

# Applications and the future of bitcoin through analysing potential practical applications and prospects in finance in Venezuela

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**Abstract.** With the rise of Bitcoin in 2009, cryptocurrency rapidly transformed to a commonly used tool for transaction and trades between individuals. Being the most used type of cryptocurrency what are some applications of Bitcoin in the real world? And what could be the future of Bitcoin? This paper aims to present the applications of Bitcoin through a case study of Bitcoin in the real world and to discuss the potentials of cryptocurrency, such as Bitcoin, in the future. In practice, Bitcoin can be used as formal type currency (just like any form of traditional currency) and an investment option. This paper illustrated that the future of Bitcoin involves an increase in its worth and increasing number of buyers. To sum up, Bitcoin is the most common cryptocurrency where it can be a type of traditional currency and an investment option. Cryptocurrency and Bitcoin particularly has the potential to pervade in the future.

## 1 Introduction

Cryptocurrency is a type of digital currency that doesn't require on banks to confirm and verify transactions. Different from traditional currency, cryptocurrency is a highly unconfined, private, and secure form of digital currency. This is due to all platforms and all coins and tokens of cryptocurrency are in digital form [1]. How does Bitcoin work and how is the Bitcoin network ran smoothly? Bitcoin is invented by Satoshi Nakamoto in 2009, where he not only implemented this cryptocurrency but also developed the first blockchain database, which is a public ledger that stores all the cryptocurrency transactions, that existed [2]. The number of Bitcoins is finite, just like any other currencies that exists. There are 21 million of Bitcoins in maximum, however it is unlikely to reach the upper limit of the Bitcoin supply. To get Bitcoins, individuals complete "tasks" to be awarded with a certain number of Bitcoins, these individuals are called miners. "Tasks" such as verifying Bitcoin transactions and adding blocks (transactions) to the blockchain are assigned to miners and if they succeed on the "task" they are awarded Bitcoins [2]. This such motivating incentive encourages individuals from all over the world to become a miner, this has caused an explosive increase in amounts of miners [2].

The more miners are available the more secure and safe each transaction will be and hence the more smoothly the Bitcoin system will run. In traditional currency, the currency flows from the user to a centralized institution (such as a bank) and then flows to the store which they purchase from [3]. In the world of Bitcoin, the currency which is Bitcoin flows from the

user to the miner which verifies the transaction then flows to the other user [1]. This system is a huge advantage of Bitcoin as miners are scattered around the network and hence the Bitcoin transactions are very safe and secure [1]. The significance of this study is to provide a case study on uses of Bitcoin in Venezuela how it can be integrated with the financial sector. The paper will aim to analyse the practical application of Bitcoin in Venezuela and discuss its future in the financial sector.

The paper is focusing on the ongoing applications and future potential of Bitcoin in Venezuela's financial sector. It is examining the unique aspects of Bitcoin transactions, where miners play a critical role in validating and securing transactions, in contrast to the traditional flow of currency through centralized banks. The study is providing insights into how Bitcoin's decentralized nature can offer advantages in terms of security and safety for transactions in the face of economic challenges, like those experienced in Venezuela due to hyperinflation and sanctions.

The analysis is currently exploring practical ways in which Bitcoin can be incorporated into Venezuela's economy, considering its ability to operate independently of the traditional financial institutions that are subject to government control and instability. Additionally, the paper is discussing the broader implications of Bitcoin's integration into Venezuela, looking at how it can offer a more stable and secure alternative to the national currency and potentially improve the economic well-being of the populace. It is also hypothesizing about the long-term prospects of Bitcoin in transforming the financial landscape of Venezuela.

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## 2 Case description

In 2010s, Venezuela experienced a severe economic. It was characterized by hyperinflation, severe shortages of basic goods, and a drastic decline in living standards. It was fuelled by a combination of factors, including mismanagement of the economy, overreliance on oil exports, government corruptions, and economic sanctions. The roots of this economic meltdown were both structural and policy driven. Venezuela's economy had become excessively dependent on oil exports, which constituted the vast majority of its national income. When oil prices fell dramatically on the global market, the government's revenues shrank accordingly, leaving it without the necessary funds to import goods or sustain its social welfare programs.

Economic mismanagement played a significant role in exacerbating the situation. The government's policies, which included price controls and currency exchange controls, were intended to stabilize the economy but instead led to widespread distortions and a burgeoning black market where goods were sold at exorbitant prices.

Corruption within the government and state-run industries further drained the country's resources. A lack of transparency and accountability meant that funds were often siphoned off, undermining economic stability and contributing to the crisis.

