

FUNNY MONEY OR THE FALL OF FIAT: BITCOIN AND FORWARD-FACING VIRTUAL CURRENCY REGULATION

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INTRODUCTION

2013 marked a dramatic turning point for the public saliency of virtual currencies, with Bitcoin standing at the forefront. Once the purview of cryptographer and cyber-geek, Bitcoin became front-page fodder for the *New York Times*¹ and *Wall Street Journal*.² The US Senate held an entire hearing specifically dedicated to Bitcoin;³ the IRS based a wholesale new guidance for taxing virtual currencies based on Bitcoin;⁴ the FBI shut down the Silk Road marketplace, seizing millions of dollars in Bitcoin in the process;⁵ popular Bitcoin exchange Mt. Gox went belly-up,⁶ and prime-time police procedurals and late night comedians made reference to the virtual currency by name.⁷ The international community wavered greatly on Bitcoin as well—in 2013 alone, the currency was outlawed in China and Russia,⁸ vacillated on in

1. N.Y. TIMES, <http://query.nytimes.com/search/sitesearch/#/bitcoin/> (last visited Sept 13, 2014).

2. WALL ST. J., http://online.wsj.com/search/term.html?KEYWORDS=bitcoin&mod=DNH_S (last visited Sept. 13, 2014).

3. Ryan Tracy, *Authorities See Worth of Bitcoin*, WALL ST. J. (Nov. 18, 2013, 11:56 PM), <http://online.wsj.com/news/articles/SB10001424052702304439804579205740125297358>.

4. I.R.S. Notice 2014-21 (Mar. 25, 2014).

5. Andy Greenberg, *FBI Says It's Seized \$28.5 Million in Bitcoins from Ross Ulbricht, Alleged Owner of Silk Road*, FORBES (Oct. 25, 2013, 12:50 PM), <http://www.forbes.com/sites/andygreenberg/2013/10/25/fbi-says-its-seized-20-million-in-bitcoins-from-ross-ulbricht-alleged-owner-of-silk-road/>.

6. Nathaniel Popper & Rachel Abrams, *Apparent Theft at Mt. Gox Shakes Bitcoin World*, N.Y. TIMES (Feb. 25, 2014), <http://www.nytimes.com/2014/02/25/business/apparent-theft-at-mt-gox-shakes-bitcoin-world.html>.

7. Eric Calouro, *'Almost Human' TV Show References Bitcoin Again: Buzzword or Quickly Becoming Mainstream?*, NEWSBTC (Mar. 3, 2014, 5:25 PM), <http://newsbtc.com/2014/03/03/almost-human-tv-show-references-bitcoin/>; Dylan Love, *Watch a Guy Try To Explain Bitcoin To Conan O'Brien*, BUSINESS INSIDER (Mar. 11, 2014, 11:06 AM), <http://www.businessinsider.com/conan-obrien-bitcoin-explanation-2014-3>.

8. Gabriela Baczynska, *Russian Authorities say Bitcoin illegal*, REUTERS (Feb. 9, 2014), <http://www.reuters.com/article/2014/02/09/us-russia-bitcoin-idUSBREA1806620140209>; Michael P. Tremoglie, *Bitcoin: The Speculator Giveth and the Speculator Taketh Away*, MAINSTREET (Dec. 19, 2013, 8:31 AM),

Canada⁹ and India,¹⁰ embraced—at least temporarily—in Germany,¹¹ and the four corners of the blogosphere exploded with as many opinions as authors. It is into this rapidly evolving world that US legislators and regulators now enter.

Virtual currencies are sufficiently novel that the US government faces an “uncertainty paradox” in deciding whether—and if so, how—to engage in regulation.¹² As the most popular virtual currency to date, Bitcoin has acted as the driving impetus for regulation—the case of first impression. Decisions made with Bitcoin in mind will shape the fundamental nature of virtual currencies going forward, acting as a deterministic model and setting the stage for future treatments by the government.¹³ Just as the structure of rules affects the outcome of a game, today’s treatment of Bitcoin will shape the nature of virtual currencies and digital payments for years to come.

However, the constantly shifting landscape surrounding Bitcoin makes it a problematic point of origin for a new regulatory regime.¹⁴ Bitcoin is but one product of market demand for such currencies, with unique advantages and flaws not shared, as a core concept, by virtual currencies writ large.¹⁵ Virtual currencies are nascent in their development; any regulation beyond narrowly tailored preservation of the most compelling government interests would have outcome-

<http://www.mainstreet.com/article/smart-spending/technology/bitcoin-speculator-giveth-and-speculator-taketh-away>.

9. *First Bitcoin ATM opens in Vancouver, more planned throughout Canada*, RT (Oct. 30, 2013), <http://rt.com/news/first-bitcoin-atm-canada-932/>; *The MintChip Challenge*, CHALLENGEPOST, <http://mintchipchallenge.challengepost.com/> (last visited Sept. 11, 2014).

10. INDIAN DEPT. OF COMMERCE, RBI CAUTIONS USERS OF VIRTUAL CURRENCIES AGAINST RISKS (2014), <http://rbidocs.rbi.org.in/rdocs/PressRelease/PDFs/IEPR1261VC1213.pdf>; *RBI asks people to be cautious of Bitcoins*, NDTV PROFIT (Dec. 28, 2013), <http://profit.ndtv.com/news/forex/article-rbi-asks-people-to-be-cautious-of-bitcoins-376084>; Pankaj Mishra, *Bitcoin Exchanges In India Shut Down After Regulator Warning*, TECHCRUNCH (Dec. 27, 2013), <http://techcrunch.com/2013/12/27/bitcoin-exchanges-in-india-shut-down-after-regulator-warning/>.

11. Zach Kyle, *Bitcoin emerges from the shadows*, IDAHO STATESMAN (Nov. 2, 2013), <http://www.idahostatesman.com/2013/11/02/2848766/bitcoin-emerges-from-the-shadows.html>.

12. Marjolein van Asselt et al., *Regulating Technologies and the Uncertainty Paradox*, in DIMENSIONS OF TECHNOLOGY REGULATION 261, 262 (Morag Goodwin, Bert-Jaap Koops, & Ronald Leenes, eds., 2010), available at https://pure.uvt.nl/portal/files/1225627/Koops_Dimensions_of_Technology_Regulation_proof_2_april_2010v2_100526.pdf.

13. See, e.g., SHEPSLE, *infra* note 116.

14. Timothy B. Lee, *An Illustrated History of Bitcoin Crashes*, FORBES (Apr. 11, 2013, 12:45 AM), <http://www.forbes.com/sites/timothylee/2013/04/11/an-illustrated-history-of-bitcoin-crashes/>.

15. Bitcoin’s hypervolatility can be attributed in large part to its unique nature as a “cryptocurrency,” a trait not *per se* necessary for virtual currencies at large—for further discussion, see section II(B), *infra*.

determinative preclusive effects on future developments in disintermediated payment mechanisms. This might effectively foreclose market investment and potentially advantageous, as-yet-unseen routes of innovation. Therefore, the US Government should limit its regulation of virtual currencies to a partially federally preempted regime, based on extant consumer fraud protection, taxation, and cyber-crime prevention laws, rather than enacting a new regulatory regime wholesale.

Part I of this note outlines the background of Bitcoin as the current paradigmatic virtual currency, explaining its origins and functionality, describing the uncertainty in international treatment to date, and sketching the relevant US legal structures already in place. Part II analyzes those regulatory options available to the Federal government, and discusses the advantages and disadvantages. Finally, Part III proposes a regulatory strategy for virtual currencies that balances government's compelling interests with the need to allow market forces to continue to spur innovation.

I. BACKGROUND

Bitcoin is not the first decentralized virtual currency,¹⁶ nor is it likely to be the last.¹⁷ It is, however, the most successful virtual currency to date—and as such, provides the impetus to spawn new regulatory models of control. Virtual currencies, state-sponsored or otherwise, are a monetary response to technological evolution. The medium for financial transactions is inextricably tied to the state of technology.¹⁸ Barter systems historically gave way to standardized coinage as metallurgy advanced, which in turn yielded paper money post-advent of the printing press. Security measures evolved from milled coin edges, to watermarks on bills, to four-digit PINs. Transactions morphed from exchange of physical currency, to notes of credit, to credit cards, to online transfers mediated by banking institutions. Money has evolved lockstep with advancement in technology, changing in fundamental form and function.

The rise in popularity of virtual currencies is in part attributable to global digital convergence bringing geographically distant markets closer together than any previous point in history.¹⁹ The number of transactions across distal economies—each reliant on a different currency, each cross-

16. Emily Flitter, *Hackers switch to new digital currency after Liberty Reserve*, REUTERS (Aug. 9, 2013, 8:53 AM), <http://www.reuters.com/article/2013/08/09/net-us-cybercrime-digital-currency-idUSBRE9780GM20130809>.

17. See, e.g., PESETACOIN, <http://pesetacoin.info/?lang=en> (last visited Oct. 4, 2014).

18. Lauren Orsini, *A Year In Bitcoin: Why We'll Still Care About The Cryptocurrency Even If It Fades*, READWRITE (Dec. 30, 2013), <http://readwrite.com/2013/12/30/bitcoin-may-fade-2014-prediction#awesm=~orWzVOeb6Gx84d>.

19. STUART MINOR BENJAMIN, HOWARD A. SHELANSKI, JAMES B. SPETA & PHILIP J. WEISER, TELECOMMUNICATIONS LAW AND POLICY, Ch. 1 (3rd ed. 2012).

currency transaction relying on different banking institutions at the point of conversion—has skyrocketed in recent years. Markets on opposite sides of the world now interact directly on a daily basis. For private and corporate consumers alike, access to the global stream of commerce is as simple as connecting to a Wi-Fi network. From this environment, virtual currencies, Bitcoin among them, have emerged.

