### Global and Local Risks in Foreign Currency Operations

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Introduction	Data	Risk Premium	Global and Local Risk Factors	Term Structure	Chile	Conclusion
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#### Motivation

#### What are the returns when operating in a different currency?

- If risk-neutral agents, free capital mobility and no frictions, Uncovered Interest Parity condition:

$$(1+i_{\$,t,h}) = \underbrace{\frac{S_t}{\mathbb{E}_t(S_{t+h})}(1+i_{t,h})}_{\underbrace{\mathbb{E}_t(S_{t+h})}}$$

USD return on local currency asset

 $i_{\text{S,t,h}}$  USD interest rate at horizon h,  $i_{t,h}$  local interest rate at horizon h,  $S_t$  &  $\mathbb{E}_t(S_{t+h})$  spot & expected LC/ USD exchange rate

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 $i_{\pm,t,h}$  USD interest rate at horizon h,  $i_{t,h}$  local interest rate at horizon h,  $S_t \& \mathbb{E}_t(S_{t+h})$  spot & expected LC/ USD exchange rate

- Large evidence of UIP failure. Define UIP deviations/excess returns (in logs)

$$\lambda_{t+h}^e \equiv i_{t,h} - i_{s,t,h} - (s_{t+h}^e - s_t) \neq 0$$

- Kalemli-Ozcan and Varela '24 (KOV) show that UIP deviations
  - average out across time for Advanced Economies (AEs) currencies ( $\lambda_{t+h}^e \approx 0$ ), but
  - they are *systematically positive* for Emerging Market (EMs) currencies ( $\lambda_{t+h}^e \approx 3pp$ ).



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- 3. What is the term structure of UIP deviations in LATAM?
  - Difference across 1, 3 and 12 month horizons, and how risk factors affect them.  $\leftarrow$  This paper



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- 4. UIP deviations in Chile
  - Zoom in (1), (2) and (3) for Chile.  $\leftarrow$  This paper



#### Main Results I: UIP Deviations

- LATAM: (average) expected excess returns are 3.2pp.
   LATAM
- AEs: expected excess returns average out across time.
   AEs



(1) In LATAM, local currency assets are expected to pay higher USD returns than USD assets



#### Main Results II: Global and Local Risk Factors

#### - Both Global and Local risk factors correlate with of UIP deviations in LATAM



- Global factors (VIX): explain 8% of variations in UIP deviations.
- Local factors: explain 24% (2/3 time invariant, 1/3 time variant).



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- Local factors: explain 24% (2/3 time invariant, 1/3 time variant).

(2) Country-specific risk correlates w/excess returns, i.e. market segmentation?



#### Main Results III: Term Structure

- UIP deviations decrease for shorter horizons, from 3.2pp at 12-month to 0.3pp at one month horizon.
- Global and local risk factors have lower explanatory power at short term horizons.

in %	UIP Deviations in LATAM		
	12 months	3 months	1 month
Average UIP Deviation	3.2	0.8	0.3
Adjusted $R^2$ of Global + Local Factors	33.5	4.9	2.8

(3) At shorter horizons, there is less uncertainty, and lower risk and UIP deviations



#### Excess Returns

Lustig and Verdelhan (2007), Lustig, Roussanov and Verdelhan (2011), Burnside, Eichenbaum, and Rebelo (2007 & 2008), Brunnermeier, Nagel and Pedersen (2009), Sarno, Schneider and Wagner (2012), Chinn and Meredith (2005), Hassan (2013), Hassan and Mano (2019), Colacito and Croce (2013), Gourio, Siemer and Verdelhan (2015), Maggiori (2017), Bansal and Dahlquist (2000), Kremens and Martin (2019)...

<u>Survey Expectations of Exchange Rates</u>: Dominguez (1986), Frankel and Froot (1987 & 1989), Ito (1990), Chinn and Frankel (1999 & 2006), Sarno, Valente, and Leon (2006), Bacchetta, Mertens and van Wincoop (2009), Bussiere, Chinn, Ferrara, and Heipertz (2018), Stavrakeva and Tang (2019), Candian and de Leo (2023), Kremens, Martin and Varela (2024)...

#### Financial Frictions

Alvarez, Atkeson and Kehoe (2009), Gabaix and Maggiori (2015), Fanelli and Straub (2021), Fontanier (2024), Itskhoki and Mukhin (2021, 2024)...

#### Policy Uncertainty

Backer, Bloom and Davis (2016), Cieslak, Hansen, McMahon and Xiao (2023), Du, Pflueger and Schreger (2020), Azzimonti and Mitra (2023)...

