Discussion of FX Dealer Constraints and External Imbalances

by Jantke de Boer and Stefan Eichler

Steven J. Riddiough
Associate Professor of Finance

9th Conference on Fixed Income Markets
Federal Reserve Bank of San Francisco
May 22-23, 2025

Rotman
Here's where it changes.

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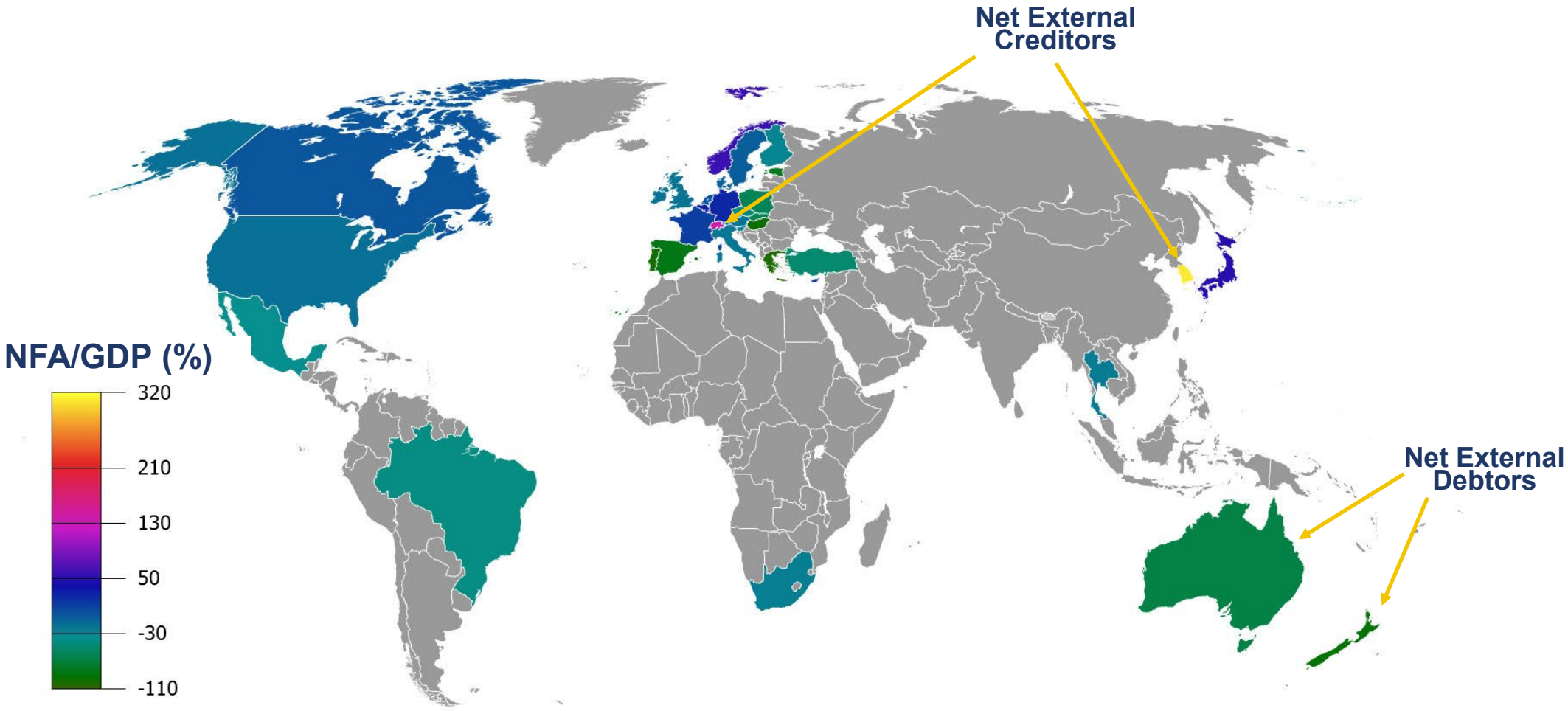
DEFY GRAVITY

Making Imbalances Topical Again (MITA)

