

SAE./No.185/June 2021

Studies in Applied Economics

BUKELE'S BITCOIN BLUNDER

Steve H. Hanke, Nicholas Hanlon, and Mihir Chakravarthi

Johns Hopkins Institute for Applied Economics,
Global Health, and the Study of Business Enterprise



Bukele's Bitcoin Blunder

By Steve H. Hanke, Nicholas Hanlon, and Mihir Chakravarthi

About the Series

The *Studies in Applied Economics* series is under the general direction of Professor Steve H. Hanke, Founder and Co-Director of the Johns Hopkins Institute for Applied Economics, Global Health, and the Study of Business Enterprise (hanke@jhu.edu).

About the Authors

Steve H. Hanke is a Professor of Applied Economics and Founder & Co-Director of The Johns Hopkins Institute for Applied Economics, Global Health, and the Study of Business Enterprise. He is a Senior Fellow and Director of the Troubled Currencies Project at the Cato Institute, a contributor at National Review, a well-known currency reformer, and a currency and commodity trader. Prof. Hanke served on President Reagan's Council of Economic Advisers, has been an adviser to five foreign heads of state and five foreign cabinet ministers, and held a cabinet-level rank in both Lithuania and Montenegro. He has been awarded seven honorary doctorate degrees and is an Honorary Professor at four foreign institutions. He was President of Toronto Trust Argentina in Buenos Aires in 1995, when it was the world's best-performing mutual fund. Currently, he serves as Chairman of the Supervisory Board of Advanced Metallurgical Group N.V. in Amsterdam. In 1998, he was named one of the twenty-five most influential people in the world by World Trade Magazine. In 2020, Prof. Hanke was named a "Knight of the Order of the Flag" by Albanian President Ilir Meta.

Nicholas Hanlon (nhanlon1@jhu.edu) is a junior at the Johns Hopkins University in Baltimore, pursuing majors in economics and applied mathematics & statistics and a minor in business. He contributed to this paper in the summer of 2021 as Prof. Hanke's Chief of Staff at the Johns Hopkins Institute for Applied Economics, Global Health, and the Study of Business Enterprise. On campus, Nicholas is a member of the varsity track and field team and the Marshal L. Salant Investment Team.

Mihir Chakravarthi (mchakra9@jhu.edu) is a sophomore at the Johns Hopkins University in Baltimore, pursuing majors in computer science and applied mathematics & statistics. He contributed to this paper in the summer of 2021 as an undergraduate research associate at the Johns Hopkins Institute for Applied Economics, Global Health, and the Study of Business Enterprise. On campus, Mihir is a member of the Alpha Kappa Psi business fraternity and SCNO where he consults pro bono for various Baltimore non-profit organizations.

Abstract

El Salvador's President Nayib Bukele has blessed El Salvador's Bitcoin Law, a law that will make bitcoin legal tender. Among other things, the President has asserted that bitcoin is a cheaper method of sending and receiving remittances than the methods currently used for the transmission of greenbacks to El Salvador. We examine the validity of the President's assertion, and conclude that the assertion is false.

Keywords: bitcoin, remittances

JEL Codes: F24

Introduction

In the middle of the night of June 8, 2021, El Salvador passed a law that made bitcoin legal tender.¹ In support of the law, President Nayib Bukele asserted that it's cheaper to send and receive remittance payments to El Salvador via bitcoin than via traditional money transfers. Bukele tweeted, "a big chunk of [remittances] is lost to intermediaries. By using bitcoin, the amount received by more than a million low-income families will increase in the equivalent of billions of dollars every year."² Let's examine the validity of that assertion.