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Road Map

- 1. Data
- 2. Risk Premium in LATAM
- 3. Global and Local Risk Factors
- 4. Term Structure of Excess Returns
- 5. UIP in Chile

### Data

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#### Data

Our Approach:

- Consensus Forecasts: Expected exchange rate at 1, 3 and 12 months horizon.
- Local and International News: Construct news-based policy uncertainty (extended from KOV '24).

Other Data:

- *Bloomberg*: Deposit interest rates and money market rates.
- International Financial Statistics (IFS), IMF: Spot exchange rates, Capital Flows.
- FRED: VIX.
- ICRG: Survey data on policy uncertainty/risk.



#### How Good are Exchange Rate Surveys?

- The correlation b/ expected & realized exchange rate changes is 0.74\*\*\* (Kremens, Martin & Varela '24)

Expected and Realized Exchange Rate Changes



#### How Do We Proxy Local Policy Uncertainty?

**Uncertainty about policies that affects investors' expected returns (monetary policy, government default** *risk, expropriation risk, war, etc.).* 

#### Follow Backer, Bloom and Davis (2016) and use:

military spending, budget deficit, government deficit, fiscal policy, money supply, quantitative easing, fed funds rate, overnight lending rate, the fed, 9/11, military procurement, terrorist attack, bank stress test, union rights, collective bargaining law, workers compensation, competition policy, monopoly, patent, copyright, immigration policy, illegal immigration, currency crisis, currency crises, currency crash, crisis, reserves, tariff, trade, devaluation, corruption...

#### Our words:

monetary policy, open market operations, central bank, interest rate, national debt, debt ceiling, sovereign debt, government deficit, money supply, capital controls, expropriation, nationalization, military embargo, no-fly zone, military invasion, war, military conflict, terrorism Introduction 0000000 Risk Premium 000

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#### UIP Deviations in LATAM: Summary Statistics

	Mean	Median	Std.Dev.	p25	p75	Obs.
			LATAN	N		
UIP Deviation	0.032	0.028	0.039	-0.005	0.051	327
Interest Rate Differential $(i_t - i_{s,t})$	0.061	0.051	0.045	0.037	0.062	327
Exchange Rate Adjustment $(s_{t+h}^e - s_t)$	0.030	0.030	0.044	0.000	0.057	327
			Brazi	I		
UIP Deviation	0.067	0.059	0.058	0.026	0.094	327
Interest Rate Differential	0.101	0.093	0.053	0.070	0.125	327
Exchange Rate Adjustment	0034	0.038	0.060	-0.005	0.081	327
			Chile			
UIP Deviation	0.011	0.011	0.043	-0.020	0.038	290
Interest Rate Differential	0.018	0.016	0.019	0.000	0.035	290
Exchange Rate Adjustment	0.006	0.010	0.036	-0.020	0.032	290
	Colombia					
UIP Deviation	0.013	0.015	0.052	-0.021	0.043	327
Interest Rate Differential	0.052	0.037	0.051	0.023	0.058	327
Exchange Rate Adjustment	0.038	0.039	0.055	-0.002	0.081	327
	Mexico					
UIP Deviation	0.030	0.023	0.044	-0.002	0.052	326
Interest Rate Differential	0.059	0.046	0.045	0.037	0.058	326
Exchange Rate Adjustment	0.029	0.027	0.056	-0.007	0.061	326
		LATAN	/I- Ex-Post U	IIP Deviati	ons	
UIP Deviation - Realized	0.018	0.027	0.107	-0.049	0.095	315
Exchange Rate Adjustment, Realized	0.043	0.043	0.113	-0.044	0.125	315

- 3.2pp average UIP deviation (Brazil and Mexico higher).
- Using realized (ex-post) exchange rate: 1.8pp.

Notes: Summary statistics for the period 1996m11 to 2023m12, 12 months horizon.

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	Mean	Median	Std.Dev.	p25	p75	Obs.
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Exchange Rate Adjustment, Realized	0.043	0.043	0.113	-0.044	0.125	315

Notes: Summary statistics for the period 1996m11 to 2023m12, 12 months horizon.

- 3.2pp average UIP deviation (Brazil and Mexico higher).
- Using realized (ex-post) exchange rate: 1.8pp.
- Accounted by high interest rate differential.

 In all cases, the interest rate differential is higher than exchange rate adjustment term



# Risk Premium in Latin American Countries

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#### Testing UIP Deviations

Test for UIP deviations/excess returns:

$$s^{e}_{ct+1} - s_{ct} = \beta(i_{ct} - i^{US}_{ct}) + \mu_i + \varepsilon_{ct+1}$$
  $\rightarrow$  if  $\beta = 1$ , UIP holds

- If agents have full information and rational expectations (FIRE),  $s_{ct+k}^e = s_{ct+k} + \epsilon$  with  $corr(\epsilon_{ct}, info_{ct} = 0)$ .