Net Foreign Assets Around the World



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The Liquidity Providers: Foreign Exchange Dealers

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Top 10 Overall Global Market Share in 2022	
Bank	**Market Share**
Deutsche Bank	11%
UBS	10%
JPMorgan	9%
State Street	8%
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Jump Trading	6%
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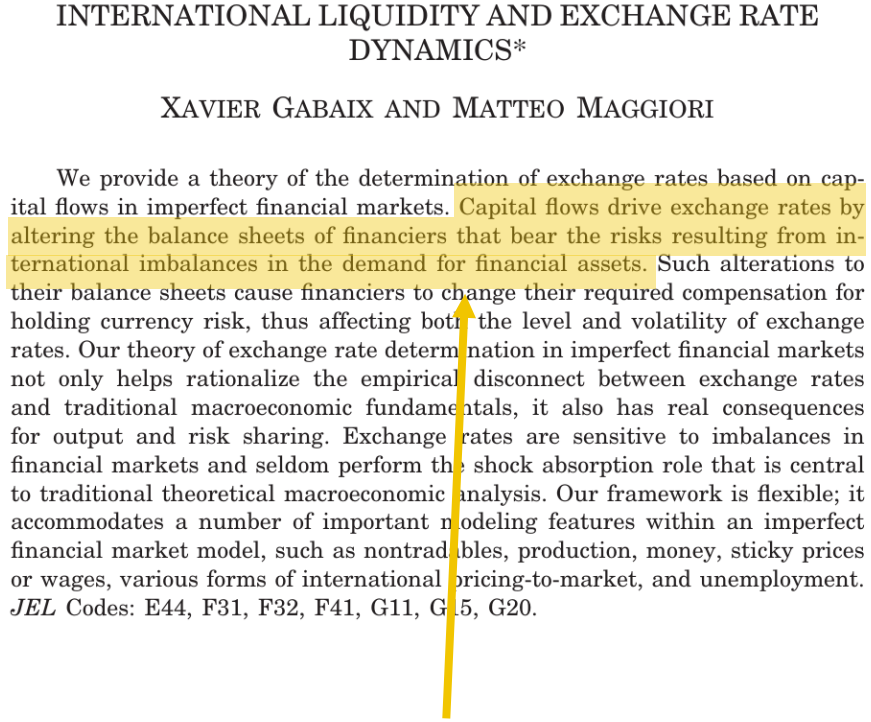
Gabaix and Maggiori (2015)

- One of the most cited papers in international finance in recent years (>1,000 Google Scholar citations)
- Provides a theory of exchange rate determination in which intermediaries limited "risk-bearing capacity" is the critical friction
- Large set of testable implications—extremely rich paper



INTERNATIONAL LIQUIDITY AND EXCHANGE RATE DYNAMICS*

XAVIER GABAIX AND MATTEO MAGGIORI

We provide a theory of the determination of exchange rates based on capital flows in imperfect financial markets. Capital flows drive exchange rates by altering the balance sheets of financiers that bear the risks resulting from international imbalances in the demand for financial assets. Such alterations to their balance sheets cause financiers to change their required compensation for holding currency risk, thus affecting both the level and volatility of exchange rates. Our theory of exchange rate determination in imperfect financial markets not only helps rationalize the empirical disconnect between exchange rates and traditional macroeconomic fundamentals, it also has real consequences for output and risk sharing. Exchange rates are sensitive to imbalances in financial markets and seldom perform the shock absorption role that is central to traditional theoretical macroeconomic analysis. Our framework is flexible; it accommodates a number of important modeling features within an imperfect financial market model, such as nontradables, production, money, sticky prices or wages, various forms of international pricing-to-market, and unemployment. *JEL* Codes: E44, F31, F32, F41, G11, G15, G20.

