Capital Flows and Sovereign Debt Markets: Evidence from Index Rebalancings

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Introduction

- How do **informationless capital flows** affect sovereign debt markets?
- A common view in international finance is that capital flows that are not related to changes in a country's future prospects or in global interest rates should not affect sovereign bond prices
  - Under the **Expectation hypothesis**, changes in bond prices should only reflect changes in risk-free interest rates and expected default losses
  - However, in the presence of **limits to arbitrage** and/or **preferred-habitat** investors, shocks to the demand for sovereign bonds can impact their prices.

Motivation

- Understanding how **capital flows affect sovereign bond markets** is important for at least two reasons:
  - ▷ The price and the liquidity of sovereign debt securities are central to the macroeconomy of countries
  - ▷ International capital flows to sovereign debt markets have grown substantially in the last decade Inflows to Emerg. Mkts
- Despite its importance, there are few empirical studies on this topic
- Capital flows are **endogeneous** to sovereign bond prices and liquidity

Contribution

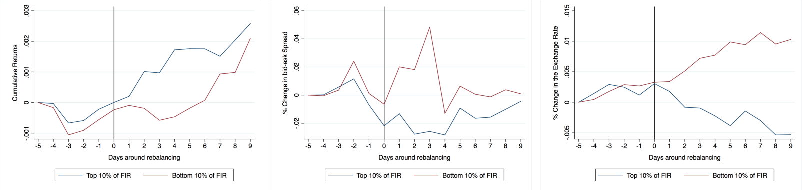
- Our main contribution is to provide evidence of the impact of **informationless capital flows** on:
  - **Prices**: cumulative returns of sovereign bonds
  - **Liquidity**: percentage change in the bid-ask spreads
  - **Exchange rate**: percentage change in the FX rates
- **Main novelty**: our identification strategy
  - Exploit **monthly rebalancings** in the major local-currency sovereign debt index in emerging countries
  - Construct a measure of Flows Implied by Rebalancings **(FIR)**

Main Findings

- We find that these **informationless** flows:
  - **prompt cumulative returns** of sovereign bonds
  - **deepen the sovereign debt market**, at least in our shortest window
  - **lead to an appreciation** of local currencies
- **Placebo tests**: FIR is not significant in the days immediately prior to the rebalancings
- **Robustness checks**: results hold when relaxing the assumptions made to construct the FIR measure
- **Heterogeneity analysis**: results consistent with the presence of preferred-habitat investors

Preview of the results

Figure: Price, Liquidity and Exchange Rate around the Rebalancing date



(a) Price **(b)** Spread **(c)** Exchange Rate

Related Studies

- This paper mostly contributes to four strands of literature:
  - **Demand shocks and financial markets**: Shleifer and Vishny (1997), Duffie (2010), Vayanos and Vila (2009). More broadly, aggregate effects of institutional investors: Broner et al. (2006), Raddatz and Schmukler (2012), Raddatz et al. (2017)
  - **Foreign investor base and government bond yields**: Warnock and Warnock (2009), Arslanalp and Poghosyan (2016)
  - **Effects of capital flows on liquidity & exchange rates**: Vagias and Van Dijk (2011), Hau et al. (2010)
  - **Capital flows expansionary or contractionary**: Calderon and Kubota (2012), Lane and McQuade (2014), Blanchard et al. (2015)

Outline

1. Introduction and Motivation

2. Index Rebalancings and Empirical Strategy

   The J.P. Morgan Government Bond Index EM Global Div.

   The Flows Implied by the Rebalancigns (FIR)

   Data and Summary Statistics

3. Results

4. Conclusions

The Benchmark

- The **J.P. Morgan Government Bond Index EM Global Diversified** is the most important local-currency sovereign debt index in emerging countries
- It belongs to the GBI-EM family of indexes. These are constructed using a bottom-up approach. J.P. establishes which countries (and securities) to include in the index.
- Each country has a **benchmark weight** w_{ct}^{B}, and rebalancings are at the monthly frequency
- In most of the indexes $w_{ct}^{B} = \frac{MV_{ct}}{\sum_c MV_{ct}}$

