

O. Barbiero, F. Bräuning, G. Joaquim & H. Stein

“Dealer Risk Limits and Currency Returns”

Discussion by

Peter Hoffmann (ECB)^a

Annual CB Conference in Market Microstructure

Mexico City, 20-21 November 2024

^aThese are personal views and do not necessarily those of the European Central Bank.

Motivation

- This is a very nice paper!
- 1st-order question: What is the role of intermediary frictions in the FX market?
- State-of-the-art execution
 - Analysis is guided by a simple model
 - Identification through shocks to internal risk-limits of global banks
- Conclusion: Frictions matter big time

Model

- The intermediary solves

$$\max_{s, \delta} \pi = \underbrace{s \cdot [D(e + s) + F(e - s)]}_{\text{intermediation margin}} + \underbrace{e \cdot \delta}_{\text{return on FX position}} - \underbrace{\frac{\gamma}{2} \delta^2}_{\text{holding cost}}$$

with $D(e + s) = a - b(e + s)$ and $S(e - s) = \Gamma^{-1}(e - s)$

- Comparative statics

$$\begin{aligned} \frac{\partial \delta}{\partial \gamma} &\propto -a & \frac{\partial^2 \delta}{\partial \gamma \partial a} &< 0 \\ \frac{\partial e}{\partial \gamma} &\propto a & \frac{\partial^2 \delta}{\partial \gamma \partial a} &> 0 \\ \frac{\partial s}{\partial \gamma} &\propto |a|(1 - b\Gamma) > 0 \end{aligned}$$

Data and identification

- Key datasets:
 - desk-level information on risk limits and usage (daily, 11 banks, 167 desks)
 - net FX trading positions (quarterly)
- Construct limit shocks in the spirit of Koijen & Gabaix's (2020) GIV

$$Limit\ Shock_{c,t} = \sum_b w_{b,t-1}^c \underbrace{\left(\sum_{\tau} \sum_d w_{d,t-1}^b \hat{\epsilon}_{d,\tau} \right)}_{Limit\ Shock_{b,t}}$$

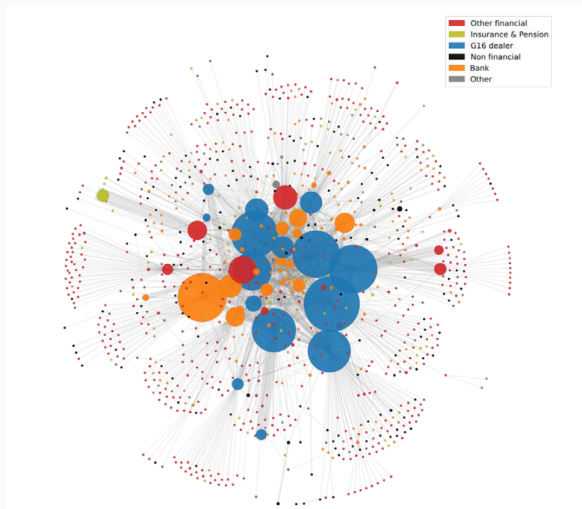
with

$$\Delta LogLimit_{d,\tau} = \sum_{h=1}^{20} (\gamma_h LogLimit_{d,\tau-h} + \omega_h Usage_{d,\tau-h}) + \alpha_d + \alpha_{b,\tau} + e_{d,\tau}$$

$$e_{d,\tau} = \lambda_d' f_{\tau} + \epsilon_{d,\tau}$$

- Demand shifter: idiosyncratic innovations in sovereign CDS spreads
 - alternative: implied FX vola

Data and identification



- EU FX Derivative Network (pre-Brexit). Source: [Abad et al. \(2016\)](#)
- Suggests that GIV approach is suitable

