Leaning against the global financial cycle

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**The views expressed belong to the authors and are not necessarily
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The research question

- *Conditional on* the realization of a negative global financial shock, use a counter-cyclical policy from a menu
  - Monetary and fiscal policy
  - Loosen macro-prudential
  - Tighten capital controls on outflows
  - Use foreign reserves and/or borrow from IMF
- *Before* the realization of the shock, improve fundamentals to shield the country
  - Quality of institutions
  - Macro-prudential stance
  - Tighten capital controls on inflows
  - Financial openness
- A trade-off between investing in the quality of institutions or using cyclical policies later?

The global financial cycle and domestic financial conditions

- Global financial cycle and capital flows (several papers), with some sceptical views (Cerutti et al. [2019])
- Dilemma: flexible FX do not insulate domestic financing conditions (Rey [2013] and Passari and Rey [2015])
- Financial trilemma still alive *in emerging markets*: transmission of risk shocks magnified under fixed exchange rates (Obstfeld [2015], Obstfeld et al. [2018]), in particular to cross-border banking flows (Habib and Venditti [2019])
- Bonciani and Ricci [2020] study the interplay between country characteristics and the impact of uncertainty shocks
- Vulnerability to an external capital flow shock: Cesa-Bianchi et al. [2018] on LTV, foreign currency debt; Neanidis [2015] on bank supervision; Eguren-Martin et al. [2020] on the interaction between Macro-Pru and capital flows

Our contribution

- Study the interplay between the quality of institutions and the domestic impact of foreign financial shocks
- Study the interplay between the quality of institutions and the policy response
  - Monetary policy
  - FX intervention
  - Capital controls
  - Macro-prudential
- While controlling for other fundamentals and important institutional features (e.g. currency regime)

Preview of Main Findings

- Countries that have better quality of institutions (and a stronger external position) suffer less from foreign financial shocks
  - Equity prices fall less
  - Spreads increase less
  - GDP falls less
- Notwithstanding the fact that their financial conditions are less affected by the shocks
  - They loosen less macro-prudential stance
  - They intervene less in forex market
- Their monetary policy seems to be more active, but delayed: cannot explain better performance at short horizons, but could explain better GDP growth performance
- We present a stylised theoretical model to make sense of these results (preliminary)

Empirical analysis

- Empirical question to be linked to the model.
  - There is a shock (S_t) that tightens financial conditions ($Y_{i,t}$)
  - There are policies ($P_{i,t}$) that can be used to cushion the effects of the shock on financial conditions
  - There are institutional features on which the government has some control ($Z_{i,t-1}$) that can shield financial conditions from the shock
  - There are other fundamentals ($X_{i,t-1}$) more difficult to control (e.g. external position) and other policies and features (e.g. capital account openness or a fixed exchange rate) that matter for the transmission of the shock
- Monthly data, 22 emerging markets, 1995-2016
- Restrict attention to countries with monthly data of decent quality

Data: financial conditions, policies and vulnerabilities

Y_{it}	Source
Stock returns, sovereign spreads, GDP Growth	Arrigoni et al. [2020] and IMF/Haver
P_{it}	Source
Short term interest rate (%)	IMF and national sources/Haver
Foreign exchange reserves (% of GDP)	IMF/Haver
Macro-prudential stance (index)	MaPP (Alam et al. 2019)
Capital controls on inflows/outflows	Fernandez et al. (2019)
Z_{it-1}	Source
Governance indicators	World Bank
X_{it-1}	Source
Capital account openness (index)	Chinn-Ito (2018)
Exchange rate regime (dummy)	Obstfeld et al. (2010), updated
Net foreign assets (% of GDP)	IMF/Haver
S_t	Source
Excess Bond Premium	Gilchrist and Zakrajšek (2012), updated

Our Z_t: Governance Indicators

- Source is the World Bank
- Increasing score in the quality of Institutions
  - Rule of Law
  - Government effectiveness
  - Corruption control
  - Quality of Regulation
  - Political Stability
- Present results for Rule of Law, robust to other measures of quality of Institutions (correlated with each other), including net foreign assets as best proxy of external sustainability

