

Crypto Diversification Analysis

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Overview

- Are tech stocks and crypto increasingly uncorrelated in price action?
- Do both asset classes comprise a reasonable diversification risk?
 - Standard Deviation
 - Sharpe Ratios
 - Distribution of Daily Returns
 - Covariance and Correlations
- Observations and projections based on apparent trends

Understanding the problem

Emerging Asset Class

Crypto is inherently more volatile as frequent innovations within the space invites speculation over fundamental analysis

Nasdaq represents \$15T in TMC vs \$2.5T in crypto similar to dot com stocks in 1999

Inflation

Will BTC become a store of value in corporate governance or provide legitimate use cases as a financial instrument?

How will investors sentiment shift as price action decouples?

Limitations

Our trend analysis is complicated by shorter data timeframes analysis in the crypto top 10 and the four year bull/bear cycle which skews our price data

Project objective:

**How will these asset classes
behave relative to one another
as crypto markets mature?**

Standard Deviation Analysis

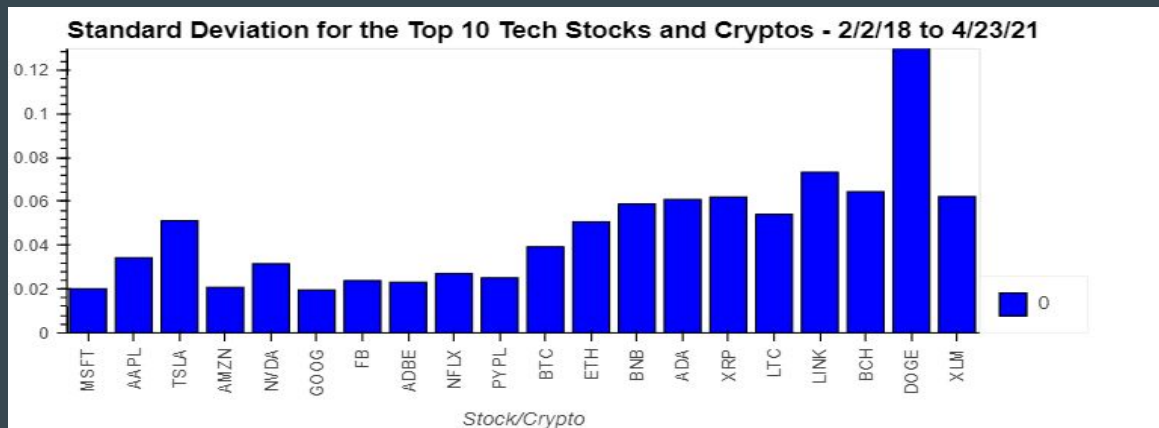
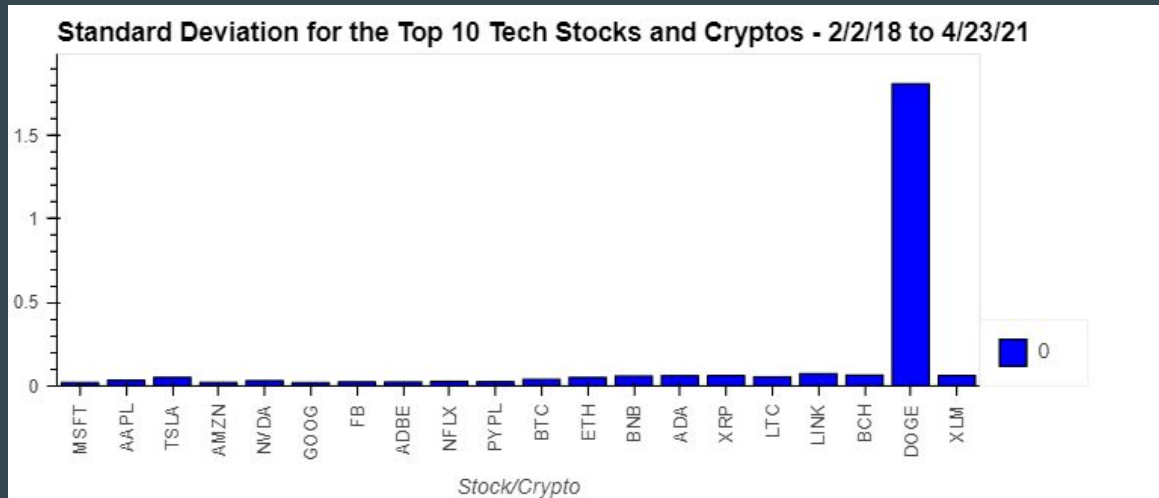
Market trends

Standard Deviation

A standard deviation is a measure of how dispersed the data is in relation to the mean.

