

IMPLICATIONS OF CRYPTOCURRENCY: A NEW BUSINESS PROPOSITION OF TODAY'S ENTREPRENEURIAL HORIZON

Snigdha Basu*, Tapash Ranjan Saha, Swapan Kumar Maity

Institute of Management Study, Maulana Abul Kalam Azad University of Technology, West Bengal, India.

*Corresponding Author's Email: snigdhasu13@gmail.com

ABSTRACT

Cryptocurrency is in a unique position as a forerunner in a possibly transformative technology to long standing financial systems. Businesses are beginning to see the value in using cryptocurrencies for international transactions, especially when transactions need to occur quickly in response to an emergency. We live in a world where everything around us is becoming digital. Along with the digitalization, money and investment are getting digitalized too. Crypto currency is the new concept of money and can be termed as digital currency in which encryption techniques are used to regulate the generation of units of currency and verify the transfer of funds, operating independently of a central bank. There are approximately 1300 other crypto currencies that exist in the digital currency market such as Ethereum, Ripple, NEM, Lit coin etc. Whereas bit coins are the most sought after Crypto currency in the market. Eight years since its introduction, bitcoin is today the most widely used and accepted digital currency. Pricing in bitcoin transactions is demand based, it is exceptionally volatile. Volumes of trading happen every second. The price of a bitcoin is largely dependent on the trading i.e. demand and supply factors. In the present study the primary objective is to find out the present scenario of the crypto currency business in India. It also studies the business prospect of bitcoins crypto currency business in India and to look out if India is ready for the changing form of new currency business. To fulfill the objectives of the study relevant statistical techniques will be used to find out the recent trends. Yearly return on investment ratio and future scope of the crypto currency business in India with special reference to bitcoins will be examined in the recent article. A much-focused SWOT analysis will also to be done to identify the overall working mechanism of the new business proposition in the today's entrepreneurial horizon from Indian context.

Keywords: *Virtual Currency, Crypto Graph, SWOT Analysis, Bitcoin Exchanges, Block Chain, Trends*

INTRODUCTION

A crypto currency is a digital or virtual currency that uses cryptography for security. They are disruptive economic innovations that have the potential to revolutionize the current economic structure and change how banks and financial institutions are operating now. If compared with current traditional fiat currency system a cryptocurrency is far more efficient in terms of usage and transaction cost. The first Cryptocurrency to begin trading was Bitcoin back in 2009. Cryptocurrency is not only a virtual money or transaction system, but it is also the monetary aspect that is just the tip of an iceberg. Cryptocurrencies are based on block chain technology. The public ledger, or block chain, means that every user can see every transaction. By using a cryptocurrency, users can exchange value digitally without third party oversight. Cryptocurrency works on the theory of solving encrypted algorithms to create unique hashes that are finite in number. Also, according to Oza & Mandhanya, (2017) the results generated from the change management of the banking sector could be utilized by the policy makers, management/owners of banks, employees and employers for refining the overall management of this industry which will profit all the

people directly or indirectly.

A. Classification

There are hundreds of virtual currencies in the market. The leaders of virtual currency world can be classified into four major categories.

a. Bitcoin

It is first widely accepted virtual currency, being a trendsetter, it had opened the door of cryptocurrency in the global economic market.

b. Ethereum

After Bitcoin, second most popular currency is Ethereum, launched back in 2015.

c. Litecoin

Litecoin secured third ranking in the crypto market in terms of acceptance. It has been launched in 2011 and uses the same fundamental structure as bitcoin therefore often referred as 'silver to bitcoin's gold'.

d. Ripple

Ripple works on consensus ledger which does not need mining process to be involved, reducing utilization of computing power and network latency.

Few examples of various Crypto currencies:

- 1) **Currency token**- A token pegged officially on the Japanese Yen. J-COIN
- 2) **Utility token**- Decentralized one that runs smart contracts. - ETHEREUM
- 3) **Membership token**- It is a decentralized cloud storage platform that allows anyone to rent their idle hard drive space to earn revenue. - STORJ
- 4) **Security token**- It is an investment fund designed to invest in block chain markets. - TaaS.

B. How are they created

With paper money government decides when to supply, print and distribute the money in the economy. But cryptocurrencies do not have a central government. It is not issued by any central authority.

