Corporate Credit Spreads as Predictors of Equity Market Performance

Vishwa Kalal

AlgoGators Capstone Project

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1 Abstract

This study investigates whether movements in corporate credit spreads, which measure the extra yield investors demand for holding corporate bonds instead of risk-free Treasuries, can predict future U.S. equity market performance. Using monthly data from 2000–2025, we analyze Investment-Grade (IG) and High-Yield (HY) spread changes as leading indicators for S&P 500 total returns. We evaluate predictability with regression models and regime checks and assess practical value with a simple spread-based risk-on/risk-off backtests. Across the full-sample regressions, coefficients were generally negative, for example, β = -0.83 for IG_OAS and β = -0.24 for HY_OAS at the 3-month horizon, indicating that wider spreads typically precede weaker equity performance. Sub-sample analysis showed the effects during stress periods, including magnitudes of β = -7.05 (IG_OAS, 2000-2007) and β = -8.77 (ΔIG_OAS, 2008-2015). During 2016-2025, several coefficients turned out to be positive, reflecting the unique post-COVID liquidity environment a short-term inconsistency and not a fundamental change in the broader pattern. Results show that widening spreads, especially in High-Yield, precedes weaker equity performance, with the effect strongest during stress regimes. These findings support the idea of using credit spreads as an early warning macro signal to guide the Fund's equity exposure and risk management.

2 Introduction

Credit spreads, defined as the yield difference between corporate bonds debt securities issued by firms and exposed to default risk) and U.S Treasury securities (sovereign obligations widely treated as the near risk-free benchmark). When credit spreads widen, investors demand a greater compensation for bearing default risk, signaling heightened uncertainty, decline in market confidence, or tighter financial conditions. On the other hand, narrowing spreads indicate improved investor confidence, greater liquidity, and optimism about economic growth (Fama & French, 1989). As the corporate bond market tends to adjust to risk ahead of the equity market, changes in credit spreads often act as early warnings for shifts in investor sentiment and future stock performance (Gertler & Lown, 1999). This relationship aligns with credit channel of monetary policy, in which changes in credit conditions influence corporate borrowing, investment, and ultimately, economic activity (Bernanke, Gertler, & Gilchrist, 1996). When credit spreads widen and borrowing becomes more expensive, firms often cut back on investment and hiring, which can slow earnings growth and weigh on stock prices. Conversely, when spreads narrow and credit is easily available, it tends to coincide with higher economic activity and stronger stock returns.

Historical market data highlights this relationship. During the 2008 Global Financial Crisis, credit conditions deteriorated rapidly, causing both Investment-Grade (IG) and High-Yield (HY) corporate spreads to widen sharply before one of the largest declines in equity markets. Similarly, the early 2020 spread spike during the COVID-19 pandemic foreshadowed a quick sell-off in equities as investors rapidly repriced risk across asset classes. In contrast periods

of monetary easing and narrowing credit spreads coincided with equity market recoveries, highlighting the predictive power of credit-market indicators. Gilchrist and Zakrajšek (2012) found that "excess bond premia", components of corporate spreads not explained by expected defaults, have significant predictive power for both economic activity and asset returns. This growing evidence suggests that corporate spreads reflect investor expectations about macroeconomic risk and serve as early indicators of financial stress.

This interaction between credit spreads and equity prices directly motivates our research question: ***Can movements in corporate credit spreads reliably predict future U.S. equity market performance?*** We hypothesize that changes in corporate credit spreads carry predictive information about future equity returns. Specifically, we expect that widening Investment-Grade (IG) and High-Yield (HY) spreads, reflecting rising perceived credit risk, will be followed by lower subsequent S&P 500 total returns, while narrowing spreads will precede higher future returns. The strength of this relationship should vary across market regimes, with the predictive power of spreads being most pronounced during periods of financial stress or heightened volatility. This hypothesis builds on the findings of Gertler & Gilchristin in their "credit channel" text, and our contributions lie in testing this relationship across multiple sub-periods; 2000-2007, 2008-2015, and 2016-2025; and evaluating whether spread based signals can be implemented as a practical, risk management system.

