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BITCOIN IN EL SALVADOR: DIGITAL FINANCE INNOVATION OR PRESIDENT BUKELE'S GAMBLE

**ANNE ANDERS
YVETTE M. BENDECK
STEPHEN J. COTTON
IVELINA PAVLOVA**

University of Houston – Clear Lake

In 2021, President Nayib Bukele led El Salvador to be the first country to adopt cryptocurrency – Bitcoin specifically – as legal tender. Through a series of initiatives, he pushed for widespread adoption in the country. President Bukele believed that the use of Bitcoin – then the most popular cryptocurrency in the world – would help improve access to the formal economy in a country where more than two-thirds of its citizens did not have bank accounts. Furthermore, it was hoped Bitcoin would decrease costs for citizens receiving remittances from family members who lived abroad. He was confident that Bitcoin would attract foreign investment and increase tourism, as well as provide Salvadorans with an appreciating currency. The International Monetary Fund and credit rating agencies, however, saw it differently, immediately downgrading El Salvador's debt, raising its borrowing costs, and restraining its access to foreign loans until the policy was reversed. Salvadorans themselves were, at best, skeptical, as they remembered the sharp swings in exchange rates and living standards that occurred before El Salvador adopted the U.S. Dollar as its official currency in 2001.

Had President Bukele had led El Salvador to the cutting edge of a world of digital finance, or he was gambling public money on an ill-advised scheme?

El Salvador

From Independence to Coffee Exporter

El Salvador, located in Central America on the Pacific coast between Honduras and Guatemala, was the smallest and most densely populated country in the region. In 1821, Honduras, Guatemala, Nicaragua, Costa Rica, and El Salvador formed the Federation of Central America and declared independence from Spain. Eighteen years later, El Salvador broke ties with the Federation and became an independent republic (U.S. Department of State n.d.)

During the 1880s, large parts of communal land were privatized to expand the country's coffee production. Over time, coffee became the country's biggest export and increases in the price of coffee brought prosperity to the country. However, the country's newly found wealth was concentrated in the hands of few, resulting in social inequality (Menjívar & Gomez 2018).

Military Rule, The Exodus, and Prosperity

The killing of at least 10,000 farmworkers who participated in a 2-day revolt organized by Farabundo Martí, leader of the Salvadoran Communist Party, in January 1932 known as "*La Matanza*" (The Slaughter), marked the beginning of a series of military dictatorships that governed El Salvador until 1979 (Varela *et al.* 2023). The drop in coffee prices because of the Great Depression combined with the political repression that followed The Slaughter, led as many as 40,000 Salvadorans to migrate to Honduras in search of work (Menjívar & Gomez 2018). By 1950, the price of coffee had rebounded which spurred economic growth and allowed the Salvadoran government to engage in a series of economic reforms throughout the 1950s and 1960s. These reforms brought economic growth, but once again, only a small portion of the population benefited, intensifying social inequality (Varela *et al.* 2023).

Involuntary Repatriation

By the late 1960s, Honduras had 300,000 Salvadorans residing in the country, most of whom were squatters living illegally. In 1969, Honduras started returning undocumented immigrants

to El Salvador, which resulted in a war between the two countries. By 1971, 41% of Salvadoran peasants were landless, with an estimated unemployment rate of 45% (Menjívar & Gomez 2018).

Political Unrest and The Civil War

Economic growth slowed during the 1970s as coffee prices declined. During this time, several armed resistance groups were formed against the government. These groups organized peasants to engage in non-violent political protests. On the heels of the Salvadoran military's assassination of Archbishop Oscar Romero, who was an outspoken critic of the military for their human rights abuses and social injustice, five of the resistance groups joined forces to form the Farabundo Marti National Liberation Front (FMLN) in 1980. Talks between the government-military coalition and the FMLN proved unproductive which resulted in a civil war that lasted 12 years (Macica *et al.* 2023). Despite the civil war, El Salvador transitioned from a military dictatorship to a democratic government in 1983 with the adoption of a new constitution and President Napoleon Duarte's election (Varela *et al.* 2023). The international community's outcry over the November 1989 assassination of six Jesuit priests associated with the Central American University, El Salvador's first private university, led to the UN-mediated peace negotiation that ended the civil war in 1992 (Macica *et al.* 2023).

From the Colón to Dollarization

In 1992, with the country in shambles after the civil war, El Salvador began to rebuild its economy with the assistance of the World Bank, the International Monetary Fund (IMF) and other international organizations. At the time, the official currency was the Colón, which was pegged to the dollar at an exchange rate of 8.75 per U.S. dollar from 1993 to 2000 (Andrew 2012). The country's service industry grew, and agricultural exports increased. By 2000, the country's debt was manageable, and the economy was growing at about 1% per year. In 2000 El Salvador's inflation rate was 2.3%, which was considerably lower than other countries in the region. The average inflation rate for Latin American and Caribbean countries (excluding high income countries) was 7.1% (World Bank 2022a, 2022b).

Despite a stable economy, El Salvador adopted the U.S. Dollar as its official currency in 2001, a move that surprised many since only a country with inflation out of control and an economy in a downward spiral would consider giving up control over its own monetary policy with such a move (Andrew 2012). The country's leaders explained that the move would attract more foreign investment, especially from the U.S., and result in a much-needed economic boost. Furthermore, under the pegged regime before dollarization, there was a currency risk premium and relatively high Colón-Dollar interest rate spread, driven in part by economic growth (leading to lower spread) and inflation (leading to higher spread) in El Salvador (Andrew 2012). Dollarization brought price stability and resulted in a decrease in interest rates, due to a decrease in the currency risk premium (Andrew 2012). However, the hoped for increase in foreign investment did not occur and economic growth remained sluggish.

Social, Economic and Political Situation as of 2023

Despite persistent economic growth between 2012 - 2019, El Salvador saw a decline in inequality and poverty, which made it the most equal country in the region prior to the COVID-19 crisis (Barroso & Robayo 2022). The increase in equality was partly due to the remittances sent from the almost two million Salvadorans living abroad, more than 20% of El Salvador's population. The poor depended on remittances for their livelihood, but these payments also were important for the country, consistently making up a large portion of the country's GDP as shown in Exhibit 1 (World Bank 2021a). In 2021, as the country rebounded from COVID-19, El Salvador's Gross Domestic Product (GDP) was \$26.1 billion, growing by an estimated 10.2% as shown in Exhibit 2 (World Bank 2021b). GDP growth slowed to 2.8% in 2022 and was expected to slow to 2.3% in 2023 (World Bank 2023).

Exhibit 1. Personal Remittances as Percent of GDP

Source: World Development Indicators Personal Remittance as a Percent of GDP data series 1980 -2021.

