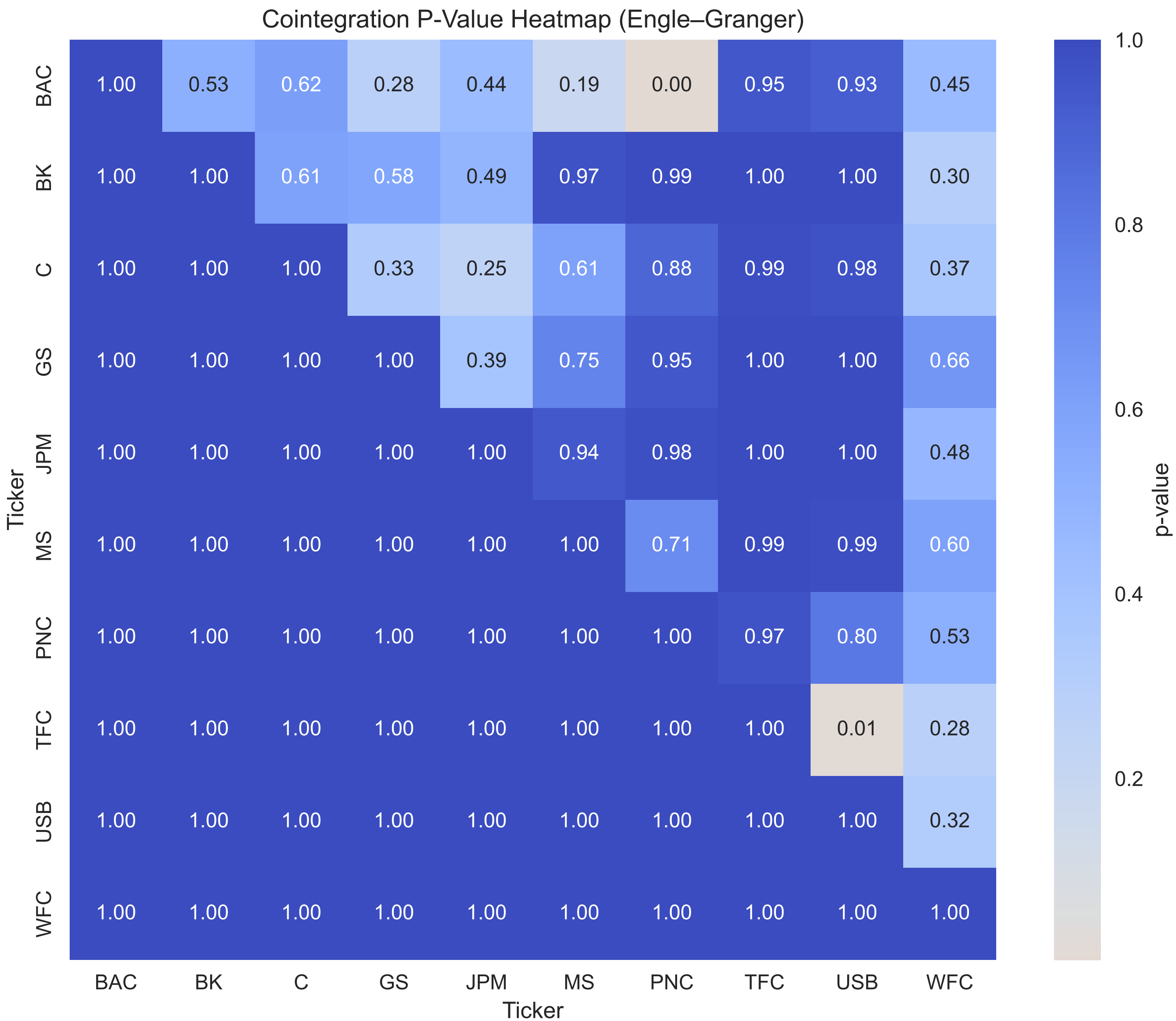
Quant Research Report – Pairs Trading

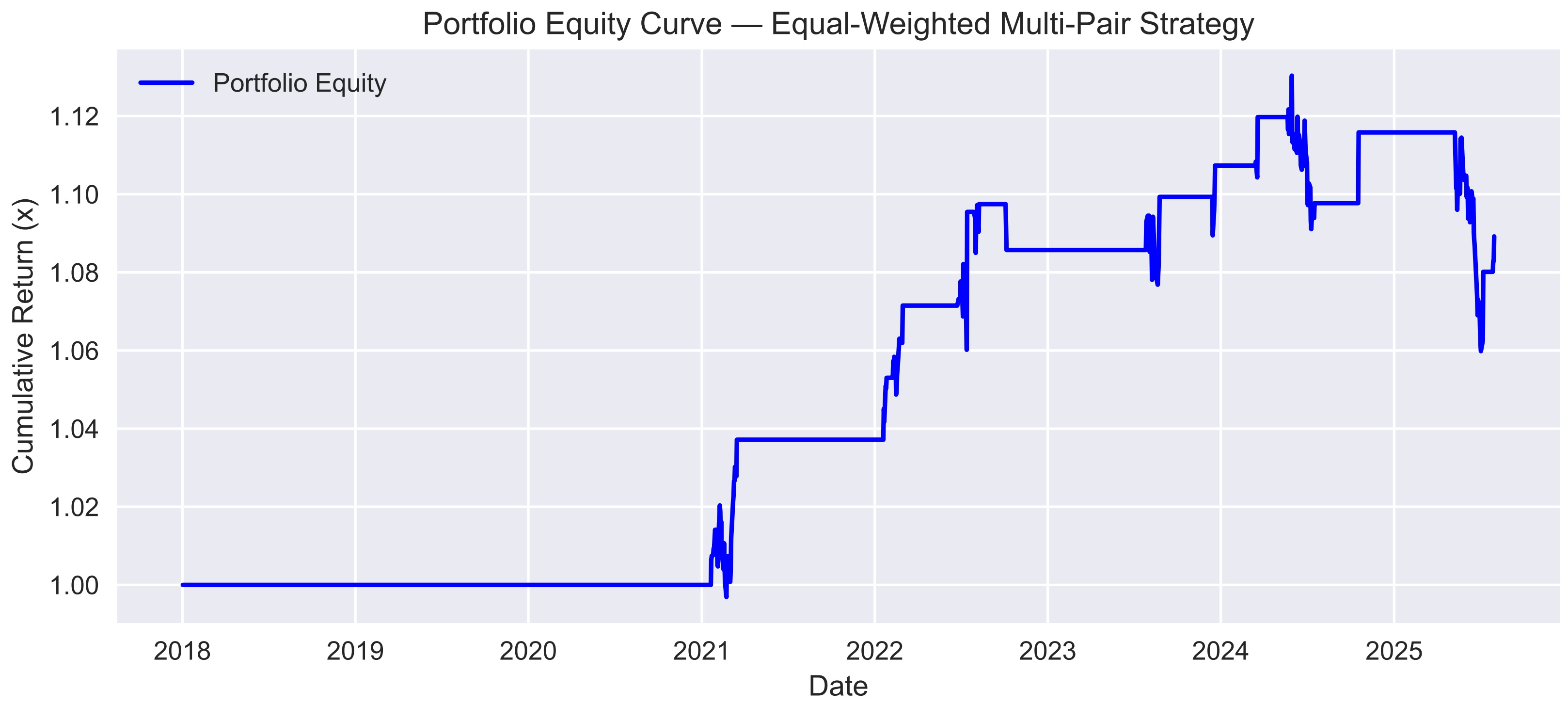
Data Period: 2018-01-02 to 2025-07-31
Number of Tickers: 10
Cointegrated Pairs Found: 2
Top 5 Pairs by Sharpe Ratio:

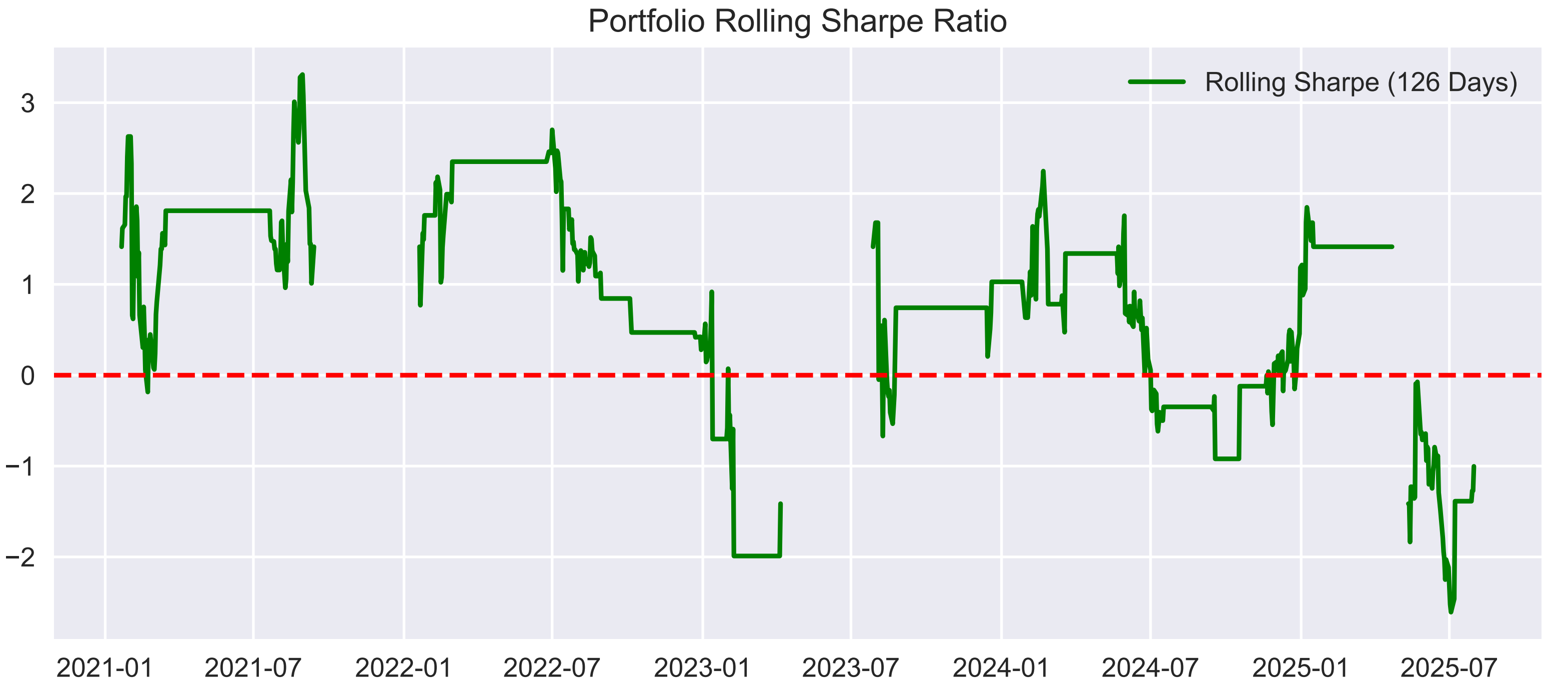
Pair	Sharpe Ratio
TFC-USB	0.874413
BAC-PNC	-0.171022


Cointegration P-Value Heatmap (Engle–Granger)
BAC 1.00 0.53 0.62 0.28 0.44 0.19 0.00 0.95 0.93 0.45
BK 1.00 1.00 0.61 0.58 0.49 0.97 0.99 1.00 1.00 0.30
C 1.00 1.00 1.00 0.33 0.25 0.61 0.88 0.99 0.98 0.37
GS 1.00 1.00 1.00 1.00 0.39 0.75 0.95 1.00 1.00 0.66
JPM 1.00 1.00 1.00 1.00 1.00 0.94 0.98 1.00 1.00 0.48
MS 1.00 1.00 1.00 1.00 1.00 1.00 0.71 0.99 0.99 0.60
PNC 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.97 0.80 0.53
TFC 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.01 0.28
USB 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.32
WFC 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
BAC BK C GS JPM MS PNC TFC USB WFC
Ticker
Ticker
p-value
1.0
0.8
0.6
0.4
0.2

