Bitwise

The Case for Diversification Within Crypto Investing

Matt Hougan
VP, Research & Development

Introduction

This report explores the value of diversification for cryptocurrency investing. It quantifies the relationship between the performance of different large-capitalization crypto assets through a number of measures: variability of monthly returns, correlations, and performance during drawdowns. As an example, the analysis finds that the average monthly difference in returns between the top- and bottom-performing large-cap cryptoasset during the past year is 300.1%. Also, during the 60%+ drawdown in the price of Bitcoin in December-January, three of the top 10 cryptoassets posted positive returns, with one rising 69%. Though cryptocurrency has a limited track record, the report finds that there has been meaningful variability in performance. Investors stand to benefit from diversification in their cryptocurrency portfolios.

The Case for Diversification Within Crypto Investing

Percentage of Total Cryptocurrency Market

Diversification is said to be the only free lunch within investing. Rather than concentrating bets on a single asset, investors can gain higher risk-adjusted returns by purchasing multiple assets with different patterns of return.

The value of diversification is taken as a given in traditional financial circles; few investors would build a portfolio with a single stock or bond. But in crypto, concentrated bets on a single coin or handful of coins is the norm. Indeed, the most popular wallets only provide access to three or four cryptocurrencies.

This paradigm grew out of an era when Bitcoin dominated the market. That paradigm is shifting, however: Since March 1, 2017, Bitcoin's share of the total cryptocurrency market cap has fallen from 85% to 40%. Importantly, this is not due to Bitcoin falling in value, but to other assets growing substantial market caps of their own. Some of those coins compete with Bitcoin, while others strive to fill entirely new use cases.

In this maturing market, old paradigms of Bitcoin maximalism no longer make sense. In fact, the data suggest that diversification is perhaps more critical in crypto than it is in any other asset category.

The Massive Variability in Returns for Individual Crypto Assets

The table below examines the monthly performance over the past year for the 10 largest cryptocurrencies, as selected by the Bitwise HOLD 10 Index on March 1, 2018. The HOLD 10 captures the 10 largest cryptocurrencies by five-year diluted market cap, so this table tracks the most established crypto assets on the market today. Coins are sorted by performance in each month.

The key message of the chart is conveyed in its kaleidoscope of colors: There is massive variability in the returns of the top 10 cryptocurrencies and no consistency in leadership (that is, the top coins in one month rarely remain the top coins in the month that follows).

Monthly Returns: Top 10 Crypto Assets

MAR 17	APRIL 17	MAY 17	JUNE 17	JULY 17	AUG 17	SEPT 17	OCT 17	NOV 17	DEC 17	JAN 18	FEB 18
293.5% Ripple	137.2% Ripple	612.0% Stellar	751.5% NEO	15.2% Bitcoin	350.7% NEO	2.9% NEO	112.8% Stellar	260.1% EOS	818.7% Ripple	91.6% NEO	24.1% Litecoin
215.6% Ethereum	136.2% Litecoin	373.0% Ripple	59.4% Litecoin	6.5% Litecoin	252.7% Monero	-7.7% Bitcoin	48.4% Bitcoin	215.3% BTC Cash	399.3% Stellar	50.1% Stellar	4.4% Monero
127.8% Dash	105.8% Stellar	194.1% Ethereum	33.1% Dash	-1.4% Dash	110.9% Dash	-13.5% Dash	8.9% EOS	182.8% Dash	209.9% EOS	48.1% Ethereum	1.5% Bitcoin
76.4% Litecoin	77.6% NEO	184.8% NEO	27.1% Ethereum	-8.8% Monero	87.3% Ethereum	-21.4% Ethereum	1.4% Ethereum	145.6% Stellar	163.3% Litecoin	39.6% EOS	-8.4% NEO
73.4% NEO	58.8% Ethereum	76.4% Monero	8.9% Bitcoin	-16.1% NEO	64.71% Litecoin	-22.2% Litecoin	1.3% Ripple	105.0% Monero	131.7% NEO	-21.7% Monero	-16.4% Dash
66.8% Monero	25.8% Bitcoin	69.7% Bitcoin	7.8% Ripple	-33.2% Ethereum	63.8% Bitcoin	-22.7% Ripple	1.1% BTC Cash	58.3% Bitcoin	94.5% Monero	-27.5% Bitcoin	-19.2% BTC Cash
27.5% Stellar	23.2% Dash	61.3% Litecoin	4.5% Monero	-36.1% Ripple	52.2% Ripple	-26.4% BTC Cash	1.1% Litecoin	57.9% Litecoin	83.4% BTC Cash	-29.4% Litecoin	-22.1% Ripple
-9.2% Bitcoin	15.6% Monero	49.2% Dash	-21.7% Stellar	-40.3% Stellar	38.7% Stellar	-32.0% Monero	-8.3% Monero	45.6% Ethereum	69.8% Ethereum	-33.7% Dash	-23.5% Ethereum
					-25.7% EOS	-38.2% Stellar	-14.8% Dash	25.0% Ripple	38.4% Bitcoin	-41.2% BTC Cash	-31.5% EOS
						-44.5% EOS	-16.8% NEO	15.9% NEO	33.9% Dash	-49.6% Ripple	-38.2% Stellar

