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# The Volatility of Cryptocurrencies and Their Future in Bangladesh



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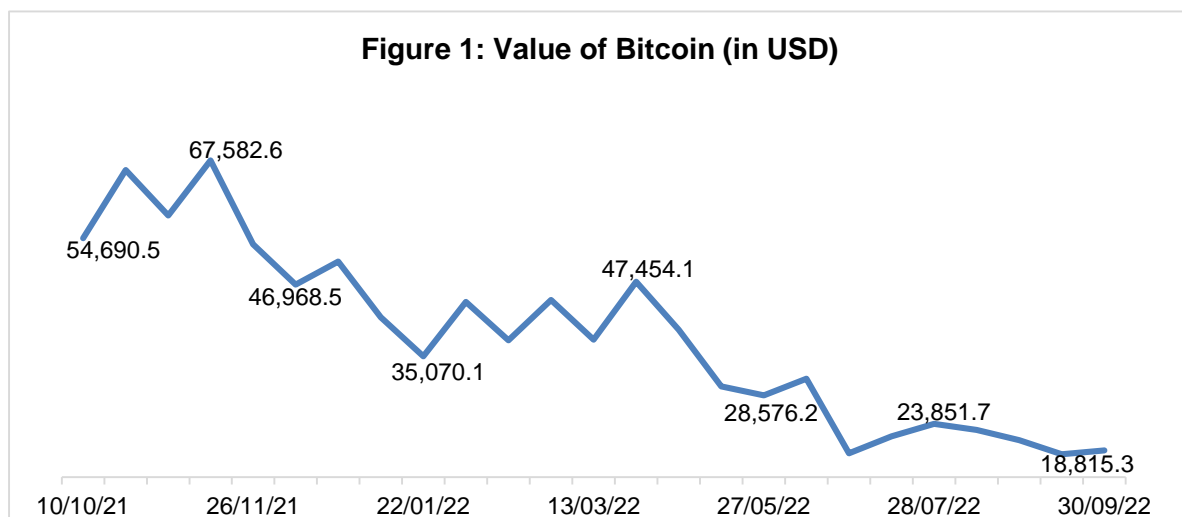
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### Introduction

On June 18, 2022, Bitcoin, the world's most traded cryptocurrency, hit a value of \$18,984.8. Although, this value may appear to be quite high, the virtual currency had lost more than 41.0% of its value compared to the previous month.<sup>1</sup>

The aforementioned events were part of a larger turmoil in the cryptocurrency market, which saw the sector's market capitalization being reduced by 70.0% or \$2.0 trillion since November 2021.<sup>2</sup> Although the market has somewhat stabilized, this volatile nature has given rise to speculations.

This white paper looks at the nature and technology of cryptocurrencies, the reasons for recent losses, and their future in the global market as well as in Bangladesh. Despite the growing global popularity of cryptocurrencies, the Bangladesh Bank has always maintained a cautious stance towards cryptocurrencies given the risks associated with it. This is understandable as there have been cases of exploitation, money laundering, and other violations of existing laws.



*Source: Google Finance*

## **What are Cryptocurrencies?**

Cryptocurrencies are digital or virtual currencies protected by cryptography, making counterfeiting or double spending nearly impossible.<sup>3</sup> They are decentralized in nature and each one maintains a ledger, which has multiple copies, containing all previous transactions with it. When a transaction involving a cryptocurrency occurs, the computer processing the transaction checks thousands of copies of the ledger to validate ownership instead of checking just one. Following the transaction, each copy of the ledger updates itself.<sup>3</sup>

Cryptocurrencies are named after the usage of cryptography in securing these ledgers. A cryptographic technology that many cryptocurrencies use is known as blockchain technology.<sup>4</sup> This is a way of securing and organizing the aforementioned ledgers. Each transaction is recorded as a block, which includes important information such as the sender, the recipient, and the transaction amount, as well as a unique identifier code known as the "hash." Each block also contains the hash from the previous transaction in it. As a result, if any information about the transaction is inorganically changed, the hash of that transaction is going to change. As each block contains the hash from the previous transaction, any future transaction with that block will be impossible as the two hashes will not match.<sup>5</sup>

Aside from their decentralized nature, cryptocurrencies have several other key features that make them appealing. These benefits include anonymity, which is achieved by tying transactions to a random sequence of characters rather than the owner's identity, security resulting from holders being able to store cryptocurrencies in special virtual wallets secured with a private key, and ease of transmission without the need for a financial intermediary.

