International Monetary Fund

January 25, 2024

ERSA-CEPR Workshop on Macroeconomic Policy in Emerging Markets

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Key questions

- How are EMs faring

- Key Challenges
  - External Sector Volatility
  - Financial stability
  - Fragmentation

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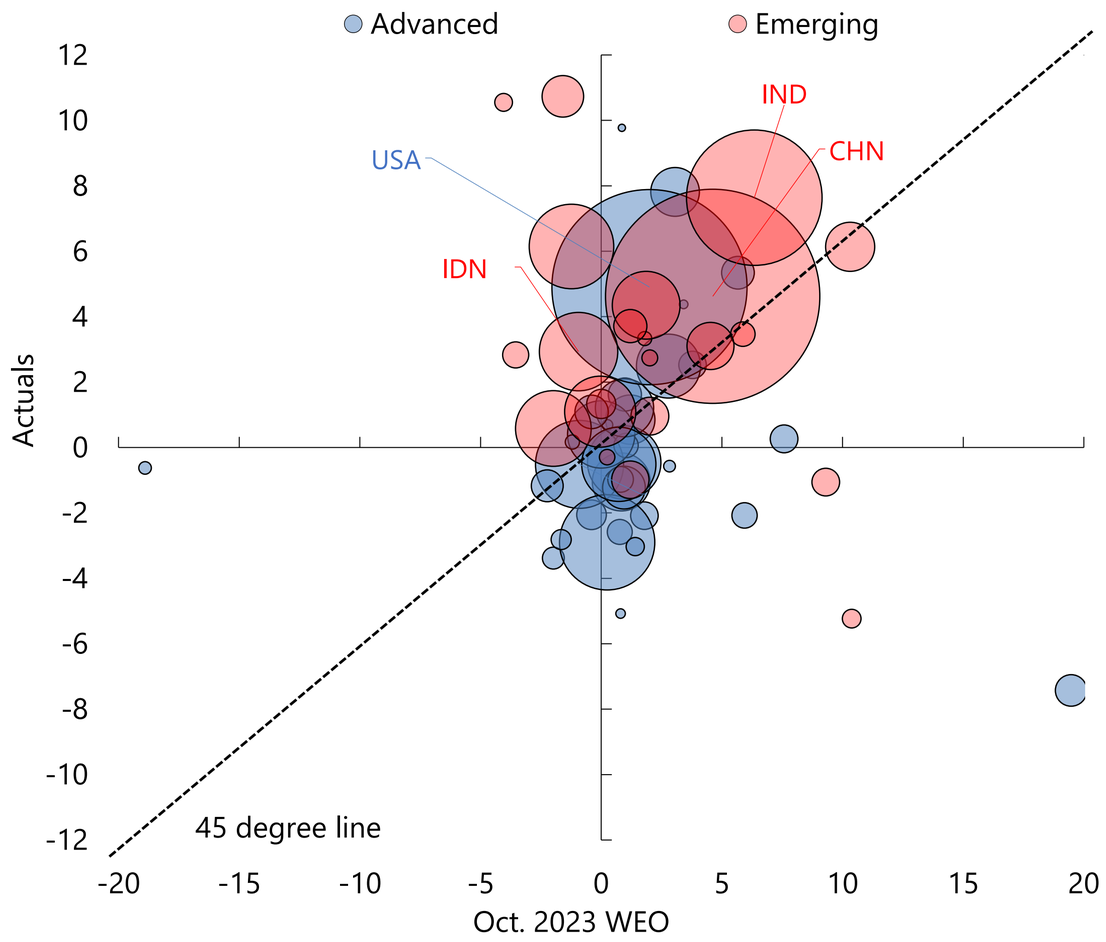
EMs Resilient Amid Changing Global Tide

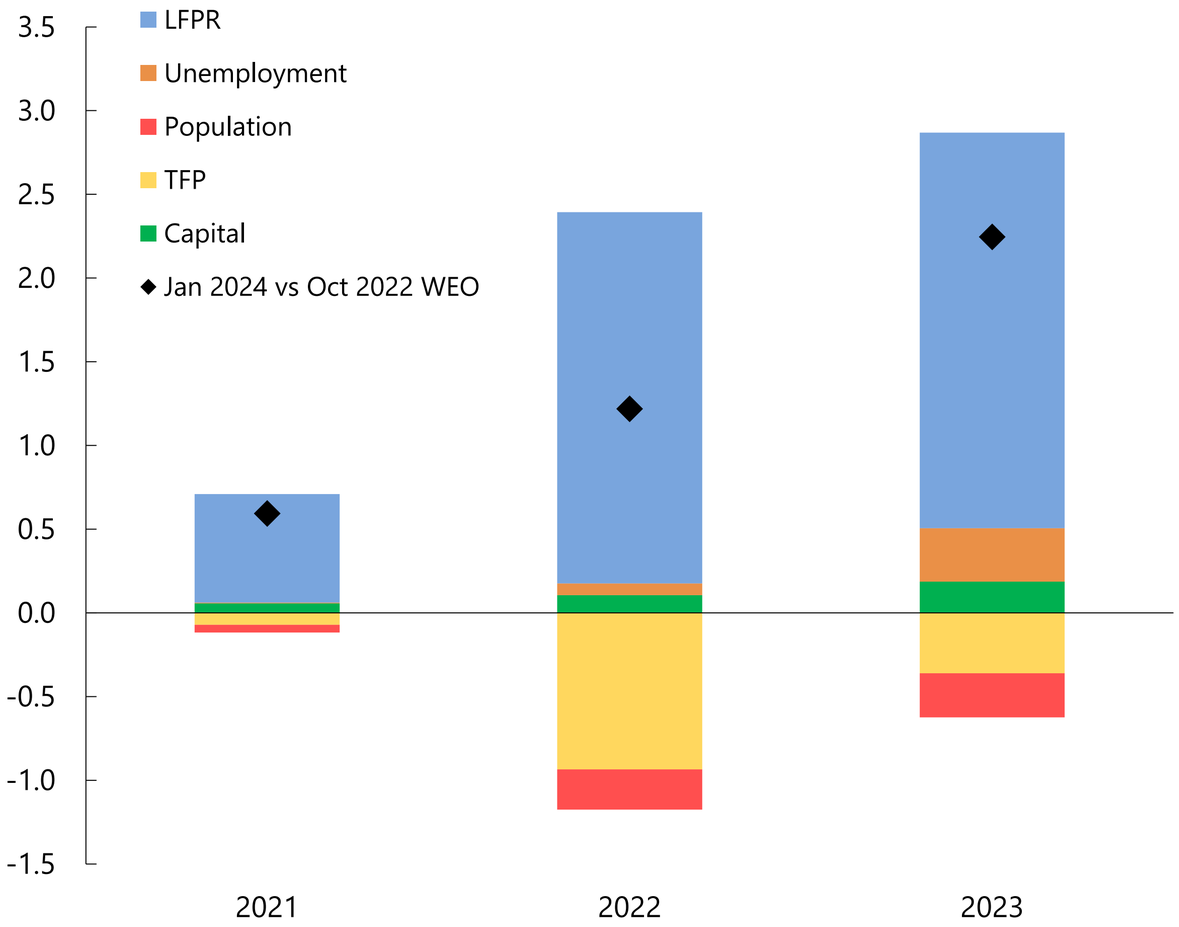
2023Q3 growth surprises 1/

(percent; Oct 2023 WEO vs actual; q/q annualized rate)



EM (ex. China) GDP level surprises 2/

(Jan 24 vs Oct 22 WEO, percentage points)

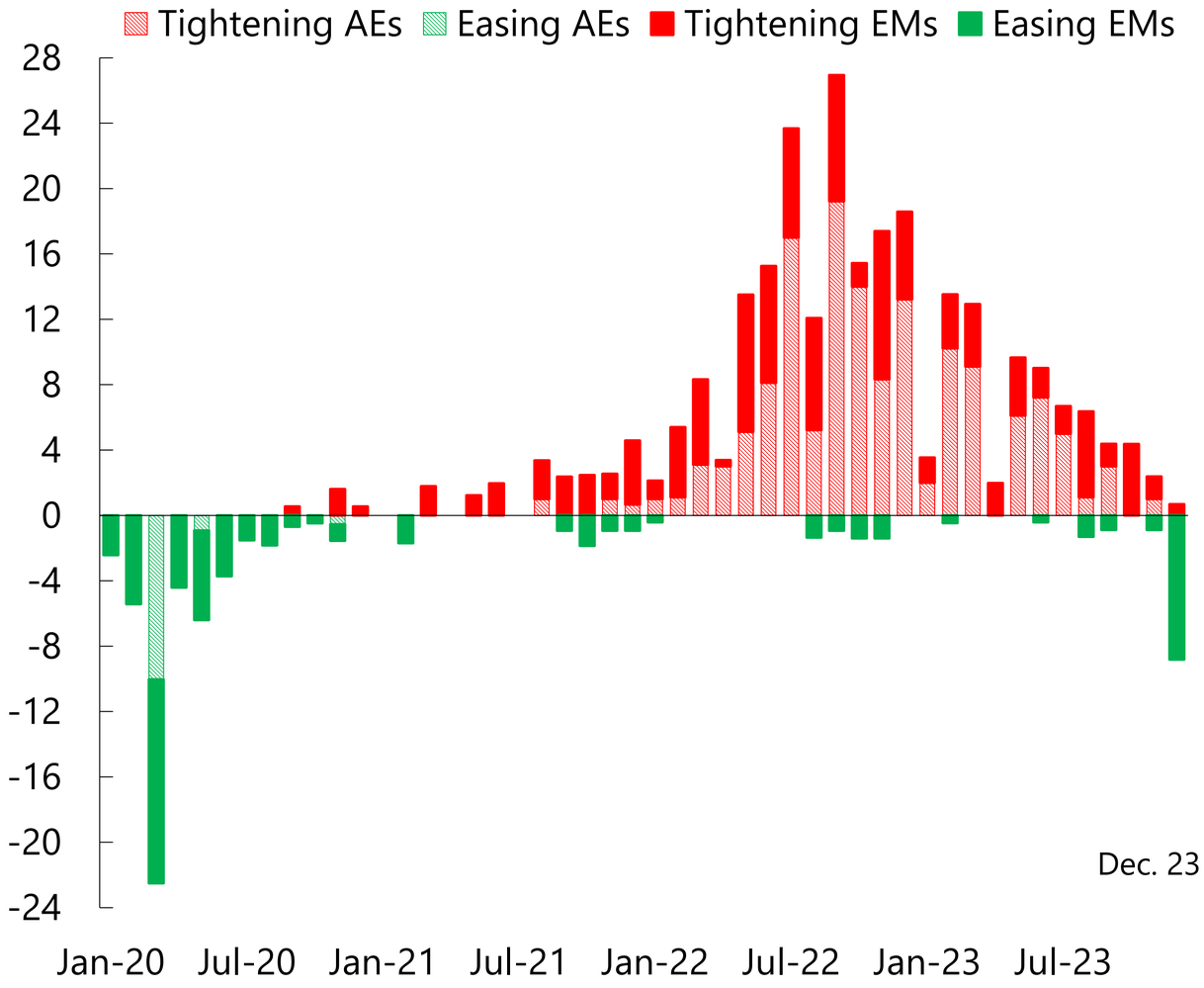


Sources: Penn World Table (PWT) 10.0, IMF, *World Economic Outlook*; and IMF staff calculations.
1/ CHN and IND show year-over-year growth due to data limitation.
2/ Cobb-Douglas production function decomposition of EM output surprises; capital stock estimated using 2019 capital stock and depreciation rate from PWT and WEO investment projections; labor contribution based on WEO employment forecasts, decomposed into population size, unemployment rate, and participation rate; 2021 decomposition reflects historic data revisions.

EMs Earlier to Move with Inflation Returning to Target

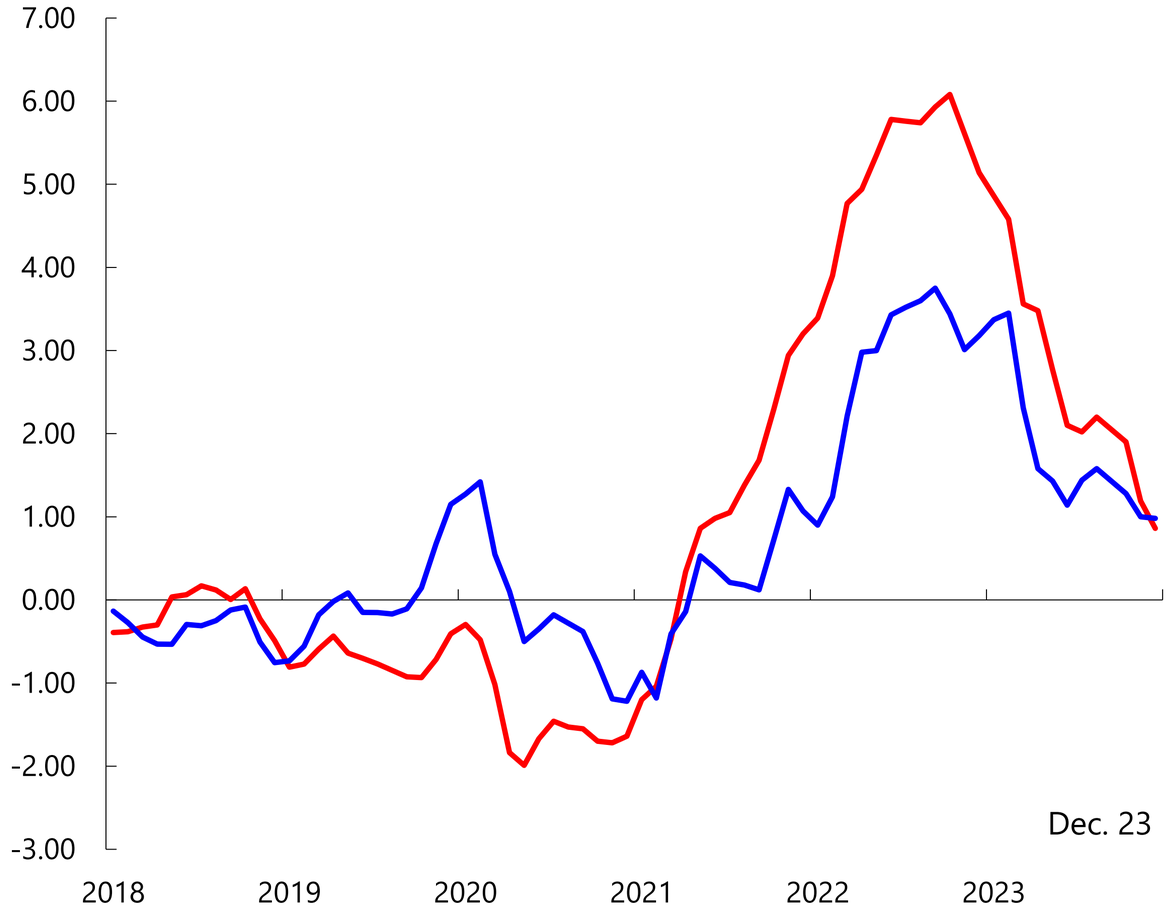
Change in Monetary Policy Cycle among G-20 Economies ex RUS

(number of increases/cuts normalized 1/)



Headline inflation deviation from central bank target

(percent, year-over-year)

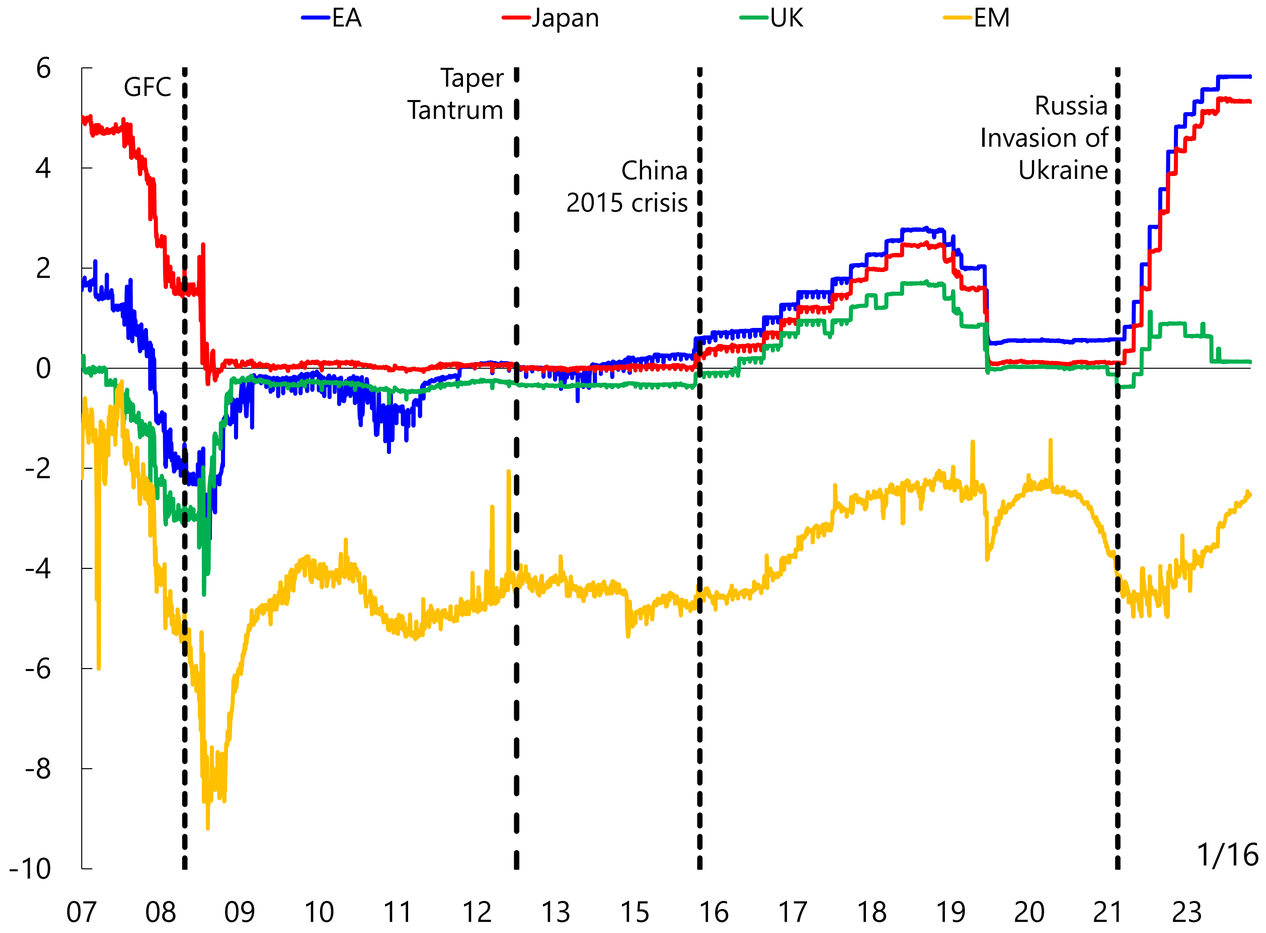


Sources: Bloomberg Finance L.P., Haver Analytics and IMF staff calculations.
1/ Mean and standard deviation are computed based on the sample starting January 2010.

