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Bitcoin in Troubled Economies: The Potential of Cryptocurrencies in Argentina and Venezuela

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Abstract

The rise of cryptocurrencies in Argentina and Venezuela in recent years shows how a highly distressed economy could become fertile ground for decentralized digital currency. This article analyzes similar traits between these two nations and examines why a collateral result of high inflation, tangled monetary regulation, and political instability could be the rapid growth of cryptocurrencies that are not linked to a central bank. Mistrust in central government authorities and national currency volatility that surpasses that of traded cryptocurrencies open a window for intangible ways of storing the falling value of local fiat currency. This article sets a general framework through which to understand the growth of decentralized cryptocurrencies in developing economies and continues to explain the rise of such technology in recent times in Argentina and Venezuela.

Keywords

Argentina; Venezuela; Bitcoin; cryptocurrencies; hyperinflation.

Bitcoin en economías turbulentas: el potencial de las criptomonedas en Argentina y Venezuela

Resumen

La proliferación del uso de las criptomonedas en Argentina y Venezuela en tiempos recientes muestra como una economía altamente volátil puede convertirse en tierra fértil para las monedas digitales descentralizadas. Este artículo analiza algunos rasgos políticos, económicos y regulatorios que

resultan similares entre estas dos naciones y por qué un resultado colateral de altos índices de inflación, una enredada regulación monetaria e inestabilidad política puede ser el rápido crecimiento de criptomonedas que no estén ligadas a un banco central. La falta de confianza en las autoridades gubernamentales le abre una ventana a formas intangibles de incorporar y conservar el valor decreciente de las monedas locales. Este artículo establece un marco general sobre Bitcoin y su potencial en las economías en vía de desarrollo y posteriormente entra a analizar los casos de Argentina y Venezuela separadamente.

Palabras clave

Argentina, Venezuela, Bitcoin, criptomonedas, hiperinflación.

INTRODUCTION

Digital disruption can often fill market gaps or respond to underlying social necessities provoked by the status quo but for which a practical remedy is initially missing. The following pages will illustrate the rise of cryptocurrencies in the context of developing and troubled economies. In particular, the study analyzes the way in which Bitcoin, a trailblazing and currently leading cryptocurrency protocol, has emerged and developed in two overregulated and troubled economies: Argentina and Venezuela.

Argentina and Venezuela's recent economic and political history share multiple traits such as strict currency exchange regulation, high inflation rates, and excessively bureaucratic structures[1], among other factors, that enable a parallel analysis of the potential of Bitcoin and other cryptocurrencies in those nations. It is no coincidence that Argentina and Venezuela rank first and second respectively, in the country index for the Bitcoin Market Potential Index developed by Garrick Hileman from the London School of Economics[2].

Although similar in many ways, Argentina and Venezuela reveal particularities that make each country an interesting case study in the quest to understand the role that decentralized digital currencies could play in distressed economic contexts. The following questions will guide this research: Can Bitcoin or an equivalent cryptocurrency be a surrogate for hard currency in economically unstable contexts? And if so, what are the implications of regulating or prohibiting Bitcoin or a comparable decentralized digital currency? Should governments in developing economies such as Argentina and Venezuela regulate the use of cryptocurrencies and accept them as a backup to fiat currency?

To approach the above questions, this paper comprises three main parts. Part one provides a broad overview of Bitcoin, cryptocurrencies, and explains their importance for developing economies. Part two discusses the emergence of Bitcoin in Argentina as a natural response to

1 Ignacio Labaqui, "Who's Afraid of Reversing Neoliberal Reforms? Financial Statecraft in Argentina and Venezuela", in *The Financial Statectaft of Emerging Powers*, edited by Leslie Elliot Armijo & Saori N. Katada (London: Palgrave Macmillan, 2014).

2 Garrick Hileman, "The Bitcoin Market Potential Index". *The Social Science Research Network* (2016), https://ssrn.com/abstract=2752757.

a troubled economic climate and the reasons why this country shows such a high potential for cryptocurrencies. Part three studies the case of Venezuela, its on-going economic crisis and the way in which market distortions created by excessive regulation have rendered this country such fertile ground for Bitcoin.

Throughout this paper, "Bitcoin" will be capitalized to refer to the system, and the lower-case "bitcoin(s)" shall refer to the unit of account.

1. THE RISE OF BITCOIN AND OTHER CRYPTOCURRENCIES IN TROUBLED ECONOMIES

The concept of electronic currency is not a new one. It first appeared in the late 1980s[3], but modern cryptocurrencies were born in 2008 with the Bitcoin protocol.

A cryptocurrency can be understood as "a virtual coinage system that functions much like standard currency, enabling users to provide virtual payment for goods free of a central trusted authority"[4]. Although all cryptocurrencies rely on the transfer of digital data, Bitcoin went one step further by using cryptographic methods to ensure genuine transactions. By being the first cryptocurrency to decentralize the network, Bitcoin freed all its transactions from hierarchical power structures[5].

The concept of Bitcoin first appeared in 2008 after a still undetermined person or group of people that went by the name of Satoshi Nakamoto, sent a white paper to a cryptocurrency mailing list. Nakamoto set out the principles and architecture of the network[6].

