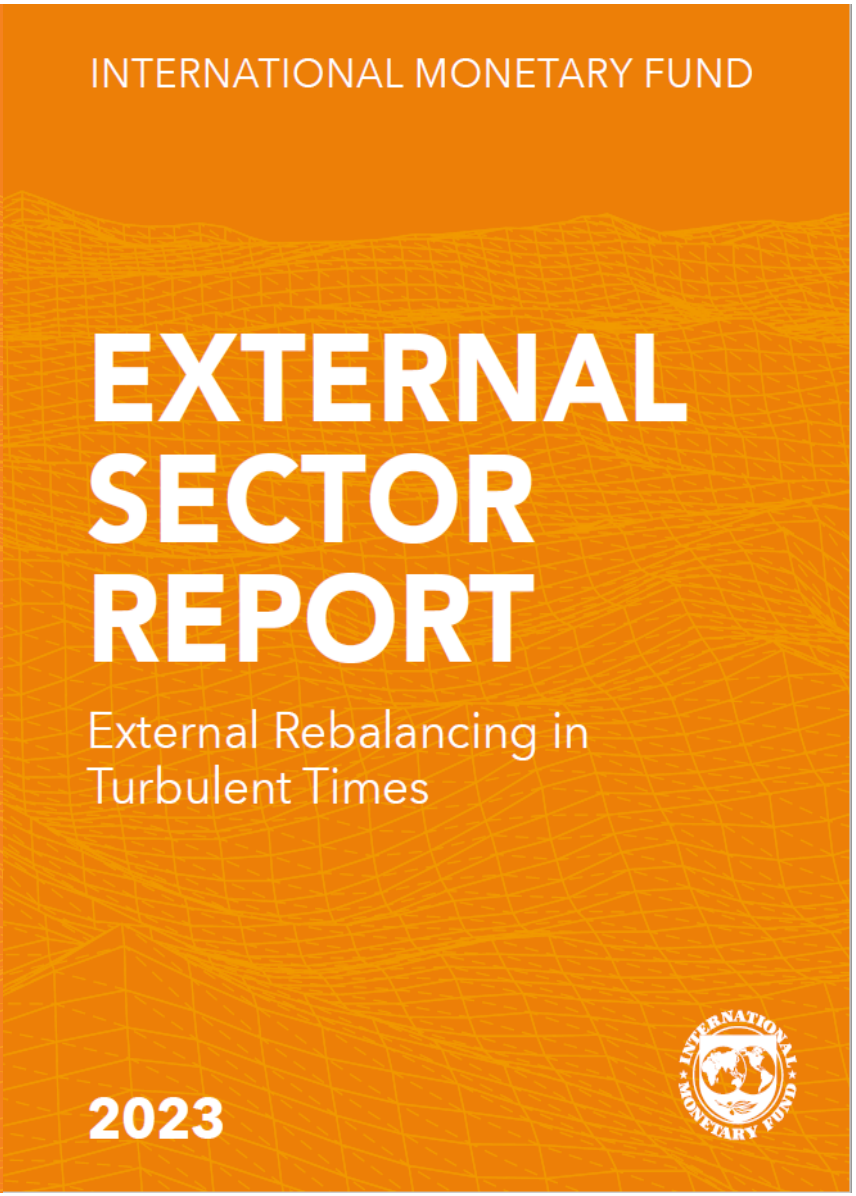

ESR Outreach

CHULALONGKORN UNIVERSITY

SEPTEMBER 2023

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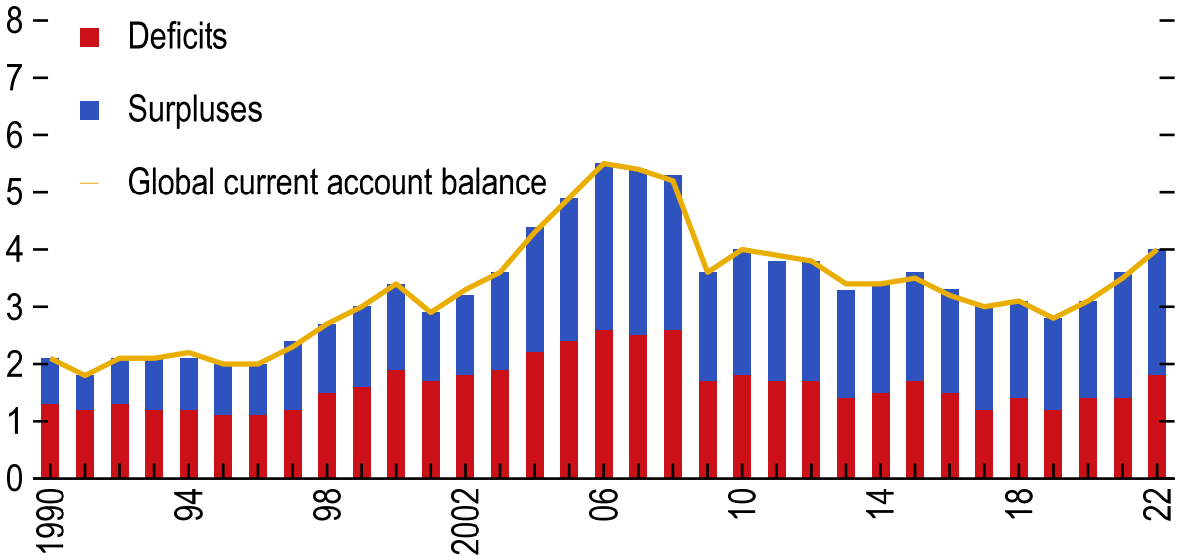
IMF Research Department

Why external (im)balances matter?

Global Current Account Balance[1]
(Percent of world GDP)



Sources: IMF, Information Notice System; IMF, *April 2023 World Economic Outlook*; and IMF staff calculations.

[1]Global current account balance is defined as the sum of absolute values of current account balances.

Why the ESR?

- Provides multilaterally consistent assessments of external positions of the world's largest economies (current accounts, real exchange rates, capital flows, external balance sheets, international reserves)
- Identifies excess CA deficits and surpluses (global imbalances)
- Detects external sector vulnerabilities
- Discusses policies to promote external rebalancing
- Fulfils IMF core mandate

Outline

Chapter 1: Recovery, War, and Policy Shocks

1) External developments in 2022 ~ early 2023
2) Outlook and risks
3) IMF external sector assessment: methodology and results for 2022
4) Policy to promote external rebalancing

Chapter 2: External Sector Implications of the Global Dollar Cycle

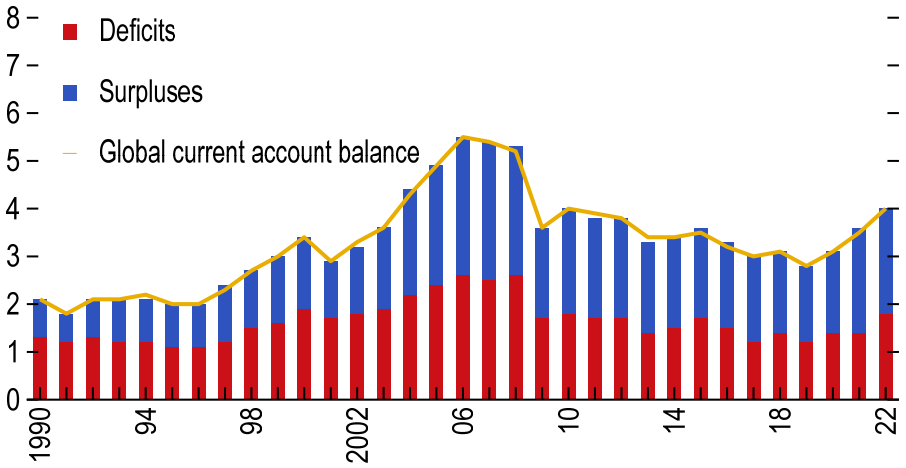
1) Motivation
2) Empirical approach
3) Data
4) Main results

Chapter 1: Recovery, War, and, Policy Shocks

The sum of borrowing and lending between countries has increased again in 2022…

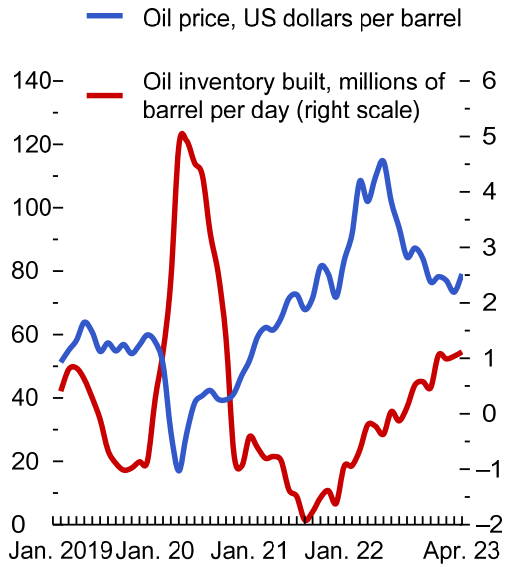
… driven by the sharp rise in commodity prices, uneven recovery from COVID and tightening of US monetary policy

Global Current Account Balance[1]
(Percent of world GDP)



Sources: IMF, Information Notice System; IMF, *April 2023 World Economic Outlook*; and IMF staff calculations. [1]Global current account balance is defined as the sum of absolute values of current account balances.

Oil Inventory Built and Price

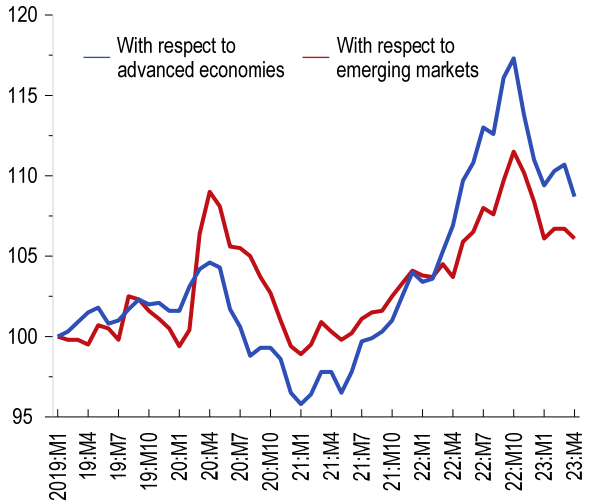


Sources: CEIC Global Economic Data; Haver Analytics; IMF, Primary Commodity Price System; Joint Organisations Data Initiative; and US Energy Information Administration.
Note: Oil inventory built is calculated as the six-month moving average of total world petroleum production minus total world petroleum consumption, and oil price refers to crude oil (petroleum), West Texas Intermediate 40 American Petroleum Institute (API), in US dollars per barrel.

Currency market exhibited significant fluctuations

US dollar reached record levels

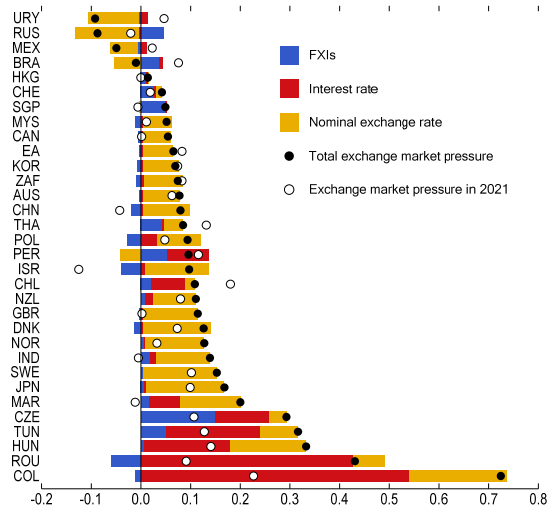
US Dollar Real Effective Exchange Rate[1]
(Index, Jan. 2019=100)



Sources: Federal Reserve Board; and IMF staff calculations. [1]Constructed as a weighted average of the foreign exchange value of the US dollar against the currencies of a group of major US trading partners that are advanced economies and emerging market economies. An increase in the real effective exchange rate index corresponds to an appreciation of the US dollar.

Many EM currencies have experienced large depreciation pressures …

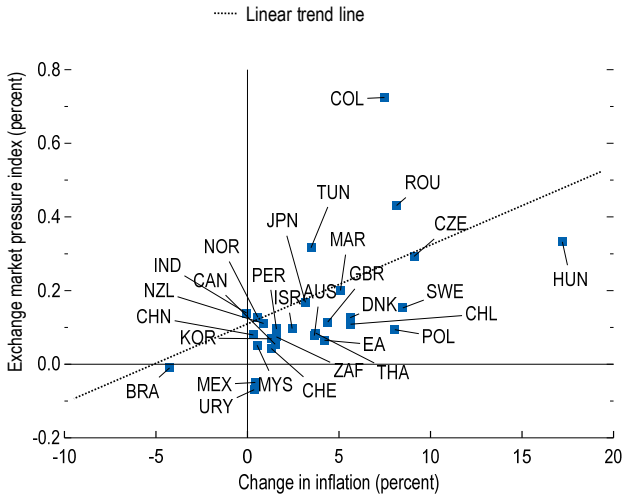
Exchange Market Pressure Index
(Percent change)



Sources: Adler and others (2021); Goldberg and Krogstrup (2023); IMF, *International Financial Statistics*; and IMF staff calculations.
Note: Positive values correspond to exchange market pressure that would depreciate the nominal exchange rate. A country's total exchange market pressure in 2022 is the sum of scaled and weighted observed foreign exchange interventions (FXIs), short-term interest rate changes, and nominal exchange rate movements.