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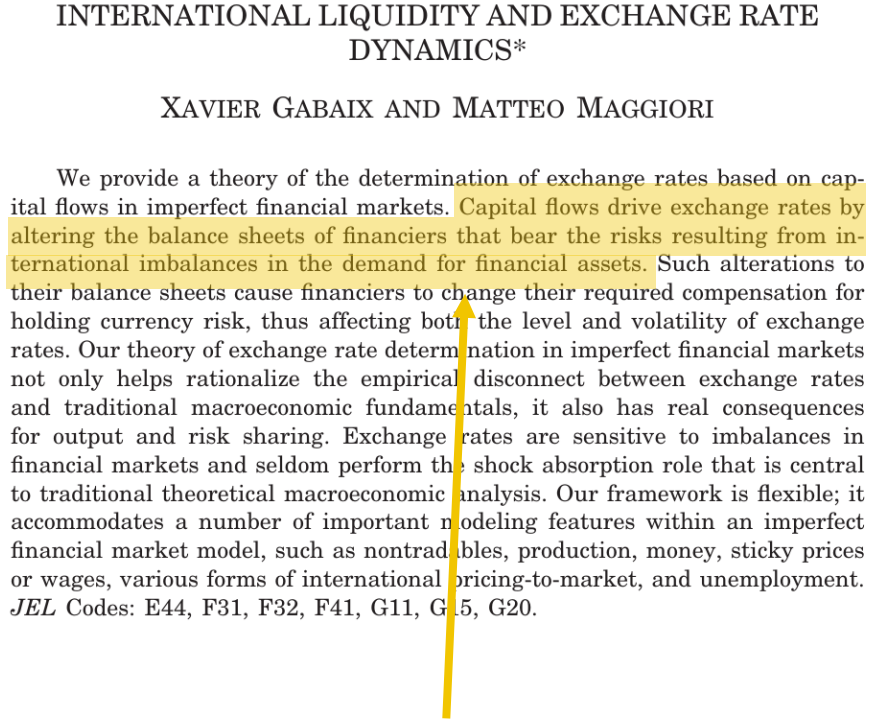
Proposition 2

When there is a shock (risk-bearing capacity falls) countries that are net external debtors should experience a currency depreciation

Proposition 6

Net external debtors should command a currency risk premium to compensate financiers willing to hold excess debtor currency



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Punchline: The evidence supports the theory

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Have we seen this film before?

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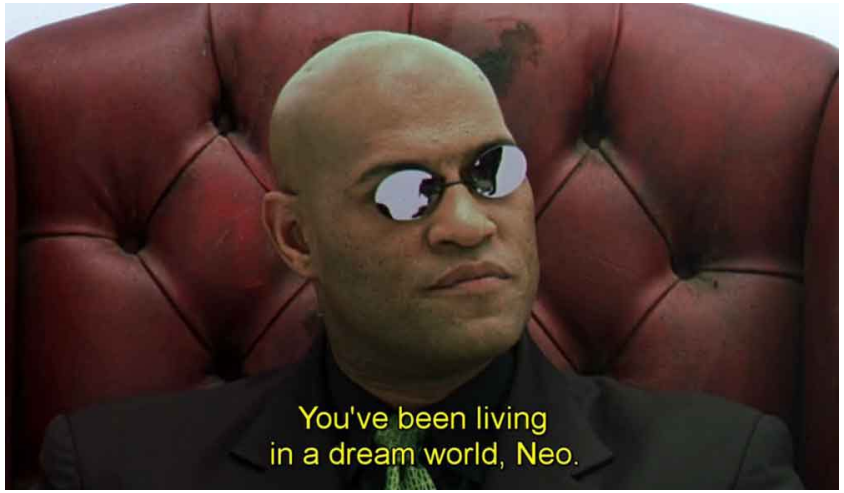

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Empirical Tests of Gabaix and Maggiori (2015)

The paper focusses on **Propositions 2** and **6** of Gabaix and Maggiori (2015)

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In addition to a pure carry force due to the interest rate differential, our model features global imbalances as a separate risk factor in currency risk premia. The reader should recall Proposition 2 that showed how net external debtor countries' currencies have a positive excess return and depreciate whenever risk-bearing capacity decreases ($\uparrow \Gamma$). This effect occurs even if both countries have the same interest rate, thus being theoretically separate from the pure carry trade. Della Corte, Riddiough, and Sarno (2014) test these theoretical predictions and find evidence of a global imbalance risk factor in currency excess returns.[37]

Novel Empirical Measure

It is hard (not impossible) to **observe risk bearing capacity**

- An empirical proxy is usually required
- In Della Corte et al. (2016) we used the VXY
- Consistent with the theory of GM (2015)

Arguably this is an **imperfect measure**—I agree!

