# A centralized cryptocurrency among decentralized cryptocurrencies: an analysis on the viability of the Petro in Venezuela

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**ABSTRACT:** Cryptocurrencies have grabbed headlines all over the world since a few years ago due to its relative short emergence and the complexity of its decentralized operational system that have risen questions towards its regulation. Optimists claim that they will fundamentally alter payments, economics and even politics around the world. Pessimists, on the other hand, claim cryptocurrencies are inherently broken and will suffer a collapse. This paper will briefly synthesize the existing literature about the origin and purpose of cryptocurrencies with special emphasis on the Bitcoin for being this the first cryptocurrency introduced in the market. It will then describe emergence of the Petro a former cryptocurrency proposed by the Venezuelan government. Finally it will analyze how this proposal clashes with the current concept of decentralized cryptocurrencies and will discuss the reliability of the proposal and the political challenges to implement this system in the country.

KEYWORDS- Bitcoin, Blockchain, Crypto-currencies, Petro, Venezuela

# I. INTRODUCTION

All currencies need some way of control. Not only to prevent fluctuations, but to guarantee supply and fight speculation. Usually, Central Banks are the organizations that manage the security of the money inside each country, as law enforcement and bureaucracy is necessary for preventing people from breaking the rules of the system. Unlike fiat currencies, the cryptocurrencies implies a new challenge of the matter. First of all, because they only rely on free access technology with no regulation. Secondly they exceed state-control and use cryptography. This is a mechanism that guarantee the encoding of the currency, due to a mathematical protocol. Or, in other words: "Cryptography is a deep academic research field using many advanced mathematical techniques that are notoriously subtle and complicated" (Narayanan et al. 2016).

Bitcoin serves as a good example of how these currencies work. First of all, "it relies on only a handful of relatively simple and well-known cryptographic constructions (...), as an online communication protocol that facilitates the use of a virtual currency, including electronic payments. Since its inception in 2009 by an anonymous group of developers: Nakamoto 2008, Bitcoinhas served approximately 62.5 million transactions between 109 million accounts" (Narayanan et al. 2016). This due to its incredibly easy access that allows anyone to create an account:

without charge and without any centralized vetting procedure— or even a requirement to provide a real name. Collectively, these rules yield a system that is understood to be more flexible, more private, and less amenable to regulatory oversight than other forms of payment (Bohme, et al. 2015: 214)

MacCarthy (2010) states that bitcoin's system implies three mayor limitations. The first one is regaring the lack of governance structure, this implies that bitcoin's holders do not have any institution to claim any right in case of infringement. Also, financial institution may not carry all the process (verify user's identity, cross-check, etcetera) as there is no regulator behind this type of payment. The second one, there seems to be no limitation of whom uses the currency, nor the place. Typically, financial institution disallow some transactions depending on the place of sale. Finally, the payments are irreversible, leaving no place for error or for claiming back a purchase.

Regardless, these limitations seems to be part of their essence. Or, As Bohme et al. (2015) states: "These design decisions are intentional—simplifying the Bitcoin platform and reducing the need for central arbiters, albeit raising concerns for some users (Bohme et al. 2015).

# II. INTRODUCING A NEW CRYPTOCURRENCY: THE PETRO

Cryptocurrencies aspire to be a new form of money. Yet, there is a debate about its applicability because of the mystery that surrounds them. Common citizens hardly know them, making them very difficult to be applied in the daily transactions. Nevertheless, amid a huge economic crisis, the Venezuelan government has bet in creating its own: The Petro.

The Petro was the first cryptocurrency promoted by a government. The 31 of January of 2018, the Superintendency for Crypto-assets and related activities of Venezuela (SUPCACVEN, by its initials in Spanish), published the so-called "Petro's White Paper", in order to establish some kind of path-through, freeing possible investors from fear and generating trust, which is highly needed in this sort of field. All this is sustained by the idea that Venezuela has the biggest oil reserves in the world. And, being "the oil market larger than the sum of all the metal markets, the situation places Venezuela in a privileged position, as it is the holder of the largest proven reserves of crude oil (300,900,000 barrels) and of great competitive advantages in the production of electric power" (SUPCACVEN, 2018).