… especially, in countries with high inflation

Exchange Market Pressure and Inflation, 2022
(Percent)

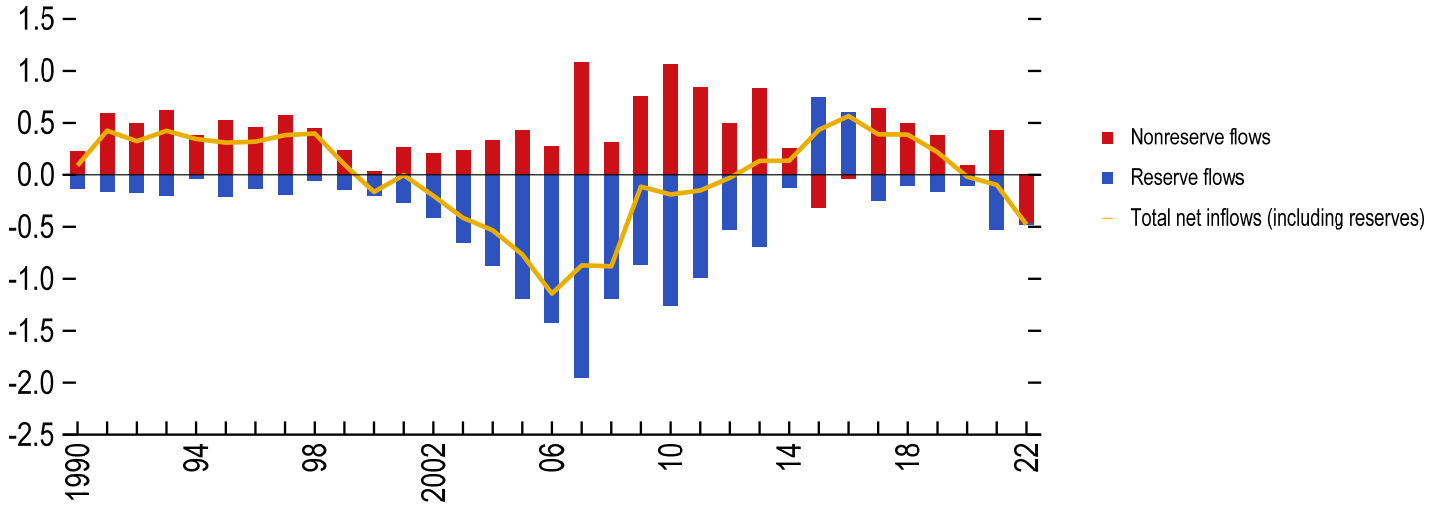


Sources: Goldberg and Krogstrup (2023); and IMF staff calculations.
Note: Figure plots the cumulative Exchange Market Pressure Index for 2022 and the change in inflation between 2021 and 2022. Russia is excluded. If policy rate changes are excluded from the Exchange Market Pressure Index, the correlation goes from 0.6 to 0.5.

Uphill capital flows reappeared…

… in contrast to past episodes, the accumulation of official reserves played a limited role

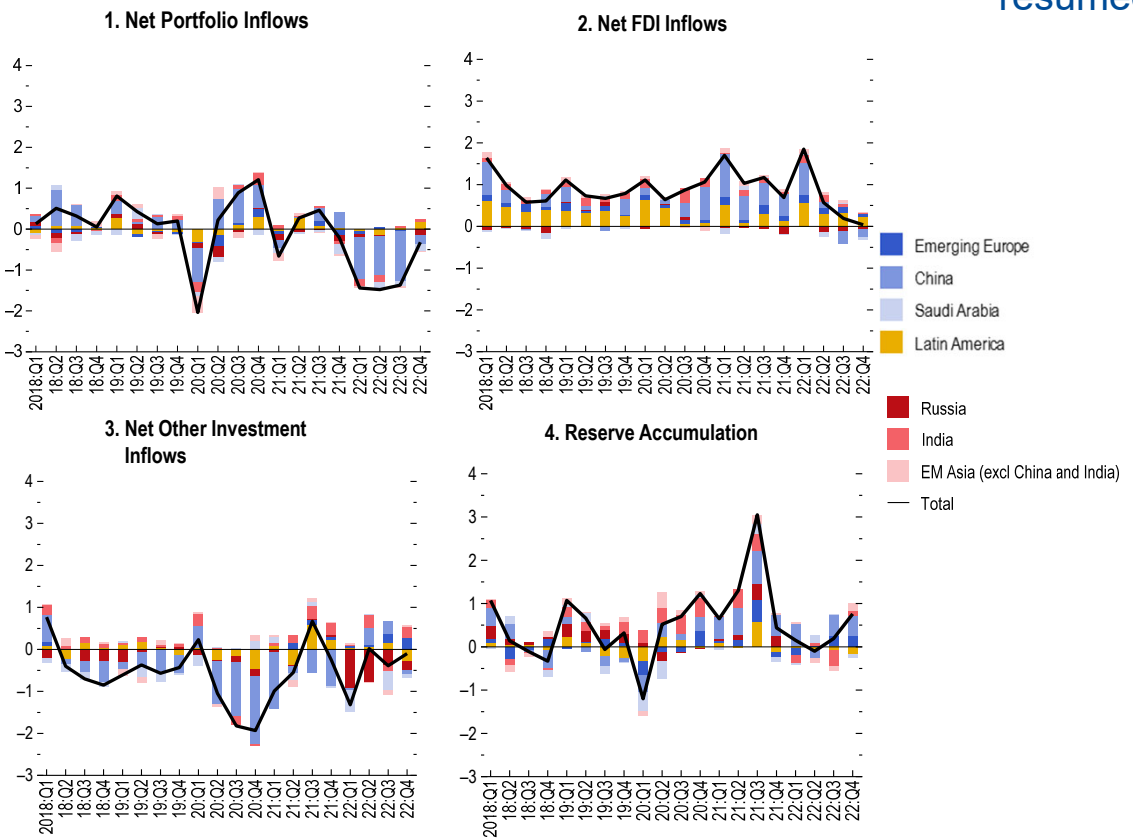
Emerging Market and Developing Economies: Net Financial Inflows
(Percent of world GDP)



Sources: IMF, Information Notice System; IMF, *April 2023 World Economic Outlook*; and IMF staff calculations.

A large share of net capital outflows in EMDEs was driven by portfolio flows…

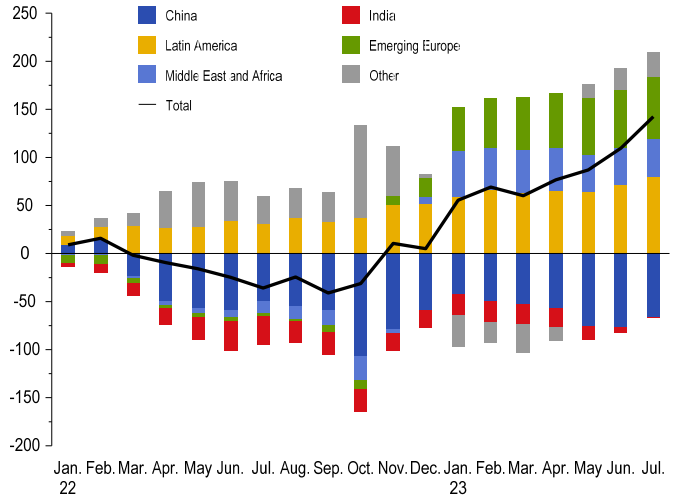
Capital Inflows to EMDE (percent of group GDP)



Sources: IMF, *International Financial Statistics;* Institute of International Finance; and IMF staff calculations.
Note: Group GDP is the total GDP of all economies considered in the figure.

… nonetheless, short-run portfolio inflows to EMDEs resumed in the first few months of 2023

Cumulative High-Frequency Portfolio Flows to EMDEs
(Billions of US dollars)

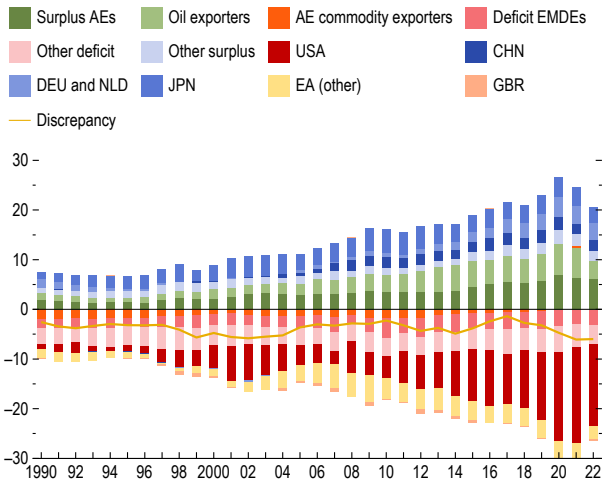


Sources: Institute of International Finance; and IMF staff calculations.

Outstanding international borrowing and lending remains elevated …

… reflecting offsetting effects of widening CA and valuation effects …

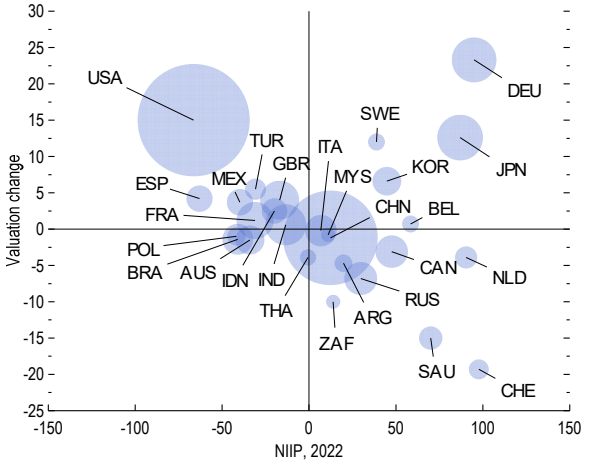
Net International Investment Positions, 1990–2022
(Percent of world GDP)



Sources: External Wealth of Nations database; IMF, *April 2023 World Economic Outlook*; and IMF staff calculations..

… with net debtors tend to experience valuation gains

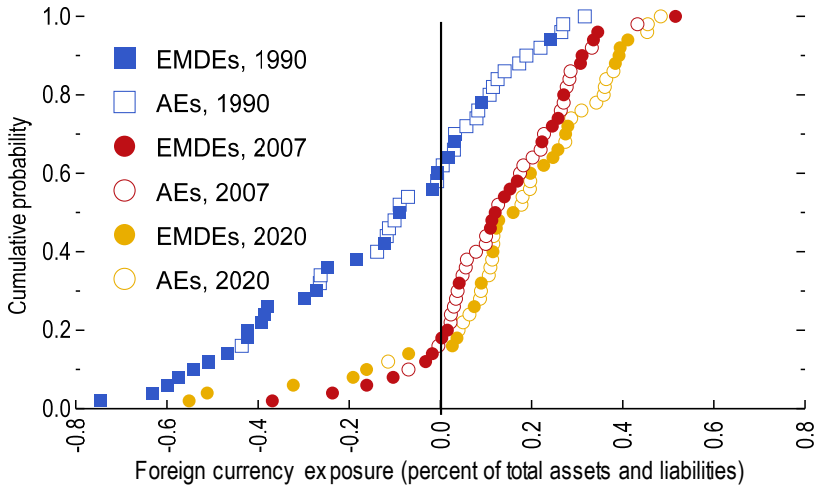
International Investment Position Valuation Change and Net International Investment Position, 2022
(Percent of GDP)



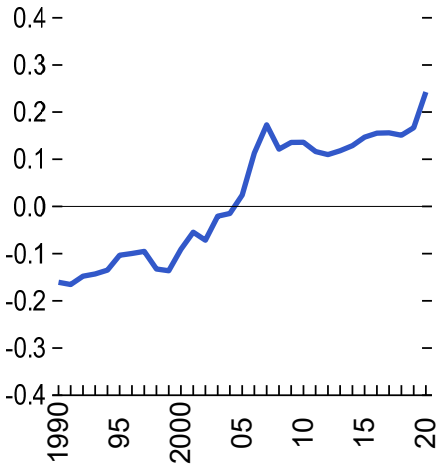
Sources: IMF, *April 2023 World Economic Outlook*; and IMF staff calculations.
Note: Valuation changes are calculated as the difference between changes in net international investment position (NIIP) and current account. For some countries, NIIPs are still projections. Bubble sizes are proportional to 2022 GDP in US dollars. Singapore and Hong Kong SAR are excluded because of the size of their NIIPs.