3 Methodology

This study utilizes an empirical, data-driven approach to evaluate whether movements in corporate spreads can predict future equity market performance. We construct a monthly dataset from January 2000 through July 2025 and apply predictive regressions to test the hypothesis that widening spreads signal weaker future stock returns, while narrowing spreads indicate improving market conditions. Rather than focusing only on statistical relationships, we combine macroeconomic theory on credit conditions with regressions and a trading simulation, allowing us to test whether the spread-equity link translates into a usable signal for portfolio decisions.

Data was collected from publicly available, reliable sources to ensure predictability and replicability. Corporate credit spreads are obtained from the ICE BofA U.S Corporate Index Option-Adjusted Spread and the ICE BofA High Yield Index Option-Adjusted Spread, two widely used benchmarks that measure the additional yield corporate bonds must offer relative to risk-free U.S. Treasury securities. The 10-Year Treasury Constant Maturity and 3-Month Treasury Bill yields, both from the Federal Reserve Economic Data (FRED), are used to calculate the term spread, an indicator of the slope of the yield curve and a measure of future economic growth. Equity market performance is captured by the S&P 500 Total Return Index, sourced from Yahoo Finance, which includes reinvested dividends and provides a more accurate measure of overall equity returns. All the data is converted to a consistent monthly frequency, and spans about 305 observations from 2000-2025. Corporate spreads are expressed in percentage terms, and the term spread is calculated as the difference

between the 10-Year Treasury yield and 3-Month Treasury Bill yield. Monthly equity returns are calculated as the difference in the S&P 500 Total Return Index. To avoid look-ahead bias, all calculations only use information available at the time of each observation. Missing values are checked and filled using forward methods where necessary, and outliers are kept to preserve market reality during stress periods such as 2008 and 2020. The final dataset includes spread levels (IG_OAS, HY_OAS) and their monthly changes (ΔIG_OAS, ΔHY_OAS), lagged returns, and the term spread. These variables allow us to differentiate between predictiveness of spread levels, which reflect broad risk conditions, and spread changes, which show short-term adjustments in market sentiment.

Our analysis begins with a series of 8 predictive regressions designed to test different variations of the credit-equity relationship. Each regression corresponds to a specific spread measure (IG_OAS, HY_OAS, ΔIG_OAS, ΔHY_OAS) and a forecast period (1 month, or 3 months). The general model is:

$$R_{t+h}^{Equity} = \alpha + \beta Spread_t + \varepsilon_t$$

where R_{t+h}^{Equity} is the future S&P 500 total return, and $Spread_t$ represents the corporate spread variable under consideration. *h* represents the forecasting horizon and is set to either 1 month or 3 months. The 1-month horizon captures very short-term reactions in equity markets, while the 3-month horizon evaluates whether spread movements contain information about the market environment over the next quarter. β measures how changes in spreads are related to future returns. A negative β indicates that periods of widening credit spreads are typically followed by weaker equity performance, consistent with investors demanding higher compensation for risk and tightening financial conditions. A positive β, on the other hand, would imply that widening spreads precede higher equity returns, signaling greater investor confidence and a willingness to take on risk. An Ordinary Least Squares (OLS) estimation is also used, with Newey-West heteroskedasticity and autocorrelation-consistent (HAC) standard errors to correct for serial dependence in monthly financial data. This ensures that the statistical significance of results is not overstated due to overlapping returns.

After estimating the baseline regressions, we extend the model by adding controls to account for broader macroeconomic influences:

$$R_{t+h}^{Equity} = \alpha + \beta Spread_t + \gamma_1 TermSpread_t + \gamma_2 R_{t-1}^{Equity} + \varepsilon_t$$

The term spread is included to control for broader economic conditions, since it reflects the impact of interest rate policy and growth expectations. The lagged equity return helps account for short-term market patterns, such as momentum or the tendency of returns to reverse over time. This control helps isolate whether corporate spreads themselves, not just general macroeconomic conditions, contain predictive information about equity performance.

