



Leading Credit Risk Indicators:

The Relationship Between Delinquency Rates and Option-Adjusted Spreads

Key Statistics Summary

Option-adjusted spreads vs corporate loan delinquency rate statistics by economic period

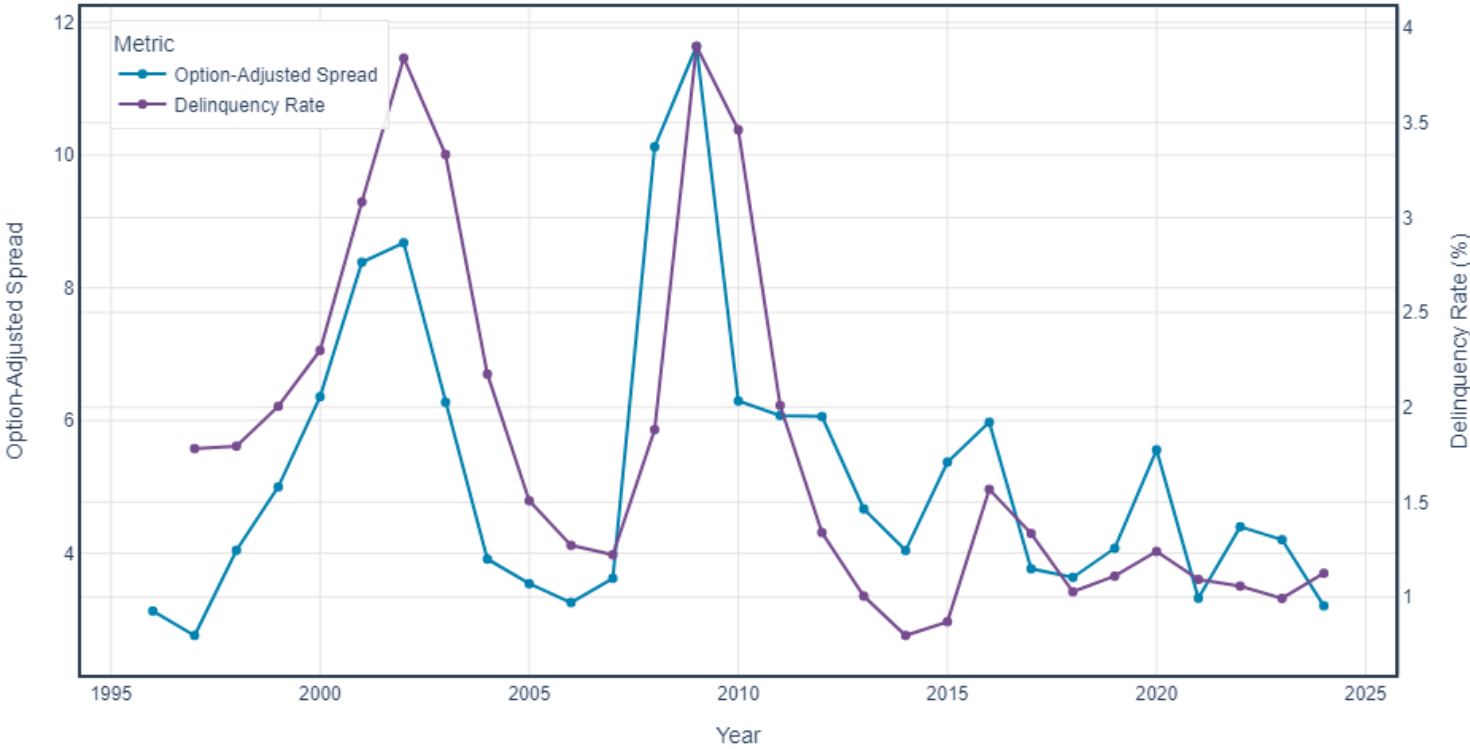
Metric	Pre-GFC (1996-2007)	Great Recession (2008-2010)	Post-Crisis (2010-2020)	Covid to Present (2020-2024)
Credit Spread Analysis				
Average Option-Adjusted Spread	508 bps	1078 bps	516 bps	416 bps
Spread Volatility (Std Dev)	218 bps	495 bps	142 bps	118 bps
Loan Performance Metrics				
Average Delinquency Rate	2.23%	2.25%	1.59%	1.10%
Delinquency Volatility (Std Dev)	0.85%	0.93%	0.98%	0.10%
Predictive Relationships				
Quarter Forward Correlation	0.90	0.78	0.68	0.46
Quarter Forward R²	0.81	0.61	0.46	0.21
Half-Year Forward Correlation	0.92	0.82	0.69	0.35
Half-Year Forward R²	0.85	0.68	0.47	0.13
Year Forward Correlation	0.85	0.59	0.65	0.09
Year Forward R²	0.72	0.35	0.42	0.01