Special focus: EMDEs' portfolio debts net FX position has deteriorated

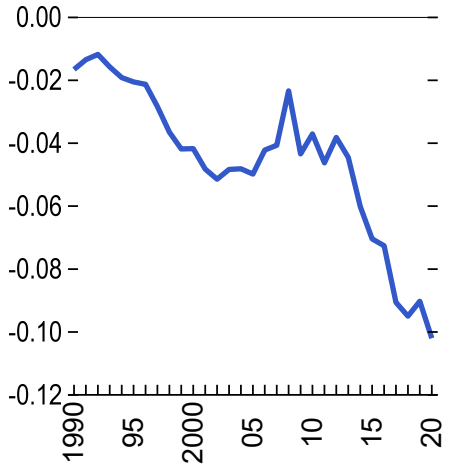
Aggregate Foreign Currency Exposures: Cumulative Distribution of Foreign Currency Exposures[1]



EMDEs: Aggregate Net Foreign Currency Exposure[2]
(Percent of GDP)



EMDEs: Portfolio Debt Net Foreign Currency Exposure[2]
(Percent of GDP)



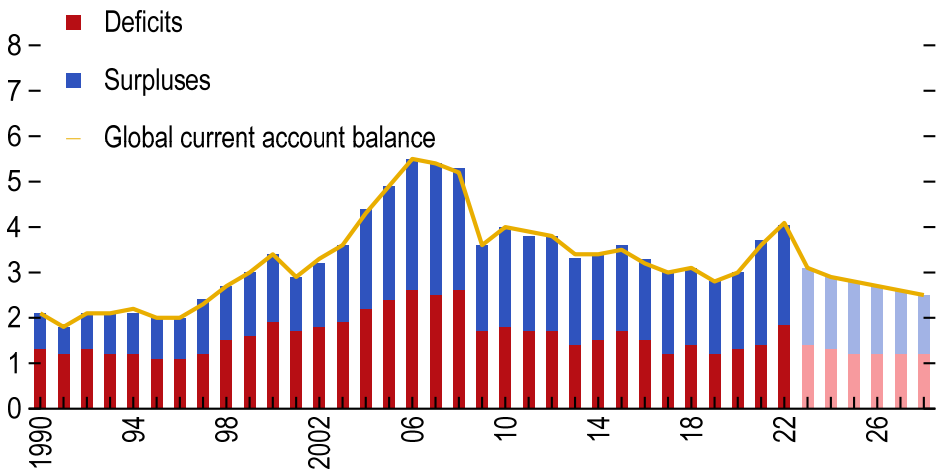
Source: Allen, Gautam, and Juvenal (2023).

Note: AEs = advanced economies; EMDEs = emerging market and developing economies.

1 Aggregate foreign currency exposure is defined as total net foreign assets denominated in foreign currency as a share of total assets and liabilities.
2 A 1 percent uniform shift in the value of the domestic currency against all foreign currencies leads to a median valuation change of *x* percent of GDP.

The outlook for global balances is subject to multiple risks, including geoeconomic fragmentation

Global Current Account Balance[1]
(Percent of world GDP)



Sources: IMF, Information Notice System; IMF, *April 2023* World *Economic Outlook*; and IMF staff calculations.
[1]Global current account balance is defined as the sum of absolute values of current account balances. Note: Shaded bars indicate forecasted values based on the April 2023 IMF *World Economic Outlook*.

Geoeconomic fragmentation:

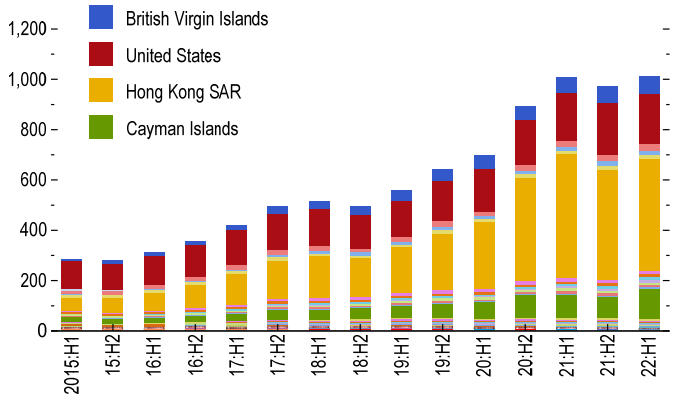
1. Has the increased risk of geoeconomic fragmentation affected the financial recycling of large current account surpluses and the funding of the US current account deficit?

2. How does higher trade costs affect current account balances? (see background slides)

Special focus: the financial side of global balances

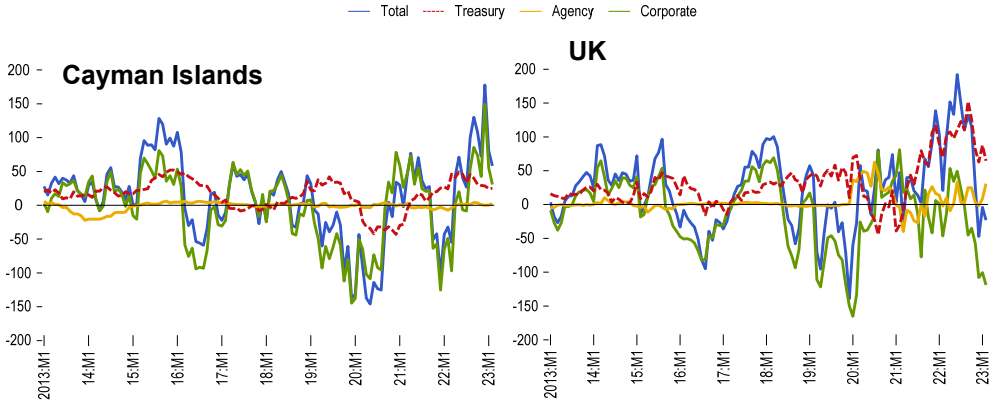
- The interdependence between large surplus and deficit economies remains largely intact.
- The currency composition of official FX reserves has remained largely stable in recent years, with the US dollar still accounting for about 60 percent of the total allocated reserves.
- Nonetheless, there appears to have been some changes in the conduits for recycling two large current account surpluses and funding of US CA deficit with the role of financial centers and non-official sector has increased.

China: Portfolio Investment Assets
(Billions of US dollars)



Source: IMF, Coordinated Portfolio Investment Survey.
Note: Legend only displays selected economies for clarity.

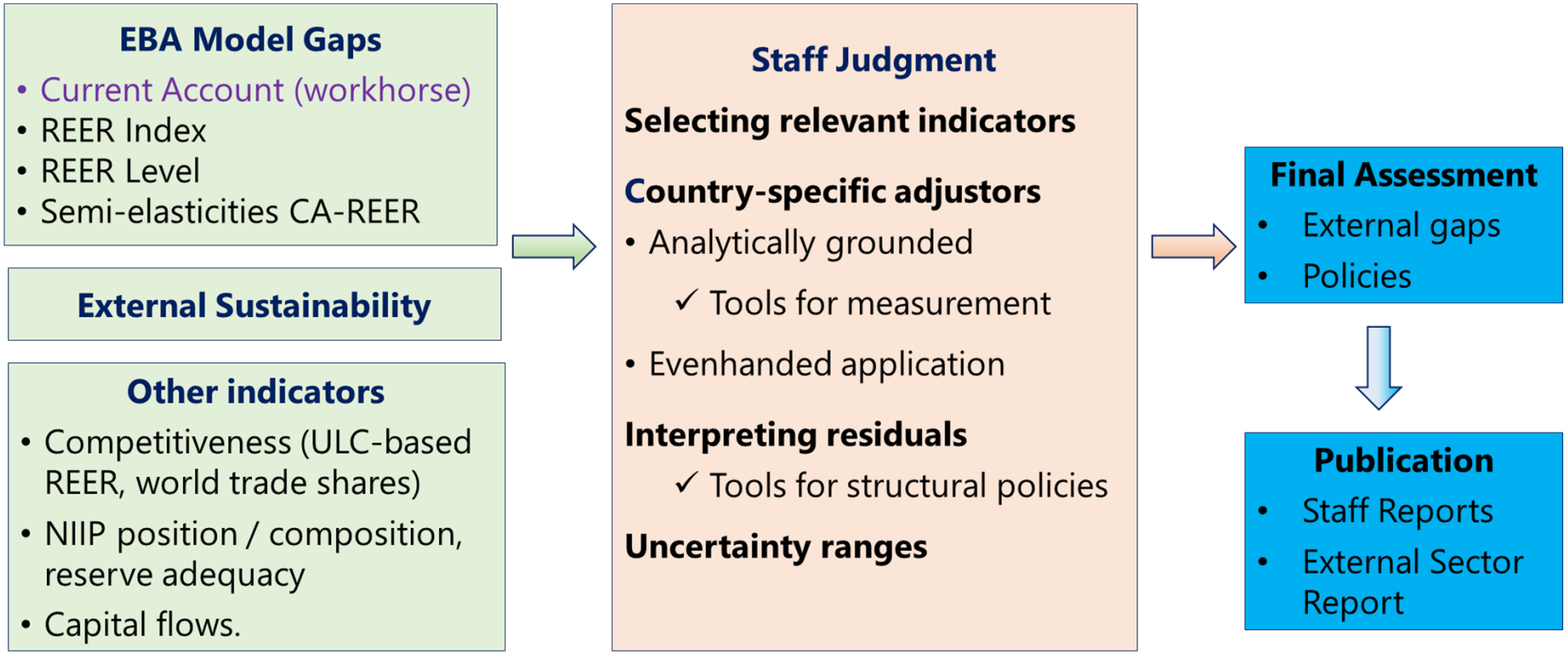
Net Foreign Purchases of US Securities
(Billions of US dollars, 12-month sum)



Sources: Federal Reserve, and IMF staff calculations.
Note: The estimated flows are essentially constructed using changes in foreign holdings of US Treasury securities adjusted for valuation effects as discussed in Bertaut and Judson (2014). Tabova and Warnock (2021) assess the different sources available for measuring foreign transactions in US Treasury securities and support the use of holdings-based estimates of flows. Corporate includes bonds and stocks.

IMF external sector assessment: methodology and results for 2022

IMF's external assessments: a holistic approach



EBA CA regression

$$\frac{CA}{Y}_{it} = \alpha + \boldsymbol{C}_{it}\beta + \boldsymbol{F}_{it}\lambda + \boldsymbol{P}_{it}\gamma + u_{it}$$

Cyclical and Short-Term Factors (C)

Output gap
Commodity terms of trade
Lagged REER annual change

Fundamentals (F)

Macroeconomic
Net foreign assets
Output per worker
Expected growth

Structural
Demographics
Institutional quality
Oil and gas resources

Actual Policies (P)

Fiscal balance
Health spending
Credit gap
FXI/Capital controls

CA norms and gaps

- **Norms**: Based on medium-term structural features and desirable policies (P*)

$$Norm_{it} = \hat{\alpha} + \boldsymbol{F}_{it}\hat{\lambda} + \boldsymbol{P}^{*}_{it}\hat{\gamma}$$

- **Gaps**: Difference between cyclically-adjusted CA balance and norm.

$$Gap_{it} = \left(\frac{CA}{Y}_{it} - C_{it}\hat{\beta}\right) - \left(\hat{\alpha} + \boldsymbol{F}_{it}\hat{\lambda} + \boldsymbol{P}^{*}_{it}\hat{\gamma}\right)$$

$$= \underbrace{(\boldsymbol{P}_{it} - \boldsymbol{P}^{*}_{it})\hat{\gamma}} + \underbrace{u_{it}}$$

Contribution of Policy Gaps (P-P*):
how much policies contribute to CA gap?

Regression Residual:
Unexplained factors

COVID adjustors

COVID adjustors:*

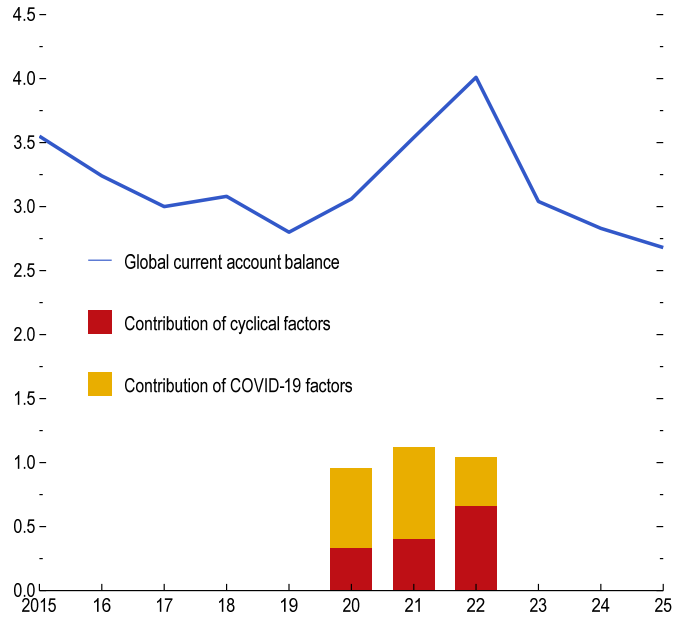
1. Medical trade
2. Shift in household consumption
3. Travel restrictions
4. Transportation cost shocks

Cyclical factors:

1. Output gap
2. Commodity terms of trade
3. Lagged REER annual change

*adjustors in grey are not no longer considered for the 2022 assessment

Global Current Account Balance, with the Contributions from Cyclical and COVID-19 Factors
(Percent of world GDP)

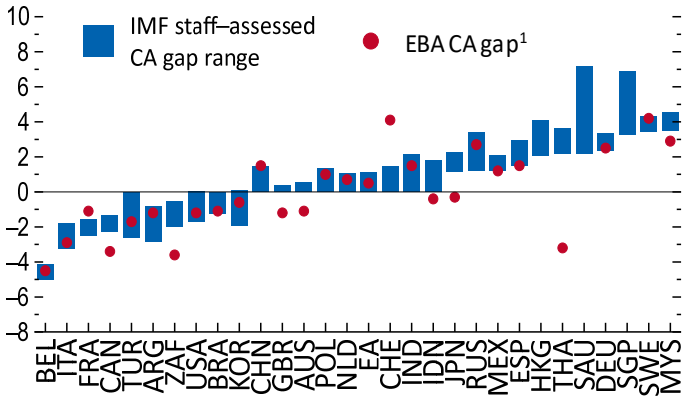


Sources: CEIC Data, Global Database; IMF, Primary Commodity Price System; Refinitiv, Datastream; UN, Comtrade; UN Conference on Trade and Development; and IMF staff calculations. Note: Global current account balance is the sum of absolute values of current account; COVID-19 factors are the sum of absolute values of transportation and travel COVID-19 adjustors for *External Sector Report* countries only; and cyclical factors are the sum of absolute values of the contribution of cyclical factors to current accounts of *External Sector Report* countries only. Data from 2023 onward are projections, based on the April 2023 IMF *World Economic Outlook.*

