ABTRACT:

In this paper, we present a new set of tools for cryptocurrency investors that are not currently available making investing in cryptocurrency a high risk undertaking. By using a new ranking system that utilizes both momentum analysis and sentiment analysis we created a toolbox for the cryptocurrency investor which enlightens the current state of the cryptocurrency investor market to enable the investor to make more informed decisions. Due to the infancy of the cryptocurrency market, most investors are still novices and need these tools to be able to break into and understand the cryptocurrency investor market. With this novel approach taken to cryptocurrency we have provided a tool to bring cryptocurrency investing into the mainstream for all investors.

The cryptocurrency Bitcoin, based on blockchain technology, is as a secure method to make financial transactions. Within a short span of time, hundreds of cryptocurrencies have been created and more are continually being created. The kind of asset cryptocurrencies will become is yet to be understood. The markets are trying to decide whether they are a hedge, safe haven or The properties of cryptocurrencies such as whether they will behave like speculative assets or in fact become another form of money [1]. Some research has shown that Bitcoin appears to act as a speculative safe haven for investors [4]. In this paper we will be looking at cryptocurrency to determine whether it is an asset class and therefore be tradable amongst other assets on the world’s markets.

In doing this we will be creating a tool for investors to analyze cryptocurrency behavior, comparing their performance and behavior to other asset classes so that investors can confidently invest in cryptocurrency.

Today cryptocurrency is on over 5,400 exchanges with a total market capitalization of $164 billion [2]. There are over 867 currencies and growing exponentially for a 2017 12-fold growth rate. Investors are flocking to cryptocurrencies such as Ethereum where its value increase 41 times in an eight-month period. For comparison, the S&P 500 index took over forty years to achieve the same kind of growth. Although new cryptocurrencies are entering the market contently, Bitcoin appears to be entering a more mature phase where its volatility is decreasing [4].

Only recently has mainstream financial institutions like Fidelity [3] begun to give its customers the ability to add cryptocurrencies to their portfolios. Besides continual development of the cryptocurrency products, additional marketplace tools are needed to support this growing marketplace. Cryptocurrency is so new that even large, stable banks are having a difficult time quantifying the movements and predicting where cryptocurrency is headed next.

To aid both the experienced and lay investor in making a more informed decision, we will be creating a cryptocurrency toolbox for the investor that does not exist today. These tools will be ranking cryptocurrencies considering the trends and other properties of various crypto-coins. Using market capitalization as one of our tools, we will expand on the current use of this parameter being used only historically and forecast its value using momentum and other properties such as sentiment analysis amongst twitter, Facebook and reddit.

Currently the cryptocurrency investor’s tools rely solely on past statistics and this is due to the infancy of the cryptocurrency market. There simply has not been the level of analysis on cryptocurrency that is required to bring it to mainstream assets classes.

Most current forecasting techniques utilize univariate which doesn’t capture other influential factors such as momentum. Due to the highly volatile and unregulated nature of cryptocurrencies, outside factors play an influential role in determining the value of the crypto-coin. We aim to include these factors in our overall analysis to provide a clear picture on what cryptocurrency is and how it can be invested.

In some research, Bitcoin has been found to be negatively with the Yuan and the USD while being positively correlated with the USD/EUR exchange rate[4].

In order to determine whether cryptocurrencies such as Bitcoin can be considered an asset class similar to the world’s government backed currencies, the cryptocurrency would need to satisfy three questions. Can it be used as a medium of exchange? Can it be used as a unit of comparability between two good and it must store value over time [4].

Price fluctuations in Bitcoin and other cryptocurrencies are dependent on both internal and external factors[4]. The internal factors are supply and demand but since the supply is deterministic this means that the only internal driver is the demand for Bitcoin. The demand for Bitcoin is determined by the hash rate. External factors affecting the price of Bitcoin is the adoption rate and how it is being used as an investment vehicle. In the short-term Bitcoin acts as a safe-haven investment and in the long run acts as a hedge [1].

Factor investing is where an investor will invest funds in the underlying risk factors that make up an asset class. One of these factors is momentum. The momentum of an asset is looking at the past performance of an asset and using that to determine the future of that asset. The momentum strategy of Jegadeesh and Titman (1993) was for to produce abnormal positive returns [10].

Liquidity is one of the major issues with cryptocurrencies. With fiat currency, a large transaction is easily absorbed into the system with little affect to the exchange price. On the contrary for cryptocurrencies where a large transaction will incur heavy fees and cause a large fluctuation in the exchange price of the currency [5].

[1] Exploring the Determinants of Bitcoin’s price, an application of Bayesian Structural Time Series

[2] Coin Market Cap website

[3] Stern, H: Fidelity Labs Tests Digital Asset Wallet On Fidelity.com. August, 09, 2017. <https://www.fidelity.com/about-fidelity/corporate/fidelity-labs-tests-digital-asset-wallet-on-fidelity.com>

[4] Exploring the Determinants of Bitcoin's price, an application of Bayesian Structural Time Series

[5] <https://www.coindesk.com/solving-liquidity-challenge-decentralized-exchanges/>

[6] Predicting the price of Bitcoin using Machine Learning

[7] Algorithmic Trading of Cryptocurrency

[8] Application of Neural Network for Forecasting of Exchange Rates and ForEx Trading

[9] Automated Bitcoin Trading via Machine Learning Algorithms

[10] Facts and Fantasies About Factor Investing