Rebalancings from the GBI-EM Global Diversified

- We use monthly rebalancings from The GBI-EM Global Diversified for **two reasons**:
  - The J.P. Morgan Government Bond Index EM Global Diversified is the **most important** local-currency sovereign debt **index** in emerging countries:
    - 89% of AUM of funds investing in local currency sovereign debt were benchmarked against a J.P. Morgan Index
    - In 2016, AUM benchmarked against the GBI-EM Glob. Div. were 186B $, compared to 20B $ for the rest of the GBI-EM indexes
  - To preserve diversification, the GBI-EM Global Diversified has a **limit on benchmark weight**: $w_{ct}^{B} \leq 10\%$

Capital Flows and Benchmark weights

To construct our measure of rebalancing-implied flows we start from:

$$F_{ict} = w_{ict} F_{it} + \tilde{A}_{it} \left(w_{ict} - w_{ict}^{BH} \right),$$

where:

- F_{ict} is the net investment flow (in dollars) from fund i to country c at time t
- w_{ict} is the portfolio weight the fund decides to have in that country at time t
- F_{it} is the net inflow (in dollars) from investors to fund i at time t
- $\tilde{A}_{it} = R_{it} A_{it-1}$ is the value of the fund's assets at the beginning of time t
- w_{ict}^{BH} is the fund's buy-and-hold weight in that country

Assumptions

We make three simplifying assumptions:

- $F_{it} = 0$ near each rebalancing
- Funds act like **passive funds**: $w_{ict} = w_{ct}^{B}$
- $\tilde{A}_{it} = A_{it}$

The FIR measure

Summing across funds and normalizing by market size:

$$FIR_{ct} = \frac{A_t \lambda_{ct}}{MV_{ct-1}},$$

where:

- $\lambda_{ct} = (w_{ct}^{B} - w_{ct}^{BH,B})$ (rebalancing reallocation)
- A_t: total assets benchmarked to the index
- MV_{ct-1}: prior-period market value of gov. debt in LCY

Intuitively, FIR_{ct} is the implied dollar flow as a % of market size.

Distribution of FIR

Empirical Strategy

We exploit that rebalancings occur end/beginning of month and estimate:

$$\Delta y^{z}_{jct} = \theta_t + \theta_c + \theta_{jt} + \beta\, FIR_{ct} + \varepsilon_{jct}, \tag{1}$$

where:

- $\Delta y^{z}_{jct} = y_{jct,d+z} - y_{jct,d-5}$ over $[d-5, d+z]$
- θ_t, θ_c: time and country FE
- θ_{jt}: maturity FE
- ε_{jct}: error term

Data

We combine multiple sources:

- Benchmark weights, rebalancing dates, AUM from **J.P. Morgan Markets** (Index Composition & Statistics)
- ISINs of LCY sovereign straight bonds from **Bloomberg**
- Bonds, FX, EMBI Global stripped spreads from **Datastream**

  Summary Statistics | Summary Statistics, by country
- Funds tracking the GBI-EM Global Div. from **EPFR**

  Summary Statistics on funds

Outline

Effect on Bond Prices

Dependent Variable: Cumulative Returns	Time FE			Maturity & Time FE			Maturity, Country & Time FE		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	0.086***	0.092***	0.111***	0.087***	0.092***	0.112***	0.087***	0.097***	0.121***
	(0.021)	(0.025)	(0.035)	(0.021)	(0.025)	(0.035)	(0.022)	(0.027)	(0.036)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	No	No	No	No	No	Yes	Yes	Yes
Maturity controls	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Mean of FIR	0.068	0.067	0.067	0.068	0.067	0.067	0.068	0.067	0.067
Stand. dev. of FIR	0.872	0.872	0.872	0.872	0.872	0.872	0.872	0.872	0.872
Observations	19348	19334	19324	19348	19334	19324	19348	19334	19324
N. of Countries	16	16	16	16	16	16	16	16	16
N. of Bonds	638	638	638	638	638	638	638	638	638
R^2	0.175	0.208	0.231	0.176	0.209	0.231	0.182	0.217	0.242

1-sd increase in FIR $\Rightarrow$ 8-bp increase in sovereign bond returns (10-day window)