Assessment of 2022 external positions: CA and REER gaps

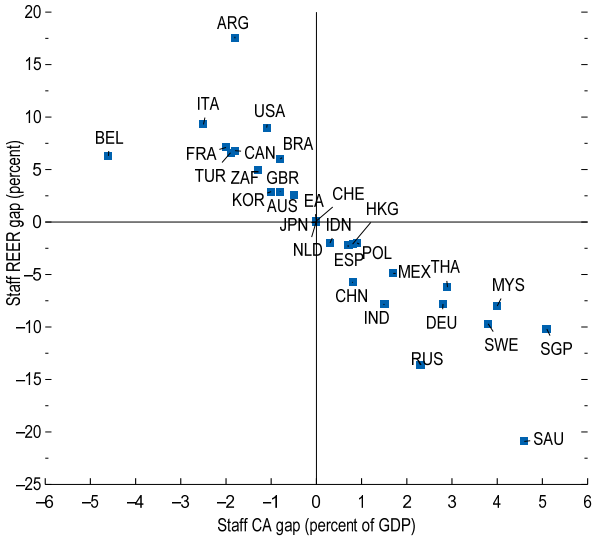
IMF staff gap includes country-special adjustments (e.g. COVID, measurement)

IMF Staff and External Balance Assessment Current Account and Real Exchange Rate Gaps, 2022
(Percent of GDP)



In most cases, the REER gap is derived using country-specific CA-REER elasticity

IMF Staff Current Account and Real Effective Exchange Rate Gaps



Source: IMF staff assessments.
Note: CA = current account; EBA = External Balance Assessment; REER = real effective exchange rate. REER gap is based on 2021 *External Sector Report*.
[1]There are no EBA estimates for Hong Kong SAR, Saudi Arabia, and Singapore.

Policies to promote external rebalancing

- Policies differ based on individual economies' positions and needs:
  - **Excess surpluses**: where fiscal space is available, policies should support recovery through public investment in digitalization, upgrading infrastructure, climate change mitigation; stimulate private investment by selected product market reforms, notably removing barriers to entry.
  - **Excess deficits**: fiscal consolidation; productivity raising reforms to boost competitiveness.

- Coordinated policy efforts are also essential, including
  - Strengthening the current rule-based trading system
  - Ensuring any industrial policies do not introduce distortions and should be consistent with international agreements and WTO rules
  - Maintaining liquidity in global financial system

Chapter 2: External Sector Implications of the Global Dollar Cycle

Motivation and main questions

Motivation

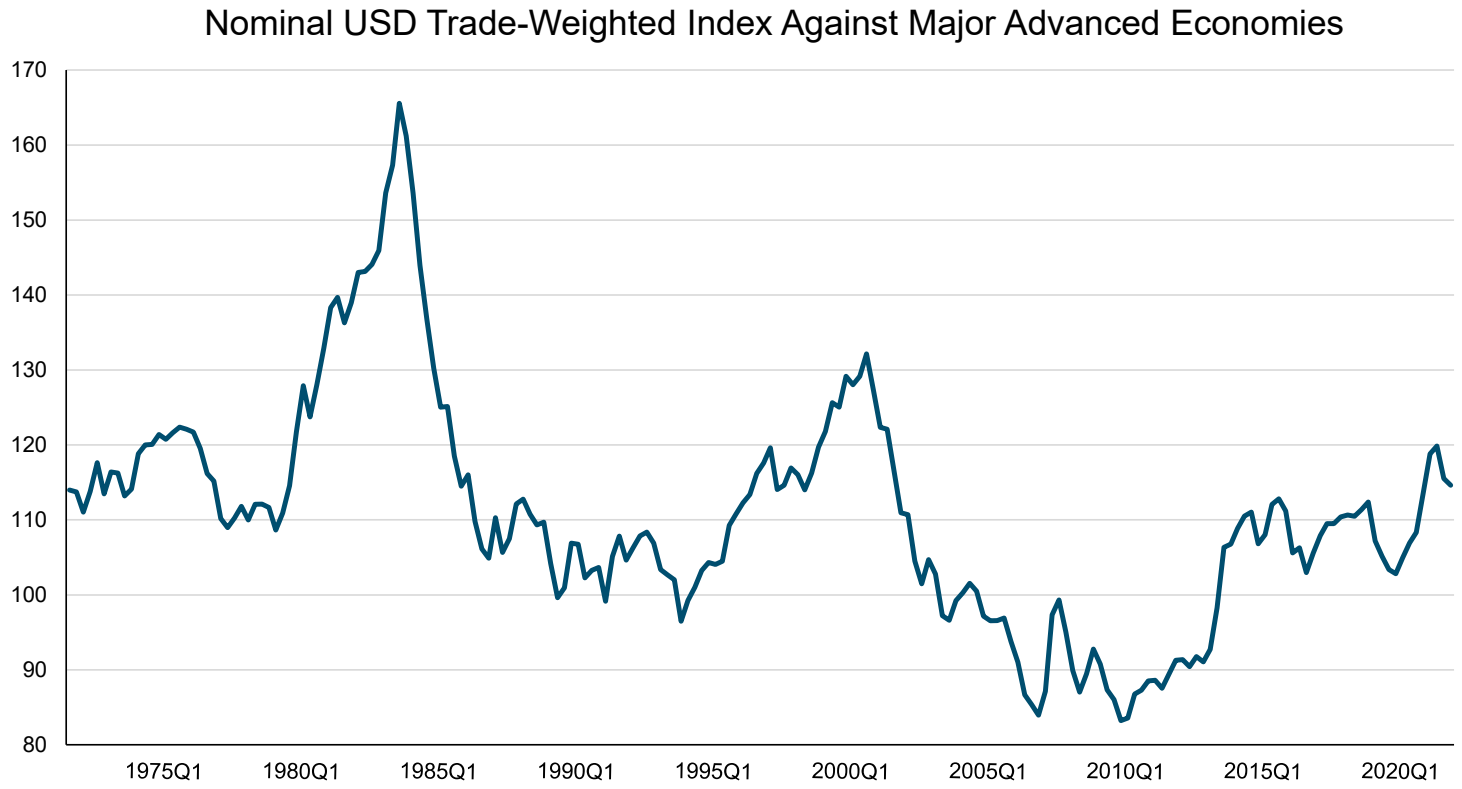
- The US Dollar displays a strong cyclical pattern
- USD appreciations can have large negative real sector spillovers to EMEs, *even* after controlling for factors such as US monetary policy and U.S. financial conditions
- Obstfeld and Zhou (2022) label this phenomenon “Global Dollar Cycle”

Questions

This chapter looks at the **external sector implications** of the Global Dollar Cycle:

- Are there *external sector* spillovers from the global dollar cycle?
- Do effects differ across countries [EMs/AEs] and what explains the heterogeneity?
- What is the impact on global balances?

The US dollar exhibits pronounced decade-long swings, with the recent sharp appreciation constituting the most recent strong dollar episode



Source: Federal Reserve Bank of St. Louis, Federal Reserve Economic Data (FRED); and Haver Analytics.

Note: Index constructed as the trade-weighted average against the currencies of seven major advanced economies: Australia, Canada, the Euro Area, Japan, Sweden, Switzerland, and the United Kingdom.

Define global dollar cycle as USD fluctuations after controlling for established factors

- Literature has focused on:
  - Monetary policy (US, ROW differentials)
  - US financial conditions (ANFCI)
  - Economic activity (ROW).
- Expected relationships with the US dollar
- Significant unexplained residual on which we focus: the Global Dollar Cycle

First Stage Regression: Global Dollar Cycle is the unexplained residual

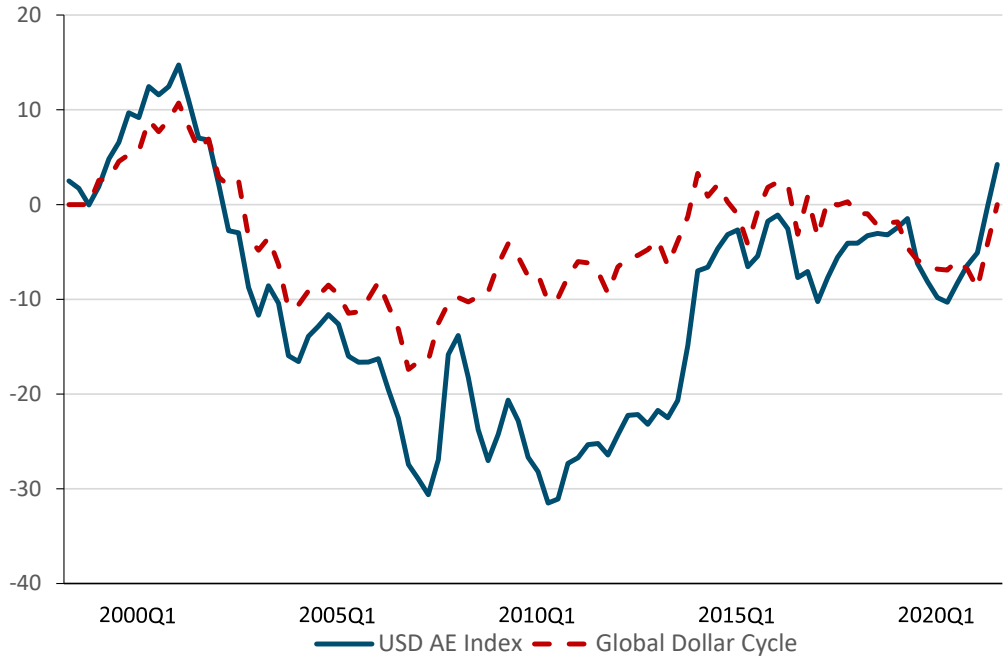
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ΔUSD Index						
L. ΔUSD Index	0.407***	0.463***					
	(0.134)	(0.107)					
US Financial Conditions (ΔANFCI)	3.624**		3.524***				
	(1.484)		(0.975)				
Monetary Policy							
ΔUS Shadow Rate	0.269			0.656			
	(1.269)			(0.817)			
ΔShadow Rate Differential	1.002				1.302*		
	(1.074)				(0.697)		
Economic Activity Factor	-0.275					-0.636**	
	(0.330)					(0.293)	
L. Δlog real US GDP	0.250						0.174
	(0.733)						(0.233)
Observations	91	92	91	92	92	91	92
Adjusted R2	0.194	0.151	0.121	-0.008	0.047	0.034	0.024
Up to lag 4	yes	yes	yes	yes	yes	yes	yes

Sources: IMF staff calculations.
Standard errors in parentheses, all specifications include lags of each control, L. denotes first lag.
*** p<0.01 ** p<0.05 * p<0.10

The global dollar cycle closely tracks movements in the US dollar trade-weighted index against major AE currencies

- The GDC closely tracks movements in the US dollar trade-weighted index against the currencies of advanced economies
- The correlation between the USD AE Index and the GDC is 84%

The US Dollar Index and the Global Dollar Cycle
(*Index, 0 = 1999:Q4*)



Sources: Federal Reserve Bank of St. Louis, Federal Reserve Economic Data; Haver Analytics; and IMF staff calculations.
Note: Global dollar cycle constructed as cumulated residuals after established factors are controlled for: (1) monetary policy, (2) policy rate differences with major advanced economies, (3) US financial conditions, and (4) an economic activity factor.
.

The global dollar cycle reflects global financial market forces

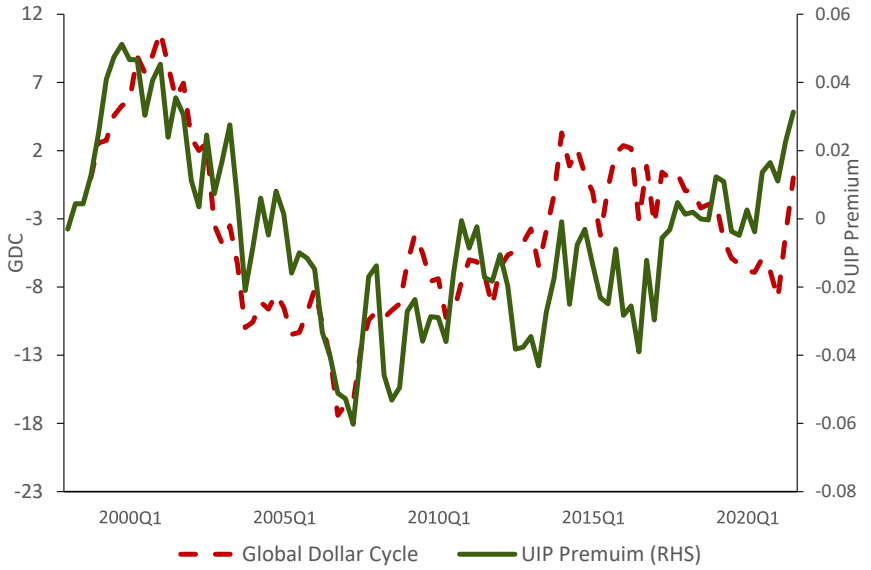
- GDC represents booms and busts in global financial markets capturing changes in investor risk appetite and preference for liquidity; linked to unique role of USD in global finance
- Comparison of the global dollar cycle with other global financial indicators reveals the strongest correlation with uncovered interest parity deviations and the global financial cycle.

