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Rethinking Virtual Currency Regulation in the Bitcoin Age

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RETHINKING VIRTUAL CURRENCY REGULATION IN THE BITCOIN AGE

Kevin V. Tu & Michael W. Meredith

Abstract: This Article investigates an increasingly important yet under-developed body of law: regulation of virtual currency. At its peak in March of 2014, the daily volume of Bitcoin transactions in United States dollars exceeded \$575,000,000. The growing mainstream acceptance of Bitcoin, however, is best illustrated by the growing number of leading merchants that have decided to accept Bitcoin payments. While Bitcoin’s rise as an alternative payment method is well-chronicled, Bitcoin’s impact extends further due to its use as an investment vehicle and its ability to spur the growth of an industry of Bitcoin-based businesses. Despite increasingly widespread use, Bitcoin (and other virtual currencies) have largely operated without the burden of regulation. Why? Like the potentially transformative innovations that preceded Bitcoin, virtual currency raises unique challenges for which existing legal models may be unprepared. As policymakers struggle to catch-up, the effort to develop an appropriate regulatory regime for virtual currency is at a critical juncture.

The response in the United States has thus far involved regulatory bodies acting independently to clarify the treatment of virtual currency under a variety of different laws designed to regulate traditional payment systems, financial services, and investments. This Article argues, contrary to this approach, that a narrow focus on the technical application and extension of existing law creates a deficient regulatory regime. Instead, we suggest that policymakers should: (1) engage the various agency stakeholders to promote cross-communication; (2) think more globally about the wide spectrum of issues arising from virtual currency; and (3) embrace the unique and distinct characteristics of virtual currency. In support of this proposition, we show that refocusing on the collection of policy goals advanced by existing law offers policymakers an additional tool to aid in the development of a comprehensive, cohesive, and appropriately-scaled virtual currency regulatory model.

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INTRODUCTION

No longer relegated to relative anonymity, the seemingly limitless potential of decentralized virtual currencies such as Bitcoin has captured

the imagination of the public at large.¹ Bitcoin was once little known and had limited practical value because few people were willing to accept it as a form of payment. However, the unique characteristics of Bitcoin along with the perceived benefits of Bitcoin over payments in traditional government-backed currency have contributed to its rapid rise in popularity.² Although still far from being universally accepted, Bitcoin has seen both an increase in its users and widespread growth in the number of merchants (both online retailers and brick and mortar establishments) willing to accept it as a valid form of payment.³ As Bitcoin has become more mainstream, established merchants, including Dell, Expedia, and Overstock.com, have started to accept Bitcoin as an alternative to traditional payment methods such as credit/debit cards.⁴

The popularity of Bitcoin has also led to the growth of an industry of virtual currency based businesses designed to facilitate Bitcoin transactions among users. Bitcoin Exchanges, Bitcoin Banks, Bitcoin ATMs, Bitcoin Wallets, and Bitcoin payment gateways have all entered the marketplace.⁵ Although their business models vary, these third-party service providers can allow for: (1) the exchange of Bitcoin into traditional currency; (2) the purchase and sale of Bitcoin; (3) the online storage of Bitcoin; (4) the transfer of Bitcoin to others; and (5) the acceptance of Bitcoin payments.⁶

The potential of Bitcoin, however, is not solely limited to serving as a payment alternative. The fluctuation in value of Bitcoin over time has led many to view it more as a commodity, asset class, or security ripe for speculative investment.⁷ The price of one bitcoin reached a high of over \$1200 in November 2013 with current prices in July of 2014 in the \$575

1. See, e.g., Clayton Browne, *Bitcoin Heists Rise Alongside Profile of the Virtual Currency*, VALUEWALK (Nov. 25, 2013), <http://www.valuewalk.com/2013/11/bitcoin-heists-rise-along-profile-virtual-currency/>; *infra* Part I.

2. See, e.g., Browne, *supra* note 1; *infra* Part I.

3. See Ian Kar, *What Companies Accept Bitcoin?*, BENZINGA (Feb. 3, 2014, 4:26 PM), <http://www.benzinga.com/economics/14/02/4276066/what-companies-accept-bitcoin>.

4. See, e.g., Shawn Knight, *Dell Joins the Growing List of Major Retailers Now Accepting Bitcoins*, TECHSPOT (July 18, 2014), <http://www.techspot.com/news/57461-dell-joins-the-growing-list-of-major-retailers-now-accepting-bitcoins.html>.

5. See, e.g., Yuliya Chernova, *New Use for Bitcoin: Compensation for Open-Source Software Development*, WALL ST. J. (Jan. 22, 2014, 4:39 PM), <http://blogs.wsj.com/venturecapital/2014/01/22/new-use-for-bitcoin-compensation-for-open-source-software-development/>; *infra* Part II.

6. See, e.g., Chernova, *supra* note 5; *infra* Part II.

7. See, e.g., Joe Light, *Should You Invest in Bitcoin*, WALL ST. J. (Nov. 23, 2013, 10:40 PM), <http://online.wsj.com/news/articles/SB10001424052702304607104579212101356897382>; *infra* Part II.

range.⁸ Despite its volatility, investors have engaged in buying, selling, and trading of Bitcoin in an attempt to achieve a return on investment.⁹

Even though Bitcoin has achieved a material level of mainstream use as a form of remittance and is increasingly purchased as an investment, virtual currencies have largely operated free of regulation or legal oversight.¹⁰ The growing popularity of Bitcoin, however, has rightfully attracted the attention of policymakers globally.¹¹ Efforts to understand the risks associated with decentralized virtual currencies such as Bitcoin and to implement an appropriate response highlight the unique challenges that face policymakers in creating a consistent, cohesive, and appropriately-scaled legal and regulatory framework for virtual currencies.¹²

Attempts to simply categorize Bitcoin into existing regulatory constructs have proven to be difficult.¹³ Most commonly, the discussion surrounds categorization of Bitcoin as money or property.¹⁴ Although Bitcoin shares similarities with both money and property, its unique characteristics result in a materially different risk profile.¹⁵ Accordingly, regulation that is tailored to traditional financial services or investment methods may fail to account for the unique attributes of Bitcoin and may

8. See, e.g., Robert Wood, *Bitcoin's \$13.50 to \$1,200 Eleven Month Climb*, FORBES (Dec. 2, 2013, 9:09 AM), <http://www.forbes.com/sites/robertwood/2013/12/02/bitcoins-13-50-to-1200-eleven-month-climb-now-taxes/>; Benjamin Wallace, *The Rise and Fall of Bitcoin*, WIRED (Nov. 23, 2011, 2:52 PM), http://www.wired.com/magazine/2011/11/mf_bitcoin/.

9. See, e.g., James Surowiecki, *Cryptocurrency: The Bitcoin, A Virtual Medium of Exchange, Could Be a Real Alternative to Government-Issued Money—But Only If It Survives Hoarding by Speculators*, MIT TECH. REV. (Aug. 23, 2011), <http://www.technologyreview.com/review/425142/cryptocurrency/>; *infra* Part II.

10. See, e.g., Gregory Ferenstein, *Senator Warns Unregulated Bitcoin Leaves Americans Holding a Valueless Currency*, TECHCRUNCH (Feb. 27, 2014), <http://techcrunch.com/2014/02/27/senator-warns-unregulated-bitcoin-leaves-americans-holding-a-valueless-currency/>; *infra* Part III.

11. See, e.g., Matthew Braga, *As Merchants Embrace Bitcoin, Digital Currency Still Struggles for Regulatory Approval Worldwide*, FIN. POST (Jan. 20, 2014), http://business.financialpost.com/2014/01/20/bitcoin-currency-merchants-regulators-2014/?_lsa=592b-fc15; Bob Adelman, *Government Is Taking Steps to Regulate Bitcoin*, NEW AM. (Nov. 19, 2013), <http://www.thenewamerican.com/economy/sectors/item/16985-government-is-taking-steps-to-regulate-bitcoin>; *infra* Part III.

12. FED. BUREAU OF INVESTIGATION, *BITCOIN VIRTUAL CURRENCY: UNIQUE FEATURES PRESENT DISTINCT CHALLENGES FOR DETERRING ILLICIT ACTIVITY* (2012), available at http://www.wired.com/images_blogs/threatlevel/2012/05/Bitcoin-FBI.pdf; *infra* Part III.

13. See, e.g., Hunton & Williams, *Recent Development in the Regulation of Bitcoin Under State and Federal Securities Law*, HUNTON & WILLIAMS (Mar. 2014), http://www.hunton.com/files/News/2916457b-30fb-4e69-9fe9-4025bfd06520/Presentation/NewsAttachment/7d70afb5-0954-420a-883a-43a7aa307cef/Developments_in_the_Regulation_of_Bitcoin_under_Securities_Laws.pdf; *infra* Part IV.

14. See, e.g., John D. McKinnon & Ryan Tracy, *IRS Says Bitcoin Is Property, Not Currency*, WALL ST. J., Mar. 26, 2014, at C2; *infra* Part IV.

15. FED. BUREAU OF INVESTIGATION, *supra* note 12; *infra* Part III.

also be ill-suited for extension to decentralized virtual currency.¹⁶

As a decentralized virtual currency, Bitcoin is electronically created and stored.¹⁷ Moreover, Bitcoin does not enjoy the backing of a government or central bank like traditional currencies such as the United States Dollar.¹⁸ While these characteristics allow for some proclaimed advantages over traditional payment methods, they also raise unique regulatory concerns and considerations.¹⁹ For example, personal account information is not transmitted in connection with a Bitcoin transaction, which provides a greater degree of anonymity than credit/debit card payments.²⁰ Although this may be attractive to some customers and is touted by Bitcoin as contributing to greater protection from identity theft, the increased anonymity may make it more difficult to identify, prevent, and investigate criminal activity.²¹ Policymakers, therefore, must tackle these challenges in understanding both the functionality and risks of decentralized virtual currencies in order to create an appropriate legal and regulatory framework.²²

To date, global regulatory responses have exhibited little consensus.²³ Some countries have simply opted to ban Bitcoin.²⁴ Others have remained silent leaving the treatment of virtual currency under existing laws unsettled.²⁵ In contrast, the United States has taken an incremental approach to clarifying the legal and regulatory landscape for virtual currency.²⁶ Regulatory bodies and legislators at both the federal and state levels have taken steps to clarify the applicability of varying but distinct laws that may implicate virtual currencies.²⁷

16. FED. BUREAU OF INVESTIGATION, *supra* note 12; *infra* Part III.

17. See Jeff Clark, *Bitcoin: Decentralized Virtual Currency*, DATA CENTER J. (Mar. 5, 2013), <http://www.datacenterjournal.com/it/bitcoin-decentralized-virtual-currency/>; *infra* Part I.

18. See, e.g., Clark, *supra* note 17; *infra* Part I.

19. See *Why Use Bitcoin?*, COINDESK, <http://www.coindesk.com/information/why-use-bitcoin/> (last updated Feb. 29, 2014); Alex McAdams, *Why I Use Bitcoin, and Why You Should Too*, MOTLEY FOOL (Feb. 9, 2014), <http://www.fool.com/investing/general/2014/02/09/why-i-use-bitcoin-and-why-you-should-too.aspx>; *infra* Part I.

20. See *Why Use Bitcoin?*, *supra* note 19; McAdams, *supra* note 19.

21. See *Why Use Bitcoin?*, *supra* note 19; McAdams, *supra* note 19.

22. FED. BUREAU OF INVESTIGATION, *supra* note 12; see also *infra* Part III.

23. Braga, *supra* note 11; see also *infra* Part III.

24. Braga, *supra* note 11; see also *infra* Part III.

25. Braga, *supra* note 11; see also *infra* Part III.

26. See, e.g., Adelman, *supra* note 11; *infra* Part III.

27. See, e.g., Hutton & Williams, *supra* note 13; DEP'T OF THE TREASURY, FIN. CRIMES ENFORCEMENT NETWORK, FIN-2013-G001, APPLICATION OF FINCEN'S REGULATIONS TO PERSONS ADMINISTERING, EXCHANGING, OR USING VIRTUAL CURRENCIES (2013) [hereinafter "FIN-2013-G001"]; *infra* Part III.

Taken as a whole, regulation in the United States has been narrowly focused on establishing how virtual currencies will be treated under existing law.²⁸ Various regulatory bodies have acted independently to provide guidance as to the treatment of virtual currency under the laws within their purview.²⁹ While this pragmatic and patch-work process has resulted in a degree of increased clarity, such a narrow approach to developing virtual currency regulation may result in: (1) a lack of inter-agency communication such that the resulting regulatory framework may be fragmented and lack cohesion; (2) difficulty in developing regulation tailored to the unique characteristics and risks of virtual currency; and (3) a failure to give sufficient consideration to the full breadth of regulatory issues raised by decentralized virtual currency such that the resulting regulatory framework may suffer from an unintended oversight in scope³⁰

This Article seeks to advance the discussion about the proper regulation of decentralized virtual currencies in the United States. Specifically, we contend that examining the regulatory objectives advanced by existing laws, as applied to virtual currency, provides valuable supplementary guidance to policymakers in the ongoing process of developing an appropriate legal framework.³¹ Moreover, this Article investigates the differing regulatory rationales underlying a selection of traditional laws applicable to currency, financial services, investments/securities, and banking.³² While these laws did not contemplate virtual currency and, in some cases, are ill-equipped to accommodate regulation of virtual currency, we find them to be instructive.

We conclude that while existing laws may be inappropriate for rote extension to virtual currency, the goals underlying these laws are often implicated to varying degrees in the context of virtual currency. As such, the regulatory goals of many existing laws justify the regulation of virtual currency.³³ The challenge for policymakers, however, is to divorce themselves from the confines of existing regulation in order to think creatively about how to enact new or modified regulatory requirements that would advance these same regulatory objectives in the

28. *See infra* Part IV.

29. *See supra* note 27.

30. *See infra* Part IV.

31. *See infra* Part IV.

32. *See infra* Part IV.

33. *See infra* Part IV.

context of virtual currency.³⁴ Ultimately, we suggest that such an exercise would help foster the creation of a more effective legal framework regardless of whether policymakers pursue the enactment of comprehensive new legislation specific to virtual currency or the continuing development of a system of distinct laws applicable to virtual currency.³⁵

This Article proceeds in four parts. Part I reviews the development of virtual currency and the unique functionality of Bitcoin, which paved the way for more widespread acceptance. Part II examines the growth of Bitcoin in the marketplace and explains how the perceived advantages of Bitcoin over traditional payment methods have been attractive to users and merchants. Part III evaluates global regulatory responses to the risks associated with virtual currency and describes how the U.S. approach of incremental clarification by independent agencies may lead to the creation of a deficient virtual currency legal framework. Part IV considers whether the policy goals of a cross-section of federal and state laws would be served by regulation of decentralized virtual currencies and argues that such an analysis should form a component part of an informed, thoughtful and comprehensive dialogue about the appropriate framework for U.S. regulation of virtual currency. A brief Conclusion follows.

I. AN INTRODUCTION TO VIRTUAL CURRENCY AND BITCOIN

As a type of virtual currency, Bitcoin is a medium of exchange that (1) is electronically created and stored,³⁶ and (2) lacks the backing of a government authority, central bank, or a commodity like gold.³⁷ Like traditional currency, virtual currencies such as Bitcoin can be used to purchase goods and services from any person that is willing to accept it as a form of payment.³⁸ However, virtual currencies can be distinguished

34. *See infra* Part IV.

35. *See infra* Part IV.

36. The term “virtual currency” lacks a universally agreed upon definition. However, in 2012, the European Central Bank defined it as “a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community.” EUR. CENT. BANK, VIRTUAL CURRENCY SCHEMES 5 (2012), available at <http://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf>. Similarly, in 2013 the U.S. Treasury defined it as “a medium of exchange that operates like a currency in some environments, but does not have all the attributes of real currency.” FIN-2013-G001, *supra* note 27.

37. Joshua J. Doguet, *The Nature of the Form: Legal and Regulatory Issues Surrounding the Bitcoin Digital Currency System*, 73 LA. L. REV. 1119, 1119 (2013).

38. *See id.* at 1120 (stating that Bitcoin’s “value fluctuates with respect to the value of other

from traditional forms of currency, such as the United States dollar or any other national currency, because virtual currencies do not have the status of legal tender.³⁹ Legal tender is a form of payment recognized by law that must be accepted by a creditor towards satisfaction of a debt or financial obligation.⁴⁰ Therefore, virtual currencies may operate like legal tender in some circumstances but lack the status of legal tender because no person is legally obligated to accept a virtual currency.

Bitcoin is not the only virtual currency or even the first virtual currency to be introduced to the public. In fact, a number of virtual currencies predate Bitcoin.⁴¹ However, each ultimately failed to reach Bitcoin's current level of popularity and mainstream acceptance.⁴² While virtual currencies are nothing new, Bitcoin was developed and introduced in a way that allowed it to obtain a material level of use in the marketplace where other virtual currencies languished. As discussed in greater detail below, a variety of Bitcoin's unique characteristics have been touted as being particularly attractive to users and may have helped Bitcoin obtain wider acceptance than other virtual currencies. In short, Bitcoin's technology appears to provide users with a satisfactory solution to the double-spending problem that plagued other virtual currencies operating without a trusted third-party clearinghouse. In doing so, Bitcoin was also able to provide perceived benefits to users, including lower costs, increased anonymity in transactions and insulation from inflation and government manipulation.

A. *Solving the Double-Spending Problem*

As noted above, Bitcoin is a type of virtual currency.⁴³ More

currencies, and . . . can be spent anywhere a merchant is willing to accept them"); Paul Krugman, *Golden Cyberfettlers*, N.Y. TIMES (Sep. 7, 2011, 12:20 AM), <http://krugman.blogs.nytimes.com/2011/09/07/golden-cyberfettlers>.

39. FIN-2013-G001, *supra* note 27 (providing interpretive guidance with respect to distinguishing virtual currency from "real" currency for the purposes of the Bank Secrecy Act and FinCEN's regulations).

40. James B. Thayer, *Legal Tender*, 1 HARV. L. REV. 73, 84 (1887) ("In law, whatever is legal tender is money; but it is not true that whatever is money is legal tender . . . the control over this whole subject which is given to Congress by the Constitution."). Thus, in general, legal tender must be issued by an authorized national body such as the United States Treasury. *See* 31 U.S.C. § 5103 (2012) (defining legal tender).

41. *See* Richard Satran, *6 Virtual Currencies that Went Bust*, US NEWS (May 13, 2013), <http://money.usnews.com/money/personal-finance/slideshows/6-virtual-currencies-that-went-bust/1>.

42. *Id.*

43. The terms "digital currency" and "virtual currency" have both been used (sometimes interchangeably) to describe Bitcoin. *See* Danny Bradbury, *Is Bitcoin a Digital Currency or a Virtual One?*, COINDESK (Mar. 19, 2014, 6:02 AM), <http://www.coindesk.com/bitcoin-digital->

specifically, Bitcoin is a crypto-currency,⁴⁴ a form of money that relies on encryption or cryptography (instead of a central authority such as a national bank or government) to control its creation.⁴⁵ As the first widely accepted decentralized crypto-currency, Bitcoin revolutionized virtual currency through its innovative use of technology to provide a seemingly reliable process of authorizing and authenticating Bitcoin transactions while protecting against double-spending of the same Bitcoin.

A study of the development of Bitcoin and how it functions highlights the innovative approach used to solve the double-spending problem. Although most have speculated that work on the Bitcoin concept was well underway by at least 2007,⁴⁶ the first formal announcement would not come until November 2008, when a paper entitled *Bitcoin: A Peer-to-Peer Electronic Cash System* was published online under the name Satoshi Nakamoto.⁴⁷ The paper detailed a proposal for a “purely peer-to-

currency-virtual-one/ (“Is bitcoin a virtual currency, a digital currency, or both? And why does it matter? In press reports, it’s often referred to as both.”). There is some debate on the subject of which term is most appropriate. *See id.* Because regulators within the United States have adopted the term “virtual currency” in their preliminary guidance on Bitcoin, that term will be used throughout this Article. *See* I.R.S. News Release IR-2014-36 (Mar. 25, 2014), <http://www.irs.gov/uac/Newsroom/IRS-Virtual-Currency-Guidance> (IRS Virtual Currency Guidance: Virtual Currency Is Treated as Property for U.S. Federal Tax Purposes; General Rules for Property Transactions Apply) (“The Internal Revenue Service today issued a notice providing answers to frequently asked questions (FAQs) on virtual currency, such as bitcoin.”). The choice to use the term “virtual currency,” however, is intended only to be a semantic one and should not be considered a comment on whether Bitcoin should properly be understood as “digital” or “virtual” currency.

44. Doguet, *supra* note 37, at 1120 n.9.

45. As will be further explicated below, this is an aspect of Bitcoin that is meaningfully distinct from traditional currencies. The creation of traditional currencies, such as the United States dollar, is based upon the will of a central authority or governing body that might be unpredictable or subject to political forces. In the United States for example, the Federal Reserve is granted the authority to “print money” and put it into circulation. In contrast, the creation of bitcoins is predictable, because the rate of their entry into the market has been coded into the program in advance. *See* JERRY BRITO & ANDREA CASTILLO, *BITCOIN: A PRIMER FOR POLICYMAKERS* (2nd ed. 2013), available at http://mercatus.org/sites/default/files/Brito_BitcoinPrimer_v1.3.pdf; Doguet, *supra* note 37, at 1119 (“Currency . . . is exactly like religion. It’s based entirely on faith. This is especially the case with Bitcoin; no government, corporation, or commodity (like gold) backs the digital currency.” (internal quotation marks omitted)).

46. Fran Berkman, *An Interactive History of Bitcoin*, SYDNEY MORNING HERALD (Feb. 11, 2014, 10:47 AM), <http://www.smh.com.au/digital-life/digital-life-news/an-interactive-history-of-bitcoin-20140211-32dt4.html> (“According to legend, Satoshi Nakamoto began working on the Bitcoin concept in 2007.”).