C. The King of the Cryptocurrencies-Bitcoins

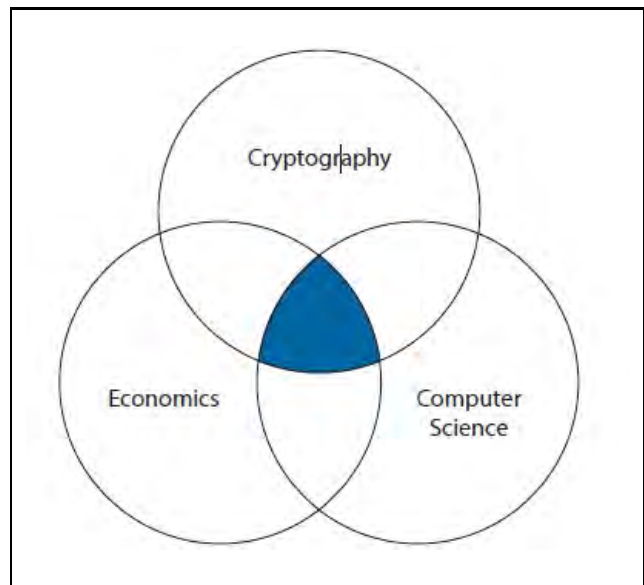
A bitcoin is a virtual currency first introduced in the year 2009 by an anonymous group called Satoshi Nakamoto. Frank Holmes, the chief executive officer at U.S. Global Investors said that the digital currency market rose above \$300 billion for the first time on Sunday evening, according to industry website (Amaro, 2017). It's a peer to peer crypto graphical system where transactions happen through a public ledger called Block Chain. It is a technology to transfer and store data or information that is generated while transacting it in a cryptocurrency.

Block Chain may be described as a tamper evident ledger shared within a network of entities, where the ledger holds a record of transactions between the entities exploiting the cryptographic hash function. The Bitcoin Block chain often referred to as the ledger of the Bitcoin system.

Bitcoin mining is the process by which transactions are verified and added to the public ledger, known as the block chain, and the means through which new bitcoins are released. Anyone with access to the internet and suitable hardware can participate in mining.

A miner collects pending Bitcoin transactions, verifies their legitimacy, and assembles them into what is known as a 'block candidate.' The goal is to earn newly created Bitcoin units through this activity. Bitcoin mining is permission less. Anyone can become a miner by downloading the respective software and the most recent copy of the Bitcoin Block chain. The consensus among miners is that every miner who receives a block candidate with a valid fingerprint adds it to his or her own copy of the Bitcoin Block chain.

Figure 1: Interdisciplinarity



D. Bitcoin Pricing

Pricing in bitcoin transactions is demand based, exceptionally volatile. Volumes of trading happen every second and largely depends on supply & demand factors. More the demand, higher is the price. Price of bitcoin in Indian cryptocurrency market has gained remarkably. As per the statistics since 2009 till March 2017, the number of bitcoins circulation has not only increased but reached to an all-time high 1,63,77,437 in number. Bitcoin does not have intrinsic value like gold in that case it cannot be used to make any physical objects like jewelry that have value.

Bitcoin Exchanges

A bitcoin exchange is a platform that facilitates exchange of bitcoins for another currency including fiat currency, thereby allowing the users to trade and make profit.

Service Provided by the Bitcoin Exchanges in India

- Storing bitcoin in a bitcoin wallet after deposit / receipt of the same in the wallet.
- Exchange of bitcoin with other currency like a fiat currency.
- A merchant gateway services used to pay to merchants in bitcoins and acceptance by them thereon.
- Mobile application providing ease of accessing bitcoin wallets.
- Sending bitcoins stored in the wallet to another wallet.

Table 1: List of Major Bitcoin Exchanges in India

NAME OF THE EXCHANGES	DATE OF FORMATION	LOCATIONS
Coin secure	2014	Delhi, India
Bitxoxo	2016	Warangal, Telangana, India
Unocoin	2015	Bengaluru, Karnataka, India
ZebPay	2015	Ahmedabad, GJ, India
Bitcoin India	2014	Hyderabad, Telangana, India

LITERATURE REVIEW

Related Work

Kelly (2014) valued the existence for bitcoin because its users have trust that if they accept it as payment, they could use it elsewhere to purchase something they want or need.