To assess the stability of this relationship over time, we divide the sample into three sub-periods that align with major financial and policy regimes:

- 2000-2007: A pre-crisis expansion period, with generally stable growth, moderate credit conditions, and relatively low market volatility.
- 2008-2015: The post-crisis period, marked by deleveraging, stressed credit markets early on, and then a large-scale monetary policy
- 2016-2025: An environment that includes gradual policy tightening, the shock of the COVID-19 pandemic, and subsequent recovery in both credit and equity markets.

Estimating regressions separately for each sub-period allows us to examine whether the predictive strength of spreads varies across market environments, particularly during stress periods when the credit channel is most active.

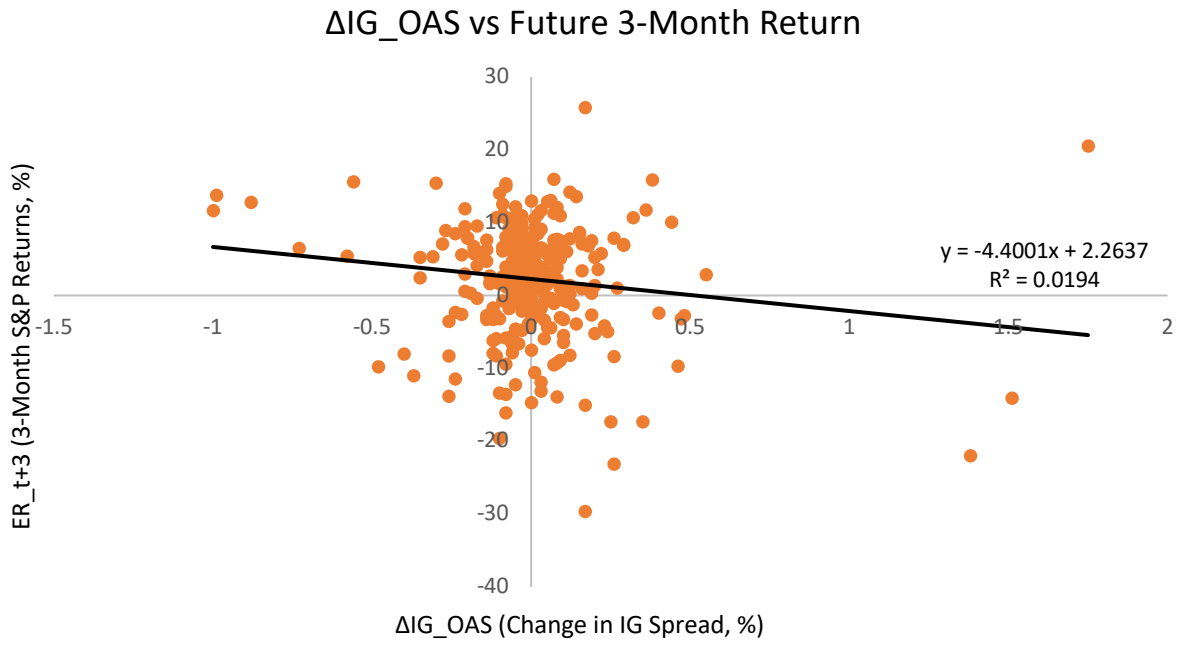
From the eight models we estimated, two were selected for backtesting: the change in Investment-Grade spreads (ΔIG_OAS) and the change in High-Yield spreads (ΔHY_OAS) as predictors of S&P 500 returns 3 months into the future. These models were chosen because changes in credit spreads reflect how investors continuously reprice risk, and they showed the most consistent relationships with future returns across all time periods. Using the AlgoSystem backtesting platform, we turned the regression results into trading signals that change the S&P 500 exposure depending on whether credit spreads are widening or narrowing. When the spreads widen significantly, the strategy reduces exposure to equities, when spreads tighten it increases exposure. The backtest runs over the full 2000-2025 period and computes performance metrics including total return, Sharpe ratio, volatility, and maximum drawdown, benchmarked against the S&P 500. By linking the statistical results to simulated portfolio performance, this step tests whether the predictive signals from credit spreads can be used in practice to increase returns while reducing large losses.

