

Political Risk Contributes to Post-Crisis Violations of Covered Interest Parity

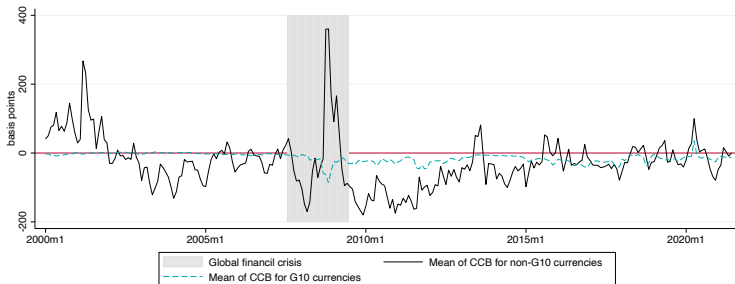
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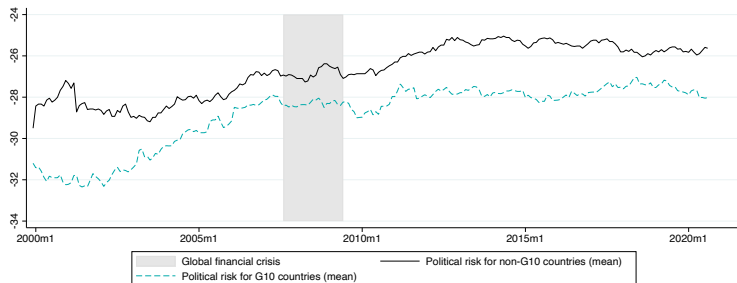
Deviations from covered interest parity post-2007

- Until the 2007/08 global crisis, covered interest parity (CIP) was one of the most robust and reliable relationships in international finance
- This relationship broke down thereafter, leading to persistent deviations from CIP, known as the cross-currency basis (CCB)



Political trends in the aftermath of the Great Recession

- The post-crisis period also saw an acceleration of several disturbing political trends
 - Rise in populist sentiment (Eichengreen 2018)
 - Increased political polarization (Fukuyama 2018)
 - Retreat of democratic norms (Diamond 2015)



Political explanations are often not forthcoming

- Economic and political risk is often intertwined
 - Economic shocks that impact dollar financing can themselves give rise to political instability
 - Unobserved common driver for both political risk and economic fundamentals
- Identifying the effects of political risk requires solving endogeneity issue

Political risk as a driver of CCB

- **Research question:** Does political risk explain the persistent and large CIP deviations observed post-global crisis?
- When political risk is elevated in a particular country, dollar suppliers might reduce their willingness to lend dollars to that market
 - Subsequent exchange or interest rate movements could erode investment returns, reducing ability or willingness of counterparties to meet covered contractual obligations
 - Preemptive lending contraction contributes toward *ex ante* dollar scarcity, which is reflected as a more negative cross-currency basis
 - **Mechanism:** Political risk $\uparrow \Rightarrow$ dollar supply $\downarrow$ & dollar demand $\uparrow \Rightarrow$ dollar scarcity $\uparrow$ (more negative CCB)

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Resolve endogeneity to estimate effect of political risk

- Naïve OLS likely biased
 - Simultaneity: Reverse causality as changes in financing conditions for USD (and CCB) could alter local economic conditions and affect public confidence in government
 - Omitted variables: Shocks to unobserved economic fundamentals may affect political risk and CCB
- Identify the effect of political risk on CIP deviations using an instrument for political risk using duration-to-election instrument for (plausibly) exogenous variation
 - Political risk virtually synonymous with changes in government, and turnover increases closer to an election
 - Timing of elections tied to political calendar that is unaffiliated with economic conditions

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Related literature from economics, finance, and politics

- **Frictions causing CIP deviations:** Increased counterparty risk (Baba & Packer 2009), increases in hedging demand for dollars (Borio *et al.* 2016, rising transactions costs of various kinds (Cenedese *et al.* 2021; Du *et al.* 2018; Liao & Zhang 2020) ⇒ **economic rather than political factors**
- **Political risk on CCB components:** Exchange rates (Leblang 2003; Steinberg & Walter 2013; Bonomo & Terra 2005) and interest rates (Bakaert *et al.* 2016; Cuadra & Sapriza 2008), as well as CIP deviations (Aliber 1973; Isard & Dooley 1980) ⇒ **noncausal estimates of political risk**
- **Demand for safe dollar assets:** From banks (Aldasoro *et al.* 2021), corporations (Alfaro *et al.* 2019), sovereigns (Dittmar & Yuan 2008) ⇒ **more why than how dollar assets have become safe**
- **Effects of political risk on international financial flows:** On portfolio (Pástor & Veronsi 2013) and FDI (Busse & Hefeker 2007), and importance of institutions and policies more generally (Alfaro, Kalemli-Ozcan & Volosovych 2007; Papaioannou 2009) ⇒ **not focused on the CCB channel**

What is the cross-currency basis?

