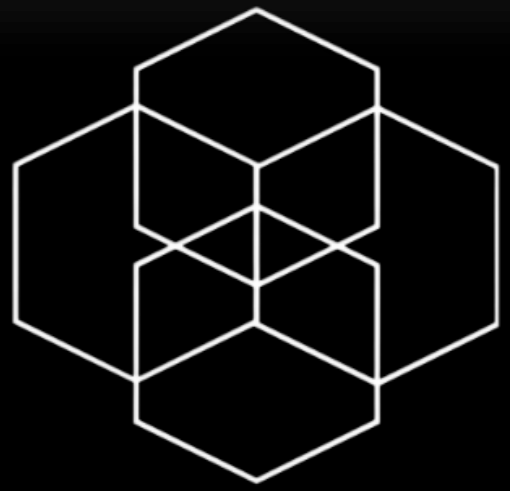

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Eli Keldsen, Ryan Parsons, Ben Pinoli

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Thesis

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Inside Uncle Sam's Portfolio: How Policy Shapes Profits

Thesis

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Strategy Inspiration

Abnormal Returns from the Common Stock Investments of the U.S. Senate. Journal of Financial and Quantitative Analysis – Ziobrowski, A. J., Cheng, P., Boyd, J. W., & Ziobrowski, B. J. (2004)

Portfolio Composition

- **Long stocks** with **high political information** content
- **Short stocks** with **political sell signals**

Economic Reasoning

Stocks traded by congressional committee members with high sector relevance systematically outperform due to information asymmetries, with performance further amplified when combined with earnings revision momentum through policy-to-fundamentals transmission effects. Signal strength varies predictably with committee seniority, political cycles, and sector-specific committee jurisdictions.

Investment Thesis

U.S. Senators possess material non-public information advantage that can be systematically identified and exploited through a multi-signal weak supervision framework combining committee jurisdiction analysis, leadership position weighting, and seniority factors.

Assumptions

- Committee members receive material, non-public information through their official duties.
- Despite a 30-45 day STOCK Act disclosure window there is still alpha extraction.
- Policy discussions translate into actionable investment insights before public disclosure.

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Example

Example


S&P 500 Pandemic and Liberation Day Crashes (Normalized Prices, Nontrading Days Removed)
S&P 500 Normalized Price
110
105
100
95
90
85
80
75
09/19
10/03
10/17
10/31
11/14
11/28
12/12
12/26
01/09
01/23
02/06
02/20
03/05
03/19
04/02
04/16
04/30
05/14
05/28
06/11
Pandemic Crash (2019-2020)
Liberation Day Crash (2024-2025)
Congressional Volume Peak (02/11/2020)
SPY Volume Peak (02/28/2020)
Congressional Volume
SPY Volume
Normalized Congressional Volume vs SPY Volume (Pandemic Period)
Normalized Value
1
0.5
0
Oct 2019
Nov 2019
Dec 2019
Jan 2020
Feb 2020
Mar 2020
Apr 2020
May 2020
Jun 2020
Normalized Congressional Volume vs SPY Volume (Liberation Period)
Normalized Value
1
0.5
0
Oct 2024
Nov 2024
Dec 2024
Jan 2025
Feb 2025
Mar 2025
Apr 2025
May 2025
Jun 2025

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Application

Application

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Weak Supervision

Weak supervision allows us to use machine learning to label millions of data points quickly through using defined 'signals' to sort data rather than labelling it by hand. This allows millions of data points to be labeled quickly.