We can then regress

$$s_{ct+1} - s_{ct} = \beta^F(i_{ct} - i_{ct}^{US}) + \mu_i + \varepsilon^F_{ct+1}$$
  $\rightarrow$  if  $\beta^F = 1$ , UIP holds

	Exchange Rate Changes		
	Expected values	Realized values	
	(1)	(2)	
$i_{ct} - i_{ct}^{US}$	<mark>0.588</mark> *** (0.037)	<mark>0.399***</mark> (0.099)	
p-value $(H_0: \beta^F = 1)$ Observations Number of Countries Country Fixed Effects Adjusted R <sup>2</sup>	0.000 1,267 4 Yes 0.280	0.000 1,222 4 Yes 0.026	

Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Standard errors are clustered at the currency-month level.

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#### Testing UIP Deviations

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$$s_{ct+1} - s_{ct} = \beta^F(i_{ct} - i_{ct}^{US}) + \mu_i + \varepsilon^F_{ct+1} \longrightarrow \text{if } \beta^F = 1, \text{ UIP holds}$$

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$\begin{array}{l} \mbox{p-value} \ (H_0:\beta^F=1)\\ \mbox{Observations}\\ \mbox{Number of Countries}\\ \mbox{Country Fixed Effects}\\ \mbox{Adjusted } \mbox{R}^2 \end{array}$	0.000 1,267 4 Yes 0.280	0.000 1,222 4 Yes 0.026	

 $\rightarrow$  Neither with expectational or realized exchange rate the UIP holds.

 $\rightarrow$  Coeff. are similar in size!

Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Standard errors are clustered at the currency-month level.



#### Where Do UIP Deviations Come From?

 Frankel and Froot ('88): two sources of "bias" in the Fama coefficient: Systematic Forecast Errors and Risk Premium.

$$plim \ \hat{\beta}^F = 1 \underbrace{-b_{RE} - b_{RP}}_{\text{"bias"}}$$

"Bias"	b <sub>RE</sub>	b <sub>RP</sub>
100%	32%	0.68%

 $\rightarrow$  In LATAM, deviations mainly arise from a risk premium.

## Global and Local Risk Factors

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### Global and Local Factors

















Corr(PRP, UIP) = 0.075, P-value = 0.223

#### Global and Local Factors

 EMs: UIP dev. correlate w/both global & local risks market segmentation: idiosyncratic risk cannot be diversified away

LATAM: UIP-Global: 49%





 AEs: UIP dev. only correlate w/global risk only systemic risk matters: integrated capital markets



— UIP Premium (L)

Corr(PRP, UIP) = 0.075, P-value = 0.223

PPP (P)





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A Simple Framework

- UIP deviations arise from global and local factors:

 $\lambda_{t+h}^{e} \approx \tilde{\gamma}_{t}^{GLOBAL} + \rho_{t}^{LOCAL}$ 

where  $\tilde{\gamma}_t^{GLOBAL}$  can be then decomposed into



#### **Regression Analysis**

Run implied regression from the simple framework:

$$\begin{split} \lambda_{ct+h}^{e} &= \gamma_{1} \text{Capital Inflows/GDP}_{ct-1} + \gamma_{2} \text{Convenience Yield/Liquidity Premium}_{t-1} \\ &+ \gamma_{3} \log(VIX_{t-1}) + \gamma_{4} \text{PRP}_{ct-1} + \mu_{c} + \varepsilon_{ct}, \end{split}$$
(1)

- Global 1: Global risk factor: VIX. \_
- Global 2: Convenience vield via G10 (Cross-currency basis):

$$= (i_{c,t}^{L} - i_{t}^{US,L}) - (f_{c,t+1} - s_{c,t})$$

Global 3: Liquidity Premium via G10: \_

$$= (i_{c,t}^L - i_{c,t}^G) - (i_t^{US,L} - i_t^{US,G})$$

- $i_{c,t}^L$  is the LIBOR rate in country c,  $i_t^{US,L}$  is the LIBOR rate in the U.S.  $f_{c,t+h}$  is forward exchange rate and  $s_{c,t}$  is the spot exchange rate (logs).
- $i_{ct}^{G}$  and  $i_{t}^{US,G}$  are interest rates on government bonds in the home country and the U.S.
- Local 1: Country-specific capital flows.
- Local 2: Country-specific local risk factor: PRP.



#### **Regression Results**

- An increase in VIX from p25 to p75 associates with a 2.2 percentage points increase excess returns.
- An increase in PRP from p25 to p75 associates with 1 percentage point increase in excess returns.