Launched in early 2009, Bitcoin is a technology grounded in peer-to-peer networking and cryptography. One of its key features is that the interactions that take place inside the network are independent of any central financial authority. However, what makes the Bitcoin protocol so exceptional is the anonymity of transactions, the insignificant to non-existent transaction costs and the open source software that underlies the "blockchain", a public registry where all preceding transactions are recorded[7].

As originally envisioned, Bitcoin has a cardinal principle to ensure the scarcity of supply by setting a fixed number of bitcoins ever to exist and for them to be originally obtained in a paced and rational manner. Referred to as "mining", users of the network may acquire bitcoins by being part of a multilateral verification process for transactions posted to the blockchain. By being part of the transaction verification process, users of the Bitcoin network "maintain the

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3 Ryan Farrell, "An Analysis of the Cryptocurrency Industry". *Wharton Research Scholars* 130 (2015): https://repository.upenn.edu/wharton_research_scholars/130/?utm_source=repository.upenn.edu%2Fwharton_research_scholars%2F130&utm_medium=PDF&utm_campaign=PDFCoverPages.

4 Ibid.

5 Ibid.

6 Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System", *Bitcoin*, accessed November 20, 2017, https://bitcoin.org/bitcoin.pdf.

7 Ibid.

bookkeeping system as an asset ledger and consensus network, and are subsequently rewarded for their efforts"[8].

The simple reason why Bitcoin is called a virtual currency is that it lacks any physical form. It is fundamentally a concept characterized by enclosing transactions by means of exchanging encrypted messages that are verified by a network[9]. Nonetheless, bitcoins operate in a similar –if not equal– manner to typical forms of hard currency in the sense that everyone inside a network agrees that bitcoins have a specific value and can be used to purchase goods and services[10]. However, the latter is true to a certain extent. It is important to determine the differing role of Bitcoin, either as a mere means to store value or whether it can become a widespread if not ubiquitous transaction medium.

As will be further elaborated, in the cases of Argentina and Venezuela, Bitcoin plays the important role of storing value in a context where the local currency loses value on a daily basis due to inflation. This is particularly true in the case of Venezuela: an economy spiraling down to hyperinflation where acquiring bitcoins has become a way of substituting the need for hard currency in times of extreme volatility[11].

In contexts in which people do not trust the financial and governmental institutions, a system that allows users to transact value without any central intervention or mediation by financial entities, is a valuable innovation. Instead, users have direct control of their "digital wallets". "Digital wallets" could be thought of as a cryptocurrency account enclosing the users' public addresses and private keys that can be stored through a web service, local applications or an offline vault service.

Even though Bitcoin might continue to gain momentum as the pioneer cryptocurrency, external and internal divisions might displace the main actor of the cryptocurrency universe. What this paper intends to assert is that even if the Bitcoin network is replaced or outnumbered by a future decentralized cryptocurrency protocol, it should eventually create comparable outcomes in troubled and overregulated economies such as those that can be found in some Latin American countries.

Bitcoin has surfaced as a rational alternative to national fiat currencies in places that have suffered high inflation rates, financial instability, and overregulation of the economy. Latin American countries such as Argentina and Venezuela serve as a petri dish for cryptocurrency. Citizens of both nations have done everything possible to transfer their savings and investments to feasible alternatives outside what is set up by local governments.

In abstract terms, what cryptocurrencies offer people in countries with repressive financial regulation is the possibility of breaking free from a tangle of capital controls that turn the

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8 Kenneth B. II Haesly, "How to Solve a Problem Like Venezuela: An Argument for Virtual Currency". *Law and Business Review of the Americas* 22, n.º 3 (2016): 261, 270, https://scholar.smu.edu/cgi/viewcontent.cgi?article=1043&context=lbra.

9 Björn Segendorf, "What is Bitcoin?" *Sveriges Riksbank Economic Review* (2014-2), http://archive.riksbank.se/Documents/Rapporter/POV/2014/2014_2/rap_pov_artikel_4_1400918_eng.pdf.

10 Kenneth B. II Haesly, *supra* note 8.

11 Girish Gupta, "Venezuelans turn to bitcoins to bypass socialist currency controls". *Reuters*, October 8, 2014, https://www.reuters.com/article/us-venezuela-bitcoin/venezuelans-turn-to-bitcoins-to-bypass-socialist-currency-controls-idUSKCN0HX11O20141008.

simplest of transactions into an ocean of institutional filters where a central entity may have to approve a transaction or add security risk to the equation[12]. The advantage of Bitcoin, or any cryptocurrency that may offer a similar decentralized architecture, is that people can transfer funds in and out of countries where it would otherwise be impossible.

Bitcoin's design could become particularly useful for developing countries that need protection from the abuse of centralized manipulability that can be exerted on fiat currency. Centralized manipulability can be understood in broad terms as "the amount to which certain nodes are able to control the overall network by using their special permissions (for example, increasing money supply, facilitating transaction ledger/history, mediating individual transactions.)"[13]. Thus, when having a closed centralized authority that dictates macroeconomic policy and currency controls in an arbitrary and insensible way, responding to political bias, it may easily lead to hyperinflation and to the affectation of citizens' savings, pensions, and most importantly, trust.