Adopting a superior approach could change or, at least, provide stronger support for the theory

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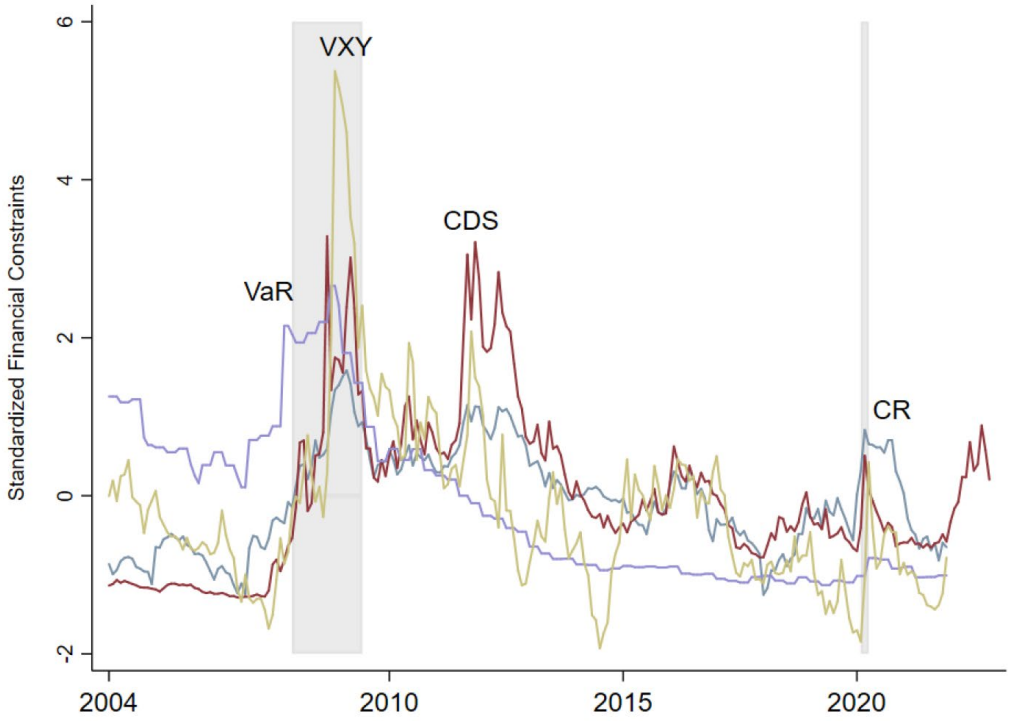