Our X_{t-1}: Fundamentals and other institutional features

- We test for alternative institutional features, including the role of Inflation Target (similar results as for governance, but less strong)
- We control for a potential policy trilemma, including capital account openness and the exchange rate regime in our emprical model
- We test several other country fundamentals (current account, external debt, level of FX reserves, general govt. balance, public debt)
- Net foreign assets emerge as best proxy of external sustainability to predict financial conditions and policy responses

Step 1: shocks, institutions and macroeconomic outcomes

$$y_{i,t+h} - y_{i,t-1} = \alpha_{i,h} + \beta_h EBP_t + EBP_t(\delta_{x,h}Z_{i,t-1} + \beta_{x,h}X_{t-1} + \gamma_{x,h}\Delta P_{i,t}) +$$
$$\delta_h Z_{i,t-1} + \phi_h X_{t-1} + \gamma_h \Delta P_{i,t} + OTHER + \epsilon_{i,t}$$

- Panel local projections with fixed effects, accounting for cross-sectional and temporal dependence of the residuals
- $y_{i,t}$ is either stock prices, sovereign spreads, GDP growth
- OTHER includes lags of EBP_t, lags of EBP_t interacted with $Z_{i,t-1}$, macroeconomic controls (inflation and output), global variables (IP and oil prices)
- Lags of output and EBP remove any predictable movements in EBP; this allows us to identify an unanticipated shock to EBP.
- Quality of Instutions ($Z_{i,t-1}$) and other fundamentals/features ($X_{i,t-1}$) *mediate* the effect of shocks and policies on financial conditions
- The presence of policies poses an endogeneity issue: do fundamentals influence the reaction of policies?
- Our assumption: make the set $X_{i,t-1}$ rich enough to control for all time varying elements that impact on policies and outcomes

Financial conditions and institutional features

Table 1: Financial conditions (1/2)

Dep. Variable	Equity returns			Bond spreads		
Horizon	t0	t+3	t+6	t0	t+3	t+6
Shock	-9.18***	-14.5***	-16.0***	0.64***	0.72***	0.70***
	(1.28)	(2.64)	(2.57)	(0.098)	(0.19)	(0.17)
Shock*Rule of Law	2.44***	3.43*	2.82	-0.21***	-0.31**	-0.25***
	(0.79)	(1.86)	(1.74)	(0.051)	(0.13)	(0.094)
Rule of Law	-2.46***	-9.84***	-15.5***	0.095	0.41*	0.72*
	(0.71)	(2.24)	(3.56)	(0.070)	(0.21)	(0.42)
Shock*NFA/GDP	2.85*	11.4**	17.2**	-0.16	-0.53***	-0.88**
	(1.46)	(4.98)	(7.89)	(0.11)	(0.18)	(0.35)
NFA/GDP	0.91	6.01**	12.9***	0.022	-0.018	-0.11
	(0.82)	(2.71)	(4.54)	(0.063)	(0.19)	(0.27)

Financial conditions and policy response

Table 2: Financial conditions (2/2)

Dep. Variable	Equity returns			Bond spreads		
Horizon	t0	t+3	t+6	t0	t+3	t+6
Shock*Δ_Rates	-0.17	-1.04**	-1.23**	0.0098	0.038	0.0042
	(0.31)	(0.42)	(0.50)	(0.031)	(0.044)	(0.053)
Δ_Rates	-0.11***	-0.41***	-0.52**	0.0033	0.0046	0.0034
	(0.039)	(0.14)	(0.23)	(0.0054)	(0.018)	(0.031)
Shock*Δ_Reserves	0.74***	1.09***	0.45	-0.036	-0.024	-0.0039
	(0.22)	(0.37)	(0.59)	(0.030)	(0.027)	(0.024)
Δ_Reserves	-0.0044	-0.083	-0.22*	0.0015	0.0082*	0.018**
	(0.019)	(0.057)	(0.12)	(0.0013)	(0.0049)	(0.0086)
Shock*Δ_CTR_Outflows	-2.74	-1.26	1.60	0.51***	0.88***	1.16***
	(1.74)	(6.32)	(5.22)	(0.19)	(0.25)	(0.34)
Δ_Outflows	-1.00	-2.41	-3.33	-0.0012	-0.18	-0.39
	(0.68)	(2.32)	(3.93)	(0.071)	(0.22)	(0.34)
Shock*Δ_MacroPru	0.35	-1.81	-5.20**	0.047	0.14***	0.22***
	(0.34)	(1.13)	(2.28)	(0.032)	(0.050)	(0.060)
Δ_MacroPru	-0.15***	-0.54***	-0.84***	0.0013	0.0029	0.0038
	(0.027)	(0.11)	(0.22)	(0.0016)	(0.0042)	(0.0068)
Observations	4,478	4,478	4,478	3,908	3,908	3,908
Countries	21	21	21	21	21	21
R2	0.20	0.25	0.28	0.15	0.14	0.17