- The cross-currency basis (CCB), $x_{it,i(t+n)}$ is the difference between the U.S. dollar interest rate $r_{t,t+n}^{us}$ and the synthetic dollar rate (in square brackets):

$$x_{it,i(t+n)} = r_{t,t+n}^{us} - \left[r_{it,i(t+n)} - \frac{1}{n} (f_{it,i(t+n)} - s_{it}) \right], \quad (1)$$

- $r_{it,i(t+n)}$ = interest rate in country i
 - s_t = log spot exchange rate at t
 - $f_{t,t+n}$ = log forward rate n periods ahead
- $x_{it,i(t+n)}$ is a measure of *deviations* from CIP
- When the CCB is **negative**, it signals a dollar **shortage** for foreign borrowers in country i

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CCB in the absence of CIP deviations

- If CIP holds perfectly,

$$\frac{1}{n} (f_{t,t+n} - s_t) = r_{t,t+n}^i - r_{t,t+n}^{us} \Rightarrow$$

$$\frac{1}{n} (f_{t,t+n} - s_t) = \alpha + \beta_r (r_{t,t+n}^i - r_{t,t+n}^{us}) + \varepsilon_t,$$

- with $\alpha = 0$, $\beta_r = 1$, $\mathbb{E}(\varepsilon) = 0$, $R^2 = 1$

Introducing political risk into the CCB

- Adding political risk, π_t^i , to the above and manipulating:

$$x_{t,t+n}^i = \alpha'' + \theta_r(r_{t,t+n}^i - r_{t,t+n}^{us}) + \theta_p \pi_t^i + \varepsilon_t', \quad (2)$$

- $\alpha'' = \alpha'$, $\theta_r = \beta_r' - 1$
- $\theta_p = \beta_p \neq 0$ if political risk explains CIP deviations

Econometric methodology

We employ level and first-differenced estimations in the baseline:

$$ccb_{it,i(t+n)} = \theta_r(r_{it,i(t+n)} - r_{US,t,US,t+n}) + \theta_p\pi_{it} + \mathbf{X}'_{it}\boldsymbol{\Theta} + \alpha' + \delta_i + \delta_t + \epsilon_{it}$$

$$\Delta ccb_{it,i(t+n)} = \gamma_r\Delta(r_{it,i(t+n)} - r_{US,t,US,t+n}) + \gamma_p\Delta\pi_{it} + \Delta\mathbf{X}'_{it}\boldsymbol{\Gamma} + \Delta\alpha'' + \delta_i'' + \delta_t'' + \epsilon_{it}''$$

- $(\Delta)ccb_{it,i(t+n)}$: monthly (change in) CCB of currency i against the USD
- $(\Delta)(r_{it,i(t+n)} - r_{US,t,US,t+n})$: monthly (change in) interest rate differential
- $(\Delta)\pi_{it}$: monthly (change in) political risk level in country i
- $(\Delta)\mathbf{X}'_{it}$: control variables
- $\delta_i(\delta_i'')$: currency fixed effect
- $\delta_t(\delta_t'')$: time fixed effect
- $\epsilon_{it}(\epsilon_{it}'')$: error term

Identification strategy I

To address **endogeneity**, we:

$$\pi_{it} = \mathbf{Z}_{it}^T \hat{\psi} + v_{it},$$
$$\Delta \pi_{it} = \Delta \mathbf{Z}_{it}^T \hat{\psi}' + v'_{it},$$

- 1 Instrument political risk with a **duration-to-election** dummy (**IV**): equals 1 in the duration of 3 months before the election month
- 2 Instrument set (**Z**) that includes duration-to election dummy and democratic accountability (**2SLS**)

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Plausibility of instrument

- Election $\Rightarrow$ political risk due to possibility of change in government (*relevance condition*)
- Election $\nRightarrow$ directly affect exchange and interest rates, since elections follow a political calendar (*exclusion restriction*)

Potential threats to identification

- Political exchange rate (Bonomo & Terra 2005) and business (Alesina 1987; Nordhaus 1975) cycles
 - **BUT:** Exchange rates affected by many things and impossible to predict (Meese & Rogoff 1983; Cheung, Chinn & Pascual 2005)
 - Forecasting interest rates is also very difficult (Duffee 2013)
 - Direction of exchange or interest rate need not vary systematically in a given direction
- Instrument set that includes democratic accountability allows overfitting and associated diagnostics
- Battery of additional robustness checks on instrument
 - Exclude elections that may be endogenously called (Westminster) or called earlier than a year early
 - Include only competitive elections (win threshold $< 10\%$)

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Another approach to identification

- One may still harbor residual concerns about the plausible exogeneity of the instrument set
- Apply a regression discontinuity (RD) design with sample limited to close elections
 - Fairly established in political science (de la Cuesta & Imai 2016) and economics (Girardi 2020) literature
 - Small win margins $\Rightarrow$ Heightened *ex ante* risk of political turnover
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Identification strategy II

We exploit regression discontinuities (**RD**) around close elections:

$$\begin{aligned}\hat{\theta}_p \pi_{iT} &= \hat{\theta}_w W_{iT} + f(\chi_{iT}), \\ W_{iT} &= \begin{cases} 1 & \text{if } \chi_{iT} \geq 0, \\ 0 & \text{otherwise;} \end{cases} \\ \hat{\gamma}_p \Delta \pi_{iT} &= \hat{\gamma}_w W'_{iT} + g(\chi'_{iT}), \\ W'_{iT} &= \begin{cases} 1 & \text{if } \chi'_{iT} \geq 0, \\ 0 & \text{otherwise,} \end{cases}\end{aligned}$$

- W : indicator variable
- f and g : (parametric but possibly nonlinear) functions
- χ_{iT} : forcing/cutoff variable (vote margin of victory)

Data sources and calculation

- Data sources for key variables of interest:
 - 1 Cross-currency basis: calculated with relevant interest and exchange rates data from *Bloomberg*
 - 2 Political risk: average of **government stability, internal conflict, and external conflict** from *ICRG*
 - 3 Duration-to-election dummy: the *Election Guide*
 - 4 Democratic accountability: *ICRG*
- Additional controls from World Bank, IMF, etc.