FX dealer specific measures
- VaR
- CDS
- Capital ratios

Also incorporate VXY

PCA Analysis

Take innovations in PC1

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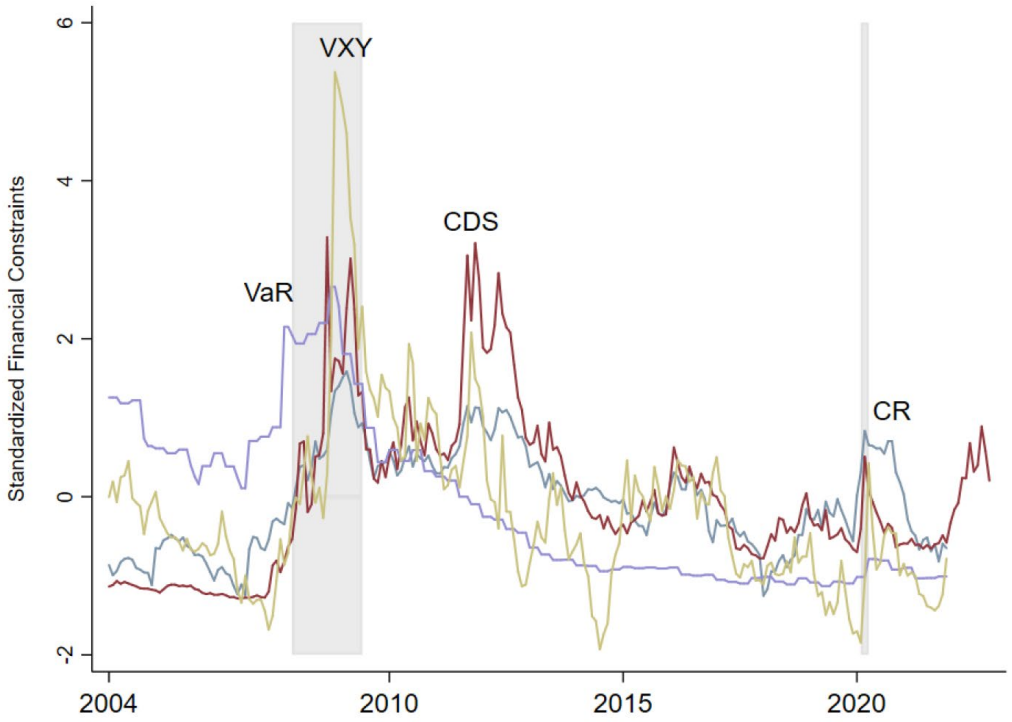
Issue: that was then, but a lot has changed since…



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Do Intermediaries Matter for Aggregate Asset Prices?

VALENTIN HADDAD and TYLER MUIR

ABSTRACT

Poor financial health of intermediaries coincides with low asset prices and high risk premiums. Is this because intermediaries matter for asset prices, or because their health correlates with economy-wide risk aversion? In the first case, return predictability should be more pronounced for asset classes in which households are less active. We provide evidence supporting this prediction, suggesting that a quantitatively sizable fraction of risk premium variation in several large asset classes such as credit or mortgage-backed securities (MBS) is due to intermediaries. Movements in economy-wide risk aversion create the opposite pattern, and we find this channel also matters.

Health of intermediaries matters for FX markets

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Risk-bearing capacity prices currency returns

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Intermediary asset pricing: New evidence from many asset classes☆

Zhiguo He[a], Bryan Kelly[a,*], Asaf Manela[b]

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Intermediary capital
Leverage cycles

ABSTRACT

We find that shocks to the equity capital ratio of financial intermediaries—*Primary Dealer* counterparties of the New York Federal Reserve—possess significant explanatory power for cross-sectional variation in expected returns. This is true not only for commonly studied equity and government bond market portfolios, but also for other more sophisticated asset classes such as corporate and sovereign bonds, derivatives, commodities, and currencies. Our intermediary capital risk factor is strongly procyclical, implying countercyclical intermediary leverage. The price of risk for intermediary capital shocks is consistently positive and of similar magnitude when estimated separately for individual asset classes, suggesting that financial intermediaries are marginal investors in many markets and hence key to understanding asset prices.

Dealer Risk Limits and Currency Returns*

Omar Barbiero[1], Falk Bräuning[1], Gustavo Joaquim[2], and Hillary Stein[1]

[1]Federal Reserve Bank of Boston

[2]Amazon

August 13, 2024

Abstract

We leverage supervisory micro data to uncover the role of global banks' risk limits in driving exchange rate dynamics. Consistent with a model of currency intermediation under risk constraints, shocks to dealers' risk limits lead to price and quantity adjustment in the foreign exchange market. We show that dealers adjust their net position and increase spread in response to granularly identified limit shocks, leading to lower turnover and an adjustment in currency returns. These shocks exacerbate effects of net currency demand on exchange rate movements, as predicted by theory, and trigger deviations from covered interest parity.