Effect on Liquidity

Dependent Variable: Δ log(Bid-Ask Spread)	Time FE			Maturity & Time FE			Maturity, Country & Time FE		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	-0.967***	-0.258	-0.186	-0.943***	-0.229	-0.157	-1.057***	-0.216	-0.240
	(0.331)	(0.279)	(0.307)	(0.330)	(0.276)	(0.314)	(0.340)	(0.307)	(0.320)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	No	No	No	No	No	Yes	Yes	Yes
Maturity controls	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Mean of FIR	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066
Stand. dev. of FIR	0.871	0.870	0.870	0.871	0.870	0.870	0.871	0.870	0.870
Observations	19078	19052	19021	19078	19052	19021	19078	19052	19021
N. of Countries	16	16	16	16	16	16	16	16	16
N. of Bonds	632	632	632	632	632	632	632	632	632
R^2	0.035	0.030	0.043	0.036	0.031	0.045	0.038	0.034	0.047

1-sd increase in FIR $\Rightarrow$ 84-bp lower spread in the shortest window

Effect on Exchange Rates

Dependent Variable: Δ log(FX Rate)									
	Time FE			Country & Time FE			Clustered SE		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	-0.328***	-0.365***	-0.370***	-0.362***	-0.414***	-0.427***	-0.362***	-0.414***	-0.427***
	(0.092)	(0.098)	(0.112)	(0.097)	(0.101)	(0.116)	(0.110)	(0.133)	(0.144)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Mean of FIR	0.052	0.053	0.052	0.052	0.053	0.052	0.052	0.053	0.052
Stand. dev. of FIR	0.875	0.874	0.875	0.875	0.874	0.875	0.875	0.874	0.875
Observations	875	877	876	875	877	876	875	877	876
N. of Countries	16	16	16	16	16	16	16	16	16
R^2	0.438	0.451	0.421	0.462	0.478	0.451	0.462	0.478	0.451

1-sd increase in FIR $\Rightarrow$ 41-bp decrease in FX returns (10-day window)

Prices

Dependent Variable: Cumulative Returns									
	Pre-rebalancing				Rebalancing	Post-rebalancing			
	$[d-4]$	$[d-3]$	$[d-2]$	$[d-1]$	d	$[d+1]$	$[d+2]$	$[d+3]$	$[d+4]$
FIR	0.013	0.004	0.017	0.021	0.015	0.035*	0.064***	0.087***	0.102***
	(0.008)	(0.013)	(0.014)	(0.018)	(0.018)	(0.018)	(0.019)	(0.022)	(0.025)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean of FIR	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.067
Stand. dev. of FIR	0.872	0.872	0.872	0.872	0.872	0.872	0.872	0.872	0.872
Observations	19348	19348	19348	19348	19348	19348	19348	19348	19339
N. of Countries	16	16	16	16	16	16	16	16	16
N. of Bonds	638	638	638	638	638	638	638	638	638
R^2	0.063	0.105	0.129	0.145	0.165	0.161	0.165	0.182	0.196

▸ Spread ▸ FX Rate

Testing and Relaxing the Assumptions on FIR

- We made three simplifying assumptions:
  - Aggregate flows to funds are zero at the rebalancing date
  - All mutual funds act as passive funds
  - $A_{it} = \tilde{A}_{it}$
- Use EPFR fund-level data on GBI-EM Global Div. trackers EPFR funds
- Test each assumption; results robust when relaxing them Non-zero fund flows Funds' activism Adjusted FIR
- Also check robustness to high sovereign risk episodes Sovereign Risk