Baseline IV regressions

	Dummies			IV			2SLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Estimation in levels									
π				-52.12*	-53.09*	-54.61*	-49.29	-48.19**	-66.74**
				(26.54)	(27.61)	(28.19)	(30.61)	(22.16)	(26.02)
Election	-0.58***	-0.59***	-0.60***						
	(0.20)	(0.20)	(0.20)						
Controls?	N	Y	Y	N	Y	Y	N	Y	Y
Currency and Time FE?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,339	4,339	4,333	4,339	4,339	4,333	4,339	4,339	4,333
F	8.64	5.22	4.61	3.86	3.85	2.45	2.59	4.72	2.55
Cragg-Donald F				21.68	21.62	21.41	27.78	28.98	23.41
Kleibergen-Paap $rk\ LM$				7.49***	7.35***	7.34***	8.38**	8.37**	8.03**
Hansen J							0.01	0.03	0.16
Panel B: Estimation in first differences									
$\Delta\pi$				-62.88**	-61.30**	-64.03**	-58.63**	-57.31**	-60.29**
				(25.12)	(24.95)	(25.69)	(21.69)	(21.67)	(22.10)
$\Delta\text{Election}$	-0.45***	-0.44***	-0.45***						
	(0.16)	(0.17)	(0.16)						
Controls?	N	Y	Y	N	Y	Y	N	Y	Y
Currency and Time FE?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,337	4,337	4,330	4,337	4,337	4,330	4,337	4,337	4,330
F	7.71	10.25	4.54	6.27	5.08	3.57	7.31	5.69	4.05
Cragg-Donald F				37.47	37.60	36.54	20.86	20.93	20.21
Kleibergen-Paap $rk\ LM$				13.00***	13.01***	12.74***	13.94***	13.94***	13.77***
Hansen J							0.19	0.17	0.15

Findings

- Increased political risk makes dollars more scarce
 - 1% increase in political risk reduces CCB by 48–67%
 - One SD shock to risk tightens dollar liquidity by between 48–278 bps
- Magnitude of impact is comparable to variations in the interest rate differential or effective exchange rate (for 1 SD shocks)

Robustness checks

1 Additional covariates

- **Liquidity:** Forward bid-ask spread, term premium (Cerutti *et al.* 2021)
- **Risk:** Treasury-sovereign 10Y interest differential, implied vol from FX options (Avdjiev *et al.* 2019)

2 Alter currency sample according to different criteria in terms of the nature of the country

- e.g. CCB for CLP uses non-circulating unit of account, *Unidad de Fomento*

3 Use alternative political risk measures

- e.g. Include investment profile

4 Switch to alternative post-crisis period based on different criteria

- e.g. Start in 2009M4, trough of DJIA

5 Utilize cross-currency basis at tenors other than 3M

6 Employ various options for instrument

- Different election duration, exclude legislative elections, include referenda, etc.)

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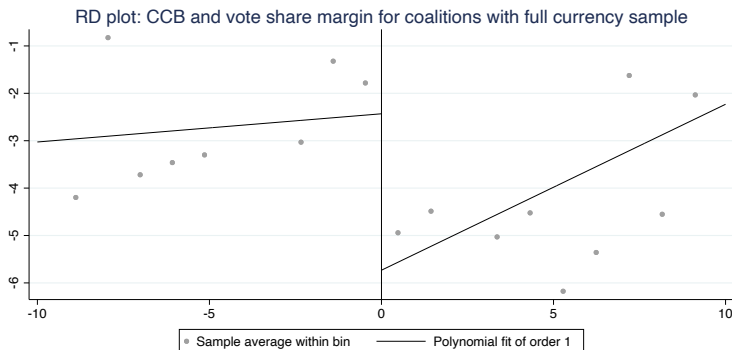
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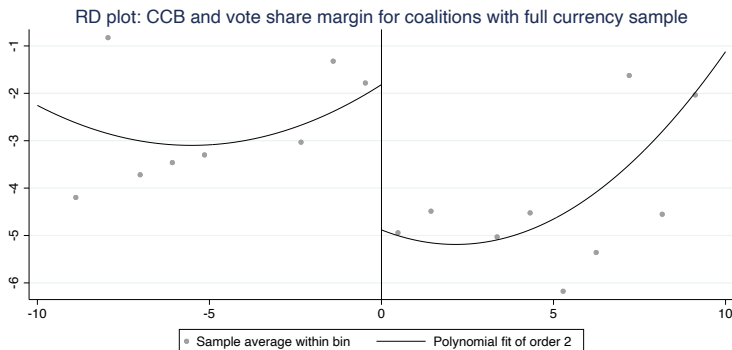
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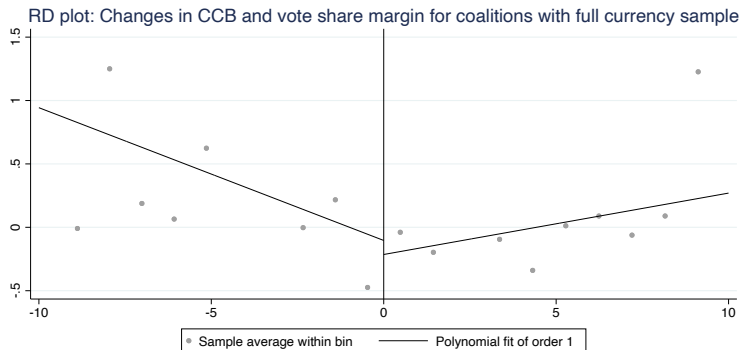
Level results reveal significant discontinuity around win threshold