In many developing countries, there are increased risks that make currency control by governments or central banks more hazardous, "since corruption tends to be more prevalent and parasitic on enterprise"[14] than in developed nations. Technologies such as Bitcoin open a door at least as a complementary structure to conventional finance that permits rational individuals to escape the consequences of centralized manipulability and political volatility. Moreover, Bitcoin and similar virtual currencies might even provide communities in developing countries with access to a financial infrastructure that would otherwise be inaccessible.

II. THE CASE OF ARGENTINA

Argentina's recent economic and political situation is paradigmatic due to its poorly managed macroeconomic policies. The Argentinian currency, the peso, has been pegged to the US dollar by different administrations since the 1990s in an effort to drop inflation and stabilize the peso. Times were hard for Argentina between 1975 and 1990 when average yearly inflation was around 300%. In 1989, it reached a 1000% cap before efforts to control such rates were temporarily effective by exploiting the robustness of the US dollar[15].

The most broadly documented case of this type of policy can be found in what was known as the "Convertibility Law," enacted in 1991. This bill, which entered into force during the times of president Carlos Menem, reacted to hyperinflation by tying the Argentinian peso to the US dollar using its strength to stabilize the local fiat currency. Originally, the measure was successful as Argentina managed to overcome recession and achieve steady economic growth from 1991 to 1994 and from 1996 to 1997. However, Argentina's economy became dependent

12 Kenneth B. II Haesly, *supra* note 8.

13 Alastair G. Clegg, "Could Bitcoin Be a Financial Solution for Developing Economies?", *University of Birmingham*, 2014, www.cs.bham.ac.uk/~rjh/courses/ResearchTopicsInHCI/2013-14/Papers/Alastair.pdf.

14 Ibid.

15 Martin Feldstein, "Argentina and inflation: what the rest of the world can learn". *World Economic Forum*, January 3, 2017, https://www.weforum.org/agenda/2017/01/argentina-and-inflation-what-the-rest-of-the-world-can-learn.

on borrowing to cover the burdens of the "Convertibility Law", and in December 2001, the Argentine economy collapsed[16].

In recent years, former President Cristina Fernandez, predecessor of Mauricio Macri –Argentina's current president–, adopted similar measures by fixing the exchange rate between the peso and the US dollar. In October 2011, capital controls obliged any individual or entity wanting to exchange pesos for US dollars to obtain authorization via a black box application process. The same framework barred the trade of dollars via online banking and ATMs. The reasons that supported this policy consisted in the protection of Argentina's dollar reserves from the prevalent practice of exchanging wealth from pesos to US dollars, and preventing capital flight[17]. Like the previous "Convertibility Law", this rule was effective at first but the drawbacks of the program were plenty, including the lack of incentives for foreign investment, the increasingly high demand for US dollars and the never ending inflation which is said to have been around 24% by official numbers and much higher by independent monitoring[18].

During Cristina Fernández' Presidency, the black currency market for the US dollar thrived due to the extensive capital controls and the closed economic context of Argentina. Whereas the official exchange rate during those years was between five and nine pesos of every dollar, on the black market, it would easily double that ratio[19]. This situation left the majority of Argentines in a position where it was practically impossible to obtain hard currency through regular channels in a context of immense economic volatility. Thus, Argentines would do almost anything to obtain dollars. For instance, they would create two PayPal accounts –one in the United States and one in Argentina–, then pay themselves for made up services and finally wire the money to a US bank account and pay a broker to bring the cash down to Argentina. Also, Argentines would typically go to casinos in neighboring Uruguay and buy chips with pesos or a credit card, and after a short time, exchange the chips for US dollars[20].

The sum of multiple factors such as inflation, the impossibility to store wealth by converting pesos into dollars and the generalized distrust towards governmental and financial institutions, enriched an already fertile soil for the emergence of Bitcoin as a rational alternative for Argentines. It is no coincidence that less than half of Argentina's population uses local credit cards as it is said that even wealthy locals are afraid of depositing their wealth in Argentinian banks[21].

It was in this context of extreme currency control during Cristina Fernandez' administration that Bitcoin first appeared in Argentina. A nationless currency isolated from any sort of exchange manipulation, prevalent during those years, Bitcoin was for some the panacea that

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16 Elena Moreno, "Bitcoin in Argentina: inflation, currency restrictions, and the rise of cryptocurrency". *Law School International Immersion Program Papers*, n.º 14 (2016), http://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1017&context=international_immersion_program_papers.

17 Ibid.

18 "Argentina's new, honest inflation statistics". *The Economist*, May 25, 2017, https://www.economist.com/news/americas/21722694-end-bogus-accounting-argentinas-new-honest-inflation-statistics.

19 "Meanwhile, in Argentina The Black Market Dollar Exchange Has 17,000 Facebook Likes". *Business Insider*, June 18, 2013, http://www.businessinsider.com/argentina-black-market-dollar-exchange-2013-6.

20 Elena Moreno, *supra* note 16.

21 Nathaniel Popper, "Can Bitcoin Conquer Argentina?", *The New York Times Magazine*, April 29, 2015, https://www.nytimes.com/2015/05/03/magazine/how-bitcoin-is-disrupting-argentinas-economy.html.

could relieve the exasperation suffered by a majority of Argentines who felt that their fiat currency was worthless.

