

Correlation of Asset Classes on the NYSE – Discussion

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This chapter discusses the results I have collected and concluded in my thesis, “Correlation of Asset Classes in NYSE.”, and provides actionable insights. 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. 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?

Funds information

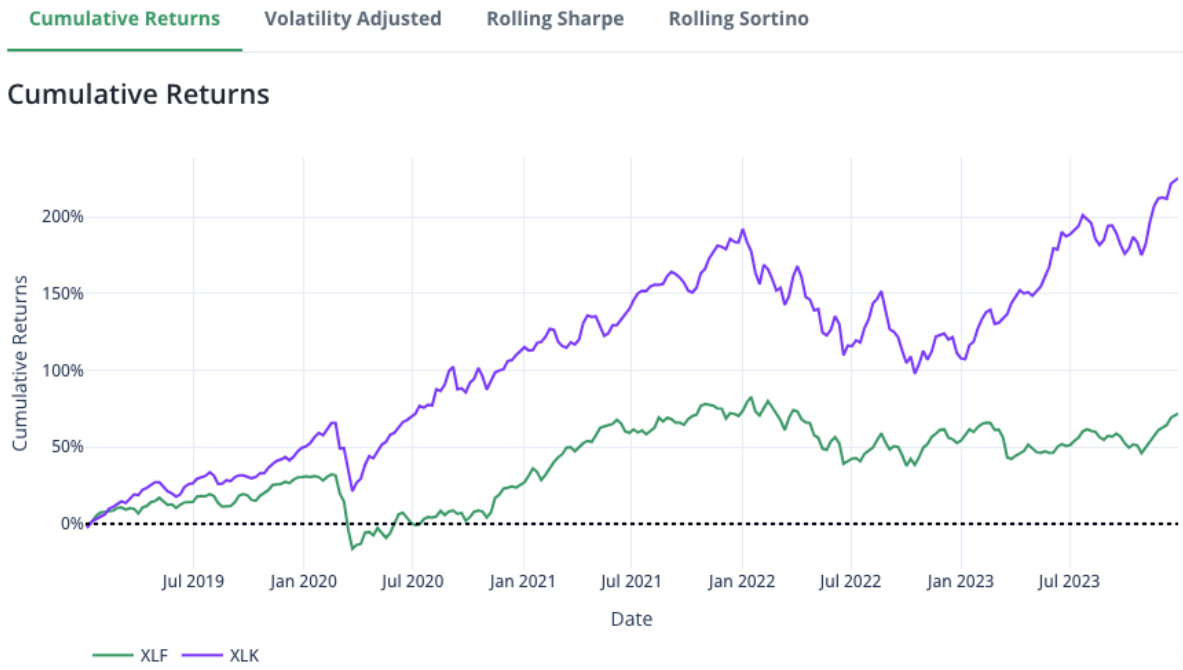
Basic funds information and structure are displayed below.

	XLFX	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 \(portfoliometrics.net\)](https://www.portfoliometrics.net)

Cumulative returns (5-year comparison)

In this chart, I identified a positive correlation between XLF and XLK cumulative returns. The spread of these two ETF equities is widening within a range of two standard deviations.



Source: [PortfolioMetrics \(portfoliometrics.net\)](https://portfoliometrics.net)