Despite Widening Interest Rate Differential, Capital Flows Stable

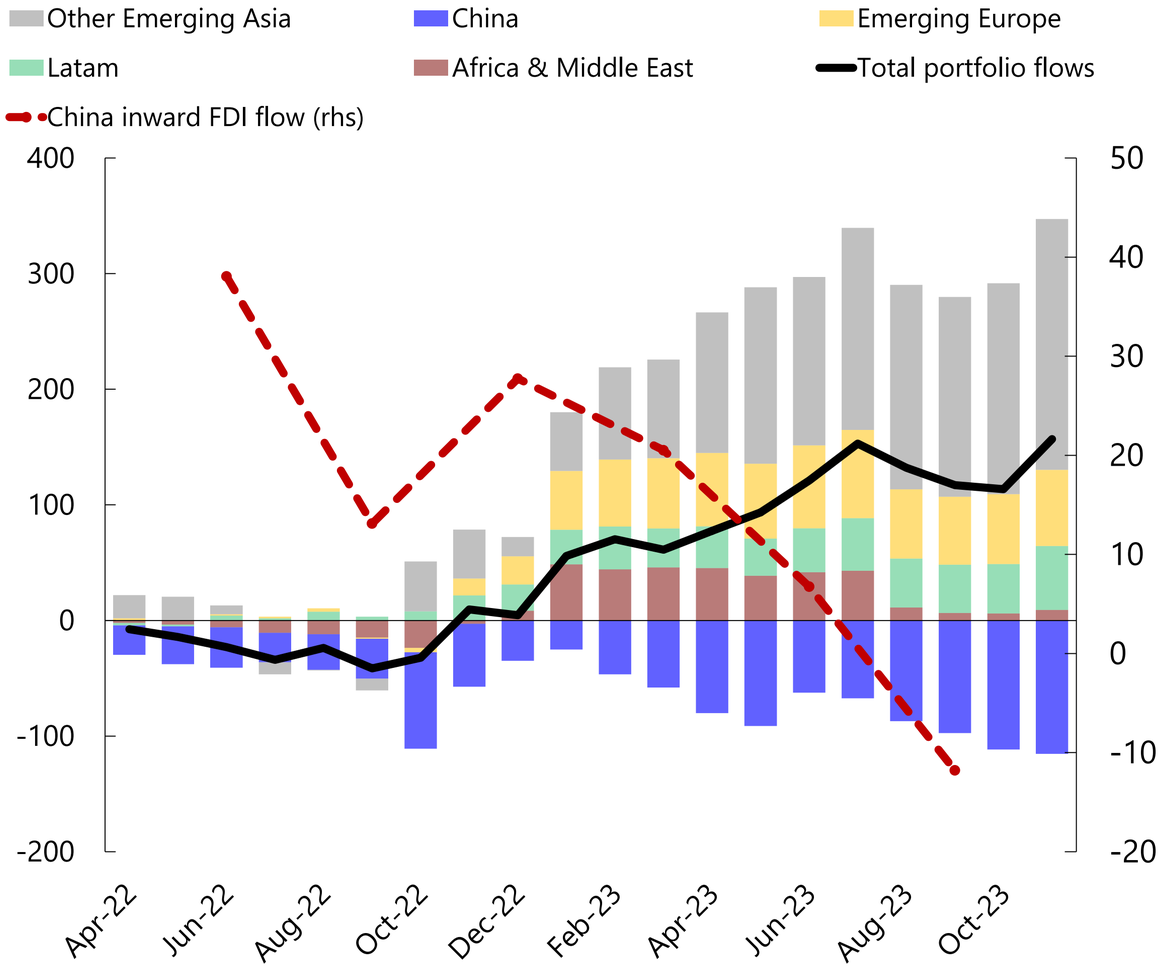
Nominal Interest Rate Differentials 1/

(versus US interest rates, percent)



MP tightening: EMs net capital flows

(cumulative; billion USD; March 22=0)

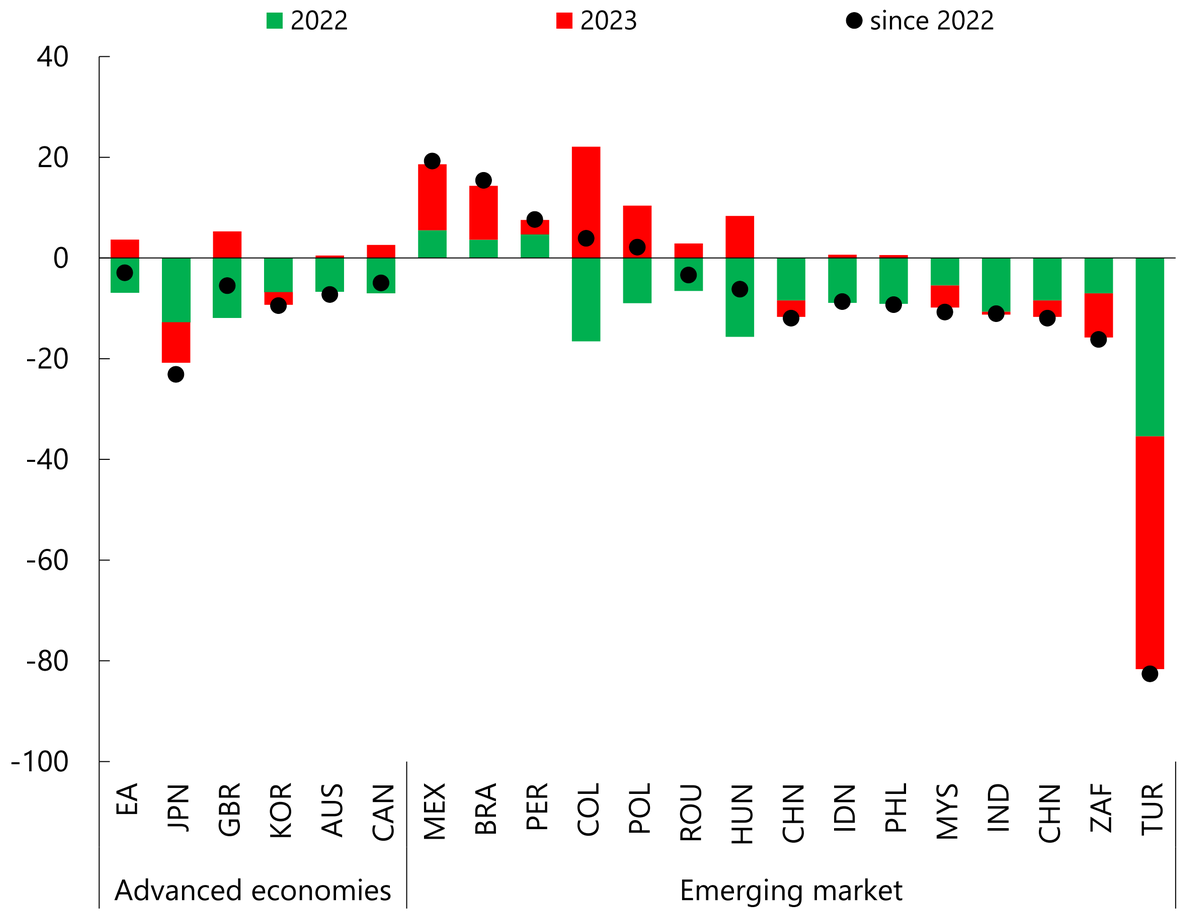


Sources: Bloomberg Finance L.P.; Haver Analytics; IIF, IMF, *Balance of payment* and IMF staff calculations
1/ Differential is calculated as US overnight bank funding rate minus foreign inter-bank rate.

Exchange Rate Pressures Contained Despite Increased MP Divergence

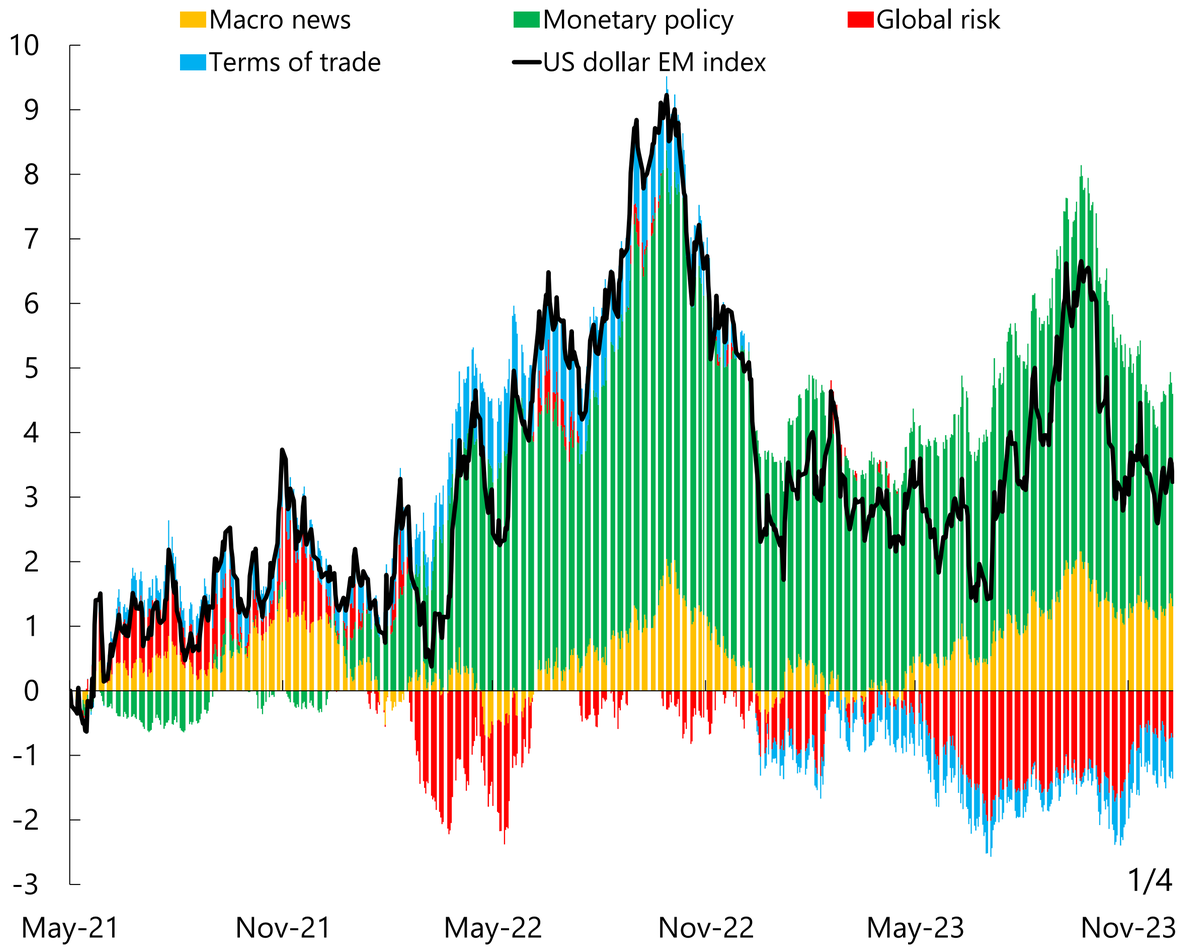
Exchange Rates vis-à-vis US Dollar

(% change; as of Jan 11, 2024; ex RUS)



U.S. dollar EM index

(index)

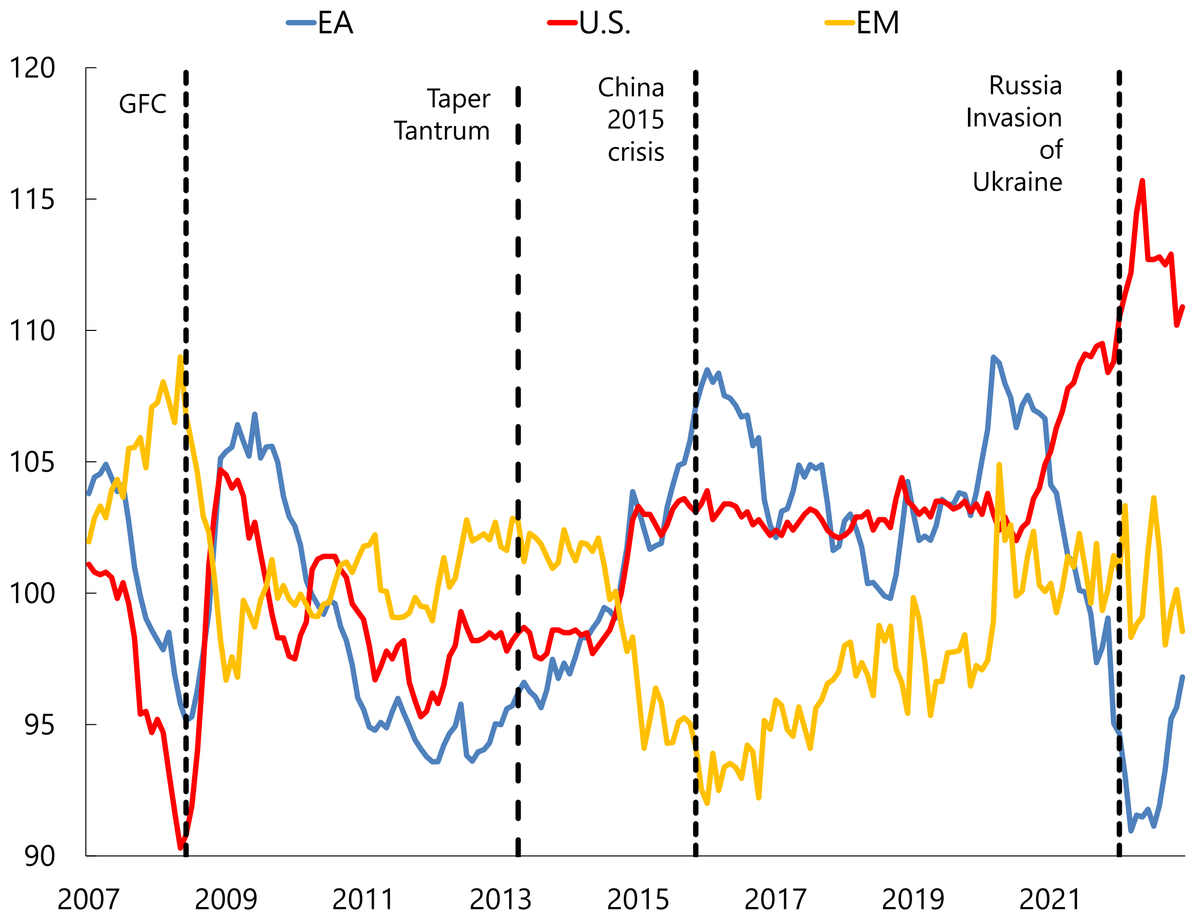


Sources: Haver Analytics and IMF staff calculations.

