Reframing the Bitcoin Problem

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Though the use of bitcoin was concentrated in small networks for the first few years following its inception in 2008, it has recently gained favor outside of the young and tech-savvy community in which it was incubated. Today, it is estimated that between eighty and one hundred thousand bitcoin transactions take place daily.[1] These transactions are anonymous and are thus untraceable as far as governmental agencies are concerned, offering nearly free range for illegal activities. It is largely for this reason that bitcoin has faced such a high degree of scrutiny from regulators—and because it has the power to render many traditional services provided by banks, payment services, and even lawyers obsolete.[2] Some ardent constitutionalists argue that virtual currencies obstruct state power. Still, decentralized virtual currencies like bitcoin have great potential to positively change the way banking and commerce has been conducted since the 15th century. The purpose of this article is twofold: first, to briefly discuss the nature of virtual currency and its role in the global economy; next, to highlight how, given the multiplicity of categories into which bitcoin may be placed, and the regulatory confusion that results, as tempting as it may be to try to fit the metaphorical square peg into a round hole, it is necessary to establish a new statutory framework specific to bitcoin's oversight.

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1: Mark Wetjen, *Bringing Commodities Regulation to Bitcoin*, Wall St. J. (Nov. 3, 2014).

2: Michael Casey, *Why Bitcoin's Erratic Price Doesn't Matter,* Wall St. J. (Dec. 21, 2014).

I. Introduction to Bitcoin

The Gold Standard of the U.S. dollar fell to the wayside in the latter half of the twentieth century as President Richard Nixon pushed for a free-floating exchange rate. With the overhaul of the Bretton Woods System, paper money cut its ties with precious metals, "freeing the greenback to find its own level in currency markets."[3] About forty years later, the monopoly of paper currency is being threatened by the introduction of virtual currency into to the global economy. Thanks to the swift rise in the prominence of e-commerce, virtual currency has quickly gained strong footing with tech-savvy consumers and is steadily diffusing to the public. Bitcoin, the virtual currency that has received the most attention to-date, was introduced in 2008 in response to the financial crisis. The crisis, which involved the collapse of several systemically important financial institutions due to risky loan portfolios and inadequate capital reserves, shook the confidence of many in the ability of the banking system to serve and protect the interests of its users. Bitcoin is a "purely peer-to-peer version of electronic cash [that allows] online payments to be sent directly from one party to another without going through a financial institution."[4] Bitcoin was initially created to solve a few of the problems of traditional fiat currency: the need for financial intermediaries, inflationary risk, service fees, and more.[5]

Perhaps the greatest advantage of virtual currency is its universality. Bitcoin promotes global commerce by allowing transactions to occur without exchange fees or the headache of conversion across currencies. However, its universality has been taken advantage of. Aided by the ability to hide behind the veil of the Internet, bitcoin has made it easier for users to skirt the law by laundering money, dealing in the underground economy, and evading taxes by bypassing financial intermediaries. Virtual currency does not have legal tender status in any particular jurisdiction,[6] meaning it is neither subject to taxation at source nor at destination. Also, even though the entire history of bitcoin transactions is available on a public ledger known as the "blockchain,"

3: Bejamin Cohen, "Bretton Woods System," in R.J. Barry Jones, ed., *Routledge Encyclopedia of International Political Economy* 100 (2001).

4: Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System,* online at https://bitcoin.org/bitcoin.pdf.

5: Jon Matonis, *ECB: 'Roots of Bitcoin Can Be Found in the Austrian School of Economics*,' Forbes (Nov. 3, 2012), online at http://onforb.es/1rcryT8.

6: Financial Crimes Enforcement Network, *Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies,* Dep't. Treasury (2013), online at http://fincen.gov/statutes_regs/guidance/pdf/FIN-2013-G001.pdf.

accounts are entirely anonymous. Rather than being held in an account issued by a FDIC-insured bank or credit union, bitcoin is held in virtual "wallets" that do not require any personal information. These two qualities—less taxation and more anonymity—are likely the two most appealing features to those who look to protect assets from taxes and purchase illegal goods.[7]