International factors, including economic sanctions imposed by various countries, compounded Venezuela's economic woes. These sanctions were mostly targeted at individuals within the government and specific sectors of the economy, particularly the state oil company, PDVSA. They restricted the country's ability to access international financial markets and attract investment, further isolating it economically.

As the economic conditions in Venezuela continued to deteriorate, the social fabric of the country began to unravel at an alarming rate. The severe scarcity of basic necessities such as food, medicine, and electricity led to widespread social unrest and a significant increase in crime rates. Long queues for rationed goods became a common sight, and many Venezuelans were forced to skip meals or scavenge for scraps to survive. The health sector was particularly hard hit, with hospitals facing dire shortages of medical supplies and an exodus of trained medical professionals seeking better opportunities abroad.

The educational system also suffered, as schools struggled with inadequate funding and resources. Many teachers left the profession due to low wages and poor working conditions, leading to a decline in educational quality and accessibility. This disruption in education threatened to have long-term effects on the country's future generations.

In response to the crisis, a mass exodus of Venezuelans began, with millions seeking refuge in neighboring countries and beyond. This migration was one of the largest in the history of the Americas, placing strain on regional economies and social services. Countries like Colombia, Brazil, and Peru saw significant increases in their populations of Venezuelan

immigrants, who often arrived with few resources and in need of immediate humanitarian assistance.

The political landscape in Venezuela became increasingly polarized and contentious. The government, under the leadership of Nicolás Maduro, faced intense domestic and international criticism for its handling of the crisis and its authoritarian tendencies. Opposition parties attempted to mobilize support and challenge the government's policies, but they were frequently met with repression, including arrests and censorship.

Internationally, the situation in Venezuela became a focal point for geopolitical tensions, with various countries taking sides in support of or against the Maduro government. This international involvement sometimes exacerbated the internal divisions and hindered efforts to find a peaceful and sustainable resolution to the crisis.

Overall, the economic collapse in Venezuela had profound and far-reaching consequences, affecting every aspect of life in the country and highlighting the vulnerabilities of an economy overly reliant on a single export commodity. As the situation evolved, the need for comprehensive economic reforms and international cooperation became increasingly evident to prevent future crises of similar magnitude.

### 2.1 Venezuela's annual inflation

Hyperinflation has reached staggering levels during 2018, with prices doubling every few weeks at its peak [4]. Shortages of food, medicine, and other essential goods became widespread, leading to long queues and social unrest. The collapse of the oil industry, which was Venezuela's main source of revenue, exacerbated the crisis as declining oil prices further strained government finances. The crisis has resulted in widespread poverty, unemployment, and emigration. As millions of Venezuelans sought refuge in neighbouring countries, the government's attempts to address the crisis through price controls, currency devaluations, and other measures were largely ineffective, which contributes to the depending on the economic turmoil throughout the decade [5-6].

The rise of Bitcoin has been both a response to economic instability and a means of circumventing government controls. As the country grappled with hyperinflation, currency devaluation, and stringent capital controls, many Venezuelans turned to Bitcoin and other cryptocurrencies to preserve their wealth and engage in international trade. Bitcoin offered the opportunity into a decentralized alternative rather than the Venezuelan Bolivar which is controlled by the Central Bank of Venezuela and is rapidly depreciating in value [1].

### 2.2 Bitcoin volume in Venezuela

The Venezuelan government's response to the growing adaptation of Bitcoin trading is ambivalent. While initially sceptical and even hostile towards cryptocurrencies with the crackdowns on Bitcoin mining

operation and exchanges, the government later explores the idea of launching its own digital currency, called the Petro, backed by the oil reserves in Venezuela. However, the Petro failed to gain traction internationally and was widely regarded as a means for the government to circumvent sanctions rather than a legitimate form of digital currency [7].

Despite regulatory challenges and economic uncertainties, Bitcoin continues to play a significant role in Venezuela, providing a lifeline for many amid the country's ongoing economic crisis. It has enabled Venezuelans to access international markets, store value, and conduct transactions outside of the traditional banking system, offering a facade to the financial stability in tumultuous times [7].

As Bitcoin continues to embed itself into the financial fabric of Venezuela, its importance as an alternative economic system grows increasingly significant. Amid hyperinflation and currency devaluation, many Venezuelans view Bitcoin not just as an investment but as a necessary survival tool. This perception has been bolstered by the ease of digital transactions, which allow users to bypass the volatility and restrictions associated with the Bolivar, the national currency.

