Monetary Policy Transmission in Emerging and Latin American Economies

Sebnem Kalemli-Ozcan[1]

[1]Brown University, NBER and CEPR

June 2025

The research is based on my own and joint papers. The views are those of mine and do not necessarily represent the views of the Federal Reserve and the IMF.

Do monetary policy making and its transmission differ in developing vs developed countries?

If so why?

What role do US policies play?

Monetary Policy in Emerging Economies

Emerging economies are largely exposed to fluctuations in external financing conditions

Monetary Policy in Emerging Economies

Emerging economies are largely exposed to fluctuations in external financing conditions

External exposure poses trade-offs and challenges to central banks

- trade-offs: increase vs. decrease policy rates during recessions coinciding w/capital outflows and exchange rate depreciations?
- challenges: “dilemma” vs. “trilemma”? (Rey 13)

Monetary Policy in Emerging Economies

Emerging economies are largely exposed to fluctuations in external financing conditions

External exposure poses trade-offs and challenges to central banks

trade-offs: increase vs. decrease policy rates during recessions coinciding w/capital outflows and exchange rate depreciations?

challenges: "dilemma" vs. "trilemma"? (Rey 13)

An important question:

1. What do emerging market central banks do? (consensus: "monetary policy pro-cyclicality")
2. Does exposure to external financing pose challenges to central banks?

Highly Relevant Academic-Policy Debate

- **Woodford:** “I find it difficult to construct scenarios under which globalization would interfere in any substantial way with the ability of domestic monetary policy to maintain control over the dynamics of inflation.”
- **Rey:** “The monetary trilemma is really a dilemma, because open economies can exercise no monetary autonomy from United States policy (or the global financial cycle) unless they impose capital controls.”
- **Obstfeld:** “An independent monetary policy is feasible for financially open EMEs, but limited in what it can achieve.”

Some Results: Monetary Policy & Short-rate Disconnect

1. Monetary policy is **countercyclical**: central banks lower policy rates during recessions

(a) Central banks in emerging economies generally adhere to Taylor-type rules

(b) Policy rate is positively correlated with GDP growth

(c) Policy rate lowered around episodes of global distress & exo. U.S. mon. pol. tightening

Some Results: Monetary Policy & Short-rate Disconnect

1. Monetary policy is **countercyclical**: central banks lower policy rates during recessions

(a) Central banks in emerging economies generally adhere to Taylor-type rules

(b) Policy rate is positively correlated with GDP growth

(c) Policy rate lowered around episodes of global distress & exo. U.S. mon. pol. tightening

2A. Short-term market rates deviate from policy rates in many emerging economies

(a) in emerging economies: market - policy rate wedge is countercyclical on average

(b) in advanced economies: market rates closely comove with policy rates

Some Results: Monetary Policy & Short-rate Disconnect

1. Monetary policy is **countercyclical**: central banks lower policy rates during recessions

(a) Central banks in emerging economies generally adhere to Taylor-type rules

(b) Policy rate is positively correlated with GDP growth

(c) Policy rate lowered around episodes of global distress & exo. U.S. mon. pol. tightening

2A. Short-term market rates deviate from policy rates in many emerging economies

(a) in emerging economies: market - policy rate wedge is countercyclical on average

(b) in advanced economies: market rates closely comove with policy rates

2B. Short-term disconnect related to economy's external exposure & financing conditions

- Tighter (looser) financial conditions related to limited pass-through of policy to market rate

Monetary Policy Rates in Emerging Economies

What Do Central Banks in Emerging Economies Do?

- Empirical evidence on the behavior of policy rates
  - (a) estimation of central bank reaction function
    OLS estimation of Taylor-type rule (Taylor 93, Carvalho et al. 21)
  - (b) correlation of policy rates with GDP growth
  - (c) policy rates around episodes of global distress ("risk-off") GFC, COVID-19
  - (d) response of policy rates to identified U.S. monetary policy shocks + Taper Tantrum
    High-frequency surprises in U.S. interest rates (Gertler & Karadi 15)

Estimated Central Banks' Reaction Function (Panel)