Desjardins (2016) stated that due to the limited number of bitcoins, it will never become inflated from an overabundance of bitcoins. Also, bitcoin and other cryptocurrencies are generally regarded as being protected from inflation originating from national government changes or restrictions (Magro, 2016). This creates a 'haven' for investors to put their wealth into, as it generally does not lose value based on inflation. The combination of demand for a haven option and its price volatility helped Bitcoin to become the best performing currency of 2015 using the US Dollar Index. A haven is an investment that is expected to retain or increase in value during times of market turbulence. Safe havens are sought by investors to limit their exposure to losses in the event of market downturns.

South America has seen a huge increase in bitcoin transactions, increasing to 510% from 2014 to 2015 (Bitcoin: A New Global Economy, 2015).

According to Magro (2016) Argentina is a hotbed for increased cryptocurrency usage due to its extremely high Inflation rate and high population of unbanked citizens.

The public block chain is shared with all users, which means that it is susceptible to attacks due to easy access (King, Williams & Yanofsky, 2013).

As per the reports of (Pricewaterhouse Coopers Report, 2015) price volatility generates risk, which discourages both merchants and consumers from holding cryptocurrency for any significant length of time. In

general, online shopping for individuals accounted for nearly 23 percent of transactions processed by BitPay in the second quarter of 2015.

Kasiyanto (2016) explained that cryptocurrency has the advantage over traditional card-based for the vendor in that it eliminates those fees.

According to Reuters (2016) cryptocurrencies could potentially become a big player in the commodity market. They have a unique attribute of being purchased through a direct online mechanism, which creates easy entry for buyers. If bitcoin continues to be a valid refuge for inflating currencies, it will gain validity to investors and push deeper into becoming more mainstream.

Objectives of the Study

- ❑ To explore the cryptocurrency business scenario in India with special reference to bitcoin business for the last five years' time frame.
- ❑ To fit a trend equation to forecast the Bitcoin prices.
- ❑ To examine the regulatory status of the Virtual Currency business in India.
- ❑ To design a SWOT analysis framework to find the issues concern.

RESEARCH METHODOLOGY

Data sources: All the secondary data (such as opening & closing price per day, market capitalization, trade volume, no. of coins in etc.) taken from various online sources.

Date period: Daily data ranging from the period of March 2014 to March 2018.

Data type: Secondary data collected (Amaro, 2017; Kelly, 2014)

Tools for analysis: MS-Excel.

This paper attempts to find the trend line based on the market capitalization for the last five years in bitcoin business. Based on the highest **R²** value, best fitted trend line & the equation for the trends was derived.

RESULTS

Market capitalization or market cap is the aggregate valuation of a company based on its current share price and the total number of outstanding shares. In case of cryptocurrency sector, market cap is used to determine the relative size of a digital currency or of all the digital currencies combined. The cryptocurrency market cap is calculated by multiplying the price by the circulating supply. Market cap=cryptocurrency price X cryptocurrency circulating supply.

Figure 2: Market Capitalization 2014



For the year 2014, based on the trend analysis, the study found that (see fig. 1), polynomial curve is the best fitted curve with a R² value of 0.6819 and the trend equation stands like,

$$y = -625.13x^3 + 8E+07x^2 - 3E+12x + 5E+16$$

Figure 3: Market capitalization 2015



For the year 2015, based on the trend analysis, the study found that (see fig. 2), polynomial curve is the best fitted curve with a R² value of 0.8033 and the trend equation stands like,

$$y = 303.37x^3 - 4E+07x^2 + 2E+12x - 2E+16$$

Figure 4: Market capitalization 2016



For the year 2016, based on the trend analysis, the study found that (see fig. 3), polynomial curve is the best fitted curve with a R² value of 0.8383 and the trend equation stands like,

$$y = 110.33x^3 - 1E+07x^2 + 6E+11x - 8E+15$$

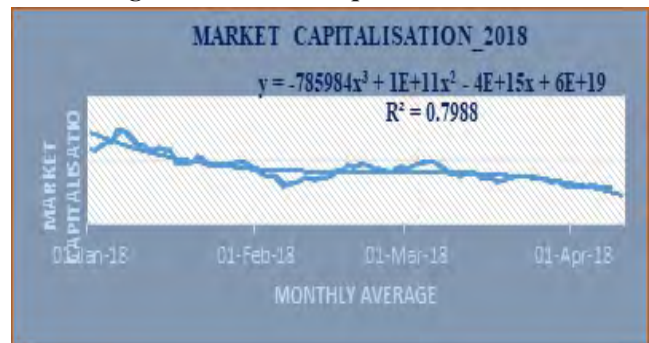
Figure 5: Market Capitalization 2017



For the year 2017, based on the trend analysis, the study found that (see fig. 4), polynomial curve is the best fitted curve with a R² value of 0.9144 and the trend equation stands like,