Correlates of the Global Dollar Cycle

Indicator	Correlation
Uncovered interest parity deviations from major advanced economy currencies	0.69*
Global financial cycle (Miranda-Aggripino, Nenova and Rey, 2020)	-0.53*
Chicago Board Options Exchange Volatility Index (VIX)	0.04
Global uncertainty index (Davis, 2016)	0.09

Source: Consensus Economics; Davis (2016); Federal Reserve Board; Haver Analytics; Miranda-Agrippino, Nenova, and Rey (2020); Refinitiv Datastream; and IMF staff calculations.
Note: Quarterly correlations over 2000:Q1–2022:Q4 depending on data availability (Global financial cycle variable ends in 2019:Q2).
" * " indicates the correlation is significant at the 1 percent level.

The Global Dollar Cycle and the UIP Premium with Major Advanced Economy Currencies



Sources: Haver Analytics; Consensus Forecast; Refinitiv Datastream; and IMF staff calculations.
Note: The UIP Premium is based on a weighted average of UIP premia based on 12-month deposit rates and consensus forecast exchange rate forecasts for the US against the 7 advanced economies in the Fed USD AE Index (Australia, Canada, the Euro Area, Japan, Sweden, Switzerland, and the UK). The correlation is 0.69. Using a 3-month horizon the correlation is 0.58.

Empirical framework

- Local projections (Jordà 2005)
- We employ the specification in Obstfeld and Zhou (2022):

country-horizon fixed-effect; USD index (AE)

$$y_{i,t+h} - y_{i,t-1} = \mu_{i,h} + \beta_h \Delta s_t + \gamma_h' \Delta z_t + \sum_{l=1}^{p} \delta_{h,l}' \Delta w_{i,t-l} + \varepsilon_{i,h,t}$$

- macroeconomic aggregates
- external variables (CA, TB, NIIP, etc....)

global controls

- US financial conditions (ANFCI)
- Rest of the world economic activity (common factor for RoW GDP)
- US effective fed funds rate
- interest rate differential between US and weighted policy rate for countries in the USD index

- lagged **country-specific controls** (real GDP growth, policy interest rate, bilateral ER against the US)
- lagged **global controls**
- lagged **change in the LHS variable**
- lagged **shock**

- With the addition of the interest rate differential to control for fundamentals and responses of major central banks
- Given global controls, remaining innovations to the USD index are treated as broadly exogenous to economic developments in non-major AEs

Data

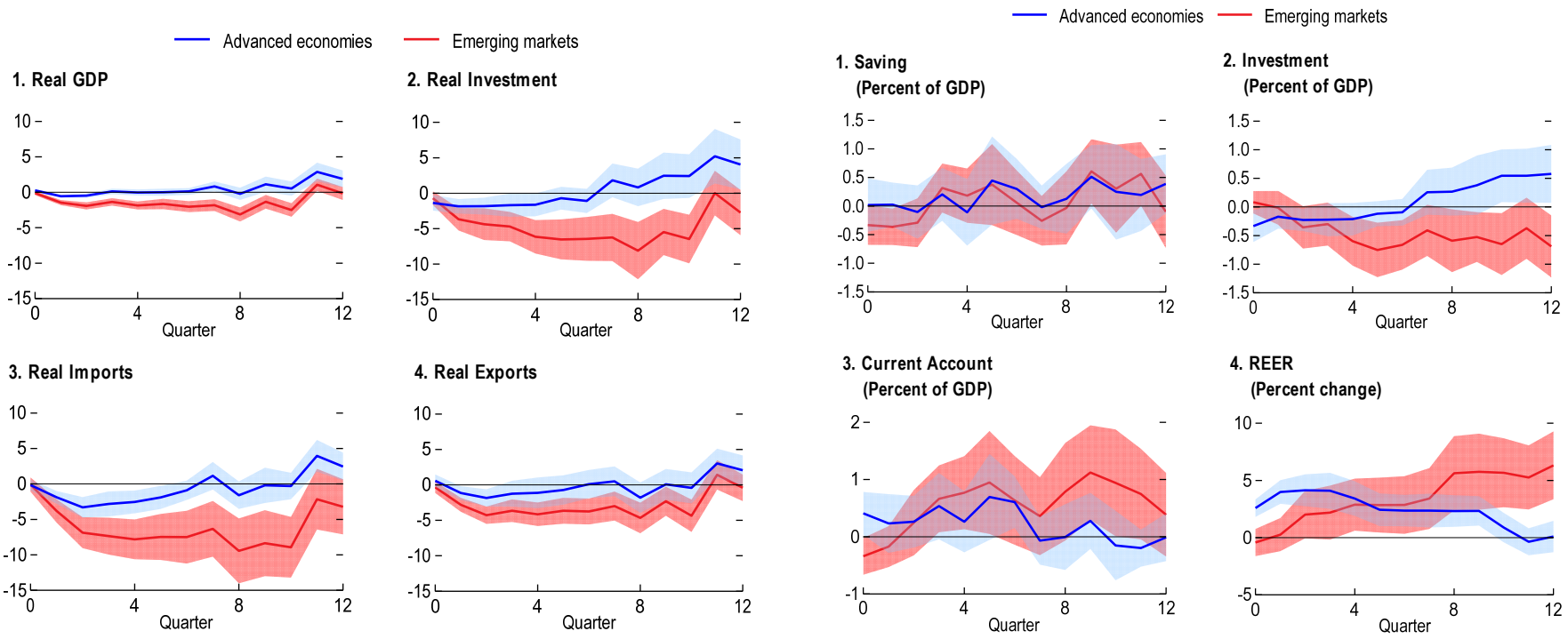
- EBA sample subject to data availability. Examine EMEs and AEs not included in the USD advanced economy index or have <4% weight in the index in 2020
- Our sample includes 15 advanced economies and 19 emerging market economies.
  - AE: Australia, Austria, Belgium, Czech Republic, Denmark, Finland, Greece, Israel, Korea, Netherlands, Norway, New Zealand, Portugal, Spain, and Sweden
  - EM: Argentina, Brazil, Chile, China, Colombia, Hungary, Indonesia, India, Mexico, Malaysia, Pakistan, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, and Turkey
- Quarterly data spanning 1999q1-2022q2
  - Sample depends on data availability for LHS variables and for state indicators in conditional LPs

Spillovers from a US dollar appreciation: real and external sector

Results

A US dollar appreciation affects emerging markets more adversely than advanced economies

The current account increases in both EMs and AEs, but through distinct channels, as investment is persistently depressed in EMs but recovers quickly in AEs. Because of 'fear of floating', in EMs income compression drives the fall in imports and the external adjustment, while in AEs depreciation in the REER and the resultant expenditure switching facilitates the adjustment

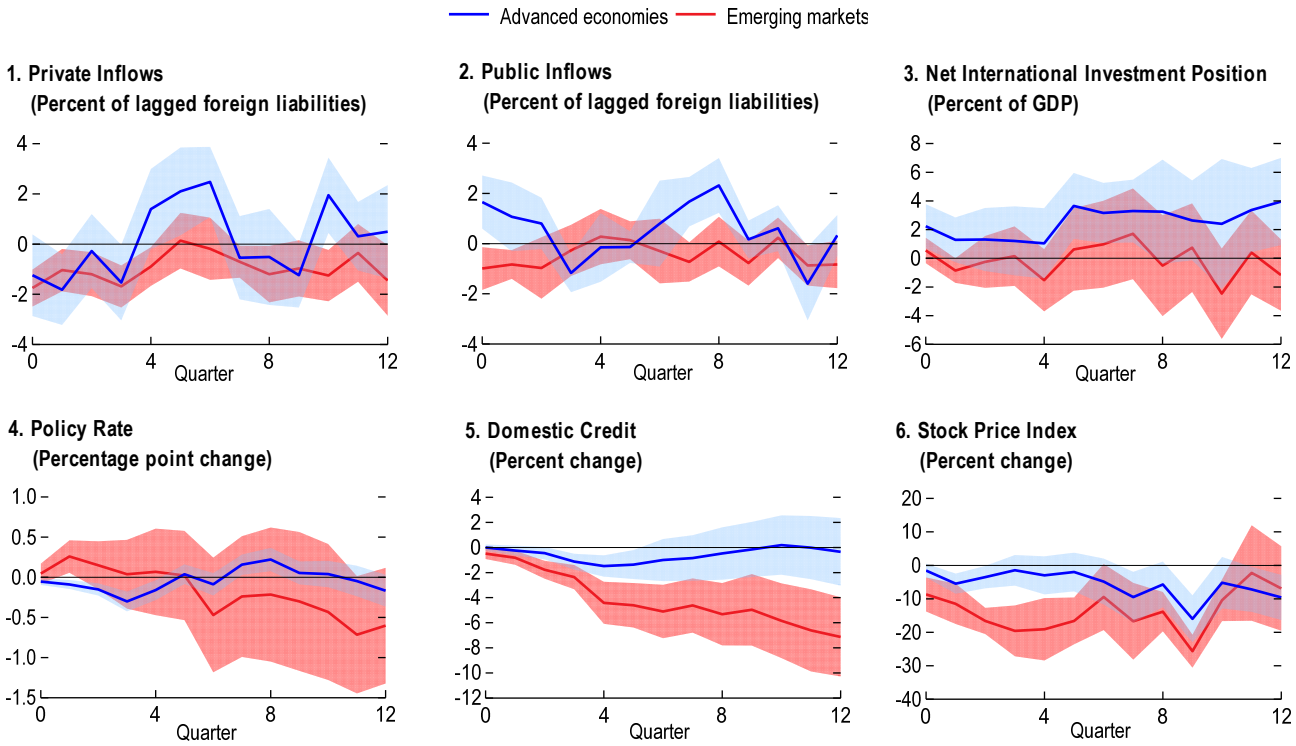


Sources: IMF staff calculations.

Note: 10% appreciation in the nominal US dollar index with 90% confidence intervals. Macro aggregates in national currencies at constant prices. An increase in the REER is a depreciation.

Spillovers from a US dollar appreciation: financial variables

AEs continue to borrow externally after US dollar appreciations and implement countercyclical monetary policy to mitigate negative spillovers. Neither of these channels operates in EMs

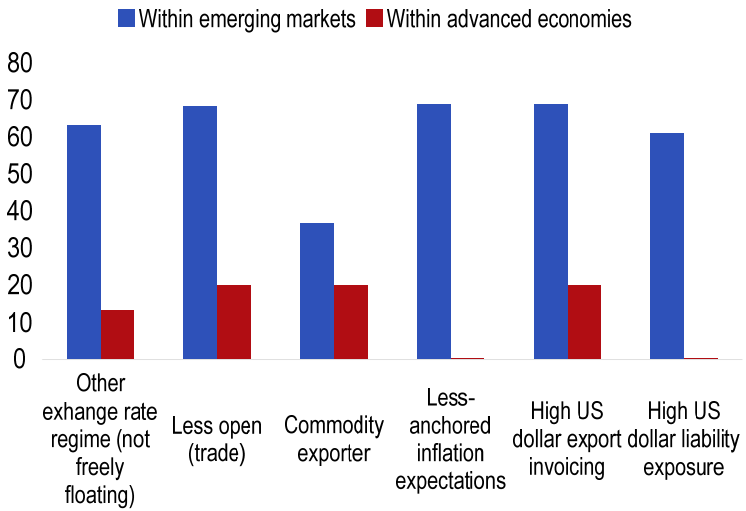


Sources: IMF staff calculations.
Note: 10% appreciation in the nominal US dollar index with 90% confidence intervals.

The role of policy regimes and structural characteristics

- To investigate why EMs experience larger negative spillovers, we focus on a set of policy regimes and structural characteristics.
- Country characteristics are closely correlated with the split in the sample between AEs and EMs, complicating the identification of contributions to differential spillovers from a particular characteristic.