Relevance Scoring

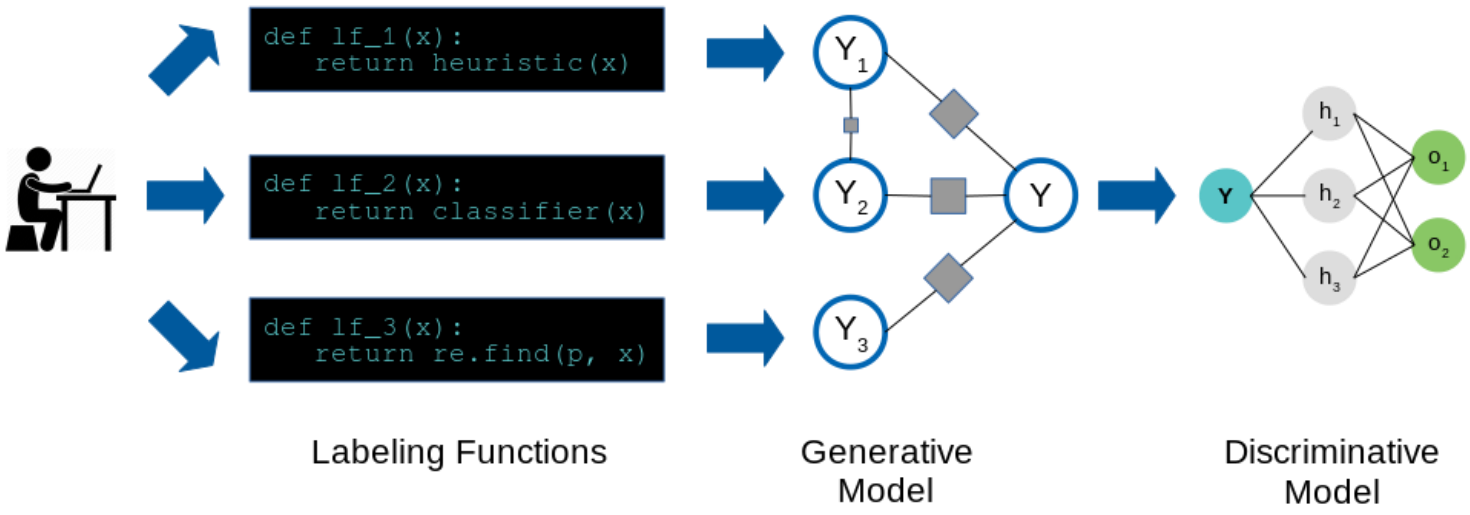
We establish thresholds at 0.75 (high) and 0.3 (low) based on signal-to-noise separation where 0.75 ensures ratios exceed 3:1 (clear informational advantage) while 0.3 represents ratios below 1:3 (minimal edge).

$$\mathcal{R}_{i,j}(t) = \min\left\{\Phi\left(\mathbf{C}_j, \mathbf{S}_i\right) \cdot \omega_j^{\text{comm}} \cdot \Lambda_j^{\text{lead}}(t) \cdot \Psi_j^{\text{sen}}(t), 1\right\}$$

$$\Phi\left(\mathbf{C}_j, \mathbf{S}_i\right) = \max_{k \in \mathcal{K}_j}\left\{\phi_{k,i} \cdot \exp\left(-\delta \cdot d_{\text{Lev}}(\mathbf{c}_k, \mathbf{s}_i)\right)\right\}$$

Application within Model

Rather than use weak supervision to solely 'label' data, we can use it to sort between 'important' and 'unimportant' stock traders in Congress, allowing us to sort Members of Congress into "High Relevance" and "Low Relevance" samples. We can then use the High relevance traders as the basis of our model, while using the other group of lower Relevance traders as a control group. Therefore, if our model successfully outperforms the market, then the High Relevance group will significantly outperform the Low Relevance group.