End of Year Returns Table

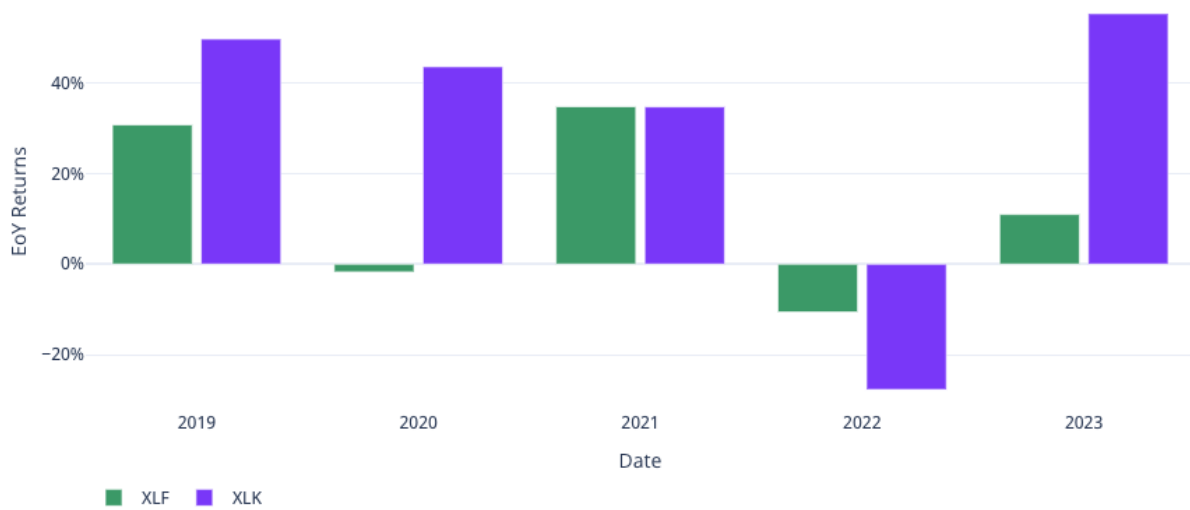
We see better visuals of the same data set displayed above. We can identify positive correlation between these two assets, where XLK registered greater returns and losses than XLF.

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 \(portfoliometrics.net\)](https://portfoliometrics.net)

End of Year Returns Chart

This bar chart better illustrates the findings I have discussed above.



Source: [PortfolioMetrics \(portfoliometrics.net\)](https://www.portfoliometrics.net)

Detailed Returns

The data below further displays skewed key indicators and parameters, across key timelines.

	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 \(portfoliometrics.net\)](https://www.portfoliometrics.net)

Risk Metrics

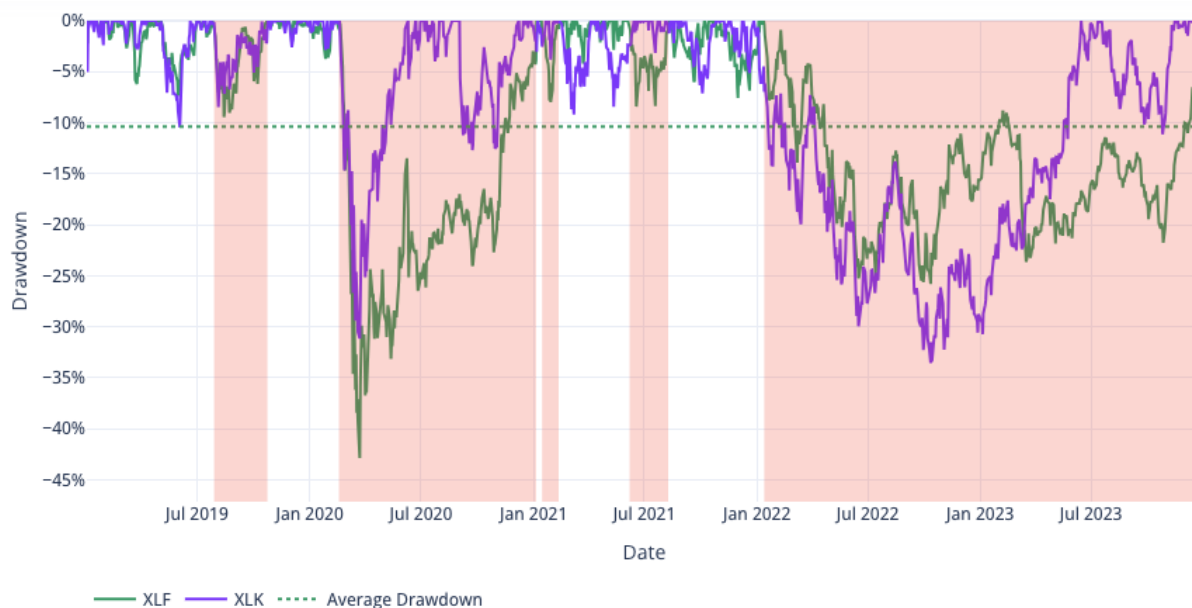
The data sets below provide an in-depth insight into key risk indicators of these two assets.