1. Share of a Category in a Characteristic by Country Group (Percent)



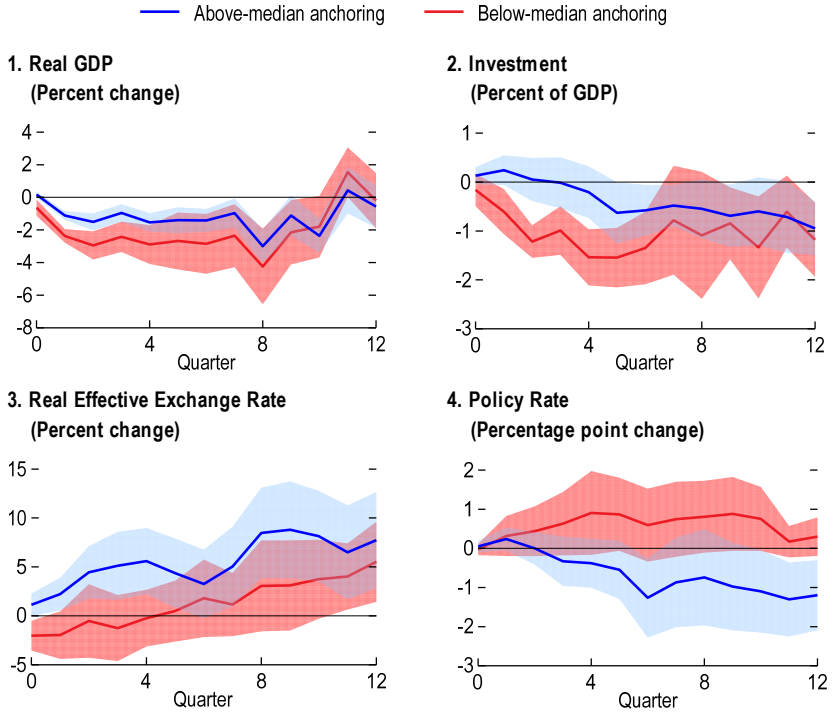
2. Sample Split Between Categories of Exchange Rate Regime and US Dollar Export Invoicing

	US dollar export invoicing below 75 percent of exports	US dollar export invoicing above 75 percent of exports
Other exchange rate regime		ARG; CHL; COL; ISR; IDN; IND; KOR; MYS; PAK; PHL; RUS; THA
Freely floating exchange rate regime	AUT; BEL; CZE; DNK; ESP; FIN; GRC; HUN; NLD; NOR; NZL; POL; PRT; ROU; SWE; TUR; ZAF	AUS; BRA

Sources: Bems and others (2021); Benetrix and others (2019); Boz and others (2022); Ilzetzki, Reinhart and Rogoff (2019), Annual report on Exchange Arrangements and Exchange Restrictions,; IMF Balance of Payments Statistics; IMF Global Data Source; UN Comtrade; IMF staff calculations.
Note: Countries that are not freely floating that are anchored to a currency other than the US dollar, are classified as freely floating.

More anchored monetary policy mitigates negative spillovers

Investment remains stable in countries with more anchored monetary policy, contributing to a shallower decline in output. More accommodative exchange rate and interest rate responses contribute to more muted negative spillovers.

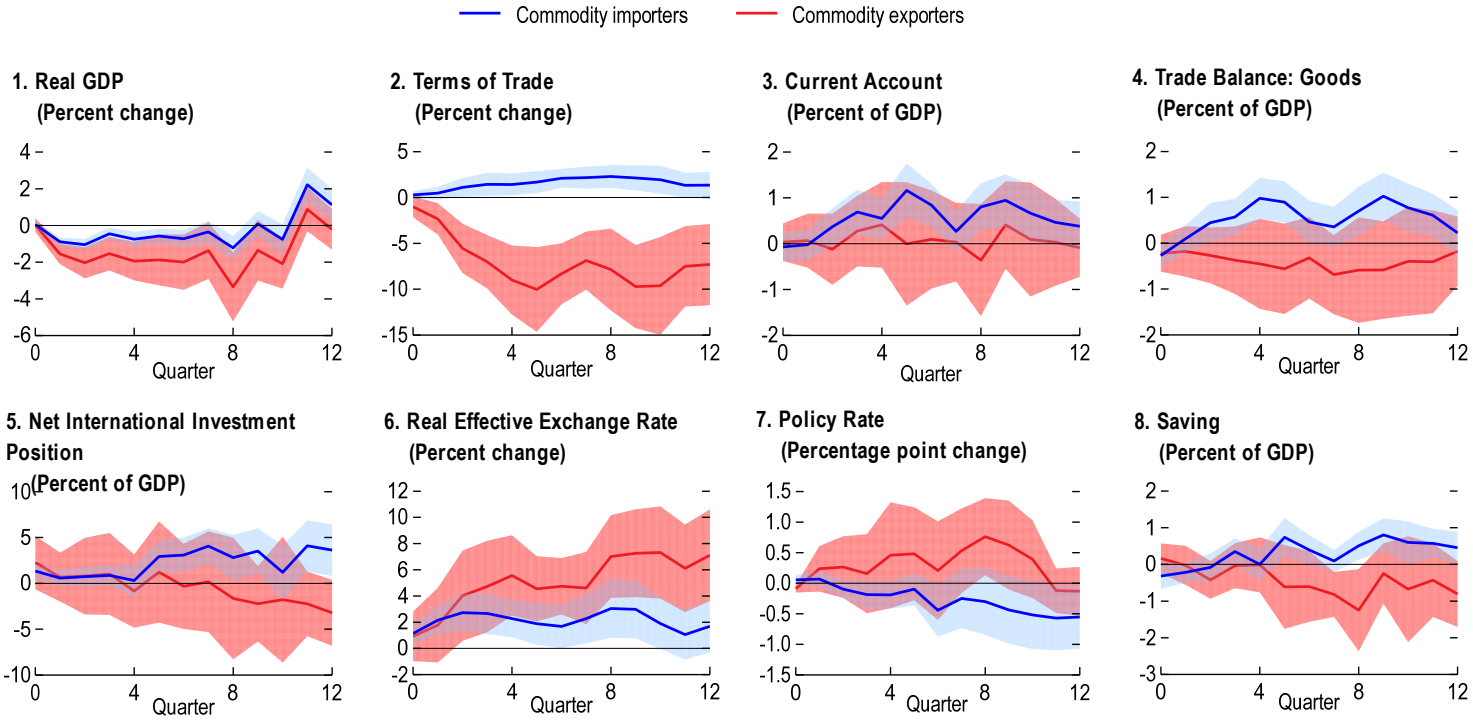


Sources: IMF staff calculations.

Note: EM sample only. Inflation expectations are anchored when the country average of the measure in Bems and others (2021) is above the sample median. 10% appreciation in the nominal US dollar index with 90% confidence intervals. An increase in the REER is a depreciation.

Commodity exporters exhibit larger negative spillovers

Commodity exporters are hard hit by a US dollar appreciation as a result of a concurrent deterioration in their terms of trade. On the flip side, the terms of trade improve for commodity importers, which helps counter the effect of the appreciation.



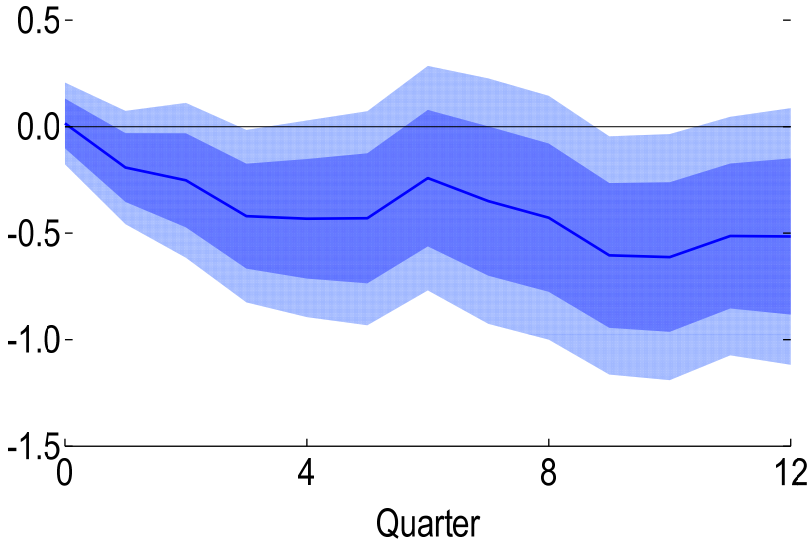
Sources: IMF staff calculations.

Note: Full sample. A country is a commodity exporter if its median trade balance in commodities is larger than 5% of GDP. 10% appreciation in the nominal US dollar index with 90% confidence intervals. An increase in the REER is a depreciation.

USD appreciations are associated with lower global balances

- Global balances are defined as the sum of absolute current account balances across all countries.
- An increase in the US dollar index leads to a sustained decrease in global balances.
- Potential channels:
  1. Falling commodity prices
  2. Lower trade flows under dominant currency pricing

Impact of a US Dollar Appreciation on Global Balances

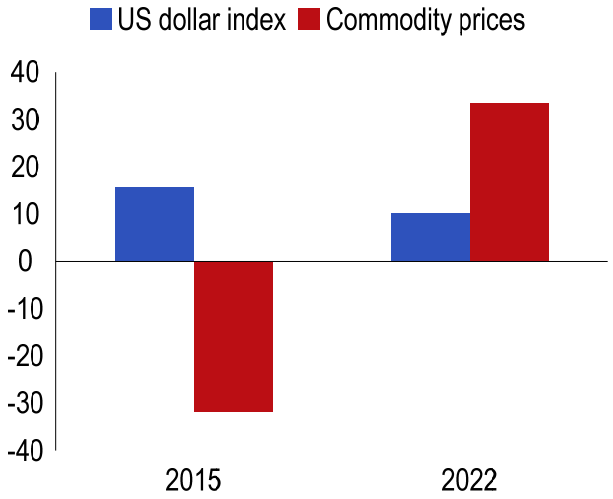


Sources: IMF staff calculations.
Note: 10% appreciation in the nominal US dollar index with 68 and 90% confidence intervals in a time-series local projections exercise. Controls are the US shadow policy rate, policy rate differentials, the adjusted National Financial Conditions Index, the economic activity factor of EMs and small AEs, and lagged US GDP, all in changes and with 4 lags, including lags of the shock and the global balances variable.

The 2021-22 strong dollar episode and spillovers to commodity exporters

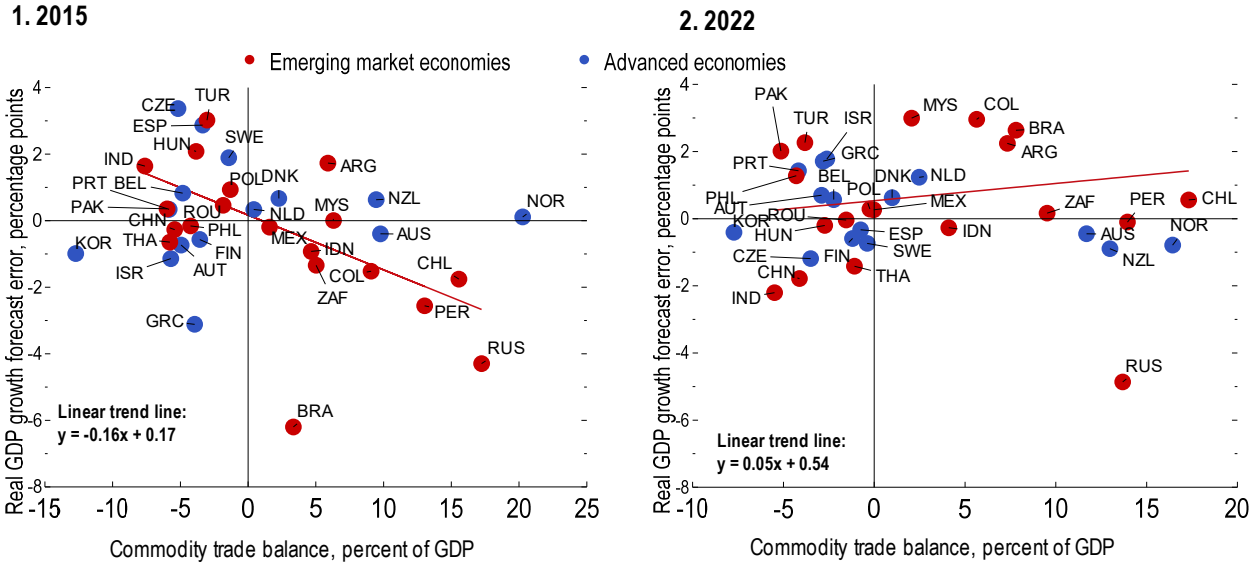
Results

US Dollar Index and Commodity Prices (% change, year-over-year)



Sources: FRED; Haver Analytics; IMF Global Data Source; IMF staff calculations.
Note: % change is calculated using the year average for monthly data between 2015 (2022) and 2014 (2021).

Real GDP Growth Revisions for Two Large US Dollar Appreciation Episodes



Sources: IMF World Economic Outlook database; IMF staff calculations.
Note: The forecast error for real GDP growth in 2015 (2022) is calculated as actual (April 2023) minus the IMF WEO data for April 2014 (January 2022). Commodity trade is defined as the ratio of commodity exports to GDP minus the ratio of commodity imports to GDP. Trend line includes only EMs. For 2015, the trend line excludes Brazil, the coefficient is statistically significant at the 5% level. For 2022, the trend line excludes Russia.

Conclusion

- The global dollar cycle has negative real sector spillovers (OZ 2022) that are more pronounced and longer-lived in emerging market economies.

- CAs increase
  - The current account increase is driven by persistently weak investment in EMs.
  - The REER plays a key adjustment role in AEs, while the REER does not adjust on impact in EMs and depreciates only gradually.

- Financial channels contribute to the adverse effects by reducing capital inflows and domestic credit.

- Commodity exporter status magnifies spillovers given the historically negative relationship between the USD and commodity prices.

- Global balances decline.

Policies can mitigate negative spillovers from US dollar appreciations

- More anchored inflation expectations and more flexible exchange rate regimes speed up the economic recovery.
- Flexible exchange rate regimes can be supported and facilitated by domestic financial market development that helps deepen FX markets and expand FX hedging options.
- Anchoring of inflation expectations can be strengthened by a sustained longer-term commitment to improving fiscal and monetary frameworks, including through ensuring a well-balanced mix of fiscal and monetary policies, consolidating and enhancing central bank independence, and continuing to strengthen the transparency and effectiveness of communications.
- Importance of precautionary policy tools, such as global safety nets as well as Integrated Policy Framework-linked policy tools
- In EMs with severe financial frictions and balance sheet vulnerabilities, macroprudential and capital flow management measures could help mitigate negative cross-border spillovers.