Notable STD on Stock/Crypto:

- AAPL: 0.543913
- TSLA: 0.812433
- NVDA: 0.500472
- LINK: 1.163498
- BCH: 1.022346
- DOGE: 28.706212



Sharpe Ratio Analysis

Market trends

Sharpe Ratios

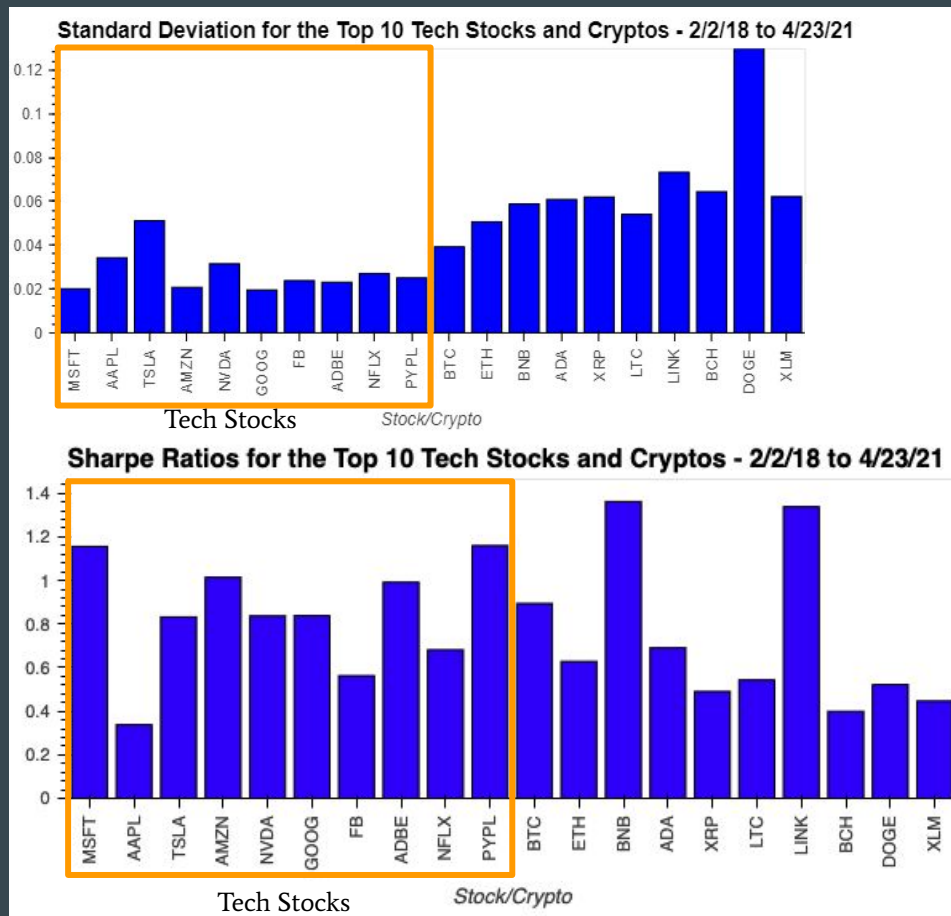
The average return earned in excess of the risk-free rate per unit of volatility/risk.

Notable Tech Stocks:

- PYPL MSFT, AMZN

Notable Cryptocurrencies:

- BNB, LINK, BTC



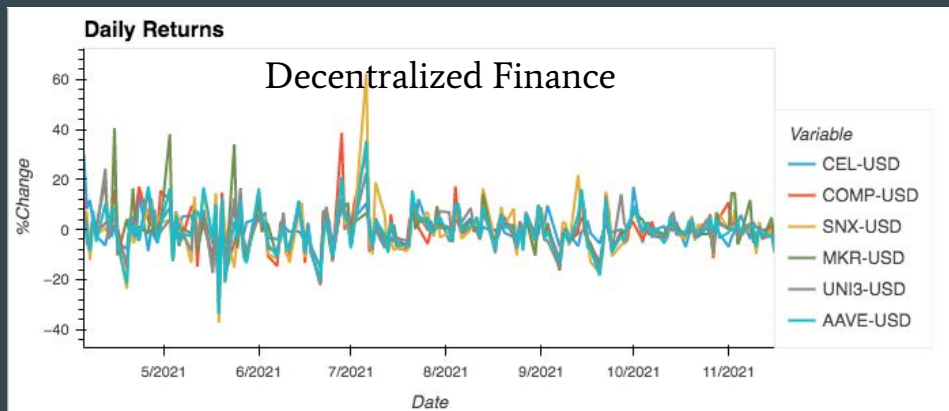
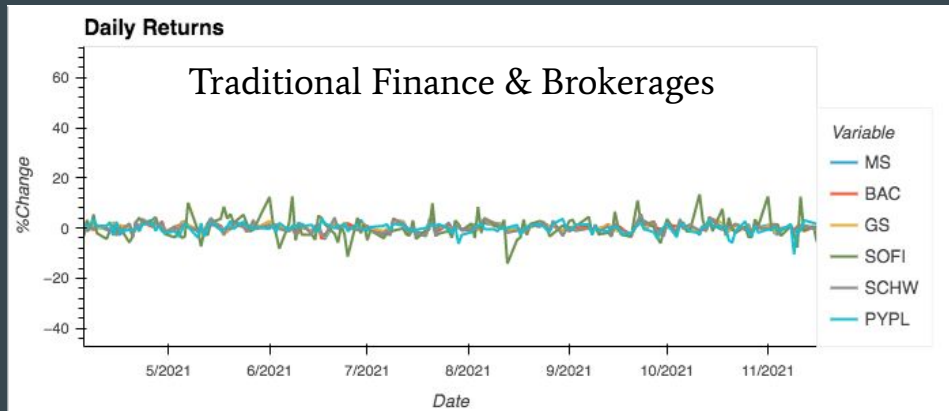
DeFi vs. Traditional Finance

Findings

DeFi is outperforming in daily returns by a wide margin

Client Implications:

- Traditional brokers will have to offer more competitive yields or better service
- Defi will face increasing regulations and is still vulnerable to flash loan attacks and new exploits, impermanent loss and rug pulls



Covariance/Correlation Analysis

Linear Relationship

Covariance

Used to measure the directional relationship between the returns on assets. Positive cov means that the move together and Negative means that they move inversely. 0 means INDEPENDENCE or DOES IT!!

Just because Covariance is 0 unfortunately does not mean Independence the relationship between them could be non-linear

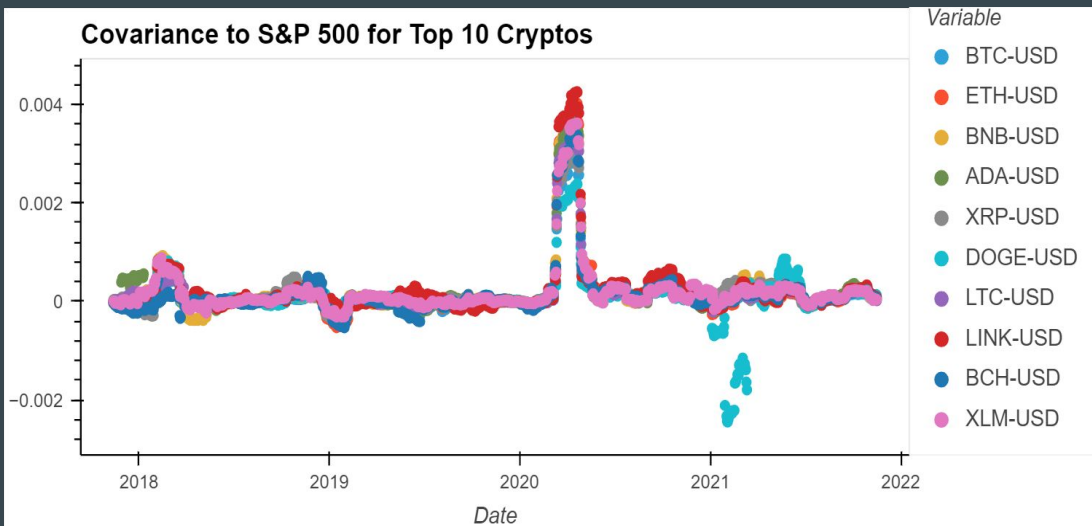
Correlation

Correlation is an indicator of how strongly these variables are related, provided that other conditions are constant. The maximum value is +1, denoting a perfect dependant relationship.