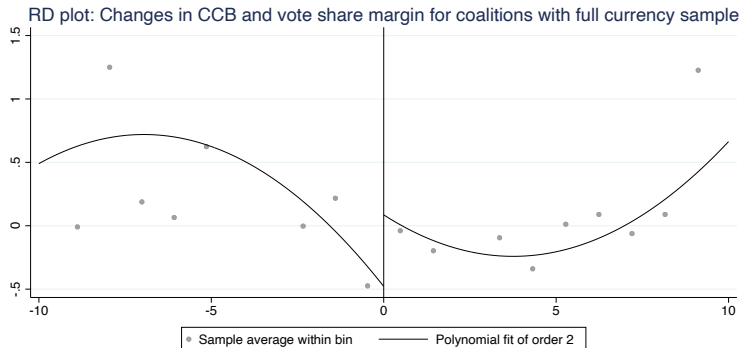
Discontinuity remains using alternative polynomial forcing function



Differenced results retain negative effect but are typically insignificant



For certain subsamples, effect may flip



Regression Discontinuity

	Full sample				Without EUR			
	(1) CCB	(2) CCB	(3) Δ CCB	(4) Δ CCB	(5) CCB	(6) CCB	(7) Δ CCB	(8) Δ CCB
Conventional	-3.30** (1.43)	-3.06 (1.87)	-0.11 (0.41)	0.56 (0.56)	-3.28** (1.63)	-2.94 (2.08)	-0.28 (0.45)	0.48 (0.62)
Bias-corrected	-3.07** (1.43)	-4.24** (1.87)	0.54 (0.41)	0.33 (0.56)	-2.93* (1.63)	-4.77** (2.08)	0.46 (0.45)	0.15 (0.62)
Robust	-3.07* (1.83)	-4.24* (2.19)	0.54 (0.55)	0.33 (0.79)	-2.93 (2.05)	-4.77** (2.19)	0.46 (0.61)	0.15 (0.88)
Observations	67	67	67	67	57	57	57	57
Polynomial	1	2	1	2	1	2	1	2
Kernel	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform

[†] This table reports the regression between monthly cross-currency basis at a tenor of 3 months and the vote share margin of close elections between the opposing and government coalitions between July 2009 and August 2020. We regard an election as a close one if the voting margin is smaller than 10% due to low number of observations. Interest differentials, reserves, real effective exchange rate, currency and time fixed effects are controlled. Robust standard errors clustered at currency level are reported: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

[§] We regard an election as a close one if the vote share margin is smaller than 10% due to low number of observations in our sample. For robustness check, we also do an estimation where we confine the vote share margin within 5%.

Political risks affect G10 and EM currencies differently

- Differences in CIP deviations for G10/non-G10, and also pre-/post-crisis
 - Split sample along these dimensions
- Results are weaker for G10 currencies subsample
 - Signs in expected direction, but most specifications for G10 insignificant
 - Reasonable given the small deviations from CIP pre-crisis

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Heterogeneity: Comparing G10 and EM currencies

	Levels: IV			Levels: 2SLS			First differences: IV			First differences: 2SLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Non-G10 currencies												
$\pi / \Delta\pi$	-40.79* (22.40)	-41.80* (23.78)	-46.46* (25.73)	-35.23* (19.04)	-37.59** (15.10)	-59.60** (24.65)	-65.01* (33.60)	-63.04* (33.50)	-67.04* (34.41)	-60.54* (29.22)	-58.87* (29.30)	-63.47** (29.98)
Currency and Time FE?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	2,999	2,999	2,993	2,999	2,999	2,993	2,997	2,997	2,990	2,997	2,997	2,990
F	3.31	2.99	1.87	3.42	5.29	2.24	3.74	4.90	4.55	4.29	5.28	4.88
Cragg-Donald F	27.78	28.56	27.35	29.42	28.78	19.02	32.54	32.55	31.63	18.09	18.09	17.44
Kleibergen-Paap rk LM	8.78***	8.59***	8.18***	9.55***	9.39***	8.45**	10.65***	10.65***	10.58***	11.51***	11.51***	11.57***
Hansen J				0.06	0.05	0.50				0.17	0.15	0.11
Panel B: G10 currencies												
$\pi / \Delta\pi$	-218.46 (803.98)	-160.58 (453.53)	-137.84 (353.41)	-24.67*** (6.24)	-22.98*** (6.27)	-21.31** (9.13)	-23.33 (26.31)	-24.01 (25.41)	-25.73 (26.88)	-23.35 (26.18)	-24.02 (25.31)	-25.74 (26.78)
Currency and Time FE?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1,340	1,340	1,340	1,340	1,340	1,340	1,340	1,340	1,340	1,340	1,340	1,340
F	0.07	0.08	0.06	15.63	16.68	12.26	0.79	1.33	1.03	0.80	1.32	1.01
Cragg-Donald F	0.07	0.13	0.17	19.36	23.18	23.02	3.14	3.38	3.24	1.58	1.70	1.63
Kleibergen-Paap rk LM	0.09	0.15	0.18	1.18	1.22	1.33	1.49	1.57	1.53	3.10	3.15	3.29
Hansen J				1.81	1.84	1.92				0.00	0.00	