Bitcoin, as a peer-to-peer cryptocurrency, is unique among virtual currencies in its fundamental structure. It has accordingly experienced varying reactions and regulations, the rationale for which does not stretch across all virtual currencies.

A. What is a Bitcoin?

1. Where did Bitcoin come from?

In 2008, an anonymous programmer (or programmers) operating under the alias Satoshi Nakamoto posted a paper outlining an idea for a digitally maintained currency.²⁰ This paper described a process for using cryptographic algorithms to maintain scarcity, and was first shared among a listserv of like-minded cryptographers.²¹ Where fiat currencies rely on the authority of a sovereign government's word, and commodity money derives value from a referent material, Nakamoto's paper proposed using the "work" necessary to break cryptography as an analogue for generation-labor to maintain scarcity and prevent inflation. The paper became the basis for Bitcoin, which formally launched one year later.²²

Bitcoin is decentralized, existing outside any formal issuing body.²³ No one "owns" the right to produce Bitcoins, or to limit the issuance of them.²⁴ The programming language at the heart of Bitcoin's cryptographic generation is open source and viewable by all.²⁵ To paraphrase pro-Bitcoin rhetoric, it is the property of no individual or

20. Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, available at <https://docs.google.com/viewer?url=http://www.bitcoin.org/bitcoin.pdf> (last visited Mar. 30, 2014). While a great deal of hubbub occurred in 2014 after Newsweek published an article alleging to have pierced Satoshi Nakamoto's pseudonymous veil, the questionable veracity of said allegations have led the author of this note to disregard them in the name of academic integrity.

21. Tom Simonite, *What Bitcoin Is, and Why It Matters: Can a Booming "Cryptocurrency" Really Compete with Conventional Cash?*, MIT TECHNOLOGY REVIEW (May 25, 2011), <http://www.technologyreview.com/news/424091/what-bitcoin-is-and-why-it-matters/>.

22. *Frequently Asked Questions*, BITCOIN, <http://bitcoin.org/en/faq> (last visited Nov. 18, 2014).

23. *Id.*

24. *Id.*

25. *Id.*

body, “much like no one owns the technology behind email.”²⁶ While Bitcoins are still being created at the time of writing, there exists a twenty-one million cap on the currency.²⁷ After twenty-one million Bitcoins have been created, no “new” Bitcoins will come into existence; the same twenty-one million will be infinitely circulated.²⁸

2. How does Bitcoin work?

As previously stated, Bitcoin is a peer-to-peer virtual cryptocurrency.²⁹ Since it is peer-to-peer, users deal directly between one another, with no intermediary financial institution.³⁰ This disintermediation is a key piece of Bitcoin’s value proposition—no sunk or marginal costs for infrastructure need be recouped, so transaction costs are kept to a minimum. On the flip side, banking institutions also provide a “safety net” that is absent in peer-to-peer digital transactions.

As a virtual currency, Bitcoin has no physical representation users can “touch” or “see—its existence is entirely comprised of digital 0’s and 1’s.³¹ Bitcoin is fully convertible, exchangeable into other forms of currency, and is unattached to any central issuing authority.³² Because it is unsupported by a central issuing authority, Bitcoin’s market validity depends on consumer and provider participation, or “opt-in.”³³

Decentralized currencies face a classic collective action problem: unlike fiat currencies backed by the imprimatur of governments with guns, decentralized currencies only have value when parties agree on their use. In the case of *virtual* decentralized currencies, this collective action problem has been aided by the network effect of technological convergence lowering the transaction difficulties of mass opt-in. Virtual decentralized currencies—like Bitcoin—overcome the collective action risks to consumers by aggregating safety in numbers through digital dissemination at a rate and volume unimaginable in a pre-Internet era.

Users store Bitcoins in virtual “wallets.” These wallets are third-

26. *Id.*

27. Joe Weisenthal, *Everyone Who Believes In Bitcoin Should Try To Answer This Question*, BUSINESS INSIDER (Dec. 29, 2013, 7:47 AM), <http://www.businessinsider.com/everyone-who-believes-in-bitcoin-should-try-to-answer-this-question-2013-12>.

28. Continued circulation will hypothetically be made possible following the mining of the preordained twenty-one million coins thanks to the currency’s divisibility to eight decimal places. *Id.*

29. FBI: BITCOIN VIRTUAL CURRENCY: UNIQUE FEATURES PRESENT DISTINCT CHALLENGES FOR DETERRING ILLICIT ACTIVITY (Apr. 24, 2012), *available at* http://www.wired.com/images_blogs/threatlevel/2012/05/Bitcoin-FBI.pdf [hereinafter FBI].

30. *Id.*

31. *Id.*

32. *Id.*

33. *Id.*

party “client” software,³⁴ and are available on almost any device imaginable from a range of providers.³⁵ Many of the more reputable wallet providers profit either by taking a small percentage of each transaction, or by exercising a flat fee per individual transaction.³⁶ Wallets do not contain users’ personal information.³⁷ Names, Social Security numbers, addresses, phone numbers—none of the typical indicia associated with bank accounts attaches to a Bitcoin wallet.³⁸ This creates a high level of anonymity in payments, which occur as single direct transfers between wallets—each payment consists of an individually numbered transaction, rather than the exchange of the static wallet identifying number (as with credit cards).

Anonymity, while not a *per se* virtual currency functionality, has emerged as a key focus of the Bitcoin discourse. Concerns over consumer privacy play against law enforcement’s interest in crime prevention; this has spurred much of the debate—and consequent regulatory action—around Bitcoin. That is not to say that Bitcoins are completely anonymous; as part of the basic operation of the currency, all transactions are stored publically and permanently on the Bitcoin network.³⁹ However, these logs contain only the “addresses” of individualized transactions.⁴⁰ Unless the wallet number (much less user identity) behind the transaction address is known through an alternate fashion, an individual transaction address is of limited use.⁴¹

3. How can Bitcoins be acquired?

Bitcoins can be acquired in one of two ways. First, users can produce the currency through a process called “mining.” Second, Bitcoins may also be purchased from third-party providers through exchange websites.

Mining is the process of setting a computer, or often a series of networked computers, to perform an incredibly difficult cryptographic

34. See COINBASE, <https://coinbase.com> (last visited Sept. 6, 2014).

35. *Choose your wallet*, BITCOIN, <http://bitcoin.org/en/choose-your-wallet> (last visited Sept. 6, 2014).

36. Rohdri Madison, *Get a piece of the Bitcoin action: How easy is it to lay your hands on the virtual currency?*, THE INDEPENDENT (Jan. 2, 2014), <http://www.independent.co.uk/life-style/gadgets-and-tech/features/get-a-piece-of-the-bitcoin-action-how-easy-is-it-to-lay-your-hands-on-the-virtual-currency-9035507.html>.

37. Kyle, *supra* note 11.

38. *Id.*

39. *Some Things You Need to Know*, BITCOIN, <http://bitcoin.org/en/you-need-to-know> (last visited Sept. 6, 2014).

40. *Id.*

41. Blockchaining, while a critical aspect of the Bitcoin discussion, is a complex enough topic that sufficient treatment is better suited to a separate paper entirely.

puzzle, which “earns” Bitcoins.⁴² The difficulty of the task and the “work” involved are intended to maintain scarcity analogous to traditional currencies, in order to prevent hyperinflation.⁴³ One commentator analogized the process to having a computer solve a Rubik’s cube possessing sides for every color hex code imaginable.⁴⁴ While ostensibly a practice anyone in possession of a laptop might engage in, mining Bitcoin requires computing power on an order of magnitude beyond the reach of most average citizens.⁴⁵ The speculation on potential for profit has led a gold rush-esque fleet of prospecting entrepreneurs to create entire computing networks with unique architecture, dedicated solely to the mining of Bitcoin.⁴⁶

Bitcoins may also be purchased through websites called “exchanges.” Exchanges allow users to convert other currencies into Bitcoins, and vice-versa, through both peer-to-peer interactions facilitated by the exchange, and in some instances with the exchange itself. As Mt. Gox, once the most notable exchange, was frequently cited in newspapers and scholarly articles alike as the primary source for Bitcoin’s value relative to the dollar—before declaring bankruptcy, with its operators facing criminal charges for theft.⁴⁷

4. What can Bitcoin be used for?

Similar to the dollar or Euro, Bitcoin can be used to purchase consumer products, goods, and services. In 2012 an estimated 1,000 different vendors, all primarily online, accepted Bitcoins as payment at year’s beginning; by the end of the year, that number had decoupled to over 10,000, half located in North America.⁴⁸ Popular websites like the dating service OkCupid,⁴⁹ the craft store Etsy,⁵⁰ and forum-cum-news-platform Reddit,⁵¹ began accepting Bitcoins as payment for their services

42. FBI, *supra* note 29.

43. Tom Simonite, *What Bitcoin is, and Why It Matters*, MIT TECHNOLOGY REVIEW (May 25, 2011), <http://www.technologyreview.com/news/424091/what-bitcoin-is-and-why-it-matters/>; WEUSECOINS, <http://www.weusecoins.com/en/>.

44. Mike Rugnetta, *Are Bitcoins and Unusual Hats the Future of Currency?*, PBS IDEA CHANNEL (Feb. 13, 2013), https://www.youtube.com/watch?v=E_9R45RLNR0.

45. William Alden, *The Bitcoin Mines of Iceland*, N.Y. TIMES DEALBOOK (Dec. 23, 2013, 7:35 AM), http://dealbook.nytimes.com/2013/12/23/morning-agenda-the-bitcoin-mines-of-iceland/?_r=0.