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Precise measures of risk-bearing capacity to test and support GM (2015)

g: New evidence from many asset

CrossMark

Manela[b]

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okings Dr, St. Louis, MO 63130, USA

A B S T R A C T

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Suggestion: The Novel Measure of Risk-Bearing Capacity

The **novelty/contribution** of the study stems from the FX-specific measure

1. **Refine the measure.** Use only variables that relate specifically to FX dealers, weighted by market share. Also clarify how it the measure it obtained (paper indicates an AR(1)) but then is that a look-ahead bias?
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	This paper	DCRS (2016)
	Change in Spot	Change in Spot
NFA/GDP	0.03	0.03
ΔRisk-Bearing Capacity	-3.50***	-0.54***
ΔRisk-Bearing Capacity x NFA/GDP	0.99***	0.27***

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2. **Push the contribution further.** What does an FX specific proxy buy us relative to
   - a poor proxy (e.g., VXY)? Or a more sophisticated alternative that are not FX-specific?
   - to run a proper horse race, explore SDF coefficients from GMM (see Cochrane, 2005) for details
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   - where does an improvement in pricing come from? New measures (CDS?) or specific dealers?
3. **Address alternative explanations.** Endogeneity is an issue—may be driven by global volatility
   - Is the risk factor different from the Global FX volatility or the Global Imbalance factors?
   - The volatility measure is also a non-tradable factor

Are the conclusions supported?

Net Foreign Assets and Currency Excess Returns

Sorting by NFA/GDP generates a spread (albeit small) in currency excess returns

	Creditors	P2	P3	Debtors	HML	HML (DCRS)
Mean return (%)	0.06	0.88	2.28	2.14	**2.08**	**1.96***

All the action is coming from the long portfolio:

- Debtor countries generate positive currency excess returns

Implications: 1. the risk factor should explain the returns, especially P4 (time series)
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But… it doesn't.

Panel A: Factor Betas				
	α_i	β^{DOL}	$\beta^{\Delta IntCon}$	R^2
IMB1 (high NFA)	-0.07*	0.63***	0.89***	0.81
	(0.04)	(0.03)	(0.19)	
IMB2	-0.04	1.03***	-0.11	0.91
	(0.03)	(0.03)	(0.24)	
IMB3	0.08*	0.89***	-0.65	0.86
	(0.04)	(0.06)	(0.45)	
IMB4 (low NFA)	0.03	1.33***	-0.09	0.94
	(0.04)	(0.06)	(0.32)	

Global risk? … Verdelhan (2018)

Direct evidence that innovations in risk bearing capacity are statistically **unrelated** to the returns that we are **most** interested in understanding

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Panel B: Factor Prices			
	λ^{DOL}	$\lambda^{\Delta IntCon}$	R^2
GMM	0.12*	-0.09	
	(0.06)	(0.08)	

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Gabaix and Maggiori (2015)

The paper undertakes a lot of **additional checks** and **tests** that seem unrelated to GM(2015)

Better to dig deeper into the Gabaix and Maggiori predictions

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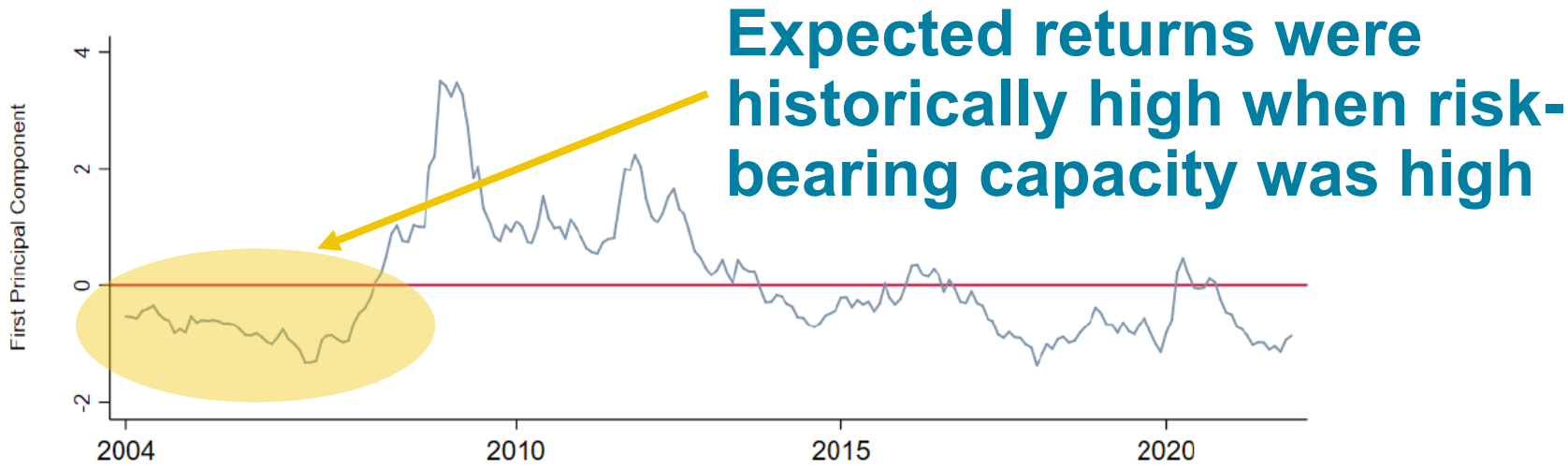
Better to dig deeper into the Gabaix and Maggiori predictions

