Topography of the FX Derivatives Market: A View from London

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Adrien Rousset Planat, Vania Stavrakeva, and Jenny Tang

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This Paper

Topography of the FX Derivatives Market:

- **Impressive data work**: over 100 million transactions from FX derivatives.
- What are the uses of FX derivatives (forwards and swaps)? Who hedges, who speculates?
- How do various sectors respond to **macroeconomic** news? **Monetary policy** news?

Why does it matter?

1. FX markets are OTC, opaque, and highly fragmented with no centralised data repository.
2. Explore how **monetary policy** propagates through exchange rate flows to real economy.
3. In line with my prior: hedge funds speculate, dealers are flat, and NBFIs hedge.

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Roadmap

1. **Highlight some of the key results using CLS data.**
2. **Connect to related work on expectations and currency flows.**

A comparison to CLS data

CLS (Continuos Linked Settlement) Group provides critical settlement infrastructure for the currency market by operating the world's largest payment-vs-payment cash settlement system.

Advantages

- **Coverage**: 30–50% of *global* FX trading volume compared to BIS Triennial survey.
- **Identification of agents**: four groups of players (firms, funds, NBFIs, and dealer banks).
- **High frequency**: as granular as **five minute** frequency (but confidentiality filters!).

Disadvantages

- Data is **anonymous** and hence, **aggregated** over time and across market participants.
- It is *not* possible to identify the **initiator** of a trade as it is common in limit order books.
- For the identification of FX dealer banks one has to rely on **network analysis** by CLS.

***Taking stock**: CLS covers spot, forward, and swaps as well as both customer-dealer and inter-dealer segments of the FX market from **September 2012** to **today**.*

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Example: (Spot) USDEUR flows

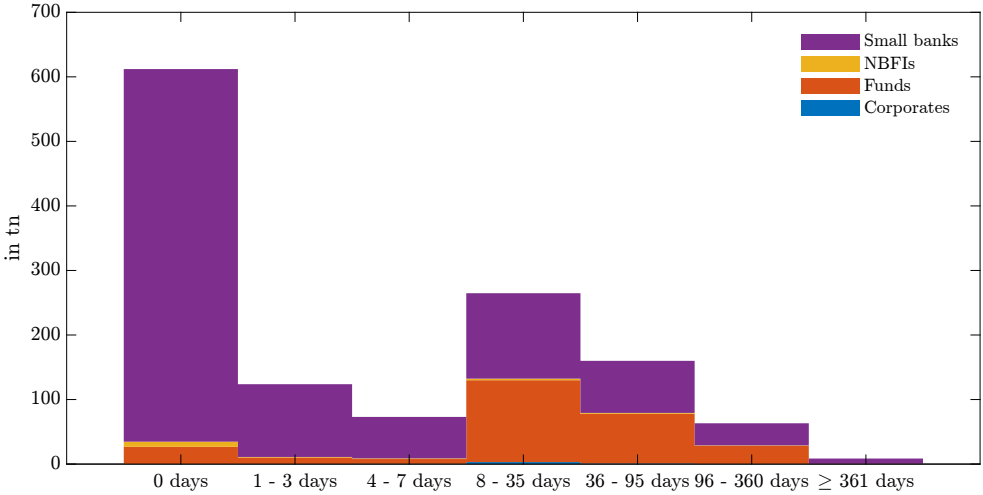
Player	EUR buy volume (in USD)	EUR sell volume (in USD)	Order Flow
Corporates	100,294,116	11,070,887	89,223,229
Funds	48,540,172	717,368,707	(668,828,535)
Non-bank financials	57,996,743	149,442,298	(91,445,555)
Non-dealer banks	1,600,840,643	1,662,449,490	(61,608,847)
Total	1,807,671,674	2,540,331,382	(732,659,708)