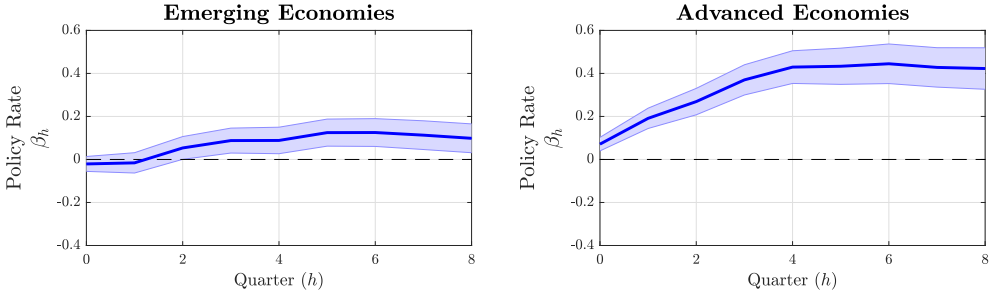
$$i_t^P = \alpha + \beta_1 i_{t-1}^P + \beta_2 \pi_t + \beta_3 \text{output gap}_t + \epsilon_t$$

	Emerging Economies	Advanced Economies
i_{t-1}^P	0.826***	0.917***
	(0.0079)	(0.0095)
π_t	**0.420*** **	**0.282*** **
	(0.034)	(0.032)
output gap$_t$	**0.0597*** **	**0.0996*** **
	(0.020)	(0.013)
R-Squared	0.87	0.95
No. of Countries	38	11
Country FE	✓	✓

- Estimates similar across emerging & advanced economies
- Estimates imply $\rho \approx 0.8$, $\phi_\pi \approx 2.5$, $\phi_y \approx 0.4$ as Taylor-rule coefficients $i_t^P = \rho i_{t-1}^P + (1 - \rho)\left(\phi_\pi \pi_t + \phi_y \text{gap}_t\right) + \varepsilon_t^P$

Cyclicality of Policy Rates (Panel)

$$i^P_{t+h} = \alpha_h + \beta_h \Delta \text{GDP}_t + \gamma_h i^P_{t-1} + \epsilon^P_{t+h}$$

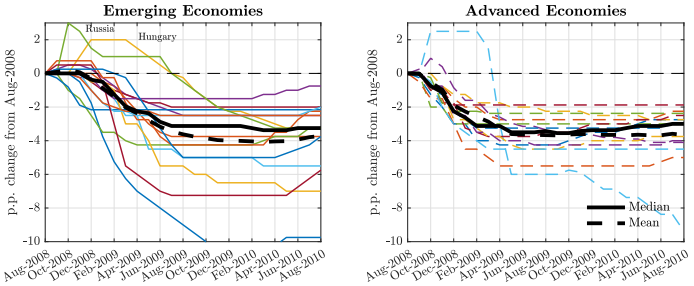


- policy rate increases when domestic GDP growth is high...

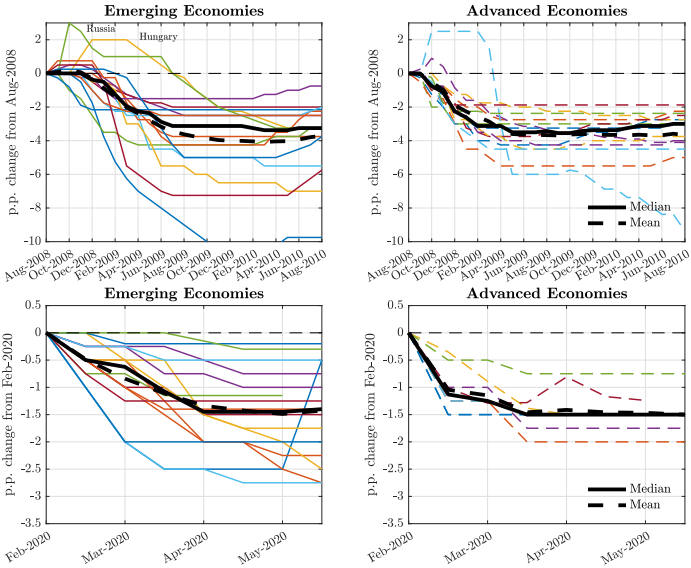
...less in EMEs than in AEs, possibly due to prevalence of supply shocks in EMEs