As of July 2022, there are 20,268 cryptocurrencies in existence. However, not all cryptocurrencies are active or valuable. Discounting many "dead" cryptos leaves only around 10,953 active cryptocurrencies.<sup>6</sup> Bitcoin, Ethereum, Tether, BNB, and USD Coin are a few examples of popular cryptocurrencies.

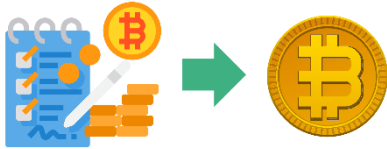


# What are Cryptocurrencies?

## CRYPTOGRAPHY & BLOCKCHAIN



Currencies secured by the use of **Cryptography**



Many cryptocurrencies use **Blockchain Technology** to secure and organize record-keeping ledgers



## FEATURES OF CRYPTOCURRENCIES



### Virtual

Virtual currencies protected by cryptography



### Decentralized

Not governed by central banks



### Recorded in a Ledger

One ledger with thousands of copies



### Checked Transactions

Transaction processing computers check all copies of the ledger to validate ownership



### Updated Ledgers

Each copy of the ledger updates itself after a transaction is completed

## BLOCK, HASH, INFORMATION, MATCH



Each transaction is recorded as a **block**



Each block contains the **hash**, a unique identifier, from the previous transaction



Changing any **information** about the transaction will change the hash



Future transactions with the block will be impossible if two hashes do not **match**



## CONTENTS OF BLOCKS



**The Sender**

01



**The Recipient**

02



**Transaction Amount**

03



**Hash**

04

## Volatility of Cryptocurrencies and the June 2022 Crash

Crypto volatility is incomparable to that of most other financial assets. With skyrocketing peaks and depressive slumps occurring at a faster and more extreme rate, crypto prices fluctuate significantly more than other asset prices in mainstream markets. For instance, Bitcoin's price increased by 125.0% in 2016, and by more than 2,000.0% in 2017. Its price fell again after reaching new all-time highs in 2017. But it set new all-time highs in 2021, more than tripling its highest price in 2017. However, Bitcoin's value fell below \$30,000.0 in May 2022, the lowest since July 2021 and more than 50% lower than its all-time high of over \$65,000.0 in November 2021. The implosion of the stablecoin TerraUSD triggered this period of volatility.<sup>7</sup>

Stablecoins are cryptocurrencies that have their values pegged to some stable financial asset. Like Tether, the stablecoin with the most market capitalization, most stablecoins are pegged to a traditional currency.

However, TerraUSD was an algorithmic stablecoin. Instead of being pegged to a traditional currency, it was pegged to another crypto token called Luna, which in turn was pegged to US dollars. And when TerraUSD could not maintain a stable supply of coins to maintain the fixed rate, both Luna and TerraUSD saw a dip in price. TerraUSD was reduced to \$0.23 from \$1 and Luna lost 99.9% of its valuation and became worth \$0.3.<sup>8</sup>

Many critics blame the collapse on Terra's algorithmic stablecoin structure and UST's rapid growth, which appears to have occurred without adequate funding, among other factors. But some believe that the depeg could also have been caused by a coordinated attack on the Terra ecosystem, in which the alleged attacker stole over \$800.0 million.<sup>9</sup>

On 12 June 2022, Celsius, one of the biggest crypto lenders, stated that they were going to pause withdrawals. This only added to the chaos, and cryptocurrencies began to plummet in value. At the same time, Three Arrows Capital, a massive crypto hedge fund, was forced to liquidate itself due to a drop in digital currency prices that saw billions of dollars wiped off the market.

Both of these entities suffered greatly during the collapse of TerraUSD, Three Arrows Capital lost between \$200.0 million to \$400.0 million. Right after that disaster, Three Arrows took out extensive loans and reinvested them aggressively into two crypto tokens, Greyscale and stETH, which also collapsed. As a result, the crypto giant could not pay back its creditors.<sup>10</sup>

## Causes of the Crash

The market value of crypto can often fluctuate by huge amounts within a short period based solely on market speculation. The price of cryptocurrencies can be influenced by media attention, public statements, and the actions of individuals who own large amounts of a cryptocurrency or influence the price via social media. This is why it is perceived to be a high-risk asset in comparison to traditional ones.

The June crash was, however, a result of high inflation in the US which stood at 8.6% in May. In response to this unprecedented phenomenon, the US Federal Bank increased the interest rate to 1.8%, the highest-ever hike since 1994.<sup>11</sup>

The increase in interest rates of this magnitude significantly raised the opportunity cost of investing, implying a likely recession. Coupled with the high inflation rate, it also increased the opportunity cost of holding any risk assets. Cryptocurrency is no exception to that rule. Therefore, in the face of the coming recession, selling cryptocurrencies became a much safer bet than holding onto them.

