THE GROB

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Editor's Note

Welcome, human. Cryptocurrencies are experiencing all-time-highs and I find myself in a similar situation to 2017, with friends and family asking questions and craving knowledge. Sadly, it seems to me, that they are asking the wrong questions and craving the wrong kind of knowledge.

This has led to the creation of *the Grob*. Inspired by *Grant's Interest Rate Observer*, it is supposed to become a sort of once or twice a month journal, commenting on and educating about cryptocurrencies and financial infrastructure. The name *the Grob* derives from *the great observer*, which was chosen not only because of a lack of modesty, but mostly because the domain was - to my surprise - still available.

This issue of *the Grob* consists of a brief commentary on today's market, followed by articles explaining concepts, that I believe to be elementary to any discussion centered around cryptocurrencies. The first article is emphazising some differences between traditional currencies and cryptocurrencies. The second article will explain some properties of currencies, that nobel prize laureate Friedrich Hayek deemed appropriate for estimating a currency's usefulness. The third article defines financial infrastructure and indicates a model, that can be used for assessing the effectiveness thereof. Enjoy the read.

Today's Market

COMMENTARY

Cryptocurrency valuations are through the roof and one is rightly wondering, if we're in the midst of a bubble again. Unlike 2017, when the prices were driven by retail investors, this year it is institutional money flooding the market [7], [2].

This begs the question why institutions are willing to place bets on assets that are incredibly volatile, whose real value has yet to be determined and are thus of unparalleld risk comared to the stock or bond market. The answer to that question lies in historically low interest rates.

Interest rates are so low, that most bonds yield a *negative net interest rate*. For people unfamiliar: interest rates define the price for money over a fixed period of time. The *net interest rate* refers to the interest rate adjusted for inflation. A negative net interest rate occurs, when inflation is higher than the interest rate of a loan.

This situation originated in the financial crisis in 2007, when the federal reserve and other central banks began taking measures of quantitative easing. Essentially, central banks were printing money and they increased the printing speed in the early beginning of the Covid-19 pandemic.

According to economist William White [1], this leads to an unhealthy market. As he explained in a recent conversation with Jim Grant, quantitative easing leasds to artifically low interest rates, resulting in cheap debt and a mis-pricing of risk.[1]

Inflation is eating up returns on relatively secure investments, including the value of cash-holdings. So in order to preserve the buying power of their fortune, investors are seeking ever riskier asset classes, as those are the only ones still giving a positive yield. This explains why the stock-market is at an all time high and why crypto-currencies might seem like a viable asset class for institutional investors.

Differences between (Crypto)Currencies

FUNDAMENTALS

There are two main differences between cryptocurrencies like Bitcoin [5] and fiat currencies like the US Dollar: The first and obvious one is the underlying infrastructure, that is enabling transactions of the currency. The overwhelming majority of circulating fiat currency is traded on a network of governmental institutions, central banks, private banks and private companies. This network is relatively vulnerable and consists of many single points of failure. As such, much care has to be taken before allowing any new entities on the network. Governments know about the importance of their financial infrastructure and regularly assess its security. The International Monetary Fund (IMF) is publishing reviews of selected member state's financial infrastructure.[2]

Cryptocurrencies are run on a network of servers, that can belong to private entities as well as companies or governments. Most of these networks, with a few exceptions, are permission-less, meaning that anyone can connect with and become a a part of them. This *open door policy* is possible, because the underlying network is secured through cryptographic protocols, that allow for a certain percentage of network participants to be malicious or corrupted, without jeopardizing the functionality of the network. The network is thus much more redundant compared to traditional financial infrastructure.

The second big difference between cryptocurrencies and fiat currencies is the underlying rule-set. A fiat currency is issued by a few central banks that decide, if there will be more or less units of the currency. On a second layer, private banks act as force multipliers. They are essentially creating new money through loans. Fiscal policy determines the required collateral of these banks and thus bounds

[1]Here is a conversation between the two from late 2020: https://youtu.be/8cYGmGZOabQ

[2]for example this one for Switzerland: https://www.elibrary.imf.org/view/journals/002/2019/190/002.2019.issue-190-en.xml

the factor by which the original money supply can be multiplied. Therefore the rule-set of fiat currencies is defined by at least two factors: monetary and fiscal policy, both of which can be changed if the central bank, or the current legislative power of a nation, decide to do so.