- Which currencies ***should*** generate higher returns? The interaction of interest rates and *unscaled* NFA
- Which other predictions could be tested?
  - For example, in UIRP regression, Fama's beta should go to 1, when risk-bearing capacity is high.
  - Post-GFC UIRP has more closely held (e.g., Bussiere et al., 2022)



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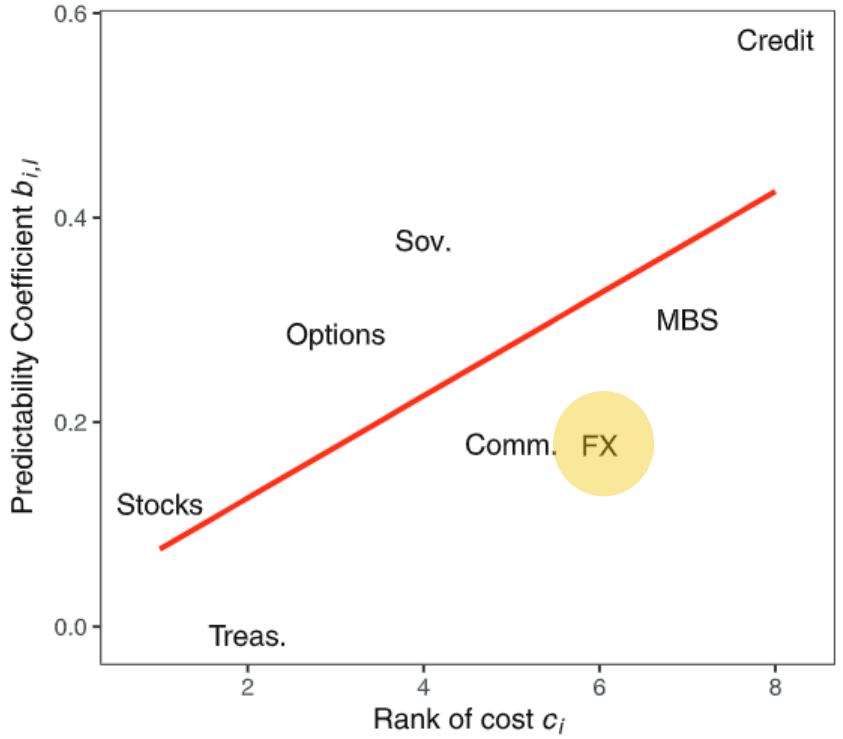

Figure 4. Predictability across asset classes: Predictive coefficients. This figure plots the predictive coefficients from Table III, which runs predictive regressions of excess returns on intermediary effective risk aversion. The x-axis is our ranking for how intermediated each asset class is. The red line is a linear regression fit through these points. An upward slope indicates more predictability in more intermediated asset classes. (Color figure can be viewed at wileyonlinelibrary.com)