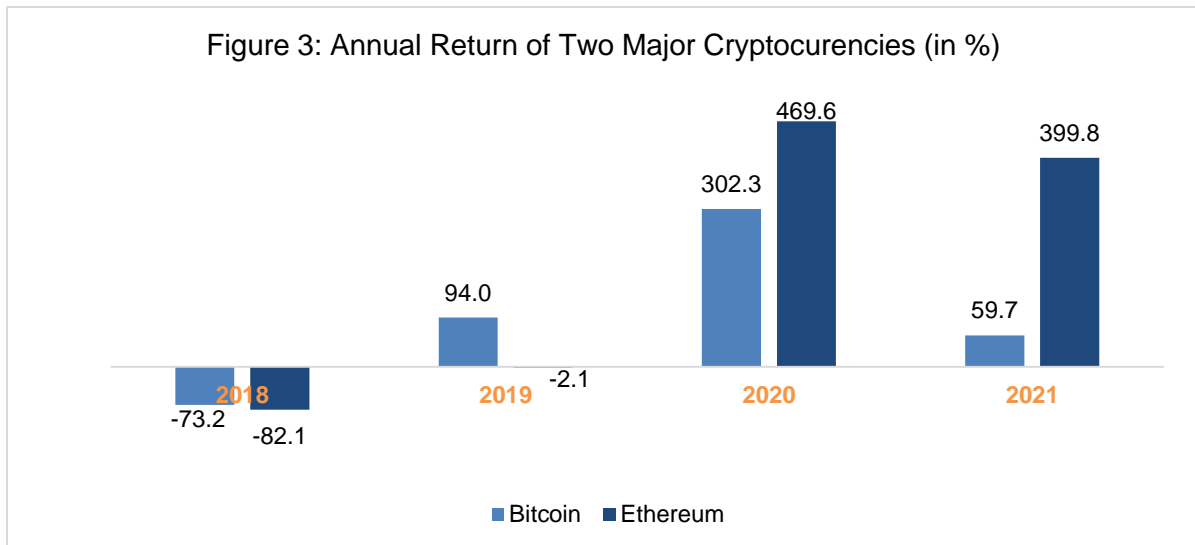
## The Future of Cryptocurrency

Cryptocurrencies have taken over the mainstream by storm since 2019. Since then, they have seen fluctuating returns on investment like 300.0% in 2020 and 70.0% in 2021.<sup>12</sup> Being particularly vulnerable and volatile risk assets, it remains to be seen whether cryptocurrencies will be able to withstand a recession.

**Figure 2: Global Cryptocurrency Users as of 2022**



Source: TripeA



Source: Calculated from Investing.com

Since 2009, there have been multiple 50% crashes in the crypto market.<sup>13</sup> Even in 2021, a similar crash occurred when China cracked down on Bitcoin miners. Many cryptocurrencies have become defunct in the process. But some currencies like Bitcoin and Ethereum have stood the test of time by bouncing back from extremely vulnerable situations. This is analogous to the DotCom bubble. Even though it created many failed companies, it also gave birth to highly successful ones like Amazon.

This begs the question of whether and how crypto price stability can be achieved. The first and most popular method of achieving this stability is to tie the token's price to a more stable asset, such as the US dollar. Furthermore, coding some of the theories applied by central banks into the DNA of the blockchain can arguably bring price stability as well. Basis, which has raised \$133 million from mainstream investors including Andreessen Horowitz to build a central bank for issuing cryptocurrency, is one of the most heavily funded blockchains that control price using an algorithm. When the price of a cryptocurrency begins to rise, the blockchain automatically increases the rate at which new coins are created, flooding the market and lowering the price. When the price begins to fall, the Basis blockchain buys back its tokens, reducing supply and pushing up the price.<sup>14</sup>

# Reducing Market Volatility of Cryptocurrency

## Methods of Price Stabilization



### PRICE TIED TO STABLE ASSET

The most popular method of achieving price stability is to tie a token's price to a more stable asset like, the US Dollar

1



### PRICE CONTROLLED BY CODING

Price stability can be achieved by coding economic theories into the DNA of the blockchains