Heterogeneity

Heterogeneous effects of FIR on Price, Liquidity and Exchange Rate

	Cumulative Returns			Δ log(Bid-Ask Spread)			Δ log(FX Rate)		
	[d + 3]	[d + 5]	[d + 7]	[d + 3]	[d + 5]	[d + 7]	[d + 3]	[d + 5]	[d + 7]
negative FIR × FIR	0.194**	0.140	0.210*	0.058	1.539	1.617	-0.787***	-0.895***	-0.944***
	(0.075)	(0.094)	(0.118)	(0.881)	(1.146)	(1.198)	(0.235)	(0.236)	(0.267)
positive FIR × FIR	0.157***	0.176***	0.199***	-1.373**	-0.609	-1.277**	-0.239**	-0.217	-0.170
	(0.046)	(0.062)	(0.075)	(0.586)	(0.569)	(0.503)	(0.121)	(0.139)	(0.151)
2009-2012 × FIR	0.039	0.015	0.033	-0.653	-0.638	-0.756	-0.392***	-0.327***	-0.357***
	(0.032)	(0.032)	(0.036)	(0.564)	(0.497)	(0.509)	(0.110)	(0.107)	(0.118)
2013-2016 × FIR	0.171***	0.170***	0.234***	-1.580**	0.045	0.376	-0.338*	-0.331*	-0.424*
	(0.034)	(0.044)	(0.068)	(0.679)	(0.653)	(0.654)	(0.192)	(0.186)	(0.227)
Long-Term × FIR	0.156***	0.167***	0.220***	-0.966**	-0.420	-0.520			
	(0.028)	(0.033)	(0.049)	(0.474)	(0.484)	(0.441)			
Medium-Term × FIR	0.069**	0.087	0.087	-1.350**	0.087	0.282			
	(0.031)	(0.057)	(0.081)	(0.667)	(0.622)	(0.734)			
Short-Term × FIR	0.025	0.031	0.034	-1.059**	-0.108	-0.123			
	(0.021)	(0.028)	(0.038)	(0.454)	(0.321)	(0.378)			
Bonds in GBI-EM × FIR	0.096***	0.151***	0.199***	-1.095**	0.007	0.203			
	(0.029)	(0.039)	(0.059)	(0.497)	(0.434)	(0.461)			
Bonds not in GBI-EM × FIR	0.083***	0.067**	0.078**	-1.026***	-0.327	-0.484			
	(0.028)	(0.030)	(0.039)	(0.353)	(0.352)	(0.371)			
Observations	19348	19334	19324	19078	19052	19021	875	877	876

Outline

1. Introduction and Motivation
2. Index Rebalancings and Empirical Strategy
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Conclusive Remarks

- We analyze the effect of **informationless capital flows** on **sovereign bond** and **exchange rate** markets
- We construct and use **FIR** in the main LCY sovereign index for EMs
- Rebalancing-driven flows: (i) **increase bond returns**, (ii) **deepen debt markets**, (iii) **appreciate local currencies**
- Potential implications for government financing, credit supply, competitiveness

Thank You!

