

# **The Macroeconomic Consequences of Exchange Rate Depreciations by Fukui, Nakamura, and Steinsson**

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# A Key Question in Open Economy Macro

Are exchange rate depreciations expansionary or contractionary?

- Standard Models: (Mundell-Fleming/Obstfeld-Rogoff)  
⇒ Expansionary due to expenditure switching (  $X \uparrow$ ,  $M \downarrow$ , Net exports  $\uparrow$  )
- Data: Depreciations and devaluations are associated with contractions, especially for EMs

**An impossible identification problem:** Exchange rates are endogenous,

⇒ depreciations go hand in hand with negative output shocks, loose monetary policy and adverse financial shocks/crises

Path 1: Exchange Rate Disconnect Literature—Who cares? Exchange rates are disconnected from macro aggregates

Path 2: Model contractionary channels that dominate expenditure switching quantitatively and provide evidence using micro data

- **Balance sheet effects with FX mismatch**:  $\downarrow$  investment even if  $\uparrow$  NX
- **Exporter are importers**:  $\downarrow$  in M means  $\downarrow$  in X
- **Dollar pricing** weakens expenditure switching as  $\downarrow$  M but  $\bar{X}$

Depreciations are expansionary but not due to expenditure switching (NX actually ↓)

Depreciations are expansionary since agents take advantage of **UIP deviations**

⇒ Higher UIP premia on home currency generates a boom via cheaper FX borrowing relative to expensive local currency borrowing (Capital inflows ↑)

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### The Narrative:

- US dollar gets an exogenous UIP shock since noise traders reduce their demand for US dollars, dollar depreciates
- Peggers expand relative to floaters
- But not because they lower policy rates to keep the peg (nominal interest rates rise)
- Pegger “imports” the UIP shock from the US
- Pegger agents work against noise traders and increase their demand for dollars

## Thought Experiment—Importing US UIP Shock: Floaters vs Peggers

Floater UIP (South Africa):  $i_{SA} - i_{US} - [E(S) - S] = 0$  if UIP holds;

$\Rightarrow S = SA/USD$ ; Dollar depreciation:  $S \downarrow$

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- When US dollar depreciates ( $S \downarrow$ ), lower premia on SA/higher on US ( $\lambda \downarrow$ )
  - $\Rightarrow$  SA appreciates relative to US and Egypt
  - $\Rightarrow$  Boom in Egypt relative to SA since Egypt can take advantage of lower FX borrowing costs and receive capital inflows



# Model Mechanics

- Augmented Itskhoki and Mukhin' 21, JPE: HH and firms can borrow and save in FX ( $s > 0$ )—VERY IMPORTANT, no expansion with  $s = 0$
- Adding capital flight shock make everyone reduce demand for dollars, outflows and recession
- With both shocks, no correlation between output and exchange rates

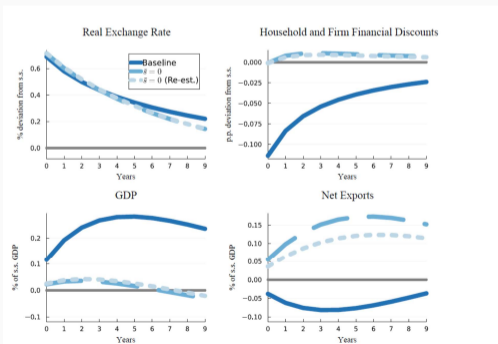


Figure 12: Comparison with a Model without Foreign Credit Channel

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- Cross-border data: wider UIP premiums associated with higher borrowing costs from abroad (within country their mechanism applies)
- In theory: two different modeling style behind UIP deviations, both give similar portfolio balance/exchange rate equations:
  - Financial frictions  $\Rightarrow$  Limit to arbitrage so you cannot absorb the risky asset
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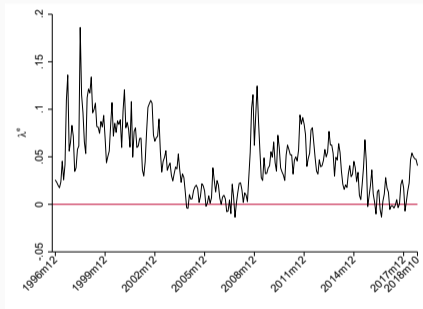
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## The source of the UIP deviation matters for:

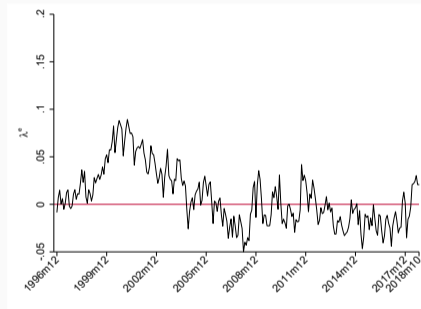
- Policy implications: when do you want to close UIP deviations with what policy?
- If it is driven by higher uncertainty, one can match both relative cheap borrowing in FX within a country and higher borrowing costs from abroad overall.

# CROSS-BORDER: UIP does not hold

(a) Emerging Markets (No Hard Pegs, Managed Floats)



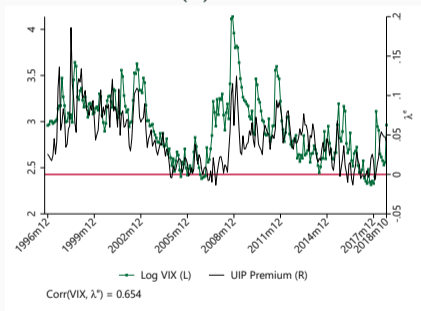
(b) Advanced Economies



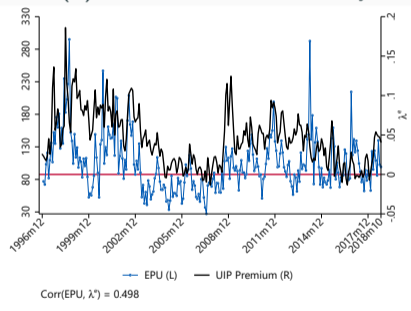
Notes: Kalemli-Ozcan and Varela, 2019: 5 Facts of the UIP Premium

# CROSS-BORDER: UIP correlates with risk sentiment, news, uncertainty

(a) VIX

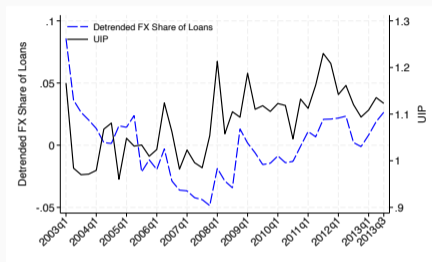


(b) News based Uncertainty



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## WITHIN A COUNTRY: There is evidence for the authors' mechanism



Notes: di Giovanni, Kalemli-Ozcan, Ulu, and Baskaya'21, RESTUD: International Spillovers & Local Credit Cycles

- A risk based model can account for both facts as pegs/managed floats inherits stochastic properties of USD
- Akinci, Kalemli-Ozcan, Queralto, 2022; Hassan, Mertens, Zhang'23, RESTUD

## Possible Threats to Identification (50 page + 47 page appendix)

**Identification assumption:** pegs are not differentially exposed to aggregate shocks correlated with the USD



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Candidate 1: US monetary policy as pegs should mimic the US-RULED OUT!

- Low correlation between US monetary policy and US dollar
- When US dollar depreciates pegs should  $\downarrow$   $i$  to keep the peg but they show  $\uparrow$   $i$  (countercyclical MP/imported US risk premia—De Leo, Gopinath, Kalemli-Ozcan, 2023)

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Candidate 2: Risk-on-off/GFC (Rey'13, JH)—Bad times: Dollar appreciates, spreads/UIP  $\uparrow$ , capital flows  $\downarrow$

- Pegs/managed floats/EMs exposed more to these risk shocks—risk-sensitive capital flows (Kalemli-Ozcan'19, JH)
- Pegs-floats would show a relative expansion w/USD depreciation due to different exposure to global risk/sentiment shocks.
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Candidate 3: The choice of pegging is endogenous to lack of monetary policy credibility

- Countries who peg lack policy credibility which is why they are more exposed to risk shocks—peg provides another nominal anchor (authors show higher inflation in pegs)

Focusing on advanced countries will help w/these issues.

