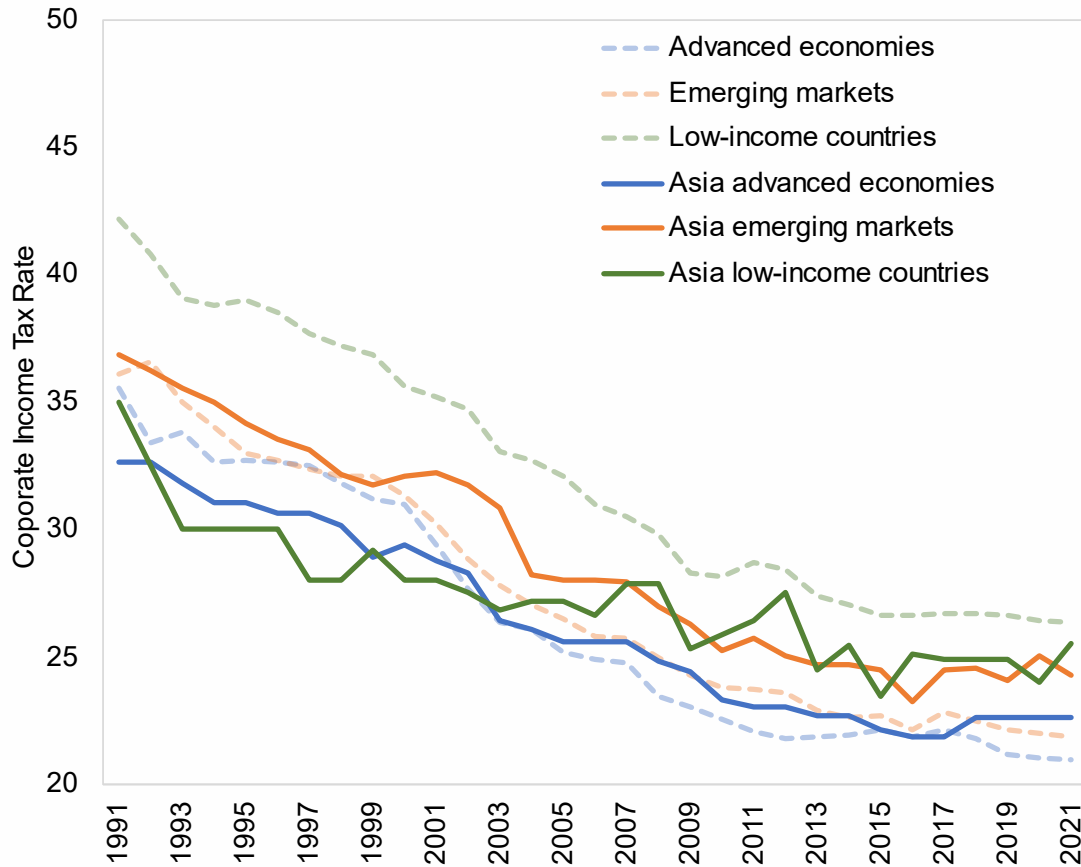**Tax Revenues Have Reduced As a Result of the Pandemic**
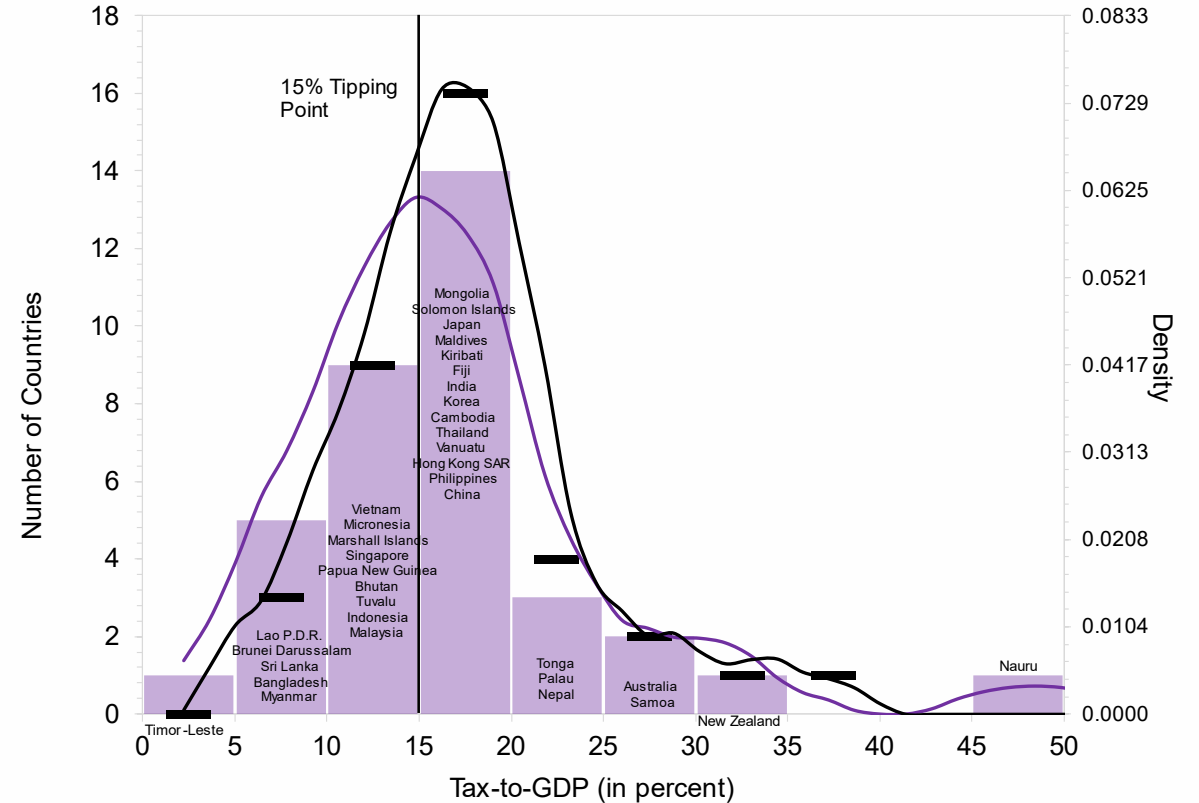
Source: IMF WoRLD Database, IMF World Economic Outlook & Staff Calculation