Although initially Bitcoin advanced and gained popularity mainly in Europe and the United States, in 2015, it started its exponential rise in Argentina. For instance, with very few changes in the currency restrictions in place in Argentina, the country saw the use of Bitcoin more than double in 2015 mainly amongst small businesses[22]. Also in mid-2015, Soledad Rodríguez Pons, a local business owner, explained to the Financial Times that she could "sell her bitcoins on Argentina's unofficial currency market for 50 per cent more than she would get at the official exchange rate"[23].

The Bitcoin market is growing at a fast pace in Argentina and with it, the acceptance of bitcoins as a valid substitute for the peso. In 2015, an estimated US$ 80,000 bitcoins were traded over the counter each day[24]. Currently, there are over 149 venues accepting bitcoins as a transaction means in Buenos Aires according to *coinmap.org*, a platform that lists businesses accepting bitcoins worldwide. This is more than financial and tech capitals such as New York, which has around 140 and San Francisco with 117 sites[25].

From a legal standpoint, the status of Bitcoin changes enormously from country to country. In South America, Bitcoin has already been banned in Ecuador and Bolivia due to central authorities' concerns[26]. In Argentina, it has not been directly regulated but it has been defined by the Financial Information Unit, the country's anti-money laundering agency, as "the digital representation of value that can be used for digital commerce and whose functions are to provide a medium of exchange, and/or a unit of account, and/or a store of value, but they are not legal tender, nor issued or backed by any country or jurisdiction"[27]. The same agency issued Resolution 300/2014 in July 2014 whereby all financial service companies were obliged to report any transaction made with cryptocurrencies[28].

Argentina's Central Bank, the competent entity to regulate the matter, asserted that it does not accept Bitcoin or any other virtual currency to be legal tender. This declaration adopts the same position stated by the European Banking Authority[29], which, nevertheless, does not exclude the possibility of understanding Bitcoin and other cryptocurrencies in Argentina as extra-legal means of exchange that can store value and serve to purchase goods and services.

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22 Benedict Mander, "Argentine Small Businesses Turning to Bitcoin". *The Financial Times*, July 19, 2015, https://www.ft.com/content/b2a8cca4-2c11-11e5-8613-e7aedbb7bdb7.

23 Ibid.

24 Tom Jeffreys, "Can Bitcoin Save Argentina's Flailing Economy?", *Digg*, January 15, 2016, http://digg.com/2016/argentina-bitcoin.

25 Coinmap.org, https://coinmap.org/#/map/38.05241677/-121.21490479/9.

26 Anthony Cuthbertson, "Cryptocurrency Round-Up: Bolivian Bitcoin Ban, iOS Apps & Dogecoin at McDonald's". *International Business Times*, August 20, 2014, http://www.ibtimes.co.uk/cryptocurrency-round-bolivian-bitcoin-ban-ios-apps-dogecoin-mcdonalds-1453453.

27 Elena Moreno, *supra* note 16. Original in Spanish: *Art. 2 of Resolution 300/2014 of the Financial Information Unit, "la representación digital de valor que puede ser objeto de comercio digital y cuyas funciones son la de constituir un medio de intercambio, y/o una unidad de cuenta, y/o una reserva de valor, pero que no tienen curso legal, ni se emiten, ni se encuentran garantizadas por ningún país o jurisdicción."*

28 Ibid.

29 European Banking Authority, "EBA Opinion on 'virtual currencies", July 4, 2014, https://www.eba.europa.eu/documents/10180/657547/EBA-Op-2014-08+Opinion+on+Virtual+Currencies.pdf.

In fact, various legal specialists have maintained that bitcoins are already regulated in a broad manner as a property under Argentina's Civil and Commercial Code[30]. This posture coincides with the previous official statements in the sense that there is no formal legal equivalence between the fiat currency and Bitcoin but it, however, accepts the legitimacy of bitcoins as a good that can store value and serve as a transaction medium for those who accept it as such.

Argentina's political situation has changed after President Mauricio Macri took office in December 2015. A center-right figure, Macri relaxed capital controls almost as soon as he took up office, enabling Argentines to access hard currency without the necessity to acquire it on the black market. As the artificial value of the fixed rate peso was taken down allowing the peso to fluctuate with the market, the local currency has lost almost half of its value against the US dollar[31]. The latter, however significant, is not as dramatic as it appears since most of the country was already functioning with the black market dollar value[32].

It seems that President Mauricio Macri's administration is resolute to battle inflation and reach price stability, but things appear to be heading the opposite way from the direction most expected when he took office. Indeed, according to the International Monetary Fund[33], Argentina closed 2018 with a 47% inflation rate. The Macri administration requires great political capital investment, as the citizens might not perceive a reduction of inflation from 30% to 25% as being significant after having lived through decades of high inflation and distrust of government and financial institutions[34]. Thus, the government must pay "a short-term political price to achieve a long-term economic gain"[35] given that it is not enough to achieve price stability, but it is key to maintain it.

Even though the economic and political landscape has changed, lowering the financial needs of helpless Argentines, the use of decentralized digital currencies has already reached cruising speed in this national context. It seems very unlikely at least under the current administration that future regulation will endanger the potential of Bitcoin or other cryptocurrencies as a valid means to store value and even to become a commonly accepted transaction medium. Argentina tends to follow the regulatory trends originating in the European Union and the United States, and thus, it might remain an open economy for cryptocurrency as long as both of these regulatory powerhouses continue to be at least agnostic towards Bitcoin.

