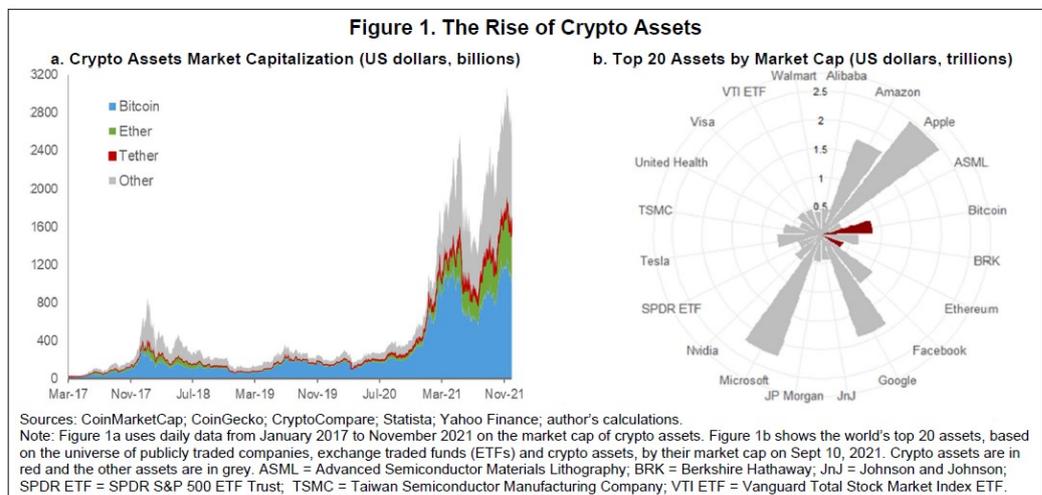


## Investing in Bitcoin

Crypto-currencies are a new asset that is achieving some notoriety in the capital market. Since its appearance in 2009, more than 10,000 crypto-currencies have been created in the world and more are born every day. Now, most of these “currencies” are empty assets and, therefore, subprime. In a recent report published by the IMF under the name “*Cryptic Connections: Spillovers between Crypto and Equity Markets*”,<sup>1</sup> The economist Tara Iyer collects three very interesting ideas, which we expand on and comment on here:

- 1) A strong increase in investment in crypto-currencies is observed, both in the retail and institutional markets, reaching a large volume compared to other stock market assets.



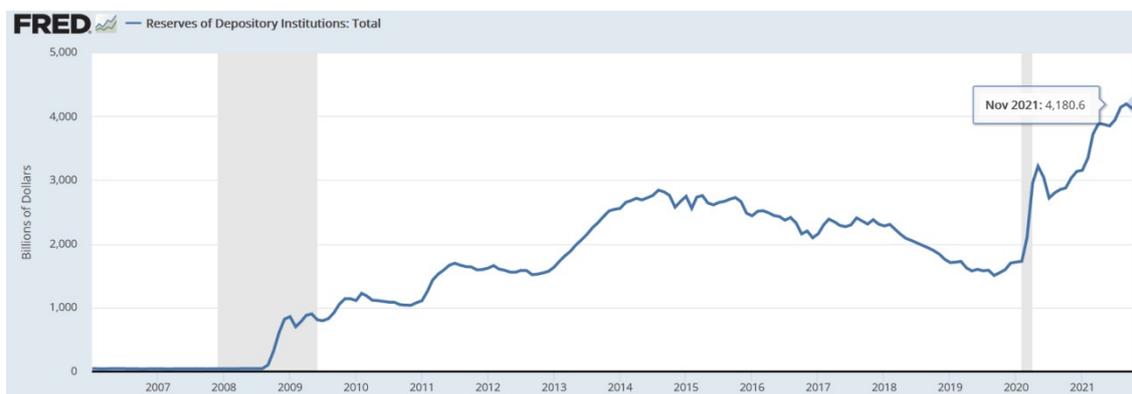
- 2) The study suggests that the interconnectedness between crypto markets and the stock market has increased markedly in recent years (2017–2021)
- 3) The extreme volatility of this type of asset, lacking specific regulation, represents a potential systemic risk in the capital market. Thus, regulators and supervisors need to closely monitor action in the crypto markets and the exposure of financial institutions to these assets, and design appropriate regulatory policies to mitigate systemic risks emanating from crypto price spillovers”.<sup>2</sup>

All cryptocurrencies are crypto-assets, they are one more safe-haven asset, such as real estate, gold, stocks, works of art, stamps, etc., which is why purchases in Bitcoin are accounted for in the assets of any investor's balance sheet. But not all crypto assets are cryptocurrencies. Indeed, there are crypto assets that have backing values or are collateralized. They are the so-called stablecoins, such as Tether and TrueCoin, both backed by the US dollar.