Dealer banks	2,540,331,382	1,807,671,674	732,659,708

Reference Date: 01/02/2019 from 12 to 1pm GMT. USDEUR Spot = 0.88397

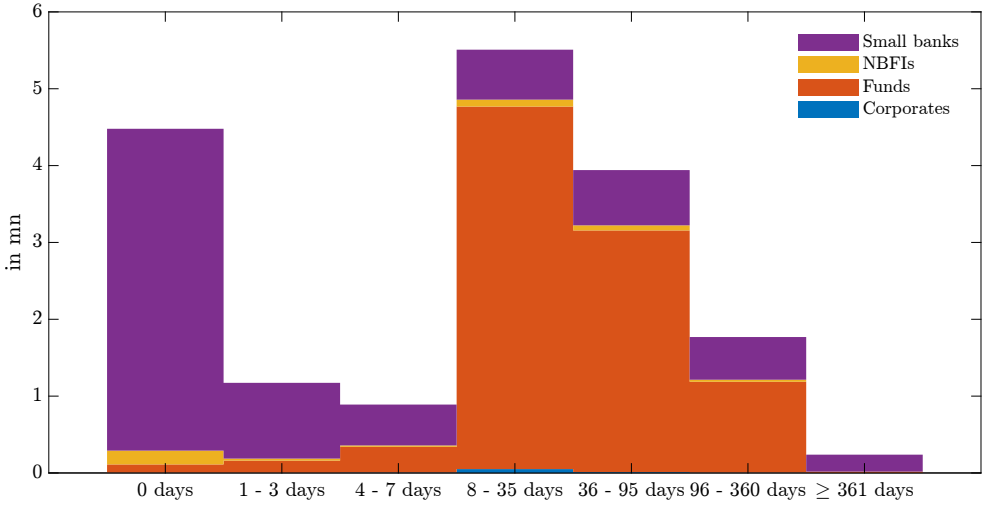
Similar data structure for forwards and swaps, which are broken down into different maturity buckets. Extension: think of spot as a "forward" that settles in $t + 2$.

Distribution of CLS Swap Currency Flows



Note: Total gross trading volume from September 2012 to March 2024.

Distribution of CLS Swap Trades



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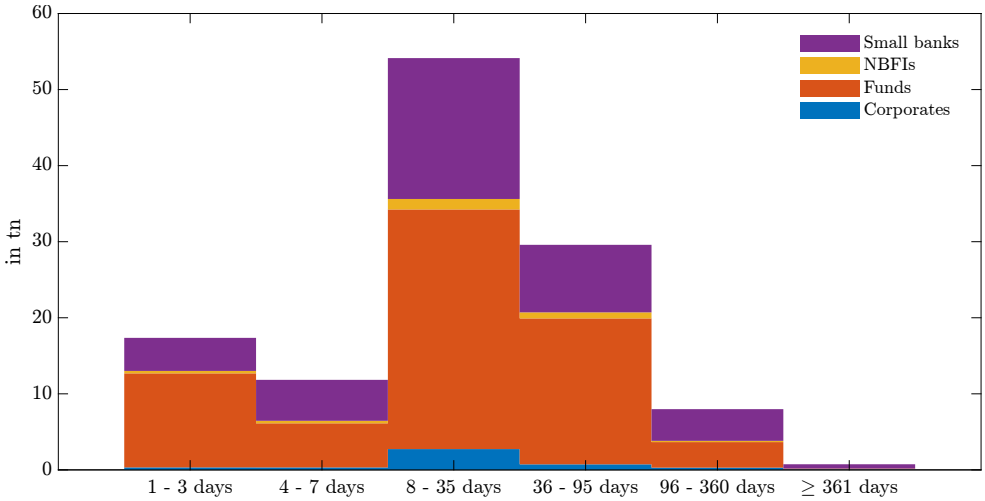
Distribution of CLS Forward Flows