While steps have been taken to mitigate the prevalence of assets held abroad, virtual currency may prove to be too elusive. As it stands, there is no central authority that can fundamentally change the entire the bitcoin economy's behavior.[8] In fact, bitcoin is not even minted by any one agency. The United States Federal Reserve controls the flow of cash and value into the U.S. economy through monetary policy and open market operations. No such organization exists to control the flow of bitcoins.[9] Instead, bitcoins are "mined" through a process in which computers solve complex algorithms and mathematical problems[10] at a predictable rate such that the eventual total number will be 21 million.[11] Supply and demand forces determine the price of each individual bitcoin, which has settled around $250 following its high of $1145 in late 2013. Upon generation, the miner is provided with cryptographic keys as both public and private proof of ownership and only the user with the claim to the key for a particular bitcoin is able to spend it.[12] In many ways, this makes virtual currency much more secure than paper money. This is particularly enticing in light of recent hacker attacks on large institutions such as Target, Home Depot and Chase Bank, in which confidential credit card and personal information was stolen, leaving consumers vulnerable to large financial losses.[13] Bitcoin does not require such sensitive information, and even if it did, as a result of the decentralized nature of the system, there are no major concentrated sources of information from

7: Omri Marian, *Are Cryptocurrencies Super Tax Havens?,* 112 Mich. L. Rev. First Impressions 38 (2014).

8: Fergal Reid & Martin Harrigan, *An Analysis of Anyonymity in the Bitcoin System*, online at http://arxiv.org/pdf/1107.4524v2.pdf.

9: Dan Stroh, *Secure Currency or Security? The SEC and Bitcoin Regulation*, Univ. Cinc. L. Rev. Blog (Nov. 18, 2014), online at http://uclawreview.org/2014/11/18/secure-currency-or-security-the-sec-and-bitcoin-regulation/.

10: Nakamoto, *Bitcoin* at 8 (cited in note 4).

11: Reid & Harrigan, *An Analysis of Anyonymity in the Bitcoin System* at 6 (cited in note 8).

12: Nakamoto, *Bitcoin* at 2-3 (cited in note 4).

13: Jessica Silver-Greenberg, Matthew Goldstein, & Nicole Perloth, *JPMorgan Chase Hacking Affects 76 Million Households,* DealBook (Oct. 2, 2014), online at http://dealbook.nytimes.com/2014/10/02/jpmorgan-discovers-further-cyber-security-issues/.

which data may be taken.

The most fundamental concern regarding the governance of virtual currency is its classification—whether as currency, commodity, security, etc. These classes are not necessarily mutually exclusive, but they are far from synonymous. This ultimately dictates the set(s) of laws to which a financial instrument is subject. Unfortunately, governing agencies have been unsuccessful in designating bitcoin's rightful place—wherever that may be. In 2013, a federal district judge ruled that "for the purposes of U.S. securities regulation, bitcoin is indeed 'money,'" but other uses remain for which the rules are not as clear.[14] As it stands, states can monitor virtual currency service providers through various means, including implementing new laws and/or regulations written explicitly for virtual currency activities, or by interpreting or amending existing ones.[15] Thus far, many agencies have elected the latter route. This method can only be effective insofar as governing agencies are collectively able to agree upon a classification for bitcoin and other such virtual currencies. The remainder of this essay will detail some of the intricacies of a few of the existing acts that are being employed to mitigate the need for a more intrusive systematic overhaul. In the end, I will attempt to provide an objective assessment of each method, ultimately to make the claim that it is not presently possible to govern virtual currencies exactly in the way that many would like. As a result, lawmakers must accept the fact that new technology warrants new legislation. And without a more systematic reconstruction, bitcoin and its virtual peers will continue to slip through the fingers of regulatory agencies.

II. Bitcoin As Alternative Currency

In March of 2013, The Financial Crimes Enforcement Network ("FinCEN") issued guidance defining currency as coin or paper money that circulates, is designated as legal tender, and is customarily used and accepted as a medium of exchange in the issuing country. Virtual currency fulfills only two of these requirements. Specifically, "virtual currency does not have legal tender status in any jurisdiction."[16] Later, in August 2013, judge Amos Mazzant of the

14: Marian, 112 Mich. L. Rev. First Impressions at 39 (citing *Securities & Exchange Commission v. Shavers,* 2013 U.S. Dist. LEXIS 110018 (2013)) (cited in note 7).

15: Conference of State Bank Supervisors, *CSBS Policy on State Virtual Currency Regulation* (2014), online at http://www.csbs.org/regulatory/ep/Documents/CSBS%20Policy%20on%20State%20Virtual%20Currency%20Regulation%20--%20Dec.%2016%202014.pdf.