(consistent w/ Taylor-rule estimates, Frankel 10)

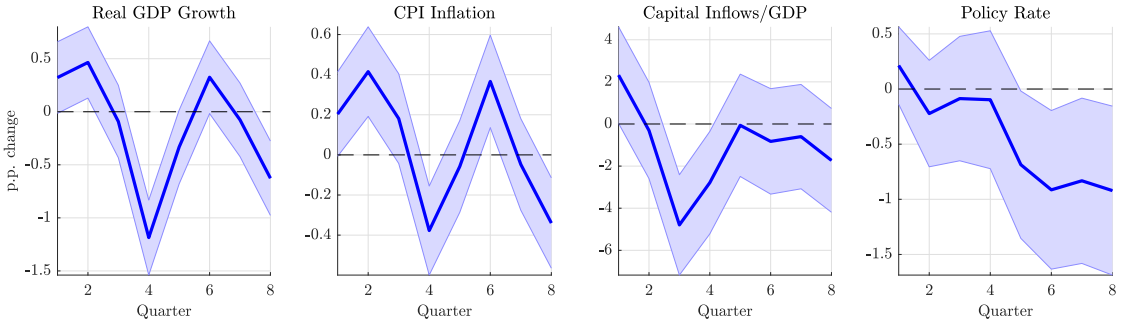
Monetary Policy Rates Around Episodes of Global Distress



Monetary Policy Rates Around Episodes of Global Distress



U.S. Mon. Pol. Tightening & Policy Rates in Emerging Economies



Impulse: 1 p.p. exogenous increase in Fed Funds Rate (Gertler & Karadi 15)

- policy rate declines after U.S. mon. pol. tightening (among lower GDP and capital inflows)
  (see also Miranda-Agrippino & Rey 20, Dedola et al. 17, Degasperi et al. 23, Kalemli-Ozcan & Unsal 24)

Short-term Market Rates in Emerging Economies

Policy Rates and Short-term Market Rates

Policy rates

> "Target interest rate set by central banks in their efforts to influence short-term interest rates as part of their monetary policy strategy"

Policy Rates and Short-term Market Rates

Policy rates

> "Target interest rate set by central banks in their efforts to influence short-term interest rates as part of their monetary policy strategy"

Relevant short-term market rates:

- Treasury rates: rates at which governments issue short-term bonds

Policy Rates and Short-term Market Rates

Policy rates

> "Target interest rate set by central banks in their efforts to influence short-term interest rates as part of their monetary policy strategy"

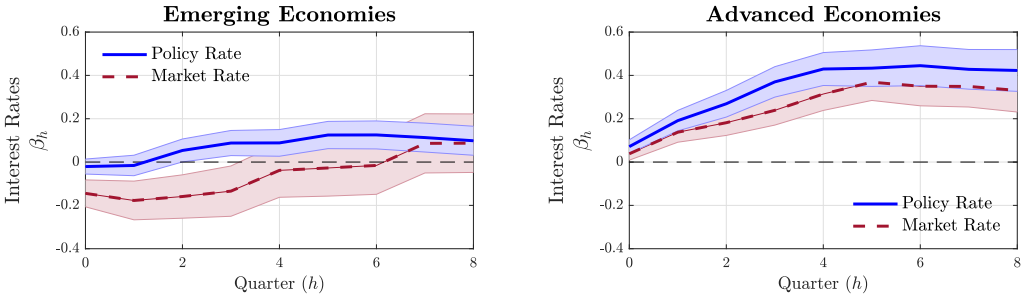
Relevant short-term market rates:

- Treasury rates: rates at which governments issue short-term bonds

Next: **3-month** treasury rates (baseline) in AEs & EMEs

Cyclicality of Policy Rates & Market Rates

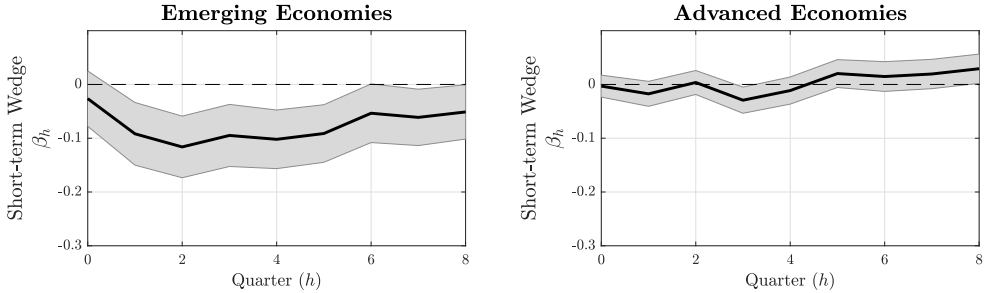
$$i_{t+h} = \alpha_h + \beta_h \Delta \text{GDP}_t + \gamma_h i_{t-1} + \epsilon_{t+h}$$



- Market & policy rates display opposite cyclicality in EMEs, but track each other in AEs
  - Important for assessing the cyclical stance of monetary policy in EMEs

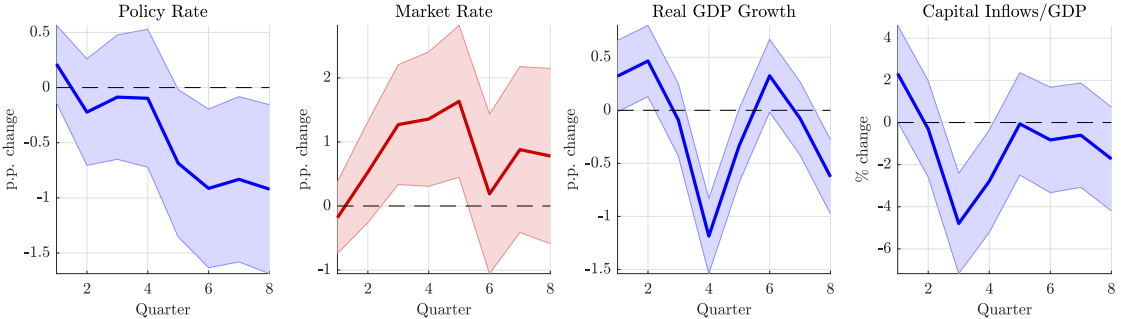
Cyclicality of Short-rate Wedge

Short-term Wedge: $i_t^M - i_t^P$



- Short-term wedge is countercyclical in EMEs, acyclical in AEs

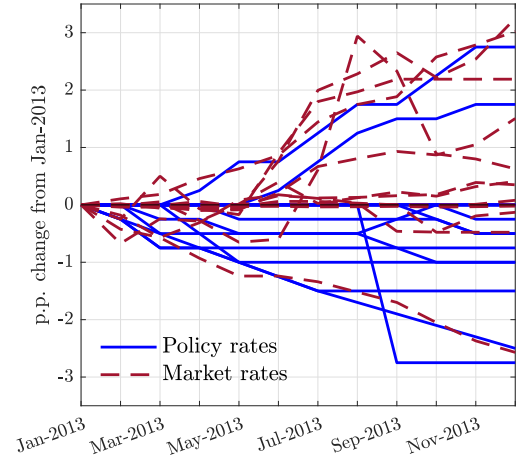
U.S. Monetary Policy Tightening, Policy Rates & Market Rates

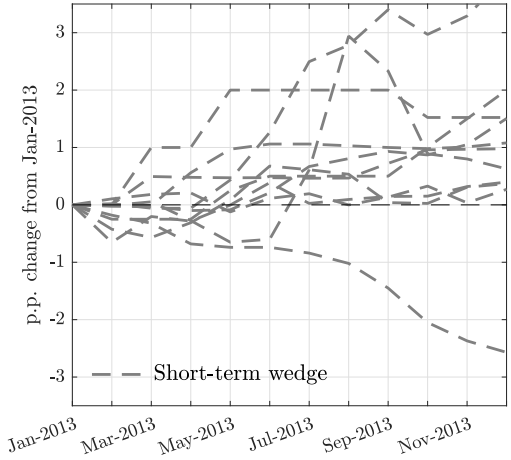


Impulse: 1 p.p. exogenous increase in Fed Funds Rate (Gertler & Karadi 15)

- Policy and market rates display opposite response to US MP in emerging economies
- Policy rates decline, while market rates increase after US MP tightening (Kalemli-Ozcan 19)