A pre-crisis falsification test

- Further consider regressions for sample 2000M1–2007M7
 - Levels: negative coefficient, but insignificant
 - FD: *positive* coefficient (also insignificant)
 - No effect of political risk pre-crisis

Reserves as self-insurance to mitigate political risk

- International reserves and swap lines can serve as self-insurance for sudden stops (Aizenman, Jinjark & Park 2011; Calvo, Izquierdo & Kung 2013)
 - Include an interaction effect of reserves on political risk
- Coefficient is positive and (marginally) significant for EM, but insignificant for G10
 - Reserves appear to be a channel for mitigating effects of political risk on CCB in EMs
 - Consistent with literature that EMs are more in need of self-insurance via reserves

Reserves as self-insurance to mitigate political risk

- International reserves and swap lines can serve as self-insurance for sudden stops (Aizenman, Jinjark & Park 2011; Calvo, Izquierdo & Kung 2013)
 - Include an interaction effect of reserves on political risk
- Coefficient is positive and (marginally) significant for EM, but insignificant for G10
 - Reserves appear to be a channel for mitigating effects of political risk on CCB in EMs
 - Consistent with literature that EMs are more in need of self-insurance via reserves

Mechanisms: International reserves

	Non-G10			G10		
	(1)	(2)	(3)	(4)	(5)	(6)
π	-119.66* (61.07)	-123.75* (62.02)	-121.30* (61.22)	3.3e+05 (1.5e+09)	-855.00 (10952.11)	-766.19 (9042.76)
$\pi \times RSV$	83.04* (46.61)	87.64* (47.05)	86.02* (46.88)	-1.3e+05 (6.0e+08)	310.43 (3950.97)	274.13 (3208.71)
RSV	325.47* (184.75)	344.13* (186.60)	338.45* (186.02)	-5.2e+05 (2.5e+09)	1265.66 (16108.65)	1117.13 (13078.67)
Controls?	N	Y	Y	N	Y	Y
Currency and Time FE?	N	Y	Y	N	Y	Y
Observations	2,993	2,993	2,993	1,340	1,340	1,340
F	1.47	1.39	1.39	0.00	0.00	0.01
Cragg-Donald F	5.30	6.50	7.49	0.00	0.00	0.00
Kleibergen-Paap $rk\ LM$	8.10***	5.73**	5.04**	0.00	0.01	0.01

Buying insurance via central bank liquidity swaps

- Liquidity swaps with Fed deployed post-GFC (Rose & Spiegel 2012) and revived during pandemic crisis (Aizenman, Ito & Pasricha 2011)
 - Consider subsamples where swap lines exist, or with a swap dummy
- Coefficient insignificant for swap lines subsample, and significant for swap dummy
 - Dollar swaps are an important political risk mitigation tool

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Are local interest rates affected by political risks?

- IBORs used to compute CCB are unsecured reported rates
 - Criticism of IBOR as inappropriate proxy for true risk-free rate
- Alternative (secured) risk-free proxies
 - Deposit rates at central bank (but may embed inflation risk, especially for less-credible authorities)
 - Sovereign bond rates (but may include default risk)
- Synthetic rate alone (without local rate)
- Only the *synthetic rate* retains significance
- Not so much unsecured local interest rates that drive CIP deviations, but a “dollar squeeze” embedded in the local rate *combined* with the forward differential

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Channels: Local vs synthetic dollar rates