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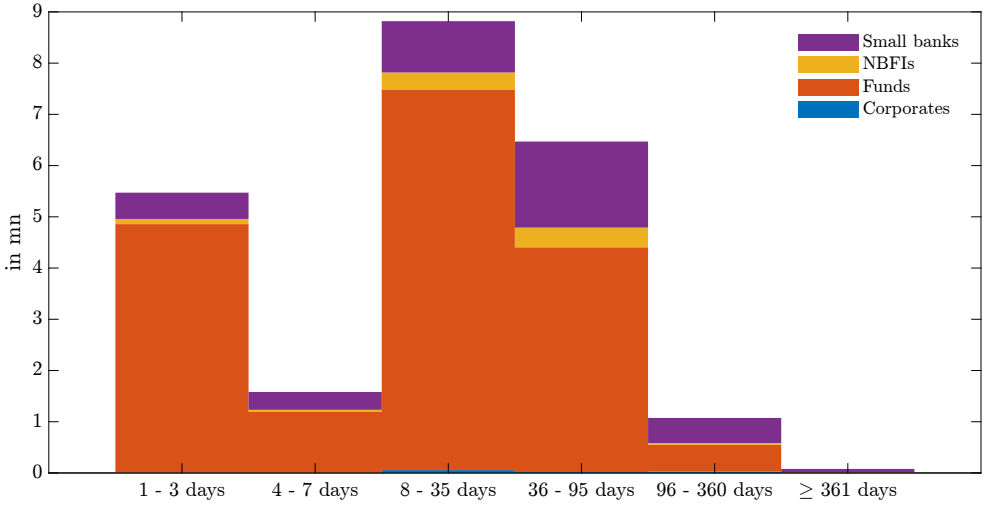

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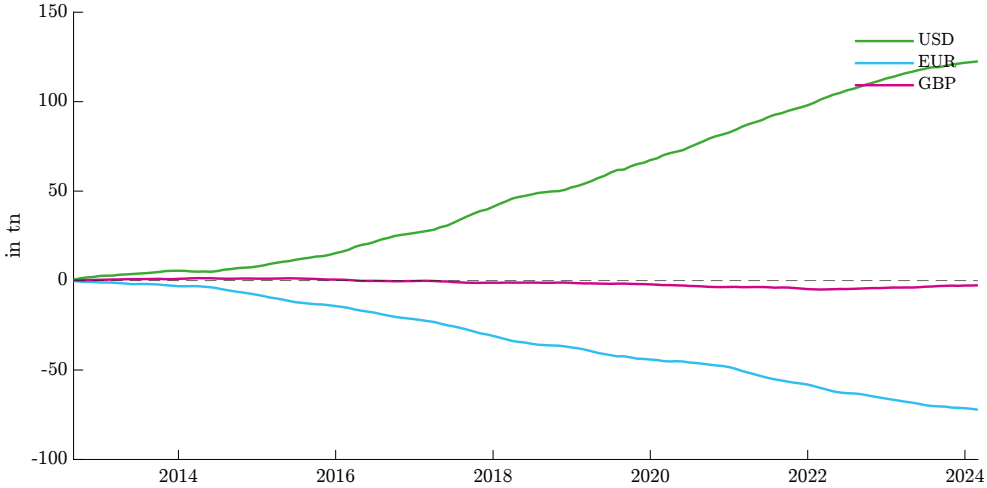
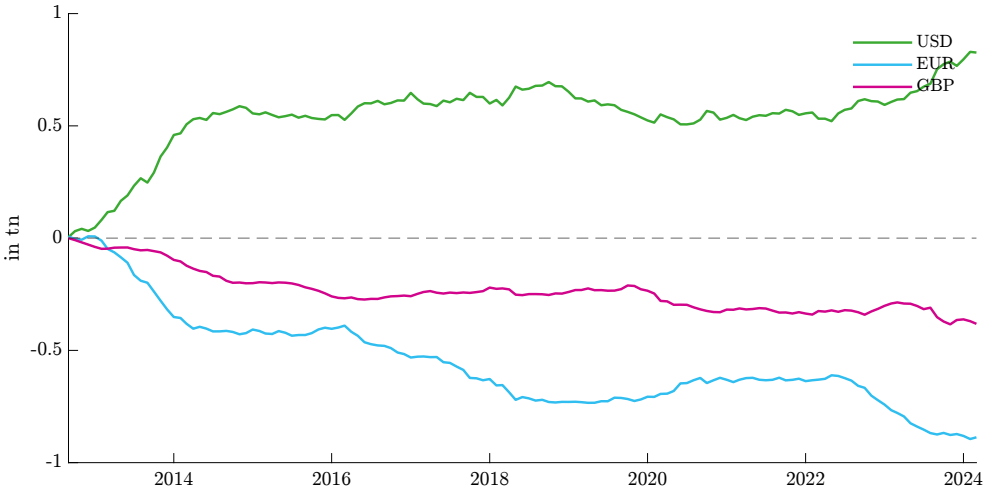
Cumulative Net Currency Exposure Swaps



Note: Currency exposures are measured in units of local currency (i.e., in GBP for GBP exposures).