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Results

Results

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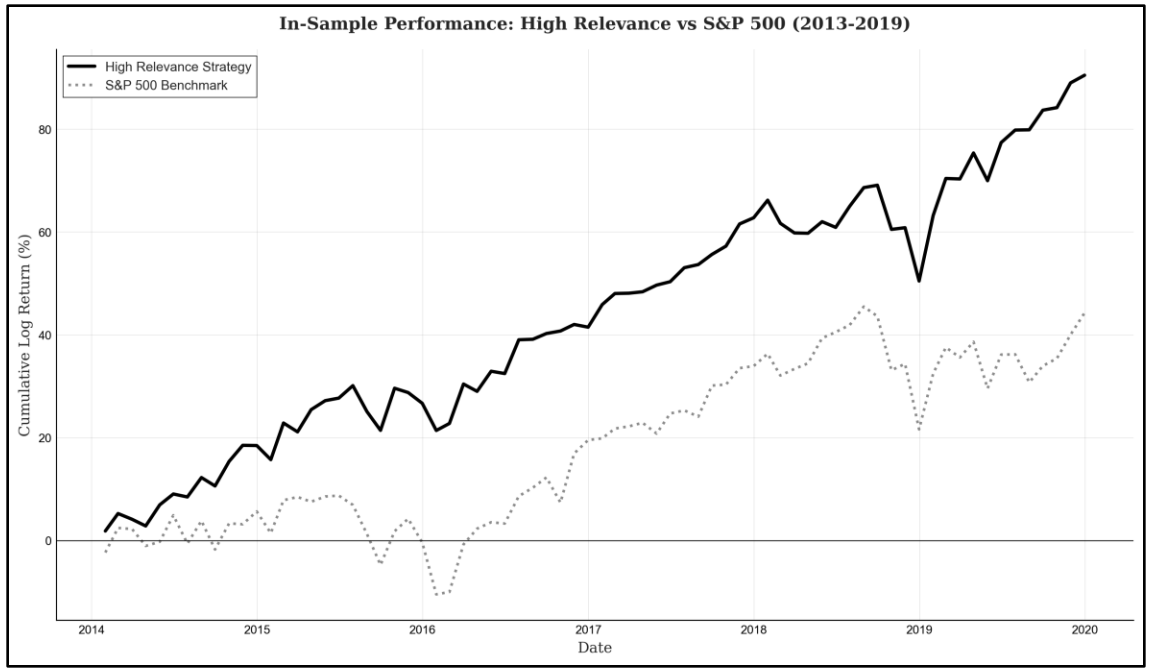
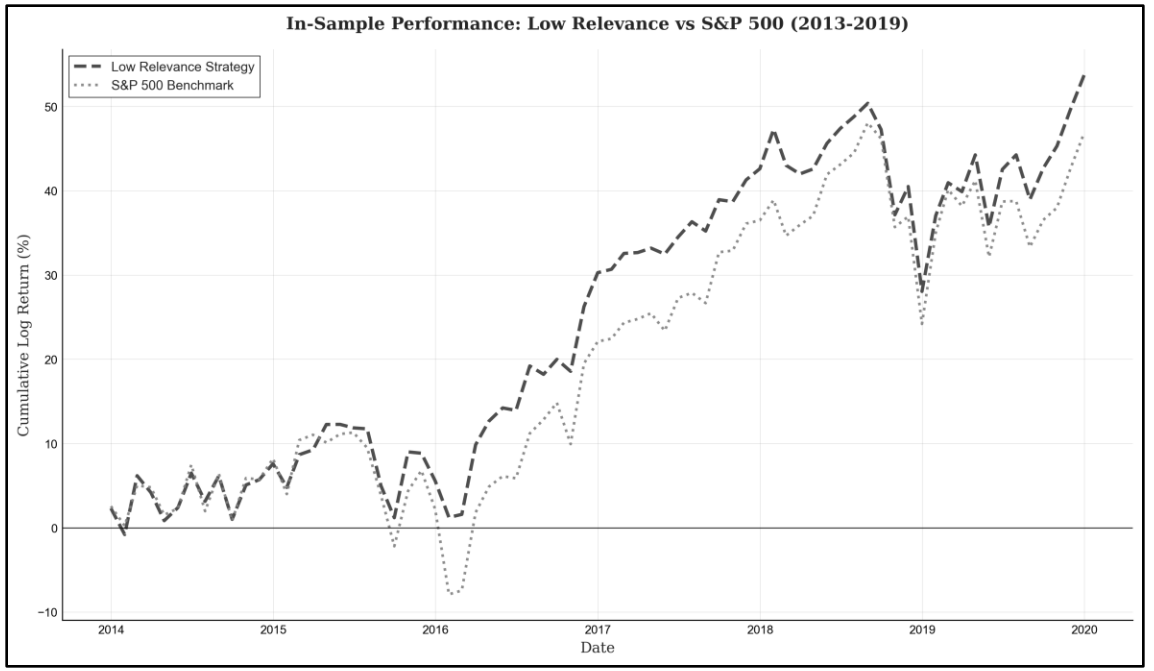
In-Sample High Relevance Results

The In-Sample Alpha of High Relevance investments reached 9.11% annually, or a **monthly alpha of 0.73%.** The in-sample t-stat of 2.23 suggests this alpha is statistically significant with 95% confidence. This results in a Sharpe ratio of 0.733.