Data as of February 28, 2018. Source: Coinmarketcap.com.

The table captures the top 10 cryptocurrencies as represented in the Bitwise HOLD 10 Index. Two of those coins - Bitcoin Cash and EOS - did not exist until the middle of 2017, and therefore only have data for part of the year. We did not include the first month's returns for those coins as both coins launched on the first day of a month and initial price discovery was not robust.

Key Findings From This Analysis

Monthly Differentials Are Massive: The average monthly difference in return between the top-performing coin and the worst-performing coin was 300.1%. The largest gap was 784.9% in December; the smallest was 47.3% in September.

Split Returns Are Common: Eight of 12 months saw at least one coin post a positive return, while another posted a negative return.

Most Coins Suffer Difficult Months: Seven of the top 10 coins spent at least one month ranked as the worst-performing crypto asset. Nine of the top 10 coins spent at least one month ranked as one of the bottom-two-performing crypto assets.

Repeating as a Top Performer Is Rare: Only twice in 12 months did the top-performing crypto asset repeat as the best performer in the following month.

Reversals in Performance Occur Regularly: There were three instances where the top-performing crypto asset in one month became the worst performer the following month. Swings can be extreme: Ripple was the best-performing asset in December 2017, rising 818.7%, but the worst-performing asset in January 2018, falling 49.6%.

Return Differentials Show No Sign of Diminishing: Despite the maturing nature of the asset class, return spreads show no signs of diminishing. December 2017 saw the largest monthly spread, with Ripple rising 818.7%, while Dash rose just 33.9%. February 2018 saw Litecoin return 24.1%, while Stellar fell 38.2%.

Investors attempting a single coin or active approach to a market this volatile face a massive challenge: There is no consistency in the rank of returns, no consistency in reversals, and massively different returns for each coin. In this “random walk” environment, a diversified portfolio capturing the full available market set is the easiest and likely optimal strategy.

What About Correlations?

Another way to approach the question of diversification is by looking at the correlation of different cryptocurrencies to one another. The tables to the right present this data looking at daily and weekly correlations for the eight coins in this study with a full year of trading history.

DAILY	BITCOIN	ETH	RIPPLE	STELLAR	NEO	MONERO	LITECOIN	DASH
Bitcoin	1.00							
Ethereum	0.41	1.00						
Ripple	0.17	0.17	1.00					
Stellar	0.26	0.25	0.50	1.00				
Neo	0.28	0.33	0.10	0.18	1.00			
Monero	0.46	0.50	0.22	0.39	0.22	1.00		
Litecoin	0.43	0.40	0.24	0.27	0.29	0.40	1.00	
Dash	0.38	0.43	0.08	0.18	0.29	0.57	0.34	1.00

The data is telling: Consistent with the previous month-by-month analysis, the returns of individual coins do not appear to be tightly correlated. That correlation varies depending on your time frame, but the results support the underlying thesis that there is value in diversifying your crypto portfolio.