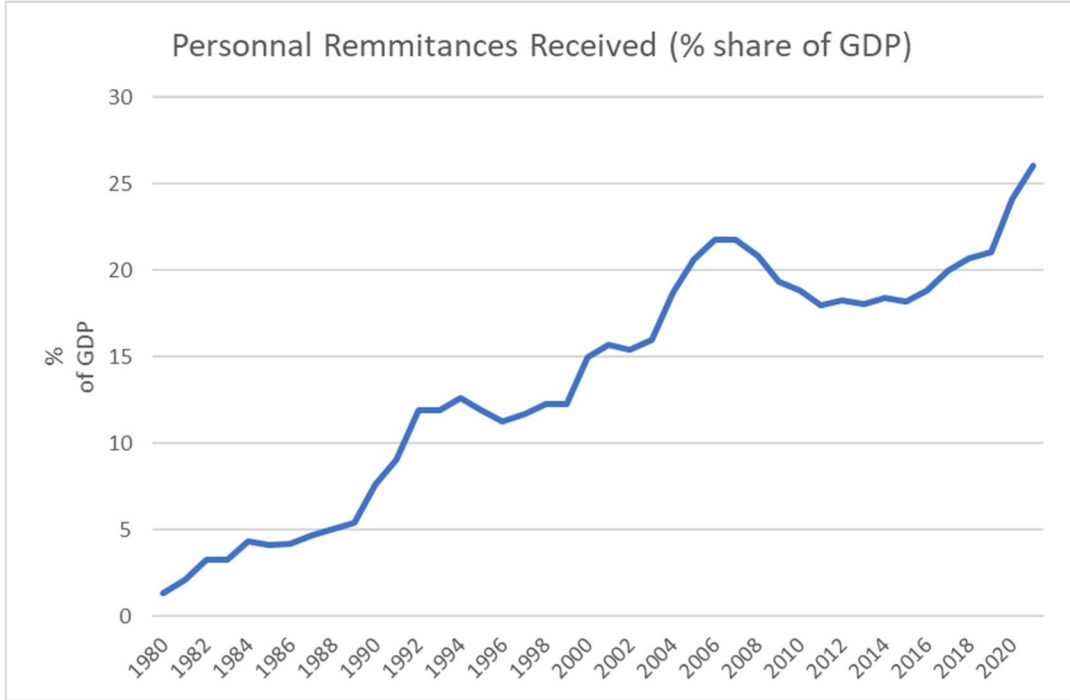


Exhibit 2. GDP Growth Rate

Source: World Bank National Accounts Data 1996 - 2021



Corruption, defined as the intentional misuse of public resources for personal gain, was pervasive in El Salvador. In 2021, Transparency International, which conducted corruption perception surveys, gave El Salvador a transparency score of 34 out of 100. The lower the score, the more corrupt the public sector was considered. The ranking placed El Salvador in the bottom 36% of the 180 countries surveyed (Transparency International, 2022a). The organization also placed El Salvador on its watch list in 2022 over concerns about the dismissal and replacement of five Supreme Court justices from the Constitutional Chamber. The justices had declared unconstitutional the arrest and confinement of individuals who violated the national COVID-19 quarantine rules. Transparency International was also concerned about the removal of the attorney general investigating allegations of corruption linked to COVID-19 crisis spending, and the inclusion of government officials on the 2021 U.S. Engel List of those who were “*accused of corruption and assault democracy*” (Transparency International 2022b; Blitzer 2022).

After President Nayib Bukele’s New Ideas party won a super-majority of seats in 2021, the Legislative Assembly passed legislation banning any COVID-19 spending investigations and protected officials from facing corruption charges. Immediately after *El Faro*, a Salvadoran newspaper, published an article detailing the government’s negotiations with the MS-13 gang, the Legislative Assembly amended the penal code to punish anyone who shared information about gangs. The action was considered as a move to censor journalists (Blitzer 2022).

Although El Salvador had twenty-one political parties, only the Nationalist Republic Alliance (ARENA), FMLN and New Ideas party candidates had won presidential elections since the end of the civil war. As of 2022, one-third of the political parties held at least one seat in the Legislative Assembly (List of political, 2023).

President Bukele

Nayib Bukele served as the 43rd president of El Salvador. When he was elected at 37, he was the youngest national leader in Latin America. His family was involved in fast food, textile, and public relations businesses. President Bukele briefly attended college in El Salvador where he studied law but left without earning a degree. Instead, he ended up running the family's public relations firm (Blitzer 2022).

Unlike most of the upper-class families in El Salvador, the wealthy Bukele family was affiliated with the FMLN, which was one of the principal clients of the Bukeles' public relations firm. Bukele's position at the firm served as a "*political apprenticeship*" that sparked his political interest. He successfully won elections to serve as mayor of Nuevo Cuscatlán (2012-2015) and mayor of San Salvador (2015-2018) as the FMLN party candidate. Some of his accomplishments in Nuevo Cuscatlán included the addition of a 24-hour medical facility, a library, a community center, and grants for students to learn English or study computer science. As mayor of San Salvador, he was credited for building the Cuscatlán market and San Salvador's first municipal library, as well as revitalizing the capital's historic commercial district. President Bukele's working relationship with San Salvador City Council deteriorated to the point he was expelled from the FMLN party. The deterioration in the relationship was due to Bukele's failure to seek required permits or follow the city's zoning ordinances for the projects he initiated (Blitzer 2022).

His expulsion from the FMLN party led him to create the New Ideas party in 2018. President Bukele's New Ideas progressive presidential candidacy was blocked by the FMLN party and the right-wing conservative party ARENA. He ran for president as the candidate for the Grand Alliance for National Unity (GANU) party, winning with 53% of the votes cast (Blitzer 2022). Bukele's landslide victory stemmed to a considerable extent from his accomplishments as mayor, his populist agenda and promises he made about creating jobs, attracting foreign direct