Cumulative Net Currency Exposure Forwards



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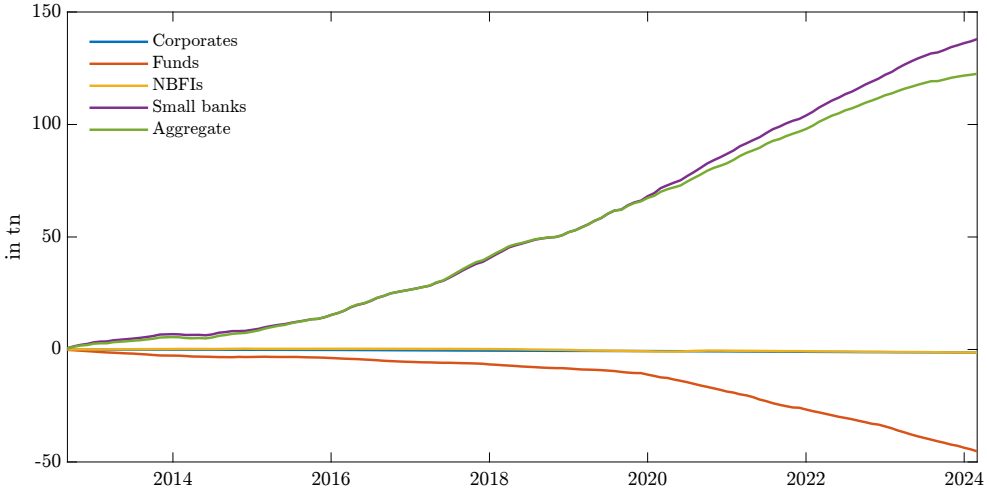
Cumulative Net Dollar Exposure Swaps by Agent



