Foreign Discount in International Corporate Bonds

by Zhe Geng

Discussion

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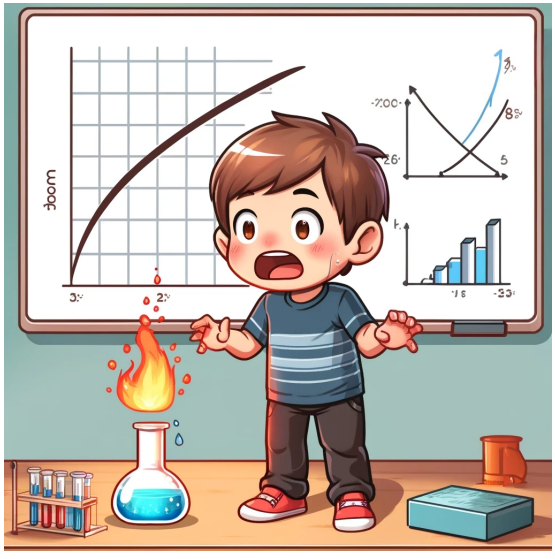
I initially thought to entertain you with a science experiment but ...



... I am a financial economist and often experiments go wrong!

Last time the audience ran for help.

Background

Corporate Debt: Some Facts

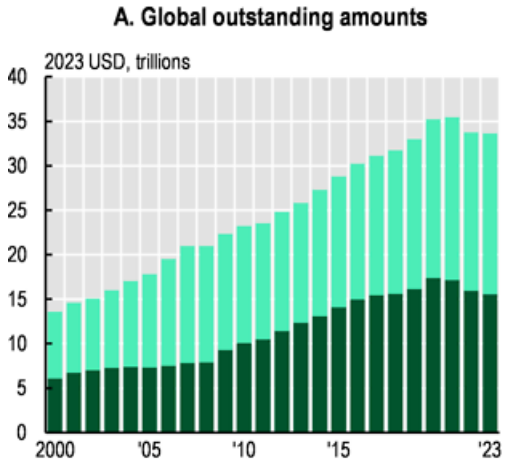
Corporate borrowing through bond markets has risen dramatically in the last 20 years

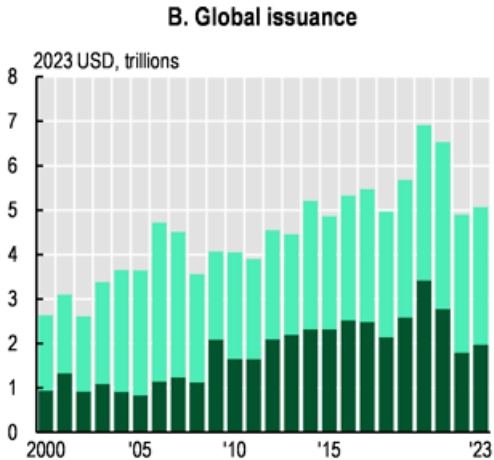
- Especially after 2008, when accommodative monetary policies and central bank purchases of corporate bonds have both kept yields low,
- Nearly $34 trillion of corporate bonds outstanding at the end of 2023, a sharp increase from about $14 trillion in 2000.

With favourable funding conditions, the average debt maturity has also increased

- The average value-weighted maturity for investment grade companies has gone up from 5.6 years in 2000 to 7.9 years in 2023.
- Most corporate bonds are issued with fixed interest rates, reducing vulnerability to interest rate fluctuations.

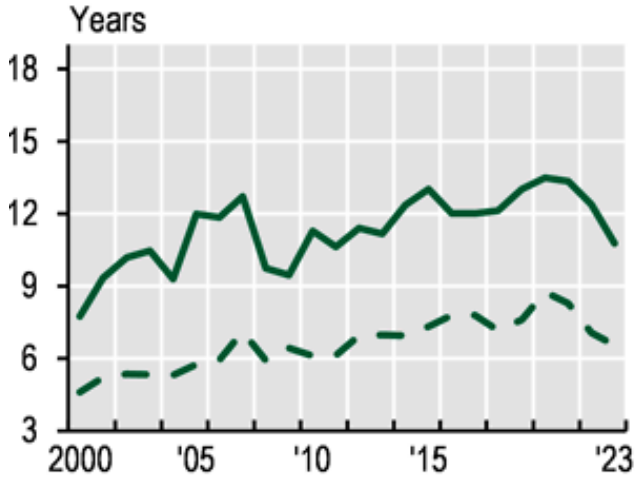
Corporate Debt Market: A Bird View





Source: OECD Capital Market Dataset: financials (light green) and non-financials (dark green).

Corporate Debt Market: Average Maturity



Source: OECD Capital Market Dataset: financials (dashed) and non-financials (solid).