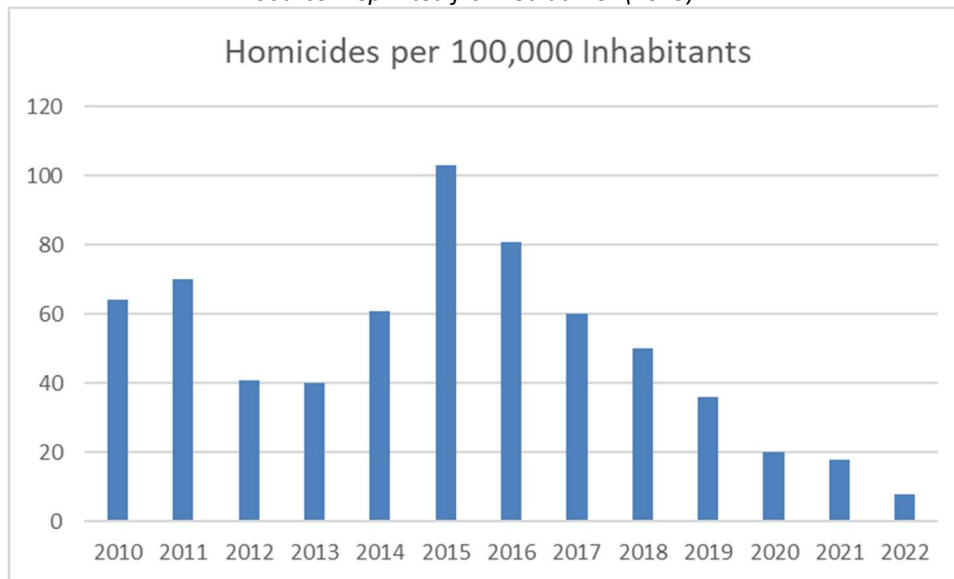
investment, addressing corruption and cracking down on gang violence to lift the citizens out of poverty.

Gang violence started dominating life in El Salvador after the United States began deporting gang members in the mid-1990s. By 2015, gangs had tens of thousands of members who extorted 4 billion U.S. dollars (approximately 15% of GDP) per year from local businesses (Blitzer 2022).

According to the United Nations Office of Drugs and Crime, from 2015 through 2018, El Salvador had the highest crime rate in the world. The homicide rate per 100,000 population ranged from 52 to 105 (United Nations n.d.). As shown in Exhibit 3, President Bukele's crackdown on gangs led to a historic decrease in the number of murders, with the homicide rate decreasing by half from 2021 to 2022 (Galdamez 2023).

Exhibit 3. Homicides in El Salvador

Source: Reprinted from Galdamez (2023)



However, Bukele also demonstrated authoritarian tendencies. In February 2020, President Bukele, flanked by armed soldiers, entered the Legislative Assembly and sat in the chair reserved for the head of the Assembly in order to intimidate legislators who were failing to

approve a loan for security spending from the Central American Bank for Economic Integration, declaring, *“It is clear who is in charge of the situation.”* (El Salvador Parliament 2020) He also discharged Supreme Court judges and replaced them with judges who allowed him to run for a second term despite constitutional term limits (Blitzer 2022). His attitude to this criticism was reflected in the Twitter profile shown in Exhibit 4, referring to himself as the coolest dictator in the world (Crane 2021).

Exhibit 4. President Bukele’s Twitter Profile on September 20, 2021

Source: Image copied from Crane (2021)



Despite his popularity, human rights groups, opposition party politicians, and journalists raised concerns about his authoritarian governing. The years of Bukele’s presidency also coincided with thousands of Salvadorans being detained during the COVID–19 outbreak and jailed after mass sentencing with no proper criminal investigations. Journalists were threatened; protestors and others were arrested for *“illegal gathering”* and other pretenses (Blitzer 2022).

President Bukele’s approval rating was the highest among all Latin American leaders with an approval rating of 86%. (CID Gallup 2022). From a scale from 1 (lowest) to 10 (highest), his approval ratings between 2019 and 2022 ranged from 7.54 and 8.37 (Instituto Universitario 2023). President Bukele’s popularity stemmed from his crackdown on gangs, improved public infrastructure, and his response to the COVID–19 pandemic (Blitzer 2022).

What is Bitcoin?

Bitcoin was created in October 2008 by “Satoshi Nakamoto,” (an) anonymous individual(s) who wished to create a currency that was *“completely decentralized, with no central server or trusted parties, because everything is based on crypto[graphic] proof instead of trust”* (Nakamoto 2008). The coins were digital ledgers of transactions. All transactions making up a coin were recorded on the coin; thus, the legitimacy of the coin was easily verified. The video in Exhibit 5 describes the verification process.

Exhibit 5. What is Bitcoin Mining?

Source: Voice of America (2022)

<https://www.youtube.com/watch?v=a4WSVqLkvn0&t=21s>

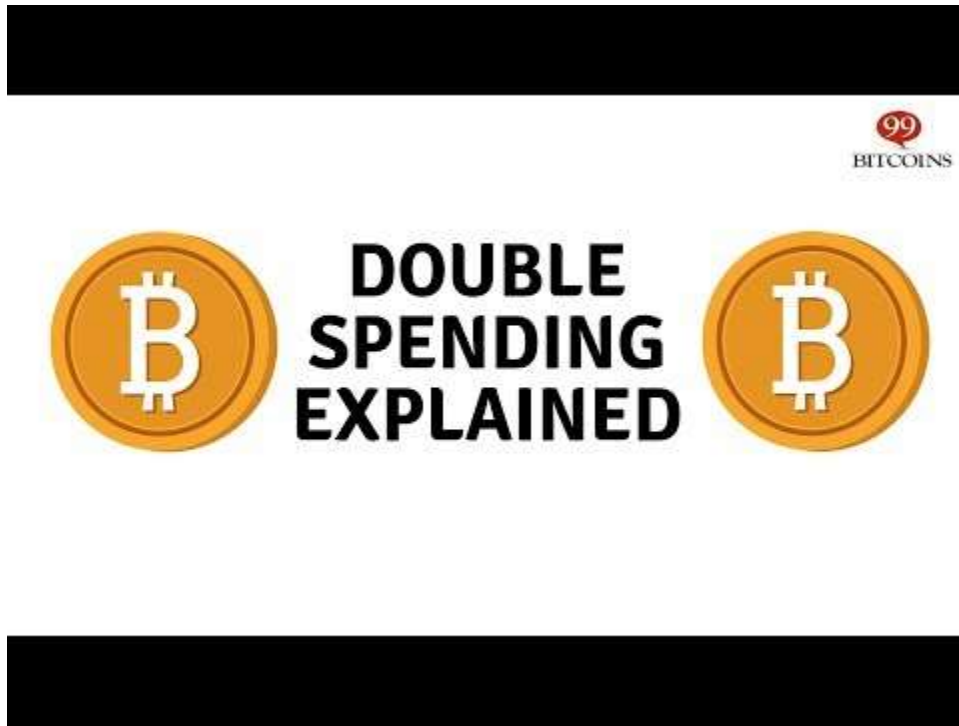


Financial intermediaries at the time accepted that some amount of fraud was expected with checks and electronic transfers, and these costs were incorporated into the system's transactions costs. Bitcoin had the potential to eliminate these costs. However, unlike checks and electronic transfers, non-physical currencies were subject to the "double-spend" problem. The problem arose when an individual who used a digital currency to pay for items or services subsequently canceled the payment after the goods or services had been received, and then used the same digital currency for another transaction. Exhibit 6 illustrates the double spending problem and how it could be avoided.