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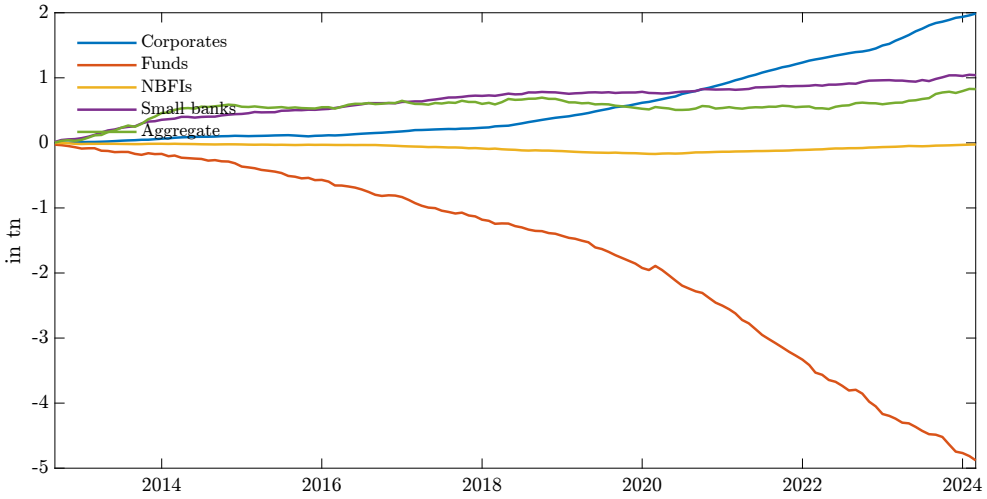
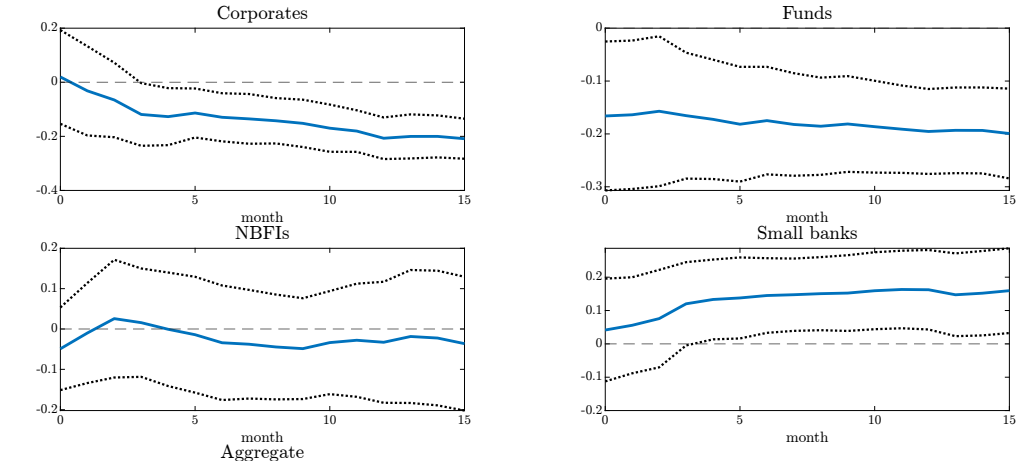
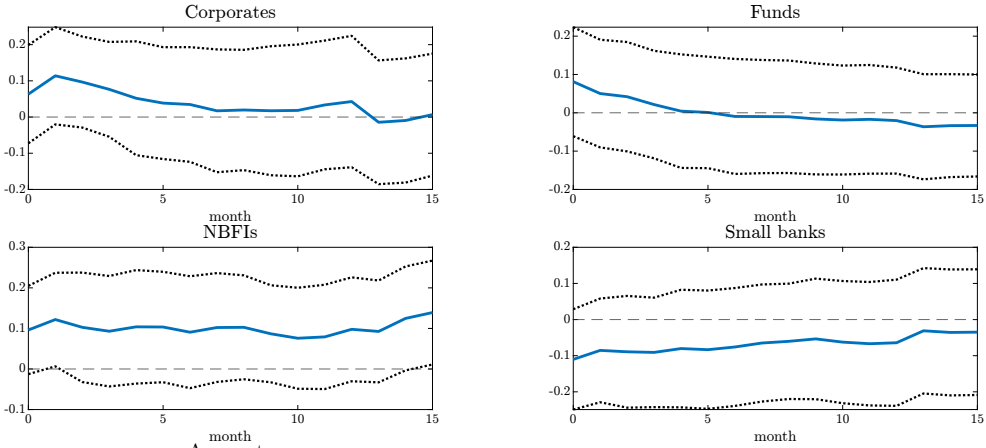


Monetary Policy Surprises and Net Dollar Swap Positions



Note: These figures plot the β coefficient estimates from $SWP_{i,t} = a_i + \beta_i MPS_t + \epsilon_{i,t}$, where $SWP_{i,t}$ is the currency flow in \$mn in the dollar factor by agent i in month t and MP_t is a monetary policy shock (Jarociński and Karadi, 2020).

Central Bank Information Shocks and Net Dollar Swap Positions



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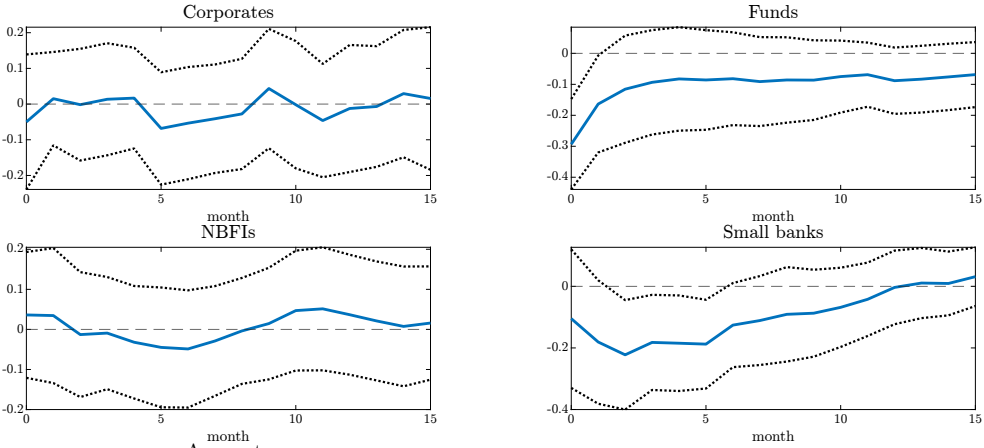
Changes in CIP and Net GBP/USD Swap Positions