Background on El Salvador Remittances

Aside from Haiti, no other country in the Western Hemisphere relies more on remittance payments than El Salvador. In fact, according to the World Bank, in 2019, personal remittances as a percentage of GDP were an astounding 20.93% in El Salvador.³ The Associated Press states that, by the end of 2020, the figure for remittances to El Salvador was \$5.92bn. That's 4.8% higher than El Salvador's 2019 remittances.⁴ In 2013, Inter-American Development Bank reported that 18% of all El Salvadoran households received remittances. These households received an average of \$195 in remittances per month, with only 13% of those monthly payments being in excess of \$350.⁵

Background on Bitcoin in El Salvador

El Salvador was dollarized in 2001, when the colón was, in effect, mothballed.⁶ But in 2019, the coastal town of El Zonte adopted bitcoin as a local currency.⁷ El Zonte is now known as "Bitcoin Beach." Participation in the bitcoin economy was optional and encouraged by gifts of bitcoin to El Zonte families. However, bitcoin did not catch on in Bitcoin Beach.⁸ Merchants and consumers struggled to make the payments app work on their phones, as internet connectivity in El Salvador is the second-worst in the Latin American-Caribbean region.⁹ So, even in Bitcoin Beach, the greenback is king.

El Salvador's rejection of bitcoin is not limited to Bitcoin Beach. According to a June 2021 survey by El Salvador's Chamber of Commerce, 92% of over 1600 respondents said they did not

¹ Ostroff, C., & Pérez, S. (2021, June 9). El Salvador Becomes First Country to Approve Bitcoin as Legal Tender. *The Wall Street Journal*. <https://www.wsj.com/articles/el-salvador-becomes-first-country-to-approve-bitcoin-as-legal-tender-11623234476>

² Bukele, N. (@nayibbukele). *Twitter*. <https://twitter.com/nayibbukele/status/1401337860343668736>

³ Personal remittances received (% of GDP) - El Salvador. *World Bank*. <https://data.worldbank.org/indicator/BX.TRF.PWKR.DT.GD.ZS?end=2019&locations=SV&start=2000&view=chart>

⁴ Remittances to El Salvador rebound after early pandemic drop. (2021, January 19). *AP News*. <https://apnews.com/article/san-salvador-coronavirus-pandemic-el-salvador-1623416c0ddc7aa238911f8a422b6c8b>

⁵ Keller, L., & Rouse, R. (2016, September). Remittance Recipients in El Salvador. *Inter-American Development Bank*. <https://publications.iadb.org/publications/english/document/Remittance-Recipients-in-El-Salvador-A-Socioeconomic-Profile.pdf>

⁶ Swinson, A. (2011, June). Official Dollarization as a Monetary Regime: Its Effects on El Salvador. *International Monetary Fund*. <https://www.imf.org/external/pubs/ft/wp/2011/wp11129.pdf>

⁷ Bitcoin Beach. <https://www.bitcoinbeach.com>

⁸ Selgin, G. (2021, June 17). The Bitcoin Law: Counterfeit Free Choice in Currency. *Alt-M*. <https://www.alt-m.org/2021/06/17/the-bitcoin-law-counterfeit-free-choice-in-currency/>

⁹ Renteria, N. (2021, June 14). In El Salvador's bitcoin beach town, digital divide slows uptake. *Reuters*. <https://www.reuters.com/article/ctech-us-el-salvador-bitcoin-beach-idCAKCN2DQ1TW-OCATC>

agree with mandating the acceptance of bitcoin, and 93.5% said they did not want to receive their salaries in bitcoin.¹⁰

Traditional Remittance Costs

Let's take a look at the costs of making remittance payments from the United States to El Salvador using traditional money transfer services. The costs of these remittance payments (reported by the World Bank) vary depending on what the sender uses as a payment instrument (bank transfer, cash, or credit), and how the recipient receives the money (bank transfer, mobile wallet, cash, or credit).¹¹ Detailed costs are contained in Table 1 and are summarized in Table 2.