In-Sample Low Relevance Results

The In-Sample alpha of Low Relevance investments reached 0.03% annually and was **on par with the S&P 500.** The in-sample t-stat of 0.01 suggests this alpha is statistically insignificant. This results in a Sharpe ratio of 0.277.



Results

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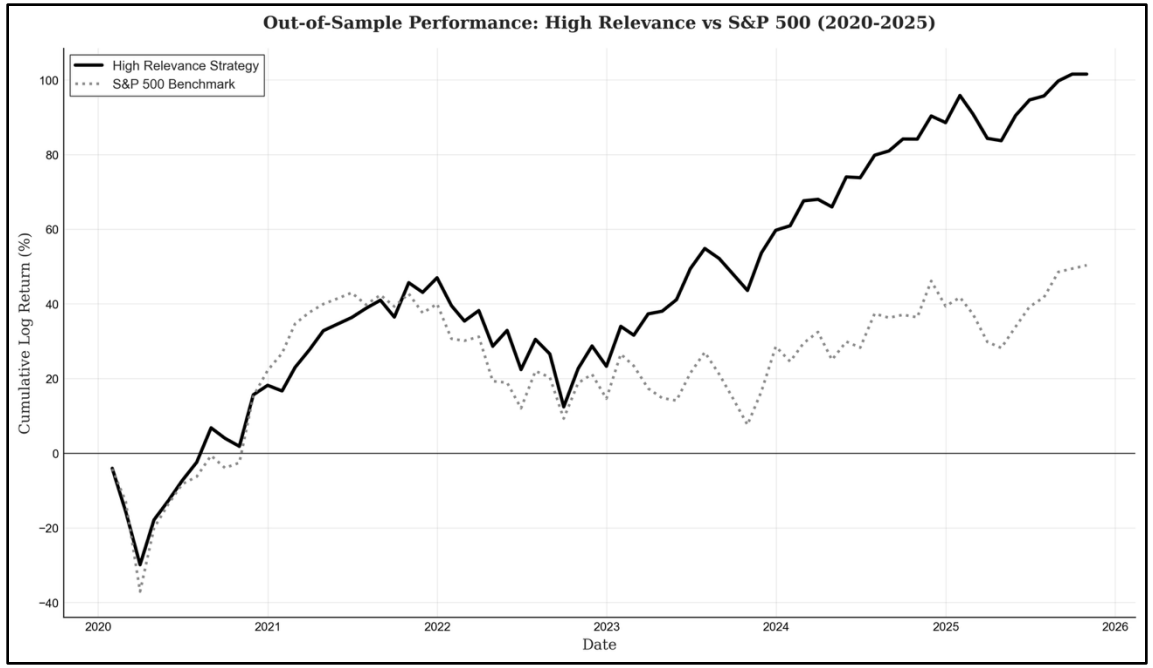
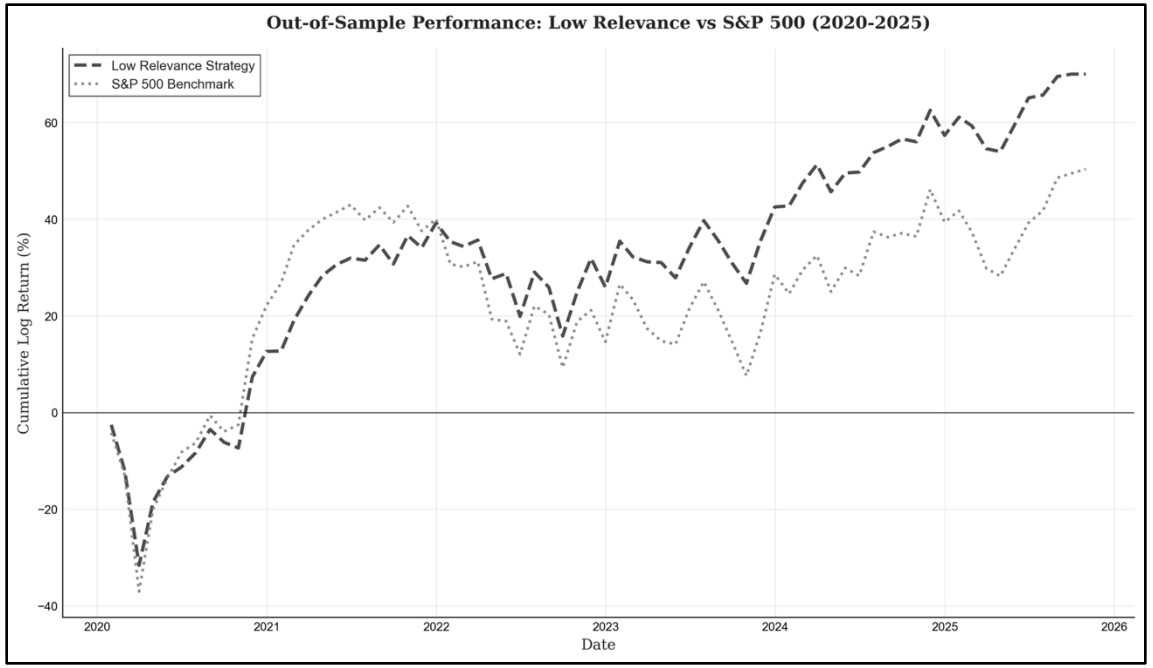
Out of Sample High Relevance Results