GDP growth and institutional features

Table 3: GDP growth (1/2)

Horizon	t+12	t+15	t+18
Shock	-0.71***	-1.03***	-1.00***
	(0.094)	(0.13)	(0.13)
Shock*Rule of Law	0.32***	0.42***	0.39***
	(0.091)	(0.12)	(0.090)
Rule of Law	-1.24**	-1.60**	-1.80**
	(0.57)	(0.66)	(0.75)
Shock*NFA/GDP	1.04	1.74**	2.49***
	(0.70)	(0.78)	(0.88)
NFA/GDP	1.09	1.39*	1.73**
	(0.68)	(0.76)	(0.82)

GDP growth and policy response

Table 4: GDP growth (2/2)

Horizon	t+12	t+15	t+18
Shock*Δ_Rates	-0.0045	-0.061	-0.080
	(0.089)	(0.098)	(0.079)
Δ_Rates	-0.17***	-0.17***	-0.17***
	(0.032)	(0.035)	(0.038)
Shock*Δ_Reserves	0.12***	0.10***	0.0015
	(0.027)	(0.031)	(0.043)
Δ_Reserves	0.0094	0.0041	-0.0052
	(0.015)	(0.016)	(0.016)
Shock*Δ_CTR_Outflows	1.68	1.04	0.60
	(1.12)	(0.90)	(0.73)
Δ_CTR_Outflows	-0.046	-0.010	0.043
	(0.55)	(0.67)	(0.75)
Shock*Δ_MacroPru	-0.24***	-0.32***	-0.33***
	(0.067)	(0.066)	(0.061)
Δ_MacroPru	-0.080***	-0.089***	-0.091***
	(0.017)	(0.021)	(0.025)
Observations	4,527	4,527	4,527
Countries	21	21	21
R2	0.65	0.64	0.63

Step 2: shocks, institutions and policy response

$$y_{i,t+h} - y_{i,t-1} = \alpha_{i,h} + \beta_h EBP_t + EBP_t(\delta_{x,h}Z_{i,t-1} + \beta_{x,h}X_{t-1}) +$$
$$\delta_h Z_{i,t-1} + \phi_h X_{t-1} + OTHER + \epsilon_{i,t}$$

- Panel local projections with fixed effects
- $y_{i,t}$ is **now** one of the potential **policy responses**: (i) policy rate; (ii) foreign exchange reserves; (iii) index of capital controls on outflows; (iv) index of macroprudential stance
- Quality of Institutions ($Z_{i,t-1}$) and other fundamentals/features ($X_{i,t-1}$) *mediate* the response of policies to the foreign financial shock

Policy rate and foreign exchange reserves

Table 5: Policy rate and foreign exchange reserves

Dep. Variable	Policy rate			FX Reserves		
Horizon	t0	t+3	t+6	t0	t+3	t+6
Shock	0.012	0.033	-0.063	-0.28*	-0.40	-0.48*
	(0.035)	(0.094)	(0.20)	(0.14)	(0.29)	(0.28)
Shock*Rule of Law	-0.017	-0.11	-0.36***	0.10**	0.36*	0.51**
	(0.042)	(0.097)	(0.11)	(0.051)	(0.21)	(0.25)
Rule of Law	0.0079	0.15	-0.036	0.013	0.098	0.31
	(0.077)	(0.19)	(0.35)	(0.065)	(0.27)	(0.55)
Shock*NFA/GDP	-0.22**	-1.00***	-1.62***	0.17	0.92**	1.69***
	(0.091)	(0.30)	(0.58)	(0.17)	(0.37)	(0.64)
NFA/GDP	-0.0076	-0.042	-0.21	-0.094	-0.36	-0.52
	(0.059)	(0.19)	(0.40)	(0.091)	(0.28)	(0.49)
Observations	4,519	4,511	4,503	5,011	5,011	5,011
Countries	21	21	21	21	21	21
R2	0.076	0.14	0.16	0.080	0.092	0.090