Inflows to Emerging Markets

Figure: Gross Liability Flows to Emerging Markets

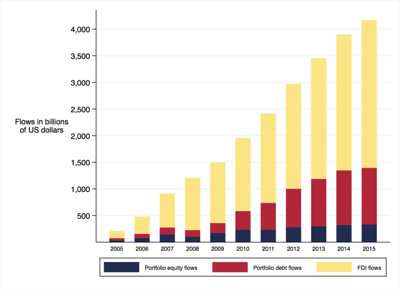

Figure: Absolute

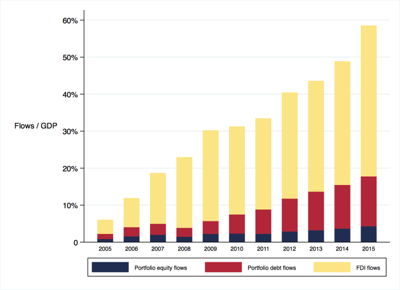

Figure: Relative to GDP

Back

The FIR measure

Figure: Distribution of Flows Implied by Rebalancing

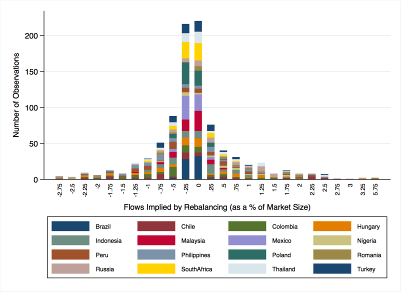

Figure: Histogram

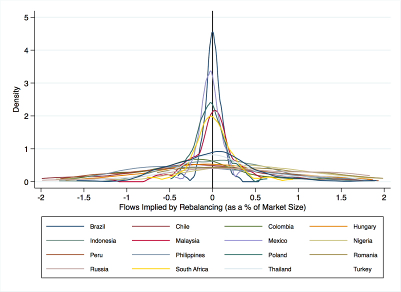

Figure: Kernel density

Back

Summary Statistics

Panel A: Bond-level summary statistics					
	Mean	Sd	Min	Median	Max
Δlog(Price)$_3$	-0.01	1.31	-11.6	0.00	10.2
Δlog(Price)$_5$	-0.03	1.49	-14.2	0.00	11.0
Δlog(Price)$_7$	-0.05	1.68	-18.3	0.00	11.9
Relative Bid-Ask Spread	0.01	0.01	0.0	0.00	0.2
Δlog(Bid-Ask Spread)$_3$	-1.13	34.15	-624.6	0.00	552.5
Δlog(Bid-Ask Spread)$_5$	-0.72	35.55	-583.5	0.00	621.7
Δlog(Bid-Ask Spread)$_7$	-0.82	35.25	-579.4	0.00	621.7
Years to Maturity	8.60	7.29	1.0	6.26	50.4
Years of Life	4.70	3.38	0.0	4.05	22.6
Panel B: Country-level summary statistics					
FIR	0.05	0.86	-2.6	0.00	5.9
Δlog(FX rate)$_3$	0.14	2.10	-6.4	-0.02	15.7
Δlog(FX rate)$_5$	0.16	2.30	-6.0	-0.02	14.1
Δlog(FX rate)$_7$	0.28	2.51	-10.7	-0.01	16.8
Total Market Value in Billions of U.S. \$ (MV)	60.12	54.56	0.6	49.87	261.9
Weight in the Index (w^B)	6.93	3.69	0.1	9.21	10.0
Stripped EMBI Global Spread	220.91	84.56	78.0	205.00	631.0

Back

Liquidity

Dependent Variable: Δ log(Bid-Ask Spread)									
	Pre-rebalancing				Rebalancing	Post-rebalancing			
	$[d-4]$	$[d-3]$	$[d-2]$	$[d-1]$	d	$[d+1]$	$[d+2]$	$[d+3]$	$[d+4]$
FIR	0.109	0.391	0.383	0.090	-0.325	-0.671**	-0.625*	-1.057***	-0.552
	(0.245)	(0.272)	(0.326)	(0.212)	(0.315)	(0.292)	(0.353)	(0.340)	(0.343)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean of FIR	0.064	0.064	0.065	0.064	0.064	0.064	0.066	0.066	0.066
Stand. dev. of FIR	0.872	0.872	0.872	0.872	0.872	0.871	0.872	0.871	0.871
Observations	19091	19095	19088	19098	19091	19090	19055	19078	19067
N. of Countries	16	16	16	16	16	16	16	16	16
N. of Bonds	632	632	632	632	632	632	632	632	632
R^2	0.009	0.009	0.008	0.044	0.043	0.041	0.039	0.038	0.050

Back

Exchange Rates

Dependent Variable: Δ log(FX Rate)									
	Pre-rebalancing				Rebalancing	Post-rebalancing			
	$[d-4]$	$[d-3]$	$[d-2]$	$[d-1]$	d	$[d+1]$	$[d+2]$	$[d+3]$	$[d+4]$
FIR	-0.025	-0.069*	-0.074	-0.133**	-0.270***	-0.311***	-0.330***	-0.362***	-0.410***
	(0.032)	(0.039)	(0.048)	(0.058)	(0.071)	(0.078)	(0.094)	(0.097)	(0.109)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean of FIR	0.051	0.051	0.053	0.053	0.049	0.052	0.053	0.052	0.053
Stand. dev. of FIR	0.874	0.874	0.874	0.874	0.871	0.874	0.874	0.875	0.874
Observations	876	876	878	878	876	874	875	875	877
N. of Countries	16	16	16	16	16	16	16	16	16
R^2	0.353	0.443	0.379	0.422	0.434	0.445	0.439	0.462	0.465