Table 1: Cost for remittance payments from the U.S. to El Salvador as of 2021 Q1

Firm	Method	Fee (USD) for \$200 payment	Cost (%) for \$200 payment	Fee (USD) for \$500 payment	Cost (%) for \$500 payment
Western Union	Credit-Cash*	\$6.00	3.00%	\$6.00	1.20%
Western Union	Bank-Cash	\$6.00	3.00%	\$15.00	3.00%
Western Union	Cash-Cash*	\$8.00	4.00%	\$8.00	1.60%
Western Union	Credit-Mobile Wallet*	\$0.00	0.00%	\$0.00	0.00%
MoneyGram	Bank-Bank	\$0.00	0.00%	\$0.00	0.00%
MoneyGram	Credit-Bank*	\$3.00	1.50%	\$8.00	1.60%
MoneyGram	Bank-Cash	\$5.00	2.50%	\$5.00	1.00%
MoneyGram	Credit-Cash*	\$5.00	2.50%	\$10.00	2.00%
MoneyGram	Cash-Cash/Bank*	\$8.00	4.00%	\$8.00	1.60%
Xoom	Bank-Cash**	\$8.00	4.00%	\$11.00	2.20%
Xoom	Credit-Cash*	\$13.00	6.50%	\$23.00	4.60%
Remitly	Bank/Credit-Cash	\$6.00	3.00%	\$9.00	1.80%
Remitly	Credit-Cash*	\$8.00	4.00%	\$11.00	2.20%
Ria	Bank/Credit-Cash	\$5.00	2.50%	\$5.00	1.00%
Ria	Cash-Cash/Bank**	\$6.00	3.00%	N/A	N/A
Ria	Credit-Cash*	\$8.00	4.00%	\$9.00	1.80%

*Note: * indicates an instant payment. ** indicates a same-day payment.*

Source: World Bank

Prepared by Professor Steve H. Hanke, The Johns Hopkins University

¹⁰ Dudas y preocupación entre empresarios y consumidores ante circulación del Bitcoin en el país. <https://camarasal.com/dudas-y-preocupacion-entre-empresarios-y-consumidores-ante-circulacion-del-bitcoin-en-el-pais/>

¹¹ Sending money from United States to El Salvador. *World Bank*. https://remittanceprices.worldbank.org/en/corridor/United-States/El-Salvador?order=field_ccl_total_cost_percent_cal&sort=asc#tab-1

Table 2: Average cost of remittance payments from the U.S. to El Salvador by firm

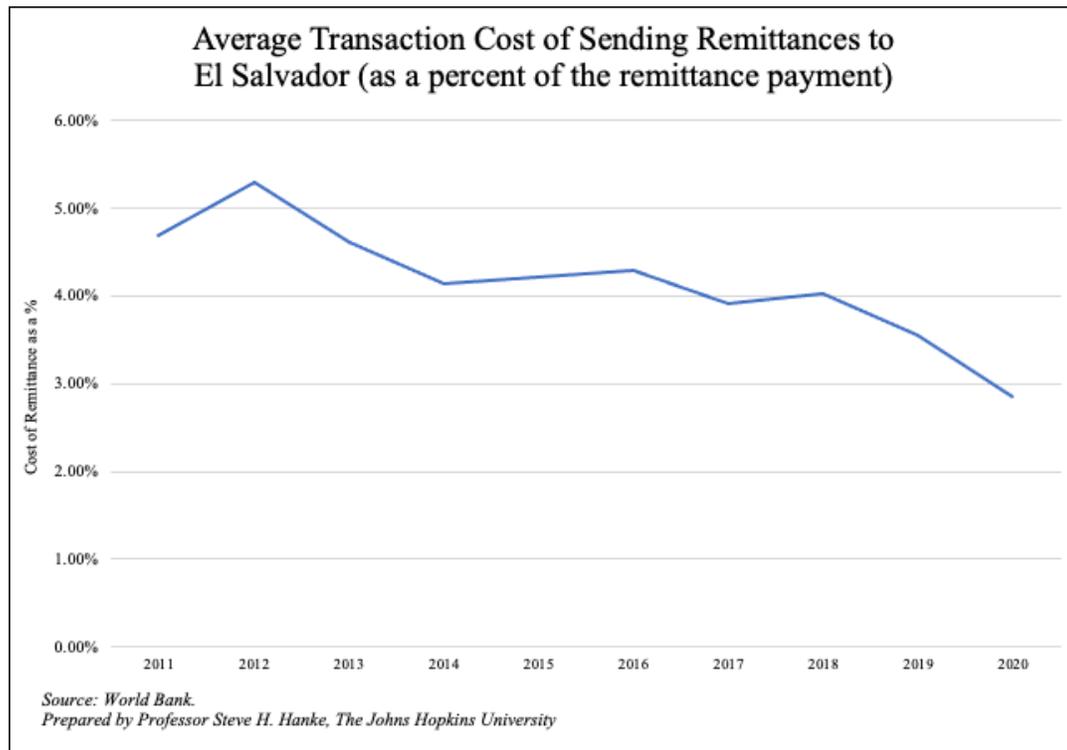
Firm	Average remittance cost (%)
Western Union	1.98%
MoneyGram	1.67%
Xoom	4.33%
Remitly	2.75%
Ria	2.46%