Capital controls and macroprudential measures

Table 6: Capital controls and macroprudential measures

Dep. Variable	Capital controls			Macropru measures		
Horizon	t0	t+3	t+6	t0	t+3	t+6
Shock	0.00066	-0.00066	-0.00083	-0.052*	-0.26**	-0.38**
	(0.0010)	(0.0029)	(0.0034)	(0.030)	(0.12)	(0.18)
Shock*Rule of Law	0.0020	0.0047	0.0010	0.043	0.16*	0.17
	(0.0032)	(0.0082)	(0.010)	(0.027)	(0.079)	(0.12)
Rule of Law	-0.0035	-0.011	-0.016	0.050*	0.18	0.28
	(0.0033)	(0.011)	(0.019)	(0.031)	(0.13)	(0.24)
Shock*NFA/GDP	0.0088	0.027**	0.028	-0.044	-0.24	-0.51**
	(0.0069)	(0.014)	(0.019)	(0.067)	(0.16)	(0.22)
NFA/GDP	0.0013	0.0066	0.016	0.078*	0.35**	0.70**
	(0.0038)	(0.013)	(0.024)	(0.045)	(0.16)	(0.33)
Observations	4,948	4,885	4,822	5,011	5,011	5,011
Countries	21	21	21	21	21	21
R2	0.0094	0.031	0.049	0.061	0.11	0.11

Summary of main findings

- Countries that have better quality of institutions (and a stronger external position) suffer less from foreign financial shocks
  - Equity prices fall less
  - Spreads increase less
  - GDP falls less
- Notwithstanding the fact that their financial conditions are less affected by the shocks
  - They loosen less macro-prudential stance
  - They intervene less in forex market
- Their monetary policy seems to be more active, but delayed: cannot explain better performance at short horizons, but could explain better GDP growth performance

Policies to lean against capital flow shocks: theory

- DSGE models with financial frictions and multiple policy tools (Basu et al. [2020] and Lama and Medina [2020])
- Foreign currency debt as a key element of vulnerability (Coulibaly [2019], Aoki et al [2018])

Policies to lean against capital flow shocks: evidence

- FX reserves to stem appreciation after capital inflow shock (Blanchard et al. [2015])
- Arce et al. [2019] and Scheubel et al. [2019]: reserve accumulation may alleviate external borrowing constraint, useful in anticipation of *future* sudden stops
- IMF papers in the context of the IPF (Mano and Sgherri [2020], Bergant et al. [2020] on macro-prudential regulation, Gelos et al. [2019], Brandao-Marques et al. [2020])
- Pasricha [2020]: EME use capital controls for both mercantilist and macro-prudential motivations (see also the survey by Rebucci and Ma [2019])
- Macroprudential "freeing the hands" of monetary policy (Mano and Sgherri [2020], Bergant et al. [2020])

A simple model of the moral hazard/stabilization trade-off

- How can we think about complementarity or trade-off between vulnerability to the GFC and cyclical stabilization policies - a dimension often discussed in policy?
- Simple model with main elements: endowment economy; an impatient household in a SOE borrows from abroad at conditions that are influenced by a global financial shock (Jeanne and Ranciere [2011])
- The government can (i) *ex ante* undertake costly structural reforms that reduce the country's dependence on the GFC and (ii) *ex post* transfer resources to (withdraw resources from) households when the GFC tightens (loosens)

The budget constraints

For the SOE household:

$$c_t = y_t + b_t - b_{t-1}r_{t-1} + g_t \tag{1}$$

where c is private consumption, y is income (endowment), b is borrowing from abroad, r is the interest rate paid, and g is a net transfer from the government

- All defined in real terms
- Endowment subject to shocks u_t

Government balance sheet (accumulation of reserves *res*):

$$res_t = res_{t-1}\bar{r}_{t-1} - g_t \tag{2}$$

- Note that reserves are remunerated (paid) at the world risk free rate $\bar{r}$, with $\bar{r} < r$