Corporate Debt: Some Other Facts

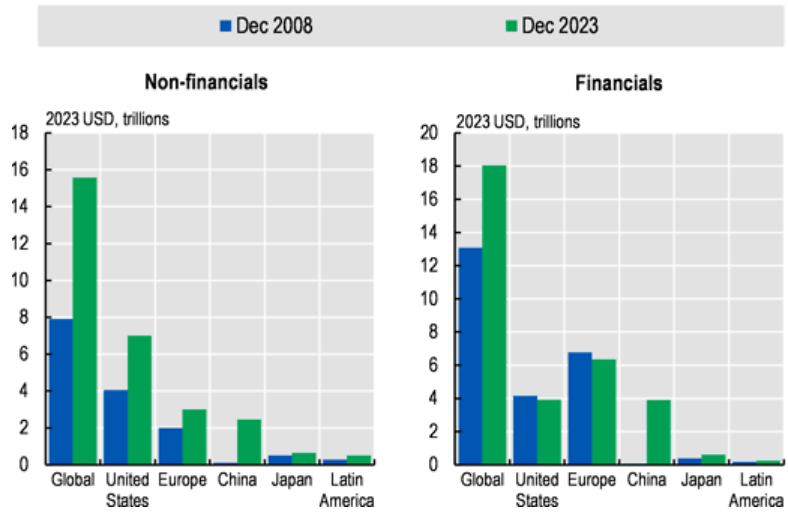
But corporate debt issuance has grown faster for the non-financial sector

- Tighter banking regulations has likely contributed to this growth,
- Over 60% of the increase in corporate bond issuance comes from non-financial corporate debt.

The geographic composition of corporate bond markets has changed significantly

- Chinese issuers have gone from less than 1% of the total outstanding in 2008 to almost 20% in 2023.
- Nearly $34 trillion of corporate bonds outstanding at the end of 2023, a sharp increase from about $14 trillion in 2000.

Financials vs Non-financials: Outstanding Debt Amount

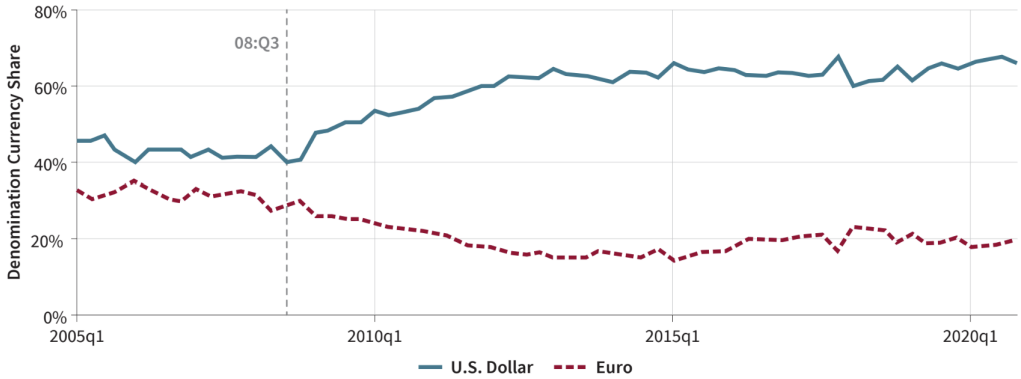


Corporate Debt: Dollar Dominance

The US dollar has strengthen its dominance in the corporate debt market

- Since 2008, there has been a broad shift away from the euro into the dollar.
- Companies issuing debt in US dollars are exposed to the Fed's policies and US dollar exchange rates.

Corporate Debt: Dollar Dominance



Source: Coppola, Lewis, Maggiori, Schreger, Sun & Tinda (2023).

This Paper

A Brief Summary

What does this paper do?

- Do US and non-US firms issuing bonds in dollars enjoy the same borrowing cost?
- Answering such a question is undoubtedly important for a variety of stakeholders given its implication for global financial stability.

What are the key ingredients?

- A rich dataset on international corporate bonds collected from TRACE and Mergent FISD coupled with state-of-art econometric methods,
- A theoretical model augmented with model uncertainty to explain potential pricing differences between foreign and home bonds.

A Brief Summary

What do we learn?

- It unveils a persistent foreign discount in dollar-denominated corporate bonds,
- Non-US issuers pay an extra premium of 20 basis points compared to US issuers,
- Pervasive phenomenon for developed and developing countries,
- Higher during periods of instability as the global financial crisis.

How to rationalize these stylized facts?

- Economic policy uncertainty can largely explain the foreign discount,
- Foreign squeeze effect as foreign bonds face selling pressure during market turmoil,
- A theoretical model that explains the foreign discount via uncertainty aversion.

Key Paper for the Literature

This paper is the missing puzzle in bond pricing research!