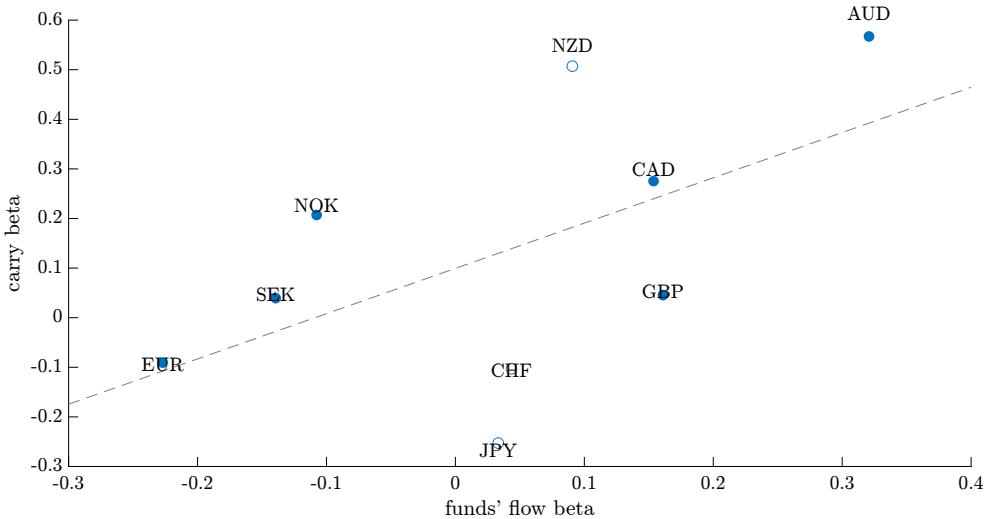


Note: These figures plot the β regression coefficient estimates from $SWP_{i,t} = a_i + \beta_i \Delta CIP_t + \epsilon_{i,t}$, where $SWP_{i,t}$ is the currency flow in \$mn in the *DOL* factor by agent i in month t and ΔCPI_t are changes in the GBP/USD CIP basis.

Taking Stock

- **Currency swaps** are *not* the only way to gain **foreign currency** exposure.
- Use **CLS data** to explore a similar *risk-on* mechanism in spot.

Funds are Risk-On: Buy High-Risk and Sell Low-Risk Currencies



Note: The figure is from Loualiche, Pecora, Somogyi, and Ward (2024) and is constructed using CLS spot data.

Demand for Dollars: Evidence from Survey Expectations*

Benedikt Ballensiefen** Fabricius Somogyi† Hannah Winterberg‡

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- **Currency investors** increase their dollar holdings when expecting **US dollar appreciation** or **improved US fundamentals**.
- Cross-sectionally, investors rebalance more heavily from **high-risk** to **low-risk** foreign currencies into dollars following expected dollar appreciation.

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Predicting Dollar Hedging and Synthetic Dollar Funding Demand