46. *Id.*

47. Simonite, *supra* note 43; Michael Bathon, *Mt Gox U.S. Bankruptcy Approved to Help Bitcoin Hunt*, BLOOMBERG (June 17, 2014), <http://www.bloomberg.com/news/2014-06-17/mt-gox-u-s-bankruptcy-approved-to-help-bitcoin-hunt.html>.

48. Kyle, *supra* note 11.

49. See OKCUPID, <http://okcupid.com> (last visited Sept. 6, 2014).

50. See ETSY, <http://etsy.com> (last visited Sept. 6, 2014).

51. See REDDIT, <http://reddit.com> (last visited Sept. 6, 2014).

in 2013. Dell⁵² and DISH⁵³ became two of the largest corporations to accept the virtual currency in 2014. PayPal, following the announcement of its spin-off from eBay, indicated in 2014 that it will start to accept Bitcoin, either through its own services,⁵⁴ or through protected payments via designated third parties.⁵⁵ This would open services like Airbnb and Uber to Bitcoin payments.⁵⁶ 2014 also saw the number of daily Bitcoin-based transactions pass the 100,000 mark for the first time.⁵⁷

Bitcoin has similarly seen a dramatic increase in its physical-word applications, if at times over-exaggerated by its faithful choirs of supporters. College students living at two university-endorsed housing units at Brigham Young University-Idaho are now able to pay for rent and other services in Bitcoin.⁵⁸ In Canada, the first Bitcoin ATM—installed in a coffee shop in Vancouver to allow for easy currency exchange—saw over \$9,500 US in transactions on its first day, and over \$27,000 US on its second.⁵⁹ One popular Bitcoin wallet provider, Coinbase, launched a mobile phone payment app in 2014 allowing retailers to accept Bitcoin in-store, beating Apple’s “Apple Pay” to the punch, both for announcement and for rollout, of “mobile app” digital banking.⁶⁰

2013 also marked a significant spike in venture capital investments in Bitcoin. Most visible as representatives of the Bitcoin *cause célèbre*

52. Dell *now Accepts Bitcoin*, DELL, <http://www.dell.com/learn/us/en/uscorp1/campaigns/bitcoin-marketing> (last visited Sept. 6, 2014).

53. Dish to Accept Bitcoin, DISH, <http://about.dish.com/press-release/products-and-services/dish-accept-bitcoin> (last visited Sept. 6, 2014).

54. Michael J. De La Merced & Andrew Ross Sorkin, *EBay Does About-Face in Spinoff of Paypal Backed by Icahn*, N.Y. TIMES (Sept. 30, 2014, 7:00 AM), <http://dealbook.nytimes.com/2014/09/30/ebay-to-spin-off-paypal-adopting-strategy-backed-by-icahn/>.

55. Andrea Felsted, *Ebay to expand the range of digital currencies it accepts*, FINANCIAL TIMES (Nov. 3, 2013, 1:43 PM), <http://www.ft.com/intl/cms/s/0/f374ed54-4328-11e3-8350-00144feabdc0.html#axzz2je1i9byJ>.

56. Greg Bensinger, *EBay Payments Unit in Talks to Accept Bitcoin*, WALL ST. J. (Aug. 14, 2014, 6:06 PM), <http://online.wsj.com/articles/ebay-payment-unit-in-talks-to-accept-bitcoin-1408052917>.

57. Nemin Hajdarbegovic, *Questions Linker as Daily Bitcoin Transactions Pass 100,000 Milestone*, COINDESK (Dec. 4, 2014, 7:55 PM), <http://www.coindesk.com/questions-linger-daily-bitcoin-transactions-pass-100000-milestone/>.

58. Adam Hofman, *BYU Idaho Accepts Bitcoin in Select Student Housing Developments*, BITCOIN MAGAZINE (Aug. 6, 2013), <http://bitcoinmagazine.com/6155/byu-idaho-accepts-bitcoin-in-select-student-housing-developments/>.

59. Kashmir Hill, *Why Are People So Excited About A Bitcoin ATM?*, FORBES (Oct. 31, 2013, 5:34 PM), <http://www.forbes.com/sites/kashmirhill/2013/10/31/why-are-people-so-excited-about-a-bitcoin-atm/>.

60. Jon Russell, *Coinbase Launches Point-of-Sale App to Let Physical Retailers Accept Payment in Bitcoin*, NEXT WEB BLOG (Dec. 30, 2013, 9:05 AM), <http://thenextweb.com/insider/2013/12/30/coinbase-launches-point-of-sale-app-to-let-physical-retailers-accept-payment-in-bitcoin/#!rcREx>.

are the Winklevoss twins, best known for their involvement in the early phases of Facebook, Inc.⁶¹ In July of 2013, the Winklevosses filed an initial public offering to create a twenty million dollar Bitcoin Trust,⁶² which would allow investors to “track the performance” of Bitcoin, effectively treating the Bitcoin market like “exchange-traded funds, listing on a stock exchange.”⁶³ However, other venture capital-funded startups beat the Winklevosses to the punch in execution—demonstrating the increased public saliency of the virtual currency.⁶⁴

5. Other emergent virtual currencies

Following on the heels of Bitcoin’s success, an explosion of similar virtual currencies occurred. Among these was a series of sixty-some “altcoins” or “Litecoins,” cryptocurrencies derived from Bitcoin’s open-source code. While at year’s end 2013, Bitcoin circulation had reached an estimated value of just over nine billion dollars, the altcoin community had already reached a circulation level resulting in an estimated four billion dollar value in less than a year’s time.⁶⁵ One of the specific altcoins, Dogecoin, was even used in funding the 2014 Jamaican Bobsled Team’s attendance of the Sochi Winter Olympics,⁶⁶ as well as a NASCAR team.⁶⁷

B. International treatment of Bitcoin

One of the primary values of decentralized virtual currencies is their ability to transcend geographic borders, lowering transaction costs between parties operating across economies. Categorizing international regulation of virtual currencies in response to Bitcoin is best divided into three responses: embracing virtual currencies, outlawing virtual currencies, and either flip-flopping or dodging the question altogether.

61. David Benoit & Andrew R. Johnson, *Winklevoss Twins Plan a Bitcoin Venture*, WALL ST. J. (July 1, 2013, 7:16 PM), <http://online.wsj.com/news/articles/SB10001424127887323936404578580161565869252>.

62. Jim Urquhart, *Winklevoss twins say Bitcoin could become a country’s currency*, REUTERS (Sep. 17, 2013, 1:59 PM), <http://www.reuters.com/article/2013/09/17/us-bitcoin-currency-idUSBRE98G0X320130917>.

63. Benoit & Johnson, *supra* note 61.

64. Urquhart, *supra* note 62.

65. *Bitcoin Gang Gets 67 New e-Currencies, Valued at \$13 Bn*, OUTLOOK INDIA (Dec. 29, 2013), <http://news.outlookindia.com/items.aspx?artid=822841>.

66. Bill Chappell, *Online Donors Send Jamaican Bobsled Team To Sochi*, NPR (Jan. 22, 2014, 7:15 PM), <http://www.npr.org/blogs/thetwo-way/2014/01/22/265060754/wow-dogecoin-other-donors-send-jamaican-bobsled-team-to-sochi> (stating that \$30k in Dogecoin was donated by users of Reddit to the Jamaican Bobsled Team).

67. *Much speed! Digital currency Dogecoin sponsors NASCAR driver Josh Wise*, FOX NEWS (Mar. 27, 2014), <http://www.foxnews.com/leisure/2014/03/27/much-speed-digital-currency-dogecoin-sponsors-nascar-driver-josh-wise/>.

That the final category is by far the most predominant demonstrates how high the degree of uncertainty regarding virtual currency regulation is—and the potential value of stabilizing consistency moving forward.⁶⁸

1. Embracing virtual currencies: Germany

On the international stage, Germany stands at the forefront of countries allowing virtual currencies within their borders. The German Finance Ministry classified Bitcoin as a “unit of account,” which allows it to be used for taxation and trade.⁶⁹ By classifying the Bitcoin as “private money,” Germany has stated it seeks to create a regime where “commercial profits that stem” from the currency’s use are taxable, framing it as a virtual alternative to the Euro, a “[competitor] in the production of money” that transcends borders.⁷⁰

2. Strict forbiddance: China and Russia

On the international stage, allowance of Bitcoin payment by Baidu, “China’s Google,” was initially seen as a positive indicium by those endorsing the use of virtual currencies.⁷¹ China has in the past been restrictive of virtual currencies, forbidding the use of “gold farmed” assets in online games to be converted for the purchase of any real-world goods.⁷² Baidu, by allowing purchasers of its security service Jiasule to pay in Bitcoins, was seen as lending an air of legitimacy.

However, the Chinese government—along with the Russian⁷³—has since outlawed the use of Bitcoins within their borders.⁷⁴ Both did so with a *de facto* regime forbidding trade of Bitcoins by the country’s

68. See generally LAW LIBRARY OF CONGRESS, REGULATION OF BITCOIN IN SELECTED JURISDICTIONS, (Jan. 2014), available at <http://www.loc.gov/law/help/bitcoin-survey/regulation-of-bitcoin.pdf> (detailing a more thorough description of Bitcoin regulation in various global jurisdictions).

69. Matt Clinch, *Bitcoin recognized by Germany as ‘private money’*, CNBC (Aug. 19, 2013, 10:25 AM ET), <http://www.cnbc.com/id/100971898>.

