Global Transmission of FED Hikes: The Role of Policy Credibility and Balance Sheets

Şebnem Kalemli-Özcan and Filiz Unsal

BPEA Fall 2023
International Transmission of the U.S. Monetary Policy

1. The FED went through its most rapid hiking cycle of the last 40 years.
   
   • 2022-2023: 5.5 percentage points ↑ in interest rates

2. Historically, such episodes are associated with crises and contractions in EMDEs
   
   • 1970s-1980s/Volcker’s disinflation (Latin America debt crisis),
   • 1994-1997 (Asian crisis),
   • 2013 (Taper Tantrum).

3. So far, no financial crises or major contraction.

4. Why this time is different?
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2. **Show the underlying reason**: Risk tolerance of global investors ↓ w/FED hikes
   ⇒ Risk-off sentiment leads to shedding risky EM assets
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3. **Zoom-in on key factors for EM being a “risky” asset class**:
   ⇒ High dollar debt (weak balance sheets via currency mismatch)
   ⇒ Lack of monetary policy credibility
1. Revisit the historical evidence: the adverse effects come from the financial channel

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3. Zoom-in on key factors for EM being a “risky” asset class:
   ⇒ High dollar debt (weak balance sheets via currency mismatch)
   ⇒ Lack of monetary policy credibility

4. 2022–2023 EM resilience: comes from ↓ dollar debt and ↑ monetary policy credibility since risk premia did not increase as much as before
Narrative
Mexico and Canada: Taper Tantrum—Exchange Rates and Spreads

NER (Local Currency/USD), May 2013

10 year govt. bond spreads, May 2013

12 month UIP deviation, May 2013

Canada
Mexico
Mexico and Canada: Taper Tantrum and Now—Exchange Rates and Spreads

NER (Local Currency/USD), May 2013

10 year govt. bond spreads, May 2013

12 month UIP deviation, May 2013

NER (Local Currency/USD), 2021q4

10 year govt. bond spreads, 2021q4

12 month UIP deviation, 2021q4

Canada  Mexico
Data
Using a narrative approach ala Romer and Romer’89, Unsal et al.’22 develop IAPOC:

Key difference: Moves away from exchange rate or monetary policy classifications towards a comprehensive assessment of monetary policy practices in:

1. (IA) Independence and Accountability
2. (PO) Policy and Operational Strategy
3. (C) Communications

FX debt of corporates and households (BIS):

- Real exposures (vs. estimates based on current account/NFL)
- Financial sector is regulated to hedge in EM
- EM governments increasingly borrow in local currency
Monetary Policy Credibility and FX Debt

(a) Policy Credibility

(b) Non-financial private sector FX Debt
Monetary Policy Credibility and Inflation Expectations

1-Year Ahead Inflation Expectations

5-Year Ahead Inflation Expectations

Year-on-year Inflation

5-Year Moving Average Inflation

AE  EMDE
Results
Local Projections Framework

Quarterly frequency (1990q1–2023q1, 70 countries, 55 EMDE)—IAPOC: 35 EM, FX debt 15 EM.


\[
y_{c,t+h} = \alpha_{c,h} + \beta_{h} i_{US,t} + \gamma Z_{c,t} + \sum_{i=1}^{\rho} \eta_{i} W_{c,t-i} + \varepsilon_{c,t+h}
\]

(1)

\[
y_{c,t+h} - y_{c,t-1} = \alpha_{c,h} + \beta_{h} i_{US,t} + \gamma Z_{c,t} + \sum_{i=1}^{\rho} \eta_{i} W_{c,t-i} + \varepsilon_{c,t+h}
\]

(2)

\(i_{US,t}:\) U.S. MP Shock

Y: Macro/Finance variables (GDP, exchange rate, policy rate, inflation, UIP, capital flows)

Z: Controls (openness, reserves, current account, growth differentials, interest rate differentials)
How to Measure U.S. Monetary Policy Shocks?

- We follow the macro literature to measure exogenous MP shocks.
  - Quarter averages of monetary policy shocks from Gertler and Karadi’15—changes in 3-month FED Fund Futures (FF4) in a 30-minute window, weighted by share of remaining days in the month.

Direct measures of risk sentiments: VIX, EBP (Gilchrist and Zakrajšek’12), the RORO index (Chari, Stedman and Lundbland’20)
International Transmission of FED Hikes: Worse Effects for EM

![Graphs showing the transmission of FED hikes to EM and AE economies.](attachment:diagram.png)
International Transmission: Worse Effects for Countries with Low Credibility
International Transmission: Worse Effects for Countries with High FX Debt
UIP deviation: \((i - i^{US}) - (Expected\Delta(E))\); \(E = local/USD\)
Conclusion and Policy Implications
Takeaways..

- The archetypal EM crisis was in 1997-98/02. As the FED raised rates, pulling capital back to the U.S., Thailand’s currency peg broke, leading to a panic that spread to South Korea, Indonesia, Brazil, Russia, Turkey, Argentina, and to LTCM.

- A decade later, in 2013, there was an EM sell-off when FED signalled tightening.

- 2022–2023: This time it is different.

- We show that: Financial channel of the international transmission was less strong this time around, relative to historical episodes, due to improved monetary policy credibility and lower FX debt.