Exhibit 6. What is Double Spending?

Source: 99Bitcoins (2015)

<https://www.youtube.com/watch?v=phLSjZdDc5A>



Bitcoin had a fixed supply of 21 million total coins. As of 2023, approximately 19.3 million had been issued. The rate of “*mining*” of new coins, in which new coins were awarded in exchange for the computational work of verifying transactions on the blockchain, was expected to slow as the number of coins approached its final supply. Because of the finite supply and wider adoption, increased demand over time was anticipated. In addition, because individuals occasionally lose their Bitcoins, in the ultra-long run the supply was expected to decrease. For example, James Howells, of Wales, accidentally threw away a hard drive in August 2013 containing roughly 8,000 Bitcoin (\$160 M at 1 BTC=\$20,000 USD) and fought unsuccessfully for years for permission to excavate the local landfill (Max 2021). Similarly, Stefan Thomas lost 7,002 Bitcoin (\$140 M) when he lost the paper containing his password to access his hard drive (Popper 2021). As a result of this largely finite but ultimately decreasing supply, investors’ expectations had generally tilted towards increasing prices. Bitcoin advocates hoped that eventually fiat currencies would be moved out of the hands of governments.

For reserve currencies, Bitcoin and other cryptocurrencies could be considered a threat. For small countries, however, cryptocurrencies theoretically had the advantage of providing access to an alternate appreciating asset. For countries that conducted much trade in U.S. dollars, or were fully dollarized, monetary policy was at the whim of policymakers in the United States. El Salvador, which was dollarized, chose to adopt Bitcoin as an official currency in the hopes of benefiting from the appreciation of Bitcoin over time, and to take advantage of increased direct trade from advocates of Bitcoin.

Before the Law, There Was Bitcoin Beach

In 2018, an anonymous donor provided the funds to support the Bitcoin Beach project, which strived to establish a sustainable Bitcoin economic ecosystem in El Zonte. El Zonte was a small, secluded fishing town located on the Pacific Coast, about 26 miles from San Salvador, the country's capital. Devastated by the civil war, the community remained highly impoverished, but had immense potential for growth through the tourism industry. Known for great surfing, the town had seen an increase in travelers visiting the community, but the estimated 500+ local families gained little from it. Most of the population did not have a bank account and depended on remittances from relatives living abroad. With the help of a local non-profit organization, the infrastructure for Bitcoin Beach was put into place and locals were educated on the use of the currency. The donation allowed for the creation of dozens of jobs with the stipulation that everyone be paid in Bitcoin. Two years later, the community had been transformed, and the Bitcoin Beach experiment was portrayed as an enormous success (Bitcoin Beach n.d.).

Bitcoin Law

Via recorded video broadcasted at the Bitcoin 2021 conference on June 5, 2021, President Bukele announced that he was sending a bill to the Legislative Assembly of El Salvador to approve Bitcoin as legal tender for the country (Thebault & Villegas 2021). Three days later,

Decreto N° 57, Ley de Bitcoin (Bitcoin Law), was overwhelmingly approved by the Assembly with a vote of 62 for and 22 against the bill, making El Salvador the first sovereign nation to approve a cryptocurrency as legal tender (Renteria *et al.* 2021). The reasons for adopting Bitcoin as legal tender included bringing into the fold nearly 70% of the Salvadoran population who did not have access to traditional financial services and promoting economic growth for the benefit of the population (Decreto N° 57 2021 p. 1).

Effective September 7, 2021, Salvadorans were able to transact business either in U.S. Dollars (USD) or in Bitcoin (BTC). The law stipulated that the exchange rate between BTC and the USD would be determined by the market. At the purchaser's request, the law mandated the acceptance of Bitcoin payments by all goods and services providers (Article 7) with the technical capability to do so (Article 12). To protect against Bitcoin price volatility, the law guaranteed *"the automatic and instantaneous conversion of Bitcoin into Dollars if so desired"* by the recipient (Article 8). The guarantee was backed by the creation of a \$150 million governmental trust fund in the Development Bank of El Salvador (BANDESAL) (Decreto N° 57 p. 2). Exhibit 7, lists other provisions included in the legislation.

Exhibit 7. Other Provisions of the Bitcoin Law

Source: Bitcoin Law p. 2

Prices for goods and services could be quoted in Bitcoin.

Taxes could be paid with Bitcoin.

No capital gains taxes associated with the sale of Bitcoin.

The infrastructure investment to implement the plan would be funded by the government.

The U.S. Dollar would continue to be the currency of reference for accounting purposes.

In Peter McCormack's *"What Bitcoin Did"* podcast (2021 40:13), President Bukele explained that Article 7, 8 and 12 of the Bitcoin Law could not each be viewed in isolation. He noted that if merchants refused BTC payments *"it would be discrimination against 70% of the people you*

want to benefit,” so Article 7 is there to protect the buyers. Article 8 was designed to protect the sellers because as President Bukele noted, if sellers “*don’t want to receive Bitcoin, they just press a button, and they will receive U.S. dollars.*” He stated that both parties “*have full freedom to choose between Bitcoin and U.S. dollars.... It’s probably the only system in the world that lets a payer pick one of the choices that is different from the seller.*” He mentioned that Article 12 protected everybody as it gave parties the ability to opt out for several reasons. President Bukele stated that they would continue to promote its use and recognized that it could take 5 to 10 years until full adoption.

The Chivo Wallet Rollout

Shortly after the passage of the Bitcoin Law, President Bukele announced plans to release a mobile app named Chivo, which was slang for “cool,” as the country’s digital wallet. As a government sponsored app, individuals did not incur cellular data charges. Users only needed access to the Internet. To promote the use of the wallet, Salvadorans who downloaded the free app and registered would receive the equivalent of \$30 in Bitcoin to encourage its use in the economy and to incentivize its citizens to utilize the app (Casa Presidencial 2021a). The conversion of the \$30 bonus into Bitcoin would be determined using the spot rate at the time of Chivo app registration. Other details about Chivo are outlined in Exhibit 8. Exhibit 9 illustrates the Chivo App. Chivo was a custodial wallet, which meant that users did not hold the private key to their Bitcoins. Exhibit 10 lists the pros and cons associated with custodial wallets.