Some useful links

- ESR 2023
  - External Rebalancing in Turbulent times
    https://www.imf.org/en/Publications/ESR/Issues/2023/07/19/2023-external-sector-report
  - Panel discussion

    IMF Videos - 2023 External Sector Report: External Rebalancing in Turbulent Times
  - Blog: “Emerging Market Economies Bear the Brunt of a Stronger Dollar”

    Emerging Market Economies Bear the Brunt of a Stronger Dollar (imf.org)
- EBA methodology Working Paper
  - 2022 Update of the External Balance Assessment Methodology

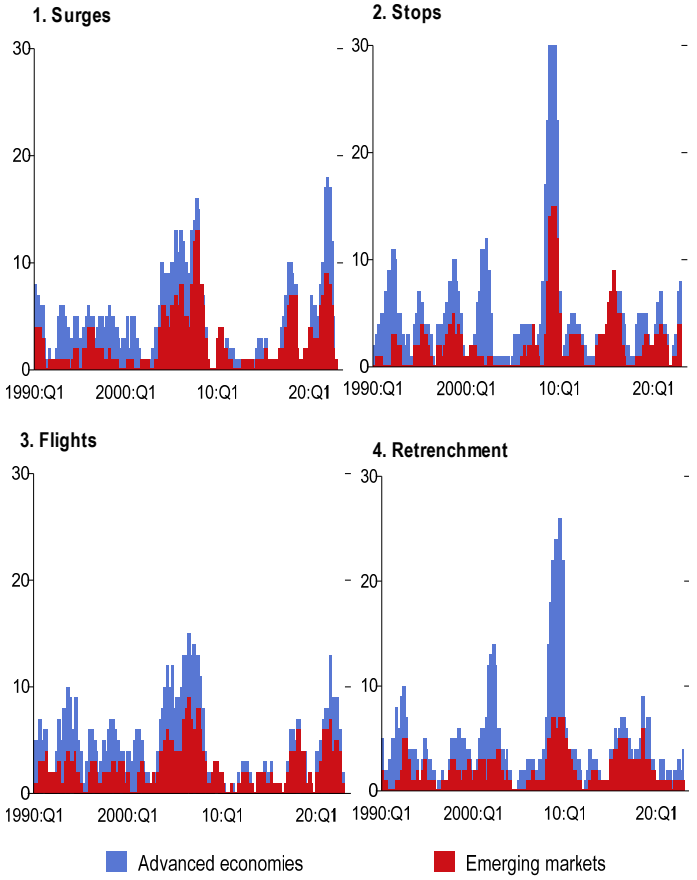
    https://www.imf.org/en/publications/wp/issues/2023/03/02/2022-update-of-the-external-balance-assessment-methodology-530509

Background slides

The COVID crisis did not lead to many sudden stops

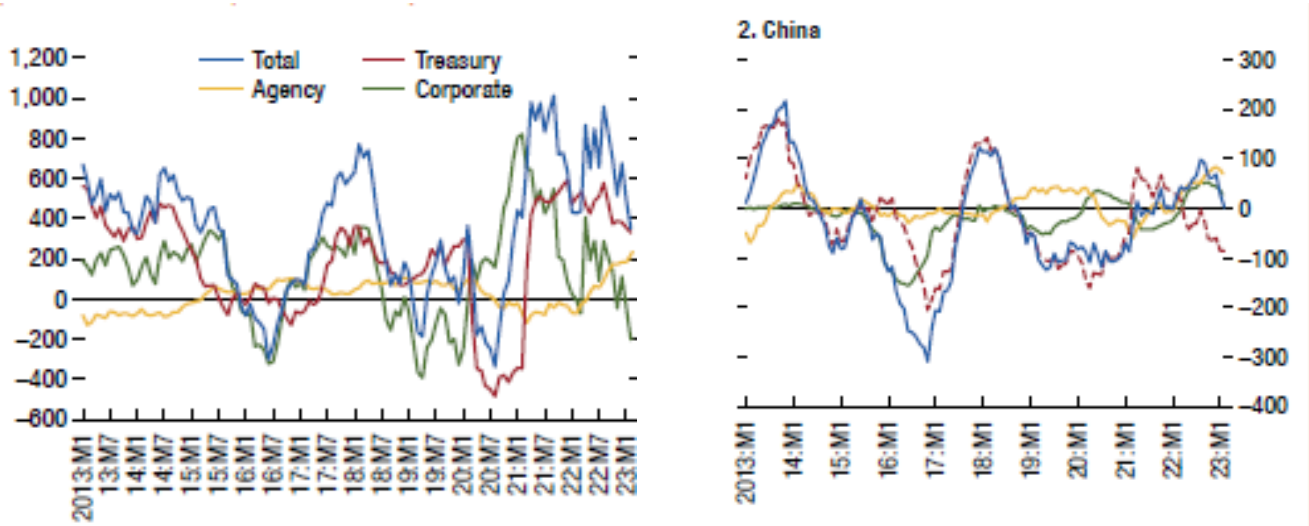
- Defining extreme capital flow movements by foreigners and domestic investors in and out of individual economies based on Forbes and Warnock (2021)
- Different phases over time:
  - Post-GFC: relative stability, “ripples” rather than “waves” (Forbes and Warnock 2021)
  - During COVID-19: no large increase in sudden stops, as policymakers reacted forcefully to maintain investor confidence
  - COVID-19 recovery: increase the frequency of extreme capital flow movements
    - a rebound in gross flows from both foreign (*surges*) and domestic (*flights*) investors
    - likely fueled by mounting optimism in financial markets

Incidence of Extreme Capital Flows: Number of Surges, Stops, Flights, and Retrenchments



A greater role of the non-official sector

Net Foreign Purchases of US Securities
(bn of US dollars, 12-month sum)



Sources: Federal Reserves and IMF staff calculations.
Note: Estimated flows are essentially constructed using changes in foreign holdings of US Treasury securities adjusted for valuation effects as discussed in Bertaut and Judson (2014). Tabova and Warnock (2021) assess the different sources available for measuring foreign transactions in US Treasury securities and support the use of holdings-based estimates of flows. "Corporate" includes bonds and stocks

Summary of the 2022 EBA refinements

- Data updates
- Extend series up to 2019
- Refined ToT gap, oil and gas reserves, capital controls index
- Expanded sample of economies
- Excluded variables not robustly associated with CA balances
- Complementary tools to analyze model residuals

- Basic principles remain unchanged!

EBA

Summary of explanatory variables in EBA CA, REER index and REER level models

EBA CA Model	REER-Index Model^{FE}	REER-Level Model
Cyclical Factors Output gap (-) Terms of Trade^{X} (+) REER log change^{L} (-)	**Cyclical Factors** Output gap (+) Terms of Trade (+)	**Cyclical Factors** Terms of Trade (+)
Macroeconomic Fundamentals Output per worker^{L} (+) Net foreign assets^{L} (+) Expected growth (-)	**Macroeconomic Fundamentals** Output per worker^{L} (+) Net foreign assets^{L} (-) Expected growth (+) Financial home bias (+)	**Macroeconomic Fundamentals** Output per worker^{L} (+) Net foreign assets^{L} (+) Expected growth (+) Reserve currency status (-) Prod. Tradable/NonTrad (+)
Structural features Demographics (+/-) Institutional quality (-) Oil exporter (+)	**Structural features**	**Structural features** Demographics (+) Trade openness^{L} (-) Institutional quality (+) VAT Revenue (+)
Policies Fiscal balance (+) Public health spending^{L} (-) FXI, Capital controls^{X} (+) Financial excesses (-)	**Policies** Monetary policy, Capital openness^{X} (+) Public health spending^{L} (+) FXI, Capital controls^{X} (-) Financial excesses (+)	**Policies** Monetary policy, Capital openness^{X} (+) Public health spending^{L} (+) FXI, Capital controls^{X} (-)

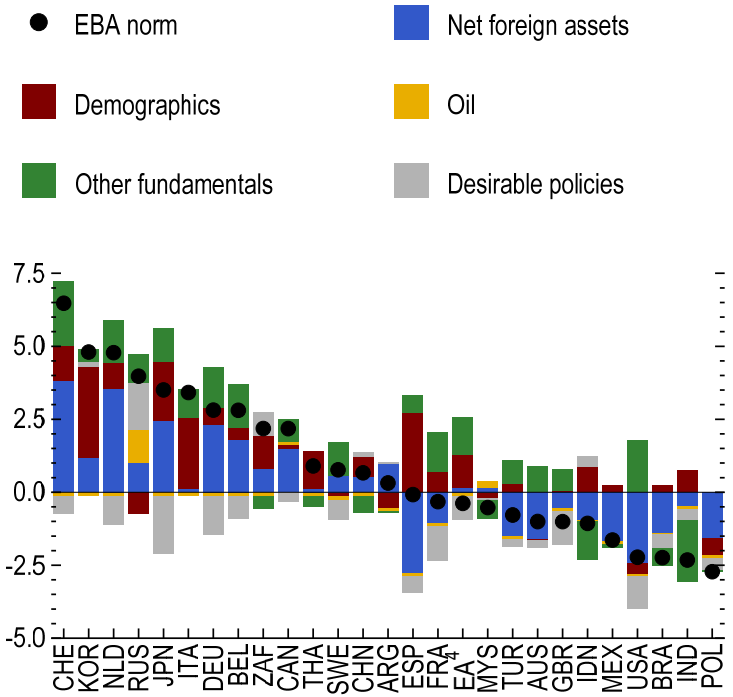
Note: The sign of the estimated coefficient is in brackets (in red if not aligned with economic priors). Lagged variables have an L superscript, while those interacted have an X superscript. Some policy variables (fiscal, FXI) are instrumented as well. Capital openness is defined as 1 minus the capital controls index. The REER-Index model includes country fixed effects (FE).

Estimated current account norms

$$Norm_{it} = \hat{\alpha} + \boldsymbol{F}_{it}\hat{\lambda} + \boldsymbol{P}^{*}_{it}\hat{\gamma}$$

- Advanced economies with higher incomes, older populations, and lower growth prospects tend to have positive current account norms
- Norms are negative for most emerging markets, as they are expected to import capital to invest and exploit the higher growth prospects

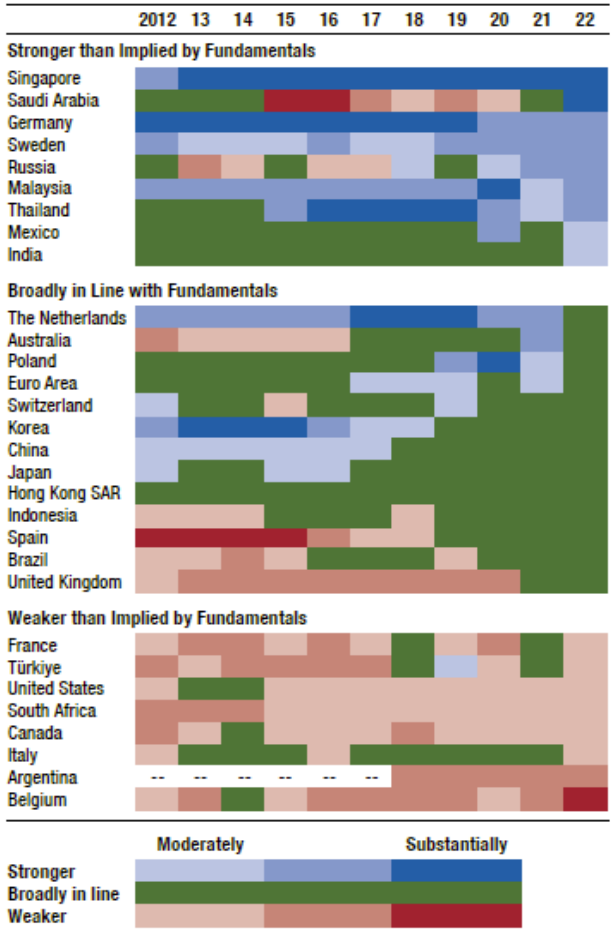
External Balance Assessment Current Account Norms, 2022
(percent of GDP)



Excess external balances over time

- Generally, a country with a staff CA gap of +/- 1 percent of GDP is considered broadly in line with fundamentals and desirable policies. 1 to 2 percent is moderately stronger, 2 to 4 stronger, above 4 substantially stronger; and symmetrically for weaker.
- Compared with those for 2021, assessments for 2022 changed for nearly half of the 30 ESR economies.
- The assessments have moved farther away from the "broadly in line" category for nearly a third ESR economies.