- Lower FX debt and higher credibility means lower risk premia, which is at the heart of the financial channel.
Gita Gopinath, FDMD, IMF, September 2023, South Africa:

“In the current ‘high for long’ environment, global financial conditions for EMs can be expected to remain challenging. Despite sharply raising U.S. rates, EMs have demonstrated resilience. Though inflation in EMs rose, inflation expectations remain anchored. These outcomes owe much to the improvements many EMs made to their policy frameworks and financial sectors during last decades. Central bank independence, inflation targeting, exchange rate flexibility, and regulation of their financial sectors all played a critical role.”
Appendix
Contribution to Literature

Two key channels of international monetary policy transmission:

1. **Trade channel (smooth/benign)**—Mundell-Fleming expenditure switching

2. **Financial channel (adverse effects)**—Alejandro’83; Calvo, Leiderman and Reinhart’93; Rey’13; Bruno and Shin’15; Kalemli-Ozcan’19; Obstfeld and Zhou’22; Fukui, Nakamura, and Steinsson’23; De Leo, Gopinath, Kalemli-Ozcan’23

EMDE vulnerabilities to external shocks:

1. **Endogenous choice of exchange rate regime/trilemma**
   - Linked to monetary policy credibility; peg is another nominal anchor
   - Floating rates can be shock absorbing or propagating (Nurkse’44; Friedman’53)
   - IT can help with external financial shocks (Mishkin and Schmidt-Hebbel’07; Bems. et al.’21)
   - Within the sample of floats/managed floats/ITs, how does monetary policy credibility work?

2. **Original Sin**: Cannot borrow in own currency—Eichengreen and Hausmann’99
   - Migrated from sovereigns to corporates—Du and Schreger’16; Carstens and Shin’21; IMF’22.
   - Importance of corporate FX debt
Improvement in Monetary Policy Credibility

(c) Change in Policy Credibility, 2007-2021

(d) Distributions
Notes: This figure shows the correlation between the policy credibility index (x-axis) and the FX debt (y-axis). Coefficient $\beta$, significant at 5%, and $R^2$ from OLS estimates $FXdebt_c = \alpha + \beta * IAPOC_c + \epsilon_c$ are reported.
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Monetary Policy Shocks and Risk Premia Shocks

(e) EBP

(f) VIX
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Note: We follow the IMF 2000 World Economic Outlook country groups classification. Because we measure U.S. monetary policy spillovers, we drop the U.S. * indicates that we have the monetary policy credibility index (IAPOC) for this country. $ indicates that we have the direct measure of FX debt exposure of the private sector for this country. Red text indicates a country is an emerging market. Blue text indicates a country is a low income/developing country.
Mexico and Canada: Taper Tantrum and Now—Policy, Inflation, and Capital Flows

- Policy Rate, May 2013
- Inflation, May 2013
- Capital Inflows to GDP, May 2013

- Policy Rate, 2021q4
- Inflation, 2021q4
- Capital Inflows to GDP, 2021q4

Canada  | Mexico
Mexico and Canada: Capital inflows to GDP during Taper Tantrum

All capital inflows to GDP (q/q growth)

All capital inflows to GDP (growth wrt 2013q1)

Canada
Mexico
### International Transmission: Inflation and Exchange Rates in EM vs. AE

#### EM, CPI

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#### EM, ER

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#### EM, Capital flows

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#### AE, CPI

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Capital outflows were stronger during early periods.
The Role of Policy Credibility—Other Variables

Low, ER

Low, UIP

Low, Capital inflows

High, ER

High, UIP

High, Capital inflows
The Role of Balance Sheet Weakness via Currency Mismatch—Other Variables

High FX, CPI

High FX, Policy rate

High FX, Capital inflows

Low FX, CPI

Low FX, Policy rate

Low FX, Capital inflows
Exchange Rates: Historical vs Recent Episode

Exchange Rate (Local/USD)

Historical Episode

Recent Episode

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Robustness for Policy Credibility: Reduced Sample of Countries (1/2)
Robustness for Policy Credibility: Reduced Sample of Countries (2/2)
International Transmission of Risk-Off Shocks to Capital Flows: The Role of FX Debt

![Chart showing Risk Sentiment Measure: EBP](image)

- **High FX debt**
  - Quarter 1: -10
  - Quarter 2: -5
  - Quarter 3: 0
  - Quarter 4: 5
  - Quarter 5: 10
  - Quarter 6: 15
  - Quarter 7: 20
  - Quarter 8: 25
  - Quarter 9: 30

- **Low FX debt**
  - Quarter 1: -5
  - Quarter 2: 0
  - Quarter 3: 5
  - Quarter 4: 10
  - Quarter 5: 15
  - Quarter 6: 20
  - Quarter 7: 25
  - Quarter 8: 30
International Transmission of Risk-Off Shocks to Capital Flows: The Role of FX Debt

Risk Sentiment Measure: RORO

High FX debt

Low FX debt
International Transmission of Risk-Off Shocks to Inflation in Low Policy Credibility Countries

Risk Sentiment Measure: EBP

CPI

Policy rate

Quarter

% change

p.p. change

Quarter
International Transmission of Risk-Off Shocks to Inflation in Low Policy Credibility Countries

Risk Sentiment Measure: RORO

CPI

Policy rate

Quarter

Quarter

% change

p.p. change

0.2
0.4
0.6
0.8
1
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1
3
5
7
9
Trade and Financial Channel of U.S. Monetary Policy Transmission

Fed Hike
Spillovers to Rest of the World

Trade Channel

Strong $

I

Expansionary or Contractionary Depreciations?

FX Debt ↑

EM/AE (Float) Monetary Policy

Inflation ↑

↑ X, ↓ M

GDP falls

Financial Channel

Cost of Capital

↓ Debt, I, Y

Balance Sheet Weakness

Risk Premium

Asset Riskiness

GDP falls more when policy defends the currency

EM/AE Monetary Policy (Float)