	Dealer Banks	Corporate	Funds	NBFIs	Non-dealer Banks
(a) Dollar funding flows					
CIP Deviations	43.131***	0.004	2.287	−0.807	−44.615**
	(15.965)	(0.105)	(4.094)	(0.886)	(17.216)
CIP Deviations × Carry Beta	35.646***	0.079*	−4.480**	0.311	−31.555***
	(7.793)	(0.040)	(1.891)	(0.271)	(8.178)
R^2	0.347	0.166	0.225	0.164	0.357
(b) Dollar hedging flows					
FX Rate Change	0.016	−0.004	1.283**	0.061	−1.355**
	(0.291)	(0.009)	(0.490)	(0.046)	(0.530)
FX Rate Change × Carry Beta	0.121	−0.001	0.053	0.010	−0.183
	(0.149)	(0.002)	(0.149)	(0.010)	(0.177)
Macro Variables	2.070	−0.033	4.476*	0.191**	−6.704**
	(1.935)	(0.059)	(2.270)	(0.096)	(2.948)
Macro Variables × Carry Beta	0.563	0.027**	−1.370**	−0.055	0.836
	(0.381)	(0.011)	(0.535)	(0.055)	(0.639)
R^2	0.237	0.150	0.445	0.156	0.321
Observations	840	840	840	840	840
Currencies	7	7	7	7	7
Fixed Effects	Currency	Currency	Currency	Currency	Currency
	Time	Time	Time	Time	Time
Controls	RER	RER	RER	RER	RER
	Carry Beta	Carry Beta	Carry Beta	Carry Beta	Carry Beta

Final Thoughts

Wish list

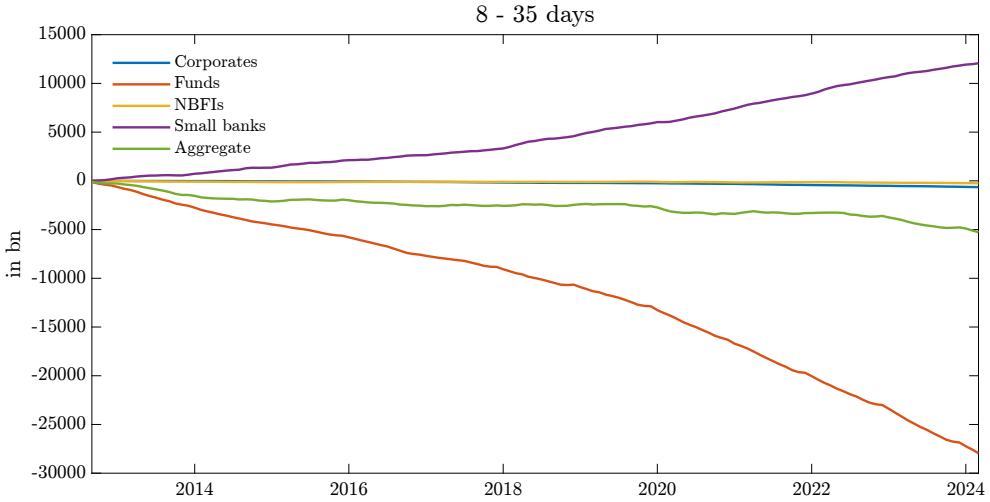
- Extension to FX spot and **other instruments** (e.g., options) would be fascinating.
- Comparison to **other data sources** (e.g., CLS) could provide additional insights.

Overall

- An extremely (data) **rich** and **insightful paper** on FX derivatives trading.
- A must read for everyone interested in **currency markets**!!