Evolution of External Sector Assessments, 2012-22
(percent of GDP)

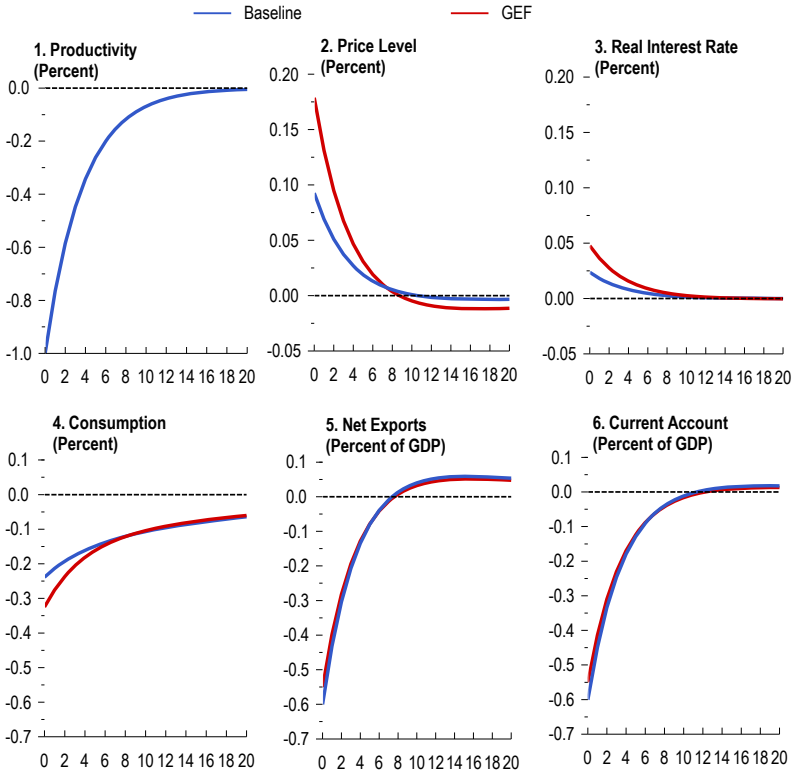


Source: IMF staff assessments.
Note: Grouping and ordering are based on economies' excess imbalance during 2022. Coverage of Argentina in the *External Sector Report* started in 2018.

Special focus: trade costs and current account

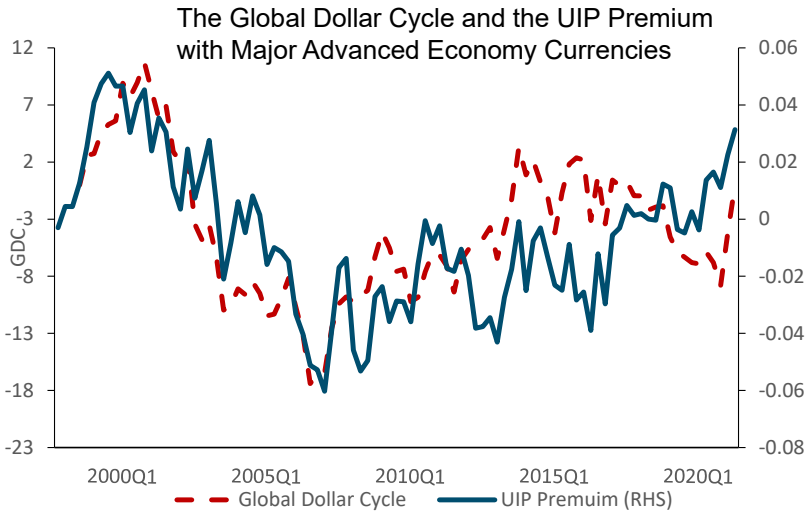
- Focus on only one aspect of fragmentation
- Use a dynamic quantitative trade model based on Cunat and Zymek (2023) to illustrate the link
- The model simulations show that trade barriers dampen the effect of shocks on trade, hence global balances.
- The flip side of the reduction in trade balances is a diminished capacity to smooth the impact of shocks which expose the country to greater consumption volatility and welfare.

Effect of a Labor Productivity Shock on a Representative EMDE: Baseline and Higher Trade Cost

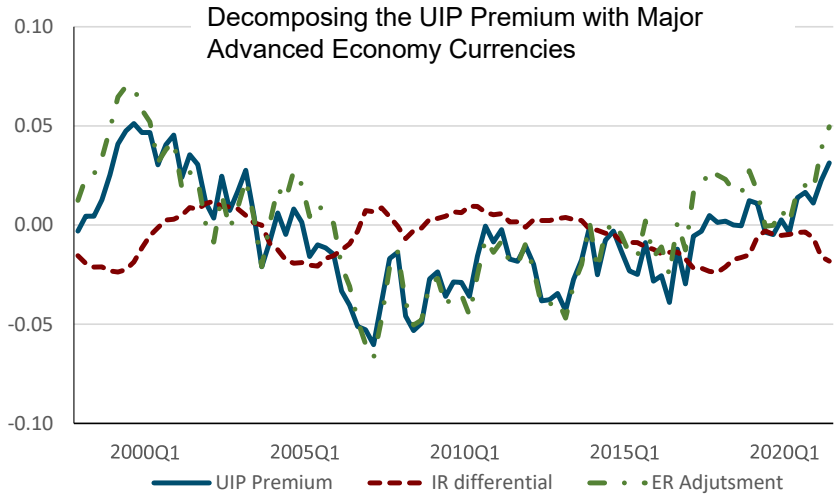


The global dollar cycle is closely related to UIP premia

- We construct a weighted average UIP premium λ^{AE} for advanced economies in line with the USD AE Index weights where individual UIP premia for each country i against the US are calculated, following Kalemli-Özcan (2019) and Das et al. (2022) as:
- $\lambda_t^i = i_t^i - i_t^{US} - \left(ln\left(E\left(S_{t+12}^{LC/\$} \right) \right) - ln\left(S_t^{LC/\$} \right) \right)$



Sources: Haver Analytics; Consensus Forecast; Refinitiv Datastream; and IMF staff calculations.
Note: The UIP Premium is based on a weighted average of UIP premia based on 12-month deposit rates and consensus forecast exchange rate forecasts for the US against the 7 advanced economies in the Fed USD AE Index (Australia, Canada, the Euro Area, Japan, Sweden, Switzerland, and the UK). The correlation is 0.69. Using a 3-month horizon the correlation is 0.58.



Sources: Haver Analytics; Consensus Forecast; Refinitv Datastream; and IMF staff calculations.
Note: IR = interest rate; ER = exchange rate. Following Kalemi-Ozcan (2019) the UIP Premium is decomposed into an interest rate differential and an exchange rate adjustment term. IR differential denotes AE deposit rate minus US deposit rate. ER adjustment is the expected US dollar depreciation.

The global dollar cycle and individual country UIP premia

- We construct a weighted average UIP premium λ^{AE} for advanced economies in line with the USD AE Index weights where individual UIP premia for each country i against the US are calculated, following Kalemli-Özcan (2019) and Das et al. (2022) as:

- $$\lambda_t^i = i_t^i - i_t^{US} - \left(\ln\left(E\left(S_{t+12}^{LC/\$}\right)\right) - \ln\left(S_t^{LC/\$}\right)\right)$$

Correlations of Individual Country UIP Premia with the US dollar

	Correlations of λ_t^i with		
	LC/USD	USD index	
Australia	0.73	0.63	0.81
Canada	0.66	0.65	0.79
Japan	0.39	0.08	0.31
Sweden	0.86	0.96	0.79
Switzerland	-0.32	0.27	0.16
United Kingdom	0.24	0.44	0.70
Euro Area	0.73	0.67	0.87
AE Index Average		0.81	1.00

Sources: Haver Analytics; Consensus Forecast; Refinitiv Datastream; and IMF staff calculations.
Note: λ_t^i is the UIP deviation as defined in the text. LC/USD denotes local currency per US dollar. USD index denotes the US dollar index against advanced economies. λ_t^i is derived by calculating individual UIP deviations against the US dollar for each of the 7 advanced economy currencies included in the US dollar index and constructing a weighted average of these deviations using the US dollar index weights. The average weights for AEs in the index are: AUD 2.7%, CAD 30.4%, JPY 14.3%, SWK 1.3%, CHF 4.5%, GBP 10.6%, EUR 36%.

Policies and characteristics across countries

	Emerging Market	Not Freely Floating	Below Median Trade Openness	Commodity Exporter	Below Median Anchoring	High US Dollar Export Invoicing	High US Dollar Liability
TUR	1	1	1	0	1	0	1
ZAF	1	0	1	0		0	0
ARG	1		1	1	1	1	1
BRA	1	1	1	0	1	1	1
CHL	1	1	1	1	0	1	1
COL	1	1	1	1	0	1	1
MEX	1	0	0	0	1		1
PER	1	1	1	1	1		1
IND	1	1	1	0	1	1	1
IDN	1	1	1	1	1	1	1
MYS	1	1	0	1	0	1	0
PAK	1	1	1	0		1	0
PHL	1	1	0	0		1	1
THA	1	1	0	0	1	1	0
RUS	1	1	1	1	1	1	1
CHN	1	1	1	0	1		0
HUN	1	0	0	0	0	0	0
POL	1	0	0	0	0	0	0
ROM	1	0	0	0	1	0	
AUT	0	0	0	0		0	0
BEL	0	0	0	0		0	0
DNK	0	0	0	0		0	0
NLD	0	0	0	0		0	0
NOR	0	0	0	1	0	0	0
SWE	0	0	0	0	0	0	0
FIN	0	0	0	0		0	0
GRC	0	0	0	0		0	0
PRT	0	0	0	0		0	0
ESP	0	0	0	0		0	0
AUS	0	0	1	1	0	1	0
NZL	0	0	1	1	0	0	0
ISR	0	1	1	0		1	0
KOR	0	1	0	0	0	1	0
CZE	0	0	0	0	0	0	0

Sources:
Ilzetzki, Reinhart and Rogoff (2019); AREAER; IMF Balance of Payments Satistics and Global Data Source; UN COMTRADE; Bems and others (2021); Boz and others (2022); Bénétrix and others (2019); and IMF staff calculations.

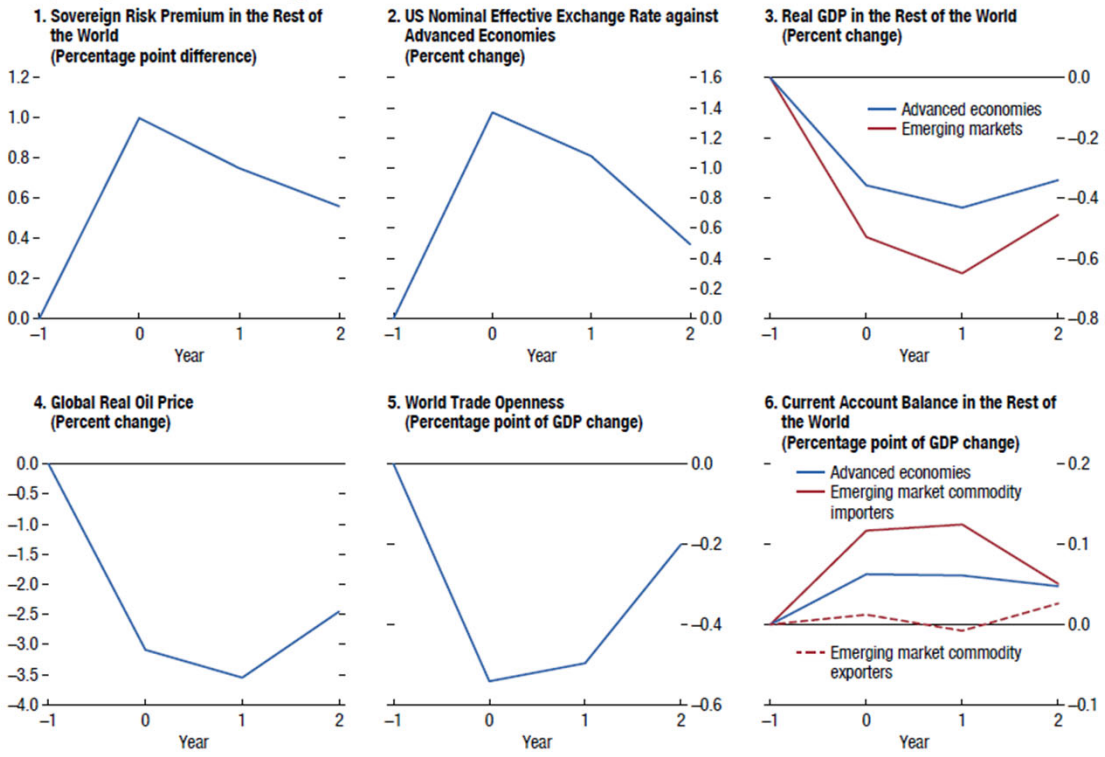
Note: Features are defined such that 1 represents the category with a more negative GDP response. The table is constructed for 2017Q1 except for high US dollar liability, which is a time-varying feature. For presentational purposes, in this table high US dollar liability is 1 if the country spent more than 12 quarters in the top quartile. The following features are not time-varying: emerging market/advanced economy status, commodity exporter/importer, below median anchoring, high US dollar export invoicing.

Theoretical model results

- Flexible System of Global Models from Andrle et al. (IMF WP 2015)
- Multi-region, general equilibrium, forward-looking semi-structural global model consisting of 24 regions
- Micro-foundations for private consumption and investment; reduced-form representation of trade, labor supply, and inflation
- Focus on a global risk premium (UIP) shock vis-a-vis the US

Figure 2.10. Impulse Responses to a Global Risk Premium Shock in the Flexible System of Global Models

The Flexible System of Global Models' response to a global sovereign risk premium shock reveals that a US dollar appreciation is accompanied by (1) a fall in output in the rest of the world, with a more negative impact on emerging markets; (2) a fall in commodity prices; and (3) a contraction in trade openness, while (4) the current account increases in commodity-importing countries. These model results are consistent with empirical findings for spillovers from US dollar appreciations.



Source: IMF staff calculations.
Note: Emerging market commodity importers include China, India, South Africa, and Türkiye; emerging market commodity exporters include Argentina, Brazil, Indonesia, Mexico, Russia, and Saudi Arabia; emerging markets include both of these country groups; advanced economies exclude the United States. In panel 2, an increase equals appreciation.