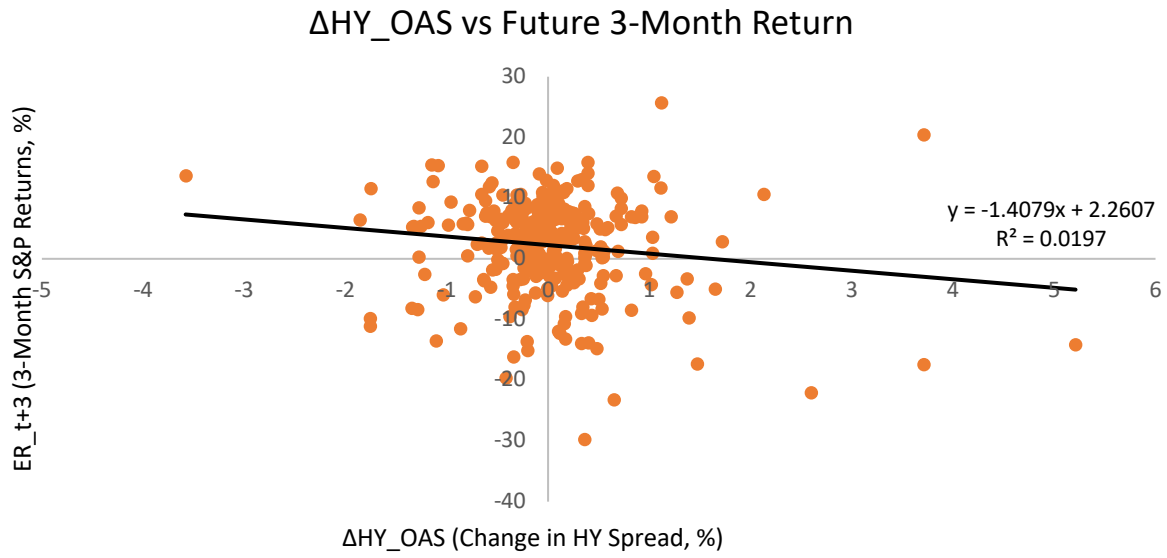
4 Results

Eight predictive regressions were estimated using both the levels and monthly changes of Investment-Grade (IG) and High-Yield (HY) corporate spreads across 1- and 3-month periods. In almost all cases, the estimated coefficients (β) were negative, meaning that wider spreads were followed by weaker subsequent equity returns. This supports the hypothesis that rising credit risk and tighter financial conditions tend to precede equity market weakness.

Y	X	Beta	T-Stat	P-Value	R^2	Adj R^2
ER_{t+1}	IG_OAS	-0.3495	-0.5971	0.5505	0.0044	0.0012
ER_{t+1}	HY_OAS	-0.0937	-0.5748	0.5654	0.0031	-0.0002
ER_{t+1}	ΔIG_OAS	-0.6339	-0.2734	0.7846	0.0012	-0.0021
ER_{t+1}	ΔHY_OAS	-0.15	-0.2523	0.8008	0.0007	-0.0026
ER_{t+3}	IG_OAS	-0.8298	-0.6377	0.5237	0.0084	0.0052
ER_{t+3}	HY_OAS	-0.241	-0.6467	0.5178	0.0068	0.0035