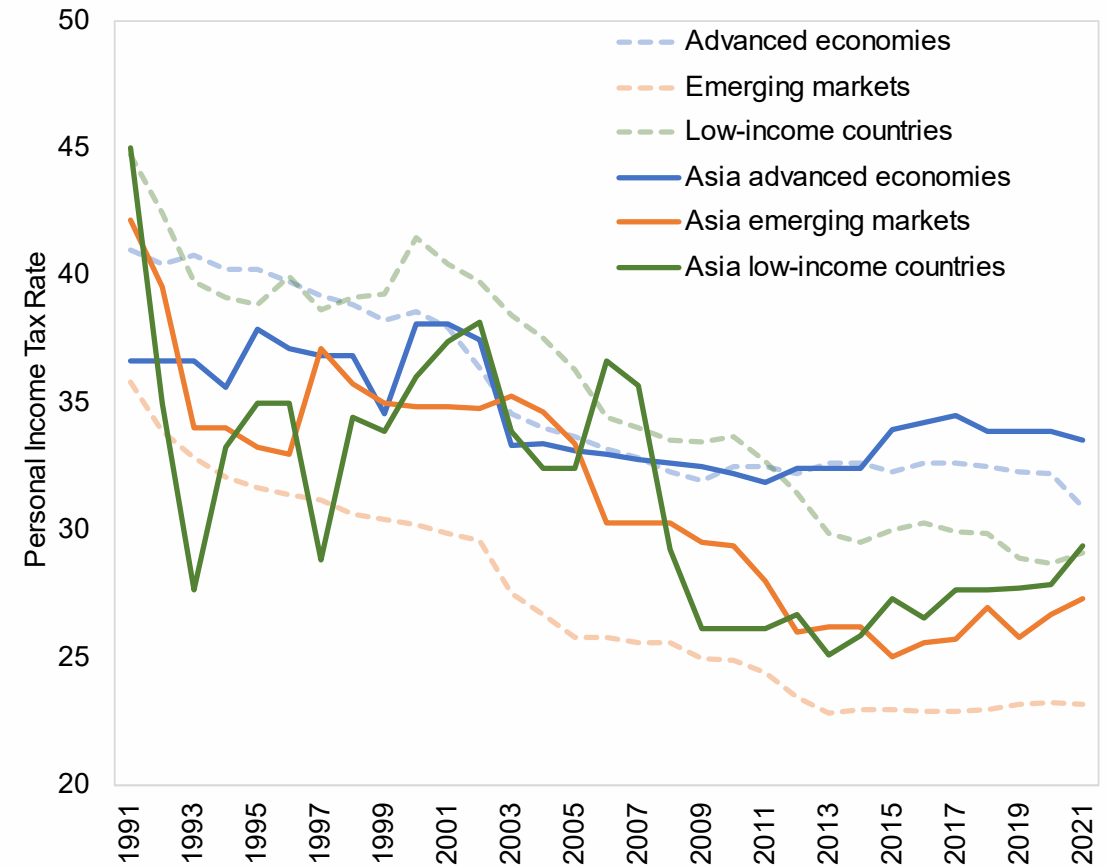Note: The aggregate total tax revenue data are calculated as simple averages. The values for 2021 and 2020 are estimates. 2022 Values are projections.