47. It is commonly believed that “Satoshi Nakamoto” is a pseudonym. *Id.* (“While he [Satoshi Nakamoto] is on record as living in Japan, it is speculated that Nakamoto may be a collective pseudonym for more than one person.”); *see also* Wallace, *supra* note 8 (“In November 1, 2008, a man named Satoshi Nakamoto posted a research paper to an obscure cryptography listserv describing his design for a new digital currency that he called Bitcoin. None of the list’s veterans had heard of him, and what little information could be gleaned was murky and contradictory. In an

peer version of electronic cash [that] would allow online payments to be sent directly from one party to another without going through a financial institution.”⁴⁸ The idea for the system of virtual currency included in Nakamoto’s paper was not new. In the early 1990s a number of virtual currency systems, including E-cash, bit gold, RPOW, and b-money, had already been launched.⁴⁹ What made the Bitcoin proposal unique was Nakamoto’s innovative approach to addressing what has come to be known as the “double spending problem.”

The “double spending problem” is an inherent difficulty that any system of virtual currency must face and it can be simplified in the following manner: “If a [virtual] dollar is just information, free from the corporeal strictures of paper and metal, what’s to prevent people from copying and pasting it as easily as a chunk of text [and] ‘spending’ it as many times as they want?”⁵⁰ Physical currencies have a manifest “built-in” solution to this double spending problem: if a consumer exchanges a physical dollar for an apple (or any other good or service) then, absent illegal activity such as counterfeiting, they are no longer in possession of the dollar and, therefore, cannot spend that dollar again to buy a another apple from another vendor. Virtual currencies, which have no physical manifestation, however, cannot rely on this sort of built-in solution. Most virtual currencies have sought to address the problem by “involv[ing] . . . a central clearinghouse to keep a real-time ledger of all transactions [involving the virtual currency].”⁵¹ Implementing a central clearinghouse can address the problem of double spending because any fraudulent transactions will be immediately logged and prevented; however, it can only be effective at doing so if the third-party is or should be trusted by the users of the currency.⁵²

online profile, he said he lived in Japan. His email address was from a free German service. Google searches for his name turned up no relevant information; it was clearly a pseudonym.”)

48. Satoshi Nakamoto, *Bitcoin; A Peer-to-Peer Electronic Cash System*, BITCOIN (Nov. 8, 2008), <https://bitcoin.org/bitcoin.pdf>.

49. Wallace, *supra* note 8.

50. *Id.*

51. *Id.*

52. Consider, by analogy, the check clearinghouse system used by banks in the United States. Prior to the widespread use of clearinghouses, banks would settle debts between each other via direct courier. That is, checks were physically delivered from one bank to another for settlement. In order to eliminate the inefficiencies of settling debts on a bi-lateral basis, bankers began to meet at one central location, known as a clearinghouse. This permitted banks to effect settlement “on the net difference between cheques exchanged (i.e. sent to and received from the other banks) rather than on the gross value of the cheques, transaction by transaction.” See *History of the Cheque*, CHEQUE & CREDIT CLEARING CO., http://www.chequeandcredit.co.uk/cheque_and_credit_clearing/history_of_the_cheque/the_clearing_-_early_days/ (last visited Dec. 29, 2014). However, because the

Nakamoto's proposal was unique because it eliminated the need for a third-party clearinghouse by turning over the authority to maintain a ledger of transactions to the users of the currency themselves. This could be achieved, Nakamoto argued, in the following manner: in order to use the currency, every Bitcoin user would be held responsible for running an application that generates an individualized pair of cryptographic keys.⁵³ One is private and stored on the user's computer, while the other is made public.⁵⁴ When a transfer of bitcoins is initiated, the amount of the transfer is submitted to the network of Bitcoin users encoded with the recipient's public key.⁵⁵ The recipient then "accepts" the transfer by submitting the same amount encoded with his or her *private* key.⁵⁶ The sender, finally, acknowledges the transfer by signing the transaction with his or her private key, thereby informing the network that bitcoins formerly located in his or her account now have a new owner.⁵⁷ In this way the double spending problem could conceivably be remedied without the use of a third-party clearinghouse.

As these encrypted transactions occur across the Bitcoin network, every user is continually "downloading a log of all transactions that have . . . taken place [across] . . . the network."⁵⁸ These publicly available, albeit encrypted, records are analyzed, voluntarily, by certain Bitcoin users (known as "miners") who authenticate and approve transactions. Authenticated blocks of transactions are then submitted to a "public ledger," known as the "block chain." This authentication process serves to remedy the "double spending" problem. Because every transaction is logged in the "public ledger" a bitcoin cannot be spent twice. Any attempt at a "second spend" of a bitcoin would be invalidated by Bitcoin miners who would be unable to authenticate the transaction or add it to the block chain. Before the transaction is confirmed, it would

functioning of the clearinghouse relied upon mutual trust between its participants and, occasionally, fear that a particular bank might soon become insolvent resulted in banks refusing to honor the checks drawn upon the accounts of that bank and threatened the validity of the system. *Id.* In order to address these fears, in the United States established the Federal Reserve System, which served as a nation-wide clearinghouse backed by the guarantee of the federal government. *Id.* Of course, virtual currencies cannot rely on the legitimacy of the federal government and instead must assuage their customers fears of insolvency based upon the reputation of the private entity administering the clearinghouse.

53. *Bitcoin Under Pressure*, ECONOMIST TECH. Q., Nov. 30, 2013, at 17.

54. *Id.*

55. *Id.*

56. Doguet, *supra* note 37, at 1126.

57. *Id.*

58. *Id.*; see also Nakamoto, *supra* note 48.

be recognized as duplicative of a transaction already in the “block chain” and would not be authenticated. Therefore, Bitcoin offered a seemingly reliable way to resolve the double-spending problem that plagued other virtual currencies without involving a third-party clearinghouse. In doing so, users of Bitcoin could theoretically be assured of the reliability of the system without having to evaluate the trustworthiness of a third-party clearinghouse. So long as the system operated reliably and users retained confidence in it, Bitcoin would appear to have overcome a primary obstacle to the wider acceptance of a virtual currency as an alternative to traditional currency.

B. Benefits of Bitcoin

Assuming the efficacy of Bitcoin’s solution to the double-spending problem, Bitcoin could conceivably offer users a viable alternative to traditional currency. In fact, as a decentralized virtual currency, bitcoin is often touted as offering a number of advantages over traditional currency. The most commonly cited benefits of bitcoin are: (1) lower costs and fees, (2) fewer risks for merchants, (3) increased anonymity for users, (4) increased speed and ease of transfer/payment, and (5) less susceptibility to government manipulation and inflationary pressures.⁵⁹

Some of these benefits are derived directly from Bitcoin’s unique solution to the double spending problem—that is eliminating the need for a third-party to mediate transactions. For example, consider the amount of time that is required for funds to be deposited into a bank account via check or wire transfer. Banks commonly hold money for days while waiting for the drawee bank to verify that the drawer actually has the funds available. Because Bitcoin’s cryptography eliminates the need for this type of third-party verification, Bitcoin has the advantage of increased speed and sometimes instantaneous transfer.⁶⁰ Of course, more modern payment methods such as debit/credit cards also offer instantaneous transactions, but these methods require the use of third-party payment networks that charge merchants usage fees, up to two percent to three percent per transaction.⁶¹ In contrast, because Bitcoin transactions can occur directly between buyer and seller, transaction

59. See, e.g., Bitcoin Project, *What Are the Advantages of Bitcoin?*, BITCOIN, <https://bitcoin.org/en/faq#what-are-the-advantages-of-bitcoin> (last visited Jan. 22, 2015); *Why Use Bitcoin?*, *supra* note 19; McAdams, *supra* note 19.

60. *Why Use Bitcoin?*, *supra* note 19.

61. McAdams, *supra* note 19.

costs are minimized.⁶²

Some of Bitcoin's other touted benefits, however, are more directly attributable to Bitcoin's status as a virtual currency. Bitcoin, like other virtual currencies, does not require its users to provide any personal information prior to making a purchase and, as such, purports to limit the risk of identity theft or fraud for consumers.⁶³ Bitcoin also serves to protect merchants from consumer fraud, because Bitcoin transactions are non-reversible.⁶⁴ This is an advantage for merchants who experience a high volume of credit card chargebacks (effectively the reversal of a transaction) resulting from customers who make a purchase and fraudulently challenge the transaction with their credit card company.⁶⁵

Finally, like other virtual currencies, Bitcoin is viewed by some as being less susceptible to inflation and artificial government manipulation of the currency's value. As such, Bitcoin advocates tout its ability to mitigate a widely held concern with respect to traditional state-backed currencies. As noted by one commentator:

When Nakamoto's paper came out in 2008, trust in the ability of governments and banks to manage the economy and the money supply was at its nadir. The US government was throwing dollars at Wall Street and the Detroit car companies. The Federal Reserve was introducing "quantitative easing," essentially printing money in order to stimulate the economy.⁶⁶

In contrast, Bitcoin's process for creating and introducing new bitcoins into the system is not subject to such arbitrary swings.

As opposed to traditional currencies that can be created on the whim of a government agency, new Bitcoins enter the market through a process known as "mining." "Every time a Bitcoin transaction is made, the transaction is broadcast to the entire network."⁶⁷ Any user of the Bitcoin network can monitor these transactions to ensure that they are valid through the use of "mining" software that is available for anyone to download at no cost. Valid transactions are then recorded and bundled into "blocks" which can be submitted to the network's "public ledger" known as the "block chain," which "contains every valid transaction

62. *Why Use Bitcoin?*, *supra* note 19.

63. *Id.*

64. *Id.*

65. *Id.*

66. Doguet, *supra* note 37, at 1126; Nakamoto, *supra* note 48.

67. Kelsey L. Penrose, *Banking on Bitcoin: Applying Anti-Money Laundering and Money Transmitter Laws*, 18 N.C. BANKING INST. 529, 532 (2014).

made since the first block was created on January 3, 2009.”⁶⁸ Before a block can be added to the “block chain,” a miner’s computer is required to correctly solve “a difficult mathematical problem, called a ‘proof-of-work.’”⁶⁹ The difficulty of the algorithm adjusts itself such that, on average, “one block is created every ten minutes.”⁷⁰ This mining process limits the total amount of currency that enters into the Bitcoin market and renders non-market fluctuations impossible. New bitcoins only enter the market after the addition of a “block” to the “block chain.” A block is merely a record of a recent Bitcoin transaction. However, the creation of “blocks” occurs at a predictable rate. This is ensured by the increasing difficulty of the “proof of work” required before a “block” can be added. As such, it is known as a mathematical certainty the rate at which new blocks, will be created. When a new block is added to the block chain, a predetermined amount of new bitcoins then enter the market as an award to whomever submitted the block; “the size of each block bounty . . . halve[s] every 210,000 blocks—first from 50 Bitcoins to 25, then from 25 to 12.5, and so on”⁷¹ until the pre-determined cap of 21 million Bitcoins is reached. In theory, this would render the currency immune from inflation and political manipulation. To many, this represents a more predictable and trustworthy system than the Federal Reserve having discretion to choose when to print money.⁷²

In sum, it appears that Bitcoin was developed to provide an innovative solution to a problem that stifled the public acceptance of prior virtual currencies. Assuming the reliability of Bitcoin’s solution to the double-spending problem, Bitcoin’s promises of a low-cost decentralized currency that is independent of the government may be attractive to users who might now view it as a viable alternative to other payment methods such as cash, checks, and debit/credit cards. The foregoing notwithstanding, Bitcoin’s staying power depends upon its level of acceptance in the marketplace.

II. BITCOIN IN THE MARKETPLACE

In order to ascend from a little-known theoretical virtual currency to a viable alternative to traditional payment forms, Bitcoin must achieve a

68. *Id.*

69. *Id.*

70. *Id.*

71. Wallace, *supra* note 8; *see also* Nakamoto, *supra* note 48.

72. *See, e.g.*, PEDRO FRANO, UNDERSTANDING BITCOIN: CRYPTOGRAPHY, ENGINEERING AND ECONOMICS 5 (2015); *Why Use Bitcoin?*, *supra* note 19.

critical level of adoption by users and acceptance by merchants. Early Bitcoin transactions highlight the virtual currency's humble beginnings. Nonetheless, Bitcoin has seen growth in both the number of users and the prevalence of Bitcoin transactions.

Informal transactions in Bitcoin began in January of 2009 when Nakamoto, himself, "mined" the first block of transactions added to the public ledger.⁷³ The first Bitcoin transaction was for the delivery of two Papa John's pizzas (which cost 10,000 bitcoins currently valued at over \$5.9 million).⁷⁴ Another early transaction was for the purchase of alpaca wool socks.⁷⁵ Some users even began giving away bitcoins to increase circulation.⁷⁶ Bitcoin has since grown to support a "base of approximately 10,000 users, including several hundred merchants that . . . accept [Bitcoin] . . . as . . . payment" processing more than \$300,000 worth of Bitcoin transactions every day.⁷⁷ Moreover, the value of a bitcoin has also grown exponentially, reaching a high value of \$1200.⁷⁸

As a new "start-up" currency, the number of merchants accepting bitcoins in exchange for goods or services is admittedly small when compared to traditional currency. Only a relatively small fraction of all monetary transactions involve bitcoins, and the use of bitcoin is far from mainstream. Nonetheless, Bitcoin has attained more attention and wider spread adoption than any other virtual currency.⁷⁹ In fact, an assessment of Bitcoin in the marketplace highlights its versatility. Although many applications have been suggested,⁸⁰ Bitcoin is most commonly used: (1)

73. Wallace, *supra* note 8.

74. Katherine Mangu-War, *Meet the \$2 Million Bitcoin Pizza*, REASON (Apr. 9, 2013, 3:04 PM), <http://reason.com/blog/2013/04/09/meet-the-2-million-bitcoin-pizza>.

75. Arella Brown, *Alpacas: The Unofficial Mascot of Bitcoin*, COINDESK (May 31, 2013, 2:12 PM), <http://www.coindesk.com/alpacas-the-unofficial-mascot-of-bitcoin/>.

76. *See, e.g.*, Max Raskin, *Meet the Bitcoin Millionaires*, BLOOMBERG (Apr. 10, 2014), <http://www.bloomberg.com/bw/articles/2013-04-10/meet-the-bitcoin-millionaires>.

77. Doguet, *supra* note 37, at 1136.

78. *See* Wood, *supra* note 8; Wallace, *supra* note 8.

79. *See* Arthur Gervais et al., *Is Bitcoin a Decentralized Currency?* (2013), available at <http://eprint.iacr.org/2013/829.pdf> (noting that "Bitcoin has witnessed a wider adoption and attention than any other digital currency proposed to date").

80. *See, e.g.*, BRITO & CASTILLO, *supra* note 45, at 14–15 (suggesting the Bitcoin service might be used as an alternative to credit cards for small businesses seeking to avoid fees, as a means to combat poverty and oppression, and as a stimulus for financial innovation); *id.* at 15 (Some countries have even "turned to Bitcoin to evade the harmful effects of capital controls and central-bank mismanagement." Argentina, for example has "adopted Bitcoin in response to the country's dual burdens of a 25 percent inflation rate and strict capital controls."); Rob Wile, *Bitcoin Can Be the New Western Union*, BUS. INSIDER (Dec. 5, 2013, 11:09 AM), <http://www.businessinsider.com/bitcoin-can-be-the-new-western-union-2013-12> (suggesting that Bitcoin can facilitate the

to purchase goods and services online,⁸¹ (2) to purchase goods and services from “brick and mortar” stores,⁸² and (3) as an investment opportunity.⁸³ In addition, the growing acceptance of Bitcoin has resulted in the development of various third-party services designed to facilitate the use of Bitcoin. Regardless of the reasons for Bitcoin’s rise, one thing is certain. Bitcoin has captured the imagination of the public and has reached a material degree of acceptance. Thus, while not as widely accepted as legal tender, Bitcoin has ascended to something more than a little known and little used virtual currency.

A. *Bitcoin Payments Online*

Because Bitcoin was designed to facilitate Internet commerce and the online transfer of funds,⁸⁴ it is not surprising that the most well-known use of Bitcoin is as a means of payment for online purchases.⁸⁵ Customers may use Bitcoin to pay for goods and services from any online retailer that accepts it.⁸⁶

Some online retailers have a business model based on the acceptance of Bitcoin as the exclusive method of payment. All purchases from these online retailers must be made with Bitcoin and Bitcoin alone. These online retailers are ostensibly seeking to leverage the lower transaction costs of Bitcoin as compared to traditional payment forms such as credit/debit cards. For example, The Bitcoin Store accepts only Bitcoin

international transmission of funds and domestic remittances).

81. Gloria Goodale, *The Rise of Bitcoin: Is It a Solution or a Menace?*, BUS. INSIDER (Nov. 23, 2013, 9:57 PM), <http://www.businessinsider.com/rise-of-bitcoin-2013-11>.

82. *Id.*

83. Wile, *supra* note 80.

84. Doguet, *supra* note 37, at 1134.

85. BRITO & CASTILLO, *supra* note 45, at 4.

86. For the customer, the checkout process when using bitcoins to complete a purchase from an online retailer is not dissimilar from the checkout process when using a PayPal account or a credit card. The customer simply selects the item, initiates the retailer checkout procedure and enters their public encryption key (instead of their credit or debit card information) to complete the transaction. Depending on the site, the customer may also be required to enter the key of the company to be paid and the amount to be paid. This initiates a transfer of Bitcoin to the online retailer in much the same way that money might be transmitted between two traditional bank accounts through the use of a customer’s debt or credit card information. For a retailer, the process of accepting a bitcoin from a customer is also comparable to accepting a payment through the use of a credit or debit card. Instead of money being transferred into the retailer’s bank account, bitcoins are transferred into the retailer’s online Bitcoin account. Transferred bitcoins can then be used to purchase products from any other merchant that accepts the currency or be exchanged for traditional currency, such as United States Dollars. See, e.g., *PayPal v. Bitcoin*, BLOCKCHAIN (Dec. 8, 2013), <https://blockchain.info/wallet/paypal-vs-bitcoin> (contrasting the PayPal and Bitcoin services).

and, as a result of the decreased transaction cost, “sells thousands of consumer electronics at discounted prices.”⁸⁷ Other online retailers that exclusively accept Bitcoin include Bitcoin Blaster (which also sells electronics) and the Bitcoin World Market (which sells a wider range of offerings to bitcoin users).⁸⁸ In sum, the growth of Bitcoin and its acceptance by users has led to the development of a niche industry of online retailers who have opened “Bitcoin Stores” where all goods are only sold in exchange for Bitcoin.

More commonly, however, online retailers have decided to accept Bitcoin as an alternative or supplement to traditional payment methods. These online retailers give customers the option to pay with Bitcoin. During the infancy of Bitcoin, the virtual currency had limited value because few online retailers were willing to accept a little known virtual currency with uncertain (if any) value in exchange for their goods and services. Nonetheless, some forward-thinking, or perhaps even publicity-seeking online retailers became early adopters. These early adopters, including OkCupid⁸⁹ (an online dating service) and Virgin Galactic⁹⁰ (an aviation company focusing on space tourism), paved the way for others, making Bitcoin much more mainstream and valuable to its users. As of June of 2014, over 60,000 merchants had joined the ranks of retailers accepting Bitcoin as an alternative form of payment.⁹¹

As might be expected, many of the online retailers that have chosen to accept virtual currency are tech-savvy providers of “virtual goods” such as EZTV (a provider of online streaming television services), the Pirate Bay (a provider of BitTorrent directories), 4chan and Reddit (online message boards), Wordpress (an online blogging platform), namecheap (a domain registration service), Lumfile and meag.co.nz (online storage services), and Zynga (a mobile gaming company).⁹² However, online retailers that deliver tangible goods to their customers have also begun to adopt the service, including Etsy vendors (a service that permits local

87. BRITO & CASTILLO, *supra* note 45, at 10.

88. Vitalik Buterin, *Bitcoin Store Opens: All Your Electronics Cheaper with Bitcoins*, BITCOIN MAG. (Nov. 5, 2012), <http://bitcoinmagazine.com/bitcoin-store-opens-all-your-electronics-cheaper-with-bitcoins>.

89. Cyrus Farivar, *OKCupid Says It Will Accept Bitcoin, as Currency Falls to Recent Low*, ARSTECHNICA (Apr. 16, 2013), <http://www.arstechnica.com/business/2013/04/okcupid-says-it-will-accept-bitcoin-as-currency-falls-to-recent-low/>.

90. Matthew J. Belvedere, *Richard Branson: Buy Your Space Flight with Bitcoin*, CNBC (Nov. 22, 2013), <http://www.cnbc.com/id/101220710#>.

91. Brian Patrick Eha, *More Major Retailers Are Getting Ready to Accept Bitcoin*, ENTREPRENEUR (Jan. 29, 2014), <http://www.entrepreneur.com/article/231134>.