Option-Adjusted Spread: Measures spread between below-investment-grade bonds (BB and below) and Treasury curve
Delinquency Rate on Business Loans: Percentage of business loans that are 30+ days past due measured across all US commercial banks

Source: Federal Reserve Economic Data (FRED)

Long-Term Credit Risk Trends

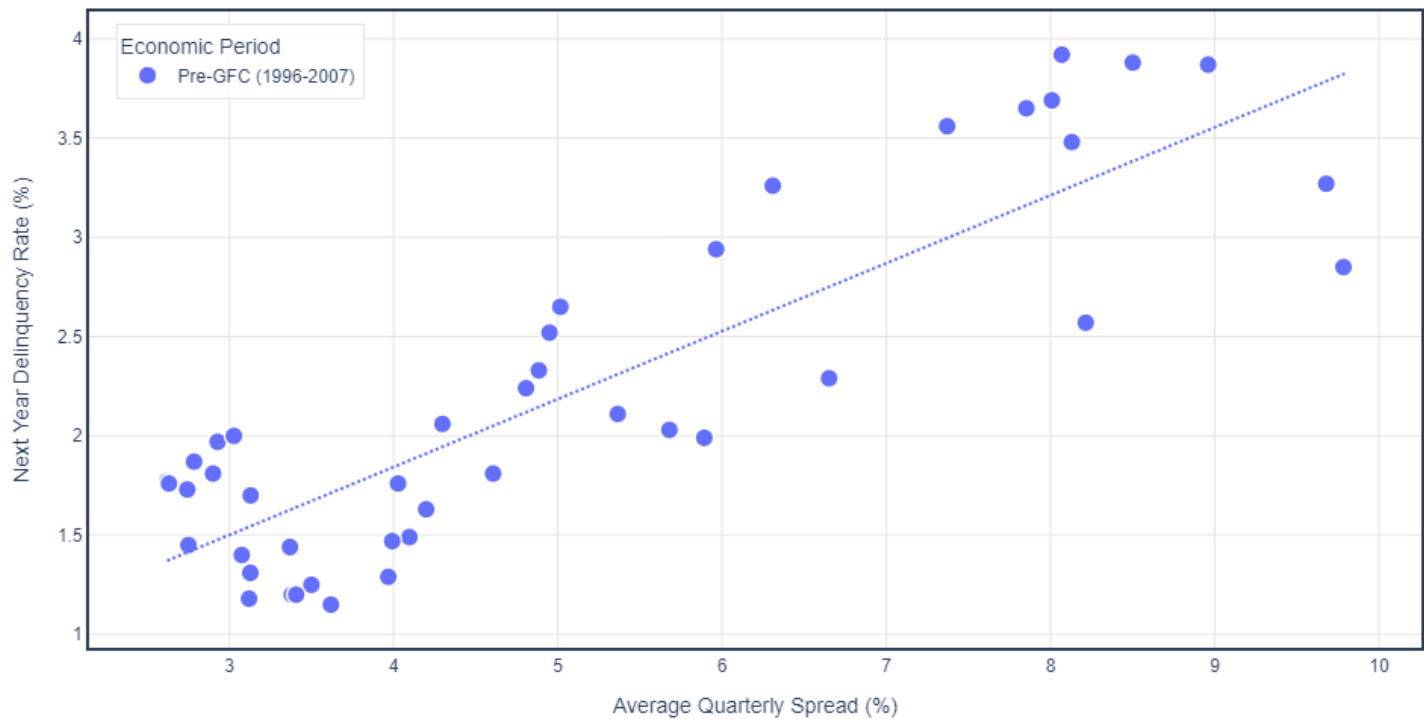
Annual Average Spread vs Delinquency Rate