		UIP Deviations					
	(1)	(2)	(3)	(4)			
$Inflows/GDP_{c,t-1}$ (Local)	$-0.177^{***}$ (0.0547)	$-0.129^{**}$ (0.0508)	$-0.125^{**}$ (0.0484)	0.076* (0.0432)			
Convenience/Liquidity <sub><math>t-1</math></sub> (Global)	$\begin{array}{c} 0.198 \\ (0.423) \end{array}$	$-0.936^{**}$ (0.447)	$-0.818^{*}$ (0.435)	$-0.877^{*}$ (0.412)			
VIX <sub>t-1</sub> (Global)		$\begin{array}{c} 0.048^{***} \\ (0.005) \end{array}$	$\begin{array}{c} 0.043^{***} \\ (0.005) \end{array}$	$\begin{array}{c} 0.042^{***} \\ (0.004) \end{array}$			
$PRP_{c,t-1}$ (Local)			$\begin{array}{c} 0.010^{***} \\ (0.002) \end{array}$	0.010*** (0.002)			
Adjusted R <sup>2</sup>	0.012	0.105	0.136	0.306			
Observations	1,117	1,117	1,113	1,113			
Number of Countries	4	4	4	4			
Currency FE	No	No	No	Yes			

Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Standard errors in parentheses.

- $\rightarrow$  Local, country-specific risk correlates higher excess returns over and above global risk factors.
- ightarrow Adding currency FE does not affect the coefficient on policy uncertainty, but increases the  $R^2$  substantially.



#### Additional Exercises

- 1. Realized ER: parallel results using realized exchange rates to compute the UIP deviations. Realized ER
- 2. Advanced Economies: country-specific policy risk does not affect UIP deviations in AEs.
- 3. Inflation Differential: similar results when controlling for inflation differentials.
- 4. Different loadings on global risk: can the results be driven by different loadings on global risk?  $\rightarrow$  Next
- 5. Granular Policy Risk: are the results robust to other country-specific measures of risk?



#### Are Local Risk Factors a Proxy for Heterogeneous Loadings on Global Risk?

- Country-idiosyncratic risks should be diversified away, could it be that local risk factor is capturing heterogeneous loadings on global risk?
- Interact VIX & PRP w/currency dummies to allow heterogeneous slope on global factor + local factors.

 $\lambda_{c,t+h}^{e} = \gamma_1(\text{Capital Inflows/GDP}_{ct-1}) + \gamma_2 \text{Convenience Yield/Liquidity Premium}_{t-1}$ 

$$+\sum_{i=1}^{c} \gamma_{3}^{i}[1_{i}] \log(\mathsf{VIX}_{t-1}) + \sum_{i=1}^{c} \gamma_{4}^{i}[1_{i}] \mathsf{PRP}_{c,t-1} + \mu_{c} + \varepsilon_{ct},$$
(2)

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#### Are Local Risk Factors a Proxy for Heterogeneous Loadings on Global Risk?

		UIP De	viations	
	(1)	(2)	(3)	(4)
VIX <sub>t-1</sub> (Global)	$\begin{array}{c} 0.042^{***} \\ (0.004) \end{array}$		$\begin{array}{c} 0.042^{***} \\ (0.004) \end{array}$	
$PRP_{c,t-1}$ (Local)	$\begin{array}{c} 0.010^{***} \\ (0.002) \end{array}$	0.011*** (0.002)		
VIX × Mexico <sub><math>t-1</math></sub> (Global)		0.040*** (0.008)		0.040*** (0.008)
$VIX \times Brazil_{t-1} \text{ (Global)}$		0.078*** (0.008)		0.073*** (0.008)
$VIX \times Chile_{t-1}$ (Global)		0.024*** (0.008)		0.025*** (0.008)
VIX × Colombia $_{t-1}$ (Global)		0.020** (0.009)		0.022** (0.009)
$PRP \times Mexico_{c,t-1} (Local)$			0.005** (0.003)	0.005** (0.003)
$PRP \times Chile_{c,t-1} (Local)$			0.008*** (0.002)	0.010*** (0.002)
$PRP \times Brazil_{c,t-1} \ (Local)$			0.021*** (0.004)	0.019*** (0.004)
$PRP \times Colombia_{c,t-1} \text{ (Local)}$			0.007** (0.003)	0.008*** (0.003)
$Inflows/GDP_{c,t-1}$	Yes	Yes	Yes	Yes
Convenience/Liquidity $_{t-1}$	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.307	0.327	0.319	0.335
Observations	1,113	1,113	1,113	1,113
Currencies	4 Voc	4 Voc	4 Vec	4 Voc
Currency FE	res	res	res	res

- Heterogeneous loadings on VIX do not affect the coefficient on local factors.
- PRP coeff. are significant for all countries, independently on whether heterogeneous loadings on VIX are included.