Cryptocurrencies are essentially a piece of code. That code contains the entire rule-set of the currency, defining monetary and fiscal policy at once. It also defines under what circumstances rules can be changed. Whoever controls the network, controls the code and can decide on the rules. There are many centralized cryptocurrencies that are essentially governed by a single private company. Such a centralization of control not only comes at a significant innate risk with regard to the security of the underlying network, but also at a great political risk. These companies operate in new legal territory and make for a great target by regulators. Ripple, a large cryptocurrency, is a prime example of this and the issuing company is currently in a lawsuit with the American Securities and Exchange Commission [6].

It seems intuitive that centralized cryptocurrencies might have a very hard time ahead, as legislative pressure will most likely increase over time. Further, it has to be asked, what the benefit of a centralized currency might be. To fully answer that question, a deeper analysis of these networks is required.

The good Currency

FUNDAMENTALS

According to Nobel-prize laureate F.A. Hayek, there are four uses for a currency: to purchase goods, to hold as a reserve for future payments, as a standard for deferred payments (e.g. in loans) and as a reliable unit of account. [4]

The first use requires a well developed infrastructure, on which the currency is traded and exchanged, possibly with the option of easily converting between other currencies. For the other three uses, Hayek claims that a currency of stable value would eventually serve best.

The last point explains why Bitcoin, currently the largest cryptocurrency, according to market capitalization[3], will never be a market dominating currency. With a fixed supply, Bitcoin's price will always be determined by demand. Demand, on the other hand, will most likely never be stable, but ever fluctuating.

Ether [3], the second largest cryptocurrency in market capitalization, does not have a fixed supply. However, price stability is not a priority for the Ethereum community, as Ethereum does not desire to be a currency for every day use. Instead, the network aims to provide the financial infrastructure, on which other currencies are traded. Ether is the fuel of the network, used to pay the fees for using the network. As such, its success must be measured with respect to the quality of its infrastructure, rather than its properties as a currency.

The good Infrastructure

FUNDAMENTALS

There are three things financial infrastructure must satisfy in order to be useful. First, it must be sufficiently powerful to enable all the transactions that are taking place on it. This is called *scalability* and the traditional financial infrastructure is very good at this. Cryptocurrencies, for the most part, are not.

The second aspect is *security*. It is important that someone's money is not transferred without their consent and that transacted money is arriving in the designated account. Traditional financial infrastructure and most cryptocurrencies are doing quite good here, although there are many astrerixes to both. While traditional financial infrastructure has many single points of failures, making it vulnerable to targeted attacks, insurances and security nets are mitigating those risks extremely well. On the other hand, many of the networks, on which cryptocurrencies run, are decentralized and secured through mechanisms, that allow for a great part of the network to be corrupted, without affecting functionality or security. The caveat is that there is no such thing as bug-free code. In fact, some bugs have been found in the past, that could have severely harmed the integrity of some of these networks.[4] Similarly, it is possible, although unlikely, that some of the cryptographic primitives on which these networks are built, might be proven unsafe.[5]

The third aspect to consider when assessing the quality of financial infrastructure is the size of its ecosystem, which is primarily determined by its number of users. Unused infrastructure is not providing any value. On the other hand, the number of possible connections rises quadratically with the number of entities on a network.

Ease and cost of access are two important factors influencing people's decision to use an infrastructure. While the traditional financial infrastructure has a high cost of entry, it makes up for that by being host to a big ecosystem, that is connecting billions of people and companies. Cryptocurrencies provide once more a heterogeneous picture: while most are easily accessible, some are quite restrictive; while some are starting to create a size-able ecosystem, others are lacking.

Outlook

COMMENTARY

The perfect financial infrastructure has yet to be created, but research and technology are progressing quickly and most likely, within the next five to ten years, these networks will scale and be secure. The reader is invited to envision the benefits a secure and *accessible* global financial infrastructure could bring to the individual. Similarly, what would be the implications of a truly stable currency? Imagine that what you save today, still holds the same buying power fifty or sixty years from now. Wouldn't this sort of currency reward long-term thinking and hard work? And if so, what are we rewarding with today's floating-value currencies?

[3] source: https://coinmarketcap.com/

[4] Just one example: https://www.coindesk.com/tech/2020/09/09/high-severity-bug-in-bitcoin-software-revealed-2-years-after-fix/

[5] The SEC named this one of the reasons for rejecting the *VanEck Bitcoin Trust* ETF: https://www.sec.gov/rules/sro/cboebzx/2021/34-93559.pdf

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