By launch day, a network of 200 Bitcoin ATMs were located around the country. In addition, 50 Bitcoin ATMs were installed in various cities in the United States to facilitate the transfer of funds from Salvadorans living abroad (Chivo Bitcoin ATMs 2021). Chivo ATMs could be found in Dallas, Houston, El Paso, Laredo, and McAllen in Texas; Los Angeles and San Francisco in California; Chicago, Illinois; Columbus, Ohio; and Doral, Florida.

Exhibit 8. Additional Chivo Wallet Details

Source: Casa Presidencial Twitter Account (2021b, 2021c, 2021d)

Users may choose their preferred currency (BTC or USD) to make or receive a payment.

Users may hold both USD and BTC balances in the wallet.

Users may convert USD into BTC and vice versa at any time.

Users may make payments and send funds using a QR code, as well as receive payments using a QR code.

Users may buy BTC without paying any commissions.

Exhibit 9. The Chivo Wallet

Source: Phone images from Chivowallet.com

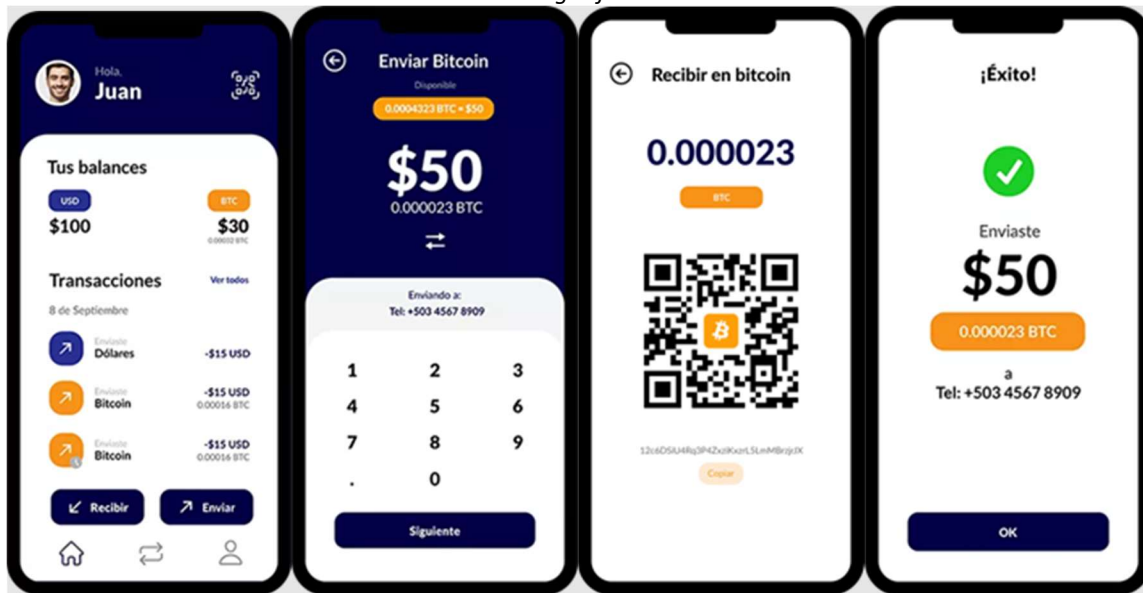


Exhibit 10. Pros and Cons of Custodial Wallets

Source: Recreated from BitPay Blog (2022)

Pros	Cons
Less responsibility held by users	Private keys are controlled by third party
Simple and easy to use for beginners	Custodial wallets are vulnerable to hackers
Can reset password to regain access to digital assets	KYC and AML verification for account creation ^[1]
	Less advanced features available for experienced crypto use

^[1] KYC or ‘Know Your Customer’ is a mandatory process that requires the identification and verification of a client’s identity. AML or ‘Anti-Money-Laundering’ is a set of procedures to identify and prevent profits from illegal activity

Citizens' Views of Bitcoin

A national poll conducted by the University Institute of Public Opinion (IUDOP) at Central American University (San Salvador) prior to the Chivo rollout indicated that 67.9% of the 1,281 individuals interviewed disapproved of adopting Bitcoin as legal tender. A similar percentage of respondents indicated that they would like to see the Bitcoin Law revoked. According to the survey, 60% of the participants did not agree with the use of public funds to promote the initiative. Furthermore, 90% percent of the participants demonstrated a lack of understanding that Bitcoin was a financial asset rather than currency. Moreover, 80% percent of those interviewed expressed little or no interest in downloading and using the Chivo wallet (Instituto Universitario 2021). A year after implementation, negative public opinion regarding the adoption of Bitcoin continued to persist. Exhibit 11 through 13 summarizes key findings from 1,269 survey participants conducted in September 2022. Overall, only 38.7% of survey participants approved of the use of Bitcoin (Instituto Universitario 2022).

Exhibit 11. Percentage of Respondents who have used Bitcoin for Purchases or Payments

Source: Recreated from IUDOP (2022), page 2

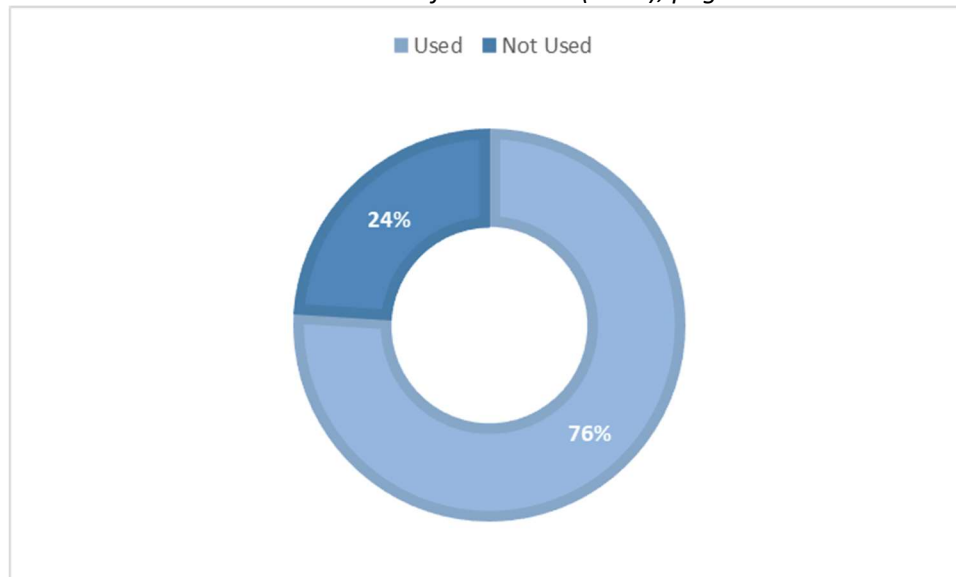


Exhibit 12. Should the Government Continue Spending Public Funds on Bitcoin Purchases?