Source: World Bank

Prepared by Professor Steve H. Hanke, The Johns Hopkins University

So, just how do El Salvador’s remittance costs stack up with those realized in other countries? El Salvador stacks up very well. Indeed, its average transaction cost as a percent of sending remittances of 2.85% per transaction is the sixth lowest of the 104 countries monitored by the World Bank. And, El Salvador realized the lowest cost of remittance transfers of any country in the Latin American-Caribbean region.¹²

Figure 1



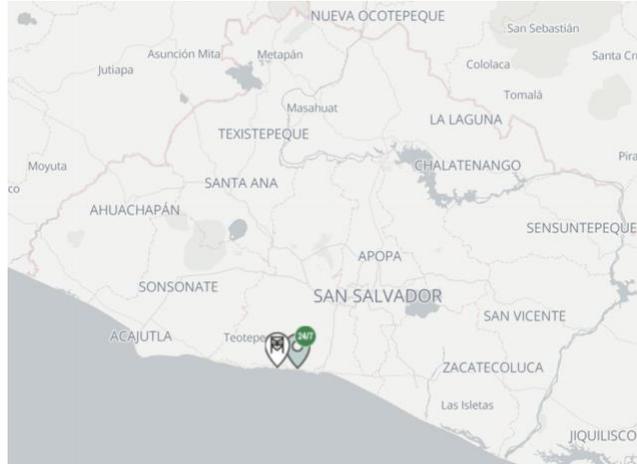
¹² El Salvador – Average Transaction Cost of Sending Remittances to A Specific Country. World Bank. <https://data.worldbank.org/indicator/SI.RMT.COST.IB.ZS?locations=SV>

Bitcoin Remittance Costs

Before diving into the costs of receiving remittances via bitcoin, we must note that 82.5% of respondents in the aforementioned Chamber of Commerce survey do not want to receive remittances via bitcoin.¹³ El Salvadorans do not want bitcoin, they want greenbacks.

As things currently stand, El Salvadorans without a bank account (70% of the population) can only convert bitcoin to greenbacks at a bitcoin ATM.¹⁴ At present, El Salvador only has two active bitcoin ATMs. These ATMs reside in coastal villages that are located 3.7 miles apart—El Sunzal and El Zonte (Bitcoin Beach).¹⁵ The total population of the villages where the ATMs are located accounts for only a tiny fraction of El Salvador’s population.^{16,17} But, Athena, the manufacturer of one of El Salvador’s two bitcoin ATMs, has indicated that it plans to end this drought by installing over 1,000 ATMs throughout El Salvador.¹⁸

Figure 2: Map of El Salvador with Bitcoin ATMs



Source: Coin ATM Radar

To exchange bitcoin for cash at a bitcoin ATM, one must pay a bitcoin ATM fee. Athena lists its bitcoin-sale fee at 5%, plus whatever network fees are being charged at the moment. These network fees are the cost of confirming and executing the sale. To facilitate more rapid transactions, Athena recommends paying higher network fees. On Athena’s website, it even recommends to “err on the side of higher fees.”¹⁹ It is worth mentioning that bitcoin transactions may never be consummated unless a large enough network fee is paid. That’s why Athena recommends paying higher fees. So, the “remittance cost” when El Salvadorans exchange their bitcoin for dollars is at least 5%, even before factoring in the network fees, the travel costs associated with going to an ATM, and the safety and security costs associated with using an ATM in El Salvador.