Results

	Δ FX Rate		Δ Net Position		Δ Bid-Ask Spread	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Directional (Baseline) Results</i>						
Limit Shock	0.045 (0.115)	0.142 (0.104)	0.130 (0.341)	-0.096 (0.371)	0.069*** (0.023)	0.073** (0.034)
Demand Shifter (CDS Innovation)		1.009*** (0.292)		-0.384 (0.442)		0.115*** (0.032)
Limit Shock $\times$ Demand Shifter		0.331** (0.137)		-0.316** (0.118)		0.000 (0.032)
Within R-squared	0.035	0.091	0.345	0.385	0.429	0.463
N	800	702	768	675	758	660
<i>Panel B: Undirectional Results</i>						
Limit Shock	0.382*** (0.115)	0.476*** (0.136)	-0.087* (0.047)	-0.091* (0.050)		
Demand Shifter (CDS Innovation)		0.381 (0.324)		-0.090** (0.035)		
Limit Shock $\times$ Demand Shifter		0.215 (0.151)		0.008 (0.026)		
Within R-squared	0.470	0.434	0.435	0.447		
N	800	702	768	675		
Dep. Variable Lags	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Currency FE	Yes	Yes	Yes	Yes	Yes	Yes

- There is so much more!
- Many (non-)obvious comments are already addressed in a 30-page Appendix
- The main results are clear and robust
- For completeness: Pls regress B-A spreads on $|Demand\ Shifter|$
 - The model predicts a positive coefficient
 - Follows from the assumption $1 - b\Gamma > 0$ (reasonable?)

Details on limits

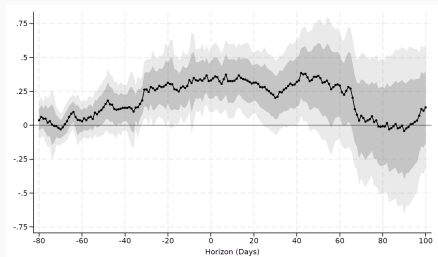
- The data on limits is just fantastic
- At the risk of being greedy: It would be great to learn more
 - How binding are they? Table 2 shows low aggregate utilization
 - What about bank-level utilization?

	(1) Mean	(2) Std. Dev.	(3) P5	(4) P25	(5) P50	(6) P75	(7) P95	(8) N
<i>Panel A: Currency-Quarter Data</i>								
Δ FX Rate	1.08	5.94	-6.50	-2.15	0.19	3.60	10.45	960
Norm. Net Position (Pct.)	-0.10	12.02	-34.06	-2.23	0.31	3.14	25.28	928

- Other questions of interest
 - How do limits respond to margins (losses, profit opportunities) and volatility?
 - Do banks compete in limits? Check response to aggregate utilization levels
 - Are limits mean-reverting? Is there a secular decline (rise of non-banks)?

Persistence

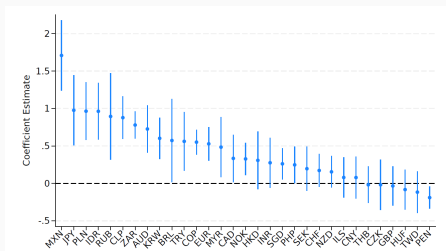
- The results on the persistence of limit shock effects are remarkable



- Somewhat puzzling because other banks have idle capacity (Table 2)
- I would at least like to see a discussion
 - Frictions in the inter-dealer market?
 - Does the Volcker Rule prevent banks from correcting mispricings?
 - How does the persistence vary with the VIX or financial conditions?
- Why not use daily limit shocks for this exercise?
 - unless I misunderstand, the data is there

Heterogeneity

- Interesting results on heterogeneous exchange rate effects



- My prior: smaller effects for more liquid currencies (faster intermediation)
- Alternative explanations?
 - Role of non-US banks (Table B.1)? → Measurement error?
 - Shifts between low margin/high volume and high margin/low volume currencies
- Why is this analysis restricted to $y_{c,t} = |\Delta e_{c,t}|$?

Summing up

- At the risk of repeating myself: a great paper!
- The authors could perhaps
 - exploit the data a bit more
 - tie up a few loose ends
- Good luck!