Portfolio Analysis Challenge
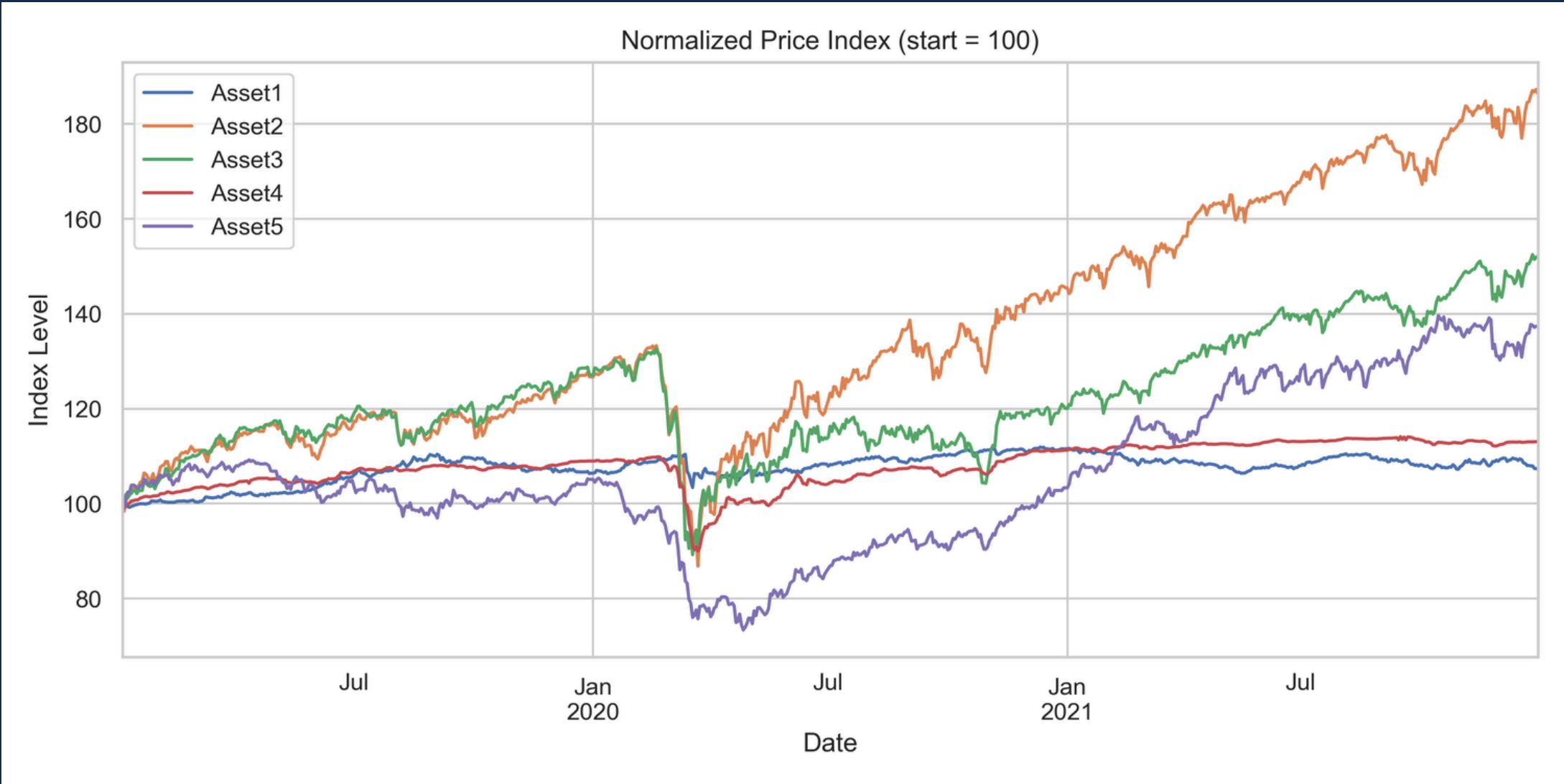
UNDERSTANDING PERFORMANCE, RISK, AND DIVERSIFICATION