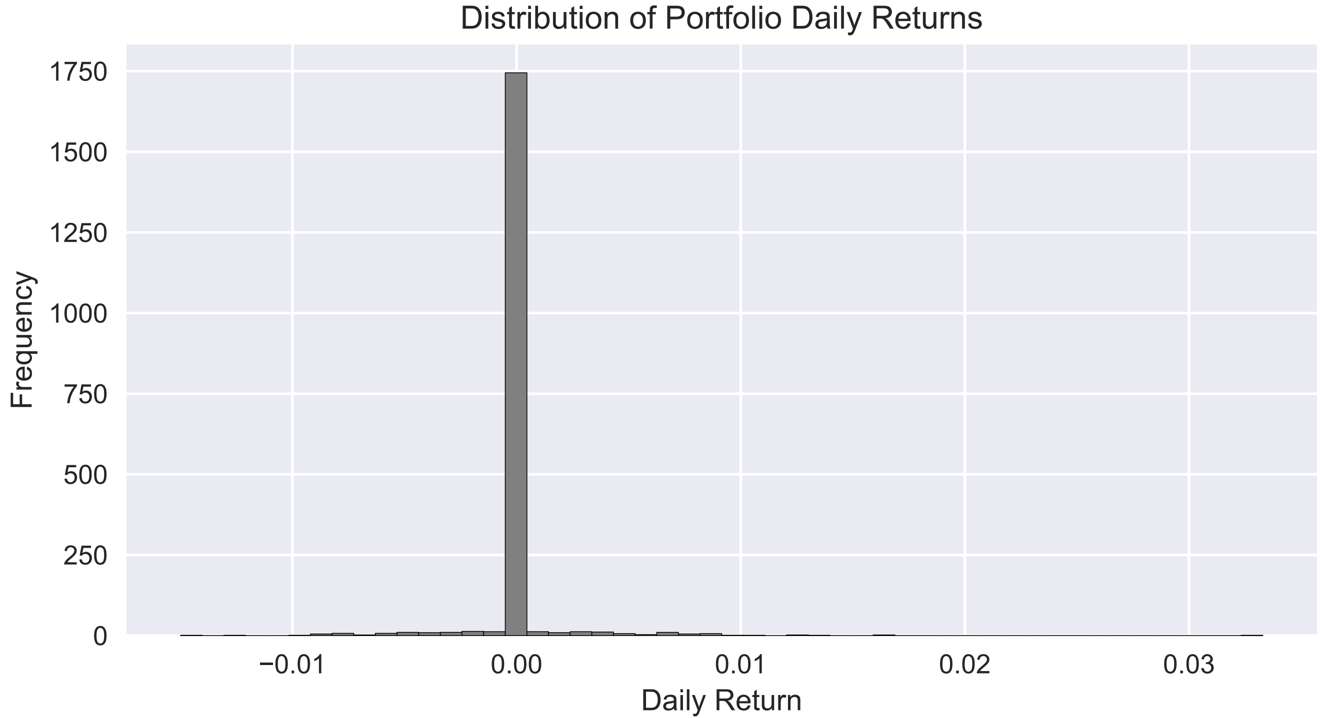
Performance Metrics by Pair

Pair	Annualized Return	Annualized Volatility	Sharpe Ratio	Max Drawdown	Win Rate	p-value
TFC-USB	0.0316	0.0361	0.8744	-0.0456	0.0241	0.0135
BAC-PNC	-0.0076	0.0446	-0.171	-0.1529	0.021	0.0035


Portfolio Equity Curve — Equal-Weighted Multi-Pair Strategy
Portfolio Equity
1.12
1.10
1.08
1.06
1.04
1.02
1.00
Cumulative Return (x)
2018
2019
2020
2021
2022
2023
2024
2025
Date