16: Danton Bryans, *Bitcoin and Money Laundering: Mining for an Effective Solution*,

Eastern District of Texas ruled in *Securities and Exchange Commission v. Trendon Shavers and Bitcoin Savings and Trust* that virtual currency is indeed "a currency or form of money."[17] This ruling is critical, as it extends governance to the use of bitcoin in relation to securities and securities law, since the 1946 case *SEC v. W. J. Howey*[18] ruled that an investment contract requires four elements, the first of which is an "investment of *money*."[19] The other three criteria are that the money is invested into a common enterprise; profits are expected from the investment; and the expected profits are generated solely from the efforts of the promoter or a third party. Trendon Shavers, the defendant in the 2013 case, operated Bitcoin Savings and Trust ("BTCST") as a Ponzi scheme, promising investors "up to 7 percent weekly interest based on BTCST's Bitcoin market arbitrage activity."[20] The SEC charged Shavers with "offering and selling investments in violation of the anti-fraud and registration provisions of the securities laws, specifically Sections 5(a), 5(c) and 17(a) of the Securities Act of 1933, Section 10(b) of the Securities Exchange Act of 1934 and Exchange Act Rule 10b-5."[21] In accordance with the rulings of *Howey* and *Shavers*, the Securities and Exchange Commission convicted Shavers and has been able to bring enforcement actions against a number of alleged bitcoin-related frauds thereafter.

III. Bitcoin As Commodity

A commodity, as defined in section 1a(9) of the Commodity Exchange Act, includes agricultural commodities and physical commodities such as an agricultural product or a natural resource *as opposed to a financial instrument such as a currency or interest rate*.[22] Despite this differentiation, U.S. Commodity Futures Trading Commission ("CFTC") Commissioner Mark Wetjen suggested that the definition of "commodity" under the CFTC's authorizing statute could be read to include bitcoin. If this were to be the case, the agency would have the authority to bring charges against individuals who attempt to manipulate the virtual currency, just as they do with those

89 Ind. L.J. 441, 442 n. 8 (2014).

17: 2013 U.S. Dist. LEXIS 110018 (2013).

18: 328 U.S. 293 (1946)

19: *Id.* at 301 (emphasis added).

20: *SEC Charges Texas Man With Running Bitcoin-Denominated Ponzi Scheme,* Securities & Exchange Commission (2013), online at http://www.sec.gov/News/PressRelease/Detail/PressRelease/1370539730583.

21: *Id.*

22: 7 U.S. Code § 1(a)(9).

who corner commodities in their respective markets.[23] The problem is that the definition clearly precludes financial instruments and currency—exactly what the *Shavers* ruling declared bitcoin to be.[24]

Even though the CFTC may not be able to govern the currency itself, under reforms included in the Dodd-Frank Act of 2010, the CFTC expanded its scope to regulating trading in derivatives called swaps. In September 2014, TeraExchange L.L.C. received approval from the CFTC to begin listing an over-the-counter swap, a derivative product, based on the price of bitcoin. CFTC's approval marks the first time a U.S. regulatory agency approved a bitcoin financial product.[25.] Regulated derivatives trading might ease some of the extreme volatility for which bitcoin is notorious, and thus mitigate one of the primary barriers to its widespread adoption as a currency and payments tool.[26] The price of one bitcoin fluctuated between $13 and $1,200 USD in 2013,[27] and almost $11.3 billion in value has been lost since that peak.[28] Bitcoin has proven to be extremely sensitive to large sudden price swings, as evidenced by the flash crashes triggered by the dissolution of the Silk Road—an online black market—and false reports of a bitcoin ban in China. Without these swap products, there is no way to hedge risk without reverting to the underlying "commodity." Large merchants like Microsoft, Dell, Expedia, and Overstock have made the use of these swaps common practice. The swap contracts provided by TerraExchange are "written, quoted, and settled in dollars" so that neither side of the trade has to deal with the underlying bitcoins directly.[29] Directly exchanging bitcoins for dollars requires compliance with anti-money laundering regulation, which typically includes the need to obtain specific licenses to be a designated money transmitter.[30] This issue will be more extensively explored in the discussion of the money-laundering implications of virtual currency a few sections later.

23: Wetjen, *Bringing Commodities Regulation to Bitcoin* (cited in note 1).