ER_{t+3}	ΔIG_OAS	-4.4001	-1.2078	0.2271	0.0194	0.0161
ER_{t+3}	ΔHY_OAS	-1.4079	-1.433	0.1518	0.0197	0.0164



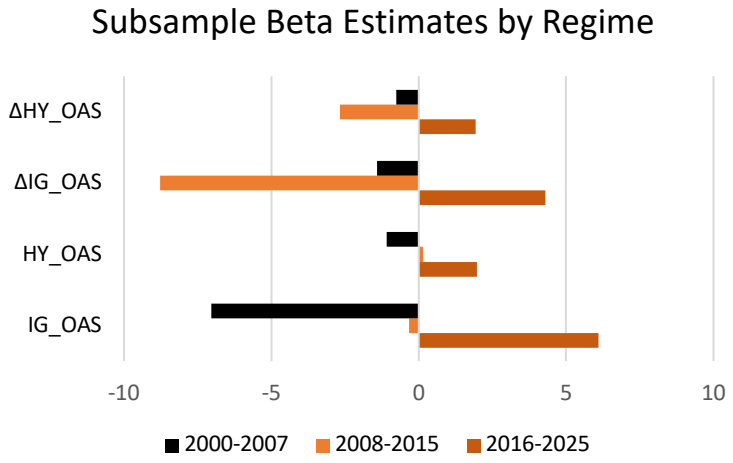


The addition of control variables, the term spread and lagged equity return, did not change the direction or general magnitude of the coefficients, indicating that credit spreads contain predictive information beyond what is explained by broader macroeconomic conditions.

Y	X	Beta	T-Stat	P-Value	R^2	Adj R^2
ER_{t+1}	IG_OAS	-0.4436	-0.6252	0.5318	0.0141	0.0043
ER_{t+1}	HY_OAS	-0.1238	-0.6333	0.5266	0.0123	0.0025
ER_{t+1}	ΔIG_OAS	-1.0373	-0.4467	0.6551	0.0114	0.0015
ER_{t+1}	ΔHY_OAS	-0.277	-0.4805	0.6308	0.0105	0.0006
ER_{t+3}	IG_OAS	-0.5016	-0.3001	0.7641	0.016	0.0062
ER_{t+3}	HY_OAS	-0.1072	-0.2303	0.8179	0.0146	0.0047
ER_{t+3}	ΔIG_OAS	-4.5188	-1.2732	0.203	0.0328	0.0232
ER_{t+3}	ΔHY_OAS	-1.4521	-1.5517	0.1207	0.0333	0.0236

Among all models, ΔIG_OAS and ΔHY_OAS at the 3-month period produced the most consistent results across sub-samples and the highest explanatory power, suggesting that spread changes capture short-term risk repricing more effectively than static spread levels. To examine stability across regimes, regressions were re-estimated for 2000-2007, 2008-2015, and 2016-2025.