92. *See* Kar, *supra* note 3.

merchants to sell their wares in pre-fabricated online shops), TigerDirect (an online market for consumer electronics), and—perhaps most famously—Overstock.com (one of the web’s largest retailers offering merchandise ranging from jewelry to electronics).⁹³

Overstock.com, for many, represented a turning point in the credibility of the Bitcoin as a more mainstream virtual currency. Coinbase, which runs an online wallet and payment processing firm, for example, labeled Overstock.com’s decision to accept Bitcoin as “the largest retail Bitcoin implementation to date.”⁹⁴ Within twenty-one hours of the announcement that Overstock.com would begin accepting Bitcoin, the company sold more than \$124,000 in goods via bitcoin (approximately four percent of its daily revenue).⁹⁵ This overwhelming response has led many to predict that the online market for Bitcoin users will likely grow even further as other retailers will “be forced to take bitcoin at some point, as the market is growing by 30% per month.”⁹⁶

As predicted, some major United States companies have started to follow the lead of Overstock.com with Dell⁹⁷ (a computer and technology company), Expedia⁹⁸ (an online travel agency), and Dish Network⁹⁹ (a satellite television provider) announcing that they would accept Bitcoin payments. Moreover, others that have not yet officially adopted Bitcoin are actively evaluating and considering it as a viable payment method. For example, at the 2014 annual shareholder meeting, Ebay’s CEO acknowledged his belief that “Bitcoin will play a very important role in the future” and revealed that Ebay is “actively considering” how it might enable Bitcoin as a payment option.¹⁰⁰ As such, it appears that larger and more well-known online retailers are beginning to accept Bitcoin and attitudes have begun to shift such that Bitcoin is increasingly viewed as having the potential to serve as a mainstream payment alternative.

93. *Id.*

94. Danny Bradbury, *Overstock.com Becomes First Major Retailer to Accept Bitcoins*, COINDESK (Jan. 9, 2014, 9:15 PM), <http://www.coindesk.com/overstock-opens-bitcoin-sales/>.

95. *Id.*

96. *Id.*

97. Sydney Temper, *Dell Begins Accepting Bitcoin*, N.Y. TIMES (July 18, 2014), http://dealbook.nytimes.com/2014/07/18/dell-begins-accepting-bitcoin/?_php=true&_type=blogs&_r=0.

98. Jane Genova, *Expedia Accepts Bitcoin—Why?*, PAYMENTWEEK (June 18, 2014, 3:34 PM), <http://paymentweek.com/2014-6-18-expedia-accepts-bitcoin-why-4923/>.

99. Kevin Xu, *Dish Network to Accept Bitcoin Bill Payments*, PAYMENTWEEK (May 29, 2014), <http://paymentweek.com/2014-5-29-dish-network-to-accept-bitcoin-bill-payments/>.

100. Jenn R. Ma, *EBay Contemplates Accepting Bitcoin*, PAYMENTWEEK (May 22, 2014), <http://paymentweek.com/2014-5-22-ebay-contemplates-accepting-bitcoin-4748/>.

One of the reasons that retailers have increasingly adopted Bitcoin is the perceived advantages that it offers over traditional payment methods. Bitcoin is attractive because it is billed as a lower-cost and lower risk alternative to credit/debit cards.¹⁰¹ Retailers can “process Bitcoin with a minimal fee of just 1 percent (compared with the up to 3.5 percent that some credit cards charge).”¹⁰² In addition, accepting Bitcoin allows merchants to avoid “fraudulent ‘charge-backs,’ or consumer-initiated payment reversals based on a false claim that a product has not been delivered.”¹⁰³ Bitcoin also allows retailers to receive access to customer payments more quickly. Bitcoin payment processing allows retailers to convert bitcoins to United States dollars within twenty-four hours whereas credit card processing typically requires forty-eight to seventy-two hours to complete.¹⁰⁴

While the claimed benefits of Bitcoin have likely contributed to the growing number of merchants willing to accept it, Bitcoin is not without risk. Some have expressed concern that merchants may be rushing to accept the virtual currency without fully understanding their potential exposure. Questions have also been raised about the security of the Bitcoin system and its ability to reliably protect against theft.¹⁰⁵ With that said, the primary risk stems from volatility in value. On more than one occasion, the value of Bitcoin has fallen by fifty percent in a twenty-four-hour period.¹⁰⁶ As such, merchants embracing Bitcoin run the risk of accepting payment in a form that quickly becomes less valuable. Thus, as noted by Greg Shvey, co-founder of The Genesis Block (a virtual currency research group), the challenge presented to merchants is to “take advantage of . . . the [currency’s] efficiencies without [incurring] any of the risks.”¹⁰⁷

101. Sara A. O’Brien, *Retailers See Big Upside by Accepting Bitcoins*, NYPOST (Dec. 28, 2013, 9:10 PM), nypost.com/2013/12/28/nyc-retailers-see-big-upside-by-accepting-bitcoins/.

102. *Id.*

103. BRITO & CASTILLO, *supra* note 45, at 11.

104. O’Brien, *supra* note 101.

105. Will Weisser, *Why Security Issues May Chronically Hinder Bitcoin Adoption*, TRIPWIRE (Nov. 26, 2013), <http://www.tripwire.com/state-of-security/security-data-protection/security-issues-may-chronically-hinder-bitcoin-adoption/>.

106. AFP, *Bitcoin Recovers After Slumping on China Bank Measures*, DAILY NATION (Dec. 19, 2013), mobile.nation.co.ke/business/Bitcoin-recovers-after-slumping-on-China-bank-measures/-/1950106/2118250/-/format/xhtml/-/9m4va5z/-/index.html; Andy Greenberg, *Bitcoin’s Price Plummets as Mt. Gox Goes Dark, with Massive Hack Rumored*, FORBES (Feb. 25, 2014, 1:56 AM), www.forbes.com/sites/andygreenberg/2014/02/25/bitcoins-price-plummets-as-mt-gox-goes-dark-with-massive-hack-rumored/.

107. O’Brien, *supra* note 101.

In sum, the state of Bitcoin acceptance by retailers highlights several issues impacting the potential for widespread use of decentralized virtual currency. Bitcoin may offer certain advantages over traditional payment methods, making it attractive to merchants as a viable payment alternative. However, those advantages may come with associated risks that are not yet fully understood due to the relative infancy of Bitcoin. Regardless of the pros and cons of accepting Bitcoin, a review of the marketplace suggests that Bitcoin is gaining traction. Larger and more well-established merchants are starting to accept Bitcoin. As a result, the use and acceptance of Bitcoin as a method of payment for the purchase and sale of online goods and services is becoming more widespread.

B. Bitcoin Payments at “Brick and Mortar” Stores

Although Bitcoin is a “virtual currency,” its purchasing power is not limited to the Internet. Like online retailers, merchants that operate brick and mortar stores have also been drawn to the perceived advantages of Bitcoin.¹⁰⁸ Merchants, both small and large, have started to accept Bitcoin at store locations.¹⁰⁹ Although the number of stores that accept Bitcoin does not come close to rivaling those that accept more traditional payment methods, this growth provides further evidence of the inroads that Bitcoin continues to make in becoming an increasingly mainstream alternative payment method.

Small businesses were the earliest adopters of in-store Bitcoin payments with owners often citing the lower transaction costs as the primary factor in their decision to adopt the currency. In April 2013, EVR, a New York “gastro-lounge,” became the first store to accept Bitcoin.¹¹⁰ EVR’s owner, Alex Likhtenstein, noted that his decision to accept Bitcoin was motivated, in part, by the exceptionally low transaction cost. Tim Ferguson, the owner of Rise bakery, the first store in North Carolina to accept Bitcoin, also cited lower transaction costs as his primary justification.¹¹¹

Low transaction costs are not the only characteristic of Bitcoin that appeals to store owners. Some merchants have found that accepting Bitcoin can attract new customers who are looking for places to spend

108. BRITO & CASTILLO, *supra* note 45, at 11.

109. Goodale, *supra* note 81.

110. O’Brien, *supra* note 101.

111. Kirby Wilson, *Tom Ferguson Becomes First Durham Business Owner to Accept Bitcoins*, DUKE CHRONICLE (Feb. 26, 2014), www.dukechronicle.com/articles/2014/02/26/tom-ferguson-becomes-first-durham-business-owner-accept-bitcoins.

their bitcoins. Daniel Lee, owner of two eateries Lean Crust Pizza and the Oxford Kitchen, as well as a small convenience store and nail salon, offers a ten percent discount to customers paying with Bitcoin in his stores.¹¹² Lee pointed to the discount as the reason why new customers have traveled to his stores and noted that some have become regular customers.¹¹³

The acceptance of Bitcoin is not, however, limited to smaller business or “mom and pop shops.” Larger businesses are also accepting in-store Bitcoin payments.¹¹⁴ These businesses include nationally and internationally recognized brands including: Subway Sandwiches,¹¹⁵ the Real Estate Firm of Brown Harris & Stevens,¹¹⁶ Richard Branson’s commercial space venture Virgin Galactic,¹¹⁷ and various McLaren and Lamborghini car dealerships.¹¹⁸

Like online retailers, the owners of brick and mortar stores are attracted by Bitcoin’s promises of advantages over traditional payment forms (e.g. lower costs, reduced risk, potential for growth and publicity).¹¹⁹ Because of these benefits, more than 75,000 merchants have started accepting in-store Bitcoin payments.¹²⁰ Accordingly, an owner of bitcoins is no longer substantially restricted in their ability to spend it. Bitcoin is accepted by merchants selling a wide array of products and services from comic books to legal services.¹²¹

112. O’Brien, *supra* note 101.

113. *Id.*

114. *Id.*

115. Jon Aziz, *Bitcoin Would Benefit from Being Boring*, IDEA FACTORY (Nov. 13, 2013), <http://theweek.com/article/index/252627/bitcoin-would-benefit-from-being-boring> (“And now, some major offline chains like Subway are beginning to join online-only businesses like Reddit, [and] Wordpress . . . in accepting the digital currency.”). Not all online retailers, however, have started to accept digital currency. See Knight, *supra* note 4 (“Dell joins major retailers Dish Network, Expedia, Newegg, Overstock and Tiger Direct in accepting bitcoins as a method of payment. Amazon is still holding out . . .”).

116. Roger Wu, *Why We Accept Bitcoin*, FORBES (Feb. 13, 2014, 9:30 AM), www.forbes.com/sites/groupthink/2014/02/13/why-we-accept-bitcoin/.

117. Jillian D’Onfro, *Sir Richard Branson Will Accept Bitcoin for Virgin Galactic Space Travel*, BUS. INSIDER (Nov. 22, 2013, 11:32 AM), www.businessinsider.com/bitcoin-for-virgin-galactic-2013-11.

118. Nerman Hajdarbegovic, *Lamborghini and McLaren Dealerships Drive Bitcoin Adoption in USA*, COINDESK (Jan. 30, 2014), <http://www.coindesk.com/lamborghini-mclaren-bitcoin/>.

119. Wu, *supra* note 116.

120. Mark Macdonald, *75 Places to Spend Your Bitcoins*, SHOPIFY (Nov. 30, 2013), www.shopify.com/blog/10480345-75-places-to-spend-your-bitcoins\$axzz2wAu9gieV.

121. BITCOIN CITY, www.bitcoincity.us (last visited Mar. 16, 2013).

C. *Bitcoin as an Investment*

Although Bitcoin was conceived as medium of exchange to pay for goods and services, Bitcoin is increasingly seen as a means of making money.¹²² Because bitcoin can be exchanged for traditional currencies and experiences relatively large price fluctuations, it has become a popular investment.¹²³ Some commentators have even noted that “most Bitcoin users are acquiring Bitcoins not in order to buy goods and services but to speculate” on its value.¹²⁴ Indeed, according to bitcoinwatch.com, although “more than a million dollars’ worth of bitcoins [have been] traded . . . less than half a million dollars in bitcoins were being used in transactions.”¹²⁵ This suggests that the virtual currency is being used primarily for investment. While volatility in the value of Bitcoin may be viewed as a potential risk to retailers that accept Bitcoin as payment, that same volatility is potentially attractive to investors who seek to profit from buying low and selling high. Accordingly, Bitcoin’s use in the marketplace is not limited serving as an alternative payment method. Instead, Bitcoin has also developed into an investment opportunity such that there is a growing number of investors who buy and sell bitcoins like one might buy and sell stock or trade traditional currencies.

Part of the reason that investors have flocked to the virtual currency is that “bitcoin . . . has rapidly fluctuated in price.”¹²⁶ Shortly after the currency was introduced, “the value of bitcoins jumped tenfold in five days.”¹²⁷ To date, Bitcoin has seen a number of similarly drastic price fluctuations. From April 2011 to June 2011, a bitcoin’s price rose from \$0.75 to \$30.00.¹²⁸ By November 2011, its value plummeted to below \$2.00 before it stabilized at around \$5.00 in 2012.¹²⁹ Throughout 2012, the value of the currency again began to destabilize, rising to a value of \$15.40 in August 2012 and then dropping to \$7.58 before the end of the

122. Nikolei M. Kaplanov, *Nerdy Money: Bitcoin, the Private Digital Currency, and the Case Against Its Regulation*, 25 LOY. CONSUMER L. REV. 111, 127–28 (2012).

123. Surowiecki, *supra* note 9.

124. *Id.*

125. *Id.*

126. Kaplanov, *supra* note 122, at 128.

127. Surowiecki, *supra* note 9.

128. Timothy B. Lee, *These Four Charts Suggest that Bitcoin Will Stabilize in the Future*, WASH. POST (Feb. 3, 2014), <http://www.washingtonpost.com/blogs/the-switch/wp/2014/02/03/these-four-charts-suggest-that-bitcoin-will-stabilize-in-the-future/>.

129. *Id.*

year.¹³⁰ The following year was no different. At the beginning of 2013, the value of a bitcoin was only \$13.50.¹³¹ Within a single month however, the value rose to \$266, and then crashed to \$50.00.¹³² In 2014, the price rose from \$130 to \$1242, and crashed to \$455 before stabilizing at around \$900.¹³³ These drastic and rapid price fluctuations led speculators to believe that buying and holding bitcoins was an easy and quick way to make a profit.¹³⁴ A shrewd investor might, given the appropriate set of circumstances, make an investment in Bitcoin and multiply his or her profits.

Given the possibility for large investment gains, the rise of Bitcoin investing is not surprising. What effect this will have on Bitcoin remains to be seen. Some have argued that “it gives people an incentive to hoard their bitcoins rather than spend them, which is the opposite of what you need people to do in order to make a currency successful.”¹³⁵ As such, there is the possibility that Bitcoin investing may stifle the continued growth of Bitcoin as a payment method. However, at least one court has suggested that because of its similarities to traditional investments, Bitcoin might be brought out of the unregulated “grey market” and effectively integrated into the regulated and well-accepted securities market.¹³⁶ Accordingly, it is possible that categorizing Bitcoin as an asset instead of a currency, or alternatively, accepting that Bitcoin may share traits of both an asset and a currency, may add certainty to the legal and regulatory framework for decentralized virtual currencies. Ultimately, one thing is certain. Bitcoin is becoming more well-known and additional applications of Bitcoin are developing. Bitcoin’s growth is not limited to gains in the number of users or merchants willing to accept it as payment. Bitcoin is also becoming more widely accepted by virtue of the increase in investors that view Bitcoin as a viable investment opportunity.

D. *Bitcoin Services*

As Bitcoin has grown in popularity, entrepreneurs have sought to capitalize by developing a variety of services to facilitate different

130. *Id.*

131. *Id.*

132. *Id.*

133. *Id.*

134. Surowiecki, *supra* note 9.

135. *Id.*

136. *See* SEC v. Shavers, No. 4:13-cv-416, 2013 WL 4028182 (E.D. Tex. Aug. 6, 2013).

Bitcoin transactions. For example, Bitcoin “exchanges” provide a mechanism for exchanging Bitcoin for traditional currencies. On October 5, 2009, the first exchange rate for Bitcoin was published by New Liberty Standard. Based primarily on “an equation that include[d] the cost of electricity to run a computer that generated Bitcoins,” New Liberty Standard assessed one United States dollar to be worth 1309.03 bitcoins.¹³⁷ This development laid the groundwork for the first Bitcoin exchange, known as “The Bitcoin Market,” which went online on February 6, 2010.¹³⁸ The online exchange provided users, for the first time, with a real-time marketplace exchanging bitcoins for United States dollars.¹³⁹ As the value and popularity of Bitcoin increased, more and more online exchanges opened for business, the most notable of which being the now defunct Mt. Gox.¹⁴⁰ To date, more than a dozen online currency exchanges have opened for business including exchanges that facilitate the exchange of Bitcoin for European currencies (such as Bitmarket.eu), exchanges that facilitate the exchange of Bitcoin for South American currencies (such as Bitcoin Brasil), and even exchanges that focus on exchanging bitcoins for other virtual currencies (such as VirWoX).¹⁴¹

Other Bitcoin-based businesses soon followed. On May 2, 2013, the first physical Bitcoin exchange was introduced, in the form of a Bitcoin ATM. A Bitcoin ATM is a “kiosk . . . similar [in many ways] to [a traditional] ATM but . . . [it] allows people to swap Bitcoin for cash, or deposit cash to buy more Bitcoin by transferring funds to or from a virtual wallet on their smartphones.”¹⁴² The first Bitcoin ATM “created a global media buzz and racked up over \$100,000 of transactions in eight days.”¹⁴³ Since that time, over ten Bitcoin ATM developers have come

137. *History of Bitcoin: The World's First Decentralized Currency*, HISTORYOFBITCOIN.ORG, <http://historyofbitcoin.org/> (last visited Jan. 17, 2015) [hereinafter *Bitcoin History*].

138. *Id.*

139. *Id.*; see also *The History of Bitcoin*, BITCOINVISION.NET, <http://bitcoinvision.net/history-bitcoin/> (last visited Mar. 16, 2015) (noting that *dwdollar* established the first Bitcoin currency exchange); *11 Historical Bitcoin Moments: A Pictorial Countdown of the Cryptocurrency History*, 99BITCOINS.COM, <http://99bitcoins.com/11-historical-bitcoin-moments-a-pictorial-countdown-of-the-cryptocurrency-history/> (last visited Mar. 16, 2015) (noting that the Bitcoin Market is a former exchange).

140. *Bitcoin History*, *supra* note 137.

141. *Id.*

142. Jon Brodtkin, *Bitcoin ATM Goes Live in Albuquerque, More Coming to Austin and Seattle*, ARSTECHNICA (Feb. 18, 2014, 9:53 PM), <http://arstechnica.com/information-technology/2014/02/bitcoin-atm-goes-live-in-albuquerque-more-coming-to-austin-and-seattle/>.

143. *Id.*

into existence, and installed thousands of Bitcoin ATMs in Canada, Australia, Finland, Slovakia, Germany, the UK, Switzerland, and the United States.¹⁴⁴

Developers also started releasing mobile apps to facilitate the use of Bitcoin.¹⁴⁵ The first of these, known as “Bitpay,” launched on June 29, 2011, and was marketed “as the first smartphone e-wallet for Bitcoins.”¹⁴⁶ It allowed users to send/receive bitcoins or transfer bitcoins from a Bitcoin wallet, using a smartphone.¹⁴⁷ Soon after, a number of similar products to facilitate Bitcoin transactions were launched including Intervex Digital’s “BitCoins Mobile,” which provided e-wallet services to Apple iPad users and “BitInstant,” a type of “debit card” used to access online Bitcoin accounts.¹⁴⁸ Developers initially faced challenges with Apple even removing Bitcoin apps from its platform.¹⁴⁹ The foregoing notwithstanding, today Bitcoin app development continues to grow, which lends further support to the view that Bitcoin is gaining more widespread acceptance. Apple has since reinstated Bitcoin apps after issuing guidelines demanding that such apps be in compliance with all applicable laws.¹⁵⁰

A host of other Bitcoin-based businesses have also been introduced. KnCMiner has begun to focus on supporting Bitcoin producers by developing hardware to facilitate the process of Bitcoin mining.¹⁵¹ So-called Bitcoin Mints have started to sell real-world metal coins that can be loaded with Bitcoin value.¹⁵² Perhaps even more interesting, however, was the announcement of “BoostVC,” a Bitcoin incubator that provides funding to jumpstart up-and-coming intermediary Bitcoin service providers.¹⁵³

144. BITCOIN ATM EXPLORER, <http://bitcoinatmexplorer.com/> (last visited Dec. 29, 2014).

145. Rich Trenholm, *Apple ‘Stamp of Approval’ for Bitcoin Points away from Apple Currency*, CNET (June 16, 2014, 8:00 AM), <http://www.cnet.com/news/apple-stamp-of-approval-for-bitcoin-points-away-from-apple-currency/>.

146. *Bitcoin History*, *supra* note 137.

147. Trenholm, *supra* note 145.

148. *Bitcoin History*, *supra* note 137.

149. See, e.g., Kaylene Hong, *Apple Removes the Last Remaining Wallet App Blockchain from the App Store*, TNW (Feb. 6, 2014, 5:43 AM), <http://thenextweb.com/apple/2014/02/06/apple-removes-the-last-remaining-bitcoin-wallet-app-blockchain-from-the-app-store/>.

150. Paul Vigna, *Blockchain’s Bitcoin App Reinstated*, WALL ST. J. (July 28, 2014, 9:01 AM), <http://blogs.wsj.com/moneybeat/2014/07/28/blockchains-bitcoin-app-reinstated-in-apples-app-store/>.

151. *Bitcoin History*, *supra* note 137.

152. Robert McMillan, *Bitcoin Mint Reopens After Nastygram from Feds*, WIRED (Jan. 15, 2014, 6:30 AM), <http://www.wired.com/2014/01/casascius-back/>.

153. *Bitcoin History*, *supra* note 137.

The development of an industry of businesses based wholly on Bitcoin lends further credence to the possibility that Bitcoin will continue to grow and eventually achieve a substantial level of mainstream acceptance. At the very least a growing number of entrepreneurs and investors appear willing to bet on the continued growth of Bitcoin via the development business models that are wholly dependent upon the ongoing success of the virtual currency.

Ultimately, a review of the market shows that use of the Bitcoin service is becoming more widespread. Acceptance of Bitcoin as a payment method and investment vehicle continues to grow, and the level of popularity has resulted in an industry of businesses based solely on Bitcoin.