70. *Id.*

71. Kashmir Hill, *Bitcoin Says Goodbye To Silk Road And Hello To Baidu, China’s Google*, FORBES (Oct. 16, 2013, 1:22 PM), <http://www.forbes.com/sites/kashmirhill/2013/10/16/bitcoin-says-goodbye-to-silk-road-and-hello-to-baidu-chinas-google/>; see also ‘China’s Google’ begins accepting Bitcoin, RT (Oct. 16, 2013, 7:42PM), <http://rt.com/news/china-baidu-accept-bitcoin-276/>.

72. Juliet Ye, *China Cracks Down on Virtual Currency, For Real*, WALL ST. J. (June 29, 2009, 11:33 AM HKT), <http://blogs.wsj.com/chinarealtime/2009/06/29/china-cracks-down-on-virtual-currency-for-real/>.

73. Todd Wasserman, *Russia Outlaws Bitcoin*, MASHABLE (Feb. 7, 2014), http://mashable.com/2014/02/07/russia-outlaws-bitcoin/?utm_medium=feed&utm_source=rss.

74. Andre Mouton, *What a Bitcoin is really worth in India and China*, MARKETWATCH (Jan. 1, 2014, 7:01 AM ET), <http://www.marketwatch.com/story/what-a-bitcoin-is-really-worth-in-india-and-china-2014-01-01>.

banks altogether.⁷⁵ At least one section of the academic economics community described this treatment as an effort to prevent Bitcoin from further damaging the already-weak yuan and ruble.⁷⁶

3. Vacillation and uncertainty: Canada, India, and the European Union

India, Canada, and the EU serve as tangible proof of the international uncertainty towards virtual currencies, whether through flip-flopping in their treatment of Bitcoin, or staying silent on the matter altogether.

India initially issued a “warning” to consumers against the use of Bitcoin, and outlawed all exchanges operating in the country, creating a *de jure* regime that made Bitcoins functionally useless within the India’s borders.⁷⁷ However, the country has since allowed the currency to return in what has been described as a “cautious” resumption.⁷⁸

Canada, on the other hand, initially set up a regime for taxation of virtual currencies, without setting any bounds on value or conversion costs.⁷⁹ Not only was Canada the site of the world’s first Bitcoin ATM,⁸⁰ but the Canadian government was even inspired by Bitcoin to attempt to create a virtual national currency of their own, in Mintchip⁸¹—which it later shut down.⁸² In January 2014, however, Canadian officials declared that the currency was not “legal tender.” While this has no functional effect on Bitcoin’s use in the country, as it does not outlaw conversion, it represents an about-face in terms of public framing by the Canadian government, at the very least.

The European Union, meanwhile, embodies on a supranational level the costs and uncertainties that emerge when governing entities remain silent on virtual currencies. Without delving too deeply into the EU’s

75. Bill Chappell, *China Bans Bitcoin Trading by Banks*, NPR BLOG (Dec. 5, 2013, 9:36 AM ET), <http://www.npr.org/blogs/thetwo-way/2013/12/05/248967111/china-bans-bitcoin-trading-by-banks>.

76. *Id.*

77. INDIAN DEPT. OF COMMERCE, *supra* note 10; Mishra, *supra* note 10.

78. *Indian Bitcoin operators resume operations cautiously*, HINDU (Jan. 15, 2014, 5:36 PM IST), <http://www.thehindu.com/business/indian-bitcoin-operators-resume-operations-cautiously/article5578640.ece>.

79. *What you should know about digital currency*, CANADA REVENUE AGENCY, <http://www.cra-arc.gc.ca/nwsrm/fctshts/2013/m11/fs131105-eng.html> (last modified Nov. 5, 2013).

80. Hill, *supra* note 59.

81. Royal Canadian Mint, *The MintChip Challenge*, CHALLENGEPOST, <http://mintchipchallenge.challengepost.com/> (last visited Oct. 3, 2014).

82. Pete Rizzo, *Canadian Government to End ‘MintChip’ Digital Currency Program*, COIN DESK (Apr. 4, 2014 8:44PM BST), <http://www.coindesk.com/canadian-government-end-mintchip-digital-currency-program/>.

complex legislative process⁸³—which would leave the eponymous Bill from Schoolhouse Rock’s “I’m Just a Bill”⁸⁴ in need of an aspirin—the relevant legal bodies have remained silent on how the EU’s Directive⁸⁵ on value-added tax (VAT) applies to virtual currencies.⁸⁶ This has generated both inconsistency and uncertainty in virtual currency regulation in member states across the continent.⁸⁷ The United Kingdom has exempted Bitcoin from VAT,⁸⁸ Estonia exercises a 20% tax on Bitcoin transactions and a 10% tax on profits from Bitcoin resale,⁸⁹ and Poland levies a 23% tax specifically on mining profit. Users seeking to comply with relevant tax laws while engaging in cross-country transactions using virtual currencies are forced down a Lewis Carroll-esque rabbit hole trying to make sense of the patchwork regime that has sprung up.

C. How has the US previously treated decentralized currencies?

1. The Constitution and Code Laws of the United States

The United States’ black letter law appears to permit the creation and use of decentralized currency. Given the historical precedent for local decentralized currencies, virtual currencies such as Bitcoin will likely be permitted to circulate freely on a federal level, barring new Congressional forbiddance.

The Constitution grants Congress the authority to “Coin” money, but does not expressly forbid the use private currencies.⁹⁰ Specifically, Article I, § 8 of the Constitution grants Congress exclusive enumerated power to “coin Money, regulate the Value thereof, and of foreign Coin, and fix the Standard of Weights and Measures.”⁹¹ This prohibition operates on an essentially Federalist set of rationales—by granting power

83. See *Ordinary Legislative Procedure*, EUROPEAN PARLIAMENT, http://www.europarl.europa.eu/external/appendix/legislativeprocedure/europarl_ordinarylegislativeprocedure_complete_text_en.pdf (last visited Oct. 3, 2014).

84. *Schoolhouse Rock: I’m Just a Bill* (ABS television broadcast Jan. 13, 1973), available at <https://www.youtube.com/watch?v=FFroMQIKiag>.

85. See Council Directive 2006/112/EC, 2006 O.J. (L347) (EC), available at <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32006L0112&from=EN>.

86. Danny Bradbury, *Europe Inches Towards a Decision on Bitcoin VAT*, COINDESK (Aug. 16, 2014, 6:50 PM), <http://www.coindesk.com/europe-inches-towards-decision-bitcoin-vat/>.

87. *Id.*

88. HM Revenue & Customs, *Revenue & Customs Brief 09/14*, GOV.UK (Mar. 3, 2014), <http://www.hmrc.gov.uk/briefs/vat/brief0914.htm>.

89. *Estonia—Services from Bitcoin Trades Subject to VAT*, KPMG (Apr. 23, 2014), <http://www.kpmg.com/global/en/issuesandinsights/articlespublications/taxnewsflash/pages/estonia-bitcoin-trades-vat-income-tax.aspx>.

90. U.S. CONST. art. I, § 8.

91. *Id.*

to the Federal government to create “Coin,” the States are preempted and prevented from issuing their own official currencies.⁹²

However, the Constitution does not make the issuance of currency a zero-sum game, as history has borne out. The effect of Article I, §8 is to preclude states in their roles as governments from issuing currencies, not to prevent non-government entities from doing so.⁹³ That is, personal currencies—private currencies—are not Constitutionally forbidden.⁹⁴ Otherwise, the passing of the Stamp Payments Act in 1862 by Congress would have been largely an exercise in redundancy.⁹⁵

That is not to say citizens may simply issue private money as they see fit. Private persons are forbidden from trying to duplicate or imitate US currencies.⁹⁶ However, given Bitcoin’s explicitly variant symbology and naming, it is virtually impossible to imagine it, or any other virtual currency, being legitimately confused for US currency.⁹⁷ Since only “US coins and currency” constitute legal tender for “debts, public taxes, and dues,”⁹⁸ businesses are not required to accept non-Federal currencies; opt-in is necessary.⁹⁹ No law forbids such opt-in, however.

Ultimately, barring explicit Congressional forbearance, virtual currencies such as Bitcoin are Constitutionally permissible, as the law now stands.

2. The Stamp Payments Act of 1862

A subsection of scholarly articles¹⁰⁰ discussing regulation of virtual currencies make repeated reference to the Stamp Payments Act of 1862, which was passed in response to the devaluation of metal coinage in relation to its component make-up post-Civil War.¹⁰¹ In part, the Act expressly forbids making any “note, check, memorandum, token, or other obligation for a less sum than \$1” meant to be used as money or “received. . .in lieu of lawful money of the United States.”¹⁰² Each

92. Reuben Grinberg, *Bitcoin: An Innovative Alternative Digital Currency*, 4 HASTINGS SCI. & TECH. L.J. 159, 182 (2012).

93. *Id.* at 182-83.

94. *Id.*

95. For further discussion of the Stamp Payments Act, please refer to Section C, *infra*. 18 U.S.C. § 336 (1994).

96. *See* 18 U.S.C. §§ 485, 486 (1994).

97. *Id.*

98. 31 U.S.C. § 5103 (1983).

99. François R. Velde, *Bitcoin: A primer*, FED. RESERVE BANK OF CHI. (Dec. 2013), http://www.chicagofed.org/digital_assets/publications/chicago_fed_letter/2013/cfldecember2013_317.pdf.

100. Robert McMillan, *Could a Civil War-Era Law Stamp Out Bitcoin?*, WIRED (Jan. 8, 2014, 6:30 AM), <http://www.wired.com/2014/01/stampact/>.