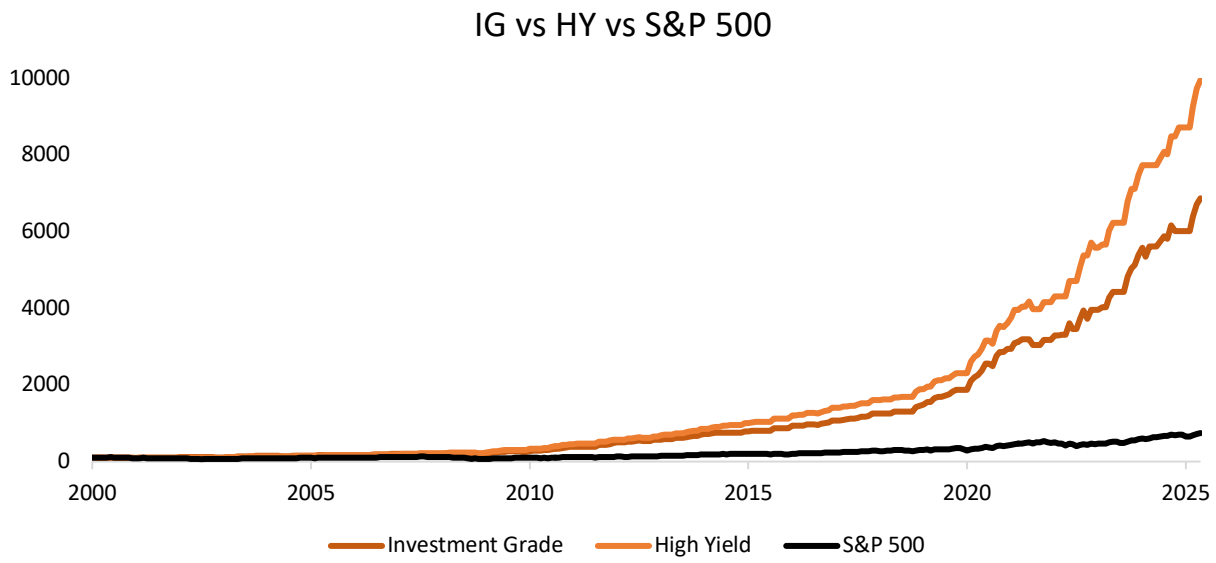
Predictor	2000-2007	2008-2015	2016-2025
IG_OAS	-7.0482	-0.3263	6.1033
HY_OAS	-1.0889	0.1382	1.9767
ΔIG_OAS	-1.411	-8.7703	4.3007
ΔHY_OAS	-0.7547	-2.6698	1.9228



Predictive power strengthened during 2008-2015, when credit stress was highest, and was weaker in calmer environments. During 2016–2025, several spread-based predictors produced positive β values, indicating that widening spreads were followed by higher future equity returns. This does not contradict the overall hypothesis, but rather reflects a regime shift: the post-COVID rebound and unprecedented monetary stimulus created an environment where spreads behaved differently, compressing rapidly during recoveries and widening temporarily during liquidity-driven periods. This pattern shows that the credit-equity relationship is dependent on the state, intensifying during financial stress periods.

Although these positive coefficients appear to contradict the typical negative relationship, they are consistent with how credit markets behaved in the post-COVID environment. Monetary stimulus, record-low interest rates, and large-scale asset purchases created a liquidity-driven recovery in which spreads occasionally widened during periods of rapid equity rebounds rather than during periods of stress. In other words, spread movements reflected short-term liquidity distortions rather than deteriorating credit fundamentals. Thus, the positive coefficients do not invalidate the broader hypothesis, they simply highlight that the spread-equity relationship is regime-dependent and can reverse when markets are dominated by policy intervention rather than fundamentals.

Although several models produced negative coefficients, the 3-month spread-change regressions stood out with the largest economic magnitude and the most consistent direction across regimes. These models also delivered the highest R^2 and adjusted R^2 values relative to the others, making them the strongest candidates for practical evaluation. The two most robust models (ΔIG_OAS predicting 3 months and ΔHY_OAS predicting 3 months) were tested using the AlgoSystem platform. These strategies increased S&P 500 exposure when spreads tightened and reduced exposure when spreads widened.



Overall the results confirm that corporate credit spreads, especially changes in Investment-Grade spreads, contain forward-looking information about equity market performance. The consistent negative coefficients, stronger predictive power during crisis periods, and improved backtested performance suggest that credit-based indicators can improve risk management and return optimization in an equity portfolio.

5 Discussion

The results indicate that corporate credit spreads, especially changes in Investment-Grade (IG) spreads, carry meaningful predictive information about equity market performance. The consistently negative regression coefficients show that widening spreads are typically followed by weaker S&P 500 returns, supporting the hypothesis that tightening credit conditions signal rising risk aversion and slower economic growth. This relationship was strongest during 2008-2015, when financial stress was elevated, suggesting that the predictive power of spreads depends on market conditions and becomes more useful in periods of heightened uncertainty. The later 2016–2025 period shows a different pattern, with some predictors displaying positive coefficients. This reflects the unusual macroeconomic environment following the COVID-19 shock, where aggressive monetary intervention and rapid market recoveries caused spreads to widen during rebounds rather than deteriorations. This suggests that the credit-equity link is not constant, but shifts depending on the dominant macro regime.

