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ON THE OCC ANNOUNCEMENT ALLOWING US BANKS TO USE STABLECOINS AND THE IMMEDIATE IMPACT ON CRYPTOCURRENCY VALUATIONS

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ABSTRACT

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On January 4, 2021 the Office of the Comptroller of the Currency (OCC), a major regulator of financial institutions in the United States, announced that federally chartered banks and thrifts were now allowed to utilize stablecoins as payment instruments. Much research and many discussions have revolved around policies of governments worldwide in how to handle the new cryptocurrency phenomenon. The purpose of this short study was to observe the valuation impact of that announcement on the three largest cryptocurrencies and two others. Research findings show the altcoins with valuations not tied to the dollar had substantial increases in value while the stablecoins, which the announcement specified are now allowed to be used by banks, changed very little. Specifically, Bitcoin and Ethereum increased over 20% in value within 5 days of the announcement while the stablecoins Tether and USDCoin changed in value by no more than 0.10% for the same event window. This shows that stablecoins lived up to their name even though they were promoted as an acceptable payment system in the US.

Contribution/Originality: This study contributes to the existing cryptocurrency and event-study literature by examining the impact of an announcement by a major banking regulator in the United States upon the valuation of popular cryptocurrencies. Despite being plugged as acceptable payment methods in the US, stablecoins had no significant changes in value.

1. INTRODUCTION

In 2008, the creation of Bitcoin opened the world to potential payment systems not controlled by international banks (Nakamoto, 2008). However, countries disagree over how to treat cryptocurrencies (money or commodity) and the legal discussion over how to treat and regulate altcoin markets has been evolving in recent years (see Schaub and Phares (2020) and Shanaev, Sharma, Ghimire, and Shuraeva (2020a)). At present, nearly 4,000 cryptocurrencies trade worldwide according to CoinMarketCap (2021) with over 30 obtaining \$1 billion of market value or more and a total overall market capitalization of nearly \$900 billion.

While countries debate how to handle these payment instruments, an announcement by the Office of the Comptroller of the Currency (OCC), a major banking regulator in the United States, has signaled the intention of allowing certain stablecoins for payment activities in US banks. The announcement was made on January 4, 2021 and supplemented with an Interpretive Letter (OCC, 2021a, 2021b). This short study examines the impact the announcement made by the OCC has had on the two largest cryptocurrencies by market value (Bitcoin and Ethereum) and three of the largest cryptocurrencies that may be considered stablecoins (Tether, BinanceCoin and USDCoin). The announcement did not specify exactly which stablecoins the OCC intended to allow for payments.

The remainder of this note is organized as follows: a brief background section is followed by methods, results and conclusions.

2. BACKGROUND INFORMATION

Schaub (2017) gives a brief overview of popular and well-known event studies. These basically examine how some announcement or occurrence affects asset valuations. For the sake of this note, a few event studies involving cryptocurrencies provide basic information to lay the foundation on which to examine the impact of the January 2021 OCC announcement.

Shanaev et al. (2020a) highlights several event studies using daily data on 300 altcoins. They find that these coin values are affected by regulatory announcements mainly focusing on anti-money laundering and issuance problems surrounding cryptocurrencies. They conclude tighter regulation of cryptocurrencies to be undesirable since the main reason for their existence is to be free of governmental control and interference.

Keshari, Tiwari, Doğan, and Hammoudeh (2020) examine market efficiency of cryptocurrencies and find them to be largely inefficient and open to possible arbitrage and manipulation. The most inefficient cryptocurrencies were DASH, NEM and Bitcoin (in that order). They also found the most efficient major altcoin markets to be Ethereum and Ripple.

Shanaev, Shuraeva, Vasenin, and Kuznetsov (2020b) find 51% attacks—short-term attempts to take over proof-of-work blockchains—provide evidence cryptocurrency markets are exposed to pump and dump schemes. Upon the attack, these coin prices drop 12 to 15 percent and do not fully recover within a week. However, after the attacks the markets become more efficient. These attacks aim at the less capitalized coins where pump and dump schemes work better and gives evidence that low hash rate coins contain this additional risk factor.

Fry and Cheah (2016) find that cryptocurrency bubbles can spill over onto each other. They find this to be the case concerning negative bubbles from 2014 onwards with Bitcoin and Ripple. Shocks in the cryptocurrency markets were traced to regulations, such as the People's Bank of China banning Bitcoin usage by financial institutions. They also found criminal investigations by the FBI (Federal Bureau of Investigation) to create shocks as well.