Global Corporate and Personal Income Tax Rates

Global Corporate Income Tax Rates, By Income Group, 1980-2020

Global Personal Income Tax Rates, By Income Group, 1980-2020

Legend:
- Advanced economies
- Emerging markets
- Low-income countries
- Asia advanced economies
- Asia emerging markets
- Asia low-income countries

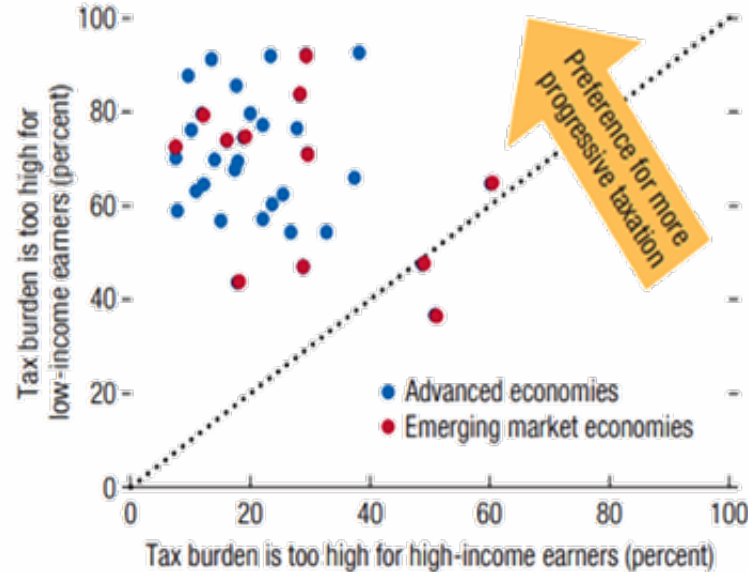**Source: IMF Fiscal Monitor (April 2022) and IMF Staff Calculations.**

Note: CIT (PIT) denotes the statutory corporate (top marginal personal) income tax rate, obtained from the IMF Fiscal Affairs Department Tax Database. CIT = corporate income tax; PIT = personal income tax. Aggregates are simple averages.

Broad-Based Fair & Elastic Tax Systems Help

People's Preference For Progressive Taxation
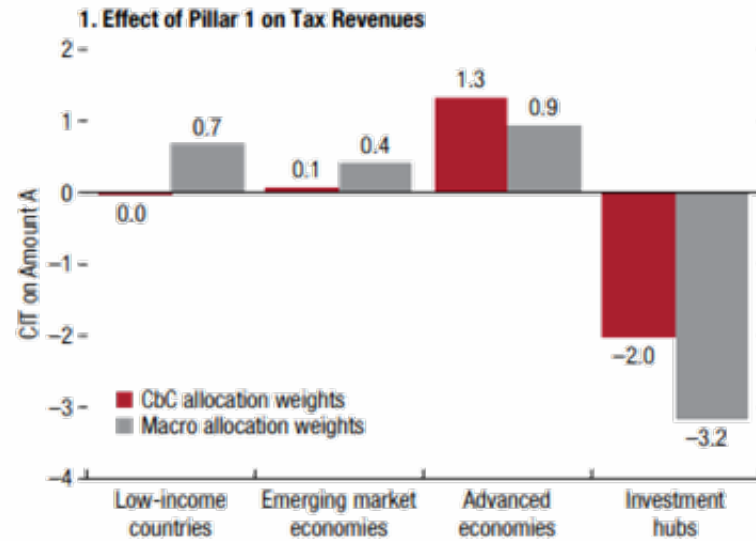(Percent of Respondents)

Revenue Effects of the OECD/G20 Inclusive Framework Agreement, Pillars 1 and 2
(Percent of Current Global Corporate Income Tax)

Most respondents preferred progressive taxation, even before the pandemic.