	Deposit rate				Treasury rate				IBOR rate				Synthetic rate			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	IV	IV	2SLS	2SLS	IV	IV	2SLS	2SLS	IV	IV	2SLS	2SLS	IV	IV	2SLS	2SLS
Panel A: Estimation in levels																
π	1.30 (8.92)	0.59 (8.67)	-19.48 (39.53)	-11.18 (32.59)	-7.13 (12.95)	-8.36 (13.26)	-48.17 (33.87)	-41.30 (31.61)	-5.92 (7.25)	-6.90 (7.07)	-30.24 (19.29)	-30.41 (21.17)	24.72 (14.59)	25.50* (15.01)	33.79* (19.03)	34.57* (19.00)
Controls?	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Observations	3,942	3,936	3,942	3,936	4,246	4,246	4,246	4,246	4,207	4,207	4,207	4,207	4,205	4,205	4,205	4,205
F	0.02	1.46	0.24	1.15	0.30	2.30	2.02	1.41	0.67	2.21	2.46	1.56	2.87	1.56	3.15	1.74
Cragg-Donald F	15.56	15.49	30.50	30.53	18.32	17.96	12.01	15.63	21.48	21.12	11.66	13.07	21.77	21.41	11.79	13.09
Kleibergen-Paap $rk\ LM$	6.18**	6.22**	7.37**	7.58**	6.31**	6.20**	6.69**	6.79**	7.45***	7.43***	7.57**	7.54**	7.55***	7.53***	7.66**	7.63**
Hansen J			0.24	0.12			1.41	1.04			2.22	1.62			0.89	0.74
Panel B: Estimation in first differences																
$\Delta\pi$	2.56 (3.64)	2.59 (3.62)	3.73 (3.28)	3.84 (3.25)	-2.64 (7.19)	-2.56 (7.28)	-1.51 (5.66)	-1.38 (5.75)	2.60 (2.60)	2.78 (2.62)	2.09 (2.11)	2.35 (2.17)	14.90 (12.35)	16.36 (13.04)	22.36** (8.99)	24.02** (9.80)
Controls?	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Observations	3,930	3,923	3,930	3,923	4,244	4,244	4,244	4,244	4,206	4,206	4,206	4,206	4,203	4,203	4,203	4,203
F	0.50	1.11	1.29	1.68	0.14	1.91	0.07	1.92	1.00	0.97	0.98	0.96	1.46	3.98	6.19	3.84
Cragg-Donald F	30.66	29.69	17.44	16.79	33.77	32.84	20.69	19.98	36.83	35.73	22.38	21.58	36.88	35.78	22.40	21.60
Kleibergen-Paap $rk\ LM$	10.39***	10.17***	11.32***	11.20***	12.13***	11.91***	13.21***	13.11***	12.93***	12.66***	13.97***	13.83***	12.94***	12.67***	13.97***	13.84***
Hansen J			0.22	0.26			0.52	0.56			0.90	0.67			0.52	0.54

What sorts of political risks matter for CIP deviations?

- Political risk measure embeds (internal and external) conflict and government stability
 - But this is a subset of political risks
- Alternative political risk proxies
 - Economic policy uncertainty (Baker, Bloom & Davis 2016)
 - Systemic political risk (corruption or rule of law)
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Main takeaways

- Political risks play a role in contributing to a more negative cross-currency basis
- Such risks matter more for CIP deviations in EMs rather than in AEs
- The accumulation of international reserves helps to relieve the dollar scarcity problem in EMs

Estimation with extra controls

	Levels						First differences					
	(1) IV	(2) 2SLS	(3) IV	(4) 2SLS	(5) IV	(6) 2SLS	(7) IV	(8) 2SLS	(9) IV	(10) 2SLS	(11) IV	(12) 2SLS
$\pi / \Delta\pi$	-58.29* (30.75)	-78.37*** (33.40)	-84.99** (40.57)	-102.81* (56.83)	-80.44** (37.11)	-96.52** (46.11)	-66.67** (27.69)	-57.28** (22.79)	-75.79** (28.21)	-66.00*** (22.16)	-76.46** (28.10)	-66.62*** (22.18)
$r^i - r^{us} / \Delta(r^i - r^{us})$	0.18** (0.08)	0.22** (0.09)	0.12 (0.11)	0.13 (0.13)	0.10 (0.11)	0.10 (0.12)	-0.24** (0.12)	-0.24** (0.12)	-0.26** (0.12)	-0.26** (0.11)	-0.26** (0.12)	-0.26** (0.12)
NEER / Δ EFFEX Rate	2.18 (2.39)	2.42 (2.82)	4.21 (3.30)	4.65 (3.90)	4.13 (2.95)	4.50 (3.40)	-10.37** (4.80)	-9.78** (4.46)	-3.50 (4.27)	-3.02 (4.15)	-3.24 (4.29)	-2.78 (4.18)
RSV / Δ RSV	-4.65** (1.97)	-5.21** (2.21)	-4.28* (2.10)	-4.57* (2.42)	-4.69** (2.10)	-5.05** (2.30)	-4.83** (2.13)	-4.80** (2.08)	-5.39** (2.07)	-5.34** (2.03)	-5.40** (2.08)	-5.36** (2.05)
Fwd spread / Δ Fwd spread	-0.51 (0.30)	-0.61* (0.32)			-0.56* (0.33)	-0.63* (0.37)	-0.04 (0.12)	-0.04 (0.12)			-0.00 (0.12)	-0.00 (0.12)
$tp^i - tp^{us} / \Delta(tp^i - tp^{us})$	-0.11 (0.11)	-0.14 (0.12)			-0.16 (0.14)	-0.19 (0.15)	-0.02 (0.05)	-0.02 (0.05)			-0.00 (0.06)	-0.01 (0.06)
$y^i - y^{us} / \Delta(y^i - y^{us})$			0.25 (0.17)	0.29 (0.23)	0.23 (0.17)	0.27 (0.22)			0.02 (0.06)	0.02 (0.05)	0.00 (0.06)	0.01 (0.05)
CurrVol / Δ CurrVol			3.84* (2.08)	4.30* (2.37)	2.87 (1.76)	3.14 (1.95)			4.57*** (1.33)	4.48*** (1.24)	4.80*** (1.40)	4.70*** (1.30)
Currency and Time FE?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,069	4,069	3,944	3,944	3,931	3,931	4,059	4,059	3,934	3,934	3,920	3,920
F	1.61	2.24	1.39	1.26	1.19	1.41	2.63	3.17	3.52	4.28	3.89	4.78
Cragg-Donald F	18.97	14.52	12.19	10.10	14.05	11.65	28.86	18.18	25.68	16.30	25.61	16.32
Kleibergen-Paap rk LM	6.65**	6.89**	5.65**	5.76*	5.98**	6.20**	11.92***	13.06***	11.03***	12.19***	11.10***	12.25***
Hansen J		0.38		0.12		0.13		0.26		0.22		0.22