III. CURRENT LEGAL AND REGULATORY ENVIRONMENT

Immediately following its creation, Bitcoin largely operated free from regulatory scrutiny. Initially, the service operated entirely outside of the traditional financial system and had very few users. As a result it evaded the attention of both regulators and the mainstream public. However, Bitcoin's popularity has forced legal and regulatory bodies (both domestic and international) to assess the potential risks of an increasingly mainstream decentralized currency. While the perceived benefits of Bitcoin have enticed new users, merchants, investors, and businesses, the innovative nature of Bitcoin also raises regulatory concerns. Regulators, however, have seemingly struggled to decide how and whether to regulate virtual currency. As a result, the legal and regulatory response domestically and abroad has, to date, been varied. The following sections will: (1) assess the impediments facing regulators seeking to address the risks posed by virtual currencies, and (2) track the domestic and international regulatory responses that have been implemented in an attempt to confront the potential dangers of virtual currencies. The foregoing notwithstanding, what is clear is that Bitcoin's growing acceptance has triggered legal and regulatory responses highlighting both the concerns associated with decentralized virtual currencies and the difficulty of establishing a consistent and coherent legal and regulatory framework to accommodate its unique characteristics.

A. *Potential Impediments to Regulating Bitcoin*

1. *No Centralized Entity*

Bitcoin, as a peer-to-peer network, lacks a centralized regulatory

entity and Bitcoin itself is not an entity or business that can be directly regulated. To date, a core component of financial regulation involves a regulator's ability to impose compliance requirements upon a centralized entity and in turn, the centralized entity's implementation of those requirements. For example, financial regulation commonly imposes requirements aimed at assisting financial regulators in identifying and preventing illicit criminal activity. Bitcoin's decentralized nature creates unique problems for regulators seeking to achieve this goal because Bitcoin lacks a centralized entity that might be able to comply with or implement traditional anti-money laundering laws that require "due diligence . . . monitoring and reporting suspicious activity, running an anti-money laundering compliance program, or accepting and processing legal requests like subpoenas."¹⁵⁴ This makes Bitcoin distinct from other virtual currencies such as WebMoney or Liberty Reserve that, although they permit users to operate anonymously, "still operate as companies with centralized organization capable of instituting programs to ensure compliance with the Bank Secrecy Act" and other legal requirements.¹⁵⁵ Moreover, as noted by Jerry Britto, a senior research fellow at George Mason University, "the Bitcoin protocol leaves governments with no intermediary to shut down There is no Bitcoin company to subpoena, no headquarters to raid, not even a server to shut down."¹⁵⁶ Thus, "[w]hile the state may be able to uncover the identity and punish the parties to a Bitcoin transaction . . . it will no longer be able to prevent those transactions from happening in the first place."¹⁵⁷ In short, Bitcoin poses potential regulatory issues because regulators lack the ability to impose regulatory requirements upon a centralized entity that might assist with early detection and prevention of illicit activity. Moreover, the lack of a centralized entity means that there is no entity that can be held accountable to users, merchants or investors for any harm that is caused.

2. *Increased Anonymity*

Like other virtual currencies, Bitcoin affords users with a degree of anonymity that is greater than many traditional payment systems. While the use of cash effectively provides the user with complete anonymity in a transaction, other traditional payment systems associate a user's

154. FED. BUREAU OF INVESTIGATION, *supra* note 12.

155. *Id.*

156. Adelman, *supra* note 11.

157. *Id.*

personal identifying information with each transaction. For example, if a person purchases an item with a credit or debit card, the customer's name and other identifying information is tied to the account.¹⁵⁸ In contrast, Bitcoin transactions afford greater anonymity. Although “[a]ll Bitcoin transactions are published online . . . the “only information that identifies a Bitcoin user is a pseudo-randomly generated Bitcoin address.”¹⁵⁹ As such, Bitcoin transactions provide a greater degree of anonymity than most traditional payment methods because the user's personal information is not provided in connection with each transaction. As a result, Bitcoin has appealed to users by promising greater security and protection from identity theft.¹⁶⁰

The anonymity afforded to Bitcoin users, however, adds another level of complexity for regulators seeking to address concerns that the service might be used to facilitate illegal activity. Traditionally, financial regulation imposes requirements on the financial institutions that facilitate transactions. For example, financial institutions may be obligated to conduct background checks on their customers and/or monitor customer transactions in order to assist with the discovery of illicit activity such as money laundering or terrorist financing.¹⁶¹ The increased anonymity of Bitcoin transactions impedes the effectiveness of these “customer due diligence” or “know your customer” elements of financial regulation.¹⁶² Even if the parties to a Bitcoin transaction are ultimately discoverable, the increased anonymity that appeals to some users makes it more difficult for the intermediaries who facilitate Bitcoin transactions to effectively assist regulators with policing suspicious

158. See *Bitcoin Gains Popularity: Why More Online Merchants Should Accept It*, STERLING PAYMENT TECHS., <https://www.sterlingpayment.com/news/industry-news/merchant-processing-industry/bitcoin-gains-popularity-why-more-online-merchants-should-accept-it/> (last visited Dec. 30, 2014) (“Credit cards are linked to personal identification information, which makes them susceptible to fraud. Bitcoin is not linked with any personal information such as name or address and thus offers a level of protection against identity theft and fraud.”).

159. FED. BUREAU OF INVESTIGATION, *supra* note 12.

160. *Frequently Asked Questions*, BITCOIN.ORG, <https://bitcoin.org/en/faq> (last visited Jan. 17, 2015).

161. See *Know Your Customer: Quick Reference Guide*, PWC (Jan. 2014), http://www.pwc.com/en_GX/gx/financial-services/publications/assets/pwc-anti-money-laundering-know-your-customer-quick-reference-guide.pdf (“Compliance with anti-money laundering, Know Your Customer (‘KYC’) and sanctions regulatory regimes dominated the financial services landscape Firms operating at a global basis will also need to demonstrate . . . that Anti Money Laundering (‘AML’) regulatory requirements are being adhered to at both local and global level.”).

162. Ariel Deschapell, *Why Know-Your-Customer Rules Won't Work with Bitcoin*, COINDESK.COM (Apr. 13, 2013), <http://www.coindesk.com/know-customer-rules-wont-work-bitcoin/>.

transactions.¹⁶³ Moreover, the increased anonymity makes it more difficult for law enforcement to quickly and efficiently obtain information on users that are found to be engaged in criminal activity.¹⁶⁴

3. *Susceptibility to Theft*

Like cash, bitcoins can be lost or stolen.¹⁶⁵ However, Bitcoin poses unique risks because the currency is stored electronically and the system does not allow for reversals after a transfer or payment is made. Because of these reasons, Bitcoin is attractive to cybercriminals and uniquely susceptible to theft.

As an initial matter, online storage makes bitcoins susceptible to theft by malicious actors that “can compromise personal computers and accounts using malware and hacking techniques to steal users’ bitcoins.”¹⁶⁶ These concerns over lack of protection and suboptimal security are not merely theoretical. As early as 2011, Bitcoin users had reported hundreds of thousands of dollars’ worth of the virtual currency as stolen. The amount of Bitcoin theft seems to have only grown since that time.¹⁶⁷ As of March 2014, reports have estimated that a total of 818,485.77 bitcoins worth approximately \$502,081,166.11 have been stolen.¹⁶⁸ The problem of theft is not limited to the personal computers of individual users being hacked. A number of Bitcoin based businesses have also been targeted successfully. For example, Bitcoin thefts have befallen Mt. Gox (the largest Bitcoin exchange) and Flexcoin (a Bitcoin bank)—both of which failed in the aftermath of the alleged thefts.¹⁶⁹

163. *Id.*

164. *Id.*

165. *The Troubling Holes in MtGox’s Account of How It Lost \$600 Million in Bitcoins*, MIT TECH. REV. (Apr. 4, 2014), <http://www.technologyreview.com/view/526161/the-troubling-holes-in-mtgoxs-account-of-how-it-lost-600-million-in-bitcoins/>; Takashi Mochizuki & Eleanor Warnock, *Mt. Gox Finds 200,000 Missing Bitcoins*, WALL ST. J., Mar. 21, 2014, at C2; Dylan Love, *\$500 Million Worth of Bitcoin Has Been Stolen Since 2010*, BUS. INSIDER (Mar. 11, 2014, 1:31 PM), <http://www.businessinsider.com/how-many-bitcoins-have-been-stolen-2014-3>.

166. FED. BUREAU OF INVESTIGATION, *supra* note 12.

167. Adam Greenberg, *Mt. Gox CEO Lied About Massive Bitcoin Theft According to Alleged Hackers*, SC MAG. (Mar. 10, 2014), <http://www.scmagazine.com/mt-gox-ceo-lied-about-massive-bitcoin-theft-according-to-alleged-hackers/article/337613/>; *List of Bitcoin Heists*, BITCOIN F., <https://bitcointalk.org/index.php?topic=576337> (last visited Mar. 16, 2015).

168. Love, *supra* note 165.

169. Tom Hals, *Failed Bitcoin Exchange Mt. Gox Gets U.S. Bankruptcy Protection*, REUTERS (June 17, 2014), <http://www.reuters.com/article/2014/06/17/us-bitcoin-mtgox-bankruptcy-idUSKBN0ES2WZ20140617>; Warner T. Huston, *A Second Bitcoin Exchange Goes Bankrupt*, BREITBART.COM (Mar. 4, 2014), <http://www.breitbart.com/Big-Government/2014/03/04/A-Second-Bitcoin-Exchange-Goes-Bankrupt>; *FlexCoin Is Shutting Down*, FLEXCOIN.COM (Mar. 3, 2014).

Once stolen, victims have few means of seeking redress. Bitcoin transactions are viewed as final and irreversible.¹⁷⁰ As such, Bitcoin payments are not subject to being challenged or charged back like credit card transactions.¹⁷¹ Instead, only the person receiving the bitcoins can initiate a refund.¹⁷² Moreover, because Bitcoins are not backed by the government or any form of deposit insurance like money stored in traditional bank accounts, victims are not protected from loss if a Bitcoin exchange fails or is hacked.¹⁷³ Accordingly, victims are not protected from loss if they store Bitcoins with an exchange and the exchange fails or suffers a malicious attack or intrusion.

While theft of bitcoins receives the most publicity, the data mining process can also be targeted. FBI “reporting indicates that malicious actors can exploit the way bitcoins are generated by compromising victim computers and instructing them to mine bitcoins.”¹⁷⁴ In short, the irreversible nature of Bitcoin transactions and the wholly online storage system appears to be particularly attractive to cyber thieves in the absence of additional protections and/or security measures. As such, the Bitcoin system provides different risks to users when compared to traditional forms of payment. It follows that Bitcoin raises unique regulatory challenges and considerations that are not necessarily present when considering more traditional forms of payment.

B. *Efforts to Regulate*

Bitcoin appears to promise additional benefits to users while also raising new regulatory challenges. The innovative nature of Bitcoin, however, does not fit neatly into existing models of regulation. Bitcoin

<http://www.flexcoin.com/>.

170. *See Some Things You Need to Know*, BITCOIN.ORG, <https://bitcoin.org/en/you-need-to-know> (last visited Jan. 17, 2015); Nicholas Weaver, *Once You Use Bitcoin You Can't Go 'Back'—And That's Its Fatal Flaw*, WIRED (Nov. 26, 2013), <http://www.wired.com/2013/11/once-you-use-bitcoin-you-cant-go-back-and-that-irreversibility-is-its-fatal-flaw/>. *But see* Eli Dourado, *Stop Saying Bitcoin Transactions Aren't Reversible*, ELIDOURADO.COM (Dec. 4, 2013), <http://elidourado.com/blog/bitcoin-arbitration/>.

171. *See Some Things You Need to Know*, *supra* note 170; Weaver, *supra* note 170.

172. *See Some Things You Need to Know*, *supra* note 170; Weaver, *supra* note 170.

173. *See* Joe Miller, *Bitcoin Vault Offering Insurance Is World's First*, BBC NEWS (Jan. 10, 2014, 11:06 AM), <http://www.bbc.com/news/technology-25680016>; Joe Adler, *Bitcoin Backers Seek FDIC-Style Insurance*, AM. BANKER (Jan. 22, 2014, 12:14 PM), http://www.americanbanker.com/issues/179_15/bitcoin-backers-seek-fdic-style-insurance-1065089-1.html; Anita Ramasastry, *Should Mt. Gox Be Bailed Out?*, JUSTIA.COM (Mar. 11, 2014), <http://verdict.justia.com/2014/03/11/mt-gox-bailed>.

174. FED. BUREAU OF INVESTIGATION, *supra* note 12.

has received increasing regulatory scrutiny with many jurisdictions tackling the questions of whether to regulate virtual currencies, and if so, how to implement an appropriate regulatory framework. To date, the global regulatory response has been varied. Most jurisdictions have yet to affirmatively enact virtual currency specific regulation. Some jurisdictions seem amenable to the continued acceptance of virtual currency while others appear averse to idea. The United States has made great efforts to understand the functionality and risks of virtual currency. The foregoing notwithstanding, the development of a regulatory framework in the United States appears to be somewhat fragmented as various bodies have provided limited guidance to clarify the treatment of virtual currency under existing laws. Though this approach may be lacking, the regulatory response thus far suggests that the United States is willing to accommodate the continued use of virtual currency so long as the risks associated with it can be mitigated to an appropriate degree.

1. *Foreign Response*

In an effort to assess what measures might be appropriate for implementation in the United States, the Law Library of the U.S. Congress surveyed the regulation of Bitcoin in forty foreign jurisdictions.¹⁷⁵ Despite variances in regulatory treatment, the survey showed that country-specific responses generally fell into one of the following broad categories: (1) no action to implement regulation of virtual currency, (2) clarification of tax treatment of virtual currency without further regulation, (3) prohibition or other limitations on the use of virtual currency, and (4) recognition of virtual currency as a form of currency that will be regulated as such.

Most countries fall into the first group—those that have not yet acted to formally regulate virtual currency. This group includes Alderney, Argentina, Australia, Belgium, Canada,¹⁷⁶ Chile, Croatia, Cyprus, Denmark,¹⁷⁷ Estonia, the European Union, France, Greece, Hong Kong,

175. Anita Ramasastry, *Bitcoin: If You Can't Ban It, Should You Regulate It? The Merits of Legalization*, JUSTIA.COM (Feb. 25, 2014), <http://verdict.justia.com/2014/02/25/bitcoin-cant-ban-regulate#sthash.4oUpDzhi.dpuf>.

176. *See, e.g.*, Braga, *supra* note 11.

177. It has been reported however, that Denmark is seeking to prepare standards that would amend currently existing financial regulation to prevent money laundering through virtual currencies. Frances Schwartzkopff & Peter Levrin, *Bitcoins Spark Regulatory Crackdowns as Denmark Drafts Rules*, BLOOMBERG (Dec. 18, 2013), <http://www.bloomberg.com/news/2013-12-17/bitcoin-rules-drafted-in-denmark-as-regulator-warns-against-use.html>; *see also* Braga, *supra* note 11.

India, Indonesia, Ireland, Italy, Japan, Malaysia, Malta, the Netherlands, New Zealand, Nicaragua, Poland, Portugal, Russia, Singapore, South Korea, Taiwan, and Turkey.¹⁷⁸ Given the relative newness of virtual currency and the fact that it has only recently started gaining widespread acceptance, it is not surprising that many jurisdictions have taken a wait-and-see approach. Regulation often lags behind innovations in the market and only time will tell how and whether these jurisdictions will regulate virtual currencies.

The second group of countries can be categorized as having clarified the manner in which virtual currencies such as Bitcoin will be taxed. However, these countries have not yet addressed how and whether the use of virtual currency will be regulated. For example, the United Kingdom has stated that “bitcoin is currently unregulated.”¹⁷⁹ Though unregulated, “Her Majesty’s Revenue and Customs [department] has classed bitcoins as ‘single purpose vouchers’ . . . [subject] to a value-added tax of 10–20%.”¹⁸⁰ Similarly, Norway,¹⁸¹ Spain, and Finland will assess bitcoins as capital property subject to a value-added tax of up to twenty-five percent.¹⁸² Adopting a somewhat different approach, Slovenia and Israel assess profits derived from Bitcoin as taxable income.¹⁸³ While the tax-treatment may vary, these jurisdictions appear to have taken a first step towards clarifying the legal and regulatory landscape for virtual currencies. However, the limited response fails to affirmatively address many of the other regulatory considerations impacting the growing use of virtual currency in the market. Instead, these jurisdictions remain silent with respect to the regulation of virtual currency, leaving the legal landscape applicable to virtual currencies largely uncertain.

A third group of countries has opted to ban or severely limit the use of virtual currencies. This group of countries includes Thailand, China, and

178. GLOBAL LEGAL RESEARCH DIRECTORATE STAFF, LAW LIBRARY OF CONG., REGULATION OF BITCOIN IN SELECTED JURISDICTIONS (Jan. 2014), available at <http://www.loc.gov/law/help/bitcoin-survey/regulation-of-bitcoin.pdf> [hereinafter BITCOIN SURVEY]; Ramasastry, *supra* note 175.

179. BITCOIN SURVEY, *supra* note 178.

180. *Id.*

181. *See, e.g.*, Braga, *supra* note 11.

182. *Id.* (“Finland, for example, is the latest country to deny Bitcoin categorization as a currency or payment method, according to Paeivi Heikkinen, head of oversight at the Bank of Finland in Helsinki. Mr. Heikkinen told Bloomberg the currency was, instead, more comparable to a commodity.”).

183. BITCOIN SURVEY, *supra* note 178.

Iceland.¹⁸⁴ Thailand took the boldest step when the Bank of Thailand ruled Bitcoin illegal.¹⁸⁵ Although Bitcoin is not illegal in China, “the People’s Bank of China and four other ministries and agencies announced that banks and payment companies were prohibited from dealing with the coin.”¹⁸⁶ Because all banks and payment institutions in China are prohibited from dealing in Bitcoin, the use of Bitcoin and development of Bitcoin-based businesses is severely impaired. In short, Chinese banks and payment companies are prohibited from exchanging Chinese currency for bitcoin and otherwise participating in any Bitcoin transactions. Iceland, although not banning the use of Bitcoin entirely, has “stated that engaging in foreign exchange trading with bitcoins is prohibited, based on the country’s Foreign Exchange Act.”¹⁸⁷ The foregoing examples show that responses to Bitcoin are not limited to attempts at designing a framework that embraces the continued use of virtual currencies. Instead, some jurisdictions have opted to take a position that appears averse, if not hostile, to the continued growth and use of virtual currencies.

In contrast, the fourth group of countries can be categorized as recognizing the validity of virtual currencies and seeking to either develop new regulations or extend existing laws. In doing so, these jurisdictions appear to be leveraging concepts from traditional financial regulation and adapting them for use with virtual currencies. Three countries have taken affirmative steps to recognize and regulate Bitcoin as a valid currency or form of payment akin to traditional payment methods. “On October 9, 2013, Brazil enacted Law No. 12,865, which created the possibility for the normalization of mobile payment systems and the creation of electronic currencies, including the bitcoin.”¹⁸⁸ Germany, similarly, views Bitcoin exchanges as financial service companies that “must fulfil[l] strict standards of operation” including meeting initial capital requirements, maintaining certain professional qualifications, and reporting transactions to Germany’s financial regulator, BaFin.¹⁸⁹ Sweden, although not creating a regulatory

184. *Id.*

185. *Id.*

186. Kashmir Hill, *Bitcoin in China: The Fall-out from Chinese Government Banning Real World Use*, FORBES (Dec. 6, 2013, 2:24 PM), <http://www.forbes.com/sites/kashmirhill/2013/12/06/bitcoin-in-china-the-fall-out-from-chinese-government-banning-real-world-use/>; see also Braga, *supra* note 11. This announcement also famously resulted in a precipitous drop in the value of Bitcoin worldwide.

187. BITCOIN SURVEY, *supra* note 178.

188. *Id.*

189. Emily Spaven, *Germany Officially Recognizes Bitcoin as ‘Private Currency’*,

framework unique to virtual currency, has found that Bitcoin constitutes “a financial service, subject to a mandatory reporting requirement.”¹⁹⁰ By opting to take steps toward developing regulation applicable to virtual currencies or clarifying the applicability of existing law, these jurisdictions appear to be more willing to permit the continued growth of virtual currencies so long as any associated risks can be mitigated.

As evidenced by the foregoing survey, the global regulatory response has been varied. Foreign jurisdictions have dealt with the unique characteristics and distinct risks of virtual currency in different ways. In analyzing the various approaches, one thing is certain: Foreign jurisdictions appear to be split when it comes to their willingness to accept the possibility of virtual currency serving as an alternative payment method.¹⁹¹

2. *United States Response*

While discussion regarding development of appropriate regulatory frameworks necessarily lags behind innovations such as virtual currency, the United States has been described as being “at the head of the pack” with respect to its efforts at understanding, developing and implementing a regulatory response.¹⁹² The foregoing notwithstanding, the current legal environment in the United States evidences what appears to be development and implementation absent a master plan. To date, the United States has made great efforts to understand the unique characteristics and potential risks of virtual currency. Nonetheless, virtual currency hearings have not yielded any formal recommendations or guidance. As a result, regulatory bodies, courts and state legislatures have acted independently resulting in a regulatory mishmash of guidance, clarification, extension and ongoing discussion.

In November 2013, the United States Senate Committee on Homeland Security and Governmental Affairs held a hearing entitled, “Beyond Silk Road: Potential Risks, Threats, and Promises of Virtual Currency” to assess whether “regulatory actions should be taken regarding Bitcoins.”¹⁹³ After hearing testimony, the committee “seemed to be open

COINDESK.COM (Aug. 19, 2013), <http://www.coindesk.com/germany-official-recognises-bitcoin-as-private-money/>.