Borrowing conditions for households

Collateral constraint (assumed always binding - domestic household more impatient than the rest of the world):

$$b_t = \omega_t y_t \qquad (3)$$

where the tightness of the collateral constraint is driven by

$$\omega_t = \bar{\omega} - \epsilon_t + X_{t-1}(\epsilon_t + \epsilon_t^2) \qquad (4)$$

- X is the pre-existing state of fundamentals
- Note that the shielding effect of fundamentals is convex, i.e. *larger* for positive (tightening) shocks
- Exchange rate not explicitly modelled, but may be behind the effect of the financial shock

Utility maximization

- The representative household maximises consumption utility using a discount factor β

- The government maximizes the following utility function over g_t and x_t,

$$U_{gov} = ln(c_t) - \frac{\chi}{2}X_t^2 - \frac{\gamma}{2}res_t^2 - \frac{\tau}{2}(res_t - res_{t-1})^2 \qquad (5)$$

where the parameter χ captures the cost of improving fundamentals (e.g., facing up to lobbies); the discount factor is $\bar{\beta} > \beta$; γ is a small cost of holding reserves; τ is a cost of changing reserves (proxies for the efficiency of counter-cyclical policies)

The effect of financial and endowment shocks
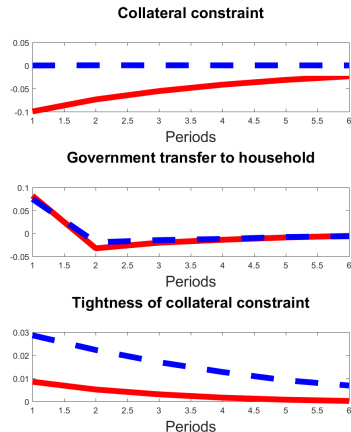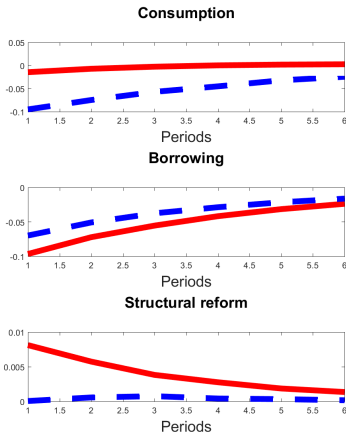
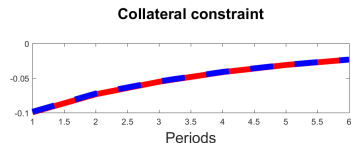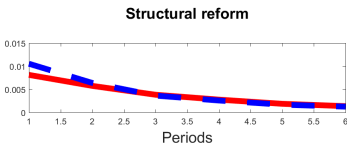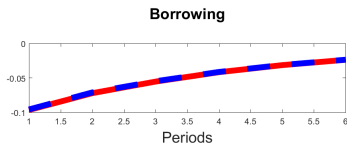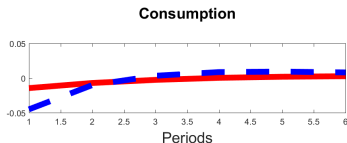- Tightening global financial shock
- Negative endowment shock

The role of the cost of structural reforms χ
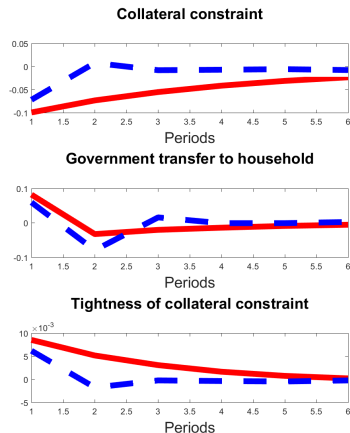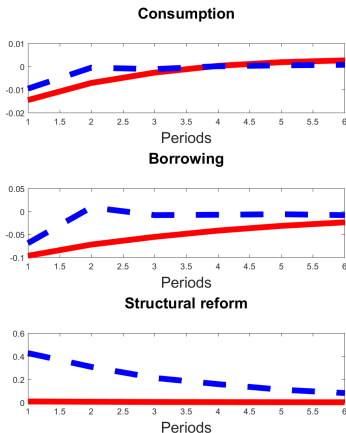
- Financial shock baseline
- Structural reform less costly (χ close to zero)