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30 Andrés Chomczyc, "Estatus legal actual de los Bitcoins en Argentina (Primera Parte)". *Abogados In House*, November 9, 2015, http://www.abogados-inhouse.com/editorial.php?id=156.

31 "USD-ARS historical data", *Investing.com*, accessed November 27, 2017, https://es.investing.com/currencies/usd-ars-historical-data.

32 James Downer, "How Bitcoin is Thriving in Argentina's Black Market Economy". *Coindesk*, 2014, https://www.coindesk.com/bitcoin-thriving-argentinas-black-market-economy/.

33 See: "Argentina ends 2018 with second highest inflation in Latin America". *France 24*, January 15, 2019, https://www.france24.com/en/20190115-argentina-ends-2018-with-second-highest-inflation-latin-america.

34 Martin Feldstein, "Argentina and inflation: what the rest of the world can learn". *World Economic Forum*, January 3, 2017, https://www.weforum.org/agenda/2017/01/argentina-and-inflation-what-the-rest-of-the-world-can-learn.

35 Ibid.

2. THE CASE OF VENEZUELA

In an even more dramatic case than Argentina, Venezuela is currently facing one of the world's most devastating financial catastrophes. The country's economy is mostly grounded in oil. Owning the world's largest crude oil reserves, Venezuela's oil exports account for 95% of total exports and 50% of Venezuela's GDP[36]. Having such relevance in the national economy, overdependence on oil has molded many if not every aspect of Venezuelan governance, economics and social mobility for many years. Nationalizing the whole oil industry is just one of various historic examples of fiscal maladministration in the country[37].

Since 2013, the country's GDP per capita has contracted by 40%, and GDP has plummeted by 35%. Depressed oil prices are a central factor in Venezuela's economic downfall[38]. However, poorly managed macroeconomic policies, corruption, and extreme capital controls have driven this nation to an unprecedented humanitarian and social crisis[39]. As a backdrop to this calamity, there is the spiral down to hyperinflation that has been estimated to be the highest in the world, closing 2018 with an estimate of 1000000%[40]. This disastrous economic perspective has not come alone. Violence has also skyrocketed, and although the government stopped publishing criminal and economic statistics more than a decade ago, independent research has found Caracas to have one of the highest murder rates in the world with 92 killings per 100,000 inhabitants in 2016[41].

Hyperinflation combined with a baffling scheme of exchange rates imposed by decree in 2003 by the left-wing government that has been in power since 1999, has resulted in an incredibly high demand for surrogates for the devalued currency, the bolivar (Bs.)[42]. These problems have become more serious since 2014, making it almost impossible for Venezuelans to obtain dollars legally. Venezuelans have thus been pushed to find whatever financial alternative is available in order to store the falling value of the bolivar, which, on the black market, passed from Bs.258 to the dollar in November 2015 to around Bs.97000 in the same month in 2017[43].

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36 Jude Clemente, "Venezuela's Oil Problems Abound". *Forbes*, November 5, 2017, https://www.forbes.com/forbes/welcome/?toURL=https://www.forbes.com/sites/judeclemente/2017/11/05/venezuelas-oil-problems-abound/&refURL=&referrer=#cd749236104e.

37 Kenneth B. II Haesly, *supra* note 8.

38 Liam Denning, "Venezuela's Complicated Crisis for Oil". *Bloomberg*, April 25, 2017, https://www.bloomberg.com/gadfly/articles/2017-04-25/venezuela-s-oil-crisis-not-just-a-supply-shock.

39 Anders Aslund, "Venezuela Is Heading for a Soviet-Style Collapse". *Foreign Policy*, May 2, 2017, http://foreignpolicy.com/2017/05/02/the-maduro-regime-is-heading-for-a-soviet-style-collapse-venezuela/.

40 "Inflation rate, average consumer prices – Annual percentage change", in *International Monetary Fund*, October, 2017, http://www.imf.org/external/datamapper/PCPIPCH@WEO/WEOWORLD/VEN.

41 Juan Carlos Garzón and Robert Muggah, "Venezuela's raging homicide epIbidic is going unrecorded", *Los Angeles Times*, March 31, 2017, http://www.latimes.com/opinion/op-ed/la-oe-garzon-muggah-venezuela-violent-crime-statistics-20170331-story.html.

42 Kenneth B. II Haesly, *supra* note 8.

43 "Histórico Dólar paralelo en Venezuela", *DolarToday*, accessed November 29, 2017, https://dolartoday.com/historico-dolar/.

The purchasing power of the majority of Venezuelans has decreased so abruptly that the monthly minimum wage was equivalent to just US$4 on the black market –the only market accessible for most citizens– in November 2017[44]. As a result, many have left the country hoping to rebuild their lives abroad; around two million Venezuelans have left the country since 1999, and apparently, the so-called "Venezuelan diaspora" is very far from decreasing[45]. However, for those who have stayed, the fight for survival has become increasingly difficult in a context where there was a reported scarcity index of 82% in June 2016[46]. In such conditions, many have resorted to Bitcoin and other cryptocurrencies such as Ethereum[47].