These findings reinforce the idea that credit markets often reprice risk before equities. Credit spreads reflect how investors view the overall level of risk in the market, including the chances of default, the availability of liquidity, and expectations about the broader economy. When they widen, it reflects a deterioration in market confidence that later translates into weaker corporate earnings and stock performance. This result supports earlier studies suggesting that movements in credit spreads can signal where the economy and financial markets are headed, reflecting shifts in overall risk.

From a practical perspective, the backtesting results show that using credit-spread movements as trading signals can improve portfolio outcomes. The ΔIG_OAS strategy achieved higher Sharpe ratios and smaller drawdowns than both the ΔHY_OAS model and the S&P 500 benchmark. For the AlgoGators Fund, this means that tracking how credit spreads change can help decide when to adjust equity exposure: cutting back on stocks when spreads widen and credit risk increases, and adding back exposure when spreads narrow again.

While results are directionally consistent, statistical significance remains modest. Because the analysis relies on overall credit-spread indices, it may miss important differences between sectors or bond ratings. In addition, using monthly data might overlook quick shifts in market conditions that happen over shorter time periods. Nonetheless, the evidence supports the hypothesis that corporate credit spreads serve as early-warning indicators of

equity performance and can improve risk management when integrated into a broader macroeconomic monitoring framework.

6 Conclusion

This study provides empirical evidence that corporate credit spreads contain meaningful information about future U.S equity market performance. Using monthly data from 2000-2025, we examined whether changes in Investment-Grade and High-Yield spreads can serve as early indicators of shifts in market sentiment and economic activity. The regression analysis showed that wider spreads, typically associated with tighter credit conditions and higher perceived risk, were followed by lower equity returns, while narrowing spreads often preceded market recoveries. This inverse relationship was most distinct when analyzing spread changes rather than level, suggesting that the dynamics of credit repricing, rather than static credit conditions, carry the strongest predictive power.

Across the different sub-sample periods, the relationship between credit spreads and future equity returns stayed the same in direction, but the strength of that relationship changed. During the 2008-2015 post-crisis era, the relationship weakened somewhat as easy monetary policy and quantitative easing reduced credit risk. However, from 2016 to 2025; during periods of price hikes, the COVID-19 shock, and recovery; it became stronger again. The results indicate that credit spreads do not always carry the same amount of information; they are most helpful for forecasting when the economy or markets are transitioning between expansion and contraction. Backtesting the two strongest models (ΔIG_OAS predicting 3 months and ΔHY_OAS predicting 3 months) showed that strategies based on these signals earned higher total returns and higher Sharpe ratios than a passive benchmark. This supports the idea that spread-based signals can be useful for timing equity exposure.

For the AlgoGators Fund, these findings have practical implications. Monitoring the direction and rate of change in corporate spreads can provide a timely signal for adjusting portfolio risk exposure. When spreads widen rapidly, it may indicate deteriorating credit conditions and justify a defensive stance, reducing equity exposure or shifting toward safer assets. On the other hand, when spreads tighten, signaling improved liquidity and investor confidence, increasing equity exposure can enhance returns during early expansion phases. Integrating credit-spread indicators into the fund's macro and multi-asset strategy could therefore strengthen its risk management framework and improve timing precision across market regimes.

Overall, this research demonstrates that corporate credit spreads serve not only as a reflection of financial stress but also as a forward-looking tool for anticipating equity performance. By translating these relationships into systematic trading and allocation strategies, funds like AlgoGators can better navigate changing market conditions, enhance returns, and reduce drawdowns, ultimately building more resilient, data-driven portfolios.

7 References

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