RANKING	PAÍS	BARRILES DE PETRÓLEO
1	Venezuela	300.900.000.000
2	Arabia Saudita	266.500.000.000
3	Canadá	169.700.000.000
4	Irán	158.400.000.000
5	Iraq	142.500.000.000
6	Kuwait	101.500.000.000
7	Emiratos Árabes Unidos	97.800.000.000
8	Rusia	80.000.000.000
9	Libia	48.360.000.000
10	Nigeria	37.060.000.000

PRINCIPALES RESERVAS PETROLERAS CERTIFICADAS EN EL MUNDO

According to the paper, the materialization of the Petro began with the idea of former president Hugo Chávez of creating a strong type of currency. This serves as a warning for what is to come. All the paper consists of unclear ideas, that hardly proves a real vision of how the *Petro* is going to work. But, what is totally clear are the intentions on promoting and designing a crypto-asset that make good use of Blockchain technology

in order to work as an "instrument to give economic stability and financial independence to Venezuela, joined into an ambitious and global vision for the creation of a free, balanced and fair international financial system" (ibidem).

Therefore, the justification of this payment method relies on taking advantage of:

- 1. The early maturity of blockchain technology.
- 2. A market of more than thirty million people eager for instruments for saving, investment and international exchange.
- 3. A world-renowned oil industry
- 4. The participation of allied governments and enthusiastic promoters of cryptocurrencies for the development of a new economy around the world.

(ibid).

Also, the aim of the raised funds was to be distributed as follows:

- 15% innovation support (related to Blockchain)
- 15% ecosystem development projects
- 15% further development of the "Petro" platform
- 55% independent fund

Furthermore, highlighting that this method will be able to skip "blockage, delays and limitations" (ibid) or, in words of President Nicolás Maduro, "Venezuela will create a cryptocurrency ... the 'petro,' to advance in issues of monetary sovereignty, to make financial transactions and overcome the financial blockade (...)" (Maduro, according to The Guardian, 2017). In sum, it was intended to "promote the country as a global reference to sovereignty in front of the big global financial centres" (SUPCACVEN, 2018).

Now, after all that ideological facade the logical question arises: how it was supposed to work? Well, according to the same White Paper (2018): "The Petro (PTR) will be a sovereign crypto-asset backed up and issued by the Bolivarian Republic of Venezuela on a federated blockchain platform" (ibid). Thus, "trust", which is the main factor for the viability of a cryptocurrency, falls over the country. Furthermore, this platform was supposed to have three stages: a) Medium of exchange, used to purchase goods and services; b) Digital platform, to create other digital instruments; and c) Savings and investment instrument, because it will hold its value.

But, when it comes to mining we face another setback. This paper does not clearly say how the coin could have be mined. Apparently, it could be pre-mined by the state who will issue "and put up for sale (...) one hundred million (100,000,000) (ibid), keeping 17.600.000 to itself and selling the rest (Rojas, 2018). And, "the petro will arrive at the public through a pre-sale of 38.400.000 units and an initial public offer of 44.000.000 additional units" (ibid).

This pre-sale began on March 1, 2018, and lasted for over a month. It consisted of "the creation and sale of an ERC20 token on the blockchain of the Ethereum platform" (SUPCACVEN, 2018). But, some days prior to the sale, without any further explanation, President Maduro sent a tweet saying that the platform will change from Ethereum to NEM and Zeus: "We have signed two fundamental agreements for El Petro to circulate on the most advanced platforms in the world, thanks to the confidence of the companies Zeus and NEM" (Maduro, according to CCN, 2018).

This drastic and unjustified maneuver, left a big confusion between the public. Nevertheless, unbelievable as it may sound, the President announced that during the pre-sale the Petro reached over 5.000 million dollars. Although, many sceptics criticize this by saying that there is no way to prove that this amount is

correct. Believing that it is just a government's strategy to manipulate the public perception and auto generate trust into its cryptocurrency.

Having said this, we must clarify that the implementation of the Petro aimed to cover international and national markets. With the launching of the Petro, the Venezuelan government wanted to establish the currency for domestic purposes, allowing taxpayers, for example, to use it as a method of payment: "The Bolivarian Republic of Venezuela guarantees that it will accept Petro as a form of payment of taxes, fees, contributions and national public services, taking as a reference the price of a barrel of the Venezuelan basket of the previous day with a percentage discount equal to Dv." (ibid). Now, like the Bolívar (Venezuelan currency) the price of the Petro seemed to be established unilaterally by the government, throughout a formula that might vary depending on the price of the oil. This formula is:



To be clear, the "Dv" discount means the "percentage difference" and "is equivalent to the rate of current discount to the Petroleum State, which will be 10% if more than 48,000,000 of Petro have been placed on the market, and will only be higher until this quantity has been reached" (ibid). Leaving an open interpretation of how this "Dv" could vary.