The Out of Sample Alpha of High Relevance investments reached 10.73% annually, or a **monthly alpha of about 0.86%.** The in-sample t-stat of 2.48 suggests this alpha is statistically significant with 95% confidence. This results in a Sharpe ratio of 0.839.



Out of Sample Low Relevance Results

The Out of Sample alpha of Low Relevance investments reached 4.80% annually and was therefore **marginally better than the S&P 500.** The in-sample t-stat of 1.82 suggests this alpha is statistically insignificant at a 95% confidence interval. This results in a Sharpe ratio of 0.606.



Results

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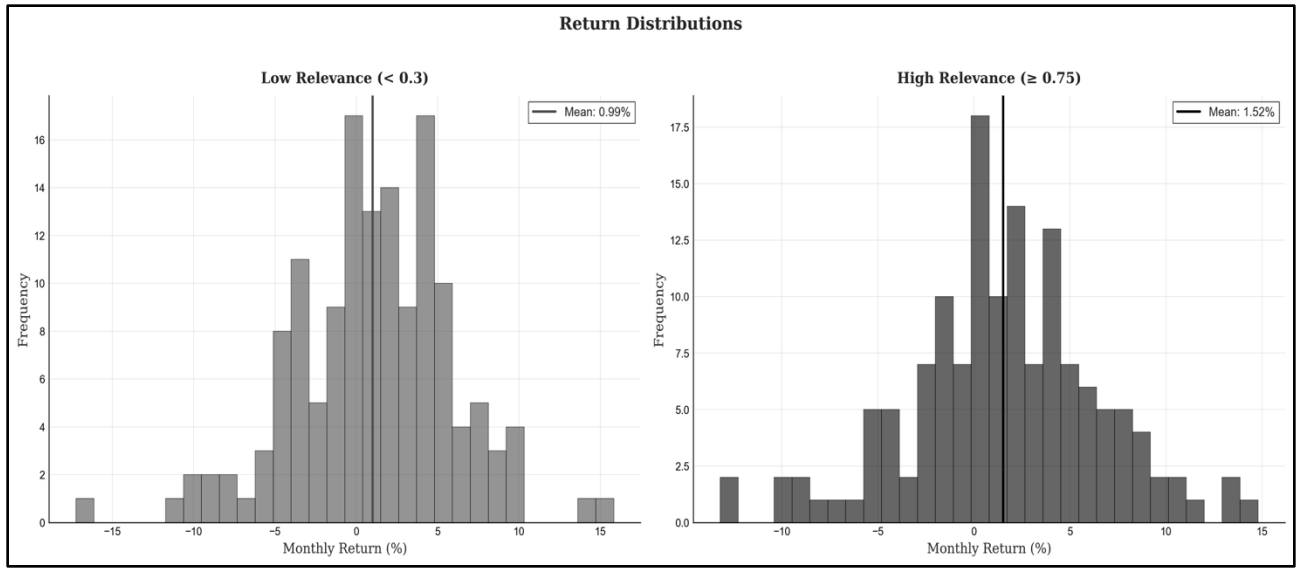
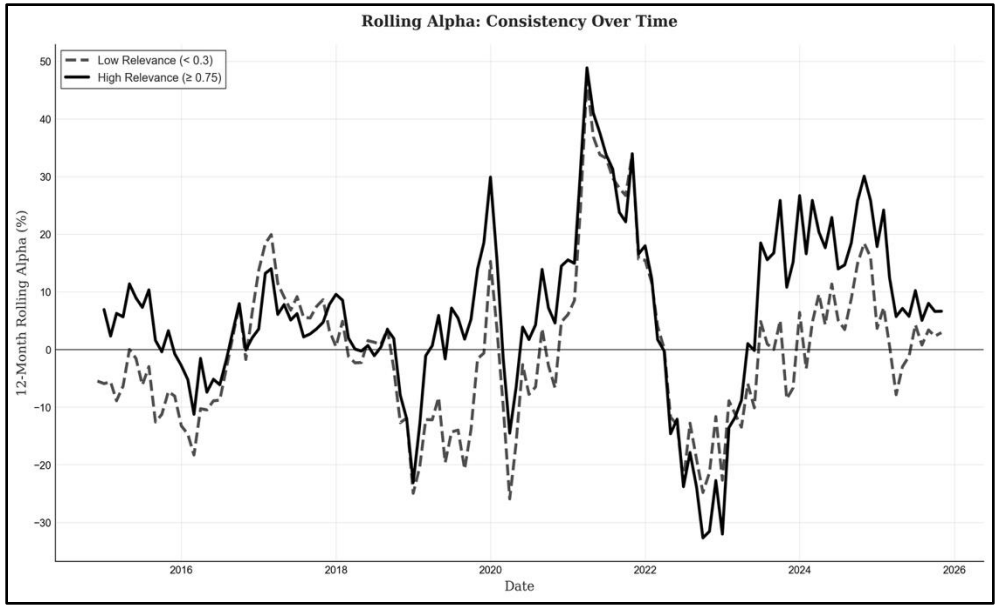
Mean Returns Summary