¹³ Dudas y preocupación entre empresarios y consumidores ante circulación del Bitcoin en el país. <https://camarasal.com/dudas-y-preocupacion-entre-empresarios-y-consumidores-ante-circulacion-del-bitcoin-en-el-pais/>

¹⁴ El Salvador – Global Financial Inclusion. *World Bank*. <https://datacatalog.worldbank.org/dataset/el-salvador-global-financial-inclusion-global-findex-database-2017>

¹⁵ Bitcoin ATMs in El Salvador. *Coin ATM Radar*. <https://coinatmradar.com/country/64/bitcoin-atm-el-salvador/>

¹⁶ Koffman, T. This El Salvador Village Adopts Bitcoin As Money. *Forbes*. <https://www.forbes.com/sites/tatianakoffman/2020/07/14/this-el-salvador-village-adopts-bitcoin-as-money/?sh=6436034a2044>

¹⁷ El Salvador Total Population. *World Bank*. <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=SV>

¹⁸ Athena Bitcoin (@AthenaBitcoin). *Twitter*. <https://twitter.com/AthenaBitcoin/status/1405288824389791745>

¹⁹ How to withdraw cash at an Athena ATM. *Athena*. <https://www.athenabitcoin.com/how-to-sell>

Conclusion:

El Salvador's President Nayib Bukele blessed El Salvador's Bitcoin Law, asserting that making bitcoin legal tender would reduce remittance costs. But at present, Bukele's assertion is incorrect. As things currently stand, the cost of using bitcoin to send remittances to El Salvador is not, in fact, cheaper than traditional money transfer services. Indeed, at present, traditional transfer methods are the cheapest way to make remittance payments.

The remittance fees for each of the money-wire transfer services are contained in Table 3. According to the World Bank, the average realized fee is, in fact, 2.85%. El Salvadorans want greenbacks, not bitcoin. So, if sent remittances in bitcoin, El Salvadorans (at present) have to convert their bitcoin to dollars at a bitcoin ATM. Therefore, the minimum cost of receiving remittances via bitcoin is 5% *plus* network fees *plus* the costs of travel, safety, and security. This is clearly at least double the average fee realized when using traditional methods.

Table 3: Remittance fee ranges

Method	Remittance fee range
Western Union	0% – 4.00%
MoneyGram	0% – 4.00%
Xoom	2.20% – 6.50%
Remitly	1.80% – 4.00%
Ria	1.00% – 4.00%
Bitcoin	5.00% + network fees + travel costs + safety & security costs

Sources: World Bank, Athena

Prepared by Professor Steve H. Hanke, The Johns Hopkins University

We don't yet know the future of El Salvador's bitcoin modalities. The Bitcoin Law was hastily put together in the middle of the night by what appear to be amateurs. New pieces to the puzzle and how they would fit together appear with each passing day. So, an assessment of the puzzle's final shape is impossible to make at this point.

Not only President Bukele, but many of the bitcoin evangelicals are factually unhinged. For example, Jack Mallers, the CEO of Strike, which is a mobile payments app that will apparently receive a monopoly franchise to service El Salvador, had this to say about remittances: "If you try to send \$50 to El Salvador, it will cost you 25 bucks."^{20,21} The World Bank's remittances data archives make clear that these statements are fanciful. Indeed, it's nothing more than bitcoin evangelical disinformation.