190. BITCOIN SURVEY, *supra* note 178.

191. Ramasastry, *supra* note 175.

192. *Id.*

193. Jason Mick, *U.S. Government: Bitcoin Has . . . Confused the Heck Out of Many of Us*, DAILYTECH (Nov. 19, 2013, 7:30 PM), <http://www.dailytech.com/US+Government+Bitcoin+hasConfused+the+Heck+Out+of+Many+of+Us/article33780.htm>.

to the idea of bitcoins,” but it stopped short of making any formal recommendations.¹⁹⁴ In the absence of formal recommendations and the lack of any other overarching effort to develop a harmonized framework for virtual currency, the regulatory environment facing virtual currency remained unsettled.

At present, the United States has not taken any affirmative action to ban virtual currency. Instead, the regulatory landscape in the United States evidences a number of differing approaches to clarifying the regulatory requirements applicable to virtual currencies with each of the following contributing to the incremental development of a regulatory framework: (1) uncertainty as to the scope of existing laws and their application to virtual currencies in the absence of definitive guidance; (2) the provision of definitive guidance from federal and state regulatory bodies as well as courts regarding the treatment of virtual currency within the context of existing laws, including the extension of such laws to govern virtual currency; and (3) ongoing discussions and progress towards the enactment of virtual currency specific regulation at the state level. Ultimately, the U.S. regulatory response has provided increased clarity, but may fall short of creating an effective legal and regulatory framework for virtual currency.

a. Uncertain Scope of Existing Law

In the absence of clear guidance, the presence of existing state and federal laws may obviate the need for virtual currency specific legislation. That is to say, the scope of existing law may be interpreted broadly as applying to virtual currencies even if virtual currencies were not contemplated at the time of adoption or do not fit neatly within the statutory framework.

For example, “[m]odern theft statutes allow for prosecution for the taking of intangible property.”¹⁹⁵ As such, virtual currency could be construed as intangible property under the statute. However, the majority of these statutes exist only at the state level and “[s]tate authorities often do not have the resources to pursue crimes on the Internet [or] . . . outside the United States.”¹⁹⁶ Accordingly, these state statutes

194. *Id.*

195. Peter J. Henning, *For Bitcoin Square Peg Meets Round Hole Under the Law*, N.Y. TIMES (Dec. 9, 2013, 11:43 AM), http://dealbook.nytimes.com/2013/12/09/for-bitcoin-square-peg-meets-round-hole-under-the-law/?_php=true&_type=blogs&_php=true&_type=blogs&_php=true&_type=blogs&_r=2&

196. *Id.*

may not be particularly effective to deter Bitcoin theft or provide a meaningful remedy to victims. Federal authorities, although better equipped to prosecute cyber-crime may not have the statutory authority to do so. Commentators have noted that “[t]here is a federal law used to prosecute the interstate transportation of stolen property, but it only applies . . . to the theft of physical items and not intangible properties like virtual currency.”¹⁹⁷ Other more applicable federal statutes do exist, such as federal anti-wire fraud statutes or the Computer Fraud and Abuse Act, which “makes it a crime to use a computer with the intent to defraud in obtaining anything of value from the victim.”¹⁹⁸ This may provide alternative mechanisms for federal authorities to prosecute online theft. However, the applicability of these statutes to virtual currency is unsettled because neither statute explicitly applies to Bitcoin and no steps have been taken to clarify or amend the statutes. As such, the question of “[w]hether stealing Bitcoins from an owner’s account would constitute fraud [within the meaning of these statutes] is [still] unclear.”¹⁹⁹

The foregoing examples highlight a common problem with regulating innovative products and services. Regulation often lags behind, leaving an uncertain legal environment. Existing laws often fail to contemplate advances and may not be suitable for extension. Even if the language of the existing statute could be construed as broadly inclusive of an innovation such as virtual currency, the lack of clear guidance and/or precedence as to the applicability of such statutes leaves the legal and regulatory environment unsettled.

b. Clarifying Existing Law

While the applicability of some laws has yet to be clarified, governmental agencies at both the federal and state levels have started to issue their own guidance as to the treatment of virtual currency under the existing laws that fall under their purview.

In March 2013, the U.S. Treasury Department’s Financial Crimes Enforcement Network (FinCEN) announced that “companies or individuals that serve as sellers or exchangers for Bitcoin,” but not Bitcoin investors or miners “may be regulated as money transmitters.”²⁰⁰ In doing so, FinCEN unambiguously clarified the applicability of the

197. *Id.*

198. *Id.*

199. *Id.*

200. See Ramasastry, *supra* note 175; FIN-2013-G001, *supra* note 27, at 3.

existing federal anti-money laundering regulatory regime to virtual currency. FinCEN's regulation requires that money transmitters register and report their transactions to the federal government.²⁰¹ "[F]ederal law . . . do[es] not create large . . . burdens [such as] . . . large licensing fees, minimum capital requirements or restrictions on how money held by sellers or exchanges is invested,"²⁰² which are common under state money transmitter laws aimed at consumer protection.²⁰³ What may create more severe regulatory burdens for Bitcoin firms, however, is the potential for further and often unpredictable state-based regulation of virtual currencies. In order to be in compliance with federal guidelines, money transmitters also need to "obtain state money licenses" in order to avoid "being prosecuted as unlicensed money transmitters."²⁰⁴ Accordingly, some commentators note that the FinCEN announcement "may set off a race among states . . . to determine if and how their laws apply."²⁰⁵

Few states have issued guidance or affirmatively amended their statutes to explicitly account for virtual currency. In states that have yet to address the applicability of their money transmitter laws to virtual currency, the typically broad definition of regulated money transmission could be construed as covering many virtual currency transactions. Specifically, state money-transmitter laws commonly impose regulatory compliance requirements on any person or entity that receives money or monetary value for the purpose of transferring it to another person or place.²⁰⁶ Accordingly, a third-party that either (1) accepts bitcoin from one person for the purpose of transferring the bitcoin to another location or person or (2) accepts bitcoin or legal tender from one person for the purpose of exchanging it and transferring it to another person or location, could conceivably be construed as engaging in regulated money transmission under state law. Because few states have issued interpretive guidance or amended their statutes to clarify the question of applicability to virtual currencies, it is ultimately unclear whether any

201. Ramasastry, *supra* note 175; FIN-2013-G001, *supra* note 27, at 3.

202. Ramasastry, *supra* note 175; see also Brett World, *U.S. Treasury Cautions Bitcoin Businesses on Compliance Duties, Advocate Cites 'Chilling Effect'*, REUTERS (Jan. 6, 2014), <http://blogs.reuters.com/financial-regulatory-forum/2014/01/06/u-s-treasury-cautions-bitcoin-businesses-on-compliance-duties-advocate-cites-chilling-effect/>.

203. Kevin V. Tu, *Regulating the New Cashless World*, 65 ALA. L. REV. 77, 93 (2013).

204. Ramasastry, *supra* note 175; see also 18 U.S.C. § 1960 (2012); Tu, *supra* note 203.

205. Ramasastry, *supra* note 175.

206. See, e.g., Transmitters of Money Act, 205 ILL. COMP. STAT. 657 / 1-105 (2014); see also Tu, *supra* note 203.

particular virtual currency based business model is subject to state money transmitter regulation.

Kansas and Texas, however, are two states that have issued general guidance on the question. In both Kansas and Texas, the applicable state regulator concluded that decentralized virtual currencies such as bitcoin do not constitute money and do not have monetary value.²⁰⁷ Because no money or monetary value is involved, a person that is only engaged in the exchange or transfer of a decentralized virtual currency from one person to another person or location is not subject to the licensing and other regulatory requirements under Kansas and Texas money transmitter laws.²⁰⁸ However, a third-party exchanger is likely to be engaging in regulated money transmission because a typical exchange transaction involves the receipt and transfer of legal tender by the third-party exchanger as an intermediary for the two parties to the transaction.²⁰⁹ The same is true of a Bitcoin ATM where the Bitcoin ATM acts as a third-party intermediary for two other parties.²¹⁰ In contrast, Bitcoin ATMs that are structured as a transaction between two parties, the customer, and the operator of the Bitcoin ATM, are unlikely to be regulated under Kansas and Texas law because there is no transmission (i.e., a promise to make the legal tender available at a later time to another person or at another location).²¹¹

Even with guidance from some states, the resulting regulatory environment remains unsettled. Specifically, the lack of action in many states means that regulators in different states could ultimately take different positions on the applicability of state money transmitter laws to virtual currencies. In the end, the current state of federal and state money transmitter regulation in the context of virtual currencies highlights the

207. See KAN. OFFICE OF THE STATE BANK COMM’R, MT 2014-01, REGULATORY TREATMENT OF VIRTUAL CURRENCIES UNDER THE KANSAS MONEY TRANSMITTER ACT (2014), available at http://www.osbckansas.org/mt/guidance/mt2014_01_virtual_currency.pdf (“One important characteristic of cryptocurrency is its lack of intrinsic value. A unit of cryptocurrency does not represent a claim on a commodity, and is not convertible by law. And unlike fiat currencies, there is no governmental authority or central bank establishing its value through law or regulation. Its value is only what a buyer is willing to pay for it.”); TEX. DEP’T OF BANKING, SUPERVISORY MEMORANDUM - 1037 (2014), available at <http://www.dob.texas.gov/public/uploads/files/consumer-information/sm1037.pdf> (“Because neither centralized virtual currencies nor cryptocurrencies are coin and paper money issued by the government of a country, they cannot be considered currencies under the statute.”).

208. See KAN. OFFICE OF THE STATE BANK COMM’R, *supra* note 207 (clarifying the applicability of the Kansas Money Transmitter Act to virtual currencies such as Bitcoin).

209. *Id.*; see also TEX. DEP’T OF BANKING, *supra* note 207.

210. *Id.*

211. *Id.*

potential for lack of harmonization when regulatory bodies act independently in responding to innovations such as Bitcoin.

The United States District Court for the Eastern District of Texas attempted to define virtual currency for the purposes of regulation under the existing provisions of the Securities Act of 1933 and the Securities and Exchange Act of 1934.²¹² The case stems from a Securities and Exchange Commission (SEC) complaint charging a Texas man with defrauding investors in a Ponzi scheme involving Bitcoin.²¹³ The SEC charged Trendon T. Shavers, the founder and operator of Bitcoin Savings and Trust (BTCST), with offering and selling Bitcoin-denominated investments in violation of the anti-fraud and registration provisions of 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-5.²¹⁴ The defendants moved to dismiss the complaint on the grounds that bitcoins are not money and therefore any investments solicited and accepted by the defendants were not investments of money under the federal securities laws.²¹⁵ In short, the defendants argued that no money ever exchanged hands.²¹⁶ The SEC argued that the Bitcoin investments at issue constituted “both investment contracts and notes, and, thus, are securities” subject to regulation under existing federal securities laws.²¹⁷ Ultimately, the court agreed with the SEC in determining that “Bitcoin is a currency or form of money” and that the investors “provided an investment of money.”²¹⁸ In denying the defendant’s motion, the court reasoned that:

The term “security” is defined as “any note, stock, treasury stock, security future, security-based swap, bond...[or] investment contract...” 15 U.S.C. § 77b. An investment contract is any contract, transaction, or scheme involving (1) an investment of money, (2) in a common enterprise, (3) with the expectation that profits will be derived from the efforts of the promoter or a third-party. *SEC v. W.J. Howey & Co.*, 328 U.S. 293, 298-99 (1946); *Long v. Shultz Cattle Co.*, 881 F.2d 129, 132 (1989). First, the Court must determine whether the BTCST investments constitute an investment of money. It is clear that

212. *SEC v. Shavers*, No. 4:13-cv-00416, 2013 WL 4028182, at *2 (E.D. Tex. Aug. 6, 2013).

213. Complaint at 1–2, *SEC v. Shavers*, No. 4:13-cv-00416 (E.D. Tex. July 23, 2013).

214. *Id.* at 8–9.

215. *Shavers*, 2013 WL 4028182.

216. *Id.* at *1.

217. *Id.* at *1.

218. *Id.* at *2.

Bitcoin can be used as money. It can be used to purchase goods or services, and as Shavers stated, used to pay for individual living expenses. The only limitation of Bitcoin is that it is limited to those places that accept it as currency. However, it can also be exchanged for conventional currencies, such as the U.S. dollar, Euro, Yen, and Yuan. Therefore, Bitcoin is a currency or form of money, and investors wishing to invest in BTCST provided an investment of money.²¹⁹

As evidenced by the court's ruling, at least one federal court has determined that Bitcoin constitutes currency or a form of money for the purpose of federal securities laws and potentially subject to regulation as such. In doing so, the court clarified how virtual currencies such as Bitcoin fit within the existing federal securities law framework.

The IRS has also provided guidance applicable to the treatment of virtual currencies under existing federal tax laws.²²⁰ The IRS acknowledged that virtual currencies lack the status of legal tender, but can be held as an investment and/or used to purchase goods and services.²²¹ Moreover, the IRS determined that certain virtual currencies—those that have an equivalent value in real currency—are treated as property.²²² Therefore, general rules applicable to property transactions may apply to virtual currency transactions.²²³ For example, the gain or loss from the sale or exchange of virtual currency for other property is taxable.²²⁴ Likewise, wages paid to an employee in virtual currency and virtual currency received in payment for goods or services

219. *Id.*

220. See I.R.S. News Release IR-2014-36, *supra* note 43; I.R.S. Notice 2014-21, at 6 (Mar. 25, 2014), available at <http://www.irs.gov/pub/irs-drop/n-14-21.pdf> [hereinafter IRS NOTICE 2014-21].

221. See I.R.S. News Release IR-2014-36, *supra* note 43; I.R.S. Notice 2014-21, *supra* note 220, at 6.

222. See I.R.S. News Release IR-2014-36, *supra* note 43; I.R.S. Notice 2014-21, *supra* note 220, at 6.

223. If virtual currencies are indeed considered property for the purposes of federal tax law, it could negatively impact their value to corporations. Because corporations do not receive preferential capital gains treatment, the gain recognized on the sale or exchange of Bitcoin in any transaction would be taxed to most corporations at thirty-four percent or thirty-five percent. See JAMES S. EUSTICE & BORIS I. BITTKER, FEDERAL INCOME TAXATION OF CORPORATIONS AND SHAREHOLDERS § 5.01, at 5-4 to 5-5 (1998). Moreover, corporations must recognize a gain on any non-liquidating distribution of appreciated property. 26 U.S.C. § 311(a) (1988). As such, Bitcoin distributions to shareholders are subject to both a corporate and shareholder level tax in addition to the income the corporation recognizes on the sale or exchange of Bitcoin. See EUSTICE & BITTKER, *supra*, at § 8.22, at 8-77 to 8-82. This may result in corporations choosing not to accept or capitalize with Bitcoin.

224. I.R.S. Notice 2014-21, *supra* note 220, at 3-4.

is taxable as income.²²⁵ Virtual currency, therefore, is property for federal tax purposes.

As evidenced by the foregoing, the regulatory landscape affecting virtual currency has become somewhat clearer with guidance establishing the regulatory treatment of virtual currency under existing laws. While the laws have not been amended to explicitly account for virtual currencies, a greater level of certainty exists as to how regulators and the courts are likely to view virtual currencies in the context of these discrete statutory frameworks and existing statutory definitions. With that said, these incremental responses are the result of independent action that is narrowly focused on specific issues or regulatory considerations impacting virtual currency in a particular context (i.e., anti-money laundering, securities, or tax). As a result, ongoing action that independently clarifies the applicability of a particular law or regulation to virtual currency could result in a lack of cohesion and potentially even inconsistency as to the regulation of virtual currencies across jurisdictions and regulatory bodies.

c. Virtual Currency Specific Legislation

Some states have opted to consider amending existing statutes to specifically account for virtual currencies or to enact new virtual currency specific legislation as a means of accounting for virtual currency's unique characteristics and potential regulatory risks. In doing so, these states would be attempting to develop a regime specifically designed for virtual currency instead of either remaining silent as to the applicability of existing laws or simply attempting to clarify how virtual currency fits into existing regulatory frameworks.

For some time, it was presumed that California's law regarding the issuance of currency, section 107 of California's Corporations Code, would prohibit the use or acceptance of virtual currencies not issued by a government entity.²²⁶ However, in order to "accommodate the growing use of alternative payment methods such as bitcoin," Governor Jerry Brown signed into law "AB-129 Lawful Money: Alternative Currency" which repealed section 107.²²⁷ In doing so, California clearly and unambiguously sought to accommodate virtual currency and clarify that

225. *Id.* at 4-5.

226. See CAL. CORP. CODE § 107 (West, Westlaw through 2014 Reg. Sess.).

227. Jeremy Kirk, *California Removes Ban on Bitcoin, Dogecoin, and Other Alternative Currencies*, PCWORLD (June 30, 2014), <http://www.pcworld.com/article/2449020/california-law-removes-ban-on-alternative-currencies.html>.

the issuance and use of virtual currency is not banned under California law, an act that is “likely to boost confidence around bitcoin” and other virtual currencies.²²⁸

Instead of modifying existing law, New York is actively developing Bitcoin-specific regulation. In February 2014, the New York State Department of Financial Services (DFS) held a hearing to assess whether the state should “establish what has been called a ‘BitLicense’ . . . [a unique license for virtual currency that would] keep sellers on a regulator’s radar screen, not only for purposes of law enforcement, but also for consumer-protection purposes.”²²⁹ Following the hearing, the DFS issued an order announcing that it “will consider proposals and applications in connection with the establishment of virtual currency exchanges located in the State of New York.”²³⁰ Approved virtual currency exchanges will be required to comport with the virtual currency regulatory framework to be proposed by DFS.²³¹ DFS has indicated its intent to propose its regulatory framework, including a specifically tailored BitLicense, no later than the end of the second quarter of 2014.²³² A press release from DFS also notes that DFS expects to start considering proposals and applications for virtual currency firms other than exchanges in the near future.²³³ In creating a virtual currency regulatory framework, DFS has stated that its goal is to: “balance creating appropriate regulatory protections without stifling beneficial innovation in the development of new payments platforms.”²³⁴

In sum, the current United States regulatory environment for virtual currency evidences a concerted effort by the government and regulatory bodies to fully understand the functionality and implications of an increasingly mainstream decentralized virtual currency such as bitcoin. To date, the creation of a regulatory framework appears to be occurring incrementally as guidance as to the applicability of existing laws to virtual currency is provided and/or steps are taken to pass legislation tailored specifically towards virtual currency. In the absence of such

228. *Id.*

229. Ramasastry, *supra* note 175.

230. See N.Y. State Dep’t of Fin. Servs., Order Pursuant to N.Y. Banking Law §§ 2-b, 24, 32, 102-a, and 4001-b and Financial Services Law §§ 301(c) and 302(a) (Mar. 11, 2014), http://www.dfs.ny.gov/about/po_vc_03112014.pdf.

231. *Id.*

232. *Id.*

233. *Id.*

234. *NYFDS Issues Public Order on Virtual Currency Exchanges*, N.Y. STATE DEP’T OF FIN. SERVS., http://www.dfs.ny.gov/about/po_vc_03112014.htm (last visited Mar. 1, 2015).

guidance or legislative action, uncertainty as to the scope and applicability of existing laws remains. As a whole, however, the regulatory response in the United States can be described as generally open to the continued growth and use of virtual currency as a viable payment alternative so long as appropriate regulations can be implemented to address the risks associated with increasingly mainstream virtual currency usage and business models.

Specifically, the United States has not yet provided any clear indication that it would prohibit or ban virtual currency. Instead, the United States' response seems to be focused on trying to accommodate virtual currency with California and New York, or perhaps Silicon Valley and Wall Street, leading the discussion on the development of virtual currency regulatory frameworks at the state level. Moreover, other federal and state responses appear focused on extending existing regulation to virtual currency where the potential risk from virtual currency aligns with the goals of existing laws. While this process has resulted in some additional clarity, the efforts appear to be occurring independently with different agencies or courts focusing narrowly upon a discrete set of regulatory concerns or the extension of a particular regulatory framework. As a result, it is possible that continuing on this path for developing virtual currency regulation may lead to a confusing and complex, or even incoherent regulatory environment, resulting in unforeseen problems requiring harmonization in the future.

IV. REFOCUSING ON REGULATORY OBJECTIVES

We have shown that the potential advantages²³⁵ of Bitcoin as a payment method and investment vehicle have contributed to its increasingly mainstream use. Bitcoin's rise in popularity, however, has also necessitated increased scrutiny as to its potential risks. The anonymity afforded to Bitcoin users, for example, has led to a concern that the currency will be used for criminal purposes.²³⁶ Similarly,

235. See, e.g., Reuben Grinberg, *Bitcoin: An Innovated Alternative Digital Technology*, 4 HASTINGS SCI. & TECH. L.J. 159, 168–76 (2012); Kier Thomas, *Could the Wikileaks Scandal Lead to New Virtual Currency?*, PC WORLD (Dec. 10, 2010, 4:30 PM), http://www.pcworld.com/businesscenter/article/213230/could_the_wikileaks_scandal_lead_to_new_virtual_currency.html; Doguet, *supra* note 37, at 1126.

236. See *id.*

237. See Ramasastry, *supra* note 175; Kim Zetter, *FBI Fears Bitcoin's Popularity with Criminals*, WIRED (May 9, 2012), <http://www.wired.com/2012/05/fbi-fears-bitcoin/>; Miranda Sumey, *What's the Buzz About Bitcoin?*, CYBERSECURITY POL'Y & RES. INST. (Aug. 28, 2013), <http://www.cspri.seas.gwu.edu/blog/2014/7/25/whats-the-buzz-about-bitcoin>.

because Bitcoin operates independently from any governmental authority, many have expressed a concern that it lacks the safeguards necessary to ensure consumer safety or the prevention of fraud.²³⁷

As demonstrated by the global response to date, Bitcoin poses unique challenges and little consensus exists on how to best regulate virtual currency. In evaluating the U.S. response, we have concluded that policymakers appear receptive to the continued growth and use of virtual currency so long as its associated risks can be mitigated with appropriate regulation. The foregoing notwithstanding, we questioned the United States' current process for developing a legal and regulatory framework. Specifically, we suggested that: (1) current thinking about virtual currency regulation is too narrowly focused on specific substantive issues,²³⁸ and (2) the developing regulatory environment may be flawed as a result of independent agency action absent sufficient consideration of how such action fits into other developing aspects of the virtual currency regulatory regime as a whole.²³⁹ As such, the current approach may fail to facilitate a big-picture discussion of the spectrum of issues raised by virtual currency and collaboration between the different agencies with a role in regulating virtual currency.