The High Relevance Sample's mean monthly returns was 1.52%, compared to a mean return of 0.99% from the Low Relevance Sample. This results in a **19.76% annualized return for the High Relevance Sample**, and a **12.47% annualized return for the Low Relevance Sample.**



Rolling Alpha Consistency

The Rolling Alpha of our High Relevance sample increased markedly in more recent years, especially after the dip in 2023. Overall, the **High Relevance Sample overperforms compared to the Low Relevance control**



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Conclusion

Conclusion

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Performance Metrics: In-Sample vs Out-of-Sample

Portfolio	In-Sample Sharpe	Out-of-Sample Sharpe	In-Sample Alpha	Out-of-Sample Alpha	In-Sample t-stat	Out-of-Sample t-stat
S&P 500	0.440	0.287	-	-	-	-
Low Relevance (<0.3)	0.277	0.606	0.03%	4.80%	0.01	1.82
High Relevance (≥0.75)	0.733	0.839	9.11%	10.73%	2.23	2.48

Summarized Results

- Out-of-Sample data **outperforms** in sample data, showing data was **not** overly sampled.
- High Relevance samples consistently overperformed the S&P 500 and the Low Relevance groups.
- Both the Low Relevance and High Relevance groups had a higher Sharpe ratio Out-of-Sample than In-Sample, outperforming the S&P 500.

$$R_{p,t} - R_{f,t} = \alpha + \sum_{k=1}^{K} \beta_k F_{k,t} + \varepsilon_t$$

Conclusion

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Closing Statement

The results of this strategy suggest that , despite the delayed information stemming from the long STOCK act disclosure window, there is alpha to be generated through following political signals and traders. Through quantitative analysis, this alpha can be captured through studying prior trades and following investment patterns on capitol hill. This political information asymmetry has the potential to significantly increase future returns.