$$y = 18505x^3 - 2E+09x^2 + 1E+14x - 1E+18$$

Figure 6: Market Capitalization 2018



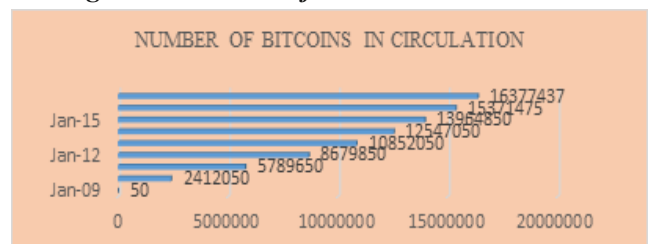
For the year 2016, based on the trend analysis, the study found that (see fig. 5), polynomial curve is the best fitted curve with a R² value of 0.7988 and the trend equation stands like,

$$y = -785984x^3 + 1E+11x^2 - 4E+15x + 6E+19$$

Number of Bitcoins in Circulation

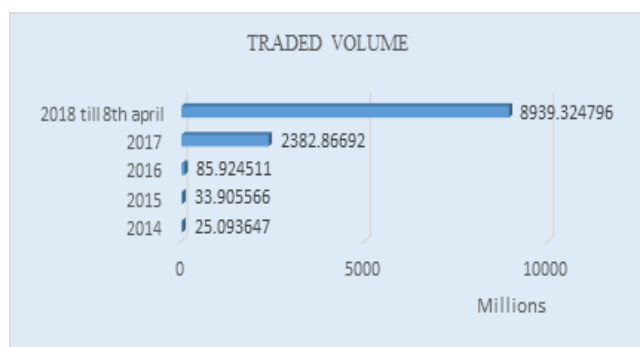
Something around three years ago a Bitcoin was worth \$300. This year in January Bitcoin was traded around \$16,700. Over the last five years, the total value of all bitcoin (i.e., 'market capitalization') has grown from less than \$1 billion to over \$262 billion with daily national turnover on December 8, 2017 exceeding \$21 billion. The total value of all cryptocurrency tokens (January 2018) is approximately \$423.7 billion (see fig. 6).

Figure 7: Number of Bitcoins in Circulation



There are about 11 trading platforms in India to buy Bitcoins. Those include Unocoin, Zebpay, Coinsecure, Coinmama, LocalBitcoins, and Bitcoin ATMs. There aren't many avenues to use Bitcoins in India (see fig. 7). But e-commerce players such as Flipkart, Amazon and MakeMyTrip run voucher programmes for people using Bitcoin exchanges, but they do not accept payment in Bitcoins. Bitcoin trading volumes could be in the range of Rs 200–250 crore every month. The above graph presents the bitcoin traded volume for the period ranging from the year 2014 to 2018 (1st week of April).

Figure 8: Bitcoin- Traded Volume in India



International Presence & Regulatory Status of Bitcoins Worldwide

- Internationally, cryptocurrencies are regulated as commodities by several central banks.
- According to Hileman & Rauchs (2017), majority of bitcoin trade are concentrated in East Asian countries like Japan, South Korea and Vietnam, they together account for 80% of bitcoin trading activity as per the research firm Crypto Compare.
- Japan allowed the use of bitcoin and several other cryptocurrencies for payments.
- Australia proposed in budget speech 2017-18 to treat bitcoins as money.
- European Union claims it as a convertible decentralized virtual currency (refer to table 2).

Table 2: Status of Bitcoins under Indirect Taxation in Different Jurisdiction

COUNTRY/REGION	STATUS
Singapore	Profit on trading in bitcoins in ordinary course is taxable
Australia	Proposed to exempt from taxation by treating it as money

European Union	Any exchange of bitcoin for another currency does not attract VAT/GST
USA	Treated as property as per internal revenue services
Norway	No VAT shall be levied on trading of bitcoins
Japan	In 2017, officially recognized bitcoins as a means of payments
Germany	Declared as private money, income received from bitcoin sales shall be taxed
Sweden	Trading in bitcoins is exempted from VAT

REGULATIONS IN INDIA

❑ **Are the Bitcoins securing?**

Bitcoin miners help keep the Bitcoin network secure by approving transactions. Mining is an important and integral part of Bitcoin that ensures fairness while keeping the Bitcoin network stable, safe and secure.