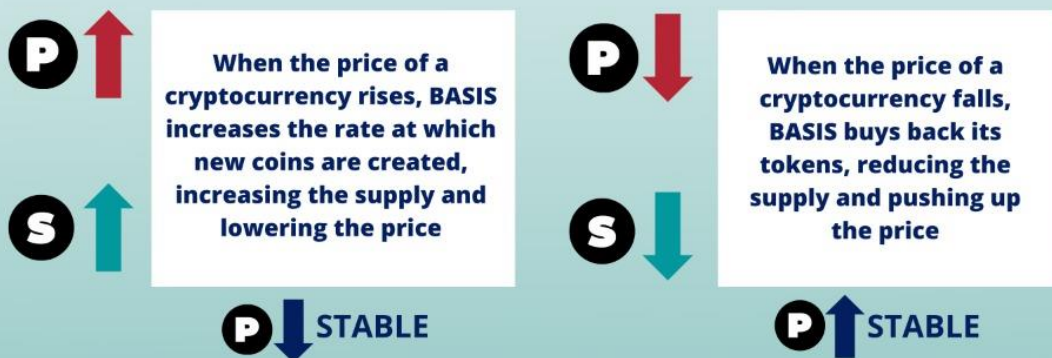
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## The Case of Basis



**BASIS**, one of the most heavily funded blockchains, controls price using an algorithm. It raised \$133 Million from mainstream investors to build a central bank for issuing cryptocurrencies

### THE PRICE CONTROL MODEL OF BASIS



## Cryptocurrency and Bangladesh

A notice issued by Bangladesh Bank on 24 December 2017 stated that the Foreign Exchange Regulation Act, 1947, does not support the use of cryptocurrencies and online transactions in these currencies with unnamed or pseudonymous people may violate the Money Laundering Prevention Act, 2012.<sup>15</sup> In June 2021, Bangladesh Bank ordered all parties to desist from cryptocurrency transactions.<sup>16</sup>



However, Finance Minister AHM Mustafa Kamal subsequently stated in parliament, while proposing the FY2022-23 budget, that the government was investigating the feasibility of introducing a central bank digital currency (CBDC) to facilitate digital payments and encourage startups and e-commerce.<sup>17</sup> The government has also undertaken the National Blockchain Strategy to aid in that process.

This can be seen as a potential shift to a centralized cryptocurrency exchange strategy pervasive in many countries. As cryptocurrencies and stablecoins have grown in popularity, the world's central banks have realized that they must provide an alternative—or risk missing out on the future of money.

In fact, a CBDC is being considered by 105 countries, representing more than 95% of the global GDP. Only 35 countries were considering a CBDC as of May 2020. A new high of 50 countries is in the advanced stages of exploration (development, pilot, or launch). A digital currency has been fully launched by 10 countries, with China's pilot scheduled to expand in 2023.<sup>18</sup>

The first National Blockchain Strategy for Bangladesh was released in March 2020. The main objective of the approach is to turn Bangladesh into a "country enabled by blockchain." In the strategy, blockchain is presented as a tool that Bangladesh can use to fulfill SDG 9—the goal that deals with infrastructure, industry, and innovation—and other SDGs. One of the key objectives of the NBS 2020 is the formulation of blockchain-friendly legal and policy frameworks. The NBS 2020 has outlined various blockchain technology use cases, but there are gaps in the document's wording as well as some challenges that may arise during implementation.<sup>19</sup>

For instance, the willingness was expressed to build a blockchain-based land registry system which would include storing the hash values of documents like a title deed for land on a permissioned blockchain. It would be very hard to tamper with the documents related to land ownership without being detected since any change to the document would instantly change the hash value. But if a mistake is made in entering land ownership data, the non-manipulable nature of the blockchain eliminates the option of reversion.<sup>20</sup>

## **Conclusion**

From a historical standpoint, cryptocurrencies are still a relatively new phenomenon. As a result, the expansion of a fiat currency that is not backed by any state is bound to be a volatile process. Ultimately, the success of cryptocurrencies will depend on the trust people put in them. Garnering this trust will, no doubt, be a long and arduous process that has just begun. On the other hand, while most cryptocurrency enthusiasts are fond of its decentralized nature and the absence of any third party, the recent collapses may change their minds.

As for the developments that have taken place in Bangladesh, it is too early to predict whether the idea of a centralized digital currency will be successful. However, Bangladesh is arguably on the right track because cryptocurrencies, like everything else, have both advantages and disadvantages, but the disadvantages can be eliminated or at least mitigated through proper governance. What must be ensured is that the relevant policies are properly drafted, regularly updated, and properly implemented at all stages, or else they will have the same effect as toothless tigers, as is the case for many other policies in our country.

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