WTH03: Agricultural Weather Analytics

Technical Analysis Report | February 01, 2026

1. Data Overview

Subject: DTN (PRIVATE)
Analysis Period: 2016-02-03 to 2026-01-30 (~10.0 years)
Total Observations: 1,435 rows
Stock Data: 0 daily OHLCV observations
Data Sources: Yahoo Finance API (yfinance), synthetic operational metrics

2. Methodology

2.1 Risk Analytics (CFA Standards)

- **Sharpe Ratio:** (Return - Rf) / Volatility (Rf = 0)
- **Sortino Ratio:** Return / Downside Deviation
- **Value at Risk (VaR):** Historical 95% and 99% confidence
- **Maximum Drawdown:** Peak-to-trough decline

2.2 Technical Indicators

- **Moving Averages:** SMA/EMA (20, 50, 200 day)
- **Volatility:** Rolling standard deviation (20, 60, 252 day)
- **Momentum:** RSI-14, Price momentum (20-252 day)

3. Risk Metrics Summary

Ticker	Total Return	Ann. Return	Volatility	Sharpe	Max DD

4. Detailed Risk Profile

Return Distribution

Metric	Value
Positive Days	0.0%
Best Day	0.00%
Worst Day	0.00%
Sortino Ratio	0.00

Value at Risk

Confidence	Daily VaR
95%	0.00%
99%	0.00%

5. Data Quality Assessment

Completeness: All trading days covered
Adjustments: Prices adjusted for splits/dividends
Validation: Stock data from Yahoo Finance
Processing: Pandas/NumPy calculations
Disclaimer: Operational metrics are synthetic/illustrative

6. Key Observations

- Sector volatility characteristics relative to market indices
- Risk-adjusted return profile (Sharpe, Sortino)
- Drawdown behavior during market stress periods
- Volume and liquidity patterns

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Portfolio Sample - Demonstrates data engineering methodology | Generated: 2026-02-01 00:58:00