Policy and Market Rates Around Taper Tantrum





Short-term Disconnect & External Financing Conditions

External Exposure and External Financing Conditions

- **External exposure**: domestic banks' external liability share
  - Domestic banks are central in gov't bond holdings
  - Domestic banks are relevant gateway to external financing

- **External financing conditions**: EMBI/CEMBI spread
  - Difference between return on EM's USD and US gov't bonds
  - Proxy for country-level external financing conditions widely available across countries

Big Picture Facts on Debt consistent with Home Bias: 60-40 Portfolio

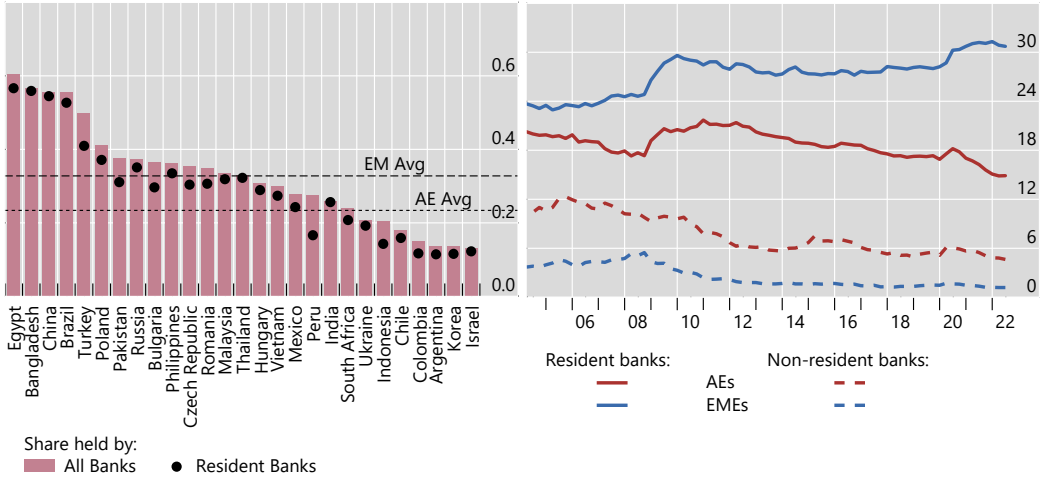
Domestic investors hold 61% of corporate and sovereign bonds, whereas foreign investors 39%

For sovereign debt in EM:

- Domestic banks: 26%
- Domestic non-banks: 28%
- Foreign banks: 6%
- Foreign non-banks: 17%
- Domestic central banks: 7%
- Foreign central banks: 16%

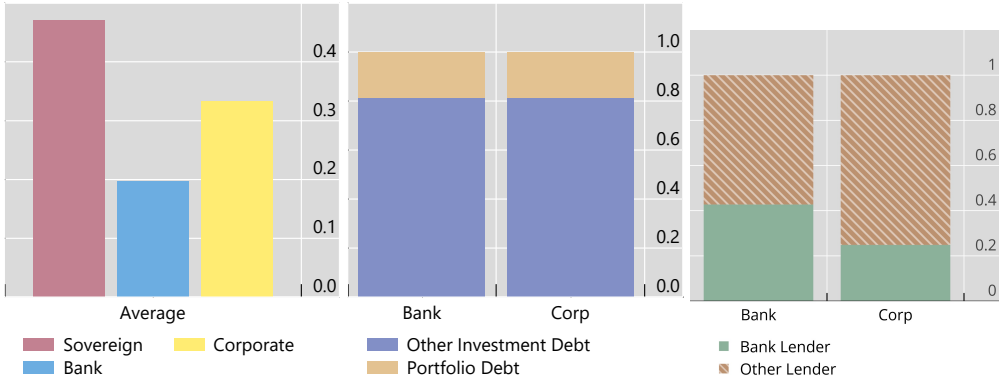
For external part, non-banks are important for sovereign (mostly local currency) as they invest in bonds, and banks important for corporate (mostly FX).

Domestic banks are important investors in EMEs government bonds



Source: Fang, Hardy, and Lewis (2023) and Hardy and Zhu (2023)

Non-Sovereign external borrowing of EMEs mainly shaped by domestic and global banks (2022)



Share of External Debt | Shares of Instruments | Shares of Lenders

Notes: The source of the data for these figures is Avdjvev et al. (2022). See also Fang, Hardy, and Lewis (2023), Hardy and Zhu (2023), and Arslanalp and Tsuda (2022).