24: 2013 U.S. Dist. LEXIS at 110018.

25: Douwe Miedema, *Bitcoin Gets Boost as U.S. Watchdog Approves First Swap*, Routers (Sep. 12, 2014), online at http://www.reuters.com/article/2014/09/12/us-usa-bitcoin-cftc-idUSKBN0H71FU20140912?irpc=932.

26: Michael J. Casey, *TeraExchange Unveils First U.S.-Regulated Bitcoin Swaps Exchange*, Wall St. J. (Sep. 12, 2014).

27: *Bitcoin, Price Index Chart,* CoinDesk (2015), online at http://www.coindesk.com/price/.

28: Michael J. Casey, *Bitcoin's Plunge Bites 'Miners,'* Wall St. J. (Jan. 14, 2015).

29: Casey, *TeraExchange Unveils First U.S.-Regulated Bitcoin Swaps Exchange* (cited in note 26).

30: *Id.*

IV. Tax Sheltering

Just as commerce is now more globally integrated than ever, assets held offshore are at an all-time high. The Tax Justice Network estimates that governments lose as much as $100 billion in tax revenue per year due to offshore asset sheltering by multi-national enterprises alone.[31] Traditionally, tax havens have two defining features: small or non-existent tax rates and strong bank privacy laws.[32] As a response to the proliferation of offshore sheltering, the Foreign Account Tax Compliance Act ("FATCA") was implemented in 2010 to reduce the tax benefit provided to those who hold assets, including those holding bitcoins, in accounts overseas without proper documentation and reporting. By building an alliance of Foreign Financial Institutions ("FFIs"), it was expected that they would reduce the prevalence of offshore tax sheltering. However, those countries that are notorious for allowing American offshore accounts to go unreported are the same ones who are expected to comply with the terms proposed by the United States: the proposed terms offer these countries the option of violating their own bank secrecy laws or facing a steep financial penalty for abiding by them. Under FATCA, FFIs are required to identify their U.S. account holders to the IRS. Failing this, the institution will face a gross tax rate of 30% of certain payments. Having this dilemma forced upon them, many FFIs have agreed to help the U.S. Even more have joined in after the U.S. formed intergovernmental covenants geared towards allowing FFIs to comply with FATCA without violating their own bank-secrecy laws.[33] But professor Omri Marion has pointed out that in addition to lesser taxation and anonymity, bitcoin offers an additional advantage: the operation of bitcoin is not necessarily dependent on the existence of financial intermediaries such as banks—so the friends of FATCA are of little use.[34]

Furthemore, it is not clear which country would have the right to tax bitcoin transactions or holdings. Still, the IRS requires a taxpayer receiving virtual currency as payment to include the fair market value of the virtual currency, measured in U.S. dollars, when computing gross income. However, bitcoin-equity swap contracts have made it possible to use tax-exempt buying

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31: *UNCTAD: Multinational Tax Avoidance Costs Developing Countries $100 Billion+*, Tax Justice Network (2015), online at http://www.taxjustice.net/2015/03/26/unctad-multinational-tax-avoidance-costs-developing-countries-100-billion/.

32: Aaron Sankin, *Bitcoin Is the Offshore Tax Haven of the Future,* Daily Dot (Oct. 10, 2013), online at http://www.dailydot.com/business/bitcoin-offshore-tax-haven/.

33: Marian, 112 Mich. L. Rev. First Impressions at 41 (cited in note 7).

34: *Id.* at 42.

agents to invest in traded securities and commodities.[35] The agent receives commission from the trade, and is thus indifferent to the contract's price, and all the while the investor is fully exposed to the risk and reward just as if he had bought the security itself. This dynamic adds yet another layer of complexity to finding out who is actually liable for the capital gains of bitcoin, as under these contracts the income goes unreported, and, hence, untaxed. Additionally, as long as bitcoin is not transferred or converted through a financial intermediary, users can exchange goods and services without providing any sort of identification or other personal information. So on one hand, if users can purchase goods and services with virtual currency, save virtual currency, and furthermore, invest it just as they would with fiat currency, with a sufficiently large user base, there becomes relatively little incentive to use government-backed currency at all, meaning that a larger portion of exchange would go unreported for tax purposes. On the other hand, the scale of the sheltering might be too small for it to be a main concern of governments: the total possible value of bitcoin held abroad is still low—the total market capitalization for bitcoin is less than one percent of total outstanding Federal Reserve Notes at the time of this writing.