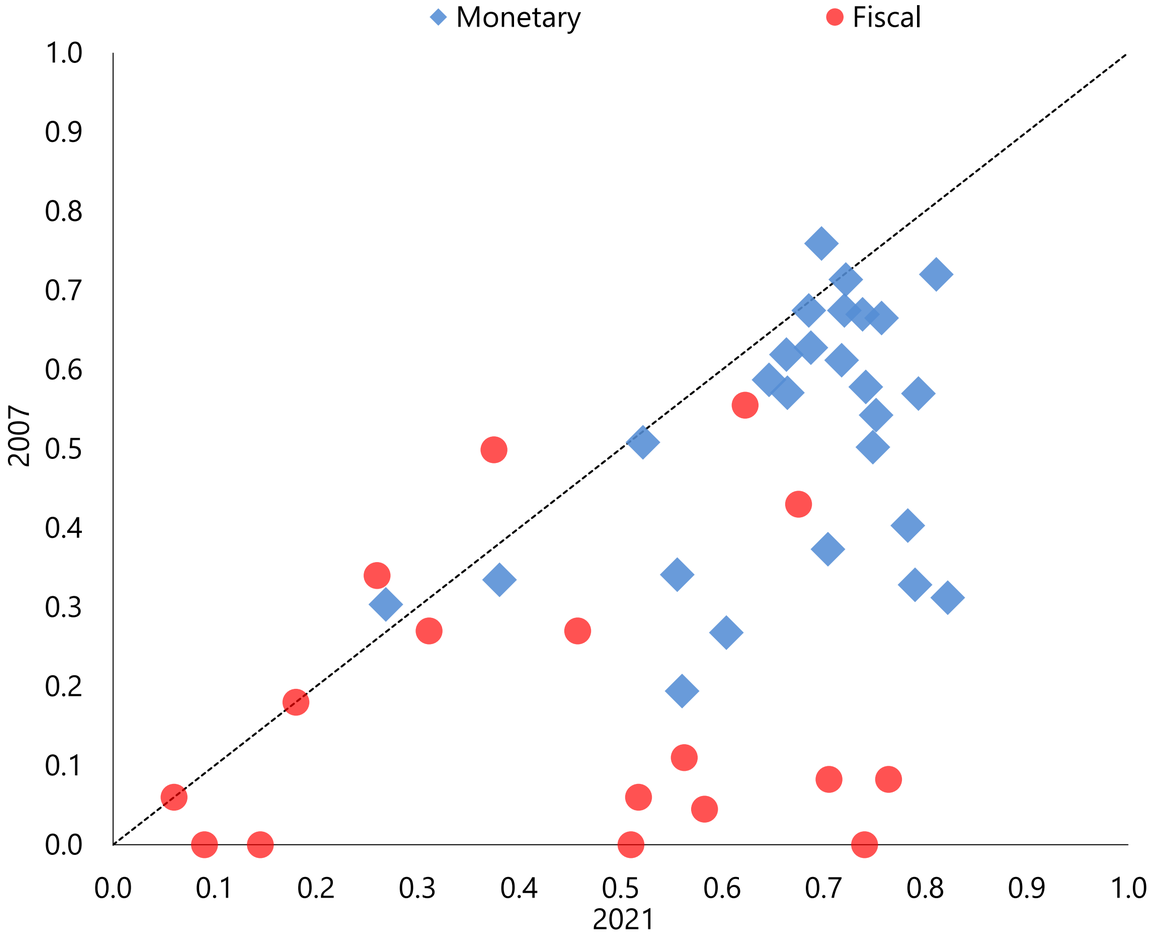
Resilience Could be Attributed to Economic Conditions and Fundamentals

Terms of trade: US, Euro Area, Emerging Market

(index; 2010 = 100)



EM fundamentals: Monetary and fiscal policy frameworks 1/



Sources: Davoodi and others (2022); Haver Analytics, *Unsal, D.F., and others. (2022);* and IMF staff calculations.

1/ Sample of 26 EMs. A higher score on the monetary policy and fiscal policy framework indicates improvement. Fiscal frameworks are defined using the strength of fiscal rules, based on four institutional criteria: i) legal basis, ii) presence of a monitoring mechanism, iii) enforcement and correction mechanism in place, and iv) flexibility and resilience against shocks. Monetary policy framework based on the IAPOC index (Independence and Accountability, Policy and Operational Strategy, and Communications). A zero value for fiscal in the x-axis line means the country had no fiscal rule in place in 2007.

Key questions

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- Key Challenges
  - External Sector Volatility
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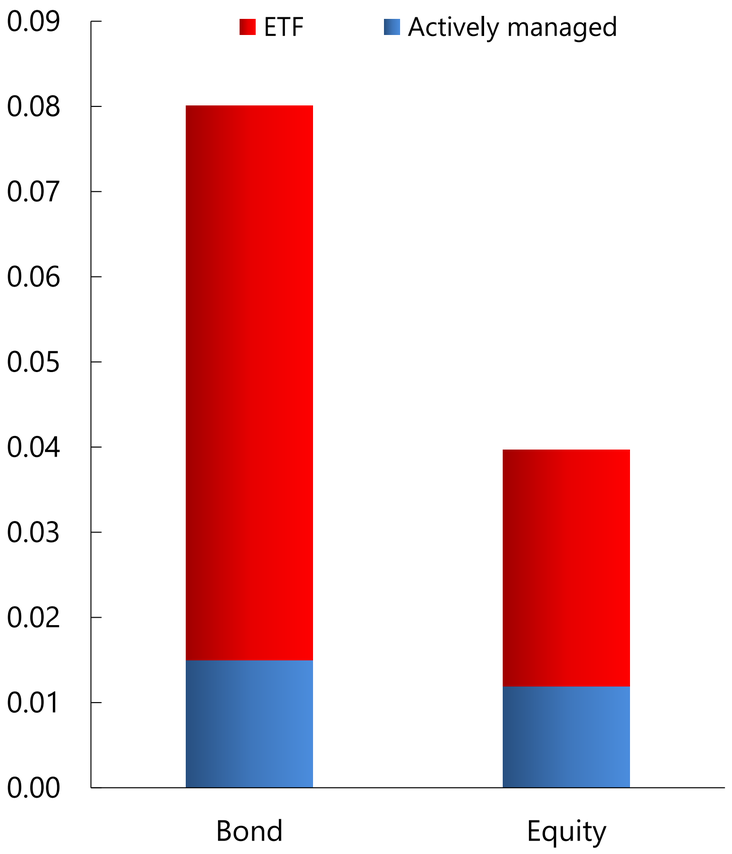
Increased Policy Divergences could Re-trigger Volatility

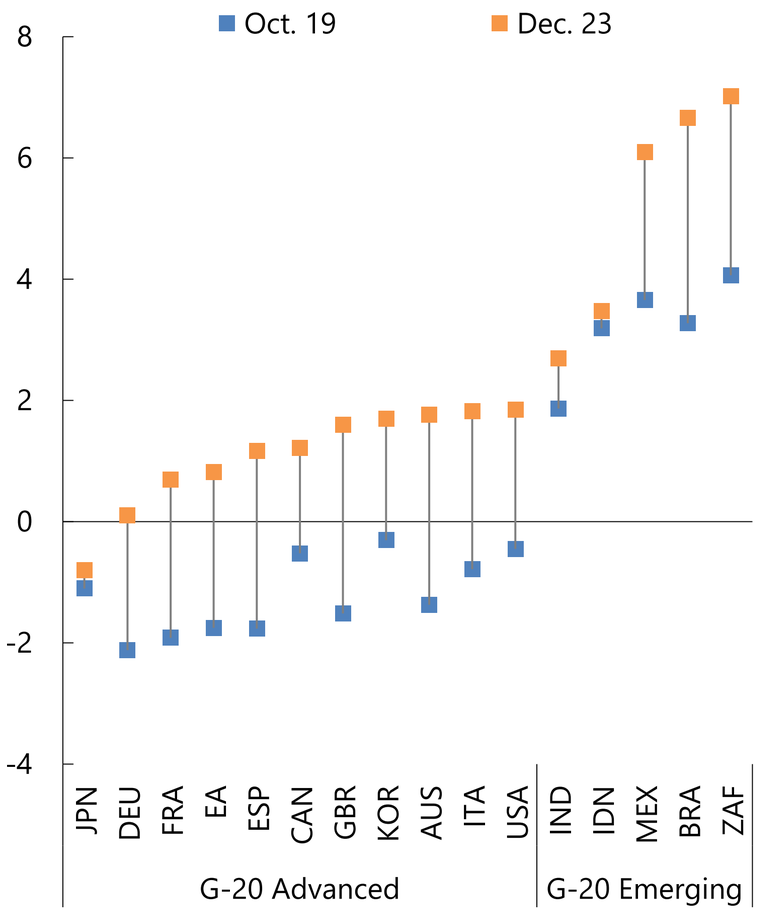
Sensitivity of fund flows to VIX 1/

(share of amount outstanding)



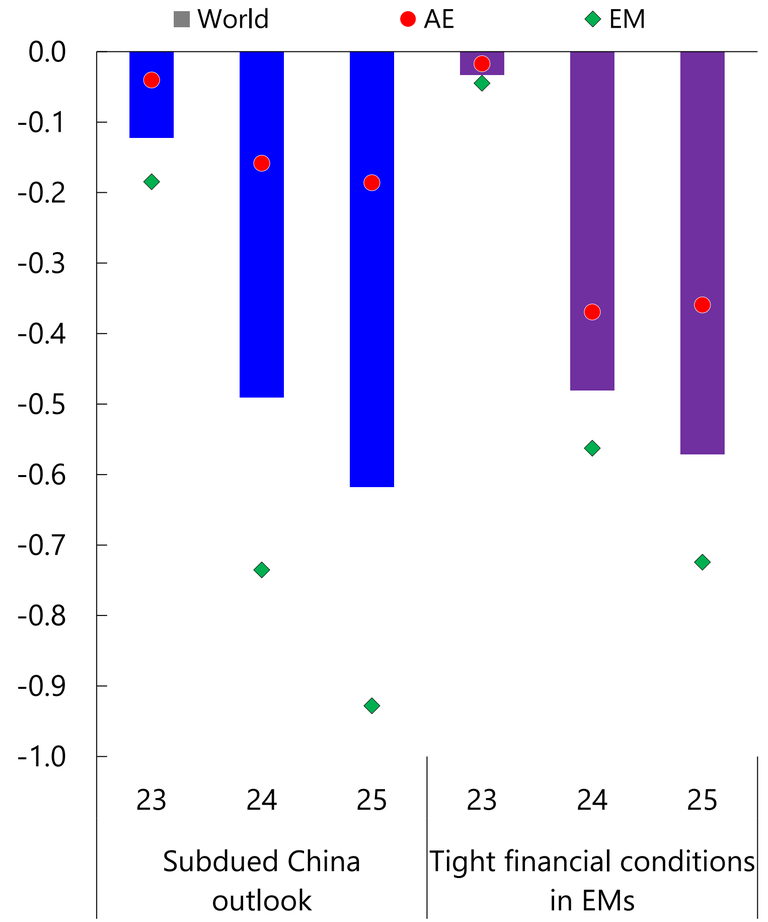
G20: Long-term real rates

(percent; nominal 10-year bond deflated by 10-year Consensus Economics inflation forecast)



Impact of different scenarios on GDP levels 2/

(percent deviation from baseline)



Sources: EPFR, Bloomberg Finance L.P.; Consensus Economics; Haver Analytics; IMF, *World Economic Outlook*; and IMF staff calculations.
1/ The y-axis shows the additional sales of debt securities by ETFs vs. actively managed funds in response to an increase in the VIX of 1.
2/ Subdued China outlook scenario assumes the levels of consumption and investment in China are 5 and 3.5 percent below baseline in 2025. As a result, China's GDP level declines by 1.6 percent. Tight financial conditions in EMs assume an increase in EM sovereign and corporate premia of 150 and 100 bps, and a depreciation of 5 percent in EM currencies relative to the US dollar, in 2024.

IMF Integrated Policy Framework Can Provide a Useful Anchor

Motivation: Provide a systematic approach to selecting policy mix for macro-financial stability

- Monetary policy, fiscal policy, and exchange rate flexibility
- Macroprudential policy measures (MPMs), FX intervention (FXI), and capital flow management measures (CFMs)

Key Findings: Optimal policy mix depends on shocks, characteristics, and initial conditions

- IPF clarifies both when policy tools may or may not be appropriate
- Full exchange rate flexibility is optimal in countries without substantial financial frictions
- In presence of frictions, other tools may also be useful
  - Role for MPMs, FXI, and CFMs under certain conditions
  - Preemptive CFM/MPMs and MPMs can improve financial stability
- No indiscriminate use (e.g., no substitute for warranted adjustments; adverse side-effects)

IPF Identifies When Multiple Tools May Be Useful

A. Stabilize premia in **shallow FX markets**.

- Ex-ante, structural policies to deepen FX and LC bond markets.
- Ex-post, CFMs, MPMs, and/or CFM/MPMs may help alongside FXI.

B. Counter financial stability risks from **FX mismatches**.

- Ex-ante, contain FX mismatches with MPMs and CFM/MPMs, and develop hedging markets.
- Ex-post, CFMs, MPMs, and/or CFM/MPMs may help alongside FXI.

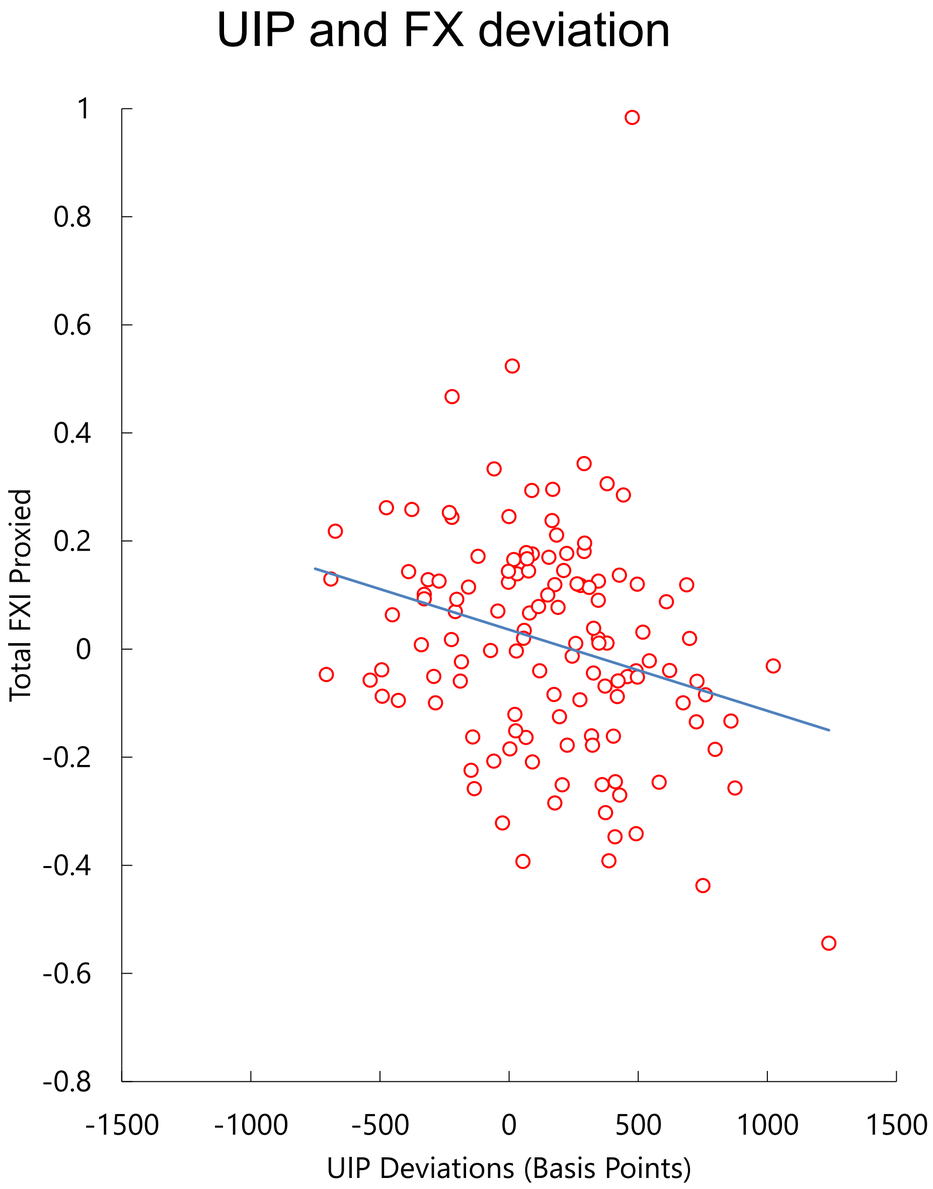
C. Counter risk of **de-anchored inflation expectations**.

- Monetary policy must play the primary role.

Across use cases: FXI, CFMs, and MPMs should not substitute for warranted monetary and fiscal policy adjustment; use of tools should bear in mind their side-effects.