❑ **Regulatory status in India**

- The reserve bank of India has neither declared bitcoins as illegal in India nor has it accepted bitcoins as a currency. The finance minister in his budget speech declared that it is no way illegal to hold these currencies, but it is illegal to transact using them in place of legal tender.
- Our finance minister Mr. Jaitly added 'the government will explore use of **block chain** technology proactively for ushering in digital economy'.
- Head, block chain & cryptocurrency council of India, admits that Indian Finance Minister may not defined it as a legal tender but recognize it as an **ASSET**.
- RBI issued 3 times warnings to the investors & players in the bitcoin segments starting from the year 2013, 2017, and in 2018 to restrict banks & financial institutions from dealing crypto currencies and gave a three month exist window to them as these medium of payments are not authorized & there is a heightened risk of investment **BUBBLE**.

STANDARD ICO (Initial Coin Offering) REGULATIONS

- ❖ Companies can't only rely on a template website and 20 pages of white paper.
- ❖ International team should be a mix of experts in the technology and business sphere.
- ❖ Backers as high-quality board of advisors and

institutional investors are also to be considered as an important factor.

- ❖ Community being at the core of the block chain. Strong media interactions are crucial.
- ❖ ICO process should be transparent and meet standards.

Table 3: SWOT Analysis- Bitcoin Business in India

STRENGTH <ul style="list-style-type: none"> ➤ Peer to peer ➤ Anonymity ➤ Fast ➤ Safe 	WEAKNESS <ul style="list-style-type: none"> ➤ Volatility ➤ Transaction cost ➤ Transaction times ➤ Virtual money
OPPORTUNITY <ul style="list-style-type: none"> ➤ Large market ➤ Internationalization 	THREAT <ul style="list-style-type: none"> ➤ Government rules & regulations ➤ Security measures

Since Bitcoin is a digital currency of new era the table 3 tends to explore and identify the strength, weakness, opportunity & threat for the future of bitcoin business.

As far as the Strengths are concern, Bitcoin is using the peer-to-peer network that is called Block chain. In this network, only the sender and the receiver know about the transaction and when it's taking place. There is no third-party involvement in this transaction. Bitcoin consists of a unique pin number that indicates the owner address. When a transaction is done, the pin number is altered. The bitcoin transaction is very fast and there is no objection to it. Bitcoin cannot be stolen from anyone's wallet. As the only owner can change the pin.

When it comes to weaknesses for this virtual currency there are many arguments about the volatility of Bitcoin. Maximum people tend to make judgments by the publicity in the media. People are now paying \$28 on average to make a deal using the digital currency, as BitInfoCharts. Bitcoin miners are enjoying the transaction fees. For bitcoin trading it takes 78 minutes on average to confirm a bitcoin transaction, as stated by Browne, (2017) published in CNBC. This is a virtual payment or transactions network.

The Opportunities in SWOT analysis of Bitcoin business are discussed. Cryptocurrency is a big market. Bitcoin is for all. Recently KFC Canada has introduced Bitcoin as one of their payment systems. Here some global brand companies

- Amazon – An online product service Marketplace.
- Apple's App Store – Buy Apple's service through AppStore with bitcoins.
- Bing by Microsoft – 2nd search engine after Google.
- Bloomberg – Online newspaper.
- Braintree – A Research firm.
- CVS – A pharmacy mall.

- Dell – US-based Global computer Technology Company.

Standing threats in bitcoin business are Governments Rules and Regulations & security measures. Bitcoin transactions are illegal in many countries. Very few countries approved bitcoin.

Impacts of Bitcion on Economy, Banking & Finance

❑ **Power to the Dark Web:** By using cryptocurrencies like Bitcoins people can make illegal transactions without giving any information about them. Cryptocurrencies like Bitcoins are a way to empower such transactions across the globe which will ultimately result in increased cybercrime.

❑ **Speculation:** Due to the extreme highs and lows Bitcoins present a massive possibility for speculation. Just like trading in shares, trading in Bitcoins is massive and seeing the rise in transaction around cryptocurrencies is probably to grow further.