The use of Bitcoin has also fostered a unique economic enclave within the country. Small businesses and entrepreneurs leverage cryptocurrencies to procure goods and services that are otherwise scarce due to import restrictions and economic sanctions. This includes everything from essential medical supplies to technological equipment. Bitcoin transactions have become particularly prevalent among tech-savvy youths and the diaspora community, who send remittances back home, thus injecting much-needed foreign currency into the economy.

However, the widespread adoption of Bitcoin in Venezuela is not without its complications. The government, while officially promoting the Petro, maintains a complex relationship with decentralized cryptocurrencies. Periodic regulatory changes and the unclear legal status of digital currencies add layers of uncertainty to an already volatile market. Additionally, there's the issue of technological infrastructure, which is often inadequate to support consistent, nationwide access to cryptocurrencies.

Despite these hurdles, the narrative of Bitcoin in Venezuela is largely one of resilience. For many, it represents a beacon of hope and a practical response to a series of systemic failures. As the global landscape of cryptocurrency continues to evolve, the situation in Venezuela serves as a compelling case study of Bitcoin's potential as a stabilizing force, albeit in a fraught and challenging environment.

### 3 Analysis

Venezuela's turbulent economic landscape and the widespread adoption of Bitcoin presents a compelling case study in the application of cryptocurrencies, specifically Bitcoin, within a context of economic crisis. This analysis delves into the specific applications of

Bitcoin in Venezuela and explore its impact on individuals, businesses, and the wider economy. The analysis is unfolding to reveal how Bitcoin is influencing the daily lives of Venezuelans. For individuals, it's being used as a store of value that is more stable than the national currency, and as a medium of exchange for goods and services, circumventing the challenges of carrying out transactions.

Bitcoin is able to preserve wealth and value. Bitcoin has emerged as a valuable tool for Venezuelans seeking to preserve their wealth in the face of hyperinflation and currency devaluation (as mentioned in case description). With the Venezuelan Bolivar losing value at a rapid rate, many citizens have turned to Bitcoin as a store of value. By converting their Bolivars into Bitcoin, Venezuelans can self their savings from the erosive effects of hyperinflation, thereby safeguarding their wealth and allowing purchase power over the long term, demonstrating Bitcoin can be used as a storage of wealth and value [8].

Bitcoin can facilitate remittances and international transactions. The adoption of Bitcoin has also facilitated remittances and international transactions for Venezuelans, many of whom have family members living far away or abroad. With traditional banking channels often inaccessible or prohibitively expensive, Bitcoin provides a low cost and efficient alternative for sending and receiving funds across borders. This has enabled Venezuelans to access financial support from relatives abroad, helping to alleviate financial hardship and sustain livelihoods during domestic economic turmoil [7]. Therefore, Bitcoin is used for remittances and transactions between individuals in a safe and efficient way.

Bitcoin possesses the ability to overcome capital controls. Venezuela's stringent capital controls have restricted access to foreign currency and hampered international trade. Bitcoin offers a workaround to these restrictions, enabling Venezuelans to engage in cross border commerce and access goods and services from global markets [9]. Cryptocurrencies provide a decentralized and censorship-resistant means of conducting transactions, allowing Venezuelans to bypass the government controls and navigate the dichotomies of an increasingly isolated economy.

The adoption of Bitcoin has also fostered entrepreneurship and innovation within Venezuela's economy. Amidst the economic crisis, a burgeoning cryptocurrency ecosystem has emerged, with start-ups and businesses exploring innovative applications of blockchain technology [2]. From the remittance services to digital payment platforms, Venezuelan entrepreneurs are leveraging Bitcoin to create new business opportunities and address the needs for a financially underserved population. Hence Bitcoin encourages entrepreneurship and innovation.

Bitcoin has the potential to empower financial inclusion in Venezuela where large segments of the population are unbanked or underbanked. Cryptocurrencies offer a decentralized and accessible means of accessing financial services in Venezuela such as savings, payments, and investments without the need

for traditional banking infrastructure. By democratizing access to finance, Bitcoin has the potential to empower marginalized communities and foster greater economic inclusion in society.

Finally, Bitcoin has emerged as a hedge against economic uncertainty and political instability in Venezuela [10]. As traditional institutions falter and trust in government issued currency erodes due to hyperinflation, Bitcoin has provided an alternative for preserving wealth and conducting transactions. By diversifying their assets into Bitcoin, Venezuelans can mitigate the risks associated with hyperinflation, currency devaluation, and political upheaval. Hence, Bitcoin can mitigate economic uncertainties allowing individuals to gain greater financial resilience in the face of economic adversity.