Finally, recalling from what is previously stated, the Petro seemed to be very blurry in this early stage. It is very difficult to establish a sentence about why it failed. This initiative has been broadly criticized because of the actor, Venezuela. So the idea has not been taken seriously into account. In the next chapter, we will try to analyze the viability of the Petro with the current market as it was back then.

# **II. 2.VIABILITY OF THE PETRO?**

First, we must establish that the Petro no longer exists. It worked for around six years disappearing without leaving behind explanations. The experience of the Petro as a cryptocurrency raised many questions over its viability as a method of payment. We have established how it pretended to worked, according to the *White Paper* of the Petro. But, one thing is what it is written and a very different thing is the enforcement. Therefore, we will aim for the analysis of every separated aspect, hoping for a proper understanding of how the cryptocurrency worked and why it may have failed.

# **II. 2.1.CREDIBILITY**

The Petro was introduced as an alternative method of payment. Due to Venezuela's economic stagnation, the devaluation of the currency and "the economic blockade" (Maduro, according to The Guardian, 2017), the Petro tries to exploit a niche based on the development of new technologies. Laura Rojas (2018) remember that after the Second World War, the dollar replaced the pound sterling as an international reserve currency; that is, other countries began to accumulate dollars or assets denominated in that currency in their international reserves funds and to use it as a reference to carry out commercial and financial transactions globally" (Rojas, 2018).

So, when it comes to "reserve currencies", the only thing that really matters is the trust in its instability. This trust is gained through credibility in the country; in its institutions, policies, economic background,

etcetera. Therefore, creating a cryptocurrency is everything but easy. As an example we have China; not even its major and booming economy has served to replace the dollar as the new "reserve currency".

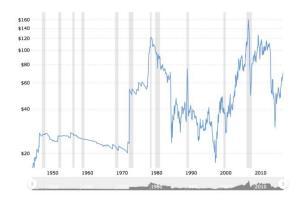
This is very important to stress out because Venezuela lacked (and lacks) of "international credibility" back then. As an example, the last presidential elections that were held on March 20, 2018, more than a dozen countries rejected the before-mentioned elections, calling them an electoral fraud and a facade to cover a dictatorship. Furthermore, the Venezuelan economy was presenting the highest inflation around the globe. According to the National Assembly, the cypher rises up to over 6.000% and its estimated to reach 131.985% by the end of the 2018.

Apart from the inflation, other economic causes had perjury the reputation of the government: a default. Or, according to *Forbes* a "quasi-default". "Once one of the richest countries in the region, it is in now in the embarrassing spot of being the basket case of South America (...). Venezuela entered into restricted default in November [of 2018], making late principal and interest payments for PDVSA bonds and the sovereign" (Forbes, 2018). PDVSA is the main company in Venezuela. It stands for *Petróleos de Venezuela S.A.* and it is in charge of all the activity related to this area.

Other factors also debilitated the credibility in Venezuela. The United States of America declared that some of the hierarchs of the Venezuelan government are involved in trafficking narcotics. While some of this allegations have not been proven, the nephews of Venezuela's first Lady, Cilia Flores, held a trial in U.S. soil and got convicted "to 18 years behind bars for conspiracy to traffic cocaine" (Insight Crime, 2017). This, plus many more allegations, may have impaired any political possibility of getting the necessary support for the *Petro*.

#### **II. 2.2.TRUSTING THE PETRO**

This point differs from the previous one as it is not related to the credibility in the country, but in the idea itself. Let's suppose that the government of Venezuela enjoys great political credibility and economic solvency. Still, the idea of putting money into something which is extremely volatile seems very frightening. For example, if we check a chart regarding the historical prices of oil, we face a very disturbing reality. In September of 2014, the price established was of \$100 per barrel. Then, in just 4 months the price dropped to half. This drastic change has occurred many times, being the Petro a very difficult saving method.



(Source: macrotrends)

#### **II. 2.3.BACKING UP THE PETRO**

Following on the previous point, according to the official announcements, and the *White Paper*, the Petro was backed up by the enormous oil reserves that the country has. This opens an interesting debate on

cryptocurrencies since the other ones lack some sort of backing (at least in the material sense, as the "blockchain" is the theorical backing of the Bitcoin, for example). But, the thing that we need to take into consideration is that this huge reserve of crude lays beneath the ground and is not yet extracted. Therefore, *a Petro is like a promise yet to be fulfilled*. Also, this promise does not guarantee a barrel of oil, because the Petro does not translate directly into it. If that were the case, someone could exchange its Petro for a barrel that actually worth's something in the international market.