In late October 2014, SurBitcoin was launched as the first local Bitcoin exchange market in Venezuela[48]. The marketplace had the great advantage of trading bolivars for bitcoins and thus opening the possibility for Venezuelans to trade in their savings in banks or mountains of paper money for a virtual currency that although unstable, was –and still is– more valuable than the debilitated fiat currency that, by then, was traded for Bs.100 per dollar while bitcoins were around US$300[49]. However, this conversion to cryptocurrencies, mainly Bitcoin, has been slow and only involved very small quantities. This is probably because of the initial distrust in virtual currency speculation as well as the economic constraints of not being able to afford what has been the rising value of bitcoins –commonly listed in dollars or euros–, making them more expensive by the day[50].

Nonetheless, it is not clear that Bitcoin can become a feasible surrogate for fiat currency in the Venezuelan context. The volatility of the bolivar is greater than Bitcoin's value fluctuation, but Bitcoin's volatility has been such that it passed from an all-time high price of $17500 in December 2017 to $3300 in December 2018 and then reached $7800 just five months later[51]. Additionally, there is no certainty that the role of Bitcoin can be more than just to store the diminishing value of Venezuelan citizens' wealth in bolivars.

On the one hand, Bitcoin's use as a transaction medium has recently increased, as may be illustrated by the fact that in November 2017, *coinmap.org* listed just seventeen venues in Caracas accepting bitcoins as a form of payment, whereas in March 2019, it listed over one hundred. On the other hand, buying bitcoins might be a bet many Venezuelans would be

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44 "Nuevo salario mínimo venezolano equivale a 4 dólares en el mercado negro". *Portafolio*, November 2, 2017, http://www.portafolio.co/internacional/nuevo-salario-minimo-venezolano-equivale-a-4-dolares-en-el-mercado-negro-511281 .

45 Tomás Páez, "La diáspora venezolana en movimiento". *El Nacional*, June 21, 2017, http://www.el-nacional.com/noticias/columnista/diaspora-venezolana-enmovimiento_194392.

46 Franz von Bergen, "Venezuelans now stealing food from school cafeterias as scarcity spreads". *Fox News*, June 24, 2016, http://www.foxnews.com/world/2016/06/24/criminals-now-stealing-food-from-venezuela-schools-as-scarcity-spreads.html.

47 Joseph Young, "Ethereum is Rising in Popularity in Venezuela Along With Bitcoin". *The Cointelegraph*, July 12, 2017, https://cointelegraph.com/news/ethereum-is-rising-in-popularity-in-venezuela-along-with-bitcoin.

48 Payton Guion, "Unable to Get Dollars, Venezuelans Turn to Bitcoins". *Vice News – Americas*, October 14, 2014, https://news.vice.com/article/unable-to-get-dollars-venezuelans-turn-to-bitcoins.

49 "Histórico Dólar paralelo en Venezuela", *DolarToday*, November 29, 2017, https://dolartoday.com/historico-dolar/.

50 Kenneth B. II Haesly, *supra* note 8.

51 "Bitcoin (USD) Price". *Coindesk*, accessed November 28, 2017, https://www.coindesk.com/price/.

happy to place if dollars were not accessible by any legal means, and it can even serve as a path to acquire hard currency such as dollars or euros.

It is difficult to find sensible words to describe the sort of currency restrictions that have existed in Venezuela since 2003, but it might be accurate to view them as a "rampant institution of bizarre and confusing capital controls usually implemented as a triage method following an oil bust"[52]. Created to cover the vanishing oil income and generate incentives for exports, the material effect of such bewildering currency controls is an indiscriminate limitation on Venezuelans' freedom to move capital from and into the country. There is, however, some hope when it comes to people's need to move wealth outside a collapsing economy. Venezuelans talk about the opportunities to prosper, or at least to subsist, that cryptocurrencies can offer to this suffering nation in which the minimum wage is far from being sufficient to buy a household's basic monthly groceries[53].

As previously discussed when considering Argentina, it is rather complicated to determine the legal status of cryptocurrencies, predominantly Bitcoin, since there have been few to no regulatory efforts to clarify the legal nature of decentralized digital currencies by the authorities. This is not common for a regime that is famous for governing by decree exerting very constricted price controls[54] and overregulating almost every sector of the national economy. The fact that Bitcoin and other systems such as Ethereum operate outside a conventional centralized financial alignment, suggests that the best way to describe them is as an extra-legal phenomenon that extends past the recognized weight of the law[55]. It can be thought to be extra-legal purely by its philosophical conception of being decentralized, global, and as uncontrolled as the internet can be. The practical difficulties of enforcing a prohibition to transact bitcoins, for example, as in the case of Ecuador and Bolivia, also show that cryptocurrencies with this sort of architecture have a dissociated relationship with the efforts in place to regulate them.

Interestingly, as also happens in Argentina, existing Venezuelan law such as the Civil Code has been interpreted to recognize bitcoins not as money, but as goods that can be swapped for other goods and services[56]. As such, bitcoins have been considered at different stages, as one of the few secure ventures in which Venezuelans can invest their money using their national bank accounts[57].

Even if a branch of the Venezuelan regime declared the illegality of Bitcoin, there are no signs that such a resolution could somehow alter the rising relocation of wealth to the decentralized servers that weave the network that supports Bitcoin. It would be very difficult under current conditions to police the transaction and "mining" of bitcoins, but it might also seem

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52 Kenneth B. II Haesly, *supra* note 8.