#### Explanatory Power of Global and Local Factors

- Global factors (VIX): explain 8.4% of variations in UIP deviations.
- Local factors: explain 24.1% (time-variant 6.8% + time-invariant 17.3%).
- Global and local factors: explain 30.7% of variations in UIP deviations.

		$R^2$ for d	lifferent	specifications
	(1)	(2)	(3)	(4)
Adjusted R <sup>2</sup>	0.084	0.068	0.241	0.307
$Inflows/GDP_{c,t-1}$	No	Yes	Yes	Yes
Convenience/Liquidity $_{t-1}$	Yes	No	No	Yes
$VIX_{t-1}$	Yes	No	No	Yes
$PRP_{c,t-1}$	No	Yes	Yes	Yes
$VIX_{t-1} \times Currency Dummy$	No	No	No	No
$PRP_{c,t-1} \times Currency Dummy$	No	No	No	No
Currency FE	No	No	Yes	Yes
Month FE	No	No	No	No



#### Explanatory Power of Global and Local Factors

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- Local factors: explain 24.1% (time-variant 6.8% + time-invariant 17.3%).
- Global and local factors: explain 30.7% of variations in UIP deviations.
- Adding global loadings and local heterogeneous slopes: explains 33.5%.
- Adding time (month) FE to account for all global factors (+ USD factor) and local factor: explains 63.1%.

	$R^2$ for different specifications								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Adjusted R <sup>2</sup>	0.084	0.068	0.241	0.307	0.327	0.319	0.335	0.631	
$Inflows/GDP_{c,t-1}$	No	Yes							
Convenience/Liquidity $_{t-1}$	Yes	No	No	Yes	Yes	Yes	Yes	Yes	
$VIX_{t-1}$	Yes	No	No	Yes	Yes	Yes	Yes	Yes	
$PRP_{c,t-1}$	No	Yes							
$VIX_{t-1} \times Currency Dummy$	No	No	No	No	Yes	No	Yes	Yes	
$PRP_{c,t-1} \times Currency Dummy$	No	No	No	No	No	Yes	Yes	Yes	
Currency FE	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
Month FE	No	No	No	No	No	No	No	Yes	



#### Additional Exercises

- 1. Realized ER: parallel results using realized exchange rates to compute the UIP deviations. Realized ER
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- 5. Granular Policy Risk: are the results robust to other country-specific measures of risk?  $\rightarrow$  Next

#### Policy Risk: A Granular View

- Use International Country Risk Guide (ICRG) to further break down local risk factors.
- ICRG provides country-specific index of a risk at monthly frequency. We use four indexes:
  - 1. Composite index: proxy for overall country risk (incl. political, economic and financial risks)
  - 2. Economic risk: proxy for general economic conditions (incl. GDP growth, inflation, fiscal balance...)
  - 3. Political risk: proxy for general policy conditions (incl. investment profile, conflict, corruption ...)
  - Financial risk: proxy for risk of debt repayment (incl. foreign debt/GDP, foreign debt service/ exports...)
- We replace *PRP* with these indexes and include them all together.

ICRG- Definitions

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#### Policy Risk: A Granular View

- All composite, economic, political and financial risks correlate w/excess returns, but...

...fundamentals and risk of debt repayment are key in LATAM.

		UIP Deviation						
	(1)	(2)	(3)	(4)	(5)			
$Inflows/GDP_{c,t-1}$	0.013 (0.054)	-0.022 (0.054)	-0.010 (0.054)	0.013 (0.054)	0.011 (0.054)			
$Convenience/Liquidity_{t-1}$	$-2.301^{***}$ (0.609)	$-2.400^{***}$ (0.617)	$-2.227^{***}$ (0.620)	$-2.545^{***}$ (0.616)	$-2.688^{***}$ (0.621)			
$VIX_{t-1}$	0.050*** (0.005)	0.053*** (0.005)	0.051*** (0.005)	0.046*** (0.005)	0.047*** (0.005)			
Composite Risk $Rate_{c,t-1}$	0.026*** (0.007)							
Economic Risk $Rating_{c,t-1}$		0.014*** (0.004)			0.012** (0.005)			
Political Risk Rating <sub>c,t-1</sub>			0.016*** (0.004)		0.000 (0.007)			
Financial Risk $Rating_{c,t-1}$			. /	0.017*** (0.005)	0.015*** (0.005)			
Adjusted R <sup>2</sup>	0.317	0.3174	0.315	0.318	0.323			
Observations	957	957	957	957	957			
Currency FE	4 Yes	4 Yes	4 Yes	4 Yes	4 Yes			

Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Period 1996m11 to 2019m6. Standard clustered at the currency-month level.