How EMs Fit into the IPF

- **Emerging markets tend to have one or more IPF frictions.**
  - FX market depth and passthrough can vary over time (Indonesia, Malaysia, Philippines, Thailand).
  - FXI better for risk-off than fundamental shocks (Malaysia).
  - Dollarization may generate a case for FXI (Peru).
- **Interactions of policy tools and frictions can be important.**
  - FXI can reduce risk of inflation de-anchoring alongside monetary policy (Indonesia, Malaysia, Philippines, Thailand)
  - Initial conditions matter (Indonesia).
  - Ex-ante regulations on corporate external debt may limit the need for ex-post FXI to the largest shocks (Indonesia).
  - Ex-ante MPMs and structural policies can deepen FX markets (Malaysia, Thailand, Peru, Uruguay).
- **Traditional policy mix still the best option in some cases.**
  - Frictions not strong enough (Colombia, South Africa), or high costs of FXI (Uruguay).
  - Premia movements driven by policy uncertainty addressed via communication (Colombia).



USD Hedging Demand and CIP Basis

- **CIP and UIP convey important information about stress in cross border markets**
  - CIP: hedging demand pressure for USD and intermediary balance sheet constraint.
  - UIP: risk appetite and intermediary balance sheet constraints

- **Gourinchas and Dao (2023) focus on CIP:**

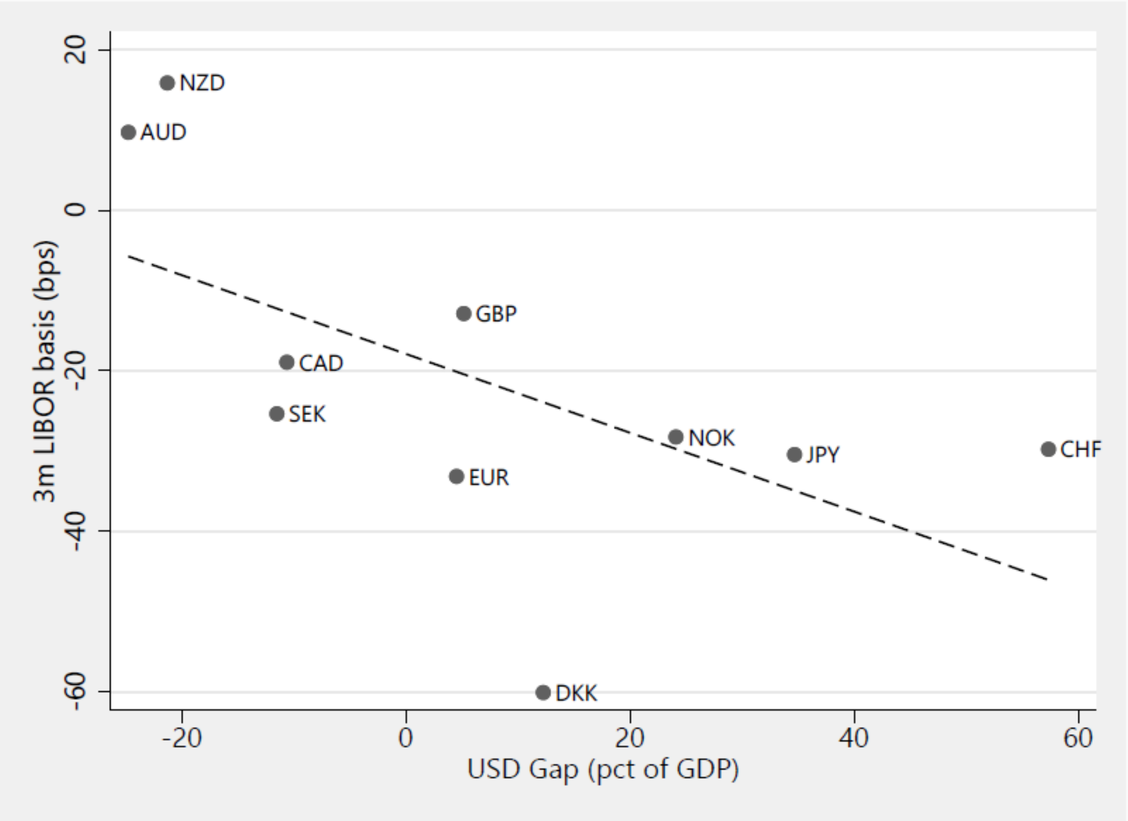
$$\frac{R_t^*}{R_t}\frac{\mathcal{F}_t}{\mathcal{E}_t} - 1 = \mu_t a \left(\frac{|F_t^*|}{W_t^*}\right)^{\alpha} \text{sign}(F_t^*)$$

where μ_t is the Lagrange multiplier on the regulatory constraint (shadow cost of reserves)

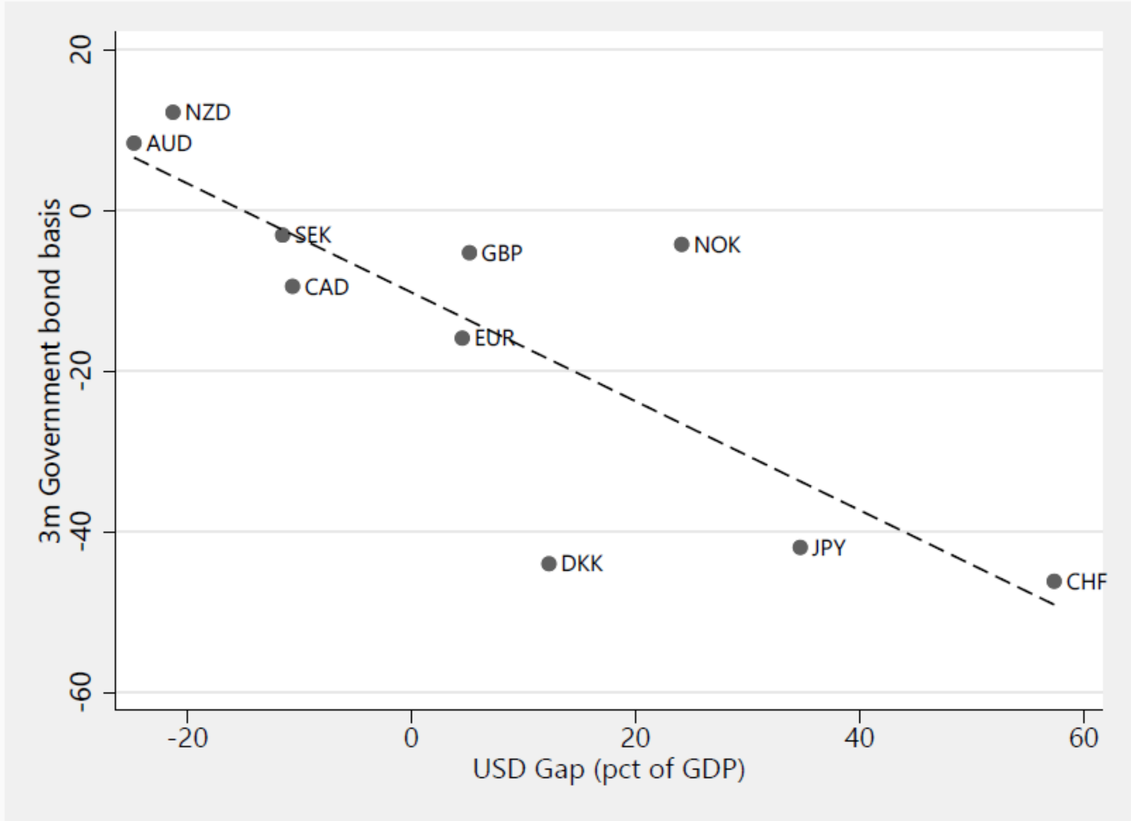
- **Intuition:**
  - When $F_t^* > 0$, country is short USD. net demand for USD forward. Hedging dollar liabilities by domestic debtors or LC assets by foreign investors. Intermediary requires a positive basis: CIP>0
  - When $F_t^* < 0$, country is long USD: net demand for LC forward to hedge USD net assets by US investors, or LC liabilities by foreign investors. CIP<0

USD Hedging Demand and the CIP Basis: Advanced Economies

Do we observe the corresponding negative relationship in the data? Broadly yes for AE (G10):



(a) LIBOR CIP basis

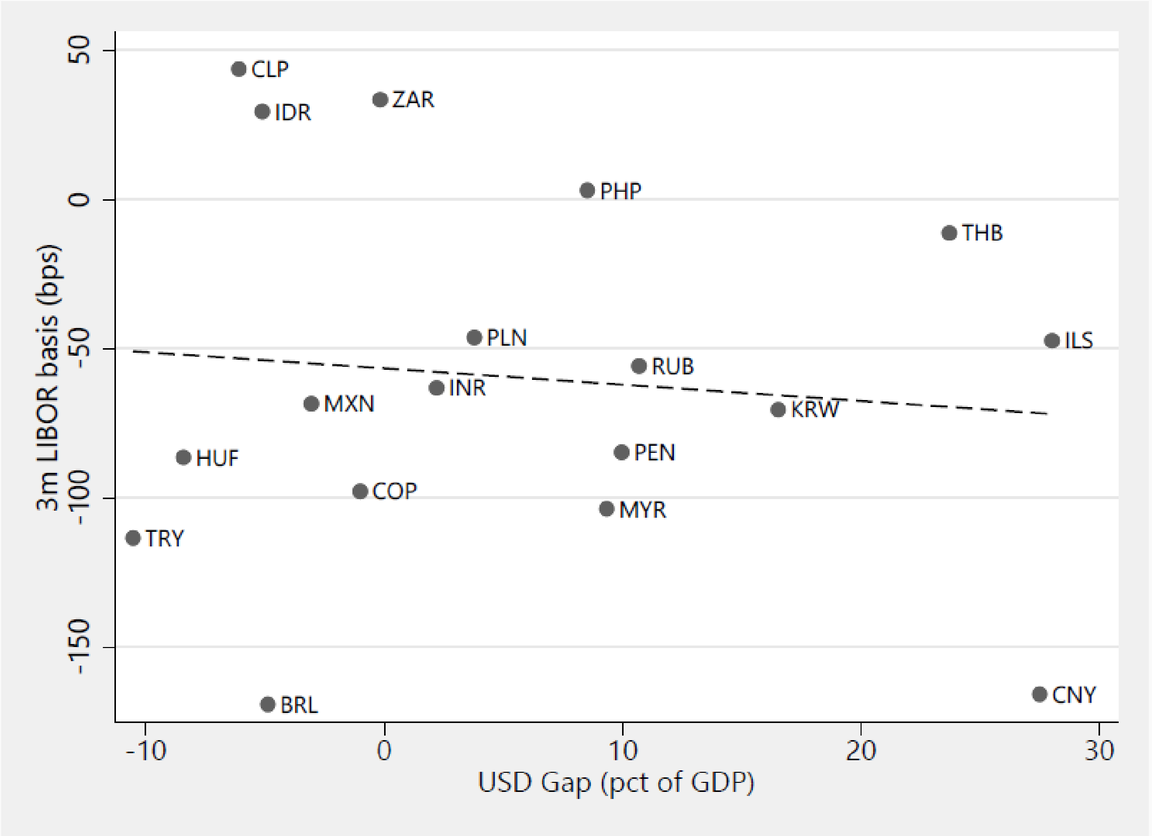


(b) Government bond CIP basis

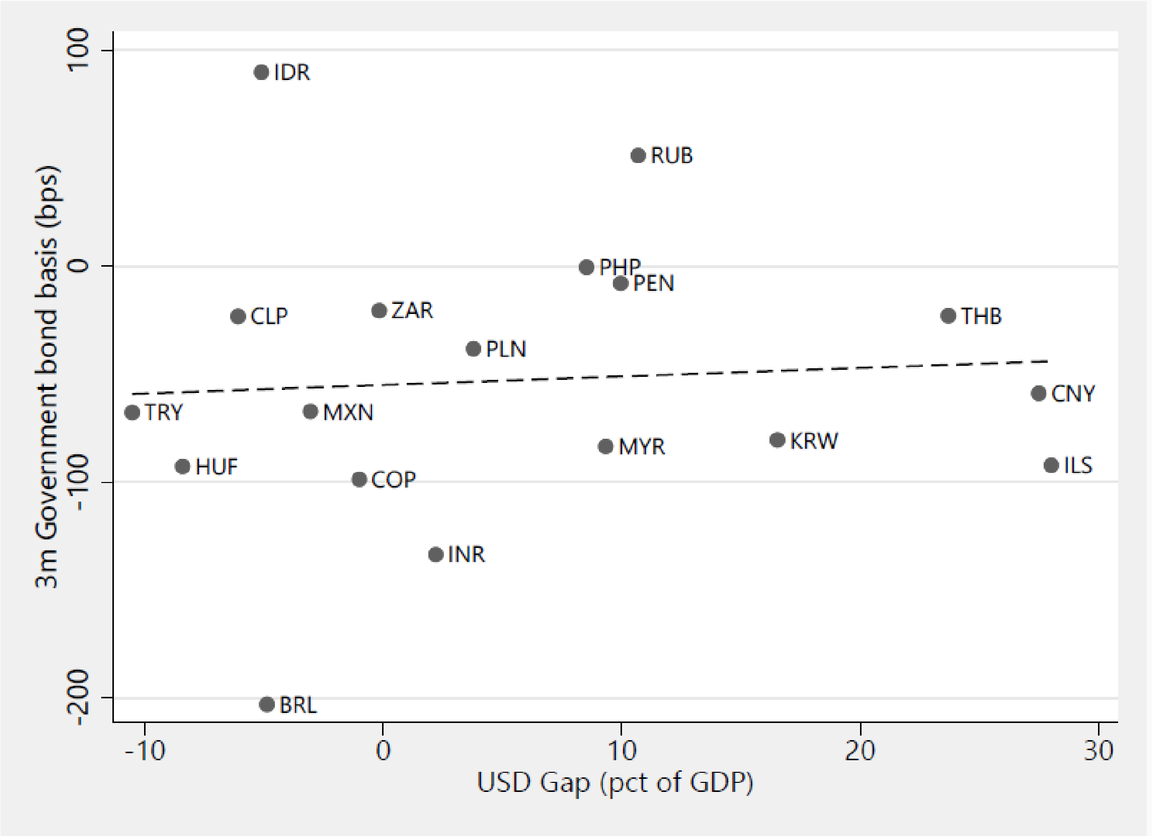
USD Gap is the net external Dollar debt asset position from Benetrix et al. (2019), proxying for net hedging demand. Scatter plots show 2010-2018 means for both variables.

USD Hedging Demand and the CIP Basis: Emerging Economies

Do we observe the corresponding negative relationship in the data? **Not** for EM's:



(a) LIBOR CIP basis

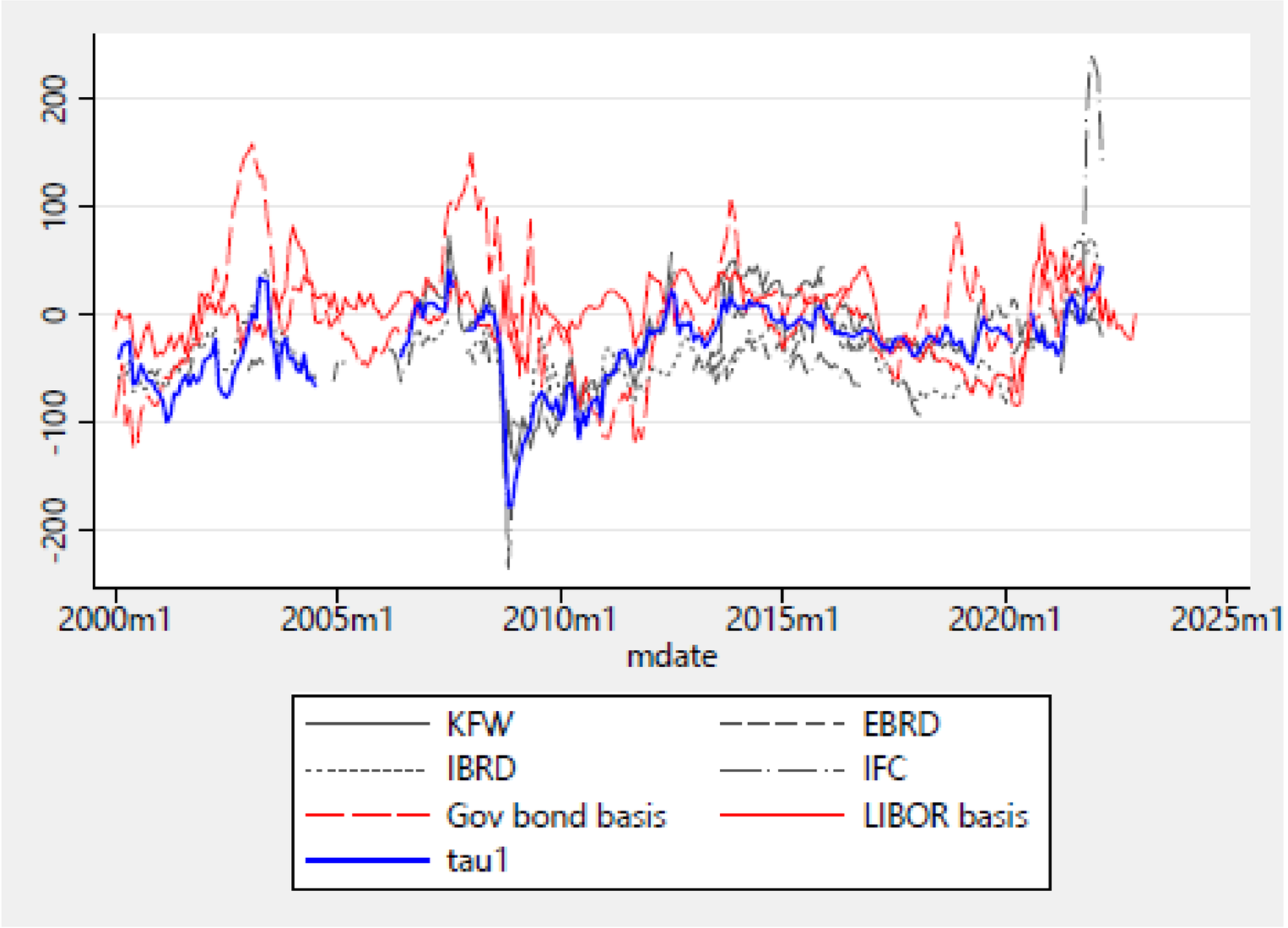


(b) Government bond CIP basis

USD Gap is the net external Dollar debt asset position from Benetrix et al. (2019), proxying for net hedging demand. Scatter plots show 2010-2018 means for both variables.