53 Stefano Pozzebon and Patrick Gillespie, "Venezuelans are losing weight amid food shortages, skyrocketing prices". *CNN Money*, May 3, 2017, http://money.cnn.com/2017/05/03/news/economy/venezuela-food-prices/index.html.

54 Kenneth B. II Haesly, *supra* note 8.

55 Ibid.

56 Ibid.

57 Kevin Cruz, "Bitcoin in South America: Why Venezuela Has an Active Bitcoin Mining Community". *Bitcoin Magazine*, January 6, 2016, https://bitcoinmagazine.com/ articles/bitcoin-in-south-america-why-venezuela-has-an-active-bitcoin-mining- community-1452097837.

short-sighted and counterintuitive. As a matter of fact, the United Nation's Economic Commission for Latin America Caribbean (ECLAC) has recommended the use of cryptocurrencies for Caribbean states such as Dominica and Barbados[58]. Countries that, in many ways, except for the current crisis, resemble Venezuela both culturally and in their need to find financial stimulus for economies that are either stagnated or growing at very low and unstable rates[59].

To bring up the idea of substituting the falling bolivar for Bitcoin or even a local form of decentralized digital currency, could be regarded in the abstract, as a perfect technological solution for a crumbling economy afflicted by hyperinflation. In practice, however, this is not only highly unlikely, but it would also require a colossal enterprise given the political inertia that leads to what some call, a full-blown dictatorship, and the practical challenge of making every financially active Venezuelan part of the same cryptocurrency network. By contrast, it is more pragmatic to think about Bitcoin, Ethereum, and any other decentralized virtual currency that may surge under the peculiar conditions existing in Venezuela, as a complement to fiat currency and as a way to reactivate commerce instead of replacing the local economy.

It is not all bad. Venezuela and Argentina have one of the highest Internet penetration rates in the Latin American region with 70 and 60 per cent respectively[60]. As examined by Professor Garrick Hileman in his 2014 study on Bitcoin's top potential markets, internet and technology penetration are variables that are fundamental to the advancement of Bitcoin[61]. With the rising accessibility to mobile communication and internet usage in Venezuela[62], the chances that Bitcoin or a sequel cryptocurrency can capture a significant amount of users brings visible network effects.

In 2016, Venezuela presented the highest rate of mobile internet usage in Latin America[63]. The potential for cryptocurrencies in these conditions is great even if the government decides it will target political or technocratic uprisings originating in the use of decentralized virtual currencies.

The digitalization of asset management has proven to have enormous potential for developing nations. Even if prohibited, the ease with which Venezuelans could simply install an application and still save their remaining wealth or transfer value with no fees or surveillance to a growing network of bitcoin holders all over the world is, at the very least, promising.

For some Venezuelans, mainly the higher middle classes, the acquisition of bitcoins has provided them with a means to both store value and to access foreign goods that are scarce or non-existent in Venezuela, including household supplies such as toilet paper[64].

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58 See: Shiva Bissessar, "Opportunities and risks associated with the advent of digital currency in the Caribbean". *Economic Commission for Latin America Caribbean –Subregional Headquarters for the Caribbean*, 2016, http://repositorio.cepal.org/bitstream/handle/11362/39860/S1501234_en.pdf;sequence=1.

59 "Latin America and the Caribbean: Bouncing Back from Recession". *International Monetary Fund*, May 19, 2017, https://www.imf.org/en/News/Articles/2017/05/18/NA190517Latin-America-and-the-Caribbean-Bouncing-Back-from-Recession.

60 "Percentage of population using the internet in Latin America and the Caribbean in 2016, by country". *Statista*, 2016, https://www.statista.com/statistics/726145/latin-america-internet-penetration-countries/.

61 Garrick Hileman, "The Bitcoin Market Potential Index". *London School of Economics*, 2014.

62 Daniel Pardo, "Cómo Venezuela se convirtió en el mayor consumidor de datos móviles en América Latina". *BBC*, February, 29, 2016, www.bbc.com/mundo/noticias/2016/02/160226_venezuela_tecnologia_datos_dp.

63 Ibid.

64 Kenneth B. II Haesly, *supra* note 8.

A powerful engine of Bitcoin's momentum in Venezuela is "mining". Electricity costs are currently very low due to large subsidies given by the socialist government[65]. Thus, to connect their computers to the network has become a means through which Venezuelans of all backgrounds can escape hyperinflation. They lend their computer processing power to perform complex computations that contribute to blockchain bookkeeping and ultimately create new bitcoins as a reward until a limited supply has been mined[66]. Two main aspects determine the profitability of a "mining" operation: i) market value of the cryptocurrency unit; and ii) the electricity costs incurred to run the powerful hardware[67].

In Venezuela, obtaining valuable cryptocurrency has become attainable, in exchange for paying low electricity prices –which most Venezuelans can afford[68]- in times when there is little to no way to find hard currency where value can be stored. As a response to this, an estimated 100,000 Venezuelans have been "mining" since October 2017[69]. An individual running a few Bitcoin miners can get around $500 a month[70], which can be lifesaving in times of hyperinflation when the national currency is in constant decline. Even though cryptocurrencies have been used mainly to store value in the case of Venezuela, Bitcoin has proceeded to become a limited but still valid transaction medium to which Venezuelans have resorted in order to access e-commerce platforms abroad that are useful to ship basic goods into the country[71].

