Too Busy for Risk? Measuring the Distraction Effect of March Madness on Financial

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Risk Practice 4/23/2025

Research Motivation

The 2025 NCAA Men's Basketball Tournament became the most-watched since 1993, with an average of 9.4 million viewers per game.

This shows how popular the tournament is in the United States and why it can strongly affect investor attention.

Video Reference

https://www.youtube.com/watch?v=3Tf_Mhh61n0

Research Motivation

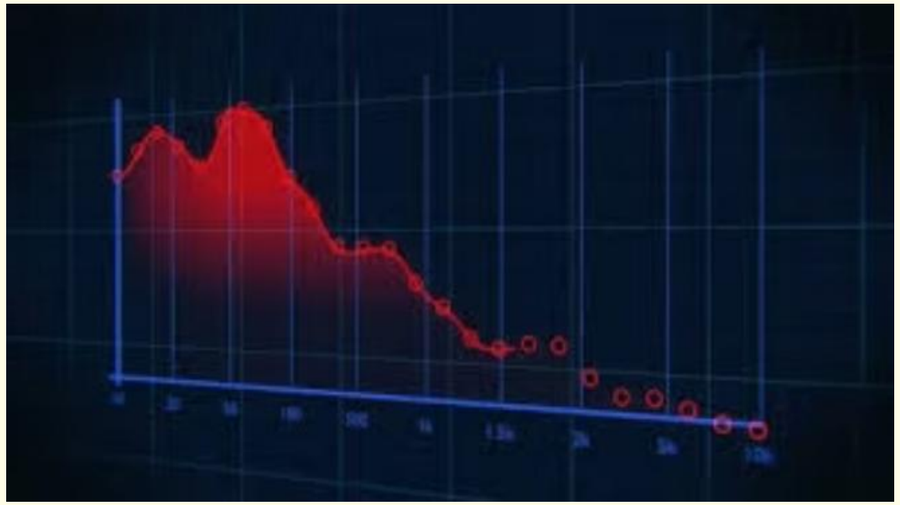
Distracted Investors

During March Madness, millions of people in the U.S. are watching college basketball.

Some investors might be so focused on the games that they don't pay enough attention to the market.

Risk Prediction Errors

If investors are distracted, it may lead to mistakes in risk predictions, such as Value at Risk (VaR) models failing more often.



Who did this before? (reference)

1

FIFA World Cup Impact

Even in the U.S., where soccer is not the top sport, the FIFA World Cup caused stock returns to drop.

This suggests that global sports events can distract investors and affect risk patterns.

2

Emerging Markets Reaction

Emerging markets reacted strongly to the announcement of hosting the World Cup.

Shows that non-economic events can influence investor sentiment and trigger abnormal returns, especially when national pride is involved.

My Method is Inspired by Wu (2022)

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Full length article

Sports Mood Index, institutional investors, and earnings announcement anomalies☆

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ABSTRACT

I construct the Sports Mood Index (SMI) of 49 metropolitan areas in the U.S. and Canada based on the performance of Big 4 professional sports teams and build the firm-level SMI based on institutional investors' holdings as a proxy for investors' mood. In sports-induced bad mood settings, earnings announcement premium becomes higher because of increased uncertainty avoidance premium, and post-earnings-announcement drift (PEAD) becomes lower because of the reversal effect. A one-standard-deviation increase in the SMI leads to a 22 bps increase in earnings announcement premium and a 16 bps decrease in PEAD in the following week. Whereas sports-induced good mood has no significant impact on the trading behavior of institutional investors, sports-induced bad mood leads to inattention. Institutional investors with sports-induced bad mood underreact to standardized unexpected earnings when faced with both positive and negative news, as evidenced by lower abnormal trading volume around earnings announcement days.

How I apply this idea:

Instead of earnings reports, I focus on **risk prediction failures (VaR violations)**. I use March Madness as a major sports event to test if **attention loss** or **mood effects** can lead to **higher VaR model failure rates**, especially for related companies.

Based on Wu (2022)

Wu created a **Sports Mood Index** to measure how sports outcomes influence investor behavior. He found that **bad moods caused by sports losses** make institutional investors **trade less and underreact to earnings reports**.