Short-term Wedge and External Conditions

$$i^M_{c,t} - i^P_{c,t} = \gamma_c + \gamma_t + \beta_1 \text{External Premium}_{c,t} + \beta_2 \text{External Exposure}_{c,t} + \epsilon_{c,t}$$

	Dependent variable: Short-term wedge $i^M_{c,t} - i^P_{c,t}$					
External Premium (β_1)	0.211***		0.154***	0.157***		0.088*
	(0.030)		(0.029)	(0.036)		(0.036)
External Exposure (β_2)		0.144***	0.133***		0.126***	0.120***
		(0.012)	(0.012)		(0.012)	(0.012)
R-squared	0.442	0.460	0.465	0.496	0.512	0.513
Observations	3027	3027	3027	3027	3027	3027
Countries	30	30	30	30	30	30
Country FE	✓	✓	✓	✓	✓	✓
Month FE				✓	✓	✓

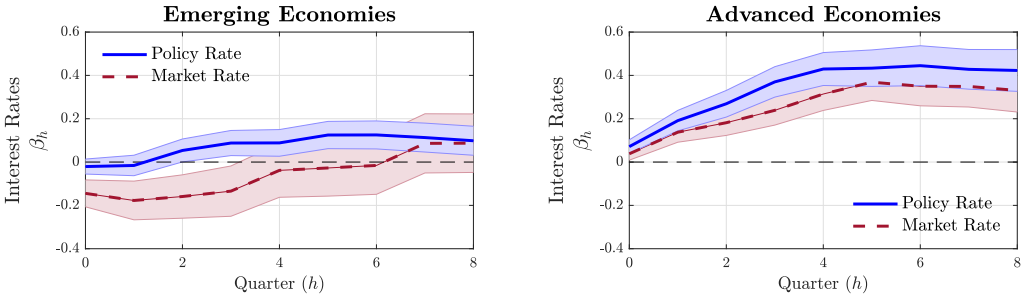
$^{*}\ p < 0.05, ^{**}\ p < 0.01, ^{***}\ p < 0.001$

External Premium: EMBI spread; External Exposure: domestic banks' foreign liabilities

Latin America

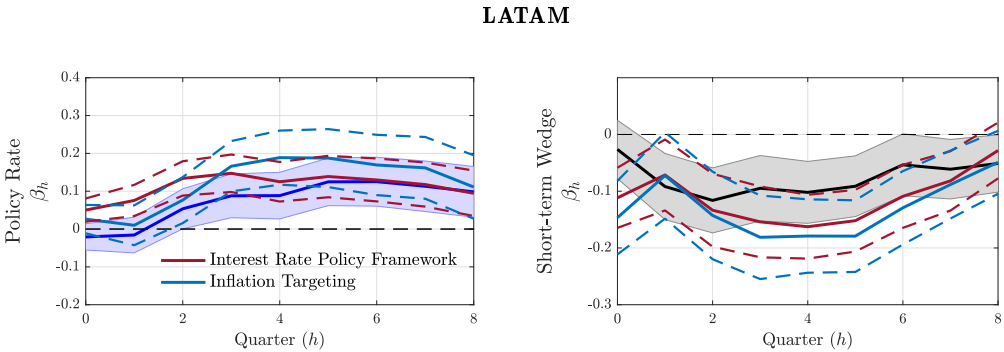
Cyclicality of Policy Rates & Market Rates

$$i_{t+h} = \alpha_h + \beta_h \Delta \text{GDP}_t + \gamma_h i_{t-1} + \epsilon_{t+h}$$



