

Corporate Bond Refinancing Under Capital Supply Uncertainty



Wanxin Chen
George Washington University

Abstract

Corporate bond refinancing, which replaces existing debt with new issuances, unlike issuance for new financing needs, faces a fixed maturity deadline. This deadline makes the firm's bond refinance decision take different responses to capital supply uncertainty.

In this paper, I examine the effect of capital supply uncertainty – measured as the average flow volatility of mutual fund investors holding the bond – on firms' refinancing decisions on the bond.

My main finding is that the capital supply uncertainty has a positive and significant impact on high-yield bond refinancing. These results highlight a novel fact that **capital supply uncertainty can make firms' refinancing decisions sooner rather than later.**

Introduction

Unlike bond issuance for new financing needs, corporate bond refinancing is governed by a clear deadline—maturity. Refinancing involves replacing existing debt with new bond issuances, and firms must either retire or roll over outstanding bonds upon maturity. This maturity constraint introduces a time-sensitive dimension to refinancing decisions, particularly when credit market conditions are volatile. As the U.S. corporate bond market has expanded to over \$10 trillion in outstanding debt, with more than \$1 trillion scheduled to mature annually in the coming years, refinancing has become a central component of firms' financial strategies. In particular, the high-yield segment is especially significant, with more than \$300 billion in bonds scheduled to mature in 2026. **Figure 1 illustrates the maturity wall of high-yield bonds.**

While much of the literature has examined how credit supply conditions affect new bond issuance (e.g., Massa et al., 2013; Zhu, 2021), **relatively less attention has been paid to refinancing decisions**, despite their distinct timing pressures and investor dynamics. This paper focuses on refinancing as a unique and understudied aspect of corporate financial behavior.

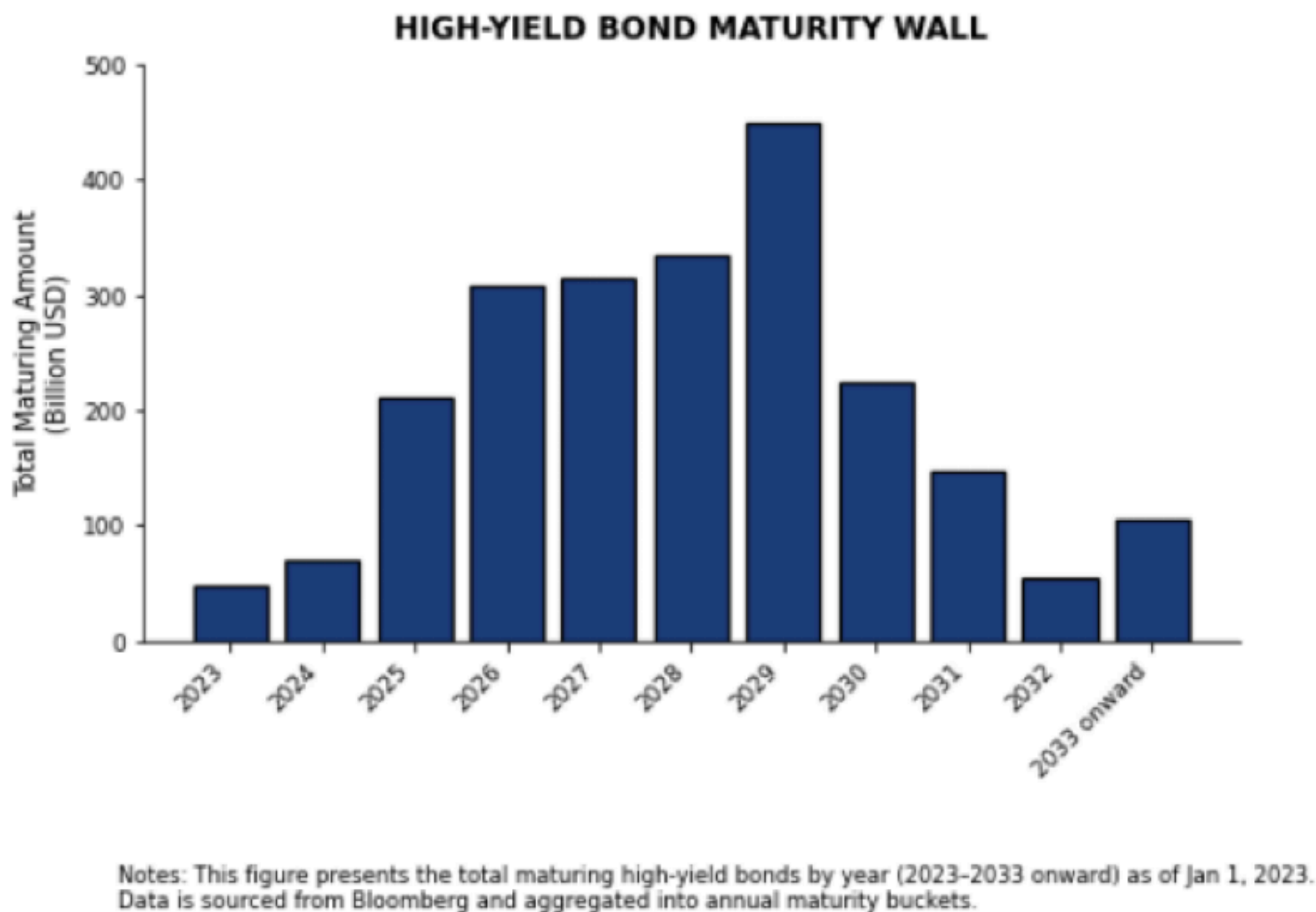


Figure 1: High-Yield Bond Maturity Wall

Data

The empirical analysis draws on multiple sources that collectively capture bond refinancing activity, firm characteristics and mutual fund investor behavior.