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# Term Structure

#### 

#### Term Structure of UIP

- Smaller UIP deviations at shorter horizons (0.3pp at 1 month, 0.8pp at 3 months vs 3.2pp at 12 months).
- Exchange rate adjustment averages out and lower interest rate differentials.

	1 month	3 months	12 months
UIP deviations	0.003	0.008	0.032
nterest Rate Differential $(i_t - i_{\$,t})$	0.003	0.015	0.061
Exchange Rate Adjustment $(s^e_{t+h}-s_t)$	0.000	0.007	0.030

1 months



#### 12-months







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#### **Regression Analysis**

#### As the horizon shortens,

- $1. \$  the correlation with global factors lowers.
- 2. the correlation with local factors vanishes.
- 3. the explanatory power of these factors drops.

	UIP Deviations				
	12 months	3 months	1 month		
$Inflows/GDP_{c,t-1}$	$\begin{array}{c} 0.076^{*} \\ (0.043) \end{array}$	$\begin{array}{c} 0.152^{***} \\ (0.038) \end{array}$	$\begin{array}{c} 0.127^{***} \\ (0.038) \end{array}$		
$Convenience/Liquidity_{t-1}$	$egin{array}{c} -0.877^{**} \ (0.412) \end{array}$	$-1.017^{**}$ (0.426)	$-0.836^{**}$ (0.413)		
$VIX_{t-1}$	$\frac{0.042^{***}}{(0.004)}$	0.020*** (0.005)	0.010** (0.005)		
$PRP_{c,t-1}$	0.010*** (0.002)	$\begin{array}{c} 0.002 \\ (0.001) \end{array}$	$\begin{array}{c} 0.001 \\ (0.001) \end{array}$		
Observations	1,113	1,019	885		
Number of Currencies	4	4	4		
Currency Fixed Effects	Yes	Yes	Yes		
Adjusted R <sup>2</sup>	0.307	0.041	0.025		



Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Standard errors are clustered at currency and month level.

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## Chile



#### UIP premium in Chile

#### - Lower UIP deviations than other LATAM, but still correlated with global and local risk factors.



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#### Global and Local Risk Factors in Chile

#### - UIP deviations in Chile are correlated w/ both global (36%) and local (33%) risk factors.





#### Chile regressions

- UIP deviations correlate with local and global factors.

	UIP deviations								
		12 month	3 months	1 month					
	(1)	(2)	(3)	(4)	(5)				
Inflows/GDP <sub>c,t-1</sub>	0.026	0.059	0.039	$0.074^{*}$	0.090**				
	(0.068)	(0.062)	(0.063)	(0.042)	(0.041)				
$Convenience/Liquidity_{t-1}$	-1.062	$-1.856^{*}$	$-2.096^{**}$	$-1.116^{*}$	$-1.060^{*}$				
	(0.879)	(0.962)	(0.929)	(0.625)	(0.565)				
$VIX_{t-1}$	, ,	0.037***	0.025***	0.005	-0.001				
		(0.008)	(0.008)	(0.006)	(0.006)				
$PRP_{c,t-1}$		× /	0.011***	0.005***	0.004* <sup>*</sup>				
			(0.002)	(0.002)	(0.002)				
Adjusted R <sup>2</sup>	0.071	0.113	0.116	0.067	0.064				
Observations	277	277	277	311	261				

Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Standard errors in parentheses.

Realized ER



#### Conclusion

#### We show that

- 1. Expected excess returns persistently positive in LATAM ( $\approx$  3pp).
  - $\rightarrow$  There is excess returns from investing in local currency assets.
- 2. Local risk factors (above and beyond global factors) affect these excess returns.
  - $\rightarrow \approx 2/3$  are country-time invariant factor.
  - $\rightarrow \approx 1/3$  time-variant policy risk.
    - ightarrow Policy uncertainty and, in particular, to risk on future fundamentals and debt repayment are key

 $\rightarrow$  How can we think of this risk premium in an global, integrated capital market? Our work indicates that there has to be market segmentation in EMs.

Policy implication:

 Reduce local policy uncertainty and frictions in world capital market integration to lower risk premium on local-currency assets. Appendix •00000000

# Appendix

#### Appendix 00000000

#### Additional Exercise: Realized Exchange Rates

		Realized UIP Premium					
	(1)	(2)	(3)	(4)			
Inflows/GDP <sub><math>it-1</math></sub> (Local)	$-0.818^{***}$	$-0.758^{***}$	$-0.753^{***}$	$-0.838^{***}$			
	(0.127)	(0.122)	(0.122)	(0.120)			
Convenience/Liquidity <sub><math>t-1</math></sub> (Global)	6.562***	5.121***	5.208***	5.249***			
, , , , , , , , , , , , , , , , , , , ,	(1.295)	(1.243)	(1.254)	(1.255)			
$VIX_{t-1}$ (Global)	· /	0.062***	0.058***	0.058***			
,		(0.012)	(0.012)	(0.012)			
$PRP_{t-1}$ (Local)		· /	0.007*	0.007*			
			(0.004)	(0.004)			
Adjusted R <sup>2</sup>	0.085	0.106	0.109	0.107			
Observations	1,117	1,117	1,113	1,113			
Number of Currencies	4	4	4	4			
Currency FE	Yes	Yes	Yes	No			
Month FE	No	No	No	No			

Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Standard errors clustered at the country-month level.