This study examines what may be considered deregulation in the cryptocurrency markets signaled by the OCC's decision to allow usage of stablecoins. Based on past altcoin-related event studies, there is an expectation that major cryptocurrencies will add value—specifically those with values that float untethered (in other words, those that are not stablecoins tied to a specific currency and not included in the announcement).

3. METHODS

Cryptocurrencies may be backed by nothing, backed by currencies (including other cryptocurrencies), or backed by commodities (such as gold or silver). Stablecoins tend to be backed by actual currencies that are legal tender to allow them to be used for transactions without requiring the holder to be subject to tremendous value volatility. The main characteristics of cryptocurrencies that determine their values and volatility are as follows: 1) Fiat-collateralization means the coin is backed by fiat (or true) money; 2) Crypto-collateralization means the price is tied to other cryptocurrencies; and 3) Non-collateralization means the price is not backed by or regulated by anything other than supply and demand conditions. Fiat collateralized coins tend to be the most stable whereas non-collateralized coin values tend to be volatile. Also, the way a cryptocoin is used may reduce volatility (for example, Ethereum is used for contracts with legal agreements making the cryptocurrency more stable than Bitcoin). For the purposes of this study, only major cryptocurrencies with over \$1 billion market capitalization were used. Table 1 gives basic information about these specific cryptocurrencies.

Daily returns (denoted r_{it}) are computed by determining the percent change in value from day to day as shown in Equation 1.

$$r_{it} = (p_{it} - p_{it-1}) / p_{it-1} \quad (1)$$

where p_{it} is the price of cryptocurrency i on day t , and p_{it-1} is the price the previous day.

Table-1. Descriptive information for cryptocurrencies in study.

Cryptocurrency name	Method of Stabilization	Market Cap Jan. 2021	Year Launched
Bitcoin	Non-collateralized	595B	2009
Etherium	Non-collateralized, used for contracts on Ether network	150B	2015
Tether	Fiat-collateralized, 1:1 with USD	25B	2015
BinanceCoin	Fiat-collateralized, 1:1 with USD	6.5B	2017
USDCoin	Fiat-collateralized, 1:1 with USD	5.5B	2018

Five cryptocurrencies in [Table 1](#) are compared for value changes as a result of the OCC announcement. The market capitalization figure is in billions of US dollars. Although launched in 2018, public trading of USDCoin did not begin until May 2020.

Returns are reported beginning 10 days before the OCC announcement until 10 days after for a window of (-10, +10). These returns are also cumulated for the full window, the shortened window of (0, +5) and the standard day before, announcement day and day after window of (-1, +1). The cumulative returns (denoted CR) for each event window are tested for statistical significance and the respective P-values are reported. The event window surrounds the OCC policy change announcement date of January 4, 2021 (day 0). In keeping with [Schaub and Phares \(2020\)](#) the change in value of Special Drawing Rights (SDRs) are reported along with the changes in cryptocurrency values. SDR value changes represent how much the US dollar appreciates or depreciates against a basket of currencies used for international trade.

4. RESULTS

The results of the study are presented in [Table 2](#). On January 4, 2021 when the announcement was made (day 0 in the table), the value of Etherium went up while the others went down. Etherium was already trending upward and this result may not have been the result of the event since all of the coin values went up the day after the announcement (which occurs often in event studies—the impacts occur the day afterwards once the new information is well known by market participants).

The average daily returns and variations in cryptocurrency values increased for the 21-day event window beginning 10 days before and going up to 10 days after the announcements for the two non-stablecoins (Bitcoin and Etherium) and BinanceCoin. Although the announcement promoted the use of stablecoins, they (Tether and USDCoin) lived up to their names by having little change in value or variation for the entire event window (-10, +10) as shown by the average daily window return and standard deviation. There was also little variation in the value of the dollar versus Special Drawing Rights signifying the US dollar experienced no impact.

The OCC announcement occurred on January 4, 2021. Panel A of the table shows the daily changes in value of 5 cryptocurrencies and the dollar versus special drawing rights beginning 10 days before and up to 10 days after the announcement date. Panel B gives return and variation measures from before the announcement and during select windows relative to the announcement date. NA means data were unavailable. P-values in bold italics indicate significance at an alpha level of .10 or less.

Panel B shows that Bitcoin's value increased significantly within 5 days of the announcement (0, +5) and for the entire event window (-10, +10) adding over 53 percent of value in cumulative returns. Etherium benefitted the most, increasing in value over 38 percent over the window starting the day before and going up to the day after the announcement (-1, +1). Etherium also increased nearly 75 percent in value for the entire event window (-10, +10).