101. Grinberg, *supra* note 92, at 183.

102. 18 U.S.C. § 336 (1994) (Formerly § 293) (“Whoever makes, issues, circulates, or pays out any note, check, memorandum, token, or other obligation for a less sum than \$1,

Bitcoin is divisible to eight decimal points in online transactions, and can be used for payments of “a less sum than \$1.”¹⁰³

While the prudence of applying the Act to virtual currencies will be addressed later in this Note, it is worth noting here that the Stamp Payments Act was passed prior to the Legal Tender Acts and Cases (which allowed the Federal Government to print paper money).¹⁰⁴ In fact, it reaches even further back and predates the Supreme Court’s decision in *Hepburn v. Griswold*, which held that *paper currency was unconstitutional*.¹⁰⁵ And in spite of the Stamp Payments Act, there is a long-standing tradition in the United States—still in practice—of localized currencies.¹⁰⁶

3. FinCEN guidance

The Financial Crimes Enforcement Network, or FinCEN, is in part the branch of the Treasury Department responsible for enforcement of money-transmitter laws and regulations.

In 2011, FinCEN issued a Guidance entitled “Application of FinCEN’s Regulations to persons Administering, Exchanging, or Using Virtual Currencies.”¹⁰⁷ Bitcoin represented a novel issue for FinCEN; its previous regulations defined a “currency” as “the coin and paper money of the United States or of any other country that [i] is designated as legal tender and that [ii] circulates and [iii] is customarily used and accepted as a medium of exchange in the country of issuance.”¹⁰⁸ By their own admission, decentralized virtual currencies such as Bitcoin have no legal tender status in any jurisdiction, because virtual currencies are not tied to any jurisdiction.¹⁰⁹

intended to circulate as money or to be received or issued in lieu of lawful money of the United States, shall be fined under this title or imprisoned not more than six months, or both.”).

103. Blake Ellis, *Funny Money? 11 local currencies*, CNNMONEY (Jan. 27, 2012), <http://money.cnn.com/galleries/2012/pf/1201/gallery.community-currencies/>.

104. *Knox v. Lee*, 79 U.S. 457 (1870); *Juilliard v. Greenman*, 110 U.S. 421 (1884) (overturning *Hepburn v. Griswold*).

105. *Hepburn v. Griswold*, 75 U.S. 603 (1869) (holding the issuance of paper money by the Federal Government to be illegal).

106. 18 U.S.C. § 336 (1994).

107. DEPT. OF TREASURY FINANCIAL CRIMES ENFORCEMENT NETWORK, APPLICATION OF FINCEN’S REGULATIONS TO PERSONS ADMINISTERING, EXCHANGING, OR USING VIRTUAL CURRENCIES, http://fincen.gov/statutes_regs/guidance/pdf/FIN-2013-G001.pdf (last visited Mar. 30, 2013); FinCEN’s regulations define “person” as “an individual, a corporation, a partnership, a trust or estate, a joint stock company, an association, a syndicate, joint venture, or other unincorporated organization or group, an Indian Tribe (as that term is defined in the Indian Gaming Regulatory Act (25 U.S.C. §2703(5) (1992)), and all entities cognizable as legal personalities.” 31 CFR § 1010.100(mm).

108. 31 C.F.R. § 1010.100(m) (2014).

109. DEPT. OF TREASURY FINANCIAL CRIMES ENFORCEMENT NETWORK, *supra* note 107.

FinCEN has classified the users, exchangers, and administrators of Bitcoin as falling under their “money services businesses” (MSB) authority. Bitcoins derive their utility from being fully convertible to other forms of currency; this classification allows FinCEN to exercise its authority and control Bitcoins at the point of conversion. Bitcoin-to-Bitcoin transactions are outside of FinCEN’s reach, but the utility of Bitcoin is in great part its convertibility. When a user converts their Bitcoins back into dollars, FinCEN may require registration.¹¹⁰ FinCEN has most recently indicated that Bitcoin miners might not have to register themselves.

4. Bitcoin and Taxation

A prevalent issue with the regulation of virtual currencies is taxation. Under the Taxing and Spending Clause of Article I, Congress has “Power To lay and collect Taxes, Duties, Imposts and Excises.”¹¹¹ While taxation of virtual currencies falls within this broad grant of authority, specific implementation in the US has proven somewhat problematic.

After lengthy speculation from industry and outsiders alike (and more than a few drafts of this paper), the IRS stated in a guidance issued in March 2014 that all convertible virtual currencies are classified as “property” for the purposes of federal taxation (as opposed to a functional or non-functional currency).¹¹² Similar to the German classification of Bitcoin as a “unit of account,” the IRS’s “property” designator potentially exposes Bitcoin users to year-end capital gains taxes. How classifying virtual currencies as property meshes with prosecuting Bitcoin-related crimes under money laundering schemes remains yet to be seen; at the time of writing, at least one U.S. District Judge has placed the two in tension by saying Bitcoin “clearly qualifies as ‘money’ or ‘funds.’”¹¹³

5. Treatment of local (non-federal) currencies in the US

In spite of the Stamp Payments Act of 1862, many non-federal currencies are in circulation in the US, and have been for years.¹¹⁴ Famous examples include the BerkShare in Massachusetts (formed in

110. Kwame Opam, *Bitcoin Miners Don't Have to Register with the US Government*, VERGE (Dec. 30, 2013, 2:08 PM), <http://www.theverge.com/2013/12/30/5257478/bitcoin-miners-dont-have-to-register-with-the-us-government>.

111. U.S. CONST. art. I, § 8, cl. 1.

112. I.R.S. Notice 2014-21 (MAR. 25, 2014).

113. “Bitcoin can be easily purchased in exchange for ordinary currency, acts as a denominator of value, and is used to conduct financial transactions.” *United States v. Faiella*, 2014 WL 4100897, at *1 (S.D.N.Y. Aug. 19, 2014).

114. Ellis, *supra* note 103.

2006), Philadelphia's Equal Dollar (1996), Ithaca, New York's eponymous Ithaca Hours (1991), Bay Bucks in Traverse City, Michigan (2006), and the Cascadia Hour Exchange in Portland, Oregon (1993)—the list can, and does, go on.¹¹⁵ In Colorado alone, Carbondale, Durango, Paonia, Fort Collins, Greeley, Loveland, and most recently, Butte, have all issued local currencies without drawing the ire of the Federal government.¹¹⁶

While none of these currencies has gone on to replace or devalue the dollar, the longevity and continued functionality of each points to the important economic role they play. Just as the BerkShare legally functions for the Berkshires, so Bitcoin has a chance to function for the Internet.

II. ADVANTAGES AND DISADVANTAGES OF REGULATION

While decentralized virtual currencies such as Bitcoin do not rely on government support for legitimacy in the way fiat currencies do, government treatment of Bitcoin will determine whether or not virtual currencies will continue to circulate in the United States.

A. Difficulty of timing, and the long-term impact of regulation

Regulators of novel technologies face twin, diametrically-opposed temporal hurdles. In terms of timing, early-stage regulation of technological advancement runs the risk of acting on insufficient empirical data, and therefore causing greater harm than good.¹¹⁷ Later-stage regulation, meanwhile, risks allowing advancements to achieve significant enough success to effectively create marketplace inertia, putting them beyond the reach of regulatory power.

Regulatory structures, the laws giving form and shape to the otherwise ethereal structure of a given market, are determinative of outcome possibilities.¹¹⁸ Just as bargaining exists in the shadow of litigation, innovation exists in the shadow of the market forces. Legal structures determine the shape of markets, and are therefore outcome determinative of innovation possibility sets.¹¹⁹

Today's regulation of Bitcoin will not only determine what happens to Bitcoin itself, but will also define the marketplace for decentralized

115. *Id.*

116. Aldo Svaldi, *Colorado Cities Selling Own Limited Currency*, DENV. POST (Aug. 28, 2009, 1:00 AM), http://www.denverpost.com/business/ci_13219440.

117. See DAVID COLLINGRIDGE, *THE SOCIAL CONTROL OF TECHNOLOGY* (1980).

118. JOHN H. ALDRICH, *WHY PARTIES? A SECOND LOOK*, ch. 1 (2d ed. 2011); KENNETH A. SHEPSLE, *ANALYZING POLITICS: RATIONALITY, BEHAVIOR, AND INSTITUTIONS*, ch. 12-13 (2d ed. 2010).

119. ALDRICH, *supra* note 118, at ch. 1; SHEPSLE, *supra* note 118, at ch. 12-13.

and virtual currencies, along with digital disintermediated payments, for years to come. Just as differences in legal landscapes affected the eventual emergence of Silicon Valley as a dominant center of technological innovation over Route 128, so too will the legal control over virtual economies in the US affect the nation's position relative to those countries which have already either allowed for Bitcoin's use and left it to develop, or outlawed it.¹²⁰ Locality-specific legal infrastructures "prominently influences the dynamics" of local markets—in this case, the US market for virtual currencies.¹²¹

A concrete example of Bitcoin-inspired regulatory actions expanding to touch other virtual currencies occurred in May 2013, with FinCEN's aforementioned guidance.¹²² While clearly prompted in response to growing concern regarding the Bitcoin, the guidance explicitly covers *all* virtual currencies, including, but not limited to, the previously discussed, recent explosion of Litecoins. The title refers to "Persons Administering, Exchanging, or Using Virtual Currencies" at large, rather than Bitcoin by name¹²³ The guidance is not even limited to mined cryptocurrencies as a subset, as FinCEN explains:

How a person engages in "obtaining" a virtual currency may be described using any number of other terms, such as "earning," "harvesting," "mining," "creating," "auto-generating," "manufacturing," or "purchasing," depending on the details of the specific virtual currency model involved. For purposes of this guidance, the label applied to a particular process of obtaining a virtual currency is not material . . .¹²⁴

While other examples of regulation expanding beyond Bitcoin to touch other virtual currencies may be less facially obvious, the effect is ultimately the same: regulation aimed at this year's popular cryptocurrency will affect the very shape of tomorrow's virtual economy.