²⁰ Strike Drives Bitcoin Forward as El Salvador Becomes World's First Country to Adopt Bitcoin as Legal Tender. *BusinessWire*. <https://www.businesswire.com/news/home/20210605005045/en/Strike-Drives-Bitcoin-Forward-as-El-Salvador-Becomes-World%E2%80%99s-First-Country-to-Adopt-Bitcoin-as-Legal-Tender>

²¹ El Salvador – The Whole Story with Jack Mallers. *What Bitcoin Did*. <https://www.youtube.com/watch?v=yL6J56Jzv10>

References

- Athena (@AthenaBitcoin). *Twitter*.
<https://twitter.com/AthenaBitcoin/status/1405288824389791745>
- Bitcoin ATMs in El Salvador. *Coin ATM Radar*. <https://coinatmradar.com/country/64/bitcoin-atm-el-salvador/>
- Bitcoin Beach. <https://www.bitcoinbeach.com>
- Bukele, N. (@nayibbukele). *Twitter*.
<https://twitter.com/nayibbukele/status/1401337860343668736>
- Dudas y preocupación entre empresarios y consumidores ante circulación del Bitcoin en el país.
<https://camarasal.com/dudas-y-preocupacion-entre-empresarios-y-consumidores-ante-circulacion-del-bitcoin-en-el-pais/>
- El Salvador Total Population. *World Bank*.
<https://data.worldbank.org/indicator/SP.POP.TOTL?locations=SV>
- El Salvador – Average Transaction Cost of Sending Remittances to A Specific Country. *World Bank*. <https://data.worldbank.org/indicator/SI.RMT.COST.IB.ZS?locations=SV>
- El Salvador – Global Financial Inclusion. *World Bank*.
<https://datacatalog.worldbank.org/dataset/el-salvador-global-financial-inclusion-global-index-database-2017>
- El Salvador – The Whole Story with Jack Mallers. *What Bitcoin Did*.
<https://www.youtube.com/watch?v=yL6J56Jzvl0>
- How to withdraw cash at an Athena ATM. *Athena*. <https://www.athenabitcoin.com/how-to-sell>
- Keller, L., & Rouse, R. (2016, September). Remittance Recipients in El Salvador. *Inter-American Development Bank*.
<https://publications.iadb.org/publications/english/document/Remittance-Recipients-in-El-Salvador-A-Socioeconomic-Profile.pdf>
- Koffman, T. This El Salvador Village Adopts Bitcoin As Money. *Forbes*.
<https://www.forbes.com/sites/tatianakoffman/2020/07/14/this-el-salvador-village-adopts-bitcoin-as-money/?sh=6436034a2044>
- Ostroff, C., & Pérez, S. (2021, June 9). El Salvador Becomes First Country to Approve Bitcoin as Legal Tender. *The Wall Street Journal*. <https://www.wsj.com/articles/el-salvador-becomes-first-country-to-approve-bitcoin-as-legal-tender-11623234476>
- Personal remittances received (% of GDP) - El Salvador. *World Bank*.
<https://data.worldbank.org/indicator/BX.TRF.PWKR.DT.GD.ZS?end=2019&locations=SV&start=2000&view=chart>
- Remittances to El Salvador rebound after early pandemic drop. (2021, January 19). *AP News*.
<https://apnews.com/article/san-salvador-coronavirus-pandemic-el-salvador->

1623416c0ddc7aa238911f8a422b6c8b

Renteria, N. (2021, June 14). In El Salvador's bitcoin beach town, digital divide slows uptake. *Reuters*. <https://www.reuters.com/article/ctech-us-el-salvador-bitcoin-beach-idCAKCN2DQ1TW-OCATC>

Sending money from United States to El Salvador. *World Bank*.
https://remittanceprices.worldbank.org/en/corridor/United-States/El-Salvador?order=field_cc1_total_cost_percent_cal&sort=asc#tab-1

Strike Drives Bitcoin Forward as El Salvador Becomes World's First Country to Adopt Bitcoin as Legal Tender. *BusinessWire*.
<https://www.businesswire.com/news/home/20210605005045/en/Strike-Drives-Bitcoin-Forward-as-El-Salvador-Becomes-World%E2%80%99s-First-Country-to-Adopt-Bitcoin-as-Legal-Tender>

Swinson, A. (2011, June). Official Dollarization as a Monetary Regime: Its Effects on El Salvador. *International Monetary Fund*.
<https://www.imf.org/external/pubs/ft/wp/2011/wp11129.pdf>