My immediate reaction

Very nice (study with novel yet interesting findings)!

My next reaction

Maybe there is room for a few comments ...

My (2 cents' worth) **comments**

Comment #1

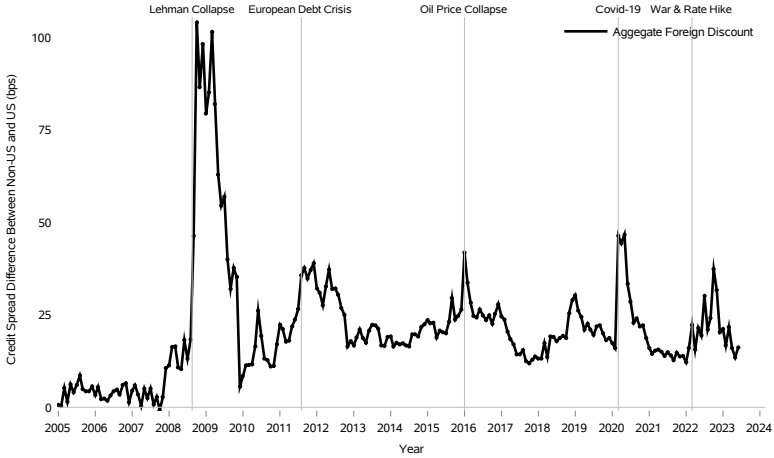
Why do firms issue dollar-denominated debt?

- The paper argues that economic policy uncertainty is the solution to the puzzle,
- But economic policy uncertainty is a broad concept and the paper is probably only scratching the surface of the problem,
- There is likely something deeper here to unveil, perhaps linked to monetary policy independence and the global financial cycle, other than the original sin,
- Firms located in certain countries are more likely to issue dollar debt than others.

Digging more about a plausible story that explains the foreign discount

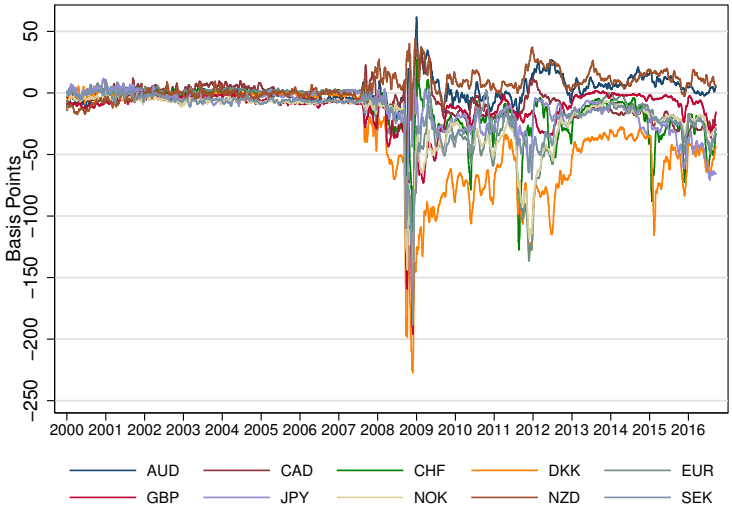
- Beyond the broad explanation of economic policy uncertainty.

Comment #2



The foreign discount is a post-crisis phenomenon.

A Similar Phenomenon in the FX Literature



Dollar basis from Du, Tepper & Verdelhan (2019).

Post-Crisis Financial Regulation

Excessive leverage was among the causes of the global financial crisis. As a backstop, the Basel Committee proposed a naïve leverage ratio, related to the size (not the composition) of a bank's balance sheet.

$$\text{Leverage Ratio} = \frac{\text{Capital Measure}}{\text{Exposure Measure}} \geq \text{Min Requirement}$$

Market participants, however, argue that the **leverage ratio** has increased the costs of intermediation, especially for balance-sheet intensive business.

"[A]t the end of the day the Basel Committee has put aside some three decades of oversight based on risk-weighted assets in favour of a blunt measure of total leverage - with all kinds of unintended consequences the likely result."