Adapting Wu (2022): From Mood to Risk Forecasting Factors

Sports Outcome (Win/Loss)

Wu (2022)

Investor Mood (Good/Bad)

Institutional Trading Behavior

Earnings Reaction (Abnormal returns)

March Madness Game Day

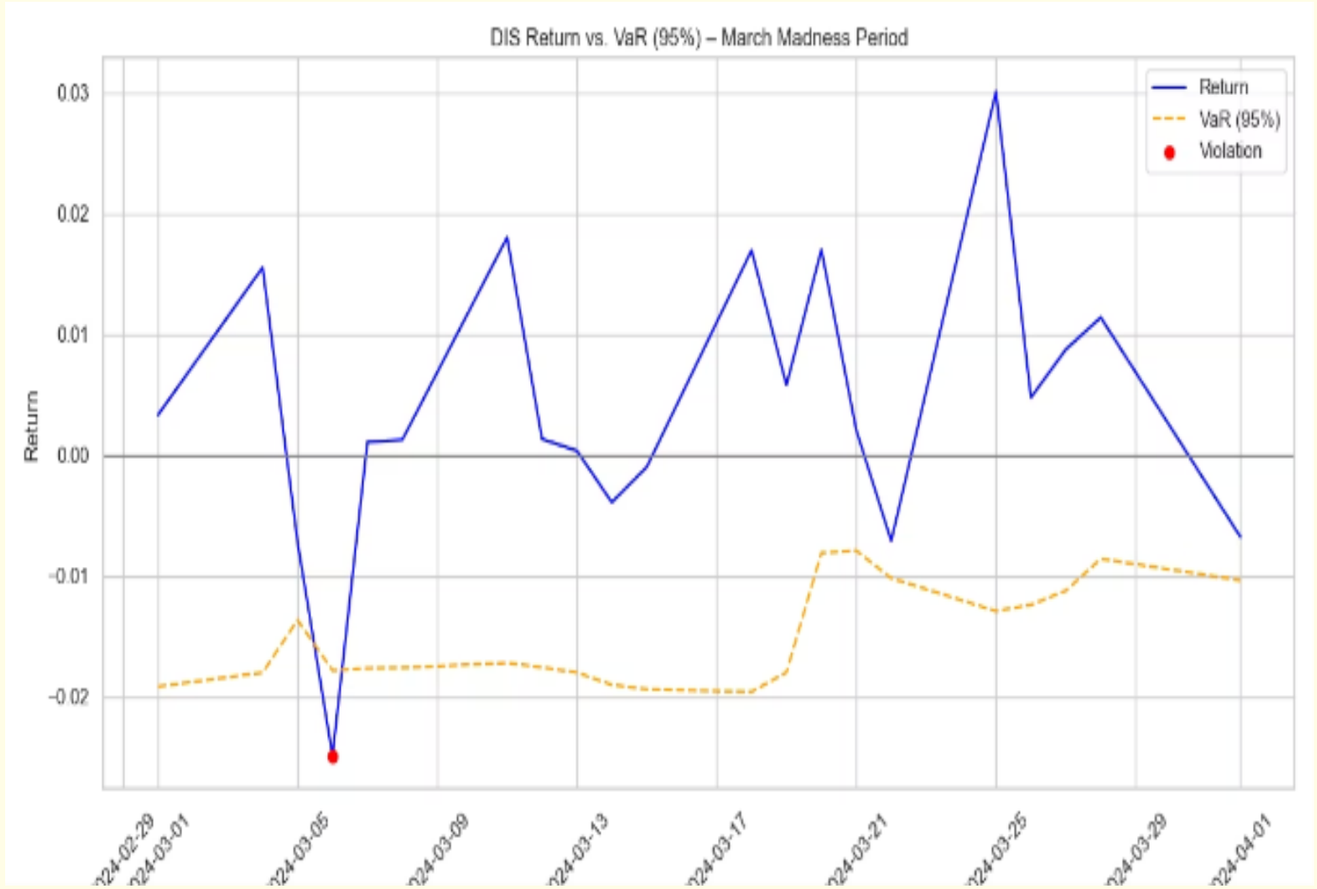
This Project

Investor Distraction

Risk Monitoring Lapses

VaR Violations ↑

How I Measure Risk Model Failure: 95% Quantile VaR



Calculate VaR

I use a **rolling 10-day quantile** to estimate Value at Risk (VaR) at the 95% confidence level.

This means: "What is the 5th percentile return over the past 10 trading days?"

Identify Violations

If the **actual return is lower than the VaR**, it means the model failed to anticipate this drop.

Each time this happens, I count it as a **VaR violation**.

Track During March Madness

I track how often this happens on **March Madness game days**.