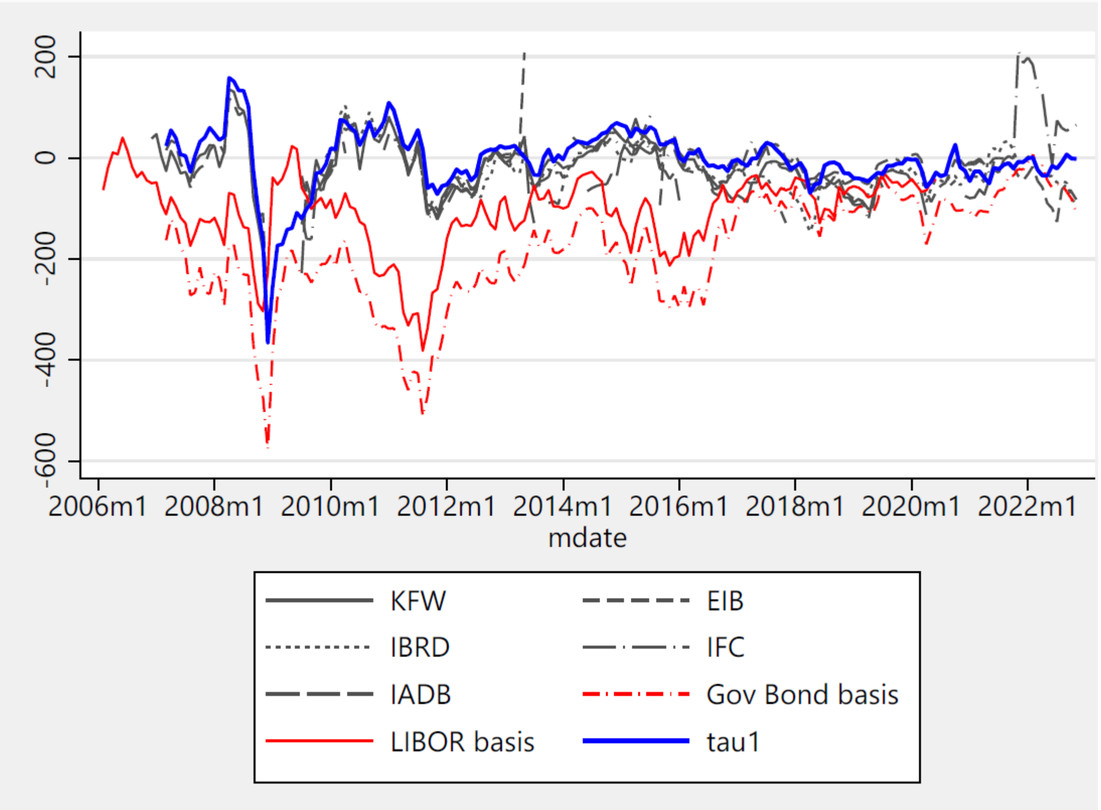
‘Purified’ CIP Basis using Supra National Bond Issuance

South Africa

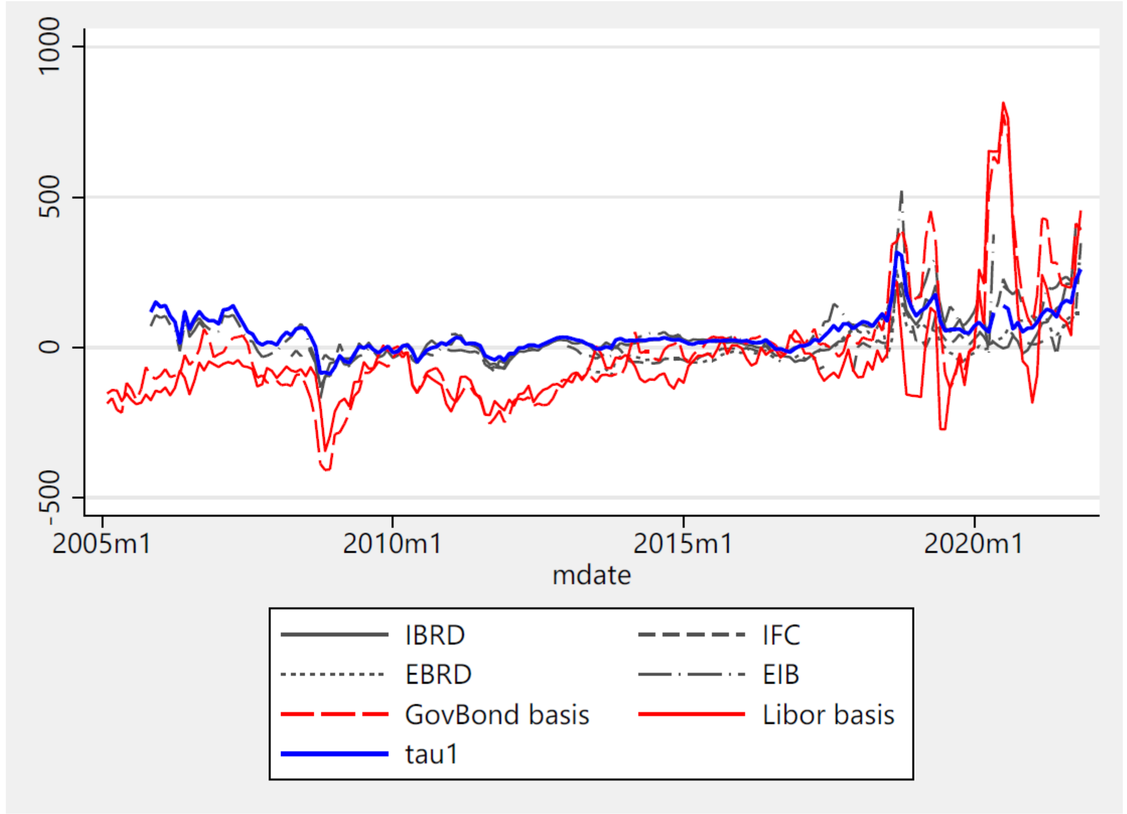


‘Purified’ CIP Basis using Supra National Bond Issuance

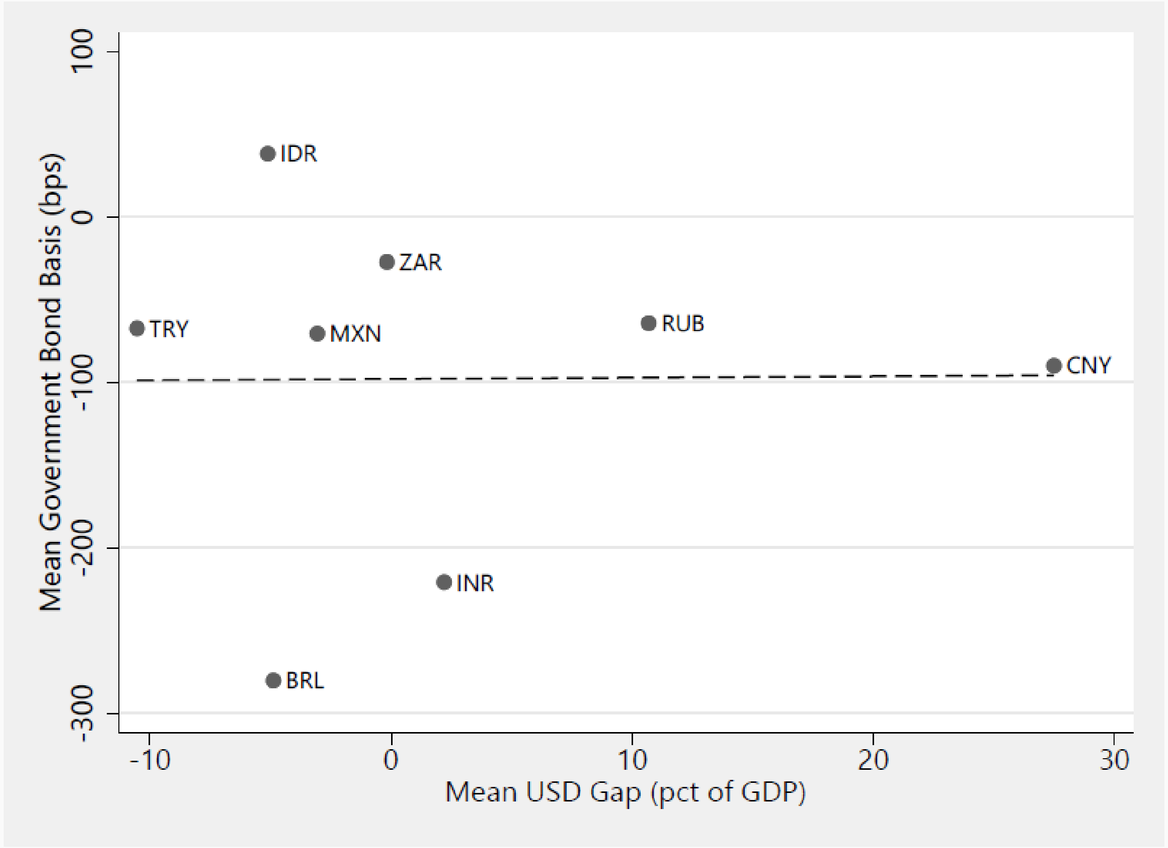
Brazil



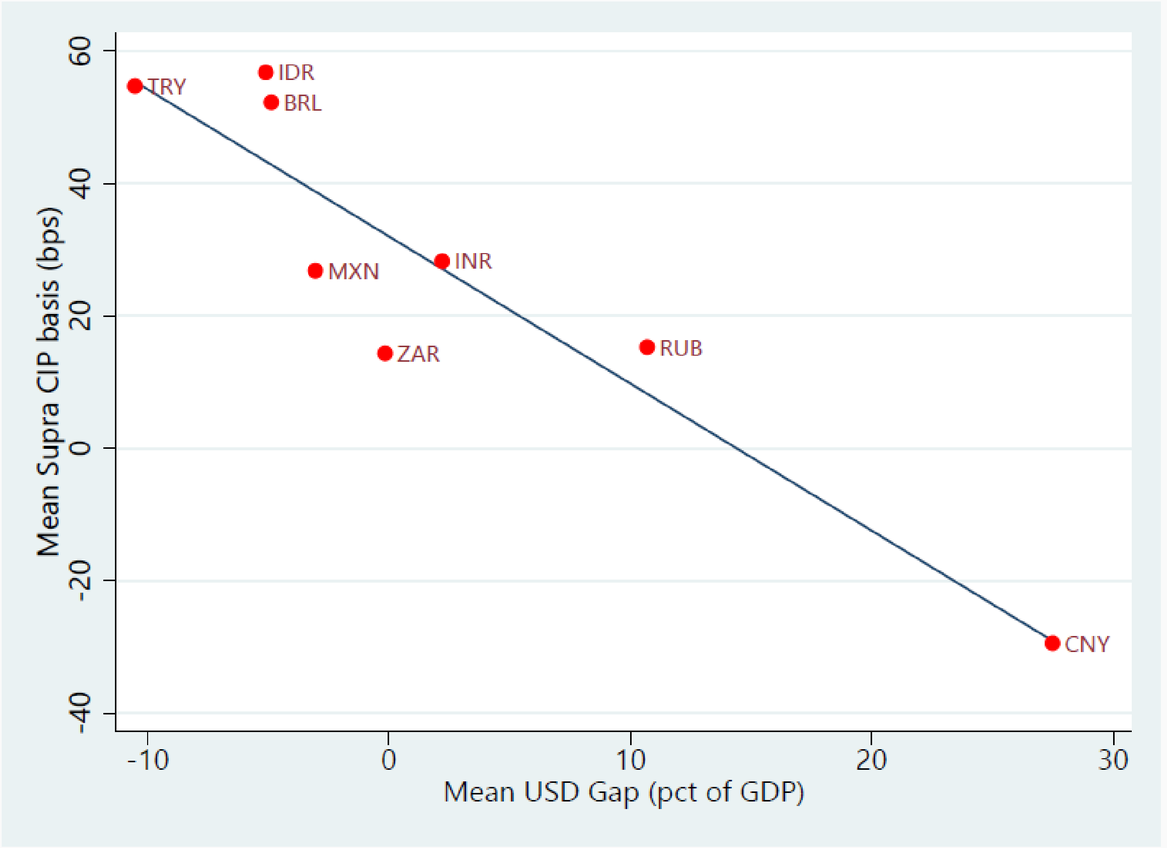
Turkiye



USD Hedging Demand and the purified CIP Basis: Emerging Economies



(a) 3-year LIBOR CIP basis



(b) 3-year Supra CIP basis

USD Hedging Demand and the purified CIP Basis: Emerging Economies

	(1)	(2)	(3)	(4)	(5)	(6)
	LIBOR CIP		Supra CIP			
$\Delta Dollar_t$	-1.662	-1.354	-4.919**	-10.418***	-7.683**	-11.257*
	(4.549)	(4.215)	(1.986)	(3.268)	(2.019)	(3.807)
$\Delta Dollar_t * USDGAP_i$	**0.459**	**0.462**	**-0.424**	**-1.108****		
	(0.576)	(0.883)	(0.337)	(0.493)		
$\Delta Dollar_t * USDGAP_i^{aug}$					**-0.353***	**-0.475*****
					(0.158)	(0.040)
Observations	2,255	901	509	322	509	322
R-squared	0.005	0.005	0.061	0.142	0.031	0.084
Number of currencies	15	6	6	3	6	3

- Results with supranational (purified) CIP consistent with model prediction.
- Results stronger for top 3 EM's currencies with most liquid supra bond markets (TRY, BRL, MXN)
- Results stronger when using augmented hedging need proxy: domestic USD gap plus LC external debt liabilities (hedging needs by foreign investors).
- Magnitude: A 10 pct broad $ appreciation raises the CIP deviation by 0.3 to 0.7 ppt more in EM in the 75th vs. 25th percentile of USD gap.

Impact of Policies on purified CIP Basis: Emerging Economies

Tighter liquidity regulation and CFM amplify CIP sensitivity: $CIP_{it} = a_{it} \frac{\mu_t}{(1+\eta_{i,t})} \times \frac{F^{\uparrow}_{it}}{Y_{it}}$

	(1)	(2)	(3)	(4)	(5)	(6)
			EM Supra CIP			
	Policy: Liquidity Reg. (i)		Policy: Liqudity Reg. (US)		Policy: CFM (i)	
$\Delta Dollar_t$	-7.658*	-6.412	-5.738	-6.489	-6.710**	-5.820
	(4.495)	(5.898)	(3.932)	(5.118)	(1.863)	(2.780)
$\Delta Dollar_t * USDGAP_i^{aug}$	-0.398	-0.032	-0.030	0.064	0.738**	1.017**
	(0.447)	(0.649)	(0.324)	(0.407)	(0.275)	(0.225)
$\Delta Dollar_t * USDGAP_i^{aug} * Policy_{it}$	**0.007**	**-0.078**	**-0.180****	**-0.271****	**-1.721*****	**-2.078****
	(0.065)	(0.104)	(0.088)	(0.114)	(0.295)	(0.217)
$Policy_{it}$	0.024*	0.101***	0.040*	0.045	2.483***	2.452***
	(0.014)	(0.031)	(0.020)	(0.038)	(0.126)	(0.201)
Observations	509	316	509	316	509	316
R-squared	0.038	0.070	0.048	0.055	0.169	0.209
Number of currencies	6	3	6	3	6	3

Notes: Liquidity Regulation indicators are calculated from the IMF's iMaPP database; CFM taken from Fernandez et al. (2016), updated.

Augmented hedging demand proxy interacts more strongly with liquidity regulation of US (global) banks than domestic banks $\Longrightarrow$ foreign investors' hedging demand accommodated by global banks.