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						D 11 11		
		OIP Premium						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Inflows/GDP_{it-1}$	-0.016	-0.010	-0.002	-0.002	-0.047	-0.044	-0.024	-0.021
	(0.015)	(0.014)	(0.013)	(0.013)	(0.043)	(0.042)	(0.040)	(0.040)
Treasury Basis $t-1$		2.831***	0.655	0.554		1.450	-3.905**	$-4.303^{***}$
		(0.586)	(0.660)	(0.670)		(1.567)	(1.564)	(1.577)
$\log(VIX_{t-1})$			0.034***	0.036***			0.085***	0.092***
			(0.004)	(0.004)			(0.010)	(0.010)
$EPU_{t-1}$				$-0.002^{*}$				$-0.008^{**}$
				(0.001)				(0.003)
Observations	1,389	1,385	1,385	1,377	1,360	1,356	1,356	1,348
Number of Currencies	6	6	6	6	6	6	6	6
Currency FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup> Within	0.092	0.021	0.079	0.081	0.001	0.002	0.061	0.064
Adjusted R <sup>2</sup>	0.088	0.106	0.158	0.160	0.044	0.044	0.100	0.101

#### Additional Exercises: Advanced Economies

Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Standard errors are in parentheses. In all cases, country-fixed effects were used. Errors are clustered at the country-month level. The table shows the impact of various factors on the UIP premium in emerging markets.

#### Appendix 000000000

#### Additional Exercise: Inflation Differential

- Results holds when controlling for inflation differential. Similar size of global and local risk factors.

	UIP deviation		
	(1)	(2)	
$Inflows/GDP_{c,t-1}$	$0.076^{*}$ (0.043)	$\begin{array}{c} 0.013 \\ (0.051) \end{array}$	
Treasury $Basis_{t-1}$	$\begin{array}{c} -0.877^{**} \\ (0.412) \end{array}$	$-2.223^{***}$ (0.774)	
$VIX_{t-1}$	$\begin{array}{c} 0.042^{***} \\ (0.004) \end{array}$	$\begin{array}{c} 0.042^{***} \\ (0.005) \end{array}$	
$PRP_{t-1}$	$0.010^{***}$ (0.002)	$0.010^{***}$ (0.002)	
Inflation $Diff_{c,t-1}$		$1.635^{***}$ (0.303)	
Observations	1,113	916	
Number of Countries	4	4	
Adjusted R <sup>2</sup>	0.307	0.370	
Country FE	Yes	Yes	

Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Standard errors in parentheses. All regressions include country fixed effects, with errors clustered at the country level.



Appendix 000000000

#### International Country Risk Guide- ICRG

- It provides data on country's political, economic and financial risks for more than than 140 countries at monthly frequency.
- Composite Risk: proxy for overall country risk: political, economic and financial risks. Political risk contributes 50% to the composite rating, while financial and economic risk ratings each contribute 25%.
- Political Risk: the assessment is made on the basis of subjective analysis of the available information. It considers government stability, socioeconomic conditions, investment profile, internal and conflict, democratic accountability, corruption, military in politics, religious tensions, law and order, ethnic tensions, and bureaucracy quality.
- Financial Risk: it includes foreign debt over GDP, foreign debt service over exports of goods and services, current account over exports of goods and services, net international liquidity as months of import cover, exchange rate stability.
- Economic risk: it includes GDP per capita, real GDP growth, inflation rate, budget balance over GDP, current account over GDP.

Return

### Term Structure: Descriptive statistics

	Mean	Median	Std.Dev.	p25	p75	Obs.
		1 month				
UIP Deviation	0.003	0.001	0.028	-0.012	0.017	274
Interest Rate Differential	0.003	0.003	0.001	0.002	0.004	274
Exchange Rate Adjustment	0.001	0.004	0.027	-0.014	0.020	337
		3 months				
UIP Deviation	0.008	0.006	0.030	-0.012	0.026	337
Interest Rate Differential	0.015	0.012	0.009	0.010	0.016	337
Exchange Rate Adjustment	0.007	0.011	0.030	-0.007	0.028	337
	12 months					
UIP Deviation	0.032	0.028	0.039	-0.005	0.051	327
Interest Rate Differential	0.049	0.035	0.047	0.025	0.047	329
Exchange Rate Adjustment	0.029	0.026	0.043	-0.002	0.057	337



Appendix 0000000000

#### Term- Structure: Realized Exchange Rates

- As the horizon shortens, the correlation of global and local risk factors with UIP deviations lowers.