Defining Treatment vs. Control

Group	Company	Why it's here
Treatment	DIS	ESPN airs March Madness games
Treatment	DKNG	Betting spikes during the tournament
Treatment	PARA	CBS Sports is a main broadcaster
Treatment	COF	Capital One is an official sponsor
Control	MSFT	Not directly involved in the tournament
Control	JNJ	No promotional tie to March Madness
Control	WMT	Unrelated consumer retail
Control	V	Not a known sponsor or advertiser

Defining GameDay

2023	2024	2025
Tournament Period	Tournament Period	Tournament Period
March 14 – April 3	March 19 – April 8	March 18 – April 7

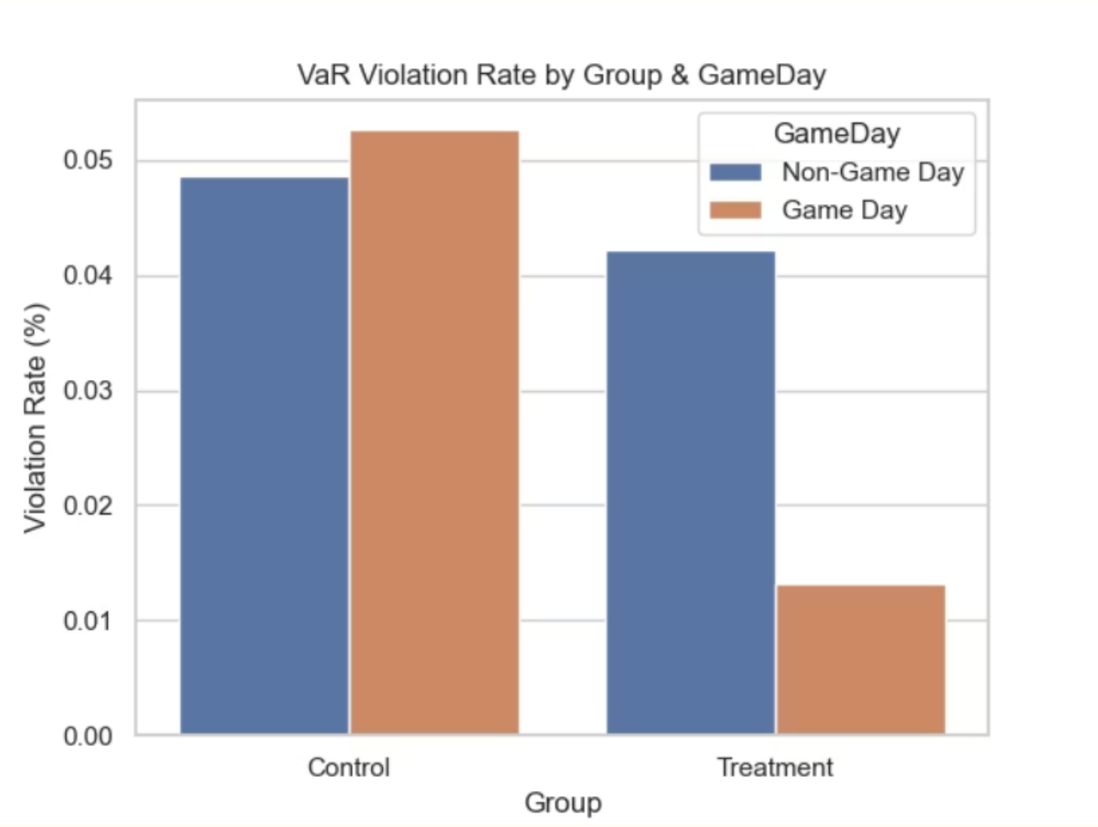
I define **GameDay = 1** if the trading day overlaps with any NCAA tournament round.

[10]:

	Date	Ticker	Return	VaR	Violation	Group	GameDay
0	2023-03-15	COF	-0.032684	NaN	0	Treatment	1
1	2023-03-16	COF	0.006779	NaN	0	Treatment	1
2	2023-03-17	COF	-0.041150	NaN	0	Treatment	1
3	2023-03-20	COF	0.005908	NaN	0	Treatment	0
4	2023-03-21	COF	0.047872	NaN	0	Treatment	0
...	...	...	...	...	...	...	...
4219	2025-04-15	WMT	-0.008023	-0.057739	0	Control	0
4220	2025-04-16	WMT	-0.029584	-0.064299	0	Control	0
4221	2025-04-17	WMT	0.022261	-0.057545	0	Control	0
4222	2025-04-21	WMT	-0.008689	-0.046901	0	Control	0
4223	2025-04-22	WMT	0.026404	-0.045513	0	Control	0

4224 rows × 7 columns

Are VaR Models More Likely to Fail on Game Days?