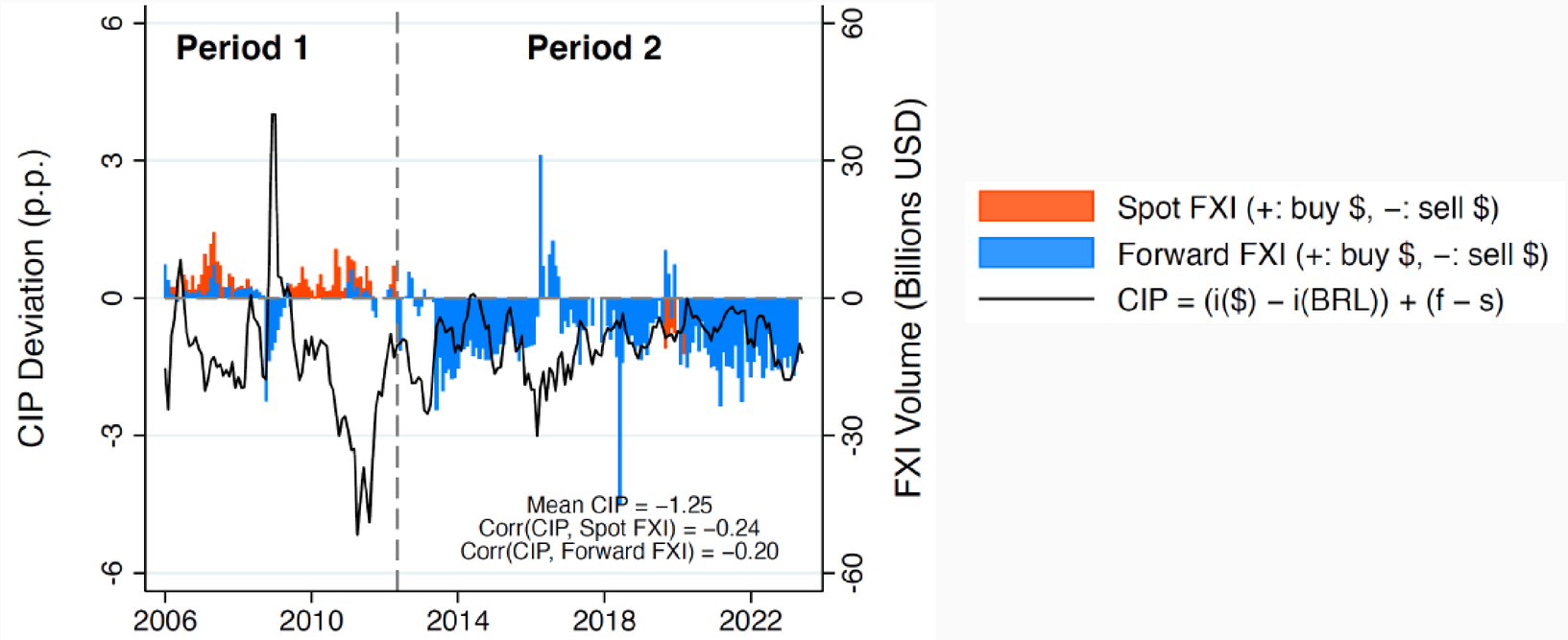
FX Interventions and CIP Basis (Dao, Gourinchas, Mano and Yago, 2023)

If CB absorbs some of the demand for Dollar fwd, then:

$$CIP_{it} = \frac{\mathcal{F}_{it}}{\mathcal{E}_{it}} \frac{R_t^*}{R_{it}} - 1 = \mu_t a_i \frac{F_{it}^*}{W_{it}^*} = \frac{\mu_t a_i}{1 + \eta_{i,t}} \times \frac{(F_{it}^* - F_{it}^{FXI})}{Y_{it}},$$

Any shock to dollar supply μ_t is dampened by the forward FXI (leaning against the wind).

Case of Brazil: have data on forward and spot intervention at daily frequency:



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Tradeoffs between price stability and financial stability

Objective and scenarios		Financial stability		
		No stress	Rising stress	Acute stress (Crisis)
Price stability	Inflation below target	No tradeoff (Loosen MP)	Intertemporal tradeoffs (Loosening MP can create financial risks down the road)	No tradeoff (Loosen MP)
	Inflation is above target	No tradeoff (Tighten MP)	**Tradeoffs for AEs & especially for EMDEs** **(Tightening MP might increase financial risks)**	**No tradeoff for AEs** **Potential tradeoff for EMDEs** **(Loosening MP might lead to outflows and create exchange pressures)**

Potential responses of MP may vary in the face of tradeoffs

- MP could internalize impact on financial stress
  - Pros: MP "gets in all the cracks" (Stein, 2013)
  - Con: MP is a blunt tool and CB's credibility in fighting inflation might suffer

- MP could ignore the impact on financial stress and calibrate the policy rate to focus on the inflation target; other tools policies would tackle financial stress ➔ **Separation Principle**
  - Pro: CB preserves or increases credibility vis-a-vis inflation
  - Caveat: Relies on the ability to deploy effective policies to mitigate tradeoffs at the appropriate time

- What CBs will do will depend on:
  - The extent of financial stress
  - Whether tools/policies other than the policy rate can mitigate or address financial stress

- Several factors complicate EMDEs' ability to navigate tradeoffs
  - Lower CB credibility
  - Weaker fiscal position
  - Larger capital flow volatility and exchange rate pressures

  ↔ IPF use multiple tools to counter financial stability stress and keep inflation expectations anchored

With tradeoffs MP deployment will depend on risk/stress scenarios

Financial Risks / Policies	Monetary policy	Financial and other policies
Modest	If financial conditions tighten and aggregate demand contracts unexpectedly, revising the path of the policy rate can still be consistent with the inflation target Emergency liquidity tools could be used to support specific intermediaries	Strengthen supervision and use stress tests to identify vulnerabilities Use macropru measures to contain risks and build buffers Use buffers if losses materialize
Moderate	CB interventions (liquidity facilities and asset purchases) may be warranted to address stress but must be communicated as temporary	Same as above
High	CB may need to adjust the policy rate and temporarily deviate from its inflation target if stress cannot be contained with other CB tools or policies	Fiscal policy to address systemic insolvencies FXI and capital flow measures could be justified in EMDEs given constraints on tightening
Acute/Crisis	If aggregate demand contracts due to crisis, AEs could loosen MP. EMDEs might still face a tradeoff since loosening MP might lead to outflows and exchange rate pressures	Same as above

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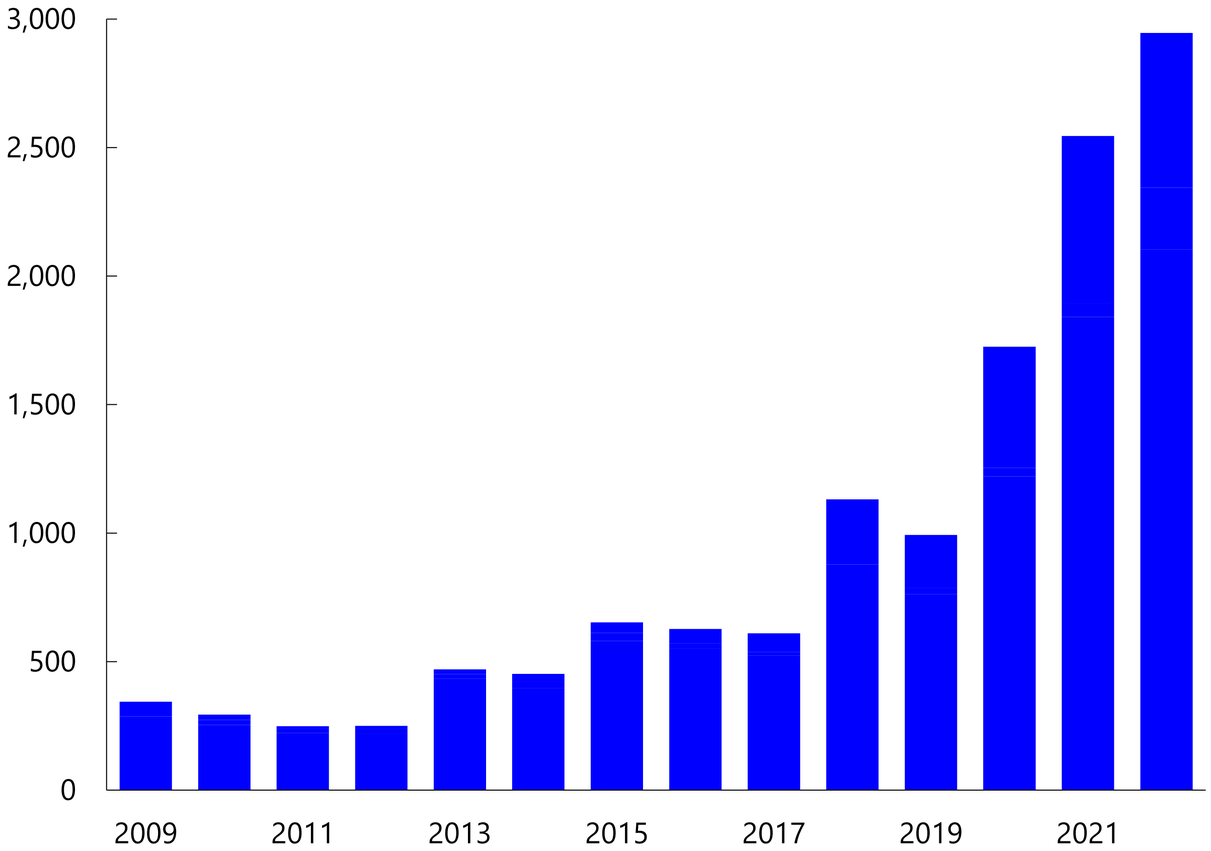
Fragmentation Forces on the Rise

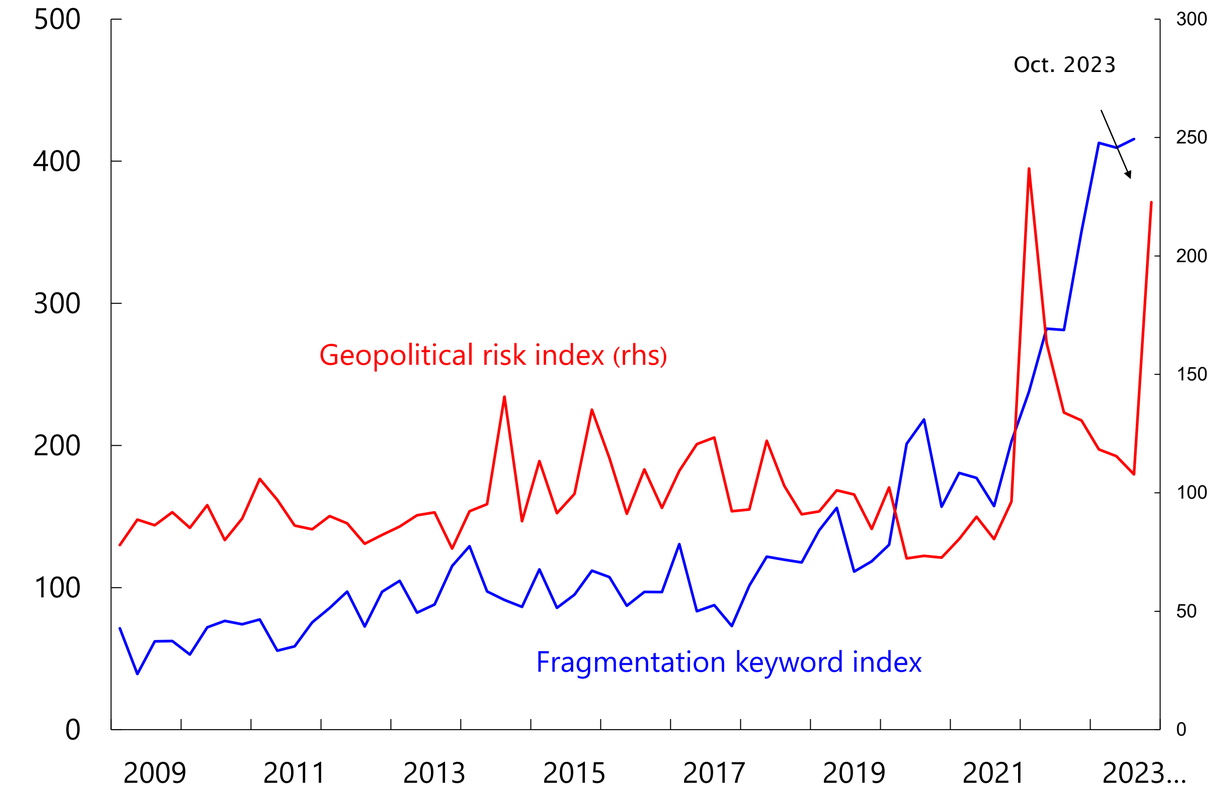
Measures distorting trade and investment

(number)



Geopolitical risk and fragmentation keywords in earnings calls 1/

(index, 2013-15=100)

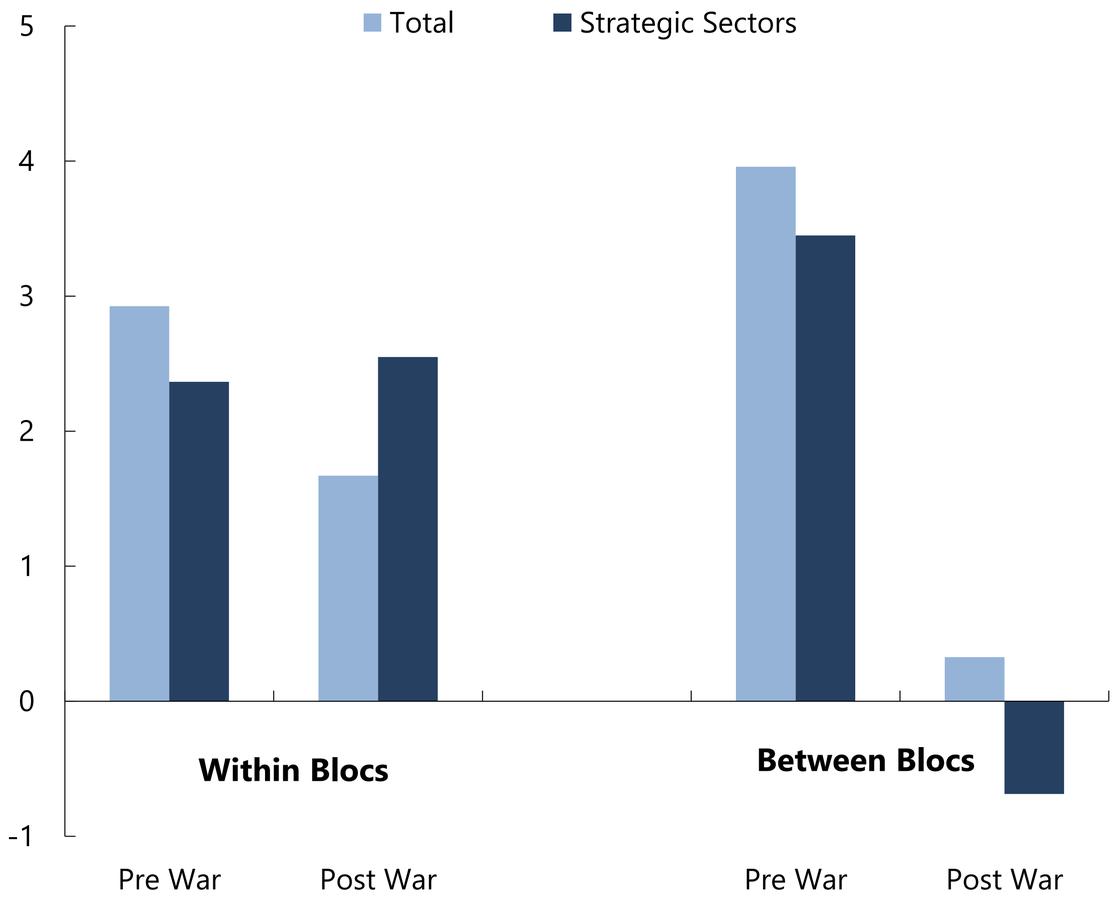


Sources: Caldara and Iacoviello (2022); Hassan and others (2019); NL Analytics, Inc.; Global Trade Alert database; and IMF staff calculations.
1/ Fragmentation indices measure the average number of sentences, per thousand earnings calls, that mention at least one of the following keywords: *deglobalization, reshoring, onshoring, nearshoring, friend-shoring, localization, regionalization.* New trade and investment distorting measures are defined per the classification from the Global Trade Alert database.