Source: Federal Reserve Economic Data (FRED)

Pre-2008 Credit Risk Dynamics: OAS as Leading Indicator of Delinquency Rates

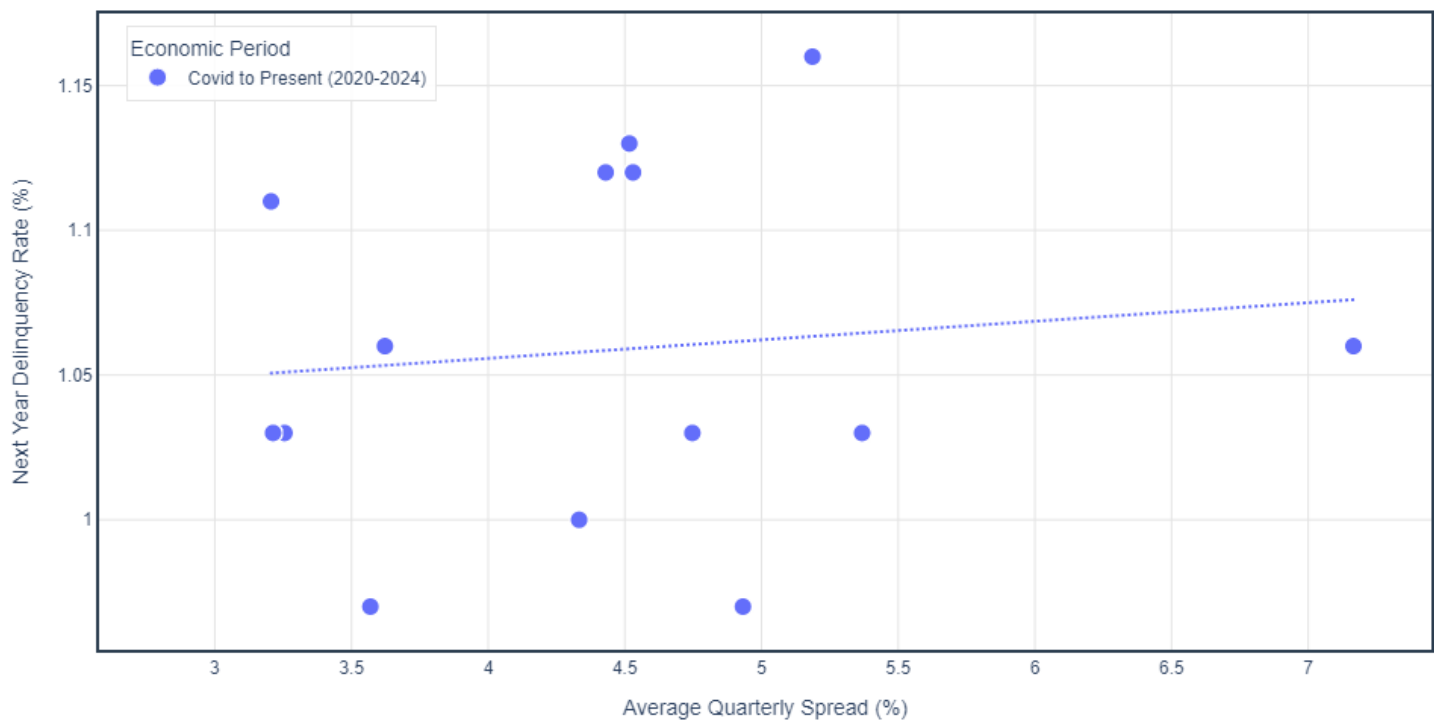
Strong Predictive Relationship ($p = 0.849$)



Source: Federal Reserve Economic Data (FRED)

Credit Risk Dynamics: OAS as Leading Indicator of Delinquency Rates (2020-2024)

Correlation Analysis Shows Weakened Predictive Relationship (Correlation: 0.093)



Source: Federal Reserve Economic Data (FRED)