WEEKLY	BITCOIN	ETH	RIPPLE	STELLAR	NEO	MONERO	LITECOIN	DASH
Bitcoin	1.00							
Ethereum	0.38	1.00						
Ripple	0.18	0.04	1.00					
Stellar	0.28	0.15	0.59	1.00				
Neo	0.20	0.22	0.03	0.05	1.00			
Monero	0.54	0.59	0.15	0.22	0.07	1.00		
Litecoin	0.62	0.22	0.45	0.39	0.13	0.30	1.00	
Dash	0.37	0.62	-0.02	0.09	0.09	0.72	0.19	1.00

It's worth noting, of course, that in markets as volatile and nascent as crypto, correlation data can be fickle. The specifics of this data have and will continue to change over time. But viewed holistically and in light of other supporting analyses, the correlation data strongly support the idea that the returns of individual coins are heterogeneous. There is a strong diversification benefit to be found in holding a basket of coins compared to holding any individual asset alone.

Performance During Bitcoin Drawdowns

A final—and we believe more robust—way to consider the benefits of diversification is to look at the performance of coins during market drawdowns. The table below captures the five time periods during the past year when Bitcoin entered a technical bear market, defined as a 20%+ pullback.

Importantly, the cryptomarket did not trade down in unison during these bear market periods. In fact, all nine other coins outperformed Bitcoin on average during these drawdowns. Perhaps more impressively, four of the coins actually delivered positive average returns during these Bitcoin bear markets: Dash (up 8.4%), Bitcoin Cash (up 10.2%), Ethereum (up 15.6%) and Neo (up 49.2%).

Diversification in Action

The performance of leading cryptoassets during significant pullbacks in Bitcoin

	BITCOIN	ETHEREUM	RIPPLE	STELLAR	NEO	MONERO	LITECOIN	DASH	BTC CASH	EOS
March 3 - March 24	-26.7%	174.5%	65.3%	19.0%	36.2%	51.3%	4.1%	105.6%	--	--
June 11 - July 16	-34.6%	-53.1%	-45.0%	-66.2%	203.0%	-50.1%	24.0%	-29.3%	--	--
Sept 1 - Sept 14	-35.4%	-44.5%	-33.8%	-53.7%	-50.1%	-41.2%	-51.4%	-40.0%	-40.6%	-53.6%
Nov 8 - Nov 12	-20.3%	-0.5%	-9.4%	-16.8%	-11.8%	14.6%	-5.3%	60.7%	122.0%	-3.5%
Dec 16 - Feb 2	-63.8%	1.7%	-6.5%	43.5%	69.0%	-44.9%	-57.7%	-55.2%	-50.8%	-16.6%
Average	**-36.1%**	**15.6%**	**-5.9%**	**-14.8%**	**49.2%**	**-14.1%**	**-17.3%**	**8.4%**	**10.2%**	**-24.6%**

Data as of 2/28/2018. Source: Coinmarketcap.com. Examines all cases of a 20%+ pullback in Bitcoin prices in the trailing 12 months.

In Conclusion

The dominant paradigm of single-coin investing evolved out of an era when Bitcoin was the only game in town. As that dominance fades, it is becoming increasingly important for investors to diversify their positions and capture the full crypto opportunity set. Different assets are delivering notably different patterns of returns and responding heterogeneously to pullbacks in Bitcoin. This creates an opportunity for investors to generate higher absolute and risk-adjusted returns by moving beyond single-coin portfolios and holding a basket of crypto assets instead.

Diversification works in every asset class in the world. It should come as no surprise that it works in crypto as well.

Contact Us

Visit: **www.bitwiseinvestments.com**
Email: **matt@bitwiseinvestments.com**
Phone: **1-415-837-8728**