Source: Recreated from IUDOP (2022), page 2

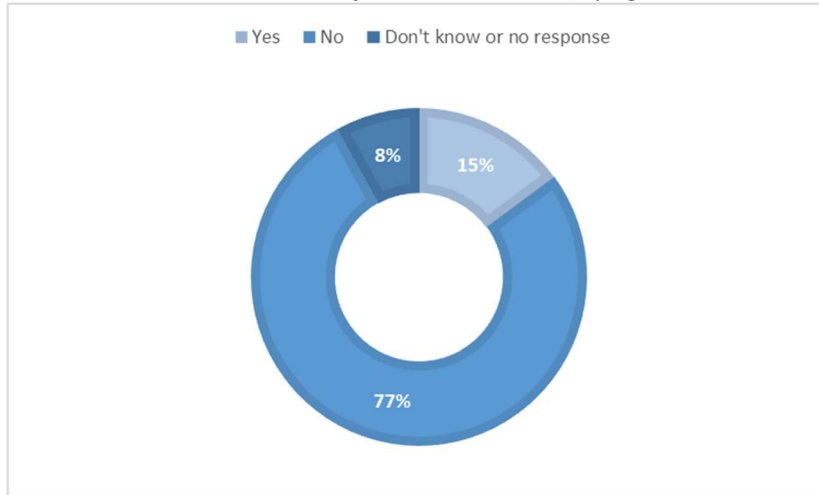
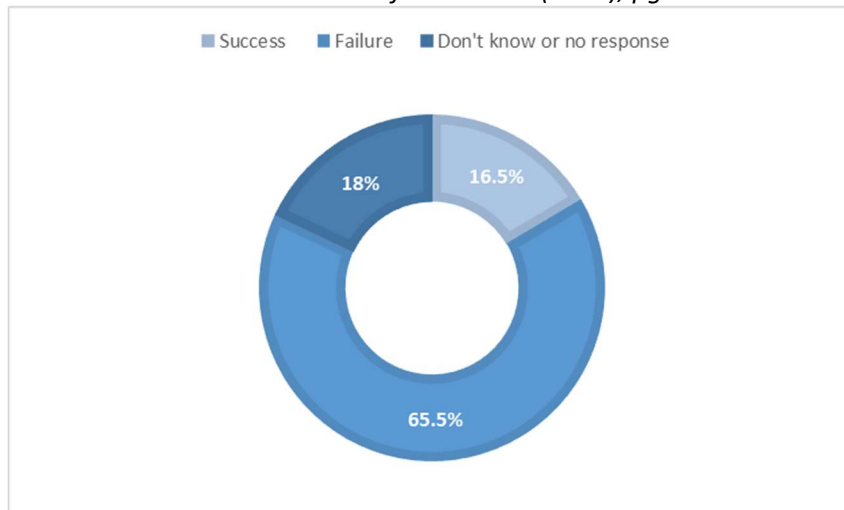


Exhibit 13. Has the Approval of Bitcoin been a Success or a Failure?

Source: Recreated from IUDOP (2022), pg. 2



Not So Smooth Launch Day

The implementation of the plan did not go smoothly. On launch day, Chivo was offline for a prolonged period to address server capacity issues due to heavy demand. Reports surfaced that the Chivo wallet was not available in the major app stores, while others reported login issues when using their telephone numbers or their official government ID (Perez & Ostroff 2021). In the following months, complaints regarding identity theft and phishing schemes were reported. Claims regarding failed transactions between Chivo and other e-wallets, as well as blocked transactions and unauthorized charges in the app also surfaced (The Block 2022).

One and Done?

El Salvador reported, through a tweet, 4 million registered Chivo users (Bukele 2021b). Despite the substantial number of registered Chivo users, data on actual Chivo wallet and BTC usage was not available from government sources. Alvarez *et al.* (2022), in partnership with CID-Gallup, interviewed 1,800 individuals to determine the success of the BTC initiative. Alvarez *et al.* stated:

“According to our results, over two-thirds of Salvadorans (68%) are aware of the existence of Chivo Wallet, and most people find out about it through social media, followed by TV and radio, news, and friends and family. The probability of being aware of Chivo is higher for individuals who own a cell phone with internet, and who are banked, educated, young, and male. However, not all of those who know about the app have tried to download it, just over half of all respondents. Most downloads took place just as Chivo was launched. In fact, 40% of all downloads happened in September 2021, and virtually no downloads have taken place in 2022. The main driver of adoption is reported to be the \$30 bonus offered by the government, equivalent to 0.7% of annual income per capita. Again, owners of a cell phone with internet, and those who are banked, more educated, younger, and male are more likely to download this technology. The most important reason not to download the app, conditional on knowing about it, is that users prefer to use cash, which was followed by trust issues—respondents did not trust the system or Bitcoin itself. While most respondents spent their \$30 bonus, less than half of those who downloaded Chivo Wallet continued to use it after spending the bonus—20% of all respondents. Furthermore, most users who used Chivo after spending the \$30 bonus do not engage with the app intensively. We do not find evidence of Chivo Wallet being used to pay for taxes or to send remittances at a significant scale.”

According to El Salvador’s Chamber of Commerce and Industry, 86% of local businesses had not made any sales using Bitcoin, and only 13.9% said that they had. Meanwhile, 3.6% of local stores indicated that Bitcoin had contributed to an increase in their sales, while 91.7% reported that the implementation of Bitcoin had no effect on their businesses (McDonald 2022). In an interview, Fernando Alvarez, coauthor of the Alvarez *et al.* 2022 NBER (National Bureau of Economic Research) working paper stated, “*There is no experiment where a currency was introduced with such strong incentives and still failed*” (Taylor 2022).

Through December 2022, \$126.7 million of the \$7.742 billion in total remittances for the year or 1.6% were transferred through the wallet (Banco Central 2022). Monthly total remittances and remittances via cryptocurrency wallets for 2022 followed the same pattern. With the non-substantive percentage of remittances transferred using cryptocurrency wallets, the potential savings by using Chivo rather than through banks or money transfer to transfer remittance services fell short of the estimated savings of \$400 million annually touted by President Bukele (Bukele 2021). Refer to Exhibit 14 for remittance data. Remittances were recorded in the current account of the balance of payments, under secondary income. Refer to Exhibit 15.

