

MScFE 560 FM Group Project Report (Crypto)

Step 1:

Portfolio

Like stocks, cryptocurrencies can also be ranked based on market capitalization. To calculate market capitalization, we multiply the number of coins in circulation by the price that day.

Large-cap cryptos refer to the top 10 cryptos by market capitalization and are the most stable. Mid-cap cryptos have a market capitalization between \$1 billion and \$10 billion and are usually in the top 10-50 cryptos by market cap. Low-cap or micro-cap cryptos have a market capitalization below \$1 billion or are not in the top 50 by market capitalization. These tend to be the riskiest and frequented by speculative investors.

Cryptocurrency	Code	Size of Cryptocurrency	Weight	Number of Corresponding Coins If Portfolio Was Created On 20/08/2020
Bitcoin	BTC	Large-caps	40%	33.67
Ethereum	ETH	Large-caps	20%	480.26
Solana	SOL	Mid-caps	15%	46754.21
Cardano	ADA	Mid-caps	10%	748268.95
Polkadot	DOT	Mid-caps	5%	17240.90
Theta	THETA	Low-caps/micro-caps	5%	109853.36
Filecoin	FIL	Low-caps/micro-caps	3%	1709.41
Syntropy	NOIA	Low-caps/micro-caps	2%	177480.85

We chose a riskier portfolio that contains 60% large-cap cryptos, 30% mid-cap cryptos, and 10% low-cap/micro-cap cryptos. We also assume that our initial investment was USD 1,000,000 and that we bought all the cryptocurrencies I was interested in on 20 Aug 2020.

Comment whether multiple assets provide differentiation benefits.

Cryptocurrency	Portfolio Value If Invested 100% In Chosen Crypto	Average Portfolio Value	Average Price Per Coin	Average Standard Deviation	Average Standard Deviation As A Percentage Of Average Cryptocurrency Price
BTC	Large-caps	2942622.157	34953.55952	365.0296792	0.010443276
ETH	Large-caps	4823405.046	2008.657808	966.3358402	0.481085348
SOL	Mid-caps	15969956.3	51.23588447	54.4970682	1.063650384
ADA	Mid-caps	5581186.541	0.745879744	0.628893809	0.84315711
DOT	Mid-caps	4831796.89	14.01259856	11.96170688	0.853639447
THETA	Low-caps/micro-	6143761.854	2.796346867	2.934318185	1.049339844
FIL	Low-caps/micro-	1573892.235	27.62168752	34.99560499	1.26696115
NOIA	Low-caps/micro-	1404937.275	0.158319873	0.166811223	1.053634137
True Portfolio		5719435.4204		677.5452863	

Here, we define differentiation benefit as the ability to meld the characteristics of different portfolio components to build one that maximizes the benefits while minimizing the downsides of each. The new portfolio does provide differentiation benefits.

The chosen portfolio could "adopt" more volatility from the mid-cap and low-cap/micro-cap cryptocurrencies to out-earn cases where the portfolio was made up of just stable-large caps. Compared to a complete Bitcoin (BTC) portfolio worth USD\$2,942,622.16 or Ethereum (ETH) worth USD\$4,823,405.05, our current mixed-bag portfolio is worth USD\$5,719,435.42.

It was also able to incorporate the stability of large-cap cryptocurrencies in its portfolio to mitigate the rapid rise and fall in mid-cap and low-cap cryptocurrencies. Investing in purely mid-cap or low-cap cryptocurrencies could have led to an even larger portfolio value of USD\$6,143,761.85, with Theta (THETA). However, it could also lead to a minimally improved portfolio value of USD\$1,404,937.28 with Syntropy (NOIA) instead of our current USD\$5,719,435.42.

Shorting: Can this portfolio be sold short? If it can be sold short, explain the mechanics.

Yes, this portfolio can be shorted. More specifically, cryptocurrencies can be shorted. Here is how.

1. Select a Trading Platform:
 - Choose a trading platform or exchange that permits the short selling of cryptocurrencies. Not all platforms offer this option due to regulatory constraints or risk factors.
2. Set Up and Verify Your Account:
 - Create an account on the selected platform, undergo necessary verification steps, including identity verification, and fund your account with the required collateral.
3. Identify Borrowable Assets:
 - Confirm that the platform allows you to borrow the specific cryptocurrencies you intend to short-sell. The platform should have these assets available for borrowing.
4. Initiate Borrowing Process:
 - Once you've located the borrowable cryptocurrency, initiate the borrowing process. Remember that a fee is typically associated with borrowing the asset.
5. Sell the Borrowed Cryptocurrency:
 - After securing the borrowed cryptocurrency, sell it at the prevailing market price.
6. Close Your Short Position:
 - To close your short position, repurchase the same quantity of cryptocurrency you borrowed and sold. If the price has decreased, repurchasing it at a lower price results in a profit (minus any fees and interest).
7. Return Borrowed Cryptocurrency:
 - After buying back the cryptocurrency, return it to the lender on the platform.

By following these steps, you can engage in short selling of cryptocurrencies, potentially capitalizing on price declines.

Credit Risk: Does this portfolio have credit risk? If it has credit risk, explain your portfolio's credit risk.

Credit risk refers to the potential for financial losses associated with various factors. This portfolio has the following credit risks.

1. Counterparty Risk:
 - Counterparty risk is the probability that the other party in an investment, credit, or trading transaction may not fulfill its part of the deal and may default on the contractual obligations.

- Cryptocurrency transactions often involve trading platforms or exchanges. The credit risk arises from these platforms' potential default or financial instability. If a platform fails or faces financial issues, it could impact the value of your portfolio.

2. Volatility Risk:

- The volatile nature of cryptocurrencies introduces credit risk. Sudden and significant price drops in any allocated cryptocurrencies may result in losses. The higher the volatility, the greater the potential credit risk.

3. Liquidity Risk:

- Low-caps/micro-caps in the portfolio may have lower market liquidity. Selling these assets could be challenging in market stress or distress, leading to increased credit risk.

4. Asset-Specific Risks:

- Each cryptocurrency in your portfolio carries its own set of risks. The credit risk is influenced by factors such as the technology behind the cryptocurrency, adoption rates, regulatory developments, and overall market sentiment.
- Technology Behind the Cryptocurrency:
 - Vulnerabilities, hacks, or technological shortcomings in the underlying technology of a cryptocurrency can erode investor confidence. If a cryptocurrency faces issues related to its technology, it may lead to a significant loss in value, contributing to credit risk.
- Adoption Rates:
 - The success of a cryptocurrency often hinges on its adoption by users and businesses. Low adoption rates may indicate a lack of trust or utility, making the cryptocurrency susceptible to market downturns. A crypto asset with limited adoption risks becoming illiquid, amplifying credit risk.
- Regulatory Developments:
 - Cryptocurrencies operate in a regulatory environment that is subject to change. Regulatory crackdowns or stringent measures can impact the legality and viability of a cryptocurrency. Sudden regulatory shifts can result in value depreciation, affecting the creditworthiness of the asset.
- Overall Market Sentiment:
 - Cryptocurrency markets are highly influenced by investor sentiment. Positive sentiment can lead to price surges, while negative sentiment can trigger significant selloffs. The overall market sentiment can create a volatile environment, exposing investors to credit risk, especially if sentiments turn bearish.