❑ **Politicization of Money:** Now with digital currencies, this economic power can be challenged by people. This has led to the creation of a new autonomous body which can facilitate transactions. The power that was vested in the governments and central banks is shifting to the masses. This revolutionary change in transaction handling has the power to change the economic structure.

❑ **Apprehension among the Central Banks:** Central banks across the world have been wary of Bitcoins as an uncontrollable and unpredictable form of currency. Cryptocurrencies are leading to loopholes in the current bank's data about the money transactions leading to inability to track economic activities.

❑ **The Emergence of New Markets:** Cryptocurrencies have led to the emergence of new markets. Currencies like Bitcoin and Ethereum have opened gates for a new kind of market which unlike present money market is controlled by no one. Cyberspace will rise as the managing body that will handle and maintain such disruptive markets.

CONCLUSION

To sum it up in a nutshell, 2018 is looking very promising with great new opportunities in cryptocurrency business. However, to maintain the ethos of free spirit and remain a self-regulated market, several associations in the world, such as Crypto valley in Switzerland, JBA in Japan has committed to lead the way. Retail investors want to access and invest in the

new asset class, processes and standards. Regulations need to become more main stream. This is only a way of comforting and providing time to adjust and build robust and ethical businesses. Each project under ICO (Initial Coin Offering) will have to comply with the protocol and set of rules. The Bitcoin business need to address the issues like finance, legal, customer protection and security related risks to encash the opportunities in this new digital currency era.

REFERENCES

- Amaro, S. (2017). Global Cryptocurrency Market Breaks through \$300 Billion Mark as Bitcoin Heads to \$10,000. CNBC. 27 Nov. Retrieved From: <https://www.cnbc.com/2017/11/27/global-cryptocurrency-market-breaks-through-300-billion-mark-as-bitcoin-heads-to-10000.html>
- Browne, R. (2017). Big Transaction Fees are a Problem for Bitcoin — But There Could be a Solution. CNBC. 19 Dec. Retrieved From: <https://www.cnbc.com/2017/12/19/big-transactions-fees-are-a-problem-for-bitcoin.html>
- Desjardins, J. (2017). Comparing Bitcoin, Ethereum, and Other Cryptos. Visual Capitalist, 13 Sep. Retrieved From: <http://www.visualcapitalist.com/comparing-bitcoin-ethereum-cryptos/>
- Hileman, G. & Rauchs, M. (2017). *Global Cryptocurrency Benchmarking Study*. Cambridge Centre for Alternative Finance. University of Cambridge, Judge Business School. UK. Retrieved From: https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2017-global-cryptocurrency-benchmarking-study.pdf
- Kasiyanto, S. (2016). Bitcoin's Potential for Going Mainstream. *Journal of Payments Strategy & Systems*, 10(1), pp 28-39.
- Kelly, B. (2014). *The Bitcoin Big Bang: How Alternative Currencies Are About to Change the World*. 1st edition. John Wiley & Sons, Hoboken, New Jersey.
- King, R.S., Williams, S. & Yanofsky, D. (2013). By Reading this Article, you're Mining Bitcoins. Quartz, 17 Dec. Retrieved From: <https://qz.com/154877/by-reading-this-page-you-are-mining-bitcoins/>
- Magro, P. (2016). What Greece can Learn from Bitcoin Adoption in Latin America. *International Business Times*, 17 July. Retrieved From: <https://www.ibtimes.co.uk/what-greece-can-learn-bitcoin-adoption-latin-america-1511183>.
- Oza, S. & Mandhanya, Y. (2017). A Study on Impact of Management of Change in Banking Sector: With Special Reference to Nanded City, India. *International Journal on Recent Trends in Business and Tourism*, 1(4), pp 41-47.
- Pricewaterhouse Coopers Report. (2015). Money is no Object: Understanding the Evolving Cryptocurrency Market. Retrieved From: <https://www.pwc.com/us/en/financial-services/publications/assets/pwc-cryptocurrency-evolution.pdf>
- Reuters. (2016). Two-Year High on Gold Prices Fueled by Brexit-Spooked Investors. *Fortune*, 6 July. Retrieved From: <http://fortune.com/2016/07/06/brexit-gold-prices/>
- The BitPay Team, Merchants. (2015). Bitcoin: A New Global Economy. BitPay, 4 Aug. Retrieved From: <https://blog.bitpay.com/bitcoin-a-new-global-economy/>