# What Drives Global Corporate Bond Returns?


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# Outline

- Intro
- Main Finding
- Comments
    - Economic meaningful: PnL, Transaction Cost
    - Local vs Global factor comparison

# Intro

Academic Background

- PhD in Economics at Princeton (2022)
- Thesis: “Essays on Institutional Ownership and Liquidity in the Corporate Bond Market”
    - "Investor Composition and the Liquidity Component in the U.S. Corporate Bond Market" - Forthcoming in Journal of Finance
    - "Investor Concentration, Liquidity and Bond Price Dynamics" - Working Paper

Industry Experience

- Lead Applied Scientist, building ML models at Snowflake
- Global Macro Quant Researcher at Two Sigma (2022–2025)
- Quant Research Intern, Corporate Bond/ETF desk at Susquehanna International Group (2020–2021)

# Main Finding

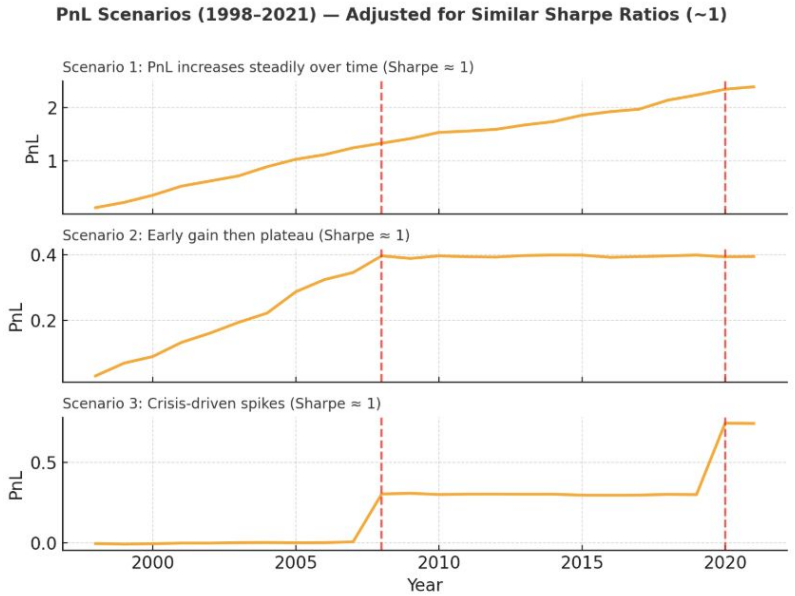
Global Corporate Bond Return Drivers:

- Signal Research in Corporate Bonds (extend to Global Markets):
  - Bond and firm-level signals
  - Effective signals were primarily equity-related: Past equity return, return around earnings, DEsprd
    - Buy bonds with higher EQ return
- Global market factor vs Other factors models
  - Global market factor performs better than other multiple factors models
  - Implication: Useful for hedging

# Comments - Economically Meaningful

- What does the P&L look like?

return spreads and alphas at the 5% level. In particular, EQret_1_0 demonstrates predictive power at the 1% significance level, which cannot be accounted for by commonly used factor models, and the associated Sharpe ratio is approximately 1.5 for both unhedged and hedged returns. Additionally, a fourth characteristic related to past stock returns, EQret_ind_6_1, also generates significant alphas



# Comments - Economically Meaningful

- What is the turnover of the portfolio
  - Corporate bonds are very expensive to trade
  - 30 to 50 bps bid-ask spread for US IG bond (source: WRDS)
- What does the P&L look like after TC?
  - 6m EQ return may perform better than 1m EQ return
- Need a much higher Sharpe ratio for meaningful net returns

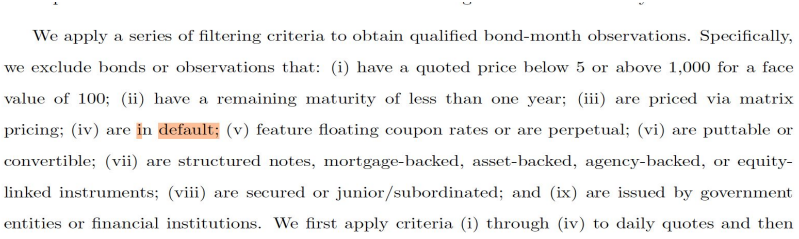
**Median Bid–Ask Spread (%) by Credit Rating**

*(Bonds with Amount Outstanding > $100 Million)*

| Rating | Bid–Ask Spread (%) |
|---|---|
| AAA | 0.35 |
| AA | 0.29 |
| A | 0.33 |
| BBB | 0.38 |
| BB | 0.42 |
| B | 0.42 |
| CCC | 0.62 |
| CC | 1.28 |
| C | 1.68 |
| D | 1.70 |

# Comments - Economically Meaningful

- Use a “liquid” and representative investment universe:
  - Example: US/EU IG bonds with a minimum outstanding amount of $100 million
  - One representative bond per firm
- Data quality and reliability:
  - Uses actual TRACE transaction data over indicative quotes.
  - Data filtered (e.g., Kalman Filter, EMA)
- Keep bonds that are default -> survival bias



We apply a series of filtering criteria to obtain qualified bond-month observations. Specifically, we exclude bonds or observations that: (i) have a quoted price below 5 or above 1,000 for a face value of 100; (ii) have a remaining maturity of less than one year; (iii) are priced via matrix pricing; (iv) are in default; (v) feature floating coupon rates or are perpetual; (vi) are puttable or convertible; (vii) are structured notes, mortgage-backed, asset-backed, agency-backed, or equity-linked instruments; (viii) are secured or junior/subordinated; and (ix) are issued by government entities or financial institutions. We first apply criteria (i) through (iv) to daily quotes and then

# Comments - Global vs Local Factor

"Global factor explains more of the portfolio returns than local + foreign factors."