V. Money Laundering

Money laundering, the process of making illegally gained proceeds appear legal, is made easier by virtual currencies.[36] Although with traditional currency transfer, there is often a physical "paper trail" to observe or intercept for proof of illicit activities, no such means are readily available for virtual currencies.[37] The Bank Secrecy Act of 1970 ("BSA") and the Money Laundering Control Act of 1986 pose the greatest risk for Bitcoin developers, exchanges, wallet providers, mining pool operators and businesses that accept bitcoin. These acts require certain kinds of financial businesses, even if they are located abroad, to register with FinCEN.[38] In March 2013, the Department of Homeland Security effectively shut down bitcoin's biggest exchange's operations—Mt. Gox—for not registering itself as a money services business in accordance with FinCEN guidelines.[39]

35: *Id.* at 43.

36: Financial Crimes Enforcement Network, *History of Anti-Money Laundering Laws,* Dep't. Treasury (2015), online at http://www.fincen.gov/news_room/aml_history.html.

37: Bryans, 89 Ind. L.J. at 456 (cited in note 16).

38: Reid & Harrigan, *An Analysis of Anyonymity in the Bitcoin System* at 5 (cited in note 8).

39: Susan A. Berson, *Some Basic Rules for Using 'Bitcoin' as Virtual Currency,* ABA J.

After several companies requested additional guidance, FinCEN responded, stating that a money services business ("MSB") is "a person that accepts currency, funds, or any value that substitutes for currency, with the intent and/or effect of transmitting currency, funds, or any value that substitutes for currency, to another person or location."[40] These same rules govern other financial service products like credit cards, as well as payment services like PayPal. As MSBs, the entities are subject to the accompanying reporting, recordkeeping and monitoring requirements of the BSA.[41] But bitcoin can be transferred without changing from bitcoin to cash, and as long as bitcoin is held as bitcoin, these transactions are not subject to legislation governing money service businesses. Under this guidance, a user who simply obtained virtual currency and used it to purchase real or virtual goods or services would not be subject to FinCEN regulations.[42] Furthermore, these regulations still allow users to remain unidentified until bitcoin is, if ever, exchanged for a government-backed currency.[43]

In response to FinCen's updated framework, new technologies have been created to render FinCen's progess nearly null and void. As previously mentioned, while bitcoin transactions are anonymous in the sense that one need not provide or verify any personal information, they are public in the way that all exchanges are made available on the "blockchain". Recently developed software titled Dark Wallet—with reference to its use for the Black Market—attempts to make each individual transaction even harder to trace. It does this by integrating a laundering-type mechanism into each and every transaction that occurs using a process called CoinJoin.[44] CoinJoin combines

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(Jul. 1, 2013), online at http://www.abajournal.com/magazine/article/some_basic_rules_for_using_bitcoin_as_virtual_money/.

40: Financial Crimes Enforcement Network, *Request for Administrative Ruling on the Application of FinCEN's Regulations to a Virtual Currency Trading Platform,* Dep't. Treasury (2014), online at http://www.fincen.gov/news_room/rp/rulings/pdf/FIN-2014-R011.pdf.

41: Financial Crimes Enforcement Network, *Bank Secrecy Act/Anti-Money Laundering Examination Manual for Money Services Businesses,* Dep't. Treasury (2008), online at http://www.fincen.gov/news_room/rp/files/MSB_Exam_Manual.pdf.

42: Jeffrey D Neuberger, *FinCEN Releases Two Rulings Classifying a Bitcoin Payment System and Virtual Currency Trading Platform as Money Services Businesses (MSBs)*, Nat'l. L. Rev. (Oct. 28 2014), online at http://www.natlawreview.com/article/fincen-releases-two-rulings-classifying-bitcoin-payment-system-and-virtual-currency.

43: Berson, *Some Basic Rules for Using 'Bitcoin' as Virtual Currency,* (cited in note 39).

44: Andy Greenberg, '*Dark Wallet' Is About to Make Bitcoin Money Laundering*

the transaction of a user with the transaction of another random user who happens to be selling or purchasing at the same time. This way, purchases and sales are more difficult for regulators to match, and money laundering becomes much easier as several transactions are recorded as if only one took place. Dark Wallet will undoubtedly face extreme scrutiny from regulators as the program matures.