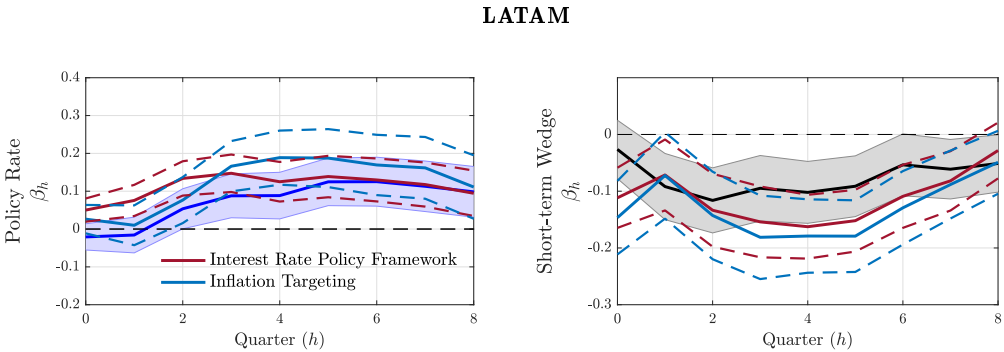
- Market & policy rates display opposite cyclicality in EMEs, but track each other in AEs
  - Important for assessing the cyclical stance of monetary policy in EMEs

Cyclicality of Short-rate Wedge



- Short-term wedge is countercyclical in LATAM, regardless of MP framework

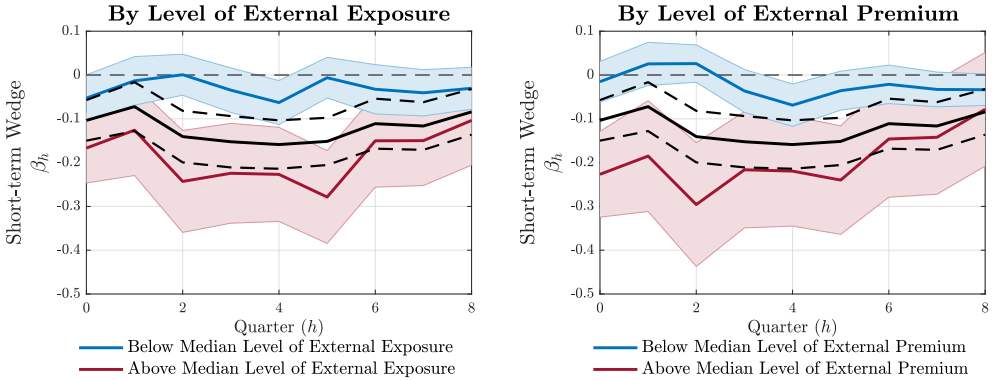
Cyclicality of Short-rate Wedge



- Short-term wedge is countercyclical in LATAM, regardless of MP framework

Cyclicality of short-rate wedge by external factors

Short-term wedge: $(i^M - i^P)_{t+h} = \alpha_h + \beta_h \Delta \text{GDP}_t + \gamma_h stw_{t-1} + \epsilon_{t+h}$



Model

A Model of Domestic Banks in Emerging Economies

Framework Partial-equilibrium model of banking sector in emerging economies

A Model of Domestic Banks in Emerging Economies

Framework Partial-equilibrium model of banking sector in emerging economies

Home Banks operate in home-currency bond market | risk neutral

Asset side: short-term home-currency market bonds ($B^M_{c,t+1}$) at market rate $R^M_{c,t}$

Liability side: home-currency deposits ($D_{c,t+1}$) at policy rate $R^P_{c,t}$

dollar bonds ($D^\star_{c,t+1}$) at **dollar funding rate** $\hat{R}^\star_{c,t} \neq R^\star_t$ (e.g. Bianchi and Lorenzoni 22)

A Model of Domestic Banks in Emerging Economies

Framework Partial-equilibrium model of banking sector in emerging economies

Home Banks operate in home-currency bond market | risk neutral

Asset side: short-term home-currency market bonds ($B^M_{c,t+1}$) at market rate $R^M_{c,t}$

Liability side: home-currency deposits ($D_{c,t+1}$) at policy rate $R^P_{c,t}$

dollar bonds ($D^\star_{c,t+1}$) at **dollar funding rate** $\hat{R}^\star_{c,t} \neq R^\star_t$ (e.g. Bianchi and Lorenzoni 22)

Hedging: home banks hedge foreign-currency liability position at forward exchange rate $F_{c,t}$

A Model of Domestic Banks in Emerging Economies

Framework Partial-equilibrium model of banking sector in emerging economies

Home Banks operate in home-currency bond market | risk neutral

Asset side: short-term home-currency market bonds ($B^M_{c,t+1}$) at market rate $R^M_{c,t}$