Back

Summary Statistics on Funds

Fund-level summary statistics					
	Mean	Sd	Min	Median	Max
Assets Under Management	604.62	1297.79	0.0	156.53	15642.1
Fund Returns	0.00	0.03	-0.3	0.00	0.2
Fund Flows in U.S. \$ (F)	2.63	74.27	-1856.1	0.00	1079.7
Fund Flows as a % of AUM	3.03	110.76	-110.4	0.00	9232.4
Abs(Fund Flows)	25.69	69.73	0.0	2.96	1856.1
Fund R^2	0.81	0.20	0.1	0.91	1.0
Average N. of Share Classes within a Fund	7.82	8.14	1.0	4.00	34.0
Total N. of Funds	142.00	0.00	142.0	142.00	142.0
Total N. of Share Classes	898.00	0.00	898.0	898.00	898.0

Back

FIR computed on EPFR funds

Re-computing FIR on the subsample of EPFR funds

	Cumulative Returns			Δ log(Bid-Ask Spread)			Δ log(FX Rate)		
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	0.246***	0.266***	0.331***	-3.090***	-0.815	-0.750	-0.968***	-1.071***	-1.102***
	(0.063)	(0.076)	(0.102)	(0.905)	(0.849)	(0.871)	(0.262)	(0.269)	(0.311)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Mean of FIR	0.022	0.022	0.022	0.022	0.021	0.022	0.018	0.018	0.018
Stand. dev. of FIR	0.313	0.313	0.313	0.313	0.313	0.313	0.320	0.320	0.320
Observations	19348	19334	19324	19078	19052	19021	875	877	876

1-sd increase in FIR $\Longrightarrow$ 8-bp increase in sovereign bond returns (10-day window)

Back

Non-zero fund flows

Panel A: Re-computing FIR on the subsample of EPFR funds with net flows lower than 3M dollars									
	Cumulative Returns			Δ log(Bid-Ask Spread)			Δ log(FX Rate)		
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	1.911***	2.305***	2.783***	-26.431***	0.080	-5.468	-7.299***	-8.462***	-8.444***
	(0.463)	(0.615)	(0.857)	(8.826)	(7.872)	(7.882)	(2.032)	(2.171)	(2.494)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Mean of FIR	0.003	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.002
Stand. dev. of FIR	0.039	0.039	0.039	0.039	0.039	0.039	0.040	0.040	0.040
Observations	19348	19334	19324	19078	19052	19021	875	877	876
Panel B: Excluding months in the top and the bottom decile of the distribution of aggregate fund flows									
	Cumulative Returns			Δ log(Bid-Ask Spread)			Δ log(FX Rate)		
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	0.209***	0.279**	0.439***	-3.190**	-1.954**	-2.748**	-1.078***	-1.184***	-1.158***
	(0.078)	(0.114)	(0.138)	(1.223)	(0.926)	(1.071)	(0.334)	(0.336)	(0.380)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Mean of FIR	0.018	0.018	0.018	0.017	0.017	0.018	0.017	0.017	0.017
Stand. dev. of FIR	0.307	0.307	0.307	0.306	0.306	0.306	0.309	0.309	0.309
Observations	14353	14342	14336	14131	14115	14092	657	659	659

Back

Non-zero fund flows

Let $F_{it} \neq 0$ in $F_{ict} = w_{ict} F_{it} + \tilde{A}_{it}(w_{ict} - w_{ict}^{BH}) \Rightarrow \gamma_{ct} = \frac{w_{ct}^{B} F_t}{MV_{ct-1}}$

Panel C: Controlling for non-zero aggregate fund flows									
	Cumulative Returns			Δ log(Bid-Ask Spread)			Δ log(FX Rate)		
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	0.245***	0.269***	0.340***	-3.068***	-0.762	-0.645	-0.973***	-1.074***	-1.108***
	(0.064)	(0.077)	(0.102)	(0.903)	(0.844)	(0.863)	(0.261)	(0.269)	(0.311)
γ	-1.614	4.664	16.211*	34.694	83.822	167.398	-15.259	-9.227	-17.160
	(6.562)	(6.982)	(8.468)	(75.911)	(118.679)	(100.834)	(17.285)	(17.149)	(17.954)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Mean of FIR	0.022	0.022	0.022	0.022	0.021	0.022	0.018	0.018	0.018
Stand. dev. of FIR	0.313	0.313	0.313	0.313	0.313	0.313	0.320	0.320	0.320
Observations	19348	19334	19324	19078	19052	19021	875	877	876