Estimation robustness

	No Euro		Alternative CLP		No CNY & SAR		No fixed regime		Gov stability risk	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	IV	2SLS	IV	2SLS	IV	2SLS	IV	2SLS	IV	2SLS
π	-49.14* (25.37)	-63.30** (23.67)	-42.83* (22.12)	-63.50** (23.76)	-55.84* (28.66)	-76.62** (32.69)	-56.99* (28.92)	-70.43** (30.90)	-14.58** (7.01)	-17.90*** (6.07)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,199	4,199	4,333	4,333	4,071	4,071	4,071	4,071	4,333	4,333
F	2.56	2.77	2.74	2.92	2.52	3.10	2.45	2.96	2.71	2.96
$\Delta\pi$	-62.18** (25.48)	-59.17** (22.27)	-62.65** (24.83)	-59.03*** (21.35)	-65.00** (25.92)	-57.40** (21.60)	-64.41** (25.68)	-55.95** (21.43)	-23.05** (9.58)	-22.33** (8.60)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,196	4,196	4,330	4,330	4,069	4,069	4,069	4,069	4,330	4,330
F	3.62	4.05	2.58	2.83	3.47	4.01	3.29	3.80	3.28	3.66
	With invest profile		2009M4-2020M8		2009M6-2020M8		1-year CCB		1-month CCB	
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
	IV	2SLS	IV	2SLS	IV	2SLS	IV	2SLS	IV	2SLS
π	-80.36* (46.75)	-55.35 (41.42)	-48.57 (28.87)	-61.38** (24.85)	-51.43* (27.69)	-64.39** (24.96)	-63.40** (30.03)	-38.14 (26.78)	-23.38 (18.68)	-58.40*** (20.07)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,333	4,333	4,426	4,426	4,364	4,364	3,568	3,568	4,228	4,228
F	2.30	1.94	2.11	2.32	2.31	2.51	3.95	4.30	4.84	4.67
$\Delta\pi$	-94.13** (40.20)	-88.36** (33.62)	-66.05** (27.94)	-61.62** (23.85)	-64.56** (25.85)	-60.63** (22.19)	-31.71** (14.98)	-28.86** (13.44)	-33.29 (20.18)	-31.80 (28.56)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,330	4,330	4,423	4,423	4,361	4,361	3,567	3,567	4,226	4,226
F	3.40	3.96	3.75	4.31	3.59	4.09	10.68	9.93	3.53	3.56

Instrument robustness

	1-month election			5-month election			Excluding legislature		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Dummy	IV	2SLS	Dummy	IV	2SLS	Dummy	IV	2SLS
Election	-0.69** (0.30)			-0.45** (0.17)			-0.47** (0.22)		
π		-65.39 (45.71)	-74.27* (37.79)		-37.26* (19.05)	-53.17*** (17.79)		-54.87 (38.35)	-70.42* (34.58)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,333	4,333	4,333	4,333	4,333	4,333	4,333	4,333	4,333
F	4.26	1.68	1.63	4.51	3.10	3.85	4.82	2.33	1.85
Δ Election	-0.30** (0.14)			-0.37** (0.16)			-0.34* (0.18)		
$\Delta\pi$		-38.73** (17.92)	-37.75** (15.46)		-45.78** (21.50)	-44.16** (20.17)		-48.12* (25.77)	-45.52** (22.27)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,330	4,330	4,330	4,330	4,330	4,330	4,330	4,330	4,330
F	3.67	3.37	3.67	3.59	3.09	3.20	4.02	3.71	4.00
	Including referenda			Exogenous election			Change in government		
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Dummy	IV	2SLS	Dummy	IV	2SLS	Dummy	IV	2SLS
Election	-0.59*** (0.20)			-0.85** (0.40)			-0.35 (0.32)		
π		-72.85* (40.28)	-75.58** (33.45)		-64.64 (43.70)	-72.87** (32.40)		-18.22 (19.32)	-37.88** (15.14)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,333	4,333	4,333	4,333	4,333	4,333	4,333	4,333	4,333
F	4.47	1.92	2.00	3.52	1.54	1.90	3.86	3.12	3.55
Δ Election	-0.28** (0.11)			-0.92** (0.37)			-0.50* (0.26)		
$\Delta\pi$		-48.43** (21.88)	-45.68** (19.06)		-134.94** (63.93)	-108.79** (52.17)		-66.42 (44.62)	-58.30* (29.21)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,330	4,330	4,330	4,330	4,330	4,330	4,330	4,330	4,330
F	3.95	3.40	3.74	4.41	2.58	3.03	4.52	4.07	5.86