The role of the cost of cyclical policies τ
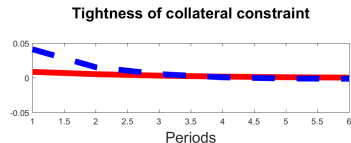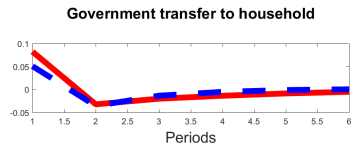
- Financial shock baseline
- More costly counter-cyclical policy (larger τ)

Key messages from the model analysis

- A persistent financial shock elicits a response from both cyclical and structural policies
- Less costly structural reforms dampen the counter-cyclical response (as in the data)
- Vice versa, a more costly counter-cyclical policy elicits a stronger response from structural
- For further work: welfare implications of cyclical and structural policies?

Conclusions

- Focus on the trade offs that EMEs policy makers face when taming the GFC
- In the face of GFC shocks EMEs could
  - act preemptively making a costly investment in fundamentals
  - act ex post through policies
- First results suggest that major concern is exchange rate stabilization
- Actions end up being pro-cyclical (higher rates)
- No clear that a trade off between policies and fundamentals actually exists in the data
- Thanks for your attention!

Fernando Arce, Julien Bengui, and Javier Bianchi. A Macroprudential Theory of Foreign Reserve Accumulation. NBER Working Papers 26236, National Bureau of Economic Research, Inc, September 2019. URL https://ideas.repec.org/p/nbr/nberwo/26236.html.

Simone Arrigoni, Alina Bobasu, and Fabrizio Venditti. The simpler the better: measuring financial conditions for monetary policy and financial stability. ECB working papers 2451, European Central Bank, August 2020.

Suman S Basu, Emine Boz, Gita Gopinath, Francisco Roch, and Filiz D Unsal. A Conceptual Model for the Integrated Policy Framework. IMF Working Papers 20/121, International Monetary Fund, July 2020. URL https://ideas.repec.org/p/imf/imfwpa/20-121.html.

Katharina Bergant, Francesco Grigoli, Niels-Jakob H Hansen, and Damiano Sandri. Dampening Global Financial Shocks: Can Macroprudential Regulation Help (More than Capital Controls)? IMF Working Papers 20/106, International Monetary Fund, June

2020. URL
https://ideas.repec.org/p/imf/imfwpa/20-106.html.

Olivier J Blanchard, Gustavo Adler, and Irineu E de Carvalho Filho. Can Foreign Exchange Intervention Stem Exchange Rate Pressures from Global Capital Flow Shocks? IMF Working Papers 15/159, International Monetary Fund, July 2015. URL https://ideas.repec.org/p/imf/imfwpa/15-159.html.

Dario Bonciani and Martino Ricci. The international effects of global financial uncertainty shocks. *Journal of International Money and Finance*, 109(C), 2020. doi: 10.1016/j.jimonfin.2020.1. URL https://ideas.repec.org/a/eee/jimfin/v109y2020ics0261560620301923.html.

Luis Brandao-Marques, R. G Gelos, Machiko Narita, and Erlend Nier. Leaning Against the Wind: A Cost-Benefit Analysis for an Integrated Policy Framework. IMF Working Papers 20/123, International Monetary Fund, July 2020. URL https://ideas.repec.org/p/imf/imfwpa/20-123.html.

Eugenio Cerutti, Stijn Claessens, and Andrew K. Rose. How Important is the Global Financial Cycle? Evidence from Capital Flows. *IMF Economic Review*, 67(1):24–60, March 2019. doi: $10.1057/s41308\text{-}019\text{-}00073\text{-}$. URL https://ideas.repec.org/a/pal/imfecr/v67y2019i1d10.1057_s41308-019-00073-5.html.

Ambrogio Cesa-Bianchi, Andrea Ferrero, and Alessandro Rebucci. International credit supply shocks. *Journal of International Economics*, 112(C):219–237, 2018. doi: $10.1016/j.jinteco.2017.11$. URL https://ideas.repec.org/a/eee/inecon/v112y2018icp219-237.html.

Louphou Coulibaly. Monetary Policy in Sudden Stop-prone Economies. 2019 Meeting Papers 529, Society for Economic Dynamics, 1 2019. URL https://ideas.repec.org/p/red/sed019/529.html.