Preference for more progressive taxation

- Advanced economies
- Emerging market economies

Pillar 1 reallocates revenues from low-tax investment hubs to other countries.

1. Effect of Pillar 1 on Tax Revenues

- CbC allocation weights
- Macro allocation weights

Pillar 2 raises global corporate income tax revenues by 5.7 percent through the top-up tax and by an extra 8.1 percent potentially through reduced tax competition.

2. Effect of a Global Corporate Minimum Tax (Pillar 2) on Tax Revenues
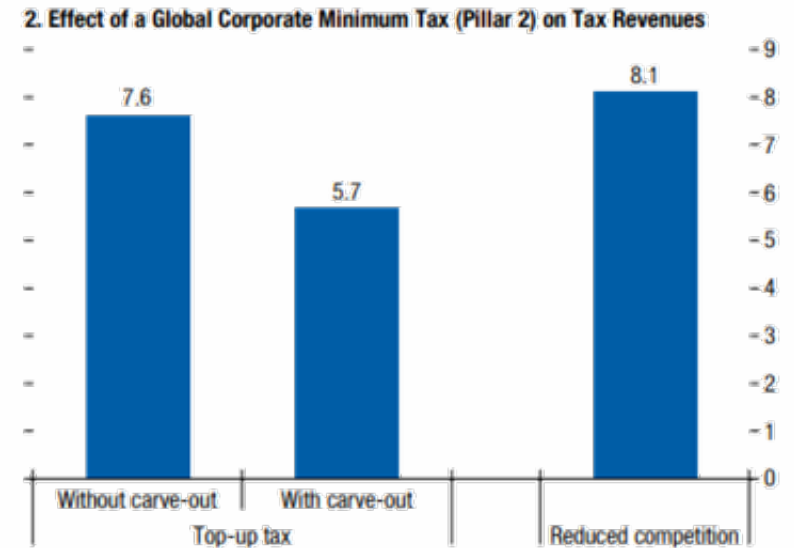
Source: IMF Fiscal Monitor (April 2021); International Social Survey Program 2016 database; and IMF staff estimates.
Note: Results are based on 2016 individual-level data on 23 advanced economies and 12 emerging market economies. Percentages refer to the share of respondents who agree with the statements reported on each axis.

Source: IMF Fiscal Monitor (April 2022); IMF Staff Estimates based on the Standard & Poor's Capital IQ database, 2017 reports from the Organisation for Economic Co-operation and Development's CbC database, and statistics from the US Bureau of Economic Analysis, as described in Online Annex 2.1 of the Fiscal Monitor.
Note: Amount A refers to profit reallocated under Pillar 1. The calculation uses weights to proxy sales by destination for the reallocation. Macro allocation weights are taken from Beer and others (2020) and computed using national accounts, whereas CbC weights are computed using the CbC database. Under Pillar 2, the carve-out is (transitionally) a deduction of 8 percent of assets and 10 percent of payroll. The tax base for the minimum tax is excess profit after the carve-out is deducted (that is, the with carve-out bar). CbC = country-by-country; CIT = corporate income tax; OECD/G20 = Organisation of Economic Co-operation and Development/Group of Twenty.

VAT Reform as Priority for Asia-Pacific

VAT as Effective Revenue Raiser
Key administrative advantages over alternatives

VAT as Efficient Instrument
Destination principle ensures level-playing field and is robust to spillovers
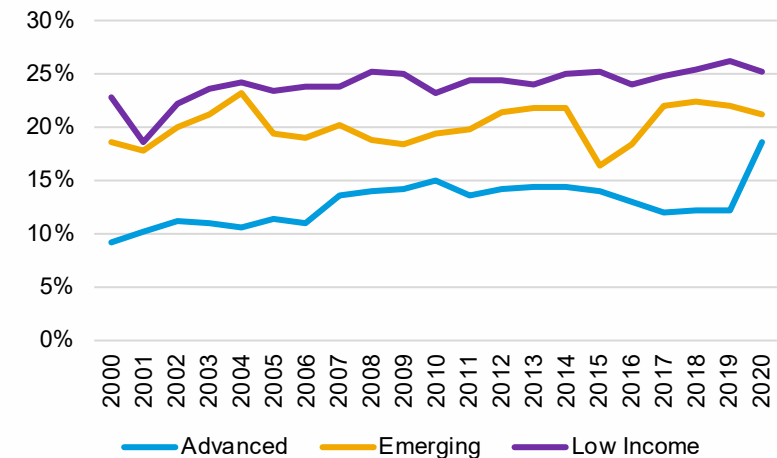
VAT Good for Equity
Using the proceeds from VAT for redistributive spending makes it powerful for inclusive policy