## 4 Suggestions

Develop comprehensive educational campaigns targeting all segments of society, from students to business owners, to increase understanding of Bitcoin's benefits, risks, and practical usage. Provide workshops, online courses, and educational materials in accessible formats and languages. Collaborate with schools, universities, and community organizations to integrate cryptocurrency education into curricula and outreach programs.

Launch initiatives to promote financial inclusion through Bitcoin, targeting underserved populations such as rural communities, women, and marginalized groups. Develop user-friendly Bitcoin wallets and payment solutions tailored to the needs of unbanked and underbanked individuals. Collaborate with microfinance institutions, community organizations, and mobile network operators to expand access to Bitcoin-based financial services.

Invest in building a robust Bitcoin infrastructure, including user-friendly cryptocurrency exchanges, secure wallets, and efficient payment platforms. Ensure that infrastructure is accessible across urban and rural areas, with support for multiple languages and payment methods. Foster collaboration between technology companies, financial institutions, and government agencies to develop and maintain essential infrastructure components [8].

Establish clear and transparent regulatory frameworks for Bitcoin and cryptocurrencies, providing legal certainty while encouraging innovation and investment. Consult with industry stakeholders, legal experts, and international regulators to develop regulations that balance consumer protection with fostering a dynamic cryptocurrency ecosystem. Create regulatory bodies or oversight committees tasked with monitoring compliance and enforcing regulations effectively.

## 5 Conclusion

In conclusion, the Venezuelan Bitcoin case offers valuable insights into the practical applications and uses of cryptocurrencies within a context of economic crisis. From preserving wealth and facilitating remittances to

fostering entrepreneurship and financial inclusion. Bitcoin has demonstrated its versatility and resilience as the most powerful and common digital currency. While challenges still remain, Bitcoin's adoption in Venezuela underscores its capacity to empower individuals, drive innovation, and reshape the economic landscape in the future of cryptocurrency.

In light of these considerations, Bitcoin's role in Venezuela is not just a testament to its utility as a digital currency but also an indicator of the transformative potential cryptocurrencies hold for reshaping economic landscapes. As we look towards the future of cryptocurrency, the Venezuelan case serves as a powerful example of how digital currencies can provide practical solutions in times of crisis, driving forward the evolution of global financial systems and opening up new possibilities for economic development and social empowerment.

In essence, the Venezuelan Bitcoin case is a compelling narrative that highlights the multifaceted applications and profound impact of cryptocurrencies in real-world scenarios. It illustrates the adaptability of Bitcoin in addressing economic challenges and signifies a significant shift in the way we perceive and interact with money. The situation in Venezuela also underscores the potential of Bitcoin as a democratizing force, providing individuals with financial autonomy and a safeguard against hyperinflation, thus empowering them to participate in the global economy without the need for traditional banking infrastructure. While challenges remain, the path forged by Bitcoin in Venezuela paves the way for a future where digital currencies play a pivotal role in the global economy, offering hope and opportunity in the midst of adversity.

## References

1. B. Zohuri, H.T. Nguyen, & M. Moghaddam, *IJTC Phys.* 3, 1-14 (2022).
2. A. Antonopoulos, *Mastering Bitcoin: Programming the Open Blockchain*, Sebastopol, CA: O'Reilly 1-13 (2017).
3. D. Easley, M. O'Hara, & S. Basu, *J. Financ. Econ.* 134, 91–109 (2019).
4. D. Bianchi, *J. Altern. Invest.* 23, 162–179 (2020).
5. B. Biais, C. Bisiere, M. Bouvard, C. Casamatta, & A. Menkveld, "Equilibrium Bitcoin Pricing," *J. Finance* 78, 967–1014 (2023).
6. D. Bianchi, "Cryptocurrencies as an Asset Class? An Empirical Assessment," *J. Altern. Invest.* 23, 162–179 (2020).
7. W. Bolt, & M.R. van Oordt, "On the Value of Virtual Currencies," *J. Money, Credit Bank.* 52, 835–862 (2020).
8. J. Bouoiyour, R. Selmi, A.K. Tiwari, & O.R. Olayeni, "What Drives Bitcoin Price?" *Econ. Bull.* 36, 843–850 (2016).
9. A.de Vries, Bitcoin's growing energy problem. *Joule*, 2, 801–809 (2018).

10. T.Allen, How bitcoin could smash socialism in Venezuela: Toni Allen, FEE Freeman Article, page10.<https://fee.org/articles/how-bitcoin-could-smash-socialism-in-venezuela>