Fernando Eguren-Martin, Cian O'Neill, Andrej Sokol, and Lukas von dem Berge. Capital flows-at-risk: push, pull and the role of policy. Bank of England working papers 881, Bank of England,

August 2020. URL
https://ideas.repec.org/p/boe/boeewp/0881.html.

R. G Gelos, Lucyna Gornicka, Robin Koepke, Ratna Sahay, and
Silvia Sgherri. Capital Flows at Risk: Taming the Ebbs and
Flows. IMF Working Papers 19/279, International Monetary
Fund, December 2019. URL
https://ideas.repec.org/p/imf/imfwpa/19-279.html.

Maurizio Michael Habib and Fabrizio Venditti. The global capital
flows cycle: structural drivers and transmission channels. ECB
Working Papers 2280, European Central Bank, May 2019. URL
https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.
wp2280~2e76974901.en.pdf.

Olivier Jeanne and Romain Ranciere. The Optimal Level of
International Reserves For Emerging Market Countries: A New
Formula and Some Applications. *Economic Journal*, 121(555):
905–930, September 2011. doi: j.1468-0297.2011.02435.x. URL
https://ideas.repec.org/a/ecj/econjl/
v121y2011i555p905-930.html.

Ruy Lama and Juan Pablo Medina. Mundell meets Poole: Managing capital flows with multiple instruments in emerging economies. *Journal of International Money and Finance*, xx(xx): xx, xx 2020.

Rui Mano and Silvia Sgherri. One Shock, Many Policy Responses. IMF Working Papers 2020/010, International Monetary Fund, January 2020. URL https://ideas.repec.org/p/imf/imfwpa/2020-010.html.

Kyriakos C. Neanidis. Volatile Capital Flows and Economic Growth: The Role of Macro-prudential Regulation. Centre for Growth and Business Cycle Research Discussion Paper Series 215, Economics, The Univeristy of Manchester, 2015. URL https://ideas.repec.org/p/man/cgbcrp/215.html.

Maurice Obstfeld. Trilemmas and Tradeoffs: Living with Financial Globalization. In Claudio Raddatz, Diego Saravia, and Jaume Ventura, editors, *Global Liquidity, Spillovers to Emerging Markets and Policy Responses*, volume 20 of *Central Banking, Analysis, and Economic Policies Book Series*, chapter 2, pages

013–078. Central Bank of Chile, March 2015. URL `https://ideas.repec.org/h/chb/bcchsb/v20c02pp013-078.html`.

Maurice Obstfeld, Jonathan D. Ostry, and Mahvash S. Qureshi. Global Financial Cycles and the Exchange Rate Regime: A Perspective from Emerging Markets. *AEA Papers and Proceedings*, 108:499–504, May 2018. URL `https://ideas.repec.org/a/aea/apandp/v108y2018p499-504.html`.

Gurnain Kaur Pasricha. Estimated Policy Rules for Capital Controls. IMF Working Papers 20/80, International Monetary Fund, June 2020. URL `https://ideas.repec.org/p/imf/imfwpa/20-80.html`.

Evgenia Passari and Hélène Rey. Financial Flows and the International Monetary System. *Economic Journal*, 0(584): 675–698, May 2015. URL `https://ideas.repec.org/a/wly/econjl/vy2015i584p675-698.html`.

Alessandro Rebucci and Chang Ma. Capital Controls: A Survey of the New Literature. NBER Working Papers 26558, National

Bureau of Economic Research, Inc, December 2019. URL
https://ideas.repec.org/p/nbr/nberwo/26558.html.

Helene Rey. Dilemma not trilemma: the global cycle and monetary
policy independence. *Proceedings - Economic Policy Symposium
- Jackson Hole*, pages 1–2, 2013. URL
https://ideas.repec.org/a/fip/fedkpr/y2013x9.html.

Beatrice Scheubel, Livio Stracca, and Cédric Tille. Taming the
global financial cycle: What role for the global financial safety
net? *Journal of International Money and Finance*, 94(C):
160–182, 2019. URL
https://EconPapers.repec.org/RePEc:eee:jimfin:v:94:
y:2019:i:c:p:160-182.