Exhibit 14. Total Remittances and Remittances via Cryptocurrency Wallets

Source: Created from Personal Remittances According to Geographical Destination in Millions USD (Banco Central 2022a)

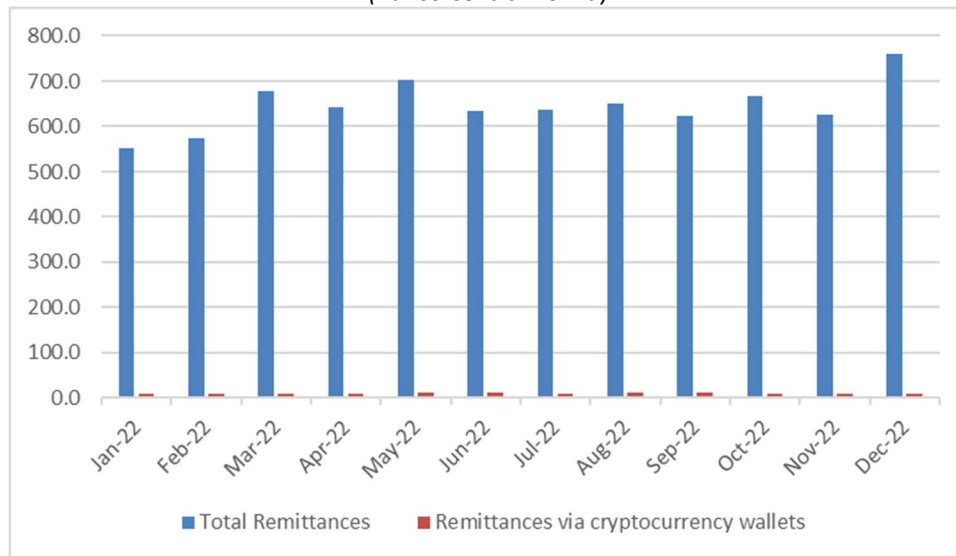


Exhibit 15. El Salvador Current Account of the Balance of Payments

Source: Created from the *Economic and Financial Data for El Salvador in Millions USD (Banco Central 2022b)*

	Q3/22	Q2/22
Current Account Balance	-623.06	-642.66
Exports of goods	1524.39	1546.84
Imports of goods	4092.07	4124.16
Services, Credit	1119.88	1064.69
Services, Debit	670.15	676.57
Primary Income, Credit	67.85	56.25
Primary Income, Debit	495.25	449.85
Secondary Income, Credit	2010.47	2025.78
Secondary Income, Debit	88.18	85.65

First it was Bitcoin Beach. Next a Bitcoin Volcano?

One final motivating factor for Bitcoin adoption was the idea that El Salvador, a small country, could benefit from capturing a disproportionate share of worldwide enthusiasm for Bitcoin. In November 2021, President Bukele announced plans to build a new “*Bitcoin City*.” The settlement was to be constructed in a “*coin shape*” at the base of the Conchagua volcano, where geothermal energy could be used to meet the heavy electrical power requirements needed to mine new Bitcoin (Attlee 2022). The construction project was to be financed in the future by Bitcoin-backed Salvadoran bonds; any investor buying more than \$100,000 in bonds would qualify for Salvadoran citizenship (Attlee 2022). By bringing in high-income citizens and increasing crypto-tourism, El Salvador hoped to eventually set up a successful tourism industry akin to Cancún or Cabo San Lucas in Mexico. Crypto industry companies lauded the plan, predicting El Salvador would become “*the Singapore of Latin America*.” Critics noted that the volcano had recently shown noticeable seismic activity, electricity costs would likely be higher than electricity generated in other regions, and the country already had a record of failed charter city plans (Attlee 2022).

International Monetary Fund and Debt Payments

External creditors were not impressed by the volcano. On January 24, 2022, the Executive Board of the International Monetary Fund (IMF) concluded its consultation with El Salvador's government regarding the adoption of Bitcoin as a legal tender. The directors emphasized that there were substantial risks linked to the use of Bitcoin along multiple dimensions, including financial stability (banks may need to establish new capital and liquidity requirements to cope with Bitcoin volatility), financial integrity (possibility of tax evasion, money laundering, terrorist financing), consumer protection (individuals and business might be subject to cybercrime or loss of wealth due to large fluctuations in value), as well as the associated fiscal contingent liabilities (because of adoption with public funds) (IMF, 2022). Due to these factors, IMF advised El Salvador to reverse its decision to make Bitcoin a legal tender.

The adoption of Bitcoin was viewed as a negative signal by credit rating agencies. In February 2022, the credit rating agency Fitch downgraded El Salvador's Long-Term Foreign Currency Issuer Default Rating from "B minus" to "CCC" and subsequently downgraded its rating again from "CCC" to "CC" in September 2022. Among the main reasons was weak fiscal liquidity and the high current account deficit, increasing the probability of default on external debt (Fitch downgrades 2022). For similar reasons Moody's and Standard and Poor's revised El Salvador's credit rating. Refer to Exhibit 16 for the El Salvador's credit agencies rating.

Exhibit 16. El Salvador's Credit Rating

Source: Created from Fitch (2022), Moody's (2022) & S&P Global (2022)

Agency	Rating	Outlook	Last Updated
Fitch	CC	NA	September 15, 2022
Moody's	Caa3	Negative	May 4, 2022
Standard and Poor's	CCC	Negative	June 1, 2022

In response to speculation that El Salvador would default on its debt, in September 2022, the government spent \$360 million in foreign currency reserves to buy back a portion of the bonds which were going to mature in 2023 and 2025 (Dulaney *et al.* 2022). To ensure that there would

be sufficient funds to pay for the debt repurchase, the Congress of El Salvador passed a bill allowing the conversion of \$360 million special drawing rights (SDR) allocated by the IMF to be converted to U.S. dollars (Renteria 2022). A second bond buyback was scheduled for the end of November 2022, with a maximum repurchase of \$74 million. While doubts in financial markets persisted over the possibility of default, El Salvador formalized credit for \$350 million from the Central American Bank for Economic Integration and other external sources in the beginning of January 2023. Surprising credit rating agencies and market participants, on January 23, 2023, El Salvador's Finance Minister announced via Twitter that the country had completed payment of the 2023 \$800 million bond, the same day as it was set to mature (Reuters 2022).

Bitcoin Developments

As shown in Exhibit 17, from 2015 to 2018, the price of Bitcoin increased at an accelerated rate. Between 2018 and the middle of 2020 was a period of relative stability, but during the COVID-19 pandemic the price accelerated rapidly through March 2021. Between March 2021 and July 2021, Bitcoin lost about half of its value. Bitcoin then regained all its lost value between July 2021 and December 2021, before beginning an unrelenting slide to one-third of its peak value by January 2023. In Exhibit 18, El Salvador's Bitcoin purchases are provided alongside the price at time of purchase.