<sup>1</sup> <https://www.imf.org/en/Publications/global-financial-stability-notes/Issues/2022/01/10/Cryptic-Connections-511776>

<sup>2</sup> Tara Iyer, *Cryptic Connections: Spillovers between Crypto and Equity Markets* (IMF, January 2022) p.3

So, why are cryptocurrencies so successful? The success of cryptocurrencies lies in the failure of national currencies and the confiscatory policies of some governments. As more money is issued than the market needs, inflation rises and all safe-haven assets increase in value. Today there are more than 4 trillion dollars sitting in the Federal Reserve. In other words, there is a monetary overcapacity of 4 trillion dollars. And in Europe the figures are somewhat lower in absolute values, but similar in relative values.



Second, this kind of asset is successful because there are countries that have practiced mandatory currency conversion. In Africa, there are states that welcome the arrival of dollars for payment of exports, but make it difficult to transfer dollars or euros once they are inside the country. This type of tool makes it possible to circumvent government controls, by charging African exports in crypto assets. “In 2002, the Argentine Minister of Economy dictated the *pesification* of all bank balances in dollars, in other words that accounts and deposits denominated in dollars would be converted to pesos at the official exchange rate. This measure angered most savers, which led to legal action to declare the rule unconstitutional. The Argentine Supreme Court declared *pesification* legal in 2004, based on the national economic emergency situation at the time. Argentines have well-founded reasons to keep their savings in crypto assets rather than in dollars. [...] The same thing happened to the Americans on April 5, 1933, where Franklin D. Roosevelt, through the Executive Order 6102, declared that, due to a national emergency, it prohibited the hoarding of gold coins, gold bullion, and gold certificates within the continental United States. In return they would receive 20.67 dollars for each troy ounce (31.1 grams) delivered. Something similar happened in Spain with the Decree-Law of March 14, 1937, which forced them to deliver to the State the foreign currency, gold or silver coined, and other financial assets, being able to denounce the offenders, with a prize of 50% of the fine imposed on the offender upon final judgment, and infractions would be punished with temporary imprisonment and a fine of between five and ten times the value not delivered”.<sup>3</sup>

Third, this type of asset is successful because of rational monetary ignorance. Citizens often forget that money is an asset created as a means of exchanging work. When this medium is abundant, beyond natural limits (Wicksell) is used to speculate.

<sup>3</sup> Pedro Gómez, *The Wealth of Nations in the 21<sup>st</sup> century* (Almería: Circulo Rojo, 2019) p.272



Sometimes people speculate in tangible assets (such as gold or real estate), but other times they speculate in intangible or vacuous assets, such as Bitcoin. At certain times, society enters an inexplicable phase of collective dementia (animal spirits) that makes it participate in speculative fashions. The first documented example of a gigantic social speculative euphoria was the Dutch Tulipomania of the 17<sup>th</sup> century. At that time the Netherlands was the world's leading economic power, with the highest development of capital and financial markets. The abundance of monetary-substitutes (promissory notes, bills of exchange, etc.) led to a large part of the wealthy population investing in tulip bulbs. A bulb could cost the equivalent of a craftsman's salary for 15 years. In 1636 a bubonic epidemic plague decimated the Dutch population. The lack of labor multiplied the prices even more, and an irresistible bull market was generated. Such was the fever that a market for futures is created, from bulbs not yet harvested".<sup>4</sup> To my understanding, the current circumstances of Bitcoin are proportionally similar to the business environment of the Netherlands in the 17th century.

Fourth, because there are countries that are adopting or tolerating them as work tools, which fosters rational monetary ignorance. In June 2021, The Salvador was the first country to accept Bitcoin as legal tender and in August 2021, Cuba it also accepted Bitcoin as an alternative and parallel legal tender. But in September of that same year, China was the first country to ban all crypto-currency transactions, mining, or trading. This measure is basically intended to prevent capital outflow.

Fifth, these types of pseudo-currencies are successful for money laundering and organized crime. Cryptocurrencies are still unregulated in many countries and, at the same time, legal. Moreover, many of the platforms to invest in cryptocurrencies are not controlled by local authorities. In countries where there is regulation, the regulations are aimed at preventing this kind of activity, but the means of controlling this type of transaction are still scarce. And although some downplay organized crime linked to cryptocurrencies, as an example indicate that the Irish Justice, in 2020, confiscated €53 million of Bitcoin for drug trafficking.<sup>5</sup>

The risks when investing in Bitcoin are evident:

1) In the short term, (i) given that 95% of Bitcoins are in the hands of 2.4% of addresses (holders), the market price of this asset does not meet the basic requirements to be considered a free price and liquid. (ii) The loss of the password implies the loss of all savings. This happened to Stefan Thomas, a German engineer who lost his password to enter the Bitcoin wallet. If he exhausts the three attempts offered by the system, he will lose the 220 million dollars.<sup>6</sup>

2) In the long term there are different risks.

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<sup>4</sup> Wikipedia, Tulipomania

<sup>5</sup> Drug dealer loses codes for €53.6m Bitcoin accounts Criminal Assets Bureau seizes 6,000 Bitcoin but sale impossible without access codes (The Iris Time, February 21, 2020)

<sup>6</sup> Lost Passwords Lock Millionaires Out of Their Bitcoin Fortunes (The New York Times, January 12, 2021)

(i) As there is no authority behind this organization, there is a risk of being able to violate the security of the blockchain. Mathematically it is possible, but today the cost is unaffordable, given that a hacker would need a power computational greater than all the miners in the system, that is, a capacity greater than that of companies the size of Amazon or Google. However, in the future quantum computers will be able to achieve that goal if the organization does not adapt the Bitcoin system to use quantum algorithms. During that adaptation time frame, the possibility of the system being hacked is real and the losses could be multimillionaires. Whether hours or days the risk will be latent.

(ii) The cost of electricity could make crypto-currency mining unfeasible. The set of Bitcoin miners consume more energy than Argentina. Even Bill Gates has criticized Bitcoin for its environmental impact.<sup>7</sup> Recently Intel has announced that in February 2022 it will present a new “ultra-low voltage” microprocessor, for cheaper mining.<sup>8</sup> But this will not reduce power consumption. There will be more hardware working, more mining competition, and equivalent power consumption. We have already seen these phenomena with paper or gasoline. In the 90s we were told that paper consumption would go down with computers, but it increased. In the 1980s they also told us that with the new injection engines, gasoline consumption would drop, but it increased. The same thing will happen with the new Intel processor. The higher the price of any crypto-currency, the more miners will want to get the mining prize, the more they will invest in hardware if the energy cost drops, so the energy consumption will remain the same or even increase.

(iii) As we can see in the table below, the supply or production of Bitcoins is scheduled to decrease, and if the current production is maintained, the last Bitcoin would be issued in the year 2144

#	# BLOQUE	RECOMPENSA	# BTC INTRODUCIDO	AÑO
0	0	50	10500000	2008
1	210000	25	5250000	2012
2	420000	12,5	2625000	2016
3	630000	6,25	1312500	2020
4	840000	3,125	656250	2024
5	1050000	1,5625	328125	2028
10	2100000	0,04882813	10253,90625	2048
15	3150000	0,00152588	320,4345703	2068
20	4200000	0,00004768	10,01358032	2088
25	5250000	0,00000149	0,31292439	2108
30	6300000	0,00000005	0,00977889	2128
34	7140000	0	0,00061118	2144
TOTAL DE BITCOINS EN CIRCULACIÓN.....			21.000.000,00	

<sup>7</sup> Bill Gates advises not to invest in Bitcoin: this is how the founder of Microsoft relates cryptocurrencies to environmental damage (Business Insider, March 11, 2021)

<sup>8</sup> Intel to Unveil 'Ultra Low-Voltage Bitcoin Mining ASIC' in February (coindesk.com) January 18, 2022

But the increase in competition and the reduction of work (mining), will cause miners to have less incentives (rewards). It will be increasingly difficult to find a valid solution to the crypto-currency algorithm and it is possible that, due to Zeno's Paradox, the last Bitcoin will never be found, in other words, Bitcoin will never reach that limit due to the use of rounding operators in your base code. This is because the block rewards and supply of Bitcoin are never expressed in exact terms. But in any case, what will happen to the miners if they have fewer and fewer incentives? Without miners, transactions are not confirmed and the entire blockchain system stops working. In each transaction a small part of the money goes to finance the miners, but this amount today is negligible compared to the benefits of mining. Once the mining ends, the commissions will have to be increased or the miners will disappear. The popular assumption that there are no intermediaries in Bitcoin transactions is false, since miners do jobs similar to those of a bank.

(iv) Bitcoin presents a dynamism problem. Stock exchanges can register up to 80,000 transactions per second, and VISA about 20,000, but Bitcoin, by software design, can only process 7 operations per second. If its popularity increases, users may experience delays in their transactions and the system may become bogged down.

(v) As a fifth risk, it should be noted that, as the supply of Bitcoins is decreasing, the market will be proportionally less liquid, making it more speculative every day. Regarding the volatility of Bitcoin, remember that in January 2022 Bitcoin reaches its lowest level since September 2021 and falls 40% compared to its historical maximum.

(vi) There is a risk that the initially agreed emission ceiling of 21 million Bitcoin will be increased. To change the limit of Bitcoins it will be necessary to change the protocol and convince the majority of the network (miners) to accept the new limit. This may seem quite difficult to achieve today, but in a time of systemic distress, where everyone stands to lose everything, it may be quite easy.

Some think that when the emission limit of 21 million is reached, the system will collapse. Everything seems to indicate that the Bitcoin system has too many uncertainties. It would not be surprising if, at a given moment, the system collapsed, as happened in the bubble of Tulipanes in the 17<sup>th</sup> century. And this should not worry us if there were no collateral damage that the whole society ended up paying (bailouts, socialization of losses) due to the absurd popularity that these empty currencies are reaching among institutional investors.

For all the above, it is surprising to make statements of the type: "by the year 2030 Bitcoin will end state money".<sup>9</sup> Even assuming that governments maintain a sit-down policy in this matter, it is impossible for Bitcoin to ever become the only official currency or the de facto currency of any country. And this is so based on the

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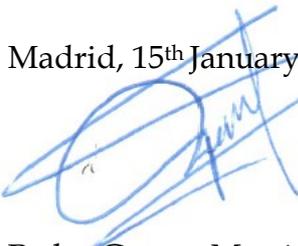
<sup>9</sup> Herminio Fernandez, *I estimate that in 10 years Bitcoin will end traditional money* (23 December, 2020) Founding member of Eurocoinpay.

*Progressive Growth of the Money Supply Principle.*<sup>10</sup> By keeping the amount of Bitcoins constant, the economy would be strongly deflationary, thus losing one of the fundamental characteristics of any currency: the unit of account. In addition, the indebtedness of a State in non-sovereign currency would suppose a gigantic risk and, additionally, the Central Bank would not be able to come to the rescue of the systemic entities. These types of statements show a deep ignorance of what a monetary and financial system is, promoting the animal spirit.

The trend towards the digitization of the economy is an unstoppable phenomenon. The authorities want to eliminate physical money to eradicate black money. We have heard in the media countless initiatives by governments and central banks in this regard. But why has not any state done this? What difficulties do States encounter in eliminating paper money? Other questions that also arise are: Will stablecoins unseat cryptocurrencies? Have there been instruments similar to stablecoins throughout history? Was there any attempt to create digital currencies by a consortium of private corporations? Are there similar currency alternatives that do not consume as much energy? Could there be a banking system based on Bitcoins? Could the financial entities that hold Bitcoins apply the fractional reserve when the system reaches the emission limit? Will private cryptocurrencies continue to be recognized by other States as a means of payment?

These types of questions will be the subject of future articles.

Madrid, 15<sup>th</sup> January 2022



Pedro Gomez Martín-Romo

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<sup>10</sup> Pedro Gómez, *The Wealth of Nations in the 21<sup>st</sup> Century* (Almería: Circulo Rojo, 2019) The Pattern of Interest and this principle are addressed in detail throughout the book.