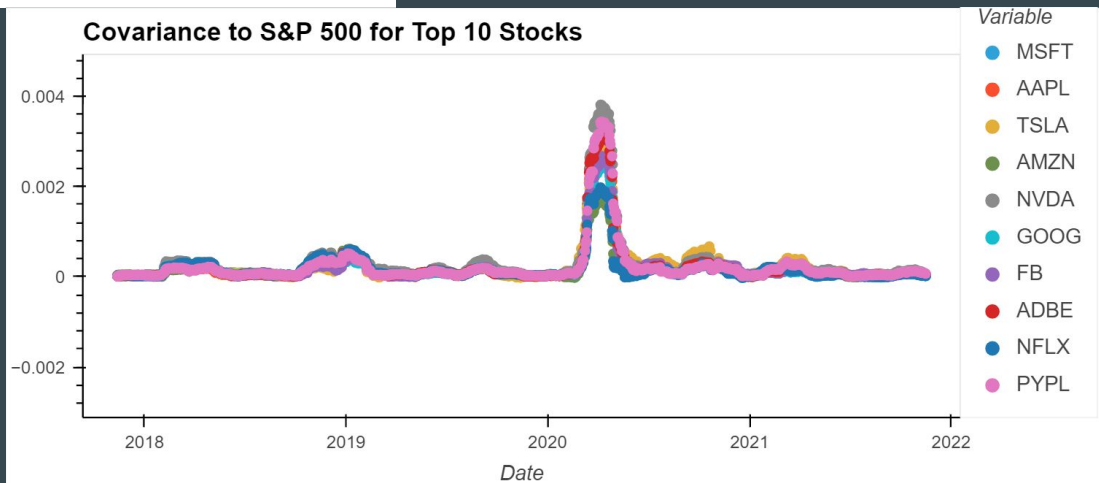
Correlation is useful when drawing conclusions between variables across domains.

In the end both of these methods only measure linear relationships.

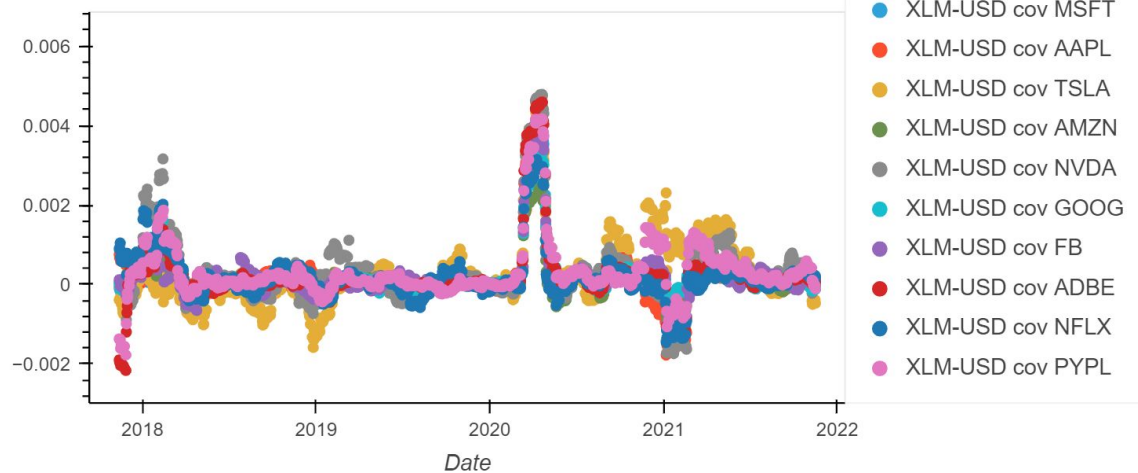
Covariance to S&P 500 for Top 10 Cryptos