Future Questions

- Why did the High Relevance Sample start to overperform more after 2023?
- How much of the success of the High Relevance Sample stems from specific outlier senators?
- Do trades cluster around specific legislative milestones (committee hearings, bill markups, votes)?
- Do senators who specialize in fewer sectors outperform generalists?

Further Reading

- Varma, Paroma, and Christopher Ré. "Snuba." *Proceedings of the VLDB Endowment*, vol. 12, no. 3, 1 Nov. 2018, pp. 223–236, https://doi.org/10.14778/3291264.3291268.
- Ziobrowski AJ, Boyd JW, Cheng P, Ziobrowski BJ. Abnormal Returns From the Common Stock Investments of Members of the U.S. House of Representatives. *Business and Politics*. 2011;13(1):1-22. doi:10.2202/1469-3569.1308

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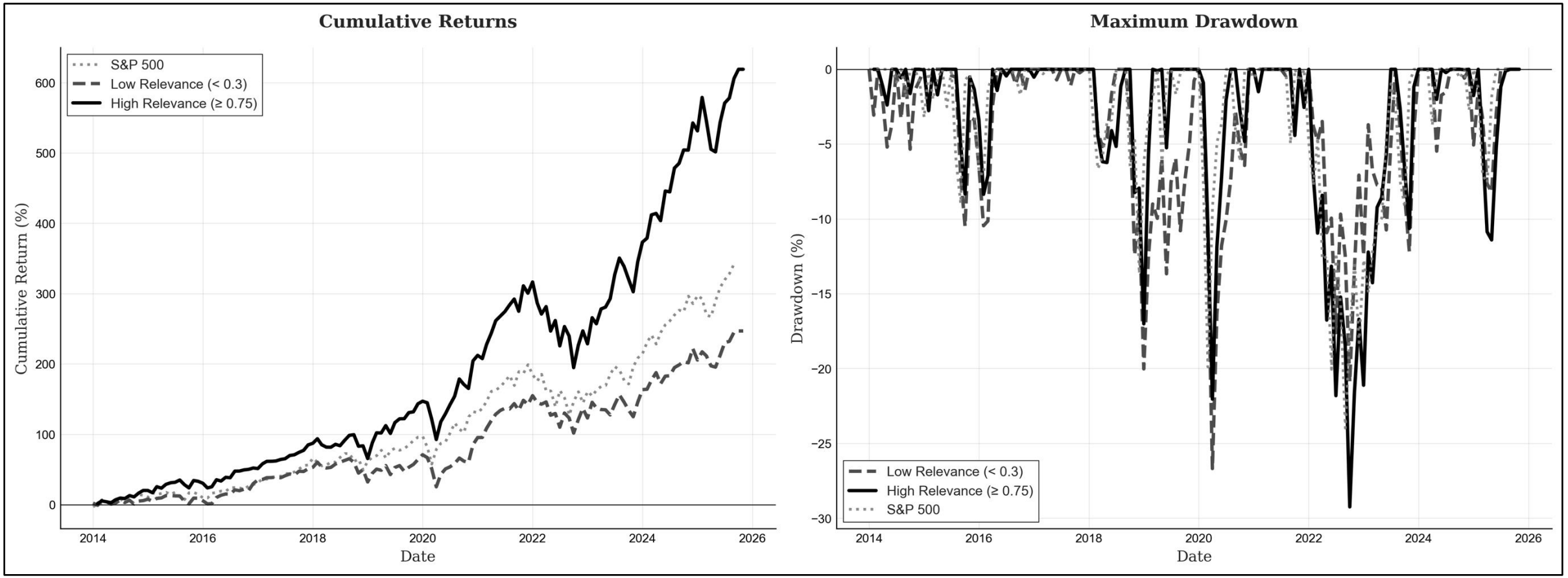
Appendix

Appendix


Cumulative Returns
S&P 500
Low Relevance (< 0.3)
High Relevance (≥ 0.75)
Cumulative Return (%)
0
100
200
300
400
500
600
2014
2016
2018
2020
2022
2024
2026
Date
Maximum Drawdown
Drawdown (%)
0
−5
−10
−15
−20
−25
−30
Low Relevance (< 0.3)
High Relevance (≥ 0.75)
S&P 500
2014
2016
2018
2020
2022
2024
2026
Date

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Analytical Workflow