VI. Solutions

While thus far I have been operating under the assumption that a new regulatory framework would be implemented to allow the technology to thrive in ways that have positive social and economic impacts, and monitor its behavior in the areas in which it presently conflicts the law, it is equally possible for governments and lawmakers alike to take a more dire stance against its existence. First, it is possible to make compliance significantly more expensive—in terms of both money and time. For example, bitcoin exchanges on which investors directly exchange bitcoins for dollars have had a tough time gaining regulatory approval in the U.S., in part because they are typically designated as MSBs and must obtain specific licenses from many of the states in which they operate. That process, which involves assuring compliance with rules designed to prevent money laundering, can often be an extensive and arduous process.[45]

Other, stricter actions could be implemented if updates to regulation continue to be ineffective or circumvented. It would be possible for the government to simply devote the computational resources necessary to mine all remaining bitcoin, thereby controlling a large portion of its total market value. In so doing, the government could take billions of dollars in value off the market that may have been used for illegal activities. Additionally, it seems possible that legislators could simply disallow payments in bitcoin altogether. While this would not directly solve the issue of the possibility tax evasion, it would significantly damage bitcoin's popularity, which would thus reduce its liquidity and value, rendering it less effective for tax-evasion purposes. But to employ either of theses strategies would amount not only to removing the problems associated with cryptocurrencies, but all of their benefits as well. A potential solution to this dilemma could be to focus on formalizing the link between the virtual economy and the real economy. Since virtual wallets

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Easier Than Ever, Wired (Apr. 29, 2014), online at http://www.wired.com/2014/04/dark-wallet.

45: Casey, *TeraExchange Unveils First U.S.-Regulated Bitcoin Swaps Exchange* (cited in note 26).

must to be funded via credit or bank transfer, or via a payment service such as PayPal, there may be a way to mandate the provision of user identification upon government request.[46]

VII. Conclusion

Amidst all this legal uncertainty, the attitude of regulators matters at least as much as the specifics of the law. If regulators view a new technology as basically benign, they will look for ways to interpret the law to allow it to flourish. If they view the technology as a threat, they will look for interpretations of the law that could allow them to shut it down.[47] The most pressing challenge for regulators will be how to monitor the dynamic and complex virtual currency systems without restraining their growth and development.[48] Despite these shortcomings, virtual currencies can offer operational and economic efficiencies over other forms of electronic payment that rely upon the traditional banking system.[49] Bitcoin has the potential to provide tremendous benefits to the under-banked and unbanked parts of the world, particularly in emerging markets where traditional financial services often are not available. While many are calling for its end—currently, Iceland, Bolivia, Ecuador, Kyrgyzstan and Vietnam have already banned its use—others are rushing to get involved.[50] Bitcoin start-ups have attracted some of Wall Street's top bankers, while hedge funds are looking for ways to profit from virtual currencies. Bitcoin's price is now quoted on Bloomberg terminals along with stocks, bonds, currencies, and commodities. Several banks have suggested virtual currency's use for interbank lending.[51] Political parties have accepted virtual currency for campaign funding.[52] Even so, bitcoin might not be the final resting place for virtual currency. Regardless of what regulators elect to do, the underlying technology will continue to grow its influence as

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46: Matonis, *ECB* (cited in note 5).

47: Timothy B. Lee, *New Money Laundering Guidelines Are A Positive Sign For Bitcoin,* Forbes (Mar. 19, 2013), online at http://onforb.es/1SyJTES.

48: Steven Weitzel, *Bitcoin and Virtual Currency Regulation,* Law (Sep. 4, 2014), online at *http://www.law.com/sites/articles/2014/09/04/bitcoin-and-virtual-currency-regulation/.*

49: *Id.*

50: *Is Bitcoin Legal?,* CoinDesk (Aug. 19, 2014), online at http://www.coindesk.com/information/is-bitcoin-legal/.

51: Casey, *Why Bitcoin's Erratic Price Doesn't Matter* (cited in note 2).

52: Taylor Tyler, *First State Republican Party Accepting Bitcoin*, CryptoCoins News (Sep. 17, 2014), online at https://www.cryptocoinsnews.com/first-state-republican-party-accepting-bitcoin-donations/.

developers create innovative versions of virtual currency.[53]

53: Michael J. Casey & Paul Vigna, *Bitcoin and the Digital-Currency Revolution*, Wall St. J. (Jan. 23, 2015).