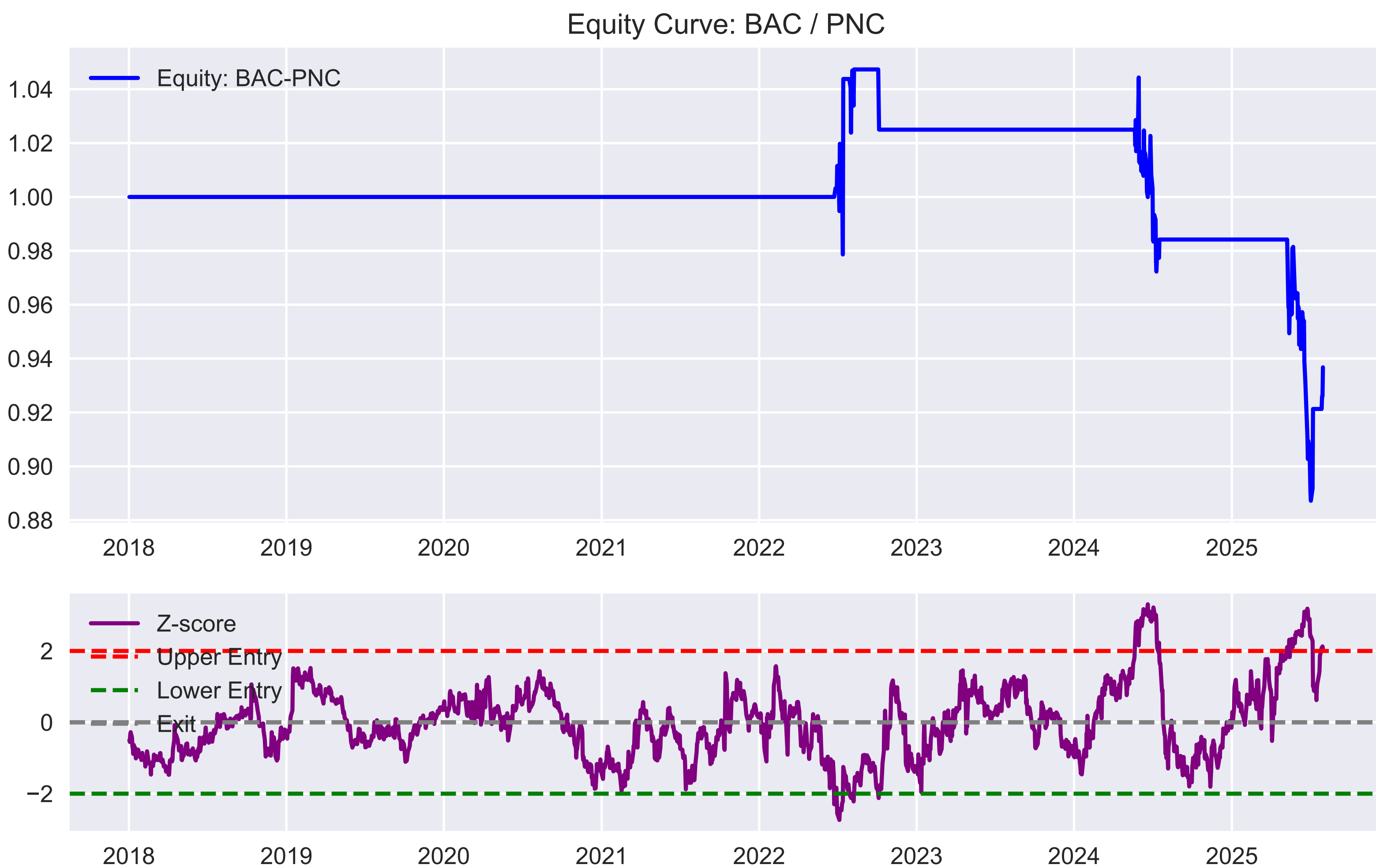


Portfolio Rolling Sharpe Ratio
Rolling Sharpe (126 Days)
3
2
1
0
−1
−2
2021-01
2021-07
2022-01
2022-07
2023-01
2023-07
2024-01
2024-07
2025-01
2025-07

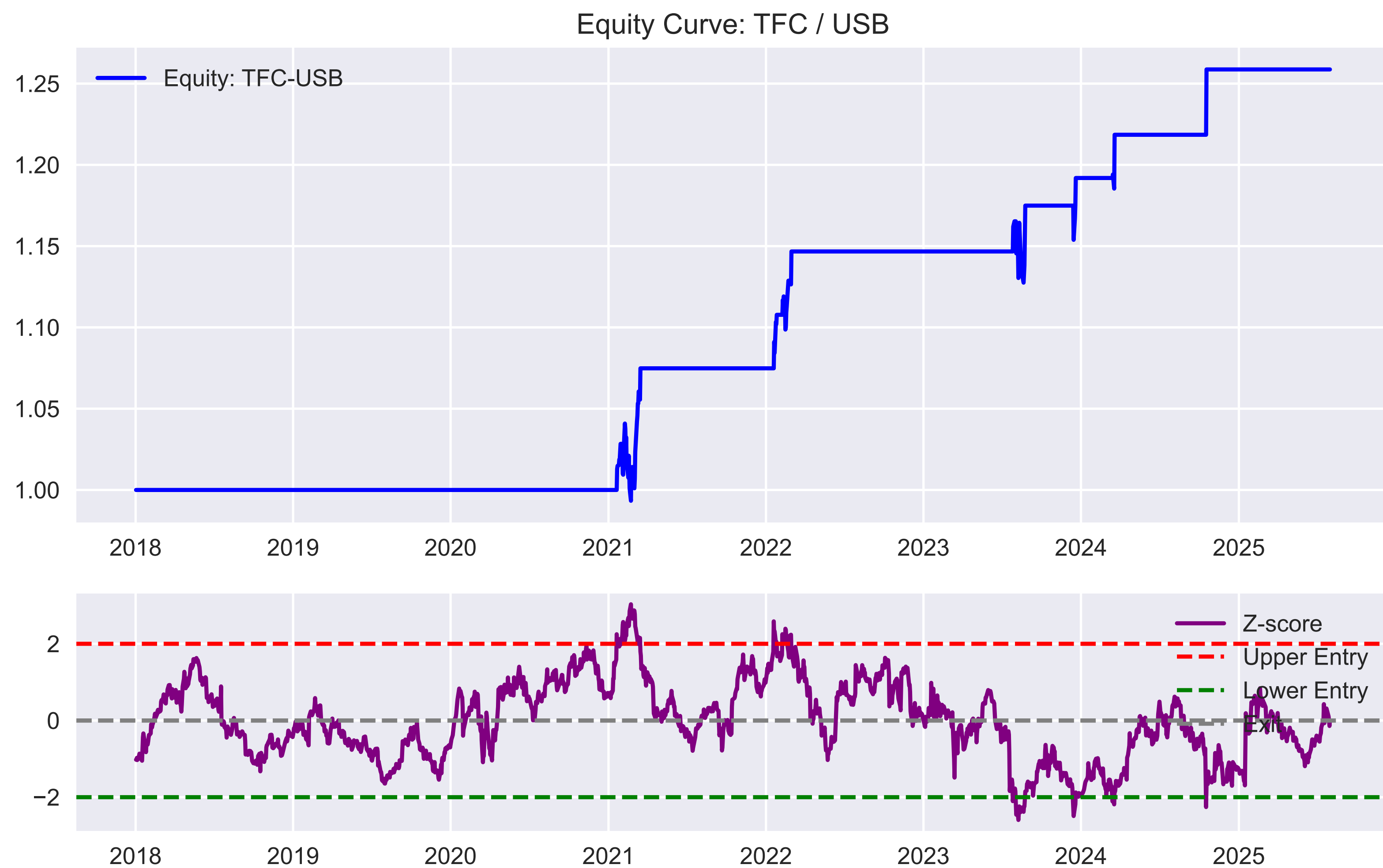

Distribution of Portfolio Daily Returns
Frequency
1750
1500
1250
1000
750
500
250
0
−0.01
0.00
0.01
0.02
0.03
Daily Return

Portfolio Performance Summary

Metric	Value
Annualized Return	0.0118
Annualized Volatility	0.0287
Sharpe Ratio	0.4103
Max Drawdown	-0.0624
Win Rate	0.0451



Equity Curve: BAC / PNC
Equity: BAC-PNC
1.04
1.02
1.00
0.98
0.96
0.94
0.92
0.90
0.88
2018
2019
2020
2021
2022
2023
2024
2025
Z-score
Upper Entry
Lower Entry
Exit
2
0
−2
2018
2019
2020
2021
2022
2023
2024
2025


Equity Curve: TFC / USB
Equity: TFC-USB
1.25
1.20
1.15
1.10
1.05
1.00
2018
2019
2020
2021
2022
2023
2024
2025
Z-score
Upper Entry
Lower Entry
Exit
2
0
−2
2018
2019
2020
2021
2022
2023
2024
2025