Back

Funds' activism

Panel A: Re-computing FIR on the subsample of passive mutual funds									
	Cumulative Returns			Δ log(Bid-Ask Spread)			Δ log(FX Rate)		
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	7.761***	7.753***	9.571***	-104.840***	-3.039	5.768	-28.076***	-32.200***	-33.791***
	(2.138)	(2.596)	(3.492)	(32.065)	(31.846)	(31.585)	(8.536)	(9.341)	(10.833)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Mean of FIR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Stand. dev. of FIR	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Observations	19348	19334	19324	19078	19052	19021	875	877	876
Panel B: Re-computing FIR on the subsample of funds with R^2 higher than 95%									
	Cumulative Returns			Δ log(Bid-Ask Spread)			Δ log(FX Rate)		
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	0.794***	0.855***	1.047***	-10.022***	-2.179	-1.932	-3.037***	-3.385***	-3.504***
	(0.191)	(0.238)	(0.326)	(2.937)	(2.811)	(2.829)	(0.841)	(0.879)	(1.017)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Mean of FIR	0.007	0.007	0.007	0.007	0.007	0.007	0.006	0.006	0.006
Stand. dev. of FIR	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
Observations	19348	19334	19324	19078	19052	19021	875	877	876

Back

Adjusted-FIR

Re-computing FIR using the market value of funds assets

	Cumulative Returns			Δ log(Bid-Ask Spread)			Δ log(FX Rate)		
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	0.244***	0.264***	0.329***	-3.130***	-0.781	-0.718	-0.964***	-1.074***	-1.106***
	(0.062)	(0.075)	(0.102)	(0.901)	(0.849)	(0.872)	(0.262)	(0.271)	(0.315)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Mean of FIR	0.023	0.023	0.023	0.023	0.022	0.023	0.018	0.019	0.018
Stand. dev. of FIR	0.314	0.314	0.314	0.314	0.314	0.314	0.319	0.319	0.319
Observations	19348	19334	19324	19078	19052	19021	875	877	876

Back

Sovereign Risk

Panel A: Controlling for sovereign risk									
	Cumulative Returns			Δ log(Bid-Ask Spread)			Δ log(FX Rate)		
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	0.071***	0.091***	0.116***	-1.111***	-0.261	-0.306	-0.369***	-0.427***	-0.442***
	(0.023)	(0.029)	(0.041)	(0.373)	(0.354)	(0.372)	(0.102)	(0.106)	(0.123)
EMBI Spread	-0.000	-0.000	-0.000	-0.007	-0.012*	-0.010	0.002	0.002	0.003
	(0.000)	(0.000)	(0.001)	(0.007)	(0.007)	(0.007)	(0.002)	(0.002)	(0.002)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Mean of FIR	0.054	0.054	0.054	0.052	0.052	0.052	0.046	0.047	0.046
Stand. dev. of FIR	0.864	0.863	0.863	0.862	0.861	0.861	0.874	0.873	0.874
Observations	16981	16969	16961	16715	16699	16679	813	815	814
Panel B: Excluding observations in the top 5% of the distribution of the EMBI spread									
	Cumulative Returns			Δ log(Bid-Ask Spread)			Δ log(FX Rate)		
	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$	$[d+3]$	$[d+5]$	$[d+7]$
FIR	0.071***	0.086***	0.112**	-1.259***	-0.387	-0.494	-0.412***	-0.447***	-0.474***
	(0.023)	(0.031)	(0.044)	(0.367)	(0.378)	(0.383)	(0.105)	(0.104)	(0.120)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maturity controls	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Mean of FIR	0.048	0.048	0.048	0.046	0.045	0.046	0.038	0.039	0.039
Stand. dev. of FIR	0.857	0.857	0.857	0.855	0.855	0.855	0.869	0.868	0.868
Observations	16547	16535	16527	16281	16265	16245	782	784	783

Back

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