Trade between geopolitical blocs is growing more slowly after the Ukraine war

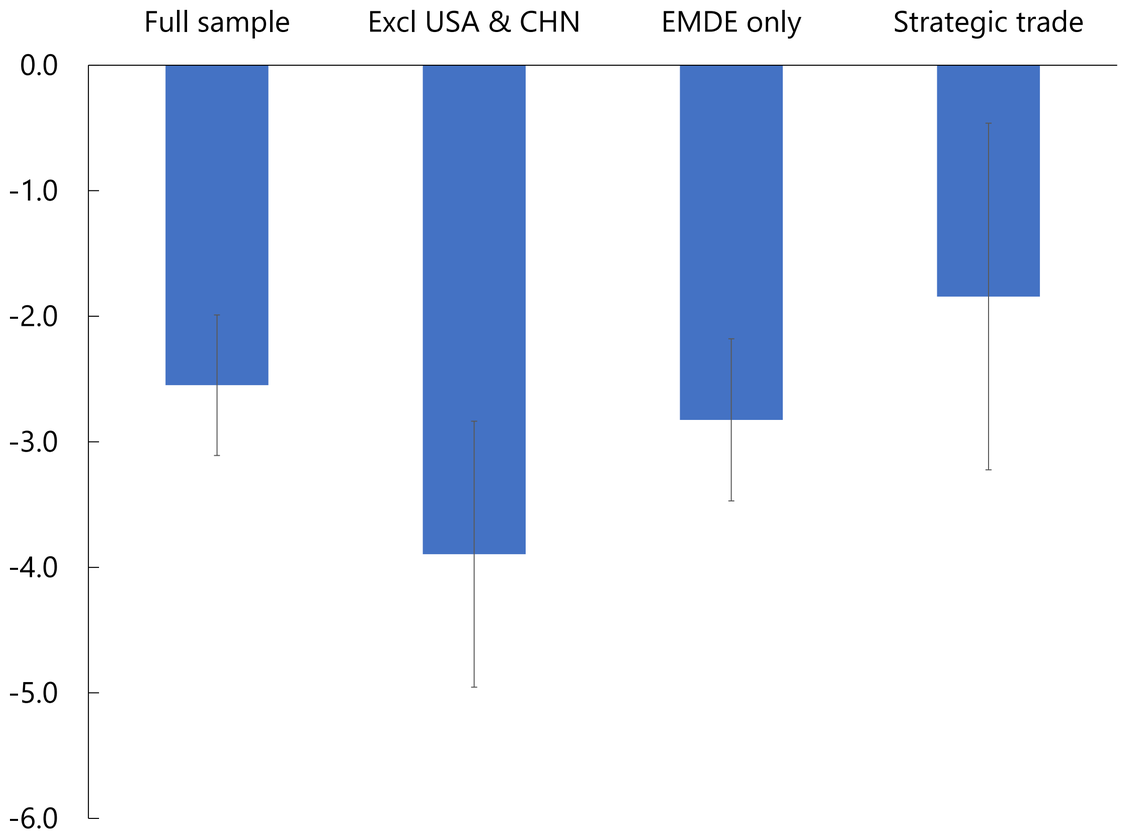
Trade Growth Between and Within Blocs 1/

(Percent)



Trade Growth Between Blocs Minus Trade Growth Within Blocs Post War

(Percentage Point, Normalized by Pre-war Difference)



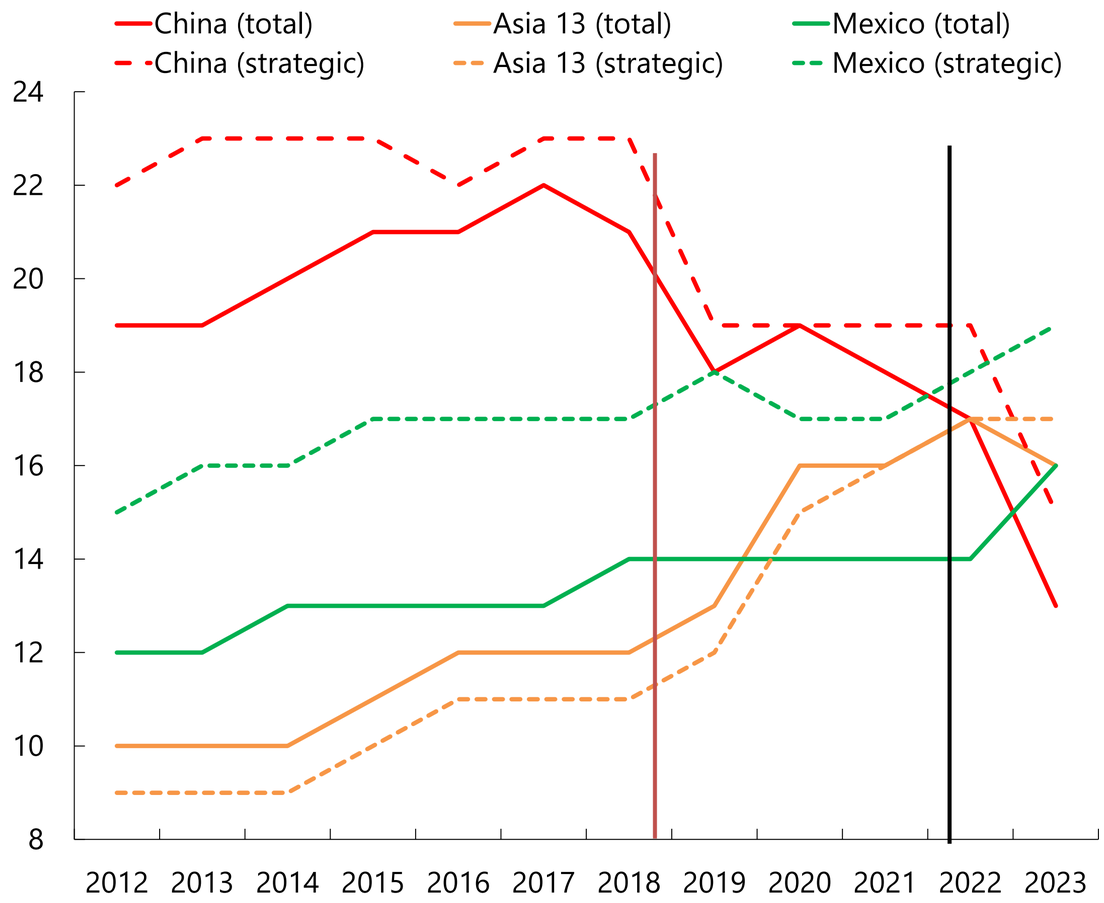
Sources: Trade data monitor; and IMF staff calculations.

1/ Bilateral quarterly growth rates are computed as the difference in log bilateral trade averaged using weights equal to the bilateral nominal trade. Strategic sectors include the following HS 2-digit chapters: 28, 29, 30, 38, 84, 85, 87, 88, 90 and 93. The chart on the right is based on regressions of quarterly growth rate of bilateral trade on an indicator of whether the countries are in different geopolitical blocs interacted with an indicator for post-2022q2, time indicators and country-pair fixed effects. Regressions are weighted by the value of total trade. The bars and whiskers are the coefficients and the 90 percent confidence intervals on the interaction term. Blocs are defined based on the 2022 UNGA vote on the war in Ukraine. The estimation period is 2018Q1-2023Q2.

China has lost ground as a source of US imports and destination of US investment

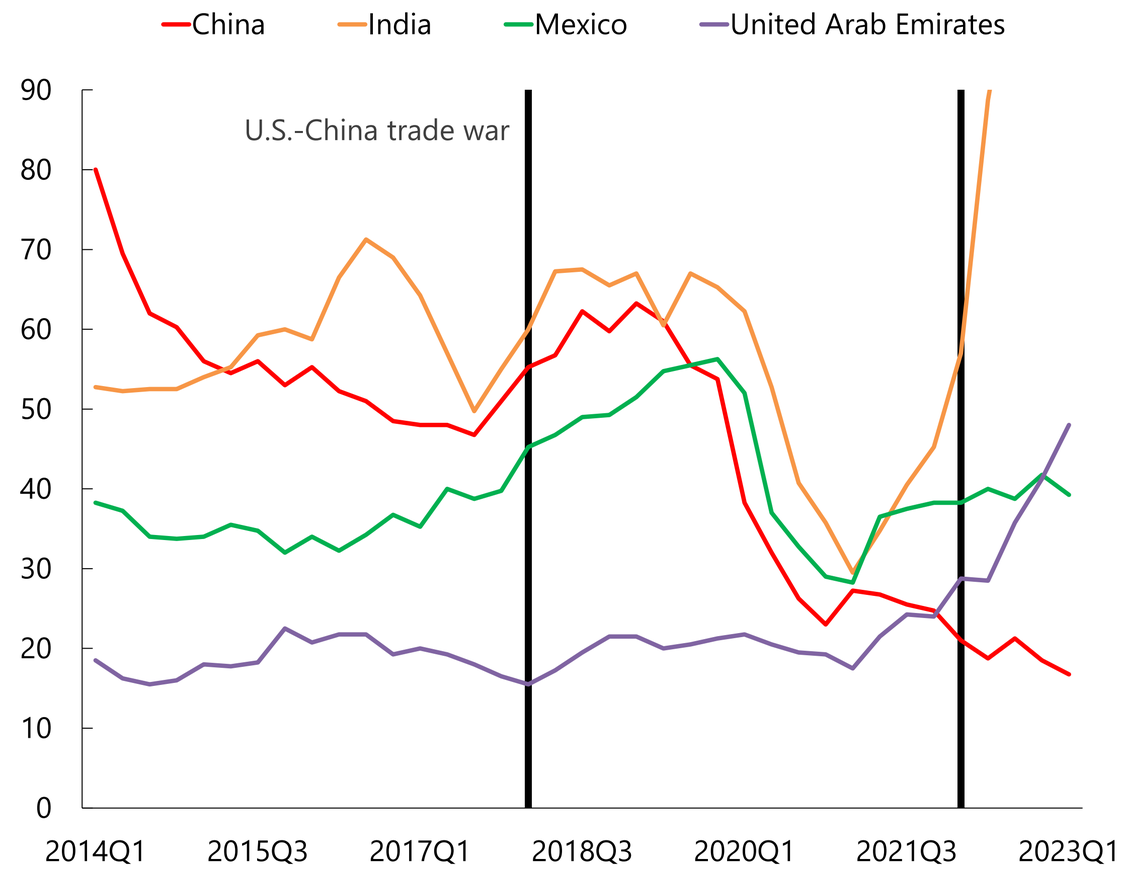
US Imports 1/

(Percent of Total and Strategic Imports)



US FDI

(Count; 4-quarter Moving Average)



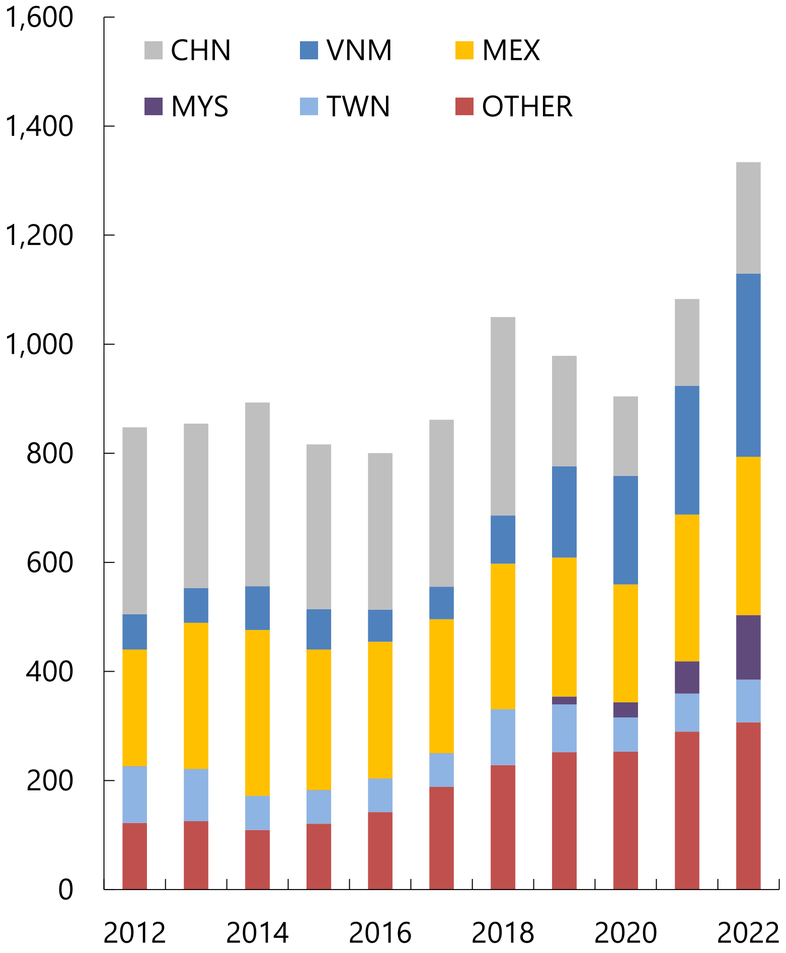
Sources: Trade data monitor; fDI and IMF staff calculations.

1/ Strategic imports are defined following Freund et al. (2023) and include the following HS 2-digit chapters: 28, 29, 30, 38, 84, 85, 87, 88, 90 and 93. Asia-13 is defined following Grossman and Helpman (2020) and include: Bangladesh, Cambodia, Hong Kong, India, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka, Singapore, Taiwan, Thailand, and Vietnam.

Other countries are filling the gap alongside an increase in inward trade from China

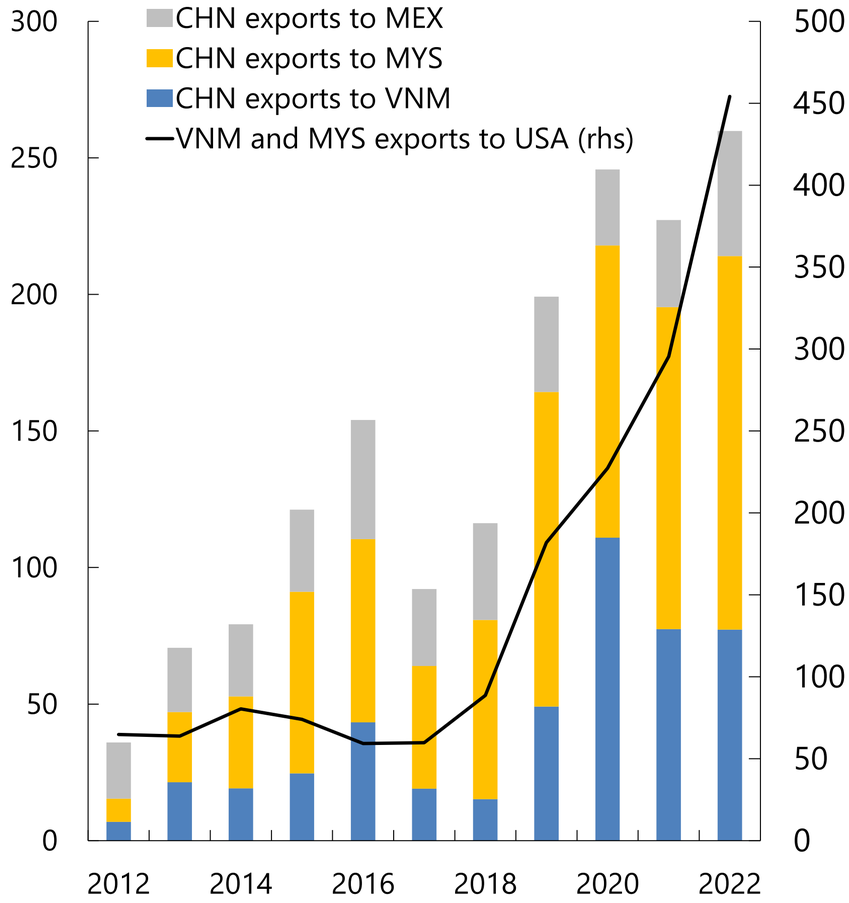
US Imports of EV batteries

(Millions of USD, HS code 850720)



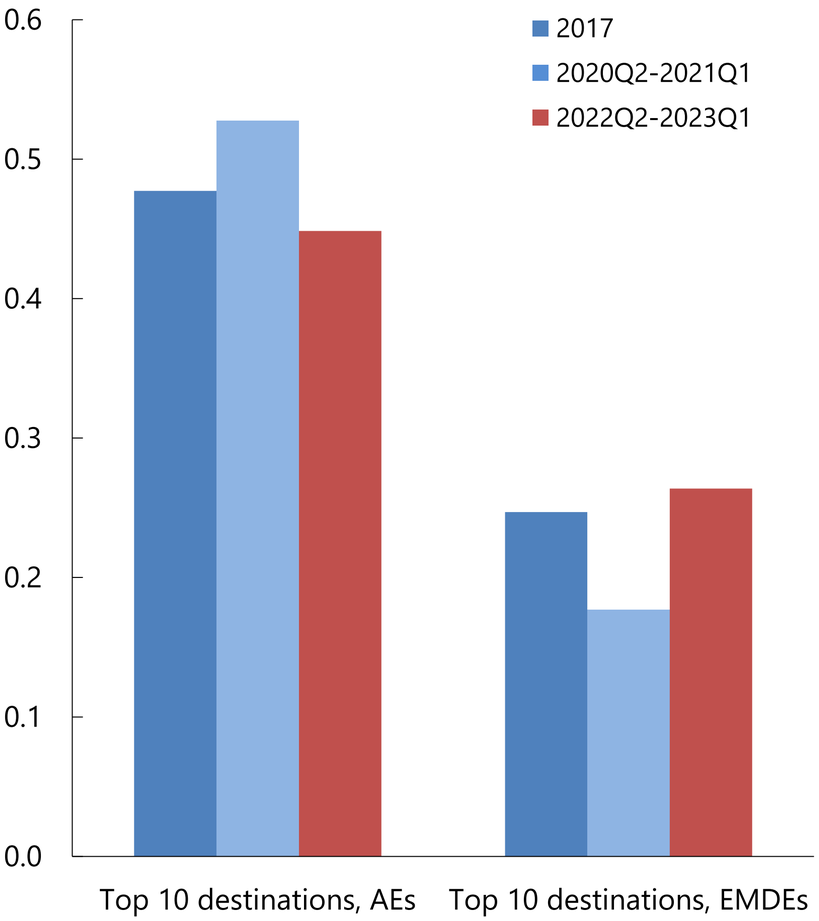
Chinese Exports of EV batteries to Malaysia, Mexico and Vietnam