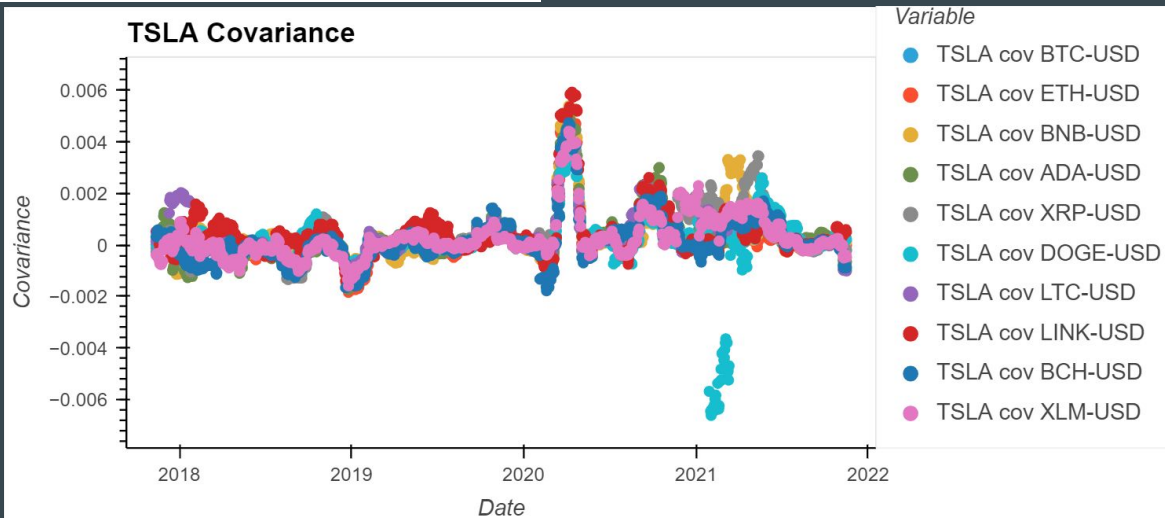
Covariance to S&P 500 for Top 10 Stocks



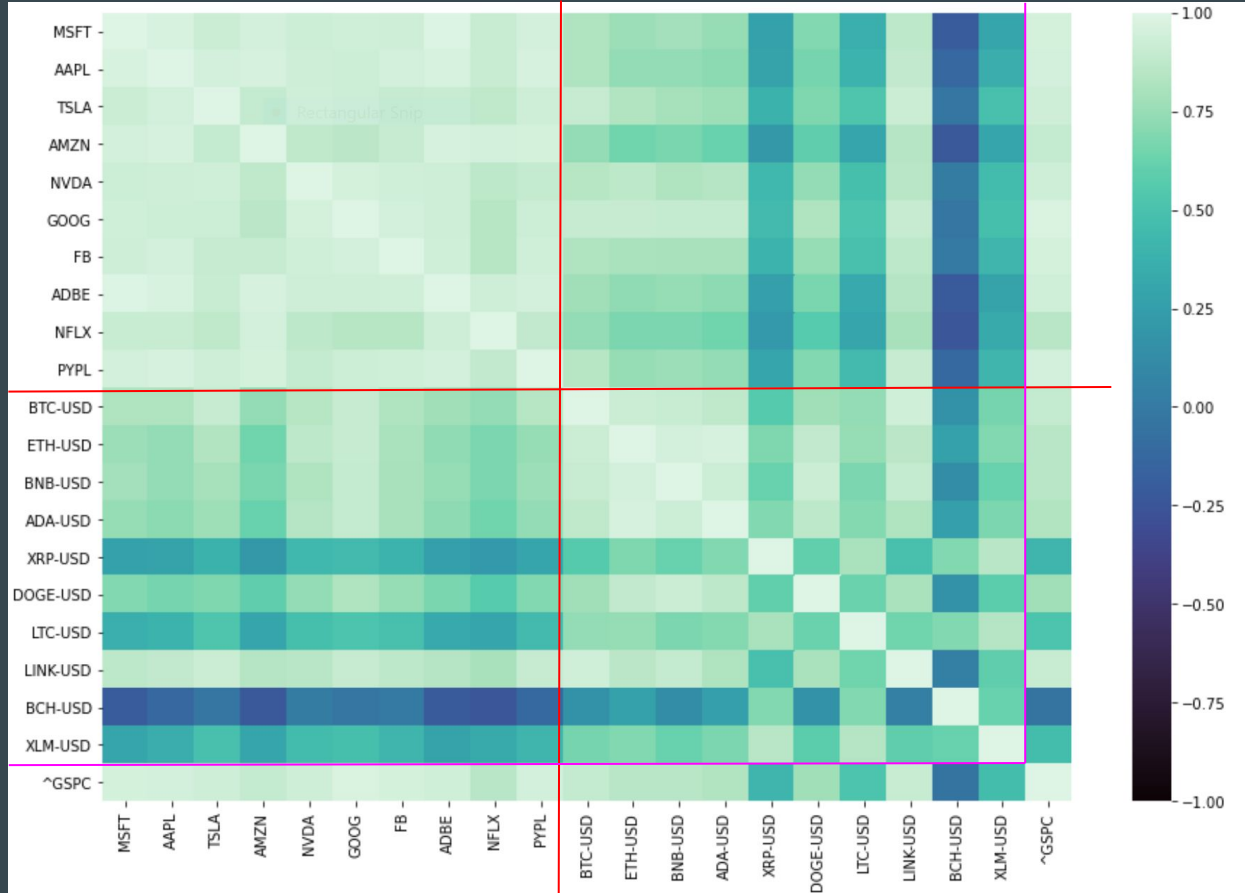
XLM-USD Covariance



TSLA Covariance



Correlation of Top 10 Stocks/Crypto and S&P 500



Question & Answers

Future modeling and analysis

- Asset classes that would be a better diversification risk
- More advanced visualizations via Streamlit inputs
- Granular analysis over shorter time frames in specific sectors

The Team



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