B. Advantages to creating a new regime of regulation based on Bitcoin

Because of its cryptographically derived generation, Bitcoin's value is uniquely susceptible to speculation, even among virtual currencies.

120. Ronald J. Gilson, *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete*, 74 N.Y.U. L. REV. 575, 577 (1999).

121. *Id.*; see, e.g., SHEPSLE, *supra* note 118 (standing for the principle that legal/regulatory rules and structures are determinative of outcome-possibilities).

122. DEPT. OF TREASURY FINANCIAL CRIMES ENFORCEMENT NETWORK, *supra* note 107.

123. DEPT. OF TREASURY FINANCIAL CRIMES ENFORCEMENT NETWORK, *supra* note 107.

124. *Id.*

This has resulted in spikes and drops in value that could have disastrous results for relatively innocent, unsophisticated users as the currency's popularity grows.¹²⁵ Consequently, Bitcoin is classified as "hypervolatile."¹²⁶ Compared to other currencies, there exists only a relatively small absolute value in Bitcoins flowing through the global stream of commerce – the total number of Bitcoins in existence may be measured in millions and billions of dollars, rather than in trillions.¹²⁷ Thus, relatively small events—such as trades, or temporary changes in business flow—can significantly affect the currency's value.¹²⁸

The hypervolatility of Bitcoin's value does not begin and end with users potentially losing money at the point of conversion, however. At least once in the past, the Chinese government intervened and outlawed virtual currencies to prevent the devaluation of their own real-world currency. Specifically, conversion of the yuan into "QQ coins" (a videogame and telephony-based virtual currency), was forbidden by the People's Bank of China.¹²⁹ Similar rationale has been used by India in their "warning" against use of the Bitcoin (which initially had the functional effect of a *de jure* forbiddance), as well as their previous outlawing of Bitcoin exchanges in the country.¹³⁰ Regulation of Bitcoin by the US government might prevent such a devaluing effect from occurring with the country's own dollar.

The possibility that the Bitcoin and other virtual currencies might be used for illicit purposes also offers rationale for Federal regulation, if not outright disallowance. As mentioned above, Bitcoin is both (a) largely anonymous, and (b) often used in online transactions.¹³¹ The difficulties of tracking such anonymous online transactions could render state levies of sales taxes for Bitcoin transactions unfeasible—and the criminal potential for Bitcoin does not stop at dodging taxes. In October 2013, US law enforcement shut down Silk Road, an anonymous "dark web" market for illicit goods, referred to variously as a "drug bazaar,"¹³² a "black market for narcotics,"¹³³ and a "secretive Internet marketplace for

125. Mouton, *supra* note 74.

126. *Frequently Asked Questions*, BITCOIN, <http://bitcoin.org/en/faq> (last visited Oct. 5, 2014).

127. *Id.*

128. *Id.*

129. JANE MCGONIGAL, *REALITY IS BROKEN: WHY GAMES MAKE US BETTER AND HOW THEY CAN CHANGE THE WORLD* (1st ed. 2011) ("They're the young adults in China who have spent so much play money, or "QQ coins" on magical swords and other powerful game objects, that the People's Bank of China intervened to prevent the devaluation of the yuan, China's real-world currency.").

130. Mouton, *supra* note 74.

131. Kyle, *supra* note 11.

132. Hill, *supra* note 71.

133. Joseph Goldstein, *Arrest in U.S. Shuts Down a Black Market for Narcotics*, N.Y. TIMES (Oct. 2, 2013), <http://www.nytimes.com/2013/10/03/nyregion/operator-of-online->

drugs.”¹³⁴ Most striking about the shutdown was not that it occurred, but the sheer magnitude of the information gap between the FBI’s speculations and reality. Between 2011-2013 the FBI estimated \$22 million worth of sales had taken place; the real number was over \$1.6 billion.¹³⁵ Bitcoin, while far from the only currency used on Silk Road, clearly played a prominent role.¹³⁶

C. Disadvantages to basing virtual currency regulation on Bitcoin

The regulatory state works optimally when controlling iterative improvement; pre-existent schema allow for effective control when technologies are “more of the same,” only better, faster, stronger, smaller, or any number of advantageous but indistinct adjectives.¹³⁷ Novel technologies—Schumpeterian disruptive innovations—shatter regulatory frameworks, failing to “fall within the scope of existing legislation or other regulatory instruments.”¹³⁸ Therefore, through appropriation of old paradigms and new legislative authorizations alike, novel shifts in technology create new models of control, which extend to apply to successive iterations.

Prior to the advent of virtual currencies, all online transaction required the inefficiency of a third-party intermediary of one variety or another—or often, several.¹³⁹ Digital currencies impose a fewer number of transaction costs than any other medium.¹⁴⁰ While peer-to-peer payment methods rely more on a “trust” and reputational constraints, disintermediation—removing the middle men—lowers the cost of overhead. In the words of Federal Reserve Chairman Ben Bernanke to the US Senate, the “long-term promise” of virtual currencies is to allow “innovations to promote a faster, more secure, and more efficient payment system.”¹⁴¹ The importance of virtual currencies moving

market-for-illegal-drugs-is-charged-fbi-says.html.

134. Brian R. Fitzgerald, *The Silk Road Upside for Bitcoin*, WALL ST. J. (Oct. 3, 2013, 9:11 AM), <http://blogs.wsj.com/digits/2013/10/03/the-silk-road-upside-for-bitcoin/?KEYWORDS=silk+road>.

135. Felix Salmon, *The FBI and the Legitimation of the Bitcoinverse*, REUTERS (Oct. 2, 2013), <http://blogs.reuters.com/felix-salmon/2013/10/02/the-fbi-and-the-legitimation-of-the-bitcoinverse/>

136. *Id.*

137. BENJAMIN, *supra* note 19.

138. DIMENSIONS OF TECHNOLOGY REGULATION (Bert-Jaap Koops, Ronald Leenes, Morag Goodwin eds., 1st ed. 2010).

139. JERRY BRITO, ANDREA CASTILLO, MERCATUS CENTER, BITCOIN: A PRIMER FOR POLICYMAKERS 3 (2013), *available at* http://mercatus.org/sites/default/files/Brito_BitcoinPrimer.pdf.

140. Ben Rooney, *U.K. Deal With Argos Shows eBay Vision of Retail*, WALL ST. J. (Sep. 24, 2013, 12:15 PM), <http://blogs.wsj.com/tech-europe/2013/09/24/u-k-deal-with-argos-shows-ebay-vision-of-retail/>.

141. Letter from Ben S. Bernake, Chairman Board of Governors of the Fed. Res. Sys., to

forward is perhaps best demonstrated by the springing up of some sixty-seven new virtual currencies following India's *de jure* shutdown of its Bitcoin exchanges.¹⁴² While many of these are simply Bitcoins dressed in a new skin, their very existence serves to demonstrate market demand for virtual currencies—market demand that regulation or price-setting would impede. The entrant of a dominant market force such as Apple into the mobile payment market signals just how¹⁴³

As the first “successful” currency to exist in a purely decentralized digital state, Bitcoin does not fall into any previous category of regulation. It is novel and mold-breaking, not an iterative step forward following previous forms of currency.¹⁴⁴ Therefore, regulatory treatment of Bitcoin, as effectively a “case of first impression,” will touch not only Bitcoin itself, but on all future analogous virtual economies yet to come. The risks of overly-delayed regulation are tangible; the regulator ends up trying to shift an already-entrenched phenomenon, whose technological developments have “[acquired] momentum as they grow larger and more complex.”¹⁴⁵ The possibility of regulators being unable to counter this momentum seems to suggest that governing bodies should strike as quickly as they can manage, and exercise control from the outset.

Yet, advocacy for such preemptive action runs aground when faced with the reality technology in its infant stages is vastly unpredictable. Any given field's brightest minds often fail to predict the direction and scope of a given technology's development. In the past century alone, co-founder of Digital Equipment Corps Ken Olsen once so utterly failed to foresee the future that in 1977 he claimed that there is “no reason for any individual to have a computer in his home.”¹⁴⁶ When innovators and inventors themselves fail to accurately predict their own product's future, it is unfair and unrealistic to expect legislators and regulators to do so successfully. Regulation of Bitcoin—and therefore, of virtual currencies moving forward—at this time would be functionally similar to regulation of computer uses in 1977. As a nascent technology, far too little is known for effective regulation to take place.

As to the crime-prevention argument, it is beyond debate that every

Thomas R. Carper, U.S. Sen., & Tom Coburn, U.S. Sen., (Sept. 6, 2013) (on file with author), available at <http://www.scribd.com/doc/185206995/Virtual-Currency-Response-Letters>.

142. *Bitcoin Gang Gets 67 New e-Currencies, Valued at \$13 Bn*, *supra* note 65.

143. Mike Isaac, *With Apple Pay, a Push Into Mobile Payments*, N.Y. TIMES (Sept. 9, 2014), <http://www.nytimes.com/2014/09/10/technology/apples-ambitious-bet-beyond-the-devices.html>.

144. Lyria Bennett Moses, *How to Think about Law, Regulation, and Technology: Problems with 'Technology' as a Regulatory Target*, 5 LAW, INNOVATION & TECHNOLOGY 1, at 8.

145. *Id.*

146. *Ken Olsen*, SNOPEs, <http://www.snopes.com/quotes/kenolsen.asp> (last visited Sept. 12, 2014).

nation-state preserves the right to prohibit certain activities within its borders. To allow a currency to act as a functional loophole because of an entirely digital existence, placing these activities outside the law's reach would be patently illogical.