(Millions of USD, HS code 850720)



FDI from China

(Share of Total Chinese Outward FDI)

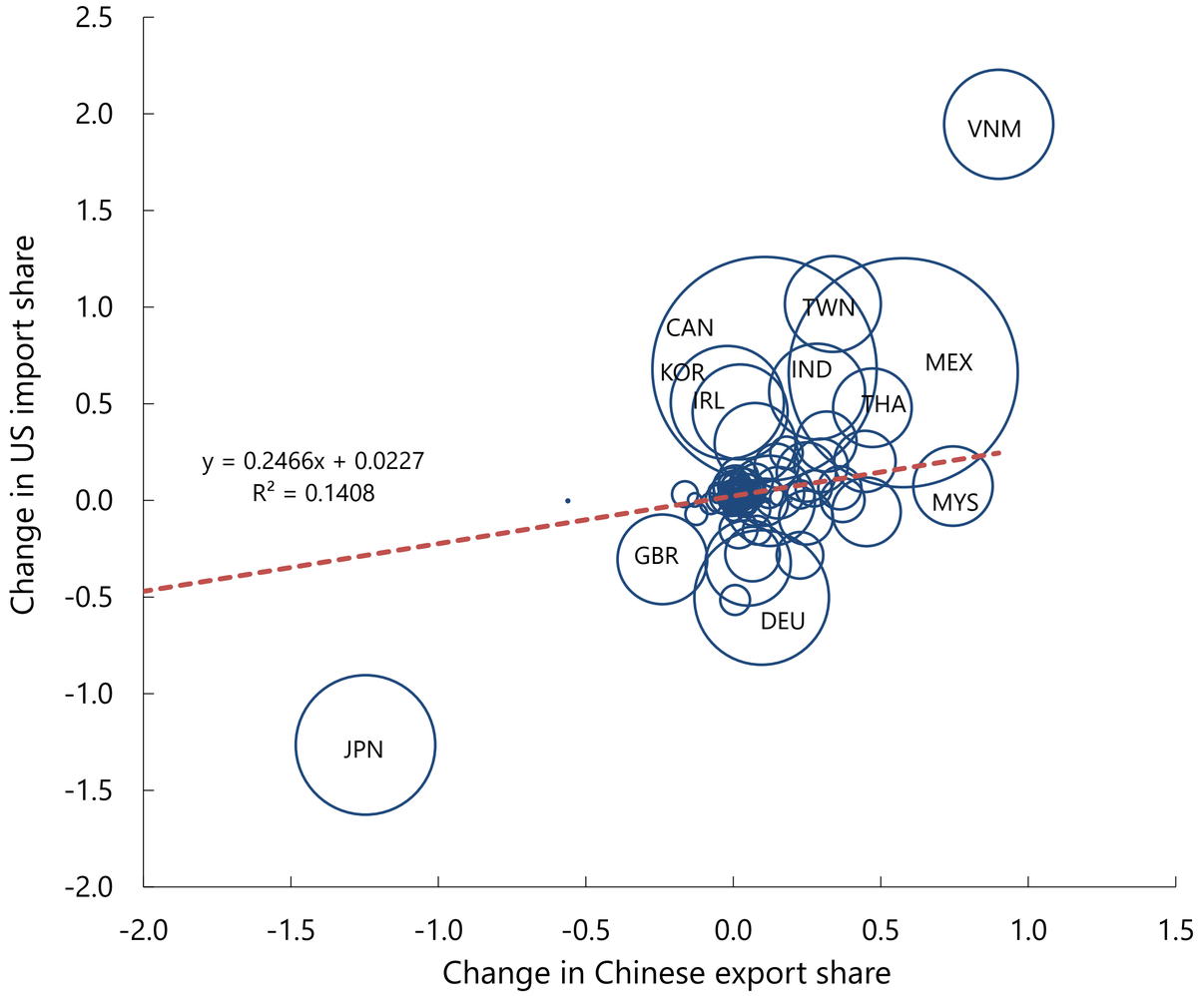


Sources: Trade data monitor; fDi Markets; and IMF staff calculations.

Countries that have gained market share in US see stronger inflows from China

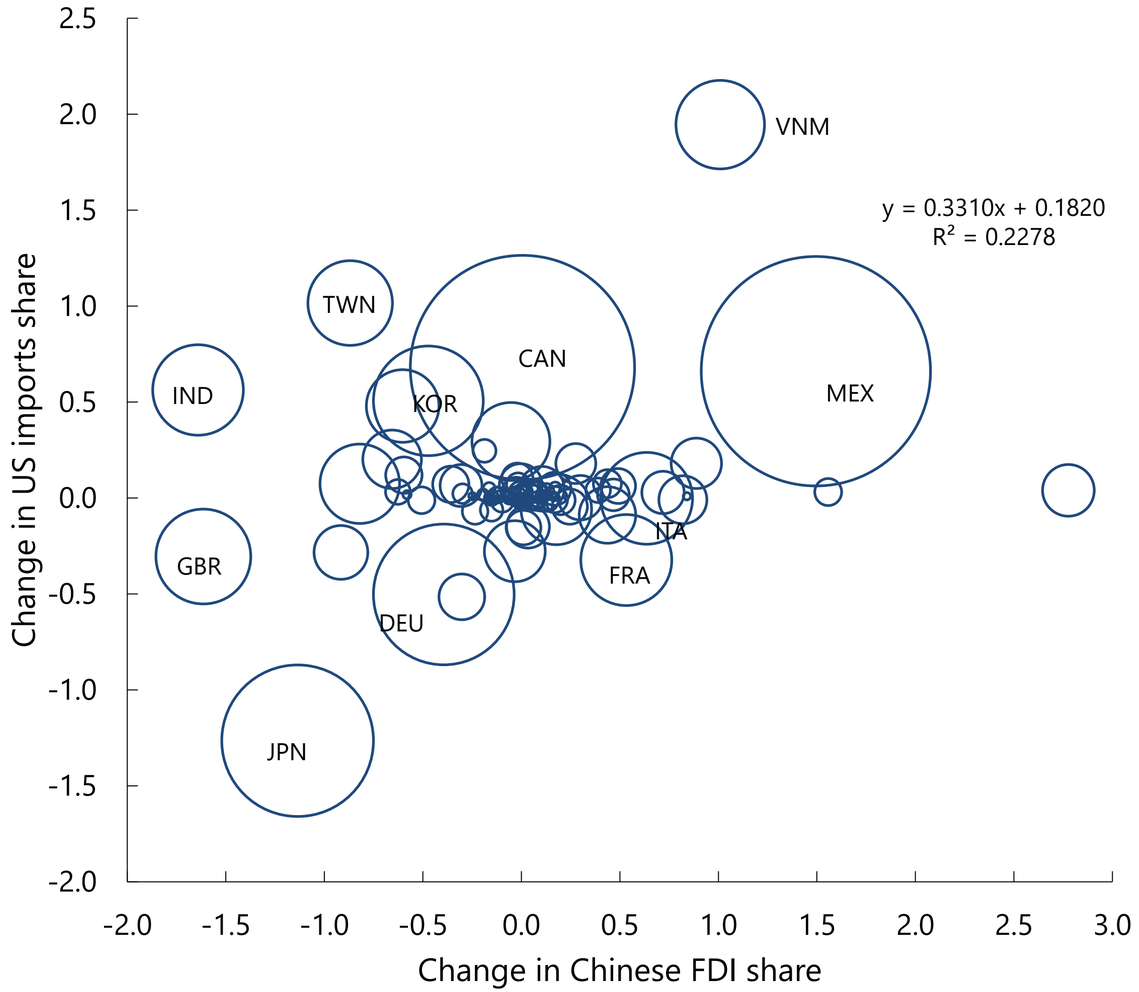
Change in US Import Shares vs Chinese Export Shares

(Percentage Point)



Change in US Import Shares vs FDI from China

(Percentage Point)

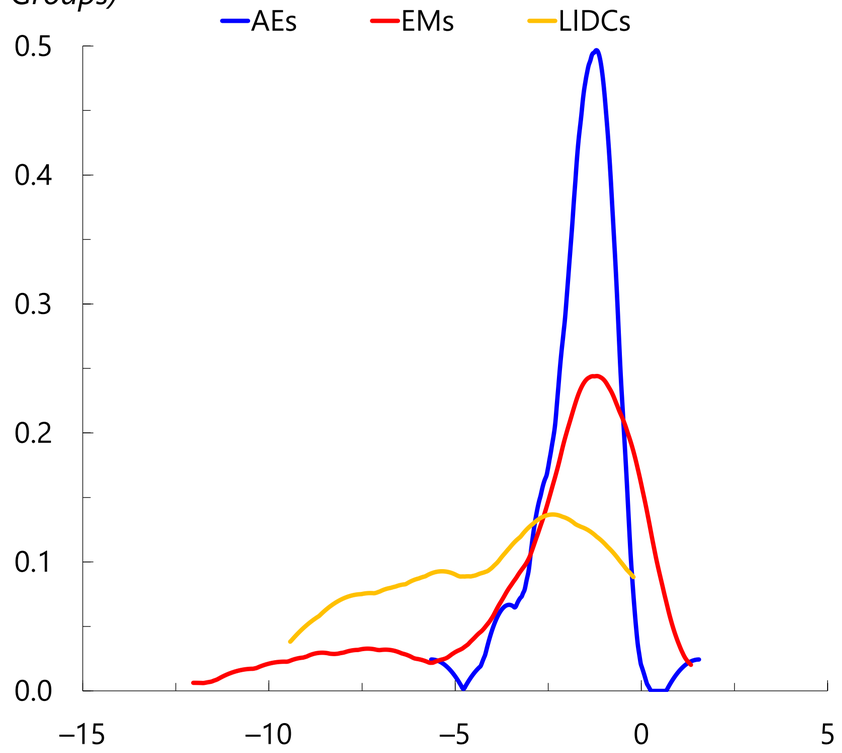


Sources: Trade Data Monitor; fDi Markets; and IMF staff calculations.

But Fragmentation Can be Costly

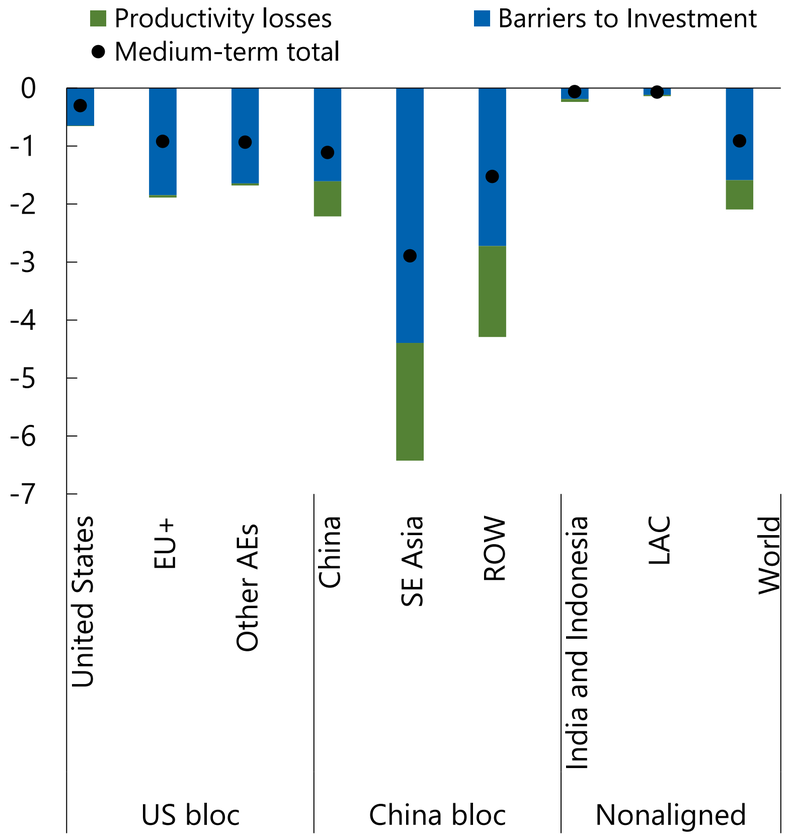
Distribution of Simulated Country GDP Changes due to Trade Fragmentation 1/

(Density of Percent Deviation from Baseline by Country Groups)



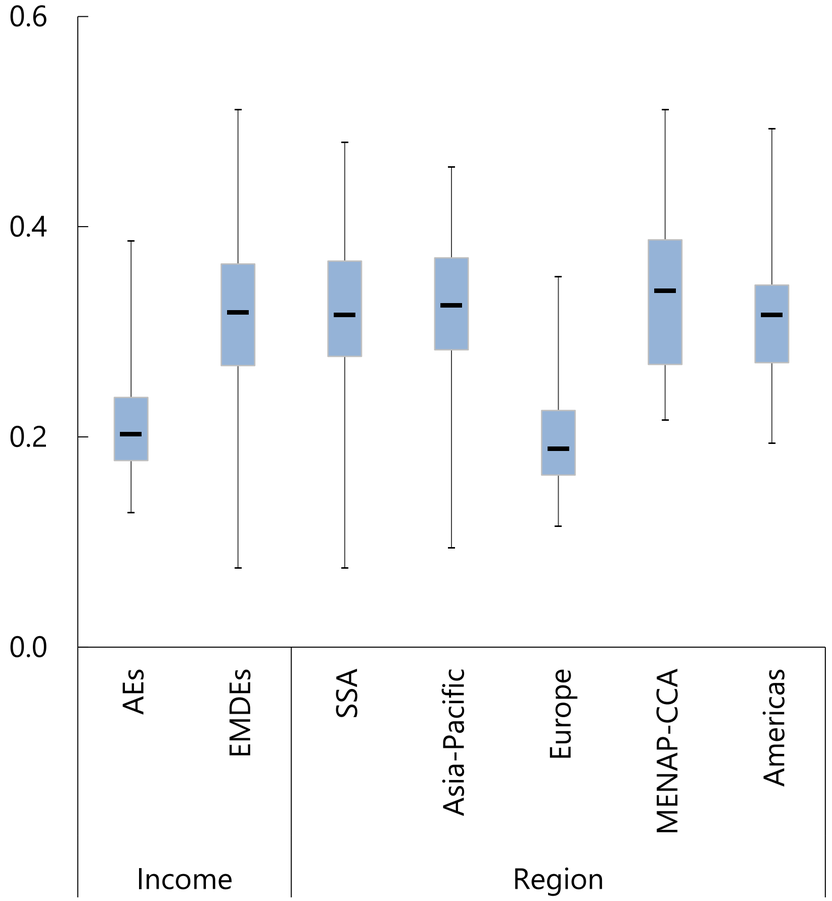
Impact of Investment Flow Barriers on GDP

(Percent Deviation from No-fragmentation Scenario)



Gauging FDI relocation risk 2/

(vulnerability index)



Sources: Atlantic Council; Bailey, Strezhnev, and Voeten (2017); Bolhuis, Chen, and Kett (2023); fDi Markets; NL Analytics; Trade Data Monitor and IMF Staff calculations.
1/ Country-level losses are aggregated using weights based on GDP at purchasing power parity. For details, see Bolhuis, Chen, and Kett (2023).
2/ Figure shows distribution of vulnerability index by income and regional groups, based on post-2009 foreign direct investment flows. AEs = advanced economies; EMDEs = emerging market and developing economies; MENAP-CCA = Middle East, North Africa, Afghanistan, Pakistan, Caucasus, and Central Asia; SSA = sub-Saharan Africa.

Conclusion

- Emerging markets have so-far weathered global shocks well and are displaying remarkable resilience

- However, challenges remain as policy divergences increase:

1. Managing external pressures:
2. Maintaining financial stability while ensuring price stability:
   - Tradeoffs between price and financial stability can arise when inflation is above target and financial risks are rising, complicating the job of CBs, especially in EMDEs
   - Given the additional difficulties that EMDEs might face in navigating tradeoffs, further building CB credibility along with monitoring financial risks and addressing them preemptively is critical
   - Financial fragility may entail non-linearities and temporary deviations from price-stability focused rules may be needed
   - Strengthening macroprudential and resolution frameworks, improving fiscal positions is also key
3. Mitigating the risk of geoeconomic fragmentation:
   - First best: avoid fragmentation
   - Second best: carefully evaluate the costs and benefits of policy choices