Exhibit 17. Daily Price of Bitcoin in U.S. Dollars Over Time

Source: Yahoo! Finance BTC – USD from February 2015 – February 2023

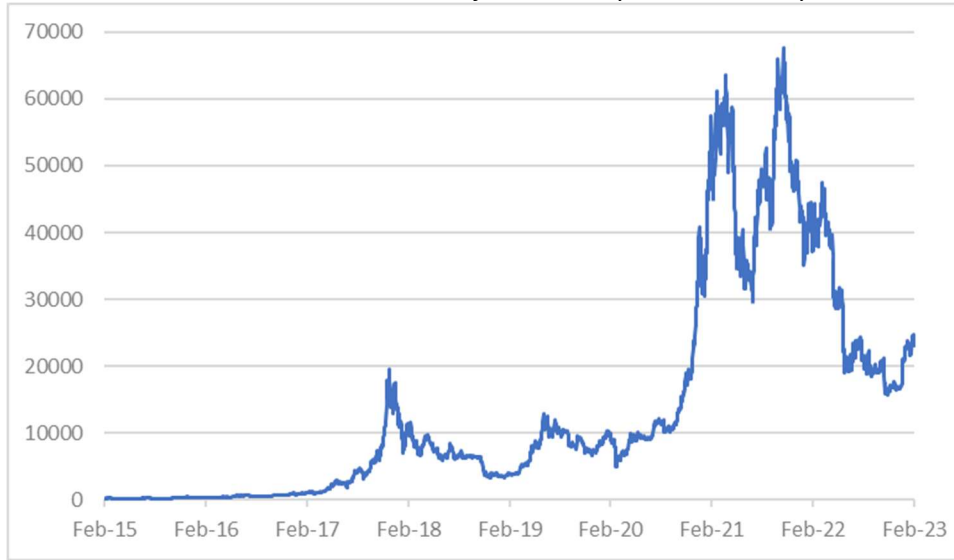


Exhibit 18. Daily Price of Bitcoin in U.S. Dollars Over Time

Source: Adapted from Prashant (2022)

Purchase Date	Bitcoin Quantity	Cost per Bitcoin	Total invested
September 6, 2021	400	\$46,811	\$18,724,400
September 7, 2021	150	\$46,091	\$6,913,650
September 19, 2021	150	\$42,843	\$6,426,450
October 27, 2021	420	\$60,622	\$25,461,240
November 26, 2021	100	\$54,815	\$5,481,500
December 3, 2021	150	\$48,670	\$7,300,500
December 21, 2021	21	\$49,220	\$1,033,620
January 21, 2022	410	\$36,585	\$15,000,000
May 9, 2022	500	\$30,744	\$15,372,000
June 30, 2022	80	\$19,000	\$1,520,000
November 17, 2022	1 per day and thereafter	Between \$16,687 and \$30,253 as of writing	~\$5,000,000 as of April 10, 2023

As of April 10, 2023, El Salvador’s BTC holdings were estimated at 2,546 BTC. This was up from the 2,381 BTC announced after a purchase of 80 BTC in July 2022, and a tweet from President Bukele on November 16, 2022, which stated that El Salvador would purchase 1 BTC per day, beginning the next day. The Bitcoin holding had an approximate market value of \$77 million and an estimated purchase price of \$108 million, representing a 29% loss on the BTC holdings (McDonald 2023).

Despite the 29% loss on their BTC investment, Samson Mow, CEO of Jan3 and one of the main proponents of BTC adoption in El Salvador, believed that El Salvador's experiment could become a successful example for other countries to follow. He commented that El Salvador losses on the BTC portfolio were outweighed by the benefits that BTC adoption brought to the country stating:

“The biggest achievement is that they managed to rebrand themselves as a Bitcoin country and they've drawn a lot more attention to themselves on the international stage. This is good for a number of reasons. This is because they are attracting more investments to the country, they're attracting a lot more tourism, I believe tourism is up 30%. And basically, they're the epicenter of nation state of Bitcoin adoption at this time.” (Cointelegraph 2022).

However, Mow's implied attribution of the increase in tourism to Bitcoin may have been overstated, as the increase in tourism in 2023 was largely attributed to the crackdown on crime. From 2019 through early 2023 there had been 365 days with no murders, compared to the previous 10 years where there was only 1 murder-free day (Di Salvo 2023a). As of May 15, 2023, BTC was trading at \$27,600 with BTC transaction fees increased to \$31, which made it more expensive for BTC users in El Salvador (Di Salvo 2023b). The country was also preparing to issue the Bitcoin volcano bonds after the Legislative Assembly in January 2023 approved the Digital Assets Issuance Law that provided the framework for the sale of bonds (Kohler 2023).

Given the fluctuations in the Bitcoin market, the level of public support for the Bitcoin rollout, and the attitude of external investors toward Bitcoin adoption, was the President's choice to adopt Bitcoin as legal tender a clever idea? Was it superior to dollarization?



Anne Anders received her PhD in Economics from Clemson University. Since joining the University of Houston-Clear Lake (UHCL) in 2016, she has taught a variety of economics courses, including Microeconomics, Macroeconomics, Sportseconomics and Managerial Economics. Dr. Anders' primary research interests are in health economics, sports economics, and urban development. She also participates in interdisciplinary research with faculty from engineering and health sciences to foster innovative solutions and comprehensive understanding of complex societal challenges.



Yvette M. Bendeck is a Professor of Finance at the University of Houston-Clear Lake. She received her B.S. in industrial management and M.S in financial economics from the Georgia Institute of Technology. She also received her Ph.D. in finance from Arizona State University. Her scholarly work has been published in some of the top-tier, peer-reviewed journals in her field, such as the *Journal of Finance*, *Journal of Banking and Finance*, and the *Journal of Monetary Economics* and the *Journal of Case Research and Inquiry*.



Stephen J. Cotten received his Ph.D. in Economics from University of Tennessee in 2009. He joined the UHCL faculty as an associate professor in 2015, after working as an assistant professor from 2009-2015. In the summer of 2022, he was promoted to professor. He has written over twenty journal articles and book chapters and has delivered various presentations. Dr. Cotten has also contributed content to four textbooks and served as a consultant for Space Center Houston, regional hospitals and local government.



Ivelina Pavlova received Ph.D. in Finance from Florida International University in 2008 and is a Certified Financial Planner™. She joined the University of Houston – Clear Lake in Fall 2008 as an Assistant Professor of Finance. Dr. Pavlova teaches Business Finance, International Finance and Personal Wealth Management courses. In 2014 Dr. Pavlova was promoted to Associate Professor. Since 2022 she has been a Full Professor at the same university. Her research interests are in the field of international finance, emerging markets, derivatives, commodities, and ESG investing.



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