**VAT Comparatively Low in Asia-Pacific**

— Asia-Pacific VAT Revenue as % of GDP
— Global VAT revenue as % of GDP
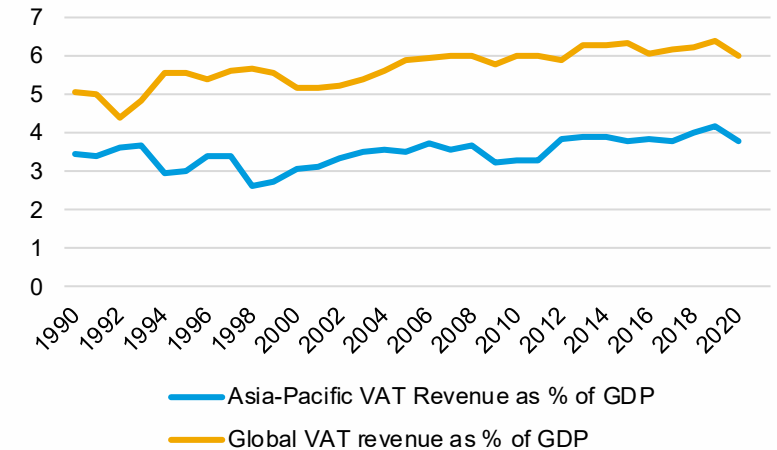
Yet, Increasingly Important in the Revenue Mix ... (VAT as Share of Total Revenue in Asia-Pacific)

— Advanced — Emerging — Low Income

12th IMF- Japan High-Level Tax Conference for Asian Countries

1. International corporate tax reform

2. Domestic corporate tax response

3. TADAT – improving tax administration

4. VAT – policy & administration

5. Digitalization – challenges/opportunities

SDG Financing Gap
(in percent of 2030 GDP)

EMEs in Asia-Pacific countries

LIDCs in Asia-Pacific countries
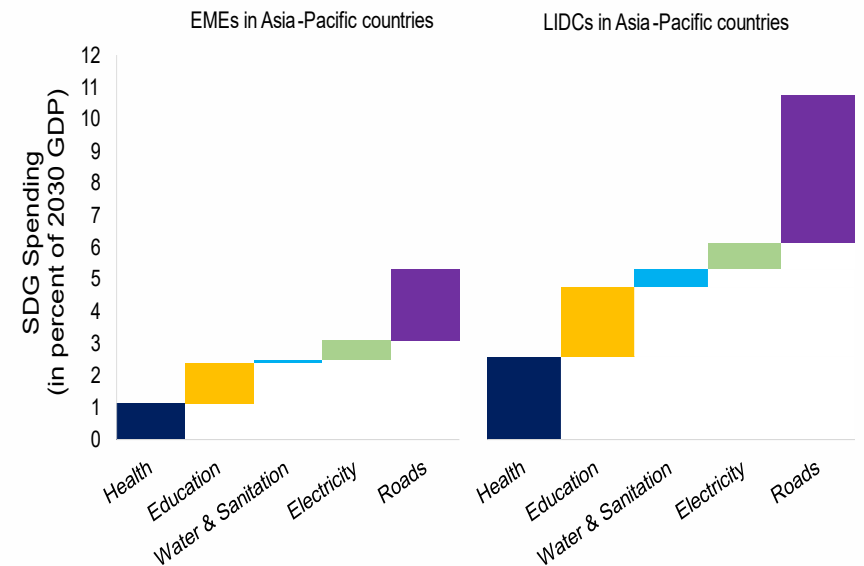
Sources: IMF Fiscal Monitor (April 2021)
Note: Updated estimates of Gaspar and others (2019). Apart from updating the key input variables with more recent data, some methodological refinements were made including the development of a new education SDG performance index with recently developed education quality indicators, incorporating newly available rural access index, and systematical treatment of infrastructure depreciation and maintenance.