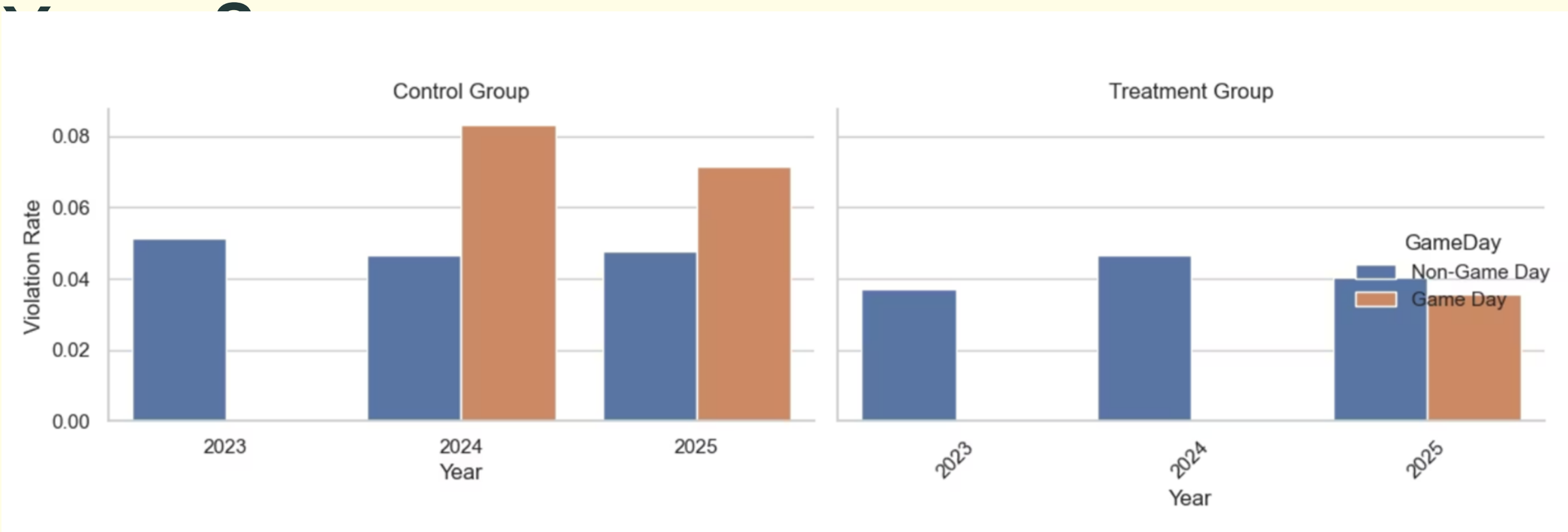
Findings:

In the **Control group**, VaR violation rates are slightly higher on game days.
In contrast, **Treatment stocks show significantly fewer violations** during March Madness.

Interpretation:

The result is not what we expected. It suggests that companies involved in March Madness may **get more attention or risk control** during the tournament, rather than being ignored by distracted investors.

Is the Pattern Consistent Across Years?



Logit Regression Confirms the Trend (But Not Significant)

We run a logistic regression to control for year effects and test the interaction between GameDay and Treatment group.

❗ The interaction term is negative, suggesting fewer violations for Treatment stocks on game days. ❌ However, the result is not statistically significant (p = 0.258).