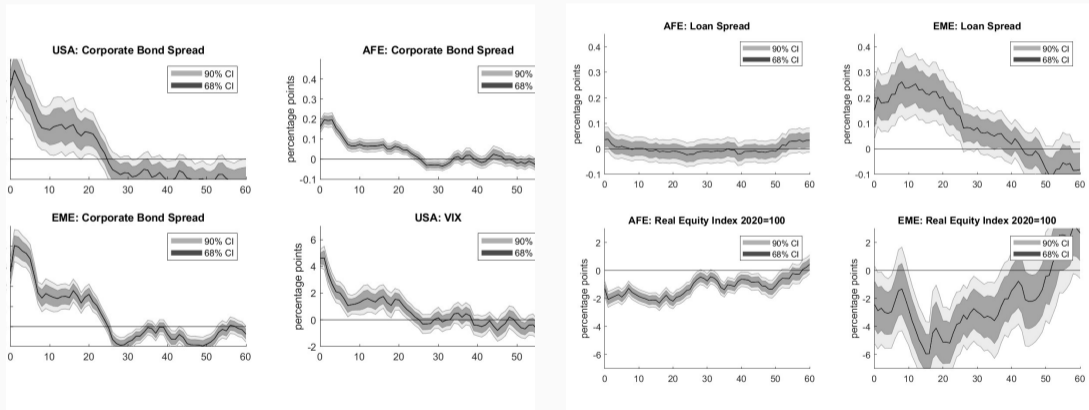
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- Combining clever identification with a creative model can address one of the most important questions in international macro
  - Depreciations alone can be expansionary (when home agents have access to foreign financing)
  - Unless combined with global risk-off/capital flight episodes
  - Calls for flexible exchange rates—different implication than state of the art models + IMF

# Appendix

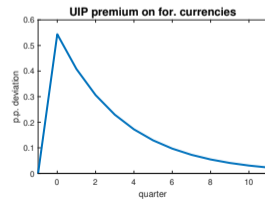
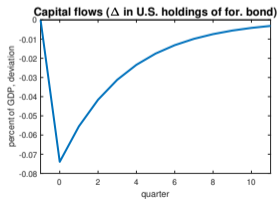
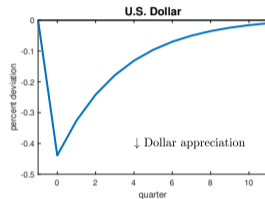
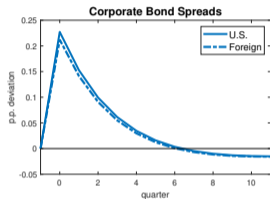
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# Local Projections on US-UIP Shocks



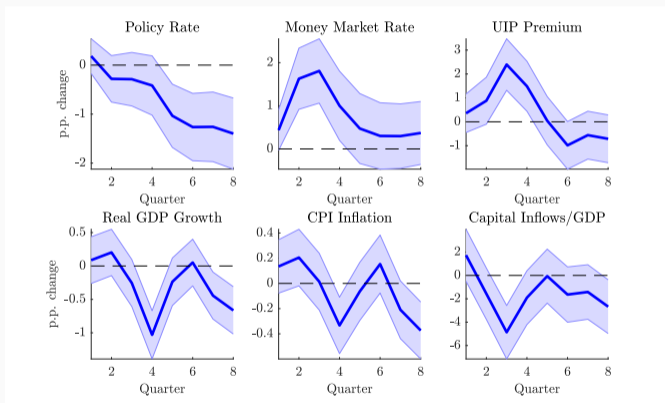
Source: Akinci, Kalemli-Ozcan, Queralto, 2022

# Model Calibration: Transmission of US-UIP shock via higher uncertainty/sentiment





# Local Projections on US-MP shock



Source: De Leo, Gopinath, Kalemli-Ozcan, 2023