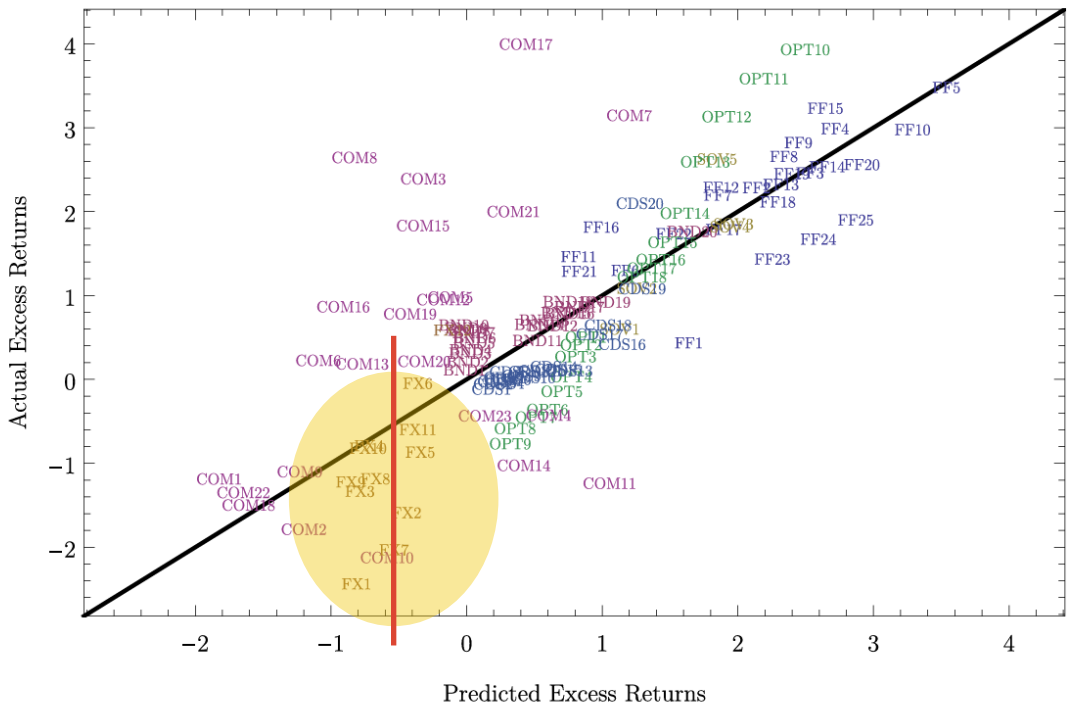

Fig. 2. Pricing errors: all portfolios. Actual average percent excess returns on all tested portfolios versus predicted expected returns using their risk exposures (betas) with respect to shocks to the intermediary capital ratio and the excess return on the market. Test portfolios are abbreviated based on their asset class: equities (FF), US bonds (BND), foreign sovereign bonds (SOV), options (OPT), CDS, commodities (COM), and foreign exchange (FX). Distance from the 45-degree line represents pricing errors (alphas). Betas are estimated in a first-stage time-series regression. The quarterly sample is 1970Q1–2012Q4. The intermediary capital ratio is the ratio of total market equity to total market assets (book debt plus market equity) of primary dealer holding companies. Shocks to capital ratio are defined as AR(1) innovations in the capital ratio, scaled by the lagged capital ratio.

Haddad and Muir (2021)

He et al. (2017)

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Additional Comments and Questions [for the authors]

These are a few **additional points** I noted down while reading the paper:

1. How did you deal with removing observations with large deviations from CIP after 2014? E.g., with Ukraine or Egypt?
2. It's perhaps worth also considering the work of Colacito et al. (JF, 2018)
3. Why is 2004 to 2007 defined as a "crisis period"?
4. The evidence on EM currencies seems related to flightiness (Fu, 2025) or original sin (Della Corte et al. 2016).
5. How do fixed exchange rates impact the findings?
6. The composition of the portfolios (Table 4) seemed a little different from Figure 7. E.g. Tunisia/Singapore
7. Is there an $R^2 > 100\%$ in Table 8?
8. Why are R^2 statistics missing for GMM?

Final Thoughts

- Paper helps to further consolidate our understanding of GM (2015)
- Novel measure of FX-specific dealer constraints. **I like it**—push further!
- Adds to a large set of papers arguing that intermediary constraints matter for asset prices
- But results are less convincing (to me) of this relationship. Conclusion could flip…

Looking forward to the next version