However, to forbid or over-regulate virtual currencies based on Bitcoin because of its potential use for illegitimate activity would be similarly illogical. Foreign currency may be used for money laundering, or drug purchasing, or murder-for-hire, yet the US does not outlaw the Euro, or the Loony, or the Pound. The United States' own dollar may be used to purchase any number of illicit services, yet it is not held to be the root or cause of these activities. In the digital medium, encrypted e-mail servers are not held liable for their role as potential carriers of illicit communiqué; makers of envelopes are not held liable for allowing a letter to be sealed against tampering, protecting potentially criminal letters within; Bitcoin is not itself criminal merely because of its pseudonymous potential. While one of a government's most fundamental compelling interests is the prevention of illegal activity, currency as an instrumentality is tertiary to criminal purpose; currency acts as utility, not cause.

III. REGULATION OF VIRTUAL CURRENCIES SHOULD OCCUR AT THE FEDERAL LEVEL THROUGH ALREADY-EXTANT LAWS, IN A REGIME OF CRIME PREVENTION, TAXATION, AND CONSUMER FRAUD PROTECTION

Instead of building a new regime for virtual currencies based off of Bitcoin—or even worse, leaving virtual currency regulation in the fifty dissimilar hands of each state's legislature—the US government should use extant laws in an optimal fashion to engage in cyber-crime prevention, taxation, and consumer fraud protection. All three of these elements are possible under current state and federal regimes. As Judge Easterbrook articulated in 1996, building new legal structures in response to discrete subject matters—what he called area-specific “Law of the Horse” regulations—inevitably leads to outdated laws, as technology outpaces its would-be governors.¹⁴⁷ Sound foundational legal principles—predictable and tested—represent the best solution.¹⁴⁸

In the case of virtual currencies, extant state and federal laws will only require minimal aid to function as long-term to government's compelling interests. A key to Bitcoin specifically will be FinCEN's extant requirement for Bitcoin converters to register as money service

147. Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. LEGAL F. 207, 207-208.

148. *Id.*

businesses.¹⁴⁹ When FinCEN's requirement for Bitcoin user registration¹⁵⁰ and the permanent public log of all Bitcoin transactions already maintained¹⁵¹ are viewed synergistically, no other new statutory regime is required to prevent crime, allow for taxation, and protect consumers from fraud.

A. The proposed regime

First, federal preemption preventing states from individually outlawing virtual currencies is necessary to prevent a patchwork, piecemeal tangle of state-specific regulations from emerging. In the first half of 2014 alone, traveling from the West Coast to the East, California passed a bill legalizing virtual currencies,¹⁵² Illinois debated a bill saying virtual currencies did not have "legal tender" status within the state's borders,¹⁵³ and the New York Department of Financial Services ducked promulgating a rule on virtual currencies by extending the comment period in its relevant proceeding.¹⁵⁴ While state autonomy over state taxation remains as critical an exercise as ever, federal action on baseline virtual currency legality would shield the market from the uncertainty of inconsistent regulation. Otherwise, virtual currencies risk facing the same well-documented dilemma as automated cars, where the necessity of adherence with disparate local legislation impedes the implementation of advantageous technology.¹⁵⁵ Given the Internet's unmistakable crossing of state boundaries, federal preemption under the Interstate Commerce Clause to prevent state-specific wholesale outlawing of virtual currencies is feasible, and likely necessary.

Second, law enforcement has already demonstrated its successful

149. DEPT. OF TREASURY FINANCIAL CRIMES ENFORCEMENT NETWORK, *supra* note 107.

150. *Id.*; see also Tracy, *supra* note 3 ("Jennifer Shasky Calvery, director of the Financial Crimes Enforcement Network, said virtual currency transactions are still relatively small in value compared with global criminal proceeds. She said she didn't believe the virtual currencies had exposed significant gaps in current law. 'We feel like we have a pretty good basis to act.'").

151. BITCOIN, *supra* note 39.

152. MARK FAROUK, BILL ANALYSIS, AB 129 (Cal. 2014), http://www.leginfo.ca.gov/pub/13-14/bill/asm/ab_0101-0150/ab_129_cfa_20140128_174724_asm_floor.html.

153. Korey Clark, *Regulators Try to Get a Handle on Bitcoin*, LEXISNEXIS LEGAL NEWSROOM (Apr. 14, 2014), <http://www.lexisnexis.com/legalnewsroom/banking/b/banking-finance/archive/2014/04/14/regulators-try-to-get-a-handle-on-bitcoin.aspx>.

154. Press Release, New York Department of Financial Services, NY DFS Releases Proposed Bitlicense Regulatory Framework for Virtual Currency Firms (Jul 17, 2014), available at <http://www.dfs.ny.gov/about/press2014/pr1407171.html>.

155. Moon K. Kim et al., *Comparative Analysis of Laws on Autonomous Vehicles in the U.S. and Europe*, AUVSI'S UNMANNED SYSTEMS 2014 http://www.auvsishow.org/auvsi2014/Custom/Handout/Speaker8657_Session789_1.pdf (last visited Oct. 6, 2014).

capacity to prevent virtual currency-related crime. The Silk Road shutdown by the FBI demonstrates a model for successful prevention of cybercrime reliant on virtual currencies as its medium. The FBI put an end to a massive criminal undertaking, whose participants in part used Bitcoin, without any new law or grant of authority. On a smaller scale, state authorities in Florida met with similar success targeting a trio of money launderers using Bitcoin as part of their criminal enterprise.¹⁵⁶ Using the state's anti-money laundering laws, Florida officials became the first non-federal entity to prosecute crimes involving Bitcoin under a local regime.¹⁵⁷ This serves as an ideal example of how local laws can coexist with a primarily federal regime. Again, extant laws were sufficient to prevent the criminal activity in question. That is not to say that the above examples are wholly dispositive; the unprovable negative, the specter of the unknown, may always be invoked when discussing crime prevention. Such arguments, amount to fear mongering; inability to disprove is not itself proof. The growing number of positive examples where existent laws are used to prevent Bitcoin-based crime demonstrate why the creation of a wholesale specialized regime is unnecessary.

Third, the IRS should use models already in place for barter systems¹⁵⁸ and foreign currencies¹⁵⁹ to cover virtual currency transactions and income, rather than use Bitcoin to justify a new regime where virtual currencies are taxed as property. It is without question that the IRS has the legal authority to tax virtual currency transactions. The agency has the long-standing power to impose taxes on income from not just bartered transactions, but from transactions using foreign currencies, and income from online transactions.¹⁶⁰ While Bitcoin can be analogized to any of these three categories, the current IRS Virtual Currency Guidance errs in treating virtual currencies as "property" for federal tax purposes by creating higher transaction costs and raising uncertainty as to capital gains taxes.¹⁶¹ As one commentator points out, "[t]he IRS already gets a piece where you swap one product or service for another"—even

156. Brian Krebs, *Florida Targets High-Dollar Bitcoin Exchangers*, KREBS ON SECURITY (Feb. 14, 2014), <http://krebsonsecurity.com/2014/02/florida-targets-high-dollar-bitcoin-exchangers/>.

157. *Id.*

158. *Bartering Tax Center*, I.R.S., <http://www.irs.gov/Businesses/Small-Businesses-&-Self-Employed/Bartering-Tax-Center> (last visited Sept. 13 2014).

159. *Foreign Currency and Currency Exchange Rates*, I.R.S., <http://www.irs.gov/Individuals/International-Taxpayers/Foreign-Currency-and-Currency-Exchange-Rates> (last visited Sept. 13, 2014).

160. I.R.S., *supra* note 158.

161. Press Release, I.R.S., *IRS Virtual Currency Guidance: Virtual Currency is Treated as Property for U.S. Federal Tax Purposes; General Rules for Property Transactions Apply* (Mar. 25, 2014), *available at* <http://www.irs.gov/uac/Newsroom/IRS-Virtual-Currency-Guidance>.

currency-free transactions are already taxable.¹⁶² Transactions using virtual currencies are no further attenuated from the dollar than transactions using the barter system are, especially given the broad scope of potential applications of the Taxing and Spending Clause established post-*US v. Butler*.¹⁶³ Using end-of-year conversion tables to determine income in US dollars is a simple and more elegant solution to the problem of Bitcoin's hypervolatility, without stifling all virtual currencies by increasing transaction costs through greater reporting duties pursuant to property classification for each exchange.¹⁶⁴ Again, no expansion or alteration of statutory law is necessary. Honest reporting of purchases and income using virtual currencies will be aided by the same factors in the regime that also allow the government to protect its compelling interest in crime prevention.

Finally, 31 U.S.C. §5103 already protects consumers from being forced to use Bitcoin or any other form of currency not issued by the US government.¹⁶⁵ The SEC has demonstrated its ability to protect innocent parties from Bitcoin-related fraudsters, as well. Therefore, the hypervolatility of the Bitcoin becomes a matter of *caveat emptor* – when users opt in to the virtual currency, they do so as a matter of their own risk and reward.

B. Advantages of the proposed regime

Limited government treatment of virtual currencies synergistically preserves government interests while also aiding perceptions of legitimacy for the currency itself. Following the shutdown of Silk Road by the FBI, the Bitcoin almost immediately *rose* in value.¹⁶⁶ Similarly, recent actions by the SEC in shutting down a Bitcoin-based Ponzi scheme also demonstrate this synergistic effect.¹⁶⁷ In the latter instance, the fraudster in question had “promised investors up to 7 percent weekly interest,” while in reality operating “a sham and a Ponzi scheme in which [he] used Bitcoin from new investors to make purported interest payments and cover investor withdrawals on outstanding . . . investments.”¹⁶⁸ By protecting investors in Bitcoin market, a functional

162. Robert Wood, *IRS Takes A Bite Out Of Bitcoin*, FORBES (May 2, 2013, 3:40 AM), <http://www.forbes.com/sites/robertwood/2013/05/02/irs-takes-a-bite-out-of-bitcoin/>.