To address this potential shortcoming, we propose that collectively examining the regulatory objectives underlying existing law (as applied to virtual currency) can be a valuable tool to advance the discussion and development of a comprehensive and coherent system of virtual currency regulation. While an analysis of all potentially applicable laws is beyond the scope of this Article, we examine the following laws, which have most commonly been suggested as having some bearing on the regulation of virtual currency: (1) federal prohibitions on private currency and the counterfeiting of government issued currency,²⁴⁰ (2)

237. Doguet, *supra* note 37, at 1124.

238. Current efforts appear focused on clarifying whether the technical requirements of existing laws apply to virtual currency. As such, the applicable regulatory body has been focused on questions of statutory interpretation and clarifying the treatment of virtual currency under existing laws within their purview. Accordingly, this narrow focus may not allow for sufficient consideration of the many issues that are raised by virtual currency.

239. Because current efforts are characterized by clarification of existing law as applied to virtual currency, action is being taken independently by each regulatory body that is charged with enforcing a law that potentially impacts virtual currency. With such limited focus, there is little room for cross-communication with other agencies to ensure consistency amongst the various regulatory responses.

240. See, e.g., Derek A. Dion, Note, *I'll Gladly Trade You Two Bits on Tuesday for A Byte Today: Bitcoin, Regulating Fraud in the e-Conomy of Hacker-Cash*, 2013 U. ILL. J.L. TECH. & POL'Y, 165, 172–74 (2013).

federal anti-money laundering legislation,²⁴¹ (3) state money-transmitter laws,²⁴² (4) federal securities law and SEC regulations, and (5) federal banking laws.²⁴³ With respect to each, we examine whether the policy goals that motivated the passage of those laws would be served in the context of regulating decentralized virtual currency. We conclude that regulation of virtual currency is justified based on these legitimate regulatory objectives.

More importantly, this exercise provides new perspective that facilitates consideration of virtual currency regulation holistically and encourages interagency discussion. We argue that refocusing on collective regulatory goals removes the constraints of current efforts to regulate virtual currency. In doing so, regulators and policymakers will be removed from the unavailing process of attempting to define virtual currency in traditional terms (e.g. currency, investment, property, commodity, or otherwise) and the restricted exercise of merely determining the applicability of existing laws.

Instead, this approach engages policymakers and regulators to think more broadly and creatively by: (1) looking at the regulatory goals that are promulgated by the host of existing laws regardless of their ultimate suitability for application to virtual currency, (2) making objective determinations about the degree to which similar regulatory considerations are implicated by virtual currency as distinct from predefined constructs, and (3) considering how to best regulate virtual currency (and its unique characteristics) to advance these goals. Regardless of how virtual currency law develops (e.g. via overarching legislation or a system of distinct federal and state laws), we suggest that this approach will supplement existing efforts and contribute to the development of comprehensive, cohesive, and appropriately scaled regulatory framework.

A. *Federal Prohibitions on Private Currencies*

One aspect of Bitcoin that is particularly troublesome to regulators is its marked similarity, in some respects, to traditional currencies or “money.”²⁴⁴ As such, the legal frameworks impacting the issuance of currency may be informative when evaluating the risks of virtual currency and regulating to address such risks. Federal statutes as well as

241. See, e.g., *id.* at 178.

242. See, e.g., Kaplanov, *supra* note 122, at 156.

243. See, e.g., *id.* at 158.

244. Dion, *supra* note 240, at 172; BRITO & CASTILLO, *supra* note 45, at 15.

the United States Constitution reserve to the federal government an exclusive right to issue currency.²⁴⁵ The federal monopoly on the issuance of currency is maintained by Article I, Section 8 of the Constitution, which grants Congress the exclusive power to coin money,²⁴⁶ and the Stamp Payments Act of 1862, which restricts the issuance of private currency.²⁴⁷ Whether the creation of a bitcoin constitutes the issuance of private currency under the Stamp Payments Act, is unclear. Moreover, simply considering whether virtual currency falls within the ambit of these laws is of little value to the development of a virtual currency regulatory regime because virtual currency does not fit neatly into the provisions of either the Constitution or the Stamp Payment Act. Nonetheless, given the similarities between the virtual and traditional currency, the policy goals and objectives underlying the restrictions on issuance of private currency remain instructive to the continuing development of a comprehensive virtual currency regulatory framework in the United States. Because “[t]he Constitution only prohibits states [and not private companies or individuals] from coining money,”²⁴⁸ however, this analysis will focus on the provisions of the Stamp Payments Acts as they are most immediately relevant.

1. *Stamp Payments Act Policy Goals*

As a historical matter, the primary purpose of the Stamp Payments Act was to prevent the hoarding and destruction of U.S. government-issued currency. However, modern “[j]udicial interpretations of the Act . . . indicate the [true] touchstone of the Act is [the prevention of] competition with official currency.”²⁴⁹ Therefore, as a practical matter, the currently accepted purpose of the Stamp Payments Act is to restrict the development of any form of money or currency (other than the United States dollar) that is intended to circulate universally.

The Stamp Payments Act was enacted in response to currency shortages during the nineteenth century.²⁵⁰ At the time, “inflation [had] caused the metal in . . . official [United States] coins to become more

245. U.S. CONST. art. I, § 10, cl. 1.

246. Article I, Section 8 of the United States Constitution provides that: “The Congress shall have Power . . . To coin money, regulate the Value thereof, and of foreign Coin, and fix the Standard of Weights and Measures.” U.S. CONST. art. I, § 8, cl. 5.

247. *See* 18 U.S.C. § 336 (2012).

248. BRITO & CASTILLO, *supra* note 45, at 24.

249. Grinberg, *supra* note 235, at 183.

250. *Id.*

valuable than . . . the coins themselves.”²⁵¹ As a result, official coins were often hoarded or melted, which contributed to severe currency shortages.²⁵² In order to continue doing business, companies began issuing their own private currencies.²⁵³ Fearing that these privately-issued currencies might further contribute to inflation and threaten the stability of the nation’s economy, a number of states prohibited “private issue of notes and tokens in values less than \$5.”²⁵⁴ The federal government, in turn, “adopted the substance of these state laws as section 2 of the Stamp Payments Act” with the intent of preventing the hoarding and destruction of official United States coins.²⁵⁵ Section 2 of the Act of 1862, which is still in effect today, provides:

Whoever makes, issues, circulates or pays out any note, check, memorandum, token, or other obligation for less sum than \$1, intended to circulate as money or to be received or used in lieu of lawful money of the United States, shall be fined under this title or imprisoned not more than six months, or both.²⁵⁶

Although the Act’s prohibition may appear to be potentially broad in scope, its applicability has been reined in by strict judicial interpretation.²⁵⁷ Moreover, modern interpretations of the Stamp Payments Act highlight that the objectives served by the Act have shifted.²⁵⁸ No longer concerned with preventing the destruction of coins, the Stamp Payments Act now exists primarily to restrict the growth of any form of widely accepted currency or money that could compete with the United States dollar.²⁵⁹

In *United States v. Van Auken*,²⁶⁰ the Supreme Court concluded that gift certificates are “payable . . . in goods, and in goods only,” and not other currencies and therefore, do not run afoul of the Act’s prohibition

251. *Id.*

252. *Id.*

253. *Id.*

254. *Id.*

255. *Id.*

256. 18 U.S.C. § 336 (2012).

257. *See, e.g., United States v. Van Auken*, 96 U.S. 366, 368 (1878); *United States v. Roussopolous*, 95 F. 977, 978 (D. Minn. 1899); *United States v. Monongahela Bridge Co.*, 26 F. Cas. 1292, 1292–93 (W.D. Pa. 1863) (No. 15,796).

258. *See, e.g., Van Auken*, 96 U.S. at 368; *Roussopolous*, 95 F. at 978; *Monongahela Bridge Co.*, 26 F. Cas. at 1292–93.

259. *See, e.g., Van Auken*, 96 U.S. at 368; *Roussopolous*, 95 F. at 978; *Monongahela Bridge Co.*, 26 F. Cas. at 1292–93.

260. 96 U.S. at 368.

on circulation of obligations for a sum.²⁶¹ In reaching its conclusion, the Court noted that the term “sum,” as it is used in the Act, refers to a “quantity of money or currency” and thus, applies only to things that can be “measurable by the pecuniary standard” and not things measured, for example, “by the pound, the gallon, [or] the yard.”²⁶² The court’s reasoning accentuates that the purpose of the Act is not to restrict all products or services that share some similarity to U.S. currency, but rather to regulate the development of a true alternative currency to the United States dollar. Here, the gift certificates did not fall within the ambit of the Act because they were not denominated or measured by a pecuniary standard.

Following *Van Auken*, the District Court for the District of Minnesota in *United States v. Roussopolous*,²⁶³ determined that “metal tokens that were redeemable for 50 cents . . . at a particular store”²⁶⁴ could not have been “intended to circulate [universally] as money” within the meaning of the Act because the tokens “do not purport to be a piece of money.”²⁶⁵ Again, the court’s reasoning highlights that mere similarity with currency of the United States is not enough. Here, the tokens were measured by a pecuniary standard.²⁶⁶ However, because of the limited scope of use, the tokens did not have the potential for widespread competition with the United States dollar.

Finding in a similarly restrictive manner, the District Court for the Western District of Pennsylvania concluded that a paper ticket which can be exchanged for passage over a toll bridge does not constitute a statutorily prohibited “private currency” because the tickets are not comparable to United States coins or dollars “in shape, design or material.”²⁶⁷ Indeed, the Act has only been used to prohibit the issuance of private currencies similar in appearance to the United States dollar such that there is a danger of confusion with U.S. currency.²⁶⁸ As such, the court continued to evidence a view that the modern purpose of the Stamp Payments Act is to prevent the rise of a universally accepted private currency that could potentially compete with or be confused for

261. *Id.*

262. *Id.*

263. 95 F. at 978.

264. Grinberg, *supra* note 235, at 185.

265. *Id.* at 977.

266. *Id.* at 978.

267. *United States v. Monongahela Bridge Co.*, 26 F. Cas. 1292, 1292–93 (W.D. Pa. 1863) (No. 15,796).

268. BRITO & CASTILLO, *supra* note 45, at 24; *see also* Grinberg, *supra* note 235, at 193.

United States currency.

In sum, the Act has not been interpreted to prohibit private currency that “(1) circulates in a limited area, (2) is redeemable only in goods, (3) does not resemble official U.S. currency and is otherwise unlikely to compete with small-denominations of U.S. currency.”²⁶⁹ Based upon an application of these factors, federal courts have permitted a number of “local currencies [to remain] in circulation . . . [including] the Cascadia Hour Exchange in Portland [Oregon] and Life Dollars in Bellingham, Washington.”²⁷⁰ Nonetheless, the objectives underlying the Act would ostensibly be served by applying its restrictions to any private currency likely to compete with U.S. currency because it is: (1) circulated universally, (2) measured in a pecuniary standard, and (3) similar in appearance to official U.S. Currency.

2. *Application to Virtual Currency*

In evaluating whether both the historical and modern purpose of the Stamp Payments Act is served by regulating virtual currencies, it appears that criminalizing the issuance and use of decentralized virtual currencies on the basis of the statutory goals of the Act is not justified at this time. Specifically, the historical concern over destruction of United States coins is not implicated by virtual currencies such as bitcoin. Moreover, virtual currencies have not yet and may never reach, a level of widespread acceptance sufficient to compete with and threaten the United States dollar.

Because no danger of currency shortage presently exists, the presence of virtual currencies is unlikely to contribute to any hoarding or destruction of U.S. coins. As such, the primary issue is whether Bitcoin is a private currency that competes with the United States dollar to such a degree that it ought to be prohibited. As applied to Bitcoin, a number of the factors considered by the courts weigh against the legality of the service. Bitcoins do not circulate in a limited area as they can be spent anywhere a merchant is willing to accept them.²⁷¹ Indeed, as an empirical matter, bitcoins have been spent across the world.²⁷² As such, bitcoins are distinct from the tokens considered by the court in *Roussopolous*, which could only be redeemed at a particular store.²⁷³

269. Grinberg, *supra* note 235, at 185.

270. BRITO & CASTILLO, *supra* note 45, at 24.

271. See Doguet, *supra* note 37, at 1120; Krugman, *supra* note 38.

272. See, e.g., BRITO & CASTILLO, *supra* note 45, at 15.

273. See *United States v. Roussopolous*, 95 F. 977, 978 (D. Minn. 1899).

Even so, bitcoins cannot be said to circulate universally because the virtual currency has not yet achieved that level of acceptance. Nonetheless, Bitcoin likely has greater potential to challenge the United States dollar than any private currencies that have been permitted to date.

Bitcoins are also more likely to be viewed as potentially competitive with the United States dollar in contravention of the underlying purpose of the Act because bitcoins are measured by a pecuniary standard and are not redeemable only in goods and services. Although bitcoins can be exchanged for goods and services, bitcoins also possess an equivalent value in United States dollars. Moreover, so long as they are accepted by a money-changing service, they can be exchanged for U.S. or foreign currency.²⁷⁴ As such, bitcoins appear to pose a greater concern than the gift cards considered by the court in *Van Auken*.

The foregoing notwithstanding, judicial concern over the danger of confusion between a private currency and U.S. currency is unlikely to be problematic because bitcoins are stored electronically and generally have no physical manifestation.²⁷⁵ With that said, bitcoin mints have started to issue metal bitcoins that can be funded with Bitcoin value.²⁷⁶ These physical bitcoins are also unlikely to cause confusion because the coins do not resemble U.S. currency and are clearly denominated in Bitcoin, not United States dollars.

Despite little likelihood of confusion, the purpose of the factors considered by the courts is to ensure that a private currency does not function to compete with or undermine the value of government issued money.²⁷⁷ Whether Bitcoin could pose a serious challenge to the value of United States dollar remains to be seen. On the one hand, bitcoin has admittedly grown in popularity and is increasingly accepted as a valid form of payment. As such, some supporters of the service hope that it will emerge as a serious alternative to traditional currency, touting it as the “destroyer of the dollar.”²⁷⁸ The foregoing notwithstanding, there are some built in limits on Bitcoin’s ability to fully displace government-controlled currency. The total number of bitcoins is capped at twenty-

274. ROBERT STOKES, TECHNOLOGIES, BANKING & FIN. SERVS. POL’Y REP., ANTI-MONEY LAUNDERING REGULATION AND EMERGING PAYMENT TECHNOLOGIES 4 (2013).

275. BRITO & CASTILLO, *supra* note 45, at 24.

276. See Robert McMillan, *Bitcoin Mint Reopens After Nastygram from Feds*, WIRED (Jan. 15, 2014), <http://www.wired.com/2014/01/casascius-back/>.

277. Grinberg, *supra* note 235, at 183.

278. Jose Pagliery, *Ron Paul: Bitcoin Could ‘Destroy the Dollar’*, CNN MONEY (Dec. 4, 2013, 12:01 AM), <http://money.cnn.com/2013/12/04/technology/bitcoin-libertarian/>.

one million,²⁷⁹ which may present an insufficient challenge to the 1.23 trillion physical United States dollars presently in circulation.²⁸⁰ As such, even assuming universal acceptance, Bitcoin may not be capable of displacing or seriously competing with the United States dollar.

Even so, as the service gains popularity, the justification for regulation or prohibition pursuant to federal laws prohibiting private currency may strengthen. At present, the growth of bitcoin does not appear to pose a credible threat to the United States dollar such that the objectives of the Stamp Payments Act would be meaningfully served by prohibiting the issuance and use of the virtual currency. In the future, however, the continued growth of bitcoin may make a reassessment of this regulatory concern necessary and appropriate. As some have suggested, “if bitcoin ever really started to take off, governments would either ban it or take over the system.”²⁸¹ Accordingly, the regulatory goals of the Stamp Payment Act may impact the long-term approach that policymakers take in developing virtual currency regulation in the United States.

B. Federal Anti-Money Laundering Legislation

Some legal scholars have suggested that despite the novel aspects of virtual currency, it may already fall within the existing regulatory regime for money transmitters.²⁸² As discussed above in Part III, regulations governing money transmitters already exist at both the federal and state level and, in fact, could be extended to apply to bitcoin exchanges. We focus first on an analysis of federal money-transmitter laws enacted by the Bank Secrecy Act (BSA) to prevent money laundering.²⁸³

At one point, the applicability of federal money transmitter laws was unclear because it was unsettled whether virtual currency even constituted “money” under the BSA.²⁸⁴ However, “FinCEN” has since issued interpretive guidance and clarified that the BSA and its implementing regulation apply only to real currency, or “the coin and paper money of the United States or of any other country that . . . is

279. Doguet, *supra* note 37, at 1130.

280. BD. OF GOVERNORS OF THE FED. RESERVE SYS., HOW MUCH U.S. CURRENCY IS IN CIRCULATION? (2014), available at http://www.federalreserve.gov/faqs/currency_12773.htm.

281. Edward Hadas, *A Prediction: Bitcoin Is Doomed to Fail*, N.Y. TIMES (Nov. 27, 2013), <http://dealbook.nytimes.com/2013/11/27/a-prediction-bitcoin-is-doomed-to-fail/>.

282. See, e.g., Doguet, *supra* note 37, at 1147.

283. Tu, *supra* note 203, at 86.

284. See generally Matthew K. Ly, *Coining Bitcoin's "Legal-Bits": Examining the Regulatory Framework for Bitcoin and Virtual Currencies*, 27 HARV. J.L. & TECH. 587, 596–97 (2014).

designated as legal tender and that . . . circulates and . . . is . . . accepted as a medium of exchange.”²⁸⁵ As such, transfers of bitcoin would be excluded from regulation unless the transfer of “real currency” was also involved.²⁸⁶ FinCEN’s guidance has provided greater clarity about the treatment of virtual currency under the BSA. However, there is still much to learn from evaluating the regulatory goals of the BSA as it provides insight into the degree of risk that virtual currency raises and how best to mitigate such risk when regulating its unique features.

1. *Bank Secrecy Act Policy Goals*

Arguably the most comprehensive set of regulations governing traditional financial service providers in the United States is aimed at preventing money laundering and the financing of terrorist or other illegal activity. The center-piece of this regulatory scheme is the BSA.²⁸⁷ Congress passed the Act with two goals in mind. First, Congress “wanted to create a paper trail to inform law enforcement of potentially suspicious activity. Second, Congress hoped to use the BSA as a weapon to prosecute money launderers” based upon that paper trail.²⁸⁸ Accordingly, the primary purpose underlying the BSA and its regulatory requirements are to prevent illegal activity by requiring that regulated entities assist with the identification and investigation of suspicious transactions and customers.

Since its passage, the BSA’s requirements have been altered and amended a number of times. Speaking broadly, the BSA generally requires that financial institutions: (1) report suspicious transactions to law enforcement, (2) maintain records of large and/or suspicious transactions, (3) submit to compliance reviews of their anti-money laundering efforts, and (4) develop methods of identifying potentially dangerous customers.

285. *Id.* (quoting FIN-2013-G001, *supra* note 27).

286. FinCEN’s guidance noted that merely using virtual currencies to make purchases or accepting virtual currencies as a method of payment “does not fit within the definition of ‘money transmission services’ and therefore is not subject to [the BSA’s] . . . registration, reporting, and recordkeeping regulations.” FIN-2013-G001, *supra* note 27. However, an individual that engages in the business of exchanging virtual currency for traditional currency is a money transmitter subject to the BSA. *See id.*

287. Bank Secrecy Act, 31 U.S.C. §§ 5311–5330 (2012).

288. Scott Sultzer, *Money Laundering: The Scope of the Problem and Attempts to Combat It*, 63 TENN. L. REV. 143, 153–54 (1995).

a. *Reporting Requirements*

Affirmative reporting requirements form the first part of the BSA's efforts to identify and prevent illegal activity. The BSA originally required that any covered "financial institution . . . [which in 1970 included only banks] file . . . [a] Currency Transaction Report (CTR) [with the Department of Treasury], whenever an individual . . . [made] transactions . . . involv[ing] . . . over \$10,000."²⁸⁹ It was later widely recognized, however, that "the BSA had [a] minimal impact on money laundering throughout the 1970s and into the early 1980s."²⁹⁰ Banks "rarely complied with the CTR reporting requirements" and the Department of Treasury "did not catch reporting irregularities."²⁹¹

In response, Congress amended the BSA pursuant to the Comprehensive Drug Abuse Prevention and Control Act, which held financial institutions criminally liable for "willful blindness" if the financial institution became aware of facts indicating a high probability of illegality but purposely fails to investigate on account of desire to stay ignorant, there is knowledge of illegality.²⁹² As such, financial institutions ran the risk of being held criminally liable if a client engaged in criminal activity and the financial institution failed to investigate.²⁹³

b. *Recordkeeping and Customer Verification Requirements*

To further advance the goals of identifying and preventing illegal activity, the BSA also imposes recordkeeping requirements on regulated financial institutions. In the early 1980s, Congress began an investigation into a growing drug trade "which revealed the enormous amount of money involved [and] . . . the widespread non-compliance of banks with the reporting requirements of the BSA."²⁹⁴ In response, Congress passed the Money Laundering Control Act of 1986, which amended the BSA by adding record-keeping requirements, mandating that all financial institutions maintain records of all transfers of \$10,000 or more into or out of the United States.²⁹⁵ Additionally, regulated

289. *Id.* at 152–53.