The increase in "mining" activities seems to be a clear consequence of the on-going situation in Venezuela and the still undetermined legal status of Bitcoin and other cryptocurrencies. However, the authorities started to crackdown on "mining" farms in 2016 and have detained several individuals related to Bitcoin "mining" charging them with energy theft and contraband[72]. It is thus likely that there will be a determination issued by Venezuela's central bank or some other branch of the regime, declaring Bitcoin, and other unauthorized cryptocurrencies, illegal in the country.

On December 3, 2017 current Venezuelan President Maduro announced the creation of a Venezuelan cryptocurrency named "Petro" which, according to him, will serve "to advance in issues of monetary sovereignty, to make financial transactions and overcome the financial blockade."[73] The virtual currency will supposedly be backed by the country's reserves of

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65 Mariana Zúñiga, "Bitcoin 'mining' is big business in Venezuela, but the government wants to shut it down". *The Washington Post*, March 10, 2017, www.washingtonpost.com/news/worldviews/wp/2017/03/10/bitcoin-mining-is-big-business-in-venezuela-but-the-government-wants-to-shut-it-down/?utm_term=.9689875c1259.

66 Rene Chun, "Big in Venezuela: Bitcoin Mining". *The Atlantic*, 2017, https://www.theatlantic.com/magazine/archive/2017/09/big-in-venezuela/534177/.

67 Ibid.

68 Ibid.

69 Alex Vásquez, "Venezuelans use bitcoin 'mining' to escape inflation". *AFP*, October, 21, 2017, https://www.yahoo.com/news/venezuelans-bitcoin-mining-escape-inflation-020507653.html.

70 Rene Chun, *supra* note 62.

71 Joseph Young, "Venezuelans Are Buying Bitcoin to Purchase Basic Goods, Treat Cancer". *The Cointelegraph*, December 17, 2016, https://cointelegraph.com/news/venezuelans-are-buying-bitcoin-to-purchase-basic-goods-treat-cancer.

72 "De los bitcoins y la legalidad en Venezuela". *Acceso Libre*, 2016, http://accesolibre.org.ve/index.php/2016/04/01/los-bitcoins-la-legalidad-venezuela/.

73 Alexandra Ulmer and Deisy Buitrago, "Enter "petro": Venezuela to launch oil backed cryptocurrency". *Reuters*, December 3, 2017, https://www.reuters.com/article/us-venezuela-economy/enter-petro-venezuela-to-launch-oil-backed-cryptocurrency-idUSKBN1DX0SQ.

gold, oil, gas, and diamonds.[74] This effort, however, has little or no chance of producing the potentially beneficial effects of decentralized digital currency in a highly distressed economy simply because Petro is not decentralized and is subject to the same abuse of centralized manipulability as the Venezuelan fiat currency. Regardless of whether such a plan will indeed succeed or not, an announcement of this sort illustrates the importance of cryptocurrencies among Venezuelans and how they are thought to be compatible or even a complement to fiat currency in times of hyperinflation and economic turmoil.

In both Argentina and Venezuela, the uncertain official stance on Bitcoin has benefited the proliferation of its use. Also, the fact that bitcoins have been considered property under commercial and civil norms in both countries seems to satisfy legal thought in the region. But this will probably not be enough if the Venezuelan regime sees the political need to seize a source of income and power. The fact that a determination of this kind could enter into force may still be countered by Bitcoin's decentralized nature and its extra-legal condition, allowing underground operations to take place given the great incentives that have been discussed above.

CONCLUSION

Although the future of Bitcoin and other sorts of decentralized digital currency is unclear, it remains an expanding alternative for people who reside within volatile and over-regulated economies, particularly in developing countries such as Argentina and Venezuela. It is still difficult to know which the best regulatory alternative for Bitcoin and other cryptocurrencies may be. However, it might seem short-sighted for governments to prohibit their use in national economies due to the decentralized architecture in which they operate and people's overwhelming need to access hard currency alternatives in times of hyperinflation.

Cryptocurrencies such as Bitcoin have the potential to supplement fiat currency particularly when volatility in the national economy is greater than the fluctuation of the cryptocurrencies' value. Citizens of countries like Argentina before President Macri took office, and Venezuela more recently, have benefitted from the use of technologies such as Bitcoin to escape arbitrary currency restrictions and survive the consequences of disoriented macroeconomic policies. Citizens from countries facing hyperinflation, where there is little access to hard currency due to the distortion of capital controls may find it extremely helpful to obtain cryptocurrencies mainly as a way to store the value of declining national currencies or to create value through "mining" activities. However, the case of Bitcoin and its growing acceptance especially in e-commerce reveals that cryptocurrencies can also become a means of transaction and even to access basic goods from abroad that do not exist in contexts like Venezuela's. By having access to an international economy through the use of Bitcoin, Ethereum or other valued cryptocurrencies, Argentines in the past and Venezuelans more recently, have gained greater financial independence and have a better chance of surviving catastrophic economic scenarios.

74 Ibid.

The rise of cryptocurrencies reveals the way in which technology evolves in the global community beyond national borders. This poses a great challenge for legal systems and policymakers that must provide new businesses that override traditional schemes, with effective and timely rules.

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