Corporate bond issuance and refinancing activity are obtained from Bloomberg's Fixed Income database. I define refinancing as the issuance of new debt within a three-month window centered on the month a bond is retired, consistent with existing literature (Xu, 2017). Firm characteristics are obtained from WRDS Compustat Quarterly Fundamentals. Mutual fund data are obtained from the Refinitiv Lipper database.

The main regression sample covers the period 2009–2023. I focus on non-convertible corporate bonds issued by U.S. public firms, excluding those with embedded put options or floating rates. For mutual funds, I include both active and inactive bond funds, including ETFs, that hold U.S. corporate bonds.

Theoretical Framework

The expected benefit of refinancing arise from the potential to reduce interest payments relative to the firm's existing debt. The expected benefit of refinancing at time t can be expressed as:

$$B_t = e^{-rt} \mathbb{E}_0 [(i_0 - i_t)D]$$

The firm faces uncertainty in obtaining refinancing due to fluctuations in capital supply. Assume current creditors appear to the firm with a Poisson arrival rate λ . Given that the firm is actively searching for refinancing, the probability of securing financing in any small interval $[t, t+dt]$ is λdt . The expected loss from failing to refinance is:

$$L_t = e^{-rt_1} \cdot \text{Cost}(D) \cdot (1 - \lambda(t_1 - t))$$

Predictions:

- Greater capital supply uncertainty \Rightarrow higher probability of refinancing
- Shorter time to maturity \Rightarrow higher probability of refinancing

Empirical Results

To examine the relationship between bondholder capital supply conditions and firm refinancing behavior in bonds, I estimate the following linear probability and logit model at the bond-quarter level:

$$D(\text{Refinance}_{i,t} > 0) = f(\alpha_s + \alpha_{r,t} + \beta_0 \text{BH Flow}_{i,t-1} + \beta_1 \text{BH Flow Volatility}_{i,t-1} + \beta_2 \text{Time To Maturity}_{i,t} + \gamma \lambda_{i,t-1}^{\text{Firm}} + \epsilon_{i,t})$$

Capital supply uncertainty is defined as the weighted average of flow volatility across the bondholding mutual funds:

$$\text{BH Flow Volatility}_{i,t-1} = \sum_{j \in \mathcal{I}_i} \left(\text{Flow Volatility}_{j,t-5:t-1} \times \frac{\text{Bond Holding}_{i,j,t-1}}{\text{Outstanding Bonds}_{i,t-1}} \right)$$

Table 1 presents the estimation results. As shown in column (3), for high-yield bonds, a one standard deviation increase in bondholder flow volatility is associated with a **0.9 percentage point increase** in the probability of refinancing, corresponding to **approximately 21 percent of the unconditional mean refinancing rate.**

Table 1: Effect of Bondholder Fund Flow Volatility on Refinance Probability				
Dependent Variable	$D(\text{Refinance}_{i,t} > 0)$			
	Linear Probability	Linear Probability	Linear Probability	Logit
	(Full Sample)	(IG Only)	(HY Only)	(HY Only)
Specification	(1)	(2)	(3)	(4)
BH Flow (standardized)	-0.002 (0.002)	-0.001 (0.002)	-0.016 (0.011)	-0.005 (0.008)
BH Flow Volatility (standardized)	0.003 (0.003)	0.002 (0.003)	0.009** (0.004)	0.016*** (0.004)
Time to Maturity (ref: very short-term)				
Short-term (1–4 years)	-0.077*** (0.021)	-0.060*** (0.018)	-0.097** (0.049)	-0.132*** (0.051)
Medium-term (4–8 years)	-0.057** (0.023)	-0.027 (0.024)	-0.107** (0.050)	-0.152*** (0.049)
Long-term (>8 years)	-0.008 (0.029)	0.019 (0.034)	-0.060 (0.090)	0.233* (0.125)
Leverage	0.021 (0.013)	0.033 (0.019)	-0.016 (0.035)	-0.016 (0.065)
NAICS Sector FE	✓	✓	✓	✓
Rating-by-Quarter FE	✓	✓	✓	✓
Observations	16,488	11,870	3,626	2,268
R^2 / Pseudo R^2	0.1810	0.1459	0.2387	0.2570

Notes: Standard errors clustered at the issuer level are reported in parentheses.

Conclusion

The findings highlight a novel fact that capital supply uncertainty, from institutional investors such as mutual funds, can accelerate corporate bond refinancing. This paper shows how instability in mutual fund flows transmits into corporate financing behavior. When investor capital supply becomes more uncertain, firms preemptively refinance to avoid future liquidity shortfalls but in doing so they lose potential interest savings.

Contact

Wanxin Chen
George Washington University
Email: wanxinchen@gwu.edu

References

- Massa, M., Yasuda, A., Zhang, L. (2013). Supply uncertainty of the bond investor base and the leverage of the firm. *Journal of Financial Economics*, 110(1), 185–214.
- Xu, Q. (2017). Kicking maturity down the road: Early refinancing and maturity management in the corporate bond market. *Review of Financial Studies*, 31(8), 3061–3097.
- Zhu, Q. (2021). Capital supply and corporate bond issuances: Evidence from mutual fund flows. *Journal of Financial Economics*, 141(2), 551–572.