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Analyzing Asset Behavior: Price and Returns

ASSET BEHAVIOR — PRICE GROWTH & DAILY MOVES

This analysis showcases how different assets behave over time, helping investors identify **growth potential** and **volatility** through visualized data.
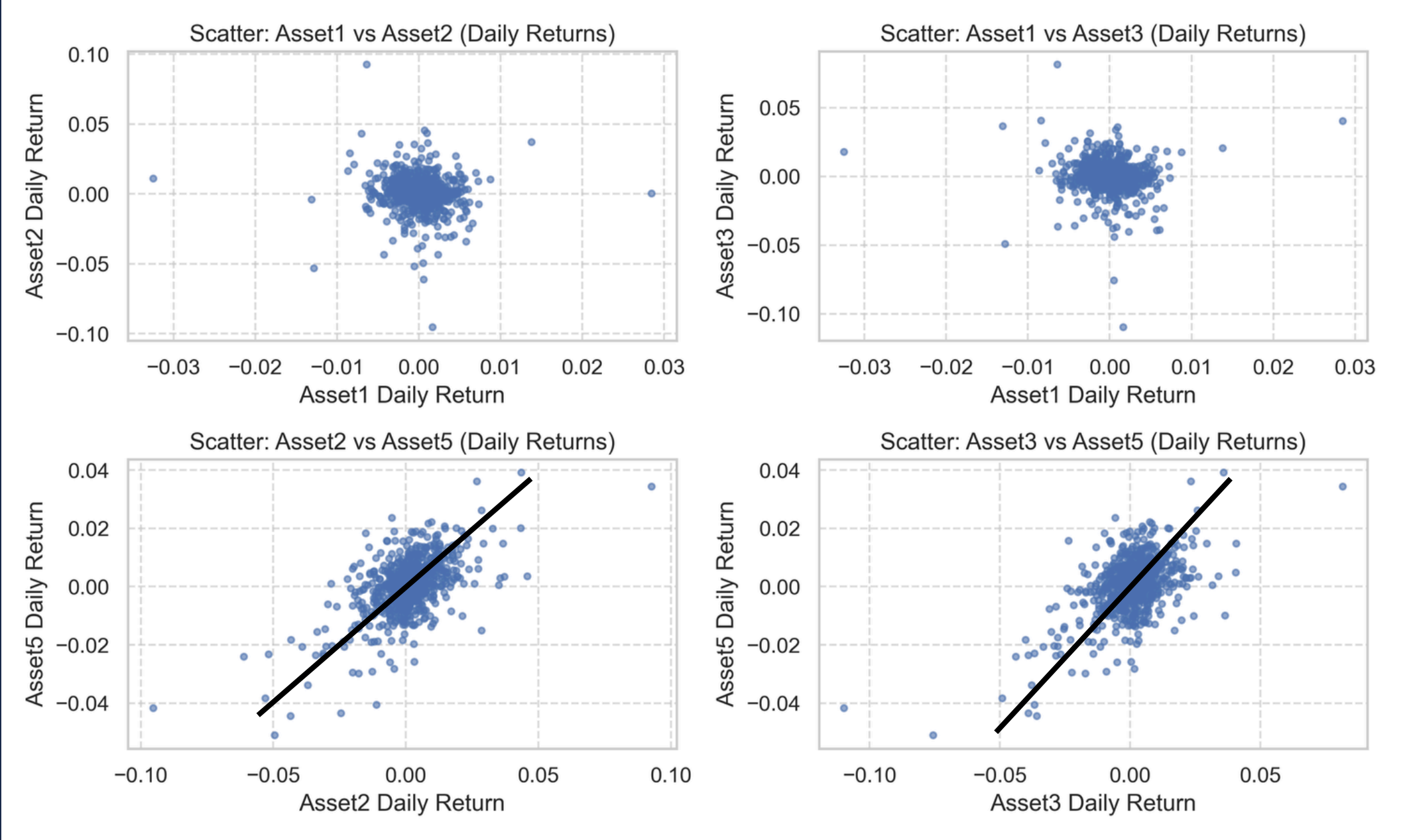

Normalized Price Index (start = 100)

Date	Asset1	Asset2	Asset3	Asset4	Asset5
1/3/2019	-0.002032	-0.016072	-0.005699	-0.002707	-0.009432
1/4/2019	-0.00274	0.020954	0.025255	-0.001125	0.019242
1/7/2019	-0.001512	0.012632	-0.007338	0.001856	0.014792
1/8/2019	-0.001535	0.001003	0.00704	0.003605	-0.000192
1/9/2019	0.001976	0.012919	0.002272	0.00412	0.014003
1/10/2019	0.001496	0.000642	0.005754	0.000361	0.000568
1/11/2019	0.001388	0.000434	0.000867	0.001608	-0.001513
1/14/2019	0.001139	-0.001785	-0.006756	-0.000033	-0.003598
1/15/2019	0.001023	0.006546	0.005581	0.001245	-0.00152
1/16/2019	0.000712	0.00797	0.000694	0.002977	0.0059
1/17/2019	-0.000024	0.000513	0.000173	0.001142	-0.001325
1/18/2019	-0.000106	0.017517	0.018021	0.001401	0.01421
1/21/2019	-0.000537	-0.002017	-0.002553	0.000846	-0.002242
1/22/2019	0.001222	-0.006064	-0.004266	-0.00039	-0.008051
1/23/2019	0.00047	-0.005881	-0.002571	-0.000716	0.00151

Understanding Asset Correlations for Diversification

ANALYZING ASSET CORRELATIONS HELPS IDENTIFY DIVERSIFICATION OPPORTUNITIES, ENHANCING PORTFOLIO RESILIENCE AND REDUCING OVERALL RISK THROUGH STRATEGIC ASSET ALLOCATION.

Scatter: Asset1 vs Asset2 (Daily Returns)
Scatter: Asset1 vs Asset3 (Daily Returns)
Scatter: Asset2 vs Asset5 (Daily Returns)
Scatter: Asset3 vs Asset5 (Daily Returns)

CORRELATION MATRIX

Low/negative correlation = shock absorbers

	Asset1	Asset2	Asset3	Asset4	Asset5
Asset1	1	-0.088341	-0.061253	0.102252	-0.106484
Asset2	-0.088341	1	0.852491	0.526634	0.591399
Asset3	-0.061253	0.852491	1	0.51155	0.557414
Asset4	0.102252	0.526634	0.51155	1	0.421155
Asset5	-0.106484	0.591399	0.557414	0.421155	1

CORR(ASSET5, ASSET1) ≈ −0.106 (SLIGHTLY NEGATIVE)
CORR(ASSET5, ASSET2) ≈ 0.591 (MODERATELY POSITIVE)
CORR(ASSET5, ASSET3) ≈ 0.557 (MODERATELY POSITIVE)
CORR(ASSET5, ASSET4) ≈ 0.421 (POSITIVE)

Performance & Risk Overview
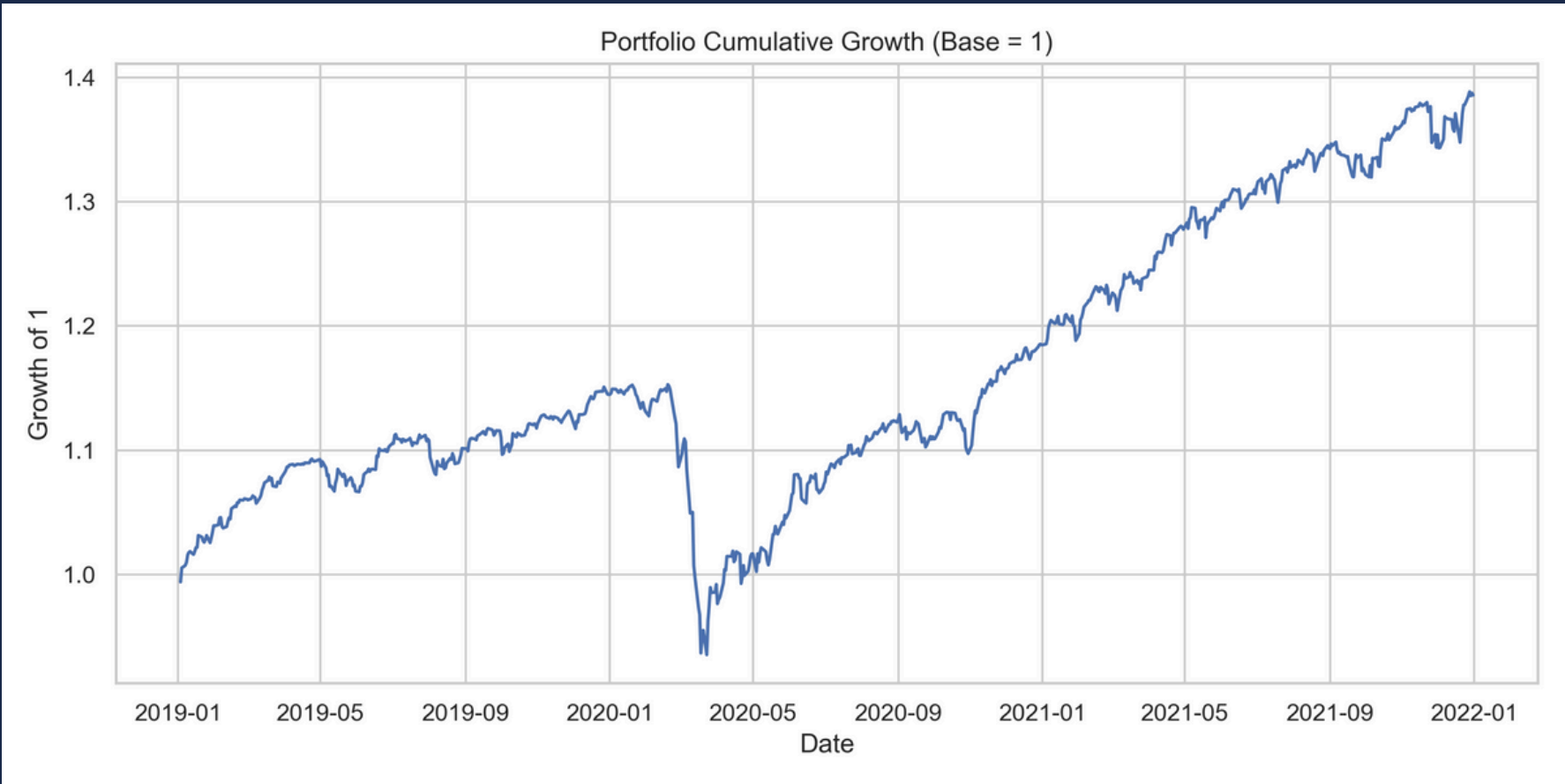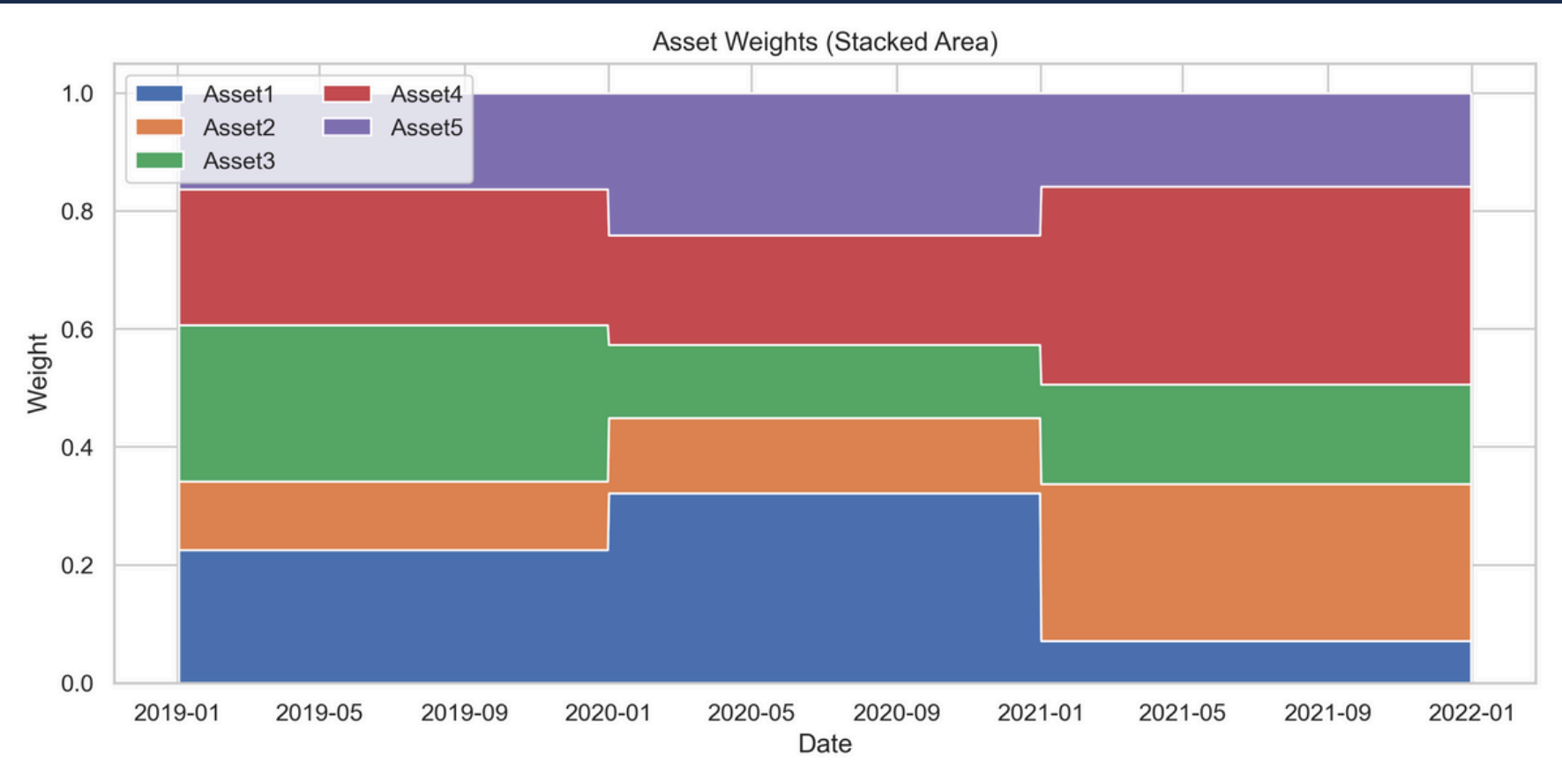of Portfolio

Annualized Return ≈ 11.5%
— solid growth —

ANALYZING GROWTH AND VOLATILITY

This section presents the portfolio's **cumulative return** over time, illustrating growth alongside moderate fluctuations, highlighting overall performance and risk levels.

Annualized Volatility ≈ 8.5%
— moderate risk —

return/vol ≈ 1.35
— good quality —

Asset Weights (Stacked Area)

Portfolio Cumulative Growth (Base = 1)

RISK

Manage cluster risk by rebalancing to avoid overexposure

REBALANCING

Enforce regular adjustment of weights as needed

DIVERSIFICATION

Increase allocation to lower correlation assets for balance

DRAWDOWNS

Monitor worst portfolio declines and recovery speed

KPIS

Measure risk-adjusted performance with key financial ratios

Family View of Portfolio Composition

THIS STACKED AREA CHART VISUALIZES PORTFOLIO WEIGHTS ACROSS EQUITIES, FIXED INCOME, AND ALTERNATIVES, ENSURING COMPLIANCE WITH POLICY LIMITS AND DIVERSIFICATION STRATEGIES.