290. *Id.* at 154.

291. *Id.*

292. *United States v. Jewell*, 532 F.2d 697, 697 (9th Cir. 1976), *cert. denied*, 426 U.S. 951 (1976).

293. Duncan E. Alford, *Anti-Money Laundering Regulations: A Burden on Financial Institutions*, 19 N.C. J. INT'L L. & COM. REG. 437, 458 (1994).

294. Sultzer, *supra* note 288, at 158.

295. *Id.* at 152–53.

financial institutions must verify the identity of purchasers of negotiable instruments, such as cashier's checks or traveler's checks, in amounts over \$3000.²⁹⁶ These requirements aided law enforcement officials by ensuring that financial institutions maintain records for their review. However, they also require financial institutions to make some affirmative enforcement efforts themselves by verifying the identity of certain customers.

c. Registration Requirements and Compliance Checks

The BSA also requires licensing and registration of entities that provide certain types of financial services. These requirements came largely as a result of *Ratzlaf v. United States*.²⁹⁷ In *Ratzlaf*, the Supreme Court overturned the convictions of defendants who had “‘deliberately’ structured a cash transaction of \$100,000 . . . to pay a gambling debt to a casino to avoid triggering the BSA’s reporting requirement.”²⁹⁸ In response, Congress passed the Money Laundering Suppression Act of 1994 (MLSA) to regulate certain non-bank financial institutions, including casinos.²⁹⁹ The MLSA, moreover, authorized the creation of a set of Uniform Laws for states to regulate businesses engaged in “provid[ing] check cashing, currency exchange, or money transmitting or remitting services, or issu[ing] or redeem[ing] money orders, travelers’ checks, and other similar instruments.”³⁰⁰ These regulations require non-bank financial institutions to submit to background checks, register their businesses with the Secretary of State, and comply with the BSA’s reporting requirements.³⁰¹ The purpose of these requirements is to conscript non-bank financial institutions into assisting U.S. government agencies with detecting and preventing money laundering and permitting government examination of such institutions if they fail to do so.³⁰²

296. *Id.* at 178.

297. 510 U.S. 135 (1994).

298. JAMES R. RICHARDS, TRANSNATIONAL CRIMINAL ORGANIZATIONS, CYBER CRIME, AND MONEY LAUNDERING 143 (1998).

299. FED. DEPOSIT INS. CORP., RISK MANAGEMENT MANUAL OF EXAMINATION POLICIES, SECTION 8.1: BANK SECRECY ACT, ANTI-MONEY LAUNDERING, AND OFFICE OF FOREIGN ASSETS CONTROL (2013), available at <http://www.fdic.gov/regulations/safety/manual/section8-1.pdf>.

300. Money Laundering Suppression Act, 31 USC § 5330(d)(1)(A) (2012).

301. RICHARDS, *supra* note 298, at 143.

302. *FinCEN’s Madate from Congress*, FINCEN (last visited Jan. 30, 2015), www.fincen.gov/statutes_regs/bsa.

d. “*Know Your Customer*” Provisions

The most recent addition to the BSA’s anti-money laundering regulatory framework was enacted in 2001 as Title III of the Patriot Act.³⁰³ Entitled the International Money Laundering Abatement and Anti-Terrorist Financing Act of 2001, the legislation introduced a number of new regulatory requirements for financial institutions via amendment to the BSA.³⁰⁴ The requirements in Title III, however, were not novel. In fact, they had been “under consideration for a number of years prior to the September 11 attacks.”³⁰⁵ The attacks did, however, provide the political momentum for their implementation as well as “elevated the rigor with which existing BSA requirements were applied.”³⁰⁶

The most pertinent Title III amendment added “know your customer” (KYC) provisions.³⁰⁷ The cornerstone of the KYC provisions is the Customer Identification Program (CIP).³⁰⁸ In short, every bank or financial institution is required to implement a written CIP appropriate for its size and type of business. The CIP must:

enable the bank to form a reasonable belief that it knows the true identity of each customer . . . based on the bank’s assessment of the relevant risks, including those presented by the various types of accounts maintained by the bank, the various methods of opening accounts provided by the bank, the various types of identifying information available, and the bank’s size, location, and customer base.³⁰⁹

In addition to the CIP, banks are “required to subject each customer to a customer due diligence process (CDD) that may involve collection of . . . more information than was gathered for purposes of . . . CIP.”³¹⁰ “Each bank is required to comply with its own established CDD policies

303. International Money Laundering Abatement and Financial Anti-Terrorist Financing Act of 2001, Pub. L. No. 107-56, §§ 301–377, 115 Stat. 296.

304. *Id.* at §§ 351–370.

305. Mark E. Plotkin & B.J. Sanford, *Patriot Act—The Customer’s View of “Know Your Customer”*—Section 326 of the USA Patriot Act, 1 BLOOMBERG CORP. L. J. 670, 671 (2006).

306. *Id.*

307. *See id.* at 672; 63 Fed. Reg. 67,536 (Dec. 7, 1998) (OTS); *id.* at 67,529 (FDIC); *id.* at 67,524 (OCC); *id.* at 67,516 (FRB); 64 Fed. Reg. 15,310 (Mar. 31, 1999) (FRB); 64 Fed. Reg. 15,137 (Mar. 30, 1999) (OCC); 64 Fed. Reg. 14,845 (Mar. 29, 1999) (FDIC); 64 Fed. Reg. 14,845 (Mar. 29, 1999) (OTS).

308. Plotkin & Sanford, *supra* note 305, at 674.

309. 31 C.F.R. § 103.121(b)(2) (2010).

310. Plotkin & Sanford, *supra* note 305, at 677.

and procedures, or risk possibly severe regulatory penalties.”³¹¹

Based upon this information and ongoing monitoring of their customers’ accounts, financial institutions are expected to file a suspicious activity report whenever it “knows, suspects, or has reason to suspect” illegal activity is or is likely to be occurring.³¹² In short, the know your customer requirements impose a much greater regulatory burden on regulated financial institutions by involving them in the process of identifying potentially illegal activity via gathering of customer information and monitoring customer transactions. In doing so, regulated financial institutions are charged with actively identifying and reporting potentially illegal transactions, which ultimately promotes the policy goals of helping with the identification and prevention of criminal activity.

2. *Application to Virtual Currency*

The purpose of the BSA, to prevent misuse of the financial system to engage in money laundering, terrorist financing, or other criminal activity, also appears to justify regulation of decentralized virtual currency. The same concerns that motivated the passage of the BSA—that legitimate financial services might be abused to facilitate or “whitewash” illegal activity—exist in the context of virtual currency. In fact, the potential for Bitcoin to facilitate criminal activity is the primary justification provided by those calling for regulation of the Bitcoin service.³¹³ Many have explained that the unique characteristics and functionality that has allowed Bitcoin to grow in popularity also make it attractive to criminals. According to one commentator “[d]igital currencies are attractive vehicles for money laundering [and terrorist financing] because they allow fast, anonymous, through-the-Internet transfers.”³¹⁴ Like many traditional financial services, decentralized virtual currencies, though largely used for legitimate purposes, are susceptible to being used to facilitate criminal activity. Therefore, the legitimate regulatory purpose of the BSA is implicated by virtual currencies and would appear to justify regulation of virtual currency so as to mitigate the risk of its misuse, or to capitalize on its ability to assist with the identification and investigation of criminal activity. The

311. *Id.* at 679.

312. 31 C.F.R. § 103.18(a)(2) (2010).

313. *See, e.g.*, Grinberg, *supra* note 223, at 204; STOKES, *supra* note 274; Dion, *supra* note 240, at 179–80.

314. Grinberg, *supra* note 235, at 204.

foregoing notwithstanding, the mere extension of the BSA's existing regulatory requirements may not be appropriate when applied to virtual currencies.

As an initial matter, the potential for misuse of the Bitcoin service for criminal purposes does not justify the outright prohibition or banning of it. As noted above, the possibility of using a legitimate financial service for a criminal purpose is not something new or unique. As with traditional financial services, a distinction must be made between the Bitcoin service and its potential for misuse. While the risk of misuse exists, early calls to "crack down" on Bitcoin focus too much on highly publicized cases of Bitcoin being used in connection with criminal activity. It has been noted, for example, that "Bitcoin's association with Silk Road has tarnished its reputation."³¹⁵ "Silk Road" is an online marketplace where a number of illicit goods, including illegal weapons and drugs, may be purchased anonymously.³¹⁶ It does not "accept credit cards, PayPal, or any other form of payment that can be traced or blocked. The only money [accepted on the site] . . . is Bitcoins."³¹⁷ Though Bitcoin exists entirely independent of Silk Road, it was Silk Road's acceptance of Bitcoin for illegal drug sales that inspired Senators Charles Schumer and Joe Manchin to send a letter to Attorney General Eric Holder and the Drug Enforcement Administration's administrator Michele Leonhart calling for a crackdown.³¹⁸

By seeking to regulate bitcoins, however, the Senators have failed to effectively distinguish between the risk posed by the Silk Road site and the Bitcoin technology itself. Specifically, the development of an appropriate regulatory regime for virtual currencies should not focus on isolated incidents of misuse. Instead, the use of virtual currencies should be viewed holistically to identify legitimate risks and to develop appropriate regulatory requirements to mitigate those risks.

In evaluating Bitcoin, it appears that its susceptibility for misuse is not categorically different than many traditional money services regulated under the BSA. Although as the currency becomes more reliable, illegal use may increase, one study estimated the total monthly Silk Road transactions amount to be approximately \$1.2 million, which

315. BRITO & CASTILLO, *supra* note 45, at 20.

316. Adrean Chen, *The Underground Website Where You Can Buy Any Drug Imaginable*, GAWKER (June 1, 2011), <http://gawker.com/5805928/the-underground-website-where-you-can-buy-any-drug>.

317. *Id.*

318. Brett Wolf, *Senators Seek Crackdown on 'Bitcoin' Currency*, REUTERS (June 8, 2011), <http://www.reuters.com/article/2011/06/08/us-financial-bitcoins-idUSTRE7573T320110608>.

is a small percentage of the total value of monthly bitcoin transactions.³¹⁹ Despite the relatively small number of bitcoins that are spent funding illegal activity, the largely unregulated environment, along with the greater level of anonymity provided, make Bitcoin more susceptible to misuse when compared to traditional money services that are now regulated under the BSA. Accordingly, Bitcoin is similar to traditional financial services in that there are legitimate uses for the service along with the potential for use in connection with criminal activity. While the potential for misuse does not appear to justify the outright prohibition of bitcoin, it certainly appears to justify some manner of regulation. Moreover, Bitcoin like traditional money service providers, may be in a unique position to assist with the identification or investigation of clients that engage in suspicious financial activity.

Although the risks that motivated the BSA's regulation of traditional financial services are also presented by Bitcoin, the mere extension of the BSA's regulatory requirements do not necessarily fit in the context of virtual currencies. As such, the development of an appropriate regulatory framework for virtual currencies should consider and seek to mitigate the potential preventing criminal activity. However, the method of regulation must be modified or wholly re-conceived of so as to take into account for the unique characteristics of virtual currency.

For example, the BSA's "Know Your Customer" provisions and "Customer Due Diligence" requirement were intended to apply where clients could appear in person to present identification or at least had personal information associated with their accounts. These requirements may be difficult to implement in the world of Bitcoin because of the anonymity granted to users of the service. Indeed, the basic functionality of the Bitcoin service serves as an impediment to implementing KYC provisions that require investigation and information gathering about customers. The Bitcoin network itself cannot be charged with implementing such requirements. Moreover, the lack of customer identifying information being transmitted with transactions makes it difficult for intermediaries engaging in Bitcoin transactions (e.g. exchangers) to implement and comply with KYC or CDD requirements.

The mere extension of other BSA-style requirements to virtual currency leads to a similar result. The BSA's licensing and registration, for example, presents an immediate dilemma. To what entity would such a requirement be directed? As a peer-to-peer network, the Bitcoin service itself lacks a centralized entity that could be required to register.

319. BRITO & CASTILLO, *supra* note 45, at 20.

Bitcoin miners, merchants, and users all operate anonymously and, therefore, without substantial modification, are not susceptible to licensing. Accordingly, intermediary services such as Bitcoin exchanges are the most obvious (and perhaps only) target.

The BSA's reporting requirements—that especially large or otherwise suspicious transactions be reported to the Department of the Treasury—might be more easily implemented in the Bitcoin context. However, challenges still remain. Because all Bitcoin transactions are viewable by all members of bitcoin's peer-to-peer network, a government regulatory agency might simply monitor these transactions for suspicious activity independently. The difficulty, however, presents itself upon a consideration of how it might be enforced should suspicious activity be discovered. Any suspicious transfer that was discovered could only be linked to a “public key” encryption code, not a particular person. However, as noted by a member of Bitcoin's core development team, given the unique information resources of law enforcement and “sophisticated network analysis techniques” it may be possible to “parse the transaction flow and track down individual Bitcoin users.”³²⁰ At a minimum, the unique characteristics and functionality of the bitcoin service appear to make it more difficult to implement monitoring and reporting requirements as a component part of identifying and preventing criminal activity utilizing Bitcoin transactions.

Because of the difficulties inherent in implementing BSA-style regulations that impose compliance requirements on the Bitcoin service itself, regulators may be better served by seeking instead to regulate the intermediaries that facilitate Bitcoin transactions such as exchangers.³²¹ These money changing businesses might operate as a regulatory “choke point” and could also be required to submit to the same regulatory requirements imposed on other financial service providers by the BSA (e.g., know your customer requirements, customer investigation, transaction monitoring, suspicious activity reporting and licensing/registration).³²² Another example of a proposal for regulating around the inherent difficulties of the Bitcoin service is the possibility of freezing or seizing bank accounts that have received currency in exchange for bitcoins.³²³

While the regulation of Bitcoin businesses serving as intermediaries

320. Chen, *supra* note 316.

321. STOKES, *supra* note 274, at 4.

322. *Id.*

323. Wolf, *supra* note 318.

facilitating Bitcoin transactions is likely to continue, such a regulatory response standing alone is imperfect. As an initial matter, the current efforts to regulate exchangers under federal money transmitter laws forgoes the possibility of identifying criminal uses involving Bitcoin where the transaction only involves bitcoins (i.e. in which no exchange for traditional currencies is made). Where a third-party exchange is not involved, the regulatory requirements will not be triggered.³²⁴ As such, the ability of regulatory and enforcement agencies to identify criminal activity will be hampered.

Moreover, Bitcoin intermediaries (such as exchanges) faced with heightened regulatory standards may simply choose to stop providing traditional currency in exchange for bitcoins altogether, which would stifle the growth and long term viability of virtual currencies as a payment alternative. Accordingly, a regulatory regime that focuses solely on the imposition of compliance requirements on intermediary services may have the practical effect of an outright ban on virtual currency. If the United States seeks to develop a regulatory framework that accommodates virtual currency while mitigating any associated risks, it appears that rethinking the traditional methods of regulating to identify and prevent criminal activity will be necessary. If, however, the potential risk of criminal use of virtual currencies is too great and no viable alternative regulatory strategies exist to mitigate such concerns, then the United States may need to reevaluate the fundamental question of whether virtual currencies should be banned.

In sum, the clearly legitimate policy goal embodied in the Bank Secrecy Act—the prevention of criminal activity—presents a conundrum for regulating the Bitcoin. It is beyond genuine dispute that there is at least some risk of bitcoins being used to facilitate illegal activity, and that identification of suspicious Bitcoin transactions might assist with the identification and prevention of criminal activity. However, the regulatory requirements included in the BSA that are effective at curtailing money laundering and terrorist financing with respect to traditional financial services appear to be either inadequate or inappropriate for virtual currency. Therefore, in developing a comprehensive legal and regulatory framework for virtual currencies, policymakers should recognize that the regulatory concerns prompting enactment of the BSA are present in the virtual currency context. While the BSA may be instructive in that regard, policymakers will need to rethink and reconceive the regulatory framework for identifying criminal

324. See FIN-2013-G001, *supra* note 27.

activity involving the use of virtual currencies.

C. *State Financial Consumer Protection Law*

Where the BSA (including its money transmitter provisions) seeks to prevent money laundering, state money transmitter laws have a different regulatory objective—consumer protection.³²⁵ As discussed above, two states have attempted to clarify the scope of these requirements as applied to virtual currency.³²⁶ In doing so, these states have primarily focused on answering the question of whether virtual currency constitutes money or value under the statute. While such guidance helps to clarify whether and in what situations state money transmitter laws apply to virtual currency, it provides little insight into bigger picture discussion as to the objectives and compliance requirements that would form an effective regulatory framework for virtual currency. As such, the following section evaluates the degree to which the regulatory objectives advanced by state money laws are also implicated in the context of virtual currency, and shows how this analysis is useful to thinking holistically about the development of a cohesive, comprehensive, and appropriately-scaled virtual currency framework.

1. *Policy Goals of State Money Transmitter Laws*

The primary purpose of state money transmitter laws is to protect consumers from suffering financial loss as a result of dealing with a money transmitter. To that end, the regulatory requirements imposed by state money-transmitter laws function as “‘safety and soundness’ laws aimed at protecting consumers from suffering losses” as a result of the nonperformance or failure of a regulated money transmitter.³²⁷ Regulated money transmitters generally include any business that transmits funds from one person to another.³²⁸ Although the requirements vary from state to state, money transmitters typically are required to obtain a license from the appropriate state regulatory body and:

- (1) furnish a surety bond or similar security device; (2) satisfy

325. Tu, *supra* note 203, at 82.

326. *See supra* note 207.

327. Tu, *supra* note 203, at 82.

328. *Hearing on the Regulation of Non-bank Money Transmitter—Money Services Businesses: Hearing Before the Subcomm. on Fin. Insts. & Consumer Credit of the House Comm. on Fin. Servs.*, 112th Congress (2012) (testimony of Ezra C. Levine), available at <http://financialservices.house.gov/uploadedfiles/hhrg-112-ba15-wstate-elevine-20120621.pdf>.

minimum net worth requirements; (3) maintain minimum levels of specified types of permissible investments (e.g., government obligations and other low-risk investments); (4) retain specified business records for statutorily mandated periods of time; and (5) file annual and periodic reports relating to financial condition and upon the occurrence of significant events.³²⁹

The majority of these requirements were passed in the early 1980s to address a unique historical and financial problem. A number of large money-order companies publicly defaulted and, because money transmitters generally are not FDIC-insured, “consumers [were] . . . left holding the bag [when] . . . money transmitter[s] d[id] . . . not forward the funds to the intended recipient.”³³⁰ The above-noted bonding and licensing requirements were intended to minimize the risk posed to consumers, should they choose rely on a third-party to efficiently deliver funds.³³¹ Accordingly, the purpose of state money transmitter laws is to protect consumers by imposing regulatory requirements designed to mitigate the risk of financial loss due to the nonperformance or failure of a third-party who contracts with the consumer to take and deliver money on behalf of the consumer.

2. *Application to Virtual Currency*

The consumer protection purpose underlying the need for state money transmitter laws is also implicated in the context of virtual currency. Regardless of whether the existing language of state money transmitter laws can or should be interpreted to cover virtual currency, the use of virtual currency leaves consumers open to the potential for financial loss with few meaningful outlets for redress.

As a technical matter, Bitcoin is not a legal entity. As a global peer-to-peer network, Bitcoin itself is unlikely to be capable of regulation as a money transmitter.³³² Turning to the intermediaries that provide Bitcoin-based services, it can be argued that certain third-party services carry the same risk of consumer loss that justifies regulation of traditional money transmitters. For example, a consumer may utilize a third-party bitcoin wallet to transfer bitcoins to another bitcoin user. In the event that the third-party does not deliver the bitcoin or payment as expected, the consumer may suffer a loss. Similarly, consumers who purchase goods

329. Tu, *supra* note 203, at 93 (internal citations omitted).

330. BRITO & CASTILLO, *supra* note 45, at 29.

331. *Id.*

332. *Id.*

and services from a merchant accepting Bitcoin often deliver bitcoins to a third-party processor or exchanger engaged by the merchant. The third-party is then charged with delivering the bitcoin to the merchant or exchanging the bitcoin for traditional currency before delivering it to the merchant. Again, the consumer may bear some risk if the third-party does not deliver the payment because a merchant may be unwilling to deliver promised goods or services if payment is not received.

In fact, Bitcoin may present an even stronger consumer protection justification for regulation. Consumer protection remains a concern even in situations where the third-party intermediary delivers the Bitcoin payment as promised or the consumer pays the bitcoin directly to the merchant. This is because Bitcoin as a payment method lacks the dispute resolution procedures and related protections that are available for credit card payments. Payments made via credit cards, for example, can be reversed if a cardholder claims that they are fraudulent or erroneous.³³³ These reversals, known as “charge-backs,” protect consumers from “unscrupulous merchants or merchant errors.”³³⁴ Bitcoin, in contrast, is a “nonreversible payment system” that might leave consumers vulnerable to fraud.³³⁵ Should a consumer find, for example, that an online merchant has failed to deliver an item purchased with bitcoin, they may be left without an efficient remedy because “Bitcoin transactions cannot be reversed if the receiving party doesn’t agree to the refund.”³³⁶

Bitcoin also raises additional consumer protection concerns outside of the potential for loss in connection with a payment or transfer. Because Bitcoin is stored electronically and transfers are irreversible, a similar risk exists with respect to Bitcoin Banks or Bitcoin Wallets that provide online storage to Bitcoin users.³³⁷ If bitcoins are stolen because the security of the Bitcoin Bank or Bitcoin Wallet is compromised, there may be few meaningful avenues of redress for the victim. Moreover, little regulation exists to ensure that the providers of such services have implemented minimum security standards or are otherwise qualified to operate. As such, a legitimate consumer protection concern is raised by Bitcoin that extends beyond the money transmitter context.