	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 \(portfoliometrics.net\)](https://www.portfoliometrics.net)

Drawdowns

Further to the data presented above, this chart represents drawdowns of XLF and XLK. It shows that in times of disinflationary pressures, XLF experiences greater drawdowns than XLK.



Source: [PortfolioMetrics \(portfoliometrics.net\)](https://www.portfoliometrics.net)

WTI historical chart – Inflation-adjusted

This chart represents historical price action for crude oil (WTI), while the shaded areas represent recession. It can be concluded that when oil prices rise fast and when they reach certain price levels, we can expect disinflation and even a recession period, followed by a sharp crash in crude oil price action.



Source: [macrotrends \(macrotrends.net\)](https://www.macrotrends.net)

Crude Oil Prices - Historical Annual Data (10-year data)

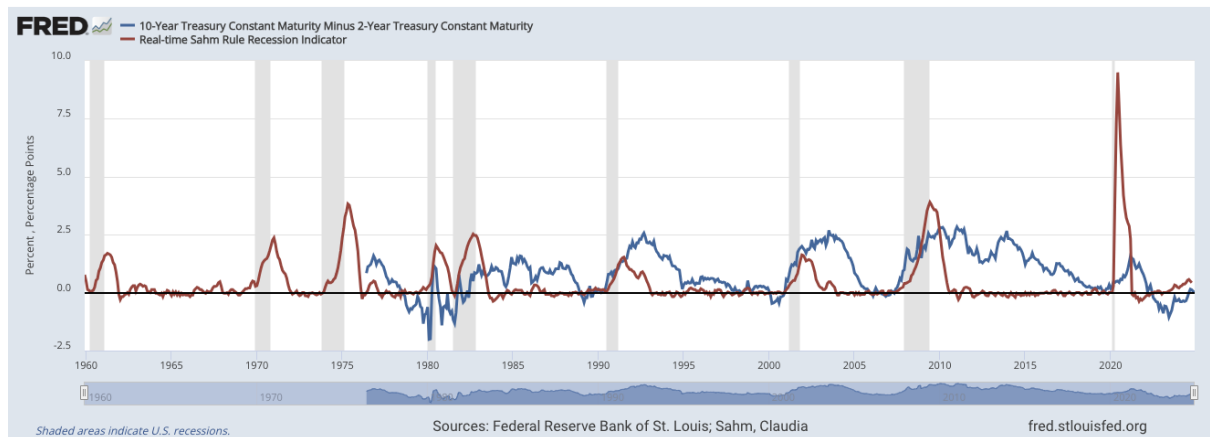
In the table below, we see a summary of annual price action data.

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%

Source: [macrotrends \(macrotrends.net\)](https://www.macrotrends.net)

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

The chart below represents a key recession indicator. By analysing the yield curve of the 10-year Treasury Constant Maturity Minus the 2-year Treasury Constant Maturity, we can see that about six months after the curve reinverts (normal curve), there will be a recession in the US economy



Source: [FEDERAL RESERVE BANK of ST. LOUIS \(fred.stlouisfed.org\)](https://fred.stlouisfed.org)

The thesis on asset class correlations on the NYSE provides essential insights into price relationships among equities, bonds, commodities, and cryptocurrencies. It identifies patterns of positive, negative, and neutral correlations, offering valuable analysis for portfolio diversification. Examining ETFs like XLF and XLK highlights sector-specific behaviours under varying economic conditions. Furthermore, indicators like Treasury yield curves and crude oil trends provide macroeconomic context. Overall, these findings equip investors and policymakers with actionable data to navigate market dynamics effectively.

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