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Optimization terminated successfully.
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         Iterations 8
                           Logit Regression Results
==============================================================================
Dep. Variable:              Violation   No. Observations:                 4152
Model:                          Logit   Df Residuals:                     4146
Method:                           MLE   Df Model:                            5
Date:                Tue, 22 Apr 2025   Pseudo R-squ.:                0.001970
Time:                        16:30:26   Log-Likelihood:                -770.09
converged:                       True   LL-Null:                       -771.61
Covariance Type:            nonrobust   LLR p-value:                    0.6938
================================================================================================
                                   coef    std err          z      P>|z|      [0.025      0.975]
------------------------------------------------------------------------------------------------
Intercept                       -2.9855      0.142    -21.037      0.000      -3.264      -2.707
Group[T.Treatment]              -0.1475      0.151     -0.978      0.328      -0.443       0.148
C(Year)[T.2024]                  0.0395      0.163      0.243      0.808      -0.279       0.358
C(Year)[T.2025]                  0.0040      0.236      0.017      0.986      -0.458       0.466
GameDay                          0.4014      0.535      0.750      0.453      -0.648       1.451
GameDay:Group[T.Treatment]      -1.2949      1.145     -1.131      0.258      -3.538       0.949
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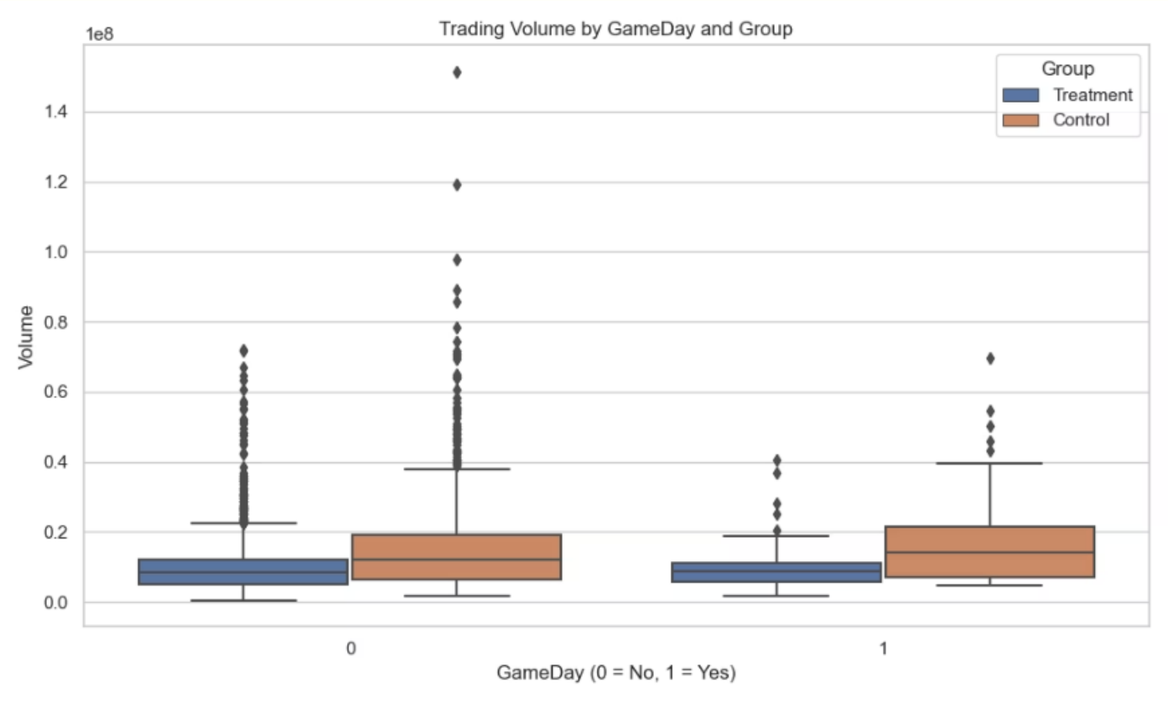
Is There More Attention on Game Days? (Volume Test)



Attention Measurement

We use daily trading volume as a proxy for investor attention.

Volume Distribution

The boxplot shows volume distributions on game days vs. non-game days for both groups.

Key Finding

There has been no significant increase in trading activity for companies related to the tournament.

Revisiting Our Hypothesis

Initial Expectation

We thought there would be more Value-at-Risk (VaR) violations for tournament-linked firms during March Madness because investors might be distracted.

Actual Finding

However, our results show **lower violation rates** for these companies.

Potential Explanations

Several factors may explain this:

- Treatment selection is fundamentally challenging: Unlike studies that use geographic proximity to define investor exposure (e.g., local sports teams and nearby firms), our approach relies on sponsorship or service linkages, which mostly involve **large, well-diversified firms.**
- **Large firms may have more stable trading patterns** and conservative VaR models, making violations less likely.
- And for these companies, tourment should bring them a positive impact, not a loss!

Limitations & Future Directions

Limitations

📊 **Sample size is relatively small**: Only 3 years of NCAA tournament data, and a limited number of trading days per year.

⚖️ **Imbalanced groups**: The number of control firms is much larger than that of treatment firms, since most sponsors are big companies and there are only a few of them. This imbalance might affect the fairness of comparison or reduce the power of regression tests.

🏢 **Treatment group definition is imperfect**: Based on sponsorship or commercial links rather than local investor sentiment or emotional exposure.

🧮 **Simplified VaR model**: We used historical quantile estimation. More dynamic models like **quantile regression** or **expected shortfall (ES)** could provide deeper insight.

Future Work

Use **event study methodology** on upset games or dramatic finishes

Find **better proxies for distraction** (Google Trends, Reddit, or volume surprise)

Expand to other large-scale events (e.g., Super Bowl, FIFA World Cup)

⭐ Inspired by Wu's use of **local investor exposure**, a powerful extension would be to redefine treatment firms based on geographic proximity to NCAA schools.

Poetic ending...

> You set out to capture distraction with mathematics, only to find that the human mind itself is a generator of chaos. You are not measuring risk—**you are staring into the abyss of human behavior.**