- Surprising, given the segmentation and home bias of local bond markets
- Local bonds are less liquid and have more measurement error.
  - In the EU (the second most liquid credit market), local + foreign is actually better than Global.
- A stricter filter for the investment universe (keeping the most liquid bonds) may revise the table's findings.
- HYG, LQD or CDX Index return as factor
  - Better data quality
  - Widely used for hedging aggregate credit market risk

**Table VII**—*Continued*

Panel B: Performance of global, local, and local+foreign versions of factor models

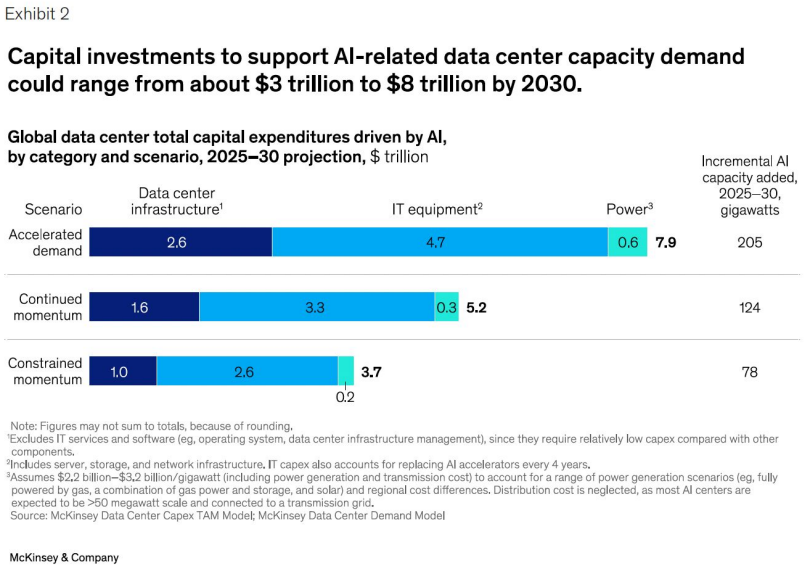
| | | MKT | | FF3 | | GB3 | | 5-factor | |
|---|---|---|---|---|---|---|---|---|---|
| | | Sig. | $\|\alpha\|$ | Sig. | $\|\alpha\|$ | Sig. | $\|\alpha\|$ | Sig. | $\|\alpha\|$ |
| US | G | 10 | 0.16 | 14 | 0.17 | 10 | 0.15 | 9 | 0.13 |
| | L | 10 | 0.18 | 10 | 0.14 | 15 | 0.22 | 11 | 0.13 |
| | L+F | 10 | 0.18 | 11 | 0.14 | 16 | 0.23 | 9 | 0.13 |
| EU | G | 6 | 0.10 | 6 | 0.10 | 6 | 0.10 | 5 | 0.09 |
| | L | 9 | 0.12 | 8 | 0.09 | 6 | 0.10 | 9 | 0.09 |
| | L+F | 4 | 0.09 | 8 | 0.09 | 4 | 0.08 | 6 | 0.09 |

# Other Comments

- Compare bond signals and company signals within the same investment universe
- Account for implementation lag and one-day data:
  - Avoid using the day t's closing price as an input signal to predict the close-to-close return between t to t+1
  - For US credit, liquidity drops sharply after 3:30 pm ET to 4:00 pm ET
- Asymmetric effects between equity and bond markets
  - Bond analysts tend to be more pessimistic due to a focus on downside risk, contrasting with the general optimism of stock analysts
  - Would like to see the analysis of asymmetric impact of positive/negative returns between equity and credit

# Exciting Problems for FI - AI CapEx

- Post-2024: massive corporate issuance to fund AI CapEx (data center, power, GPU)
- Corporate bond markets + ABS/CMBS may finance a significant portion of **$5–7T in AI-related infrastructure** (data centers, power, semiconductors) in 2025-2030 (source GS, Mckinsey)
- This raises new fixed-income questions:
  - How to price tech infrastructure risk (low collateral, high CapEx)?
  - How will rating agencies rate OpenAI-related entities their investment in data center?
  - Could this create a new “AI bond bubble”?
- A large supply shock - who will buy them?



# Exciting Problems for FI - Generative AI's Impact on Corporate Bond Investing

- Productivity Gains:
  - Easier information processing and research, especially for FI
  - Improved risk management; tools (agents) will eventually emerge to assist in data collection and analysis
- Enhanced Signal Generation:
  - Access to more alternative data and signals from both structured and unstructured sources
  - Short-run: More profits for hedge funds and asset managers with access to the models and data
  - Long-run: Signal will decay
- Market Implications:
  - What are the consequences for market segmentation?
  - Ultimately, market efficiency will increase

# Summary

- Great paper and great pleasure to read it
- Better and more accurate measurement of return and price, focus on a more liquid investment universe
- Show PnL after TC

- To everyone: please feel free to contact me regarding research collaboration, refereeing and discussion
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