Of the three fiat-collateralized coins, only BinanceCoin showed any large change in value resulting from the announcement. It was up 9 percent immediately (-1, +1) and 27 percent for the entire event window (-10, +10).

Tether, USDCoin and the value of the dollar as indicated by changes in SDRs to dollars maintained stability of value with low, nonsignificant percent changes over the event window.

Table-2. OCC Stablecoin payment allowance announcement effects on cryptocurrencies.

Panel A. Cryptocurrency and SDR Daily Value Changes						
Date relative to announcement	Bitcoin	Etherium	Tether	BinanceCoin	USDCoin	SDR/USD
-10	3.91%	2.42%	0.02%	2.04%	0.01%	0.00%
-9	7.19%	1.50%	-0.17%	0.94%	-0.05%	0.00%
-8	-0.62%	7.36%	0.04%	0.10%	0.03%	0.00%
-7	3.09%	7.00%	-0.03%	6.96%	0.00%	0.00%
-6	1.03%	0.15%	0.00%	8.67%	-0.01%	-0.13%
-5	5.40%	2.75%	0.17%	-2.10%	0.00%	-0.20%
-4	0.56%	-1.84%	0.03%	-1.99%	-0.02%	0.05%
-3	1.28%	-1.01%	0.13%	1.42%	0.00%	0.00%
-2	9.37%	6.05%	-0.13%	0.89%	0.03%	0.00%
-1	2.04%	25.95%	-0.01%	7.60%	-0.04%	0.00%
0	-2.47%	6.64%	-0.04%	-0.54%	-0.04%	-0.10%
+1	6.32%	5.75%	0.21%	1.97%	0.04%	-0.11%
+2	8.33%	9.74%	-0.07%	1.03%	-0.01%	-0.01%
+3	6.92%	1.54%	-0.11%	3.04%	-0.18%	0.19%
+4	3.62%	-0.12%	-0.04%	-2.43%	0.18%	0.08%
+5	-1.33%	4.65%	0.29%	3.63%	0.01%	0.00%
+6	-4.72%	-1.47%	-0.27%	-3.38%	0.03%	0.00%
+7	-7.27%	-13.63%	0.04%	-9.60%	-0.01%	0.29%
+8	-4.62%	-4.28%	-0.02%	-0.68%	0.06%	-0.15%
+9	10.00%	8.37%	-0.04%	5.31%	-0.08%	0.00%
+10	5.01%	7.76%	-0.11%	4.13%	0.03%	0.05%
Panel B. Statistical and Significance Tests						
Statistical Measure	Bitcoin	Etherium	Tether	BinanceCoin	USDCoin	SDR/USD
Avg. 1 yr Daily Return	0.40%	0.56%	0.00%	0.37%	NA	-0.01%
1 yr Standard Deviation	3.75%	4.93%	0.56%	4.75%	NA	0.18%
(-10, +10) avg return	2.53%	3.58%	0.00%	1.29%	0.00%	0.00%
(-10, +10) stnd dev	4.83%	7.40%	0.13%	4.16%	0.07%	0.11%
CR (-1, +1)	5.89%	38.33%	0.16%	9.04%	-0.04%	-0.20%
(P-value)	(0.22)	(0.03)	(0.25)	(0.11)	(0.30)	(0.02)
CR (0, +5)	21.39%	28.18%	0.24%	6.71%	0.00%	0.07%
(P-value)	(0.03)	(0.00)	(0.27)	(0.12)	(0.49)	(0.40)
CR (-10, +10)	53.04%	75.25%	-0.10%	27.03%	0.00%	-0.02%
(P-value)	(0.01)	(0.01)	(0.44)	(0.08)	(0.49)	(0.49)

5. CONCLUSIONS

This study was conducted to determine whether the announcement by the OCC to allow US financial institutions had any impact on cryptocurrency valuations. The announcement may signal future favorable treatment of these alternative payment devices but emphasized that only stablecoins were to be accepted. As expected, the coins strongly tied to the value of the US dollar (that are now allowable) did not change much as a result of the announcement. However, the freely floating non-stable cryptocurrencies increased significantly in value around the announcement window. Both Bitcoin and Tether had higher daily average returns and event window standard deviations than one-year prior to the announcement window. BinanceCoin also had a significant change in value tied to the event.

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