163. *U.S. v. Butler*, 297 U.S. 1 (1936).

164. *Id.*

165. 31 U.S.C. § 5103 (1983).

166. *See, e.g.*, Sean Vitka, *Bitcoin: I'm Not Dead Yet!*, SLATE (Oct. 16, 2013, 4:45 PM), http://www.slate.com/articles/technology/future_tense/2013/10/silk_road_shutdown_does_not_spell_the_end_for_bitcoin.html; Salmon, *supra* note 135.

167. Press Release, U.S. Sec. and Exch. Comm'n, SEC Charges Texas Man With Running Bitcoin-Denominated Ponzi Scheme (Jul. 23, 2013), *available at* <http://www.sec.gov/News/PressRelease/Detail/PressRelease/1370539730583#.Uncy3yuxOFc>.

168. *Id.*

side effect of the actions was to impart legitimacy. Bitcoin was, in effect, held to the same enforcement standards as the US's own dollar.¹⁶⁹ The logical inference is that use of Bitcoins in investment portfolios is a legitimate strategy by consumers; by preventing abuse of investors, the SEC creates an environment where participation is encouraged.¹⁷⁰ The SEC's own press release referenced a Texas man being charged with "Running [a] Bitcoin-Denominated Ponzi Scheme."¹⁷¹ This creates the inference that the SEC does object to Bitcoin as a *per se* issue. Rather, in line with the regulatory scheme here proposed, the criminal act using Bitcoin as a medium was the problem. The government prevents crime, consumers are protected, and the market flourishes.

The proposed regulatory regime would also preclude the need for the US government to invoke the Stamp Payment Act. While legally feasible, invoking the Act would be a severe misapplication of an outdated law. Just as our country has fewer horses and bayonets than at the time of the Stamp Payments Act's passage,¹⁷² so too has the global marketplace changed post-advent of nationwide electricity—along with little things like telephones, computers, and the Internet. By way of analogy, the Stamp Payments Act of 1862 was passed roughly contemporaneously to the existence of the Pony Express (1860-1861).¹⁷³ Imagine for a moment that a federal regulatory regime controlling mail designed to fit the Pony Express was applied to today's world of overnight air shipping and would-be drone delivery.¹⁷⁴ No one could have predicted that the federal regulation of mail and the creation of the Postmaster General in 1775 would lead directly to the modern Route 1, stretching from Maine to Florida.¹⁷⁵ Applications of the Stamp Payments Act, over 150 years after its passage, would have similarly unpredictable effects.

C. Disadvantages of the proposed regime

The primary disadvantage to the proposed regime is the difficulty of

169. *See id.*

170. Jeremy Kirk, *SEC Charges Texas Man With Running Bitcoin Ponzi Scheme*, PCWORLD (Jul. 23, 2013, 10:30 PM), <http://www.pcworld.com/article/2045083/sec-charges-texas-man-with-running-bitcoin-ponzi-scheme.html>.

171. U.S. Sec. and Exch. Comm'n, *supra* note 164.

172. *Transcript of the Third Presidential Debate*, N.Y. TIMES (Oct. 22, 2012), <http://www.nytimes.com/2012/10/22/us/politics/transcript-of-the-third-presidential-debate-in-boca-raton-fla.html>.

173. PONY EXPRESS, <http://ponyexpress.org> (last visited Oct. 5, 2014).

174. David Streitfeld, *Amazon Floats the Notion of Delivery Drones*, N.Y. TIMES BLOG (Dec. 1, 2013, 10:07 PM), <http://bits.blogs.nytimes.com/2013/12/01/amazon-floats-the-notion-of-delivery-drones/>.

175. USPS, THE UNITES STATES POSTAL SERVICE: AN AMERICAN HISTORY 1775-2006 (Nov. 2012), <https://about.usps.com/publications/pub100.pdf>.

exercising sales taxes over Bitcoin transactions by states. This would be heavily mitigated by FinCEN's registration requirements for any user of the Bitcoin who converts the currency. When coupled with the permanent public log of all Bitcoin transactions already maintained,¹⁷⁶ Bitcoin transactions will not be significantly more difficult in taxation on the state level than online purchases.¹⁷⁷

Another disadvantage to the proposed minimal regulatory regime is the higher burden it will place upon agencies combatting cyber-crime, as compared to simply outlawing virtual currencies. As mentioned above, US law enforcement has already demonstrated an admirable capacity for preventing Bitcoin-related crimes from occurring; the regulatory scheme proposed would avoid binding law enforcement's hands, while simultaneously avoiding overly restricting the marketplace.

As for the argument that the Bitcoin's hypervolatility might in some way serve to devalue the dollar, the US is already partially insulated by the fact that only the dollar constitutes legal tender.¹⁷⁸ In China, citizens are forbidden from taking more than \$50,000 out of the country in any given year; Bitcoin offered a method to circumvent this draconian law.¹⁷⁹ Barring the sudden and unexpected advent of Communism in the national government, such "capital flight" is not a concern facing the US.¹⁸⁰ Nor does the US face the same currency-destabilization difficulties as India, where the rupee's poor performance has led to a widespread gold smuggling industry.¹⁸¹ Even ignoring the rationale of the two most visible countries to continue to outlaw Bitcoin at the time of writing, the US has in the past fallen on a different side of the economic ideological spectrum than China and Russia. Imitating the action of those two, rather than the likes of Germany and the EU, would constitute a dramatic about-face for a country that has to date prided itself on marketplace freedom.

A dispositive example of the costs of virtual economy regulation occurred in 2009, when the Chinese government outlawed the practice known as "gold farming."¹⁸² Gold farmers generate in-world currency in popular online games, and then sell said virtual currency to other players

176. BITCOIN, *supra* note 39.

177. *Quill Corp. v. North Dakota*, 504 U.S. 298 (1992).

178. 31 U.S.C. §5103 (1983).

179. Mouton, *supra* note 72.

180. *Id.*

181. *Id.*

182. See, e.g., Richard Heeks, *Current Analysis and Future Research Agenda on "Gold Farming": Real-World Production in Developing Countries for the Virtual Economies of Online Games* (The Univ. of Manchester Inst. for Dev. Policy and Mgmt. Working Paper Series, Paper No. 32, 2008), available at http://www.sed.manchester.ac.uk/idpm/research/publications/wp/di/di_wp32.htm.

for real-world currencies.¹⁸³ The Chinese government, fearing this early example of a convertible virtual currency, declared converting currencies from online games to yuan illegal.¹⁸⁴ In spite of massive government expenditures in an effort to enforce the ban, the practice remains prevalent in China to this day.¹⁸⁵ By driving the nascent virtual currency underground, the Chinese government went from having a potential net gain in revenue (courtesy of taxes on gold farmers' transactions), to a net loss (from enforcement expenditures in a failed effort to curtail the practice).¹⁸⁶ At the time the ban was declared, the gold farming industry generated between \$200 million and \$1 billion dollars in annual revenue—a fraction of Bitcoin's current value.¹⁸⁷ If attempting to curtail a practice as comparably small as gold farming has been so costly the Chinese government, a similar attempt by the US to outlaw the more-prevalent Bitcoin (or other subsequent virtual currencies) would be economically inefficient.

CONCLUSION

Regardless of whether or not Bitcoin survives, the increasing trend towards globalization will continue to create market demands for virtual currencies, both for privacy and disintermediation reasons. Where market demands exist and are unfulfilled, those who rise to satisfy the wants of that void will profit—and the knowledge of this will drive participants to try and satisfy any requirement set before them. Today's regulation of Bitcoin will affect not only Bitcoin itself, but extend to touch tomorrow's digital payment innovations. Whether Bitcoin is Paul Krugman's "evil,"¹⁸⁸ Alan Greenspan's "bubble,"¹⁸⁹ Bank of America's evolutionary PayPal,¹⁹⁰ or something entirely different, the width and variety of intellectually honest and academically rigorous opinions points to an absolute lack of predictability surrounding virtual currencies. Therefore, because of the inherent uncertainty in regulating novel technological advancements, and the risks of using the law to functionally foreclose

183. Most famously, "gold" in Blizzard's "World of Warcraft"—hence their collective name. See, e.g., David Rosenberg, *China bans online 'gold farming'*, CNET (June 29, 2009, 1:45 PM), http://news.cnet.com/8301-13846_3-10275180-62.html.

184. Heeks, *supra* note 182; MINISTRY OF COMMERCE, PEOPLE'S REPUBLIC OF CHINA, CHINA BARS USE OF VIRTUAL MONEY IN TRADING FOR REAL GOODS, <http://english.mofcom.gov.cn/article/newsrelease/commonnews/200906/20090606364208.html>.

185. Rosenberg, *supra* note 183.

186. *Id.*

187. Heeks, *supra* note 182.

188. Paul Krugman, Op-Ed., *Bitcoin Is Evil*, N.Y. TIMES (Dec. 28, 2013, 2:35 PM), http://krugman.blogs.nytimes.com/2013/12/28/bitcoin-is-evil/?_r=1.

189. Mouton, *supra* note 74.

190. *Id.*

potentially economically advantageous routes of progress, the US Government should limit regulatory control over virtual currencies to a federally preempted minimal regime of consumer fraud protection, taxation, and cyber-crime prevention, and avoid creating an entirely new regime based on Bitcoin.