Liability side: home-currency deposits ($D_{c,t+1}$) at policy rate $R^P_{c,t}$

dollar bonds ($D^\star_{c,t+1}$) at **dollar funding rate** $\hat{R}^\star_{c,t} \neq R^\star_t$ (e.g. Bianchi and Lorenzoni 22)

Hedging: home banks hedge foreign-currency liability position at forward exchange rate $F_{c,t}$

Home banks take as given policy rate $R^P_{c,t}$ and dollar funding rate $\hat{R}^\star_{c,t}$

(as well as spot and forward exchange rates)

Domestic Banks & Short-rate Disconnect

- Bank's balance sheet:

$$\frac{B^M_{c,t+1}}{R^M_{c,t}} = \frac{D_{c,t+1}}{R^P_{c,t}} + \frac{S_{c,t} D^\star_{c,t+1}}{\hat{R}^\star_{c,t}}$$

- Bank's profits:

$$\Pi^B_{c,t+1} \equiv \left(R^M_{c,t} - (1-\omega_c) R^P_{c,t} - \omega_c \left(\frac{F_{c,t}}{S_{c,t}} \right) \hat{R}^\star_{c,t} \right) \frac{B^M_{c,t+1}}{R^M_{c,t}} \qquad \text{w/} \qquad \omega_c = \frac{S_{c,t} D^\star_{c,t+1}}{B^M_{c,t+1}} \frac{R^M_{c,t}}{\hat{R}^\star_{c,t}}$$

- Equilibrium return on home market bond:

$$R^M_{c,t} = (1-\omega_{c,t}) R^P_{c,t} + \omega_{c,t} \left(\frac{F_{c,t}}{S_{c,t}} \right) \hat{R}^\star_{c,t} \qquad \text{w/} \qquad \text{CIP: } \frac{F_{c,t}}{S_{c,t}} \frac{R^\star_{c,t}}{R^P_{c,t}} = 1$$

- **Short-rate wedge** of country c at time t (first-order approximation)

$$i^M_{c,t} - i^P_{c,t} = \omega_c (\hat{i}^\star_{c,t} - i^\star_t) + (\hat{i}^\star_c - i^\star) \omega_{c,t}$$

△ Short-term wedge increases with external premium $\hat{i}^\star_{c,t} - i^\star_t$ and external exposure $\omega_{c,t}$

(Causal evidence: Di Giovanni, Kalemli-Ozcan, Ulu, Baskaya 22)

Key friction: Segmented short-term bond markets

- Implication: While CIP holds for deposit rates, CIP fails for market rates in baseline model:

$$\frac{F_{c,t}}{S_{c,t}}\frac{R^{\star}_{c,t}}{R^{P}_{c,t}} = 1 \qquad \frac{F_{c,t}}{S_{c,t}}\frac{R^{\star}_{c,t}}{R^{M}_{c,t}} = \frac{1}{1+\omega\left(\frac{\hat{R}^{\star}_{c,t}}{R^{\star}_{t}}-1\right)}.$$

- Reasons:
  1. Only home banks can access the short-term home bond market (and thus access R^M).

     [local banks having an advantage in accessing the cash market relative to foreign investors in EMEs (De Leo-Keller-Zou, 2024)]
  2. Home banks cannot borrow at the international deposit rate ($R^{\star}_t$) but only their country-specific external borrowing rate ($\hat{R}^{\star}_{c,t} > R^{\star}_t$).
  3. Home banks borrow a fraction of their liabilities externally ($\omega_{c,t} > 0$).

→ Neither home nor global intermediaries can arbitrage CIP devs across short-term risk-free market bonds

Conclusions

- Exposure to global financial conditions poses trade-off and challenges to central banks
- Monetary policy stance in emerging economy is predominantly countercyclical
- Challenges to monetary policy manifest in time-varying short-term wedge between policy rates and market rates...

  ...relevant for countries w/ large external exposure and external finance premia
- An interesting GE extension is one where foreign funding conditions ($\hat{R}^{\star}_{c,t} - R^{\star}_{t}$) might also depend on the country fundamentals and policy credibility/uncertainty.