Reuters, 5 August 2013

Post-Crisis Financial Regulation

Suppose a bank has a target return on equity of 10%

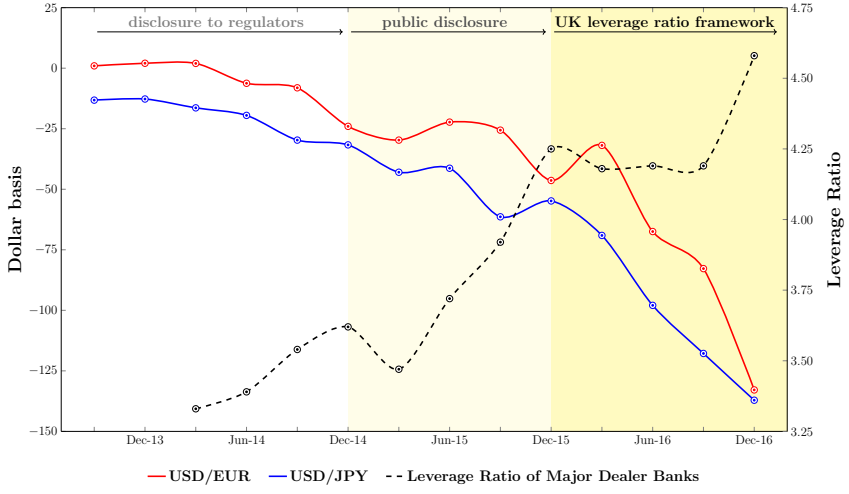
- The minimum leverage ratio requirement is 3%,
- At least 3% of capital against assets in its balance sheet.

Using a simple back-of-the-envelope calculation

$$\begin{aligned}\text{Return on Assets} &= \frac{\text{Profit}}{\text{Equity}} \times \frac{\text{Equity}}{\text{Assets}} \\ &= \text{Return on Equity} \times \text{Leverage Ratio} \\ &= 10\% \times 3\% = 30 \ \textit{bps}\end{aligned}$$

A bank requires at least 30 *bps* of **return on assets** to engage in a trade.

Cenedese, Della Corte and Wang (2021)



Source: Cenedese, Della Corte & Wang (2020).

A story of balance-sheet constraints?

If it looks like a duck, swims like a duck, and quacks like a duck,
then it probably is a duck

Comment #3

How about firm characteristics?

$$\text{Credit Spread}_{i,t} = a + b\text{Foreign}_{i,t} + c\text{Rating}_{i,t} + \text{Controls}_{i,t} + \varepsilon_{i,t}$$

What type of foreign discount are capturing?

- The composition of firms issuing dollar debt has changed since 2008,
- Are US and non-US firms comparable in all respects?
- Do they have similar leverage and profitability?
- Are US firms better capitalized?

Comment #4

Table 6: **Foreign Discount and Country Level Uncertainty**

Foreign	17.00***	5.91	17.01***	7.48	14.83***	6.06
	[3.26]	[0.99]	[3.44]	[1.40]	[2.56]	[0.98]
EPU		1.98***		1.71***		1.47***
		[4.66]		[7.03]		[5.66]
Rating	19.03***	18.95***	16.23***	16.14***	16.36***	16.31***
	[10.10]	[10.19]	[10.38]	[10.26]	[10.84]	[10.79]
Maturity	3.32***	3.31***	2.75***	2.76***	2.78***	2.78***
	[12.78]	[12.78]	[6.90]	[6.93]	[7.10]	[7.12]
IssueSize	-0.03	-0.14	0.42	0.21	0.09	-0.10
	[-0.01]	[-0.03]	[0.16]	[0.08]	[0.03]	[-0.04]
Age	2.23***	2.19***	1.84***	1.82***	1.84***	1.82***
	[5.44]	[5.92]	[5.44]	[5.69]	[5.96]	[6.11]
IssuerRisk	No	No	Yes	Yes	Yes	Yes
USRiskPremium	No	No	No	No	Yes	Yes
CountryRisk	No	No	No	No	Yes	Yes
Industry&Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs	425866	425866	425866	425866	424948	425866
Adj R^2	0.23	0.24	0.44	0.44	0.46	0.46

But EPU is trending up ... how about using changes?

Comment #5

Table 7: **Foreign Discount and 2020 GDP Forecasts**

	Num of Investors		Dispersion of GDP Forecast (%)				Mean of GDP Forecast (%)				
Country	Local	US	Local	US	FValue	Pvalue	Local	US	Diff	tValue	Realized
CA	11	8	0.79	1.60	4.11**	0.04	-6.12	-7.26	-1.14*	-1.87	-5.40
DE	17	13	1.47	1.70	1.34	0.57	-6.09	-7.05	-0.97*	-1.67	-4.90
FR	9	13	0.90	1.78	3.92*	0.06	-10.06	-9.41	0.65	1.12	-8.10
JP	12	13	0.71	1.18	2.73*	0.10	-5.18	-5.36	-0.19	-0.48	-4.80
UK	17	14	2.02	2.35	1.35	0.56	-8.39	-9.68	-1.29*	-1.65	-9.80
US	10	14	1.20	1.32	1.21	0.80	-6.28	-5.18	1.10**	2.09	-3.50

Maybe Covid is a special case, how about checking the full sample?

Conclusions

How big is the premium paid by non-US firm issuing dollar debt?

More important than you expect and this paper provides the answer!

An interesting paper with novel results and I have enjoyed reading it!

Thank you