	UIP Deviations - Realized			
	12 months	3 months	1 month	
$Inflows/GDP_{c,t-1}$	$-0.753^{***}$	$-0.173^{***}$	-0.023	
, .,	(0.122)	(0.057)	(0.030)	
Convenience/Liquidity <sub><math>t-1</math></sub>	5.208***	3.080***	0.946**	
	(1.254)	(0.571)	(0.378)	
$VIX_{t-1}$	0.058***	0.025***	0.010***	
	(0.012)	(0.006)	(0.003)	
$PRP_{c,t-1}$	0.007*	0.004**	0.002**	
-,	(0.004)	(0.002)	(0.001)	
Obs.	1,113	1,019	885	
Number of Currencies	4	4	4	
Currency Fixed Effects	Yes	Yes	Yes	
Adjusted R <sup>2</sup>	0.109	0.080	0.033	

Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Errors are clustered at currency and month level.



### Chile: UIP Deviations (Realized Exchange Rates)

	UIP Deviations - Realized			
	12 months	3 months	1 month	
$Inflows/GDP_{ct-1}$	$-0.600^{***}$ (0.127)	$-0.354^{***}$ (0.078)	$-0.089^{**}$ (0.037)	
Treasury $Basis_{t-1}$	0.464 (1.882)	$1.368 \\ (0.948)$	$0.636 \\ (0.640)$	
$VIX_{t-1}$	0.057*** (0.021)	$0.020^{*}$ (0.010)	$\begin{array}{c} 0.012^{**} \\ (0.005) \end{array}$	
PRP <sub>ct-1</sub>	0.009 (0.006)	-0.001 (0.003)	-0.001 (0.002)	
Obs. Adjusted R <sup>2</sup>	277 0.116	311 0.105	261 0.045	

Notes: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. Standard errors are shown in parentheses.



Advanced Economies			Emerging Markets			
Euro	Yen	UK Pound	Korean Won	Turkish Lira	Other EMs*	
(1)	(2)	(3)	(4)	(5)	(6)	
Goldman Sachs						
HSBC	HSBC	HSBC	HSBC	HSBC	HSBC	
General Motors						
ING Financial Markets	ING Financial Markets	ING Financial Markets	ING Financial Markets		ING Financial Markets	
BNP Paribas	BNP Paribas	BNP Paribas		BNP Paribas	BNP Paribas	
JP Morgan						
Allianz	Allianz	Allianz			Allianz	
Oxford Economics	Oxford Economics	Oxford Economics		Oxford Economics	Oxford Economics	
Morgan Stanley	Morgan Stanley	Morgan Stanley		Morgan Stanley	Morgan Stanley	
Bank of Tokio Mitsubishi						
Credit Suisse	Credit Suisse	Credit Suisse		Credit Suisse		
Citigroup	Citigroup	Citigroup	Citigroup	Citigroup	Citigroup	
Societe Generale	Societe Generale	Societe Generale		Societe Generale	Societe Generale	
Royal Bank of Canada	Royal Bank of Canada	Royal Bank of Canada			Royal Bank of Canada	
Royal Bank of Scotland	Royal Bank of Scotland	Royal Bank of Scotland			Royal Bank of Scotland	
ABN Amro	ABN Amro	ABN Amro			ABN Amro	
Barclays Capital	Barclays Capital	Barclays Capital		Barclays Capital	Barclays Capital	
Commerzbank	Commerzbank	Commerzbank			Commerzbank	
UBS	UBS	UBS	UBS	UBS	UBS	
IHS Global Insight						
Nomura Securities	Nomura Securities	Nomura Securities	Nomura Economics	Nomura Securities	Nomura Securities	
			Macquarie Capital		Macquarie Capital	
			ANZ Bank		ANZ Bank	

#### How good is data on expectations: Who are the forecasters?

Notes: \*Other emerging market currencies' include: Argentinean Peso, Brazilian Real, Chilean Peso, Chinese Renminbi, Colombian Peso, Czech Koruna, Hungarian Forint, Indian Rupee, Indonesian Rupiah, Malaysian Ringgit, Mexican Peso, Peruvian Sol, Polish Zloty, Romanian Leu, Russian Rouble, South African Rand, Ukrainian HRYVNIA. Source: Consensus Forecast.