Appendix

Cumulative Net Dollar Exposure 8-35 days Swaps by Agent



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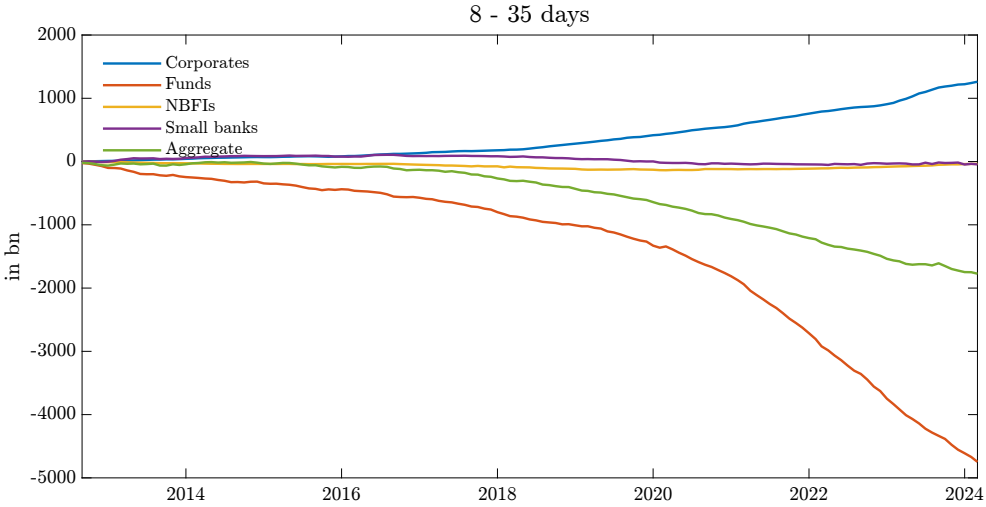
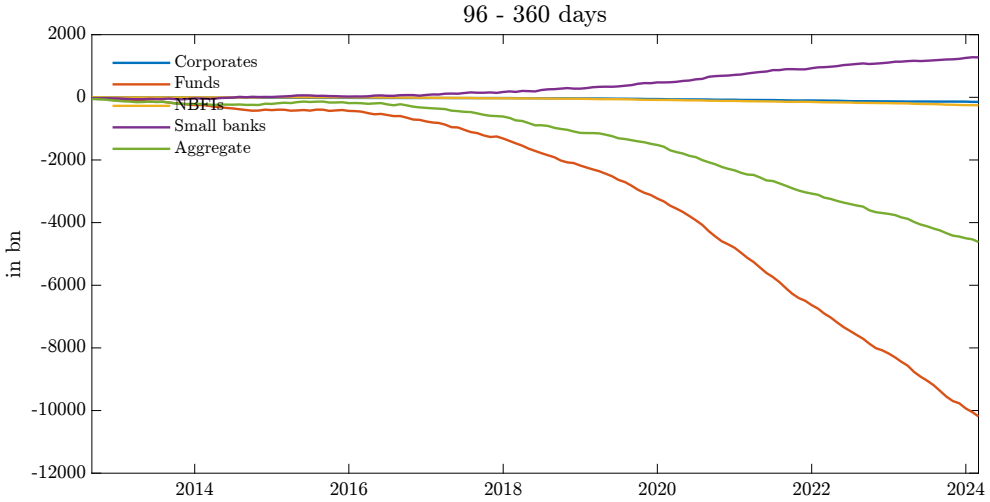


Cumulative Net Dollar Exposure 96-360 days Swaps by Agent



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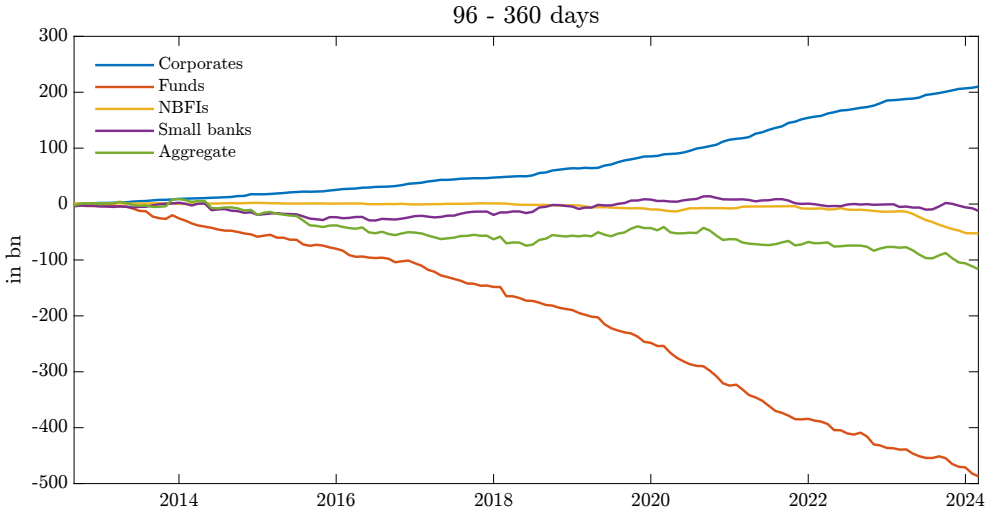

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