333. Gilbert J. Schroeder & Robert J. Moody, *Credit Card Fraud Losses: A Case Study on Credit Card Chargebacks*, 3 FIDELITY L. ASS’N J. 23, 27 (1997).

334. BRITO & CASTILLO, *supra* note 45, at 12.

335. *Id.*

336. Jim Edwards, *18-Year-Old Reports \$1 Million Bitcoin Theft from ‘Bank’ He Controlled—And Says He Can’t Call the Cops*, BUS. INSIDER (Nov. 8, 2013), <http://www.businessinsider.com/1-million-bitcoin-theft-in-australia-2013-11#ixzz2nE2SYctF>.

337. *Id.*

In Bitcoin's short life "[t]here have been several high-profile thefts of bitcoins . . . including a hacker attack . . . on a Czech exchange called Bitcash.cz that emptied four thousand digital wallets belonging to customers."³³⁸ In addition, a Bitcoin wallet service, called Inputs.io, had more than 4000 bitcoins (valued at \$1.3 million) stolen. Touted as "one of the most secure web wallets on the market," Inputs.io was operated by an 18 year old.³³⁹ The response of these services accentuates the limited recourse that the victims have to recover any losses. Bitcash.cz simply announced that it had filed suit seeking to recover against the alleged hackers.³⁴⁰ Presumably, the victims will not recover the value of their lost bitcoins unless the lawsuit is successful. In contrast, Inputs.io's administrator has committed his personal funds to reimburse users "up to 100 percent depending [up]on the amount" lost.³⁴¹ As such, the victims will receive a percentage of the value of their stolen bitcoins but only as a result of the service provider's apparent generosity.

Mt. Gox, the world's largest Bitcoin exchange, proved that this risk to consumers is present even when utilizing the most well-established services. In February 2014, Mt. Gox announced that it had become insolvent.³⁴² Documents and e-mails recovered from the firm indicated that the exchange's 744,408 bitcoins, which account for approximately six percent of all bitcoins in existence, had "slowly been stolen over the course of several years."³⁴³ Approximately 200,000 bitcoins have been recovered in the case of Mt. Gox, but this still brings "the [number of] lost Bitcoins [to] around 650,000," a painful number for the users of the Mt. Gox service.³⁴⁴ With Mt. Gox insolvent and bitcoins stolen, the victims have few avenues for seeking redress for their losses.

Although the consumer protection concern appears to be legitimate, proponents of Bitcoin note that the risks are minimal because many companies ultimately choose to refund their customers should theft

338. Brian P. Eha, *Why Regulate Bitcoin*, NEW YORKER (Nov. 18, 2013), <http://www.newyorker.com/online/blogs/currency/2013/11/why-regulate-bitcoin.html>.

339. Jim Urquhart, *Bit-heist: Over \$1mn in Bitcoins Stolen from Australian Online Bank*, REUTERS, rt.com/news/bitcoin-hacking-stolen-million-417/ (Nov. 10, 2013).

340. Jack Moore, *Czech Bitcoin Exchange Hacked with 4,000 Wallets Emptied*, INT'L BUS. TIMES (Nov. 13, 2013), m.ibtimes.co.uk/bitcoin-czech-exchange-wallet-hacked-521981.

341. Urquhart, *supra* note 339.

342. Rob Wile, *Bitcoin Exchange MtGox Disappears*, BUS. INSIDER (Feb. 24, 2014), <http://www.businessinsider.com/reports-mtgox-halts-all-trading-2014-2>.

343. *Id.*

344. James Lyne, *\$116 Million Bitcoins 'Found' at MtGox and How to Protect Your Wallet*, FORBES (Mar. 21, 2013), www.forbes.com/sites/jameslyne/2014/03/21/116-million-bitcoins-found-at-mtgox-and-how-to-protect-your-wallet/.

occur.³⁴⁵ Further, they argue that the value of stolen bitcoins is somewhat limited, because transactions of bitcoins are made public, it would be difficult for a “bitcoin bank-robber” to use ill-gotten gains without being immediately detected.³⁴⁶

The foregoing notwithstanding, the consumer protection concerns underlying state money transmitter laws would appear to justify some degree of Bitcoin regulation.³⁴⁷ Consumers face the potential for financial losses when dealing with third-parties in transfer or payment transactions that are similar to traditional money transfer services regulated under state law. However, the risk of consumer harm does not end there. Consumer protection concerns extend beyond the scope of those targeted by money transmitter laws because of the lack of regulation surrounding other Bitcoin services and the potential for theft without redress. Given the absence of regulatory or other protections, consumers may only be protected by the benevolence of merchants and service providers. Thus, many of the same risks that existed with respect to traditional currencies prior to regulation of money transmitters are also present with Bitcoin.

In fact, the consumer protection concerns associated with Bitcoin appear more far-reaching than those that prompted the regulation of money transmitters. As such, the technical application or extension of state money-transmitter laws to Bitcoin is not only ill-suited but also likely insufficient to address the unique risks of decentralized virtual currency. Accordingly, consideration of the unique consumer protection risks of Bitcoin aids in the development of a regulatory response that can mitigate the unique risks of virtual currency.

D. *Federal Securities Regulation*

Because Bitcoin can be viewed as a speculative investment, some have suggested that it might effectively be regulated by extending the application of federal securities law.³⁴⁸ At least one federal court has explicitly held that certain Bitcoin investments “meet the definition of investment” subject to regulation pursuant to Sections 20 and 22 of the Securities Act of 1933 and Sections 21 and 27 of the Exchange Act of

345. Eha, *supra* note 338.

346. *Id.*

347. *Id.*

348. *See, e.g.,* Dion, *supra* note 240, at 194.

1934.³⁴⁹ In doing so, the United States District Court for the Eastern District of Texas provided greater clarity as to the treatment of virtual currencies under federal securities laws by answering the narrow question of whether Bitcoin falls within the existing statutory definition of the term “investment.” The decision ostensibly extends the technical requirements governing securities to virtual currency. However, the mechanical extension of requirements designed for traditional securities, such as stocks and bonds, may be difficult to implement for virtual currency.

While the extension of these laws to virtual currency may be inapposite, evaluating the regulatory objectives of securities laws is useful to inform the development of a tailored virtual currency framework.

1. *Policy Goals of Federal Securities Law*

Prior to 1933, there was very little regulation of securities in the United States.³⁵⁰ Instead, investors were loosely regulated solely at the state level in a manner which resulted in a “Wild West [style] . . . market.”³⁵¹ Due to this patchwork style of regulation, “securities were misunderstood by most investors, who fell prey to fraudsters manipulating the market, as well as companies who operated with unique accounting schemes and often would not disclose negative facts.”³⁵² Despite these well-recognized abuses, Congress was not compelled to step in until these largely unregulated and volatile investments contributed, in part, to the Wall Street Crash of 1929.³⁵³ Following the crash, Congress convened what became known as the Pecora Commission to investigate the roots of the market’s failure.³⁵⁴ The Commission’s finding resulted in the passage of the Securities Act of 1933 and the Securities Exchange Act of 1934.³⁵⁵ These statutes serve

349. See *SEC v. Shavers*, No. 4:13-cv-00416, 2014 WL 4652121, at *8 (E.D. Tex. Sept. 18, 2014).

350. See Glyn A. Holton, *United States Financial Regulation*, RISK GLOSSARY (2004), http://www.riskglossary.com/articles/united_states_financial_regulation.htm (“Prior to 1933, US securities markets were largely self-regulated.”).

351. See, e.g., Dion, *supra* note 240, at 192.

352. *Id.* at 193.

353. Sargon Daniel, *Hedge Fund Registration: Yesterday’s Regulatory Schemes for Today’s Investment Vehicles*, 2007 COLUM. BUS. L. REV. 247, 277 (2007).

354. J. Scott Colesanti, *Demanding Substance or Form? The SEC’s Plain English Handbook as a Basis for Securities Violations*, 18 FORDHAM J. CORP. & FIN. L. 95, 103–04 (2012).

355. Daniel, *supra* note 353, at 277.

similar but distinct purposes.

Often referred to as the “truth in securities” law, the Securities Act of 1933 has two basic objectives: (1) to “require that investors receive financial and other significant information concerning securities being offered for public sale,”³⁵⁶ and (2) “prohibit deceit, misrepresentations, and other fraud in the sale of securities.”³⁵⁷ In order to achieve these goals, the Securities Exchange Act of 1934 “created the Securities and Exchange Commission” which was given “broad authority . . . to regulate, and oversee brokerage firms, transfer agents, and clearing agencies as well as the nation’s securities self-regulatory organizations.”³⁵⁸

These acts, in concert, require that any security that is issued also be registered with the Securities Exchange Commission (SEC). This registration regime “enables investors, not the government, to make informed judgments about whether to purchase a . . . securit[y].”³⁵⁹ If the information contained in the registration documents filed with the SEC is inaccurate and an investor suffers a loss as a result of their reliance upon that information, the Act imposes civil, and sometimes criminal, penalties upon the party that has engaged in improper registration.³⁶⁰ As such, the objective underlying federal securities law is ensuring disclosure of material information such that investors are not misled and can make informed investment decisions.

2. *Application to Virtual Currency*

In the absence of regulation, Bitcoin raises similar concerns regarding the potential for investors to suffer harm as a result of misrepresentation or non-disclosure of material information. Some commentators have even noted that the regulatory environment with respect to bitcoin is akin to the “Wild West” facing investors prior to the passage of the Securities Act of 1933.³⁶¹ This is supported by the fact that Bitcoin has undergone a number of extreme and volatile price corrections.³⁶²

356. *The Laws that Govern the Securities Industry*, U.S. SEC. & EXCHANGE COMMISSION (Oct. 1, 2013), <http://www.sec.gov/about/laws.shtml>.

357. *Id.*

358. *Id.*

359. *Id.*

360. *Id.*

361. *See, e.g.,* Dion, *supra* note 240, at 192–93.

362. *Beyond Silk Road: Potential Risks, Threats, and Promises of Virtual Currencies: Hearing on the Virtual Currencies Before the S. Comm. on Homeland Sec. & Governmental Affairs*, 113th Congress 14 (2013) (statement of Jerry Brito), available at <http://www.hsgac.senate.gov/>

Economists have noted that “these adjustments resemble traditional speculative bubbles: overoptimistic media coverage of Bitcoin prompts waves of novice investors to pump up Bitcoin prices.”³⁶³ Although some have suggested that these fluctuations will eventually decrease, their recurrence and severity indicate, at least, “an alignment in the purpose of the Securities Act and the reality of the current bitcoin market”³⁶⁴ In short, the lack of regulation means that the sale of Bitcoin as an investment is susceptible to puffery, nondisclosure of material information, and even affirmative misrepresentation. Accordingly, investments in Bitcoin raise the same potential for investors to be defrauded or otherwise harmed by uninformed purchases of Bitcoin. Therefore, the policy goals served by regulation of securities also justifies the regulation of Bitcoin investments.

A conceptual difficulty arises, however, when considering how the registration provisions of the Securities Act can be practically applied to bitcoins that are created and distributed anonymously online instead of purposefully issued by an individual or corporation, as is the case with traditional securities. In order to avoid the complexities of requiring dynamic online registration, most have again turned to regulation of intermediaries as the solution, suggesting that bitcoin exchanges “be forced to . . . register with the SEC . . . [and] file . . . public reports . . . [thus] informing potential investors on the full reality of the Bitcoin investment.”³⁶⁵

Using Bitcoin exchanges as a “regulatory chokepoint,” could address some of these concerns. It is unclear, however, whether such an approach is appropriate. Unlike traditional securities, the value of a bitcoin is not controlled directly by a central authority nor is there a group of “inside traders” that might benefit from specialized knowledge of the service.³⁶⁶ Rather, the value of a bitcoin is determined entirely based upon what the market will bear in relation to other currencies.³⁶⁷ In that respect, Bitcoin could be viewed as more akin to foreign currency

download/?id=0dcd748d-035a-4c0f-b695-7680adc2425d (“Bitcoin has weathered at least five significant price adjustments since 2011.”).

363. *Id.*; see also Timothy B. Lee, *An Illustrated History of Bitcoin Crashes*, FORBES (Apr. 11, 2013), <http://www.forbes.com/sites/timothylee/2013/04/11/an-illustrated-history-of-bitcoin-crashes>; Felix Salmon, *The Bitcoin Bubble and the Future of Currency*, MEDIUM (Apr. 3, 2013), <https://medium.com/money-banking/2b5ef79482cb>.

364. See, e.g., Dion, *supra* note 240, at 193.

365. *Id.* at 194.

366. *Id.* at 167.

367. *Id.*

which is, generally, exempt from U.S. securities law.³⁶⁸

Despite some of the above-noted similarities between bitcoin and traditional investments, Bitcoin possesses distinctly different characteristics that may impede the extension of existing securities law requirements to the virtual currency context. Because the goal of having informed investment decisions underlying federal securities laws justifies regulation of virtual currency, policymakers seeking to create a virtual currency framework must identify modified or alternative compliance requirements that serve the same purpose while being specifically tailored to virtual currency.

E. Federal Banking Law

“Banking is among the world’s most heavily regulated industries.”³⁶⁹ Among other requirements, banks and their boards must obtain a license and administrative approval prior to formation, meet statutorily prescribed capital and reserve requirements, abide by strict operational and corporate governance standards when they operate, and maintain compliance with a host of consumer protection and anti-discrimination laws.³⁷⁰

Although Bitcoin does not necessarily fall within the common definition of a “bank,”³⁷¹ the continued growth of Bitcoin as a viable payment system may soon make comparisons between the two increasingly appropriate. Because Bitcoin is touted as a competitor and alternative to the heavily-regulated traditional financial system dominated by banks, the regulation of banks provides useful guidance in the development and creation of a virtual currency regulatory regime. This is particularly true if decentralized virtual currencies ultimately achieve a level of near universal acceptance such that it would rival the importance of the banking industry. While the regulatory objectives served by banking regulation do not presently incite the same degree of concern in the context of virtual currency, the continued growth of decentralized virtual currency may subsequently necessitate regulation-specific virtual currency regulation aimed at advancing the same goals as current banking laws.

368. *See id.* at 177 (citing *Proctor & Gamble Co. v. Bankers Trust Co.*, 925 F. Supp. 1270, 1280 n.4 (S.D. Ohio 1996)).

369. RICHARD S. CARNELL, JONATHAN R. MACEY, & GEOFFREY P. MILLER, *THE LAW OF BANKING AND FINANCIAL INSTITUTIONS* 53 (4th ed. 2009).

370. *See id.*

371. *Id.* at 35 (“We might . . . define a bank . . . as a firm that accepts deposits withdrawable by check and makes loans.”).

1. *Policy Goals of Bank Regulation*

It has often been suggested that banks are “special” institutions distinguishable “from all other classes of institutions both financial and nonfinancial” and, therefore, should be subject to similarly unique regulation.³⁷² Three characteristics of banks are usually identified in support of this view: (a) the fact that unregulated banks are susceptible to runs and panics, (b) “their role in creating and destroying money,” and (c) “their custodianship of the payment system.”³⁷³ In short, these features combine to make the banking system “too big to fail.” Stated another way, the United States’ banking system is of unmatched importance because a bank failure commonly results in significant external costs on society, not just harm to the bank and its customers. Accordingly, a stringent regulatory regime governs the banking industry to prevent these undesirable results and to promote the safety and soundness of the United States banking system. The following sections briefly describe these characteristics of banks that have been presumed to render them uniquely amenable to strict regulation and governmental control.

a. *Susceptibility of Banks to Runs and Panics*

The first justification commonly provided for regulation of the banking system stems largely from the trauma that the U.S. economy experienced in the run-up to the Great Depression. As some banks experienced liquidity problems or even collapsed, a “contagion of fear” and lack of trust in the financial system as a whole resulted in depositors flocking to their banks and demanding that their money be returned.³⁷⁴ Banks, however, were unable to sustain such a demand and the nation experienced wave after wave of bank collapses.³⁷⁵

The reason that banks are uniquely susceptible to this type “panic” or “run on the bank” has to do with two common banking practices: the use of “transaction accounts from which the bank makes payments [to depositors on demand]; and the fractional reserve system the bank uses to make sure it has enough cash to honor those payments and other withdrawals.”³⁷⁶ “A transaction account is any account from which a

372. *Id.* at 57 (quoting E. Gerald Corrigan, *Are Banks Special?*, Federal Reserve Bank of Minneapolis 1982 Annual Report (1982)).

373. *Id.* at 54.

374. *Id.* at 17.

375. *Id.*

376. *Id.* at 40.

customer may withdraw money . . . upon demand” and the fractional reserve system used by nearly every bank is based upon the principle that “banks need to keep only a fraction of total deposits on reserve as cash and can expect . . . no more than a small percentage of deposits to be withdrawn at any given time.”³⁷⁷ The remainder of the deposits can be maintained in the form of less liquid investments.

Taken together, these two elements of the modern banking system ensure that, on any given day, if every customer who maintains an account at a bank demanded the return of the entire balance of their account, the bank would be incapable of meeting all of the demands. Thus, should even a small group of customers begin to lose confidence in their bank, “each depositor [would have] . . . an individual self-interest in joining the run [because] . . . depositors at the front of the line will receive full payment while depositors at the end . . . risk partial or total loss” all but ensuring a collapse of the institution.³⁷⁸

In order to guard against this inherent risk of collapse, regulations have been promulgated to ensure that banks provide their customers with deposit insurance (often administered through the FDIC) to assure them that the value of their deposits will be safe even if the bank fails.³⁷⁹ Moreover, certain “safety and soundness” requirements have been imposed to require, amongst other things, that banks maintain a minimum level of capital.³⁸⁰

b. The Role of Banks in the Creation and Destruction of Money

Another common justification for regulation of the banking industry is the fact that banks directly impact the total supply of money available in the national economy. Stated simply, banks have the ability to increase the money supply by virtue of making loans.

Because banks are only required to keep a fraction of total deposits in reserve, a certain portion can be given to another customer in the form of a loan, which gives banks an avenue for making a profit.³⁸¹ Each loan functions, in a sense, to increase the total money supply available in the economy.³⁸² The original depositor of the funds may still demand the

377. *Id.* at 42.

378. *Id.* at 46–47.

379. See, e.g., Carter H. Golembe, *The Deposit Insurance Legislation of 1933: An Examination of Its Antecedents and Its Purposes*, 75 *Pol. Sci. Q.* 181–200 (1960).

380. See 12 C.F.R. § 364.100 (2014).

381. JOHN A. TATOM, *FINANCIAL MARKET REGULATION: LEGISLATION AND IMPLICATIONS* 5 (2009).

382. Jon Carney, *Basics of Banking: Loans Create a Lot More Than Deposits*, CNBC (Feb. 26,

withdrawal of the deposited funds at any time, but those same funds can simultaneously be used by the customer who received the loan from the bank.³⁸³ As the borrower repays the loan, that “created” money is “destroyed” (it can no longer be used by the debtor, only the depositor or the bank).³⁸⁴ However, should the debtor never repay the loan, the bank has in effect increased the amount of currency available for use in the financial system.³⁸⁵

In this way, as a matter of course, banks “create” and “destroy” money. The relationship between banks and the money supply has important consequences for public policy and impacts the overall health of the economy.³⁸⁶ For example, “many economists believe that the 1933 collapse of the U.S. banking system exacerbated the Great Depression by massively contracting the money supply.”³⁸⁷ As such, advocates of stringent financial regulation argue, the aspects of banking that implicate the nation’s money supply should be controlled in order to ensure their alignment with the public interest in a stable monetary policy.³⁸⁸

c. The Role of Banks in the Payment System

A final justification provided for the extensive regulation of banks in the United States is the “special role [banks play] . . . in operating the U.S. payment system—the system for transferring wealth through bookkeeping entries, notably by clearing checks and transmitting electronic payments.”³⁸⁹ It is this system that allows a check deposited in one bank to be efficiently transferred to another. Should this payment system break down, there is “the potential for widespread . . . disrupt[ion] [to] the economy.”³⁹⁰ Thus, in order to ensure a

2013), <http://www.cnbc.com/id/100497710>; Michael McLeay, Amar Radia, & Ryland Thomas, *Money Creation in the Modern Economy*, BANK OF ENGLAND Q. BULL., Quarter 1 2014, at 16, available at <http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q102.pdf>.

383. Carney, *supra* note 382; McLeay, Radia, & Thomas, *supra* note 382, at 16; CARNELL, MACEY, & MILLER, *supra* note 369, at 40–42; TATOM, *supra* note 381, at 5.

384. Carney, *supra* note 382; McLeay, Radia, & Thomas, *supra* note 382, at 16; CARNELL, MACEY, & MILLER, *supra* note 369, at 40–42; TATOM, *supra* note 381, at 5.

385. Carney, *supra* note 382; McLeay, Radia, & Thomas, *supra* note 382, at 16; CARNELL, MACEY, & MILLER, *supra* note 369, at 40–42; TATOM, *supra* note 381, at 5.

386. CARNELL, MACEY, & MILLER, *supra* note 369, at 50.

387. *Id.*

388. *See* Carney, *supra* note 382; McLeay, Radia, & Thomas, *supra* note 382, at 18; CARNELL, MACEY & MILLER, *supra* note 369, at 54; TATOM, *supra* note 381, at 5.

389. CARNELL, MACEY, & MILLER, *supra* note 369, at 50; *see also* TATOM, *supra* note 381, at 5.

390. CARNELL, MACEY, & MILLER, *supra* note 369, at 51.

healthy payments system, advocates of regulation argue, banks must be prohibited from engaging in disruptive or risky business practices that