Correlation of Asset Classes on the NYSE – Results

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The trading floor of the New York Stock Exchange

This article outlines the research results of my thesis, "Correlation of Asset Classes in NYSE." The study investigates the relationships among asset classes, including the NYSE's primary index, the S&P 500, commodities, Treasury bonds, the USD, and prominent cryptocurrencies. The objective is to analyse whether price correlations between these asset classes are positive, negative, or neutral. For example, does a bullish trend in one sector correlate with bearish tendencies in another, or do they move in tandem? By exploring these dynamics, the research aims to provide market participants and policymakers with actionable insights to position themselves effectively in the market. Additionally, the study delves into sector rotation patterns and the cyclical and seasonal behaviours of sector-based asset classes.

Results

As a reminder from previous chapters, the research addresses two primary questions:

1. What are the correlations among asset class prices in U.S. markets?
2. Are these correlations positive, negative, or neutral?

The study employs quantitative and qualitative research methods to achieve these objectives, emphasising quantitative approaches. This focus stems from the need to analyse over a decade of price data and numerical trends across various asset classes. The research relies on three foundational methodologies: validity, reliability, and triangulation.

XLF vs. XLK - ETF Comparison

XLF - Financial Select Sector SPDR Fund

The Financial Select Sector SPDR Fund is an equity ETF that tracks the S&P Financial Select Sector Index, providing exposure to a diversified portfolio of large-cap financial companies in the US. The fund offers a broad-based investment approach, covering various industries such as banking, insurance, real estate, and consumer finance.

The fund is suitable for investors seeking to gain exposure to the US financial sector, which is heavily influenced by US policy and regulations.

XLK - Technology Select Sector SPDR Fund

The Technology Select Sector SPDR Fund (XLK) provides diversified exposure to the US technology sector, investing in various companies across various technology segments, including IT services, wireless telecommunication services, and semiconductors.

The fund is suitable for investors seeking to gain exposure to the US technology market.

Funds information

	XLF	XLK
Fund Name	Financial Select Sector SPDR Fund	Technology Select Sector SPDR Fund
Fund Provider	State Street	State Street
Index	S&P Financial Select Sector Index	S&P Technology Select Sector Index
Asset Class	Equity	Equity
Listing	US-listed	US-listed
Expense Ratio	0.09%	0.09%
Inception Date	1998-12-16	1998-12-16
Number Of Holdings	73	69
Region	United States	United States
Investment Style	Blend	Growth
Market Cap	Large-Cap	Large-Cap
Sector	Financials	Technology
Sector Detail	Banks & Insurance	Technology - Broad
Leveraged	Non-leveraged	Non-leveraged

Source: PortfolioMetrics (portfoliometrics.net)

Cumulative returns (5-year comparison)
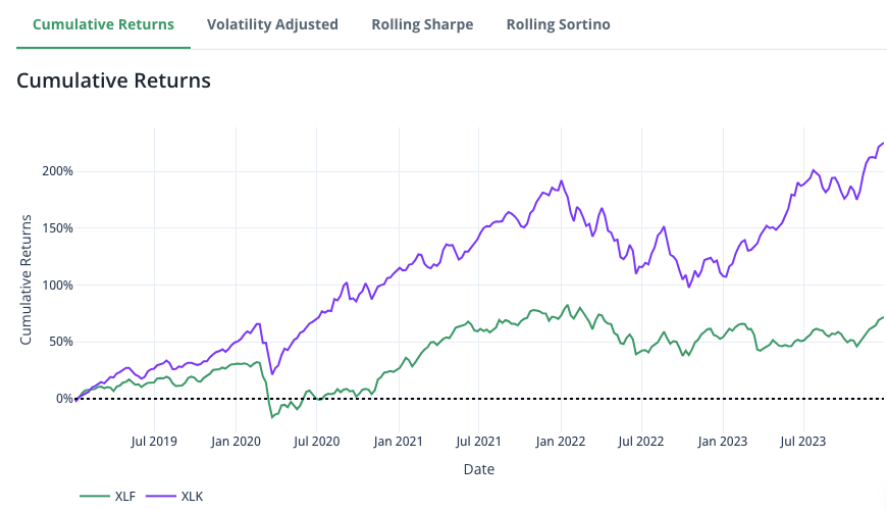
Source: PortfolioMetrics (portfoliometrics.net)

End of Year Returns Table

Year	XLF	XLK	XLF - Multiplier	XLF - Won
2019	30.8%	49.8%	0.62	▼
2020	-1.8%	43.6%	-0.04	▼
2021	34.8%	34.7%	1.00	▲
2022	-10.6%	-27.7%	0.38	▲
2023	11.0%	55.3%	0.20	▼

Source: PortfolioMetrics (portfoliometrics.net)

End of Year Returns Chart
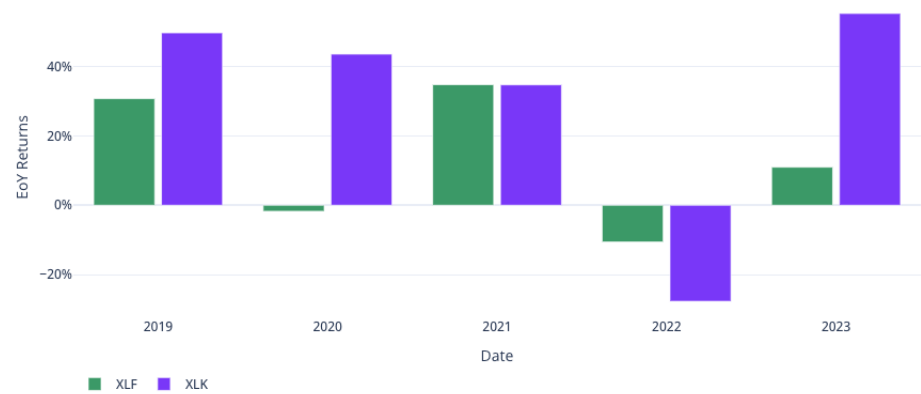
Source: PortfolioMetrics (portfoliometrics.net)