Pre-crisis period

	Dummies			IV			2SLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Estimation in levels									
π				-9.48 (29.15)	-8.74 (28.32)	-4.34 (28.66)	-8.59 (14.68)	-8.06 (14.83)	-11.03 (13.75)
Election	-0.11 (0.19)	-0.10 (0.30)	-0.05 (0.30)						
Controls?	N	Y	Y	N	Y	Y	N	Y	Y
Currency and Time FE?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	2,278	2,278	2,242	2,278	2,278	2,242	2,278	2,278	2,242
F	0.33	0.12	0.65	0.11	0.11	0.59	0.34	0.20	0.60
Cragg-Donald F				7.05	7.25	6.64	22.47	22.97	19.26
Kleibergen-Paap $rk\ LM$				2.55	2.58	2.57	4.02	4.14	4.19
Hansen J							0.00	0.00	0.05
Panel B: Estimation in first differences									
$\Delta\pi$				53.02 (39.10)	31.99 (36.34)	38.63 (39.31)	50.31 (38.82)	29.96 (35.96)	37.89 (39.16)
$\Delta Election$	0.30** (0.15)	0.18 (0.18)	0.21 (0.18)						
Controls?	N	Y	Y	N	Y	Y	N	Y	Y
Currency and Time FE?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	2,246	2,246	2,210	2,246	2,246	2,210	2,246	2,246	2,210
F	4.25	5.93	4.04	1.84	6.05	3.31	1.68	5.81	3.28
Cragg-Donald F				7.72	7.70	6.40	3.89	3.88	3.20
Kleibergen-Paap $rk\ LM$				5.18**	5.09**	5.07**	5.65*	5.57*	5.53*
Hansen J							1.82	1.09	1.35

Political risk relative to the U.S.

	Dummies			IV			2SLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Estimation in levels									
π				-3.31** (1.50)	-3.36** (1.55)	-3.44** (1.57)	-3.37** (1.56)	-3.31*** (1.16)	-4.60*** (1.44)
Election	-0.58*** (0.20)	-0.59*** (0.20)	-0.60*** (0.20)						
Currency and Time FE?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,339	4,339	4,333	4,339	4,339	4,333	4,339	4,339	4,333
F	8.64	5.22	4.61	4.87	4.37	2.79	4.66	7.92	3.70
Cragg-Donald F				27.45	27.36	27.27	30.57	31.44	23.53
Kleibergen-Paap rk LM				9.32***	9.26***	9.25***	10.35***	10.60***	10.05***
Hansen J							0.00	0.00	0.54
Panel B: Estimation in first differences									
$\Delta\pi$				-5.33** (1.98)	-5.20** (1.96)	-5.42** (2.01)	-5.07*** (1.75)	-4.96*** (1.74)	-5.22*** (1.79)
Δ Election	-0.45*** (0.16)	-0.44*** (0.17)	-0.45*** (0.16)						
Currency and Time FE?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,337	4,337	4,330	4,337	4,337	4,330	4,337	4,337	4,330
F	7.71	10.25	4.54	7.26	5.32	4.03	8.43	6.08	4.36
Cragg-Donald F				22.71	22.73	22.12	12.31	12.32	11.89
Kleibergen-Paap rk LM				12.99***	13.05***	12.53***	15.89***	15.93***	15.41***
Hansen J							0.28	0.25	0.20

Table 1: Panel unit root tests for main variables of interests

	<i>with demean</i>			<i>without demean</i>		
	CCB	Poli risk	$r^i - r^{us}$	CCB	Poli risk	$r^i - r^{us}$
Im-Pesaran-Shin	-19.23***	-4.55***	1.92	-20.31***	-3.32***	-0.95
Fisher ADF	-23.53***	-14.49***	-9.19***	-24.69***	-14.60***	-9.31***
Fisher PPerron	-23.92***	-7.49***	-0.21	-26.01***	-7.55***	0.45
Pesaran CADF	-16.26***	-3.38***	-3.73***	-17.36***	-5.37***	-4.31***
	ΔCCB	$\Delta Poli\ risk$	$\Delta(r^i - r^{us})$	ΔCCB	$\Delta Poli\ risk$	$\Delta(r^i - r^{us})$
Im-Pesaran-Shin	-54.79***	-61.48***	-53.42***	-52.69***	-61.39***	-40.91***
Fisher ADF	-46.46***	-42.06***	-39.88***	-46.56***	-42.57***	-38.48***
Fisher PPerron	-46.61***	-46.52***	-45.59***	-46.64***	-46.63***	-42.51***
Pesaran CADF	-28.06***	-28.05***	-26.06***	-27.76***	-27.77***	-26.22***

The null hypothesis is nonstationarity or the existence of a unit root. Lags for the tests are chosen by the Akaike criterion. The Im-Pesaran-Shin test reports the W_{t-bar} statistic, the Fisher ADF test and Fisher PPerron test report the inverse normal Z, and the Pesaran CADF reports the Z_{t-bar} statistic. *, ** and *** indicates significance at 10 percent level, 5 percent level and 1 percent level respectively.

Table 2: Sample currency

<i>G10 currencies</i>				
AUD	CAD	CHF	DKK	EUR
GBP	JPY	NOK	NZD	SEK
<i>Non-G10 currencies</i>				
BGN	CLP	CNY	COP	CZK
HKD	HUF	IDR	ILS	INR
KRW	MXN	MYR	PHP	PLN
RON	RUB	SAR	SGD	THB
TRY	TWD	ZAR		

References I