The only real backing for the Petro was the domestic acceptance as a method of payment for taxes, goods and services, etcetera. By the time, a renovated iconic hotel in Venezuela, The Humboldt, was going to accept payments in Petro. This hotel, "according to President Maduro, (...) is going to be the first seven-star property in his crisis-stricken Bolivarian Republic" (News Bitcoin, 2018). But, this was never the case, and the Petro was only used as a price reference for some governmental payments such as fines, taxes, etcetera.

# **II. 2.4.LACK OF TRANSPARENCY**

Fourthly, transparency might be a cause for credibility. Whether is to build it or to lose it. We already remarked that the government said the Petro gather over 5.000 million dollars in its first auction. This declaration was very hard to believe. Not only because many economists have said so, but because of the lack of transparency and lies over the subject.

Everything around the Petro was a mystery. For instance, the government suddenly changed the platform from Ethereum to NEM and ZEUS. However, the reason of this change was not properly informed. And every change was introduced with a single tweet: "We have signed two fundamental agreements for the Petro to circulate on the most advanced platforms in the world, thanks to the confidence of the companies Zeus and NEM" (Maduro, according to CCN, 2018), without further explanations. And to add up, NEM rapidly denied a political link with Venezuela as they declared:



The fact that the government did not guarantee a blockchain platform and most importantly, the fact that they spread fake news as an attempt to support the Petro made that the level of confidence in the project decreases even more.

# **II. 2.5.CRYPTOREACTIONS**

Probably, the reason why the government left Ethereum for NEM and ZEUS was because of discrepancies with Alex van de Sade. This person is one of the main designers for Ethereum who has criticized the upcoming cryptocurrency on Twitter. His first comment was about the impossibility of following the price of the oil. In his own words: "it's basically impossible for it [the Petro] to do the one thing it's supposed to do, follow the price of the oil".

e	alex van de sande "my handle, it has 4 letters" @avsa	9
En resp	puesta a @avsa	
theory mecha impos the pri	overnment cannot create Petros (but it can) which in a should make the market happy, but there's no anism to issue or destroy the tokens, it's basically sible for it to do the one thing it's supposed to do, follow ice of oil. • 7 feb. 2018	
♡ 29	$\stackrel{\rm O}{\simeq}$ Ver los otros Tweets de alex van de sande "my handle, it $\ldots$	0

Another critique goes to the formula for calculating the price of the Petro. According to Van de Sande, the demand must be market-based, so the price should too. But, if the government fix the price taking into account another good (the oil), the price of the coin would not have its own value.

alex van de sande "my handle, it has 4 letters" @avsa
En respuesta a @avsa
The supply is limited, the demand is market based, but the price will be somehow pegged to the price of oil. Because, thanks to socialism magic, price is not set by supply and demand, but by this incredible formula where both Petro and the Bolivar are divided by themselves 16:58 - 7 feb. 2018
$\bigcirc$ 120 $\bigcirc$ 54 personas están hablando de esto

Finally, it comes to our mind to mention the distribution of the funds. We already placed the percentages, but, it is rather curious that 15% of all the money was to be directed to the "Petro Project". This, meaning to develop the required technology to continue its sustainability. So, if the technology is not yet fully developed, is not that another reason for not trusting the Petro? Well, at least we cannot completely say that there was a lack of transparency on this matter, since they openly declared it on the *White Paper*, to leave no doubts about it.

# **III. CONCLUSION**

Unlike the Bitcoin which lacks a governance structure other than its underlying Blockchain platform, the Petro was fully introduced by the government. Although, a government with one of the lowest democratic scores that is perceived as unreliable in the international arena (Freedom House, 2018). Bitcoin operational structure allows to make transactions with no prohibition on sales of particular items even if they seem unlawful transactions; In contrast, Petro was limited to investment and domestic payments which will allow the government to keep track of these records, similar to what credit card networks do.

On the other hand, the Petro was supposed to function as an alternative currency to the current Bolivar, if so, it was never clarified the difference between this cryptocurrency and a virtual currency.

If the Bitcoin -that was the first cryptocurrency placed on the market- with the most commercial and academic reviews is not fully understood or broadly known by the average consumer, the Petro certainly had less chances to ever be understood and trusted. The lack of transparency in the launching process plus a backup that seems inefficient due to the volatility of the oil prices in the market and the increasing inflation in the country made the Petro project like another utopic project.

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