Detailed Returns

	XLF	XLK
Best Day ⓘ	13.2%	11.7%
Worst Day ⓘ	-13.7%	-13.8%
Best Month ⓘ	37.2%	47.1%
Worst Month ⓘ	-26.4%	-25.6%
Best Year ⓘ	34.8%	55.3%
Worst Year ⓘ	-10.6%	-27.7%
MTD Return ⓘ	4.7%	4.0%
3M Return ⓘ	12.3%	17.8%
6M Return ⓘ	14.5%	12.7%
YTD Return ⓘ	11.0%	55.3%
1Y Return ⓘ	12.2%	59.2%
3Y Return (ann.) ⓘ	10.4%	14.6%
5Y Return (ann.) ⓘ	9.9%	25.9%

Source: PortfolioMetrics (portfoliometrics.net)

Risk Metrics

	XLF	XLK
Annualized Volatility ⓘ	26.5%	27.4%
Max Drawdown ⓘ	-42.9%	-33.6%
Longest Drawdown ⓘ	716 days	534 days
Value at Risk ⓘ	-2.7%	-2.7%
CVaR ⓘ	-4.3%	-4.1%
Risk of Ruin ⓘ	0.0%	0.0%
Kelly Criterion ⓘ	5.2%	9.0%
Recovery Factor ⓘ	1.67	4.07
Ulcer Index ⓘ	0.14	0.12
Serenity Ratio ⓘ	0.29	0.72

Source: PortfolioMetrics (portfoliometrics.net)

Drawdowns
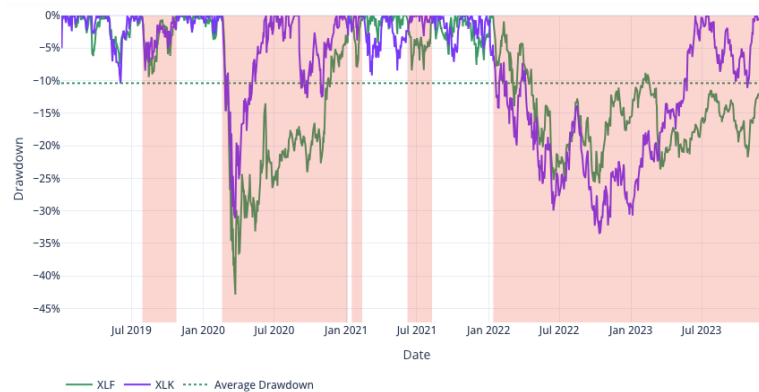
Source: PortfolioMetrics (portfoliometrics.net)

WTI historical chart – Inflation-adjusted
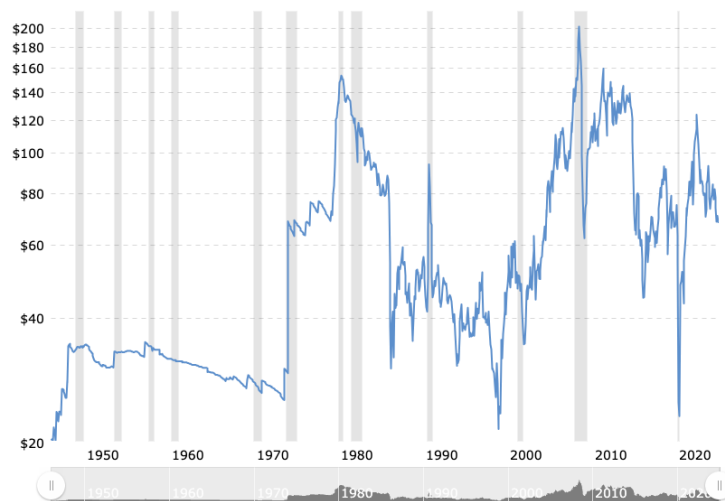
Crude Oil Prices - Historical Annual Data (10-year data)

Year	Average Closing Price	Year Open	Year High	Year Low	Year Close	Annual % Change
2024	$76.33	$71.65	$87.01	$66.37	$69.96	-1.92%
2023	$77.64	$80.26	$93.84	$66.74	$71.33	-11.40%
2022	$94.53	$76.08	$123.70	$71.59	$80.51	7.05%
2021	$68.17	$47.62	$84.65	$47.62	$75.21	55.01%
2020	$39.68	$61.17	$63.27	$11.26	$48.52	-20.64%
2019	$56.99	$46.31	$66.24	$46.31	$61.14	35.42%
2018	$65.23	$60.37	$77.41	$44.48	$45.15	-25.32%
2017	$50.80	$52.36	$60.46	$42.48	$60.46	12.48%
2016	$43.29	$36.81	$54.01	$26.19	$53.75	44.76%
2015	$48.66	$52.72	$61.36	$34.55	$37.13	-30.53%
2014	$93.17	$95.14	$107.95	$53.45	$53.45	-45.55%

10-Year Treasury Constant Maturity Minus 2-Year Treasury Constant Maturity and Real-time Sahm Rule Recession Indicator

In this chapter, I discuss the results of the data I collected for my thesis. results include: XLF vs. XLK - ETF Comparison, detailed funds information, cumulative returns (5-year comparison), end-of-year returns table/chart/detailed returns, risk metrics, drawdowns chart, WTI historical chart – Inflation-adjusted, crude oil prices - historical annual data (10-year data), and 10-Year treasury constant maturity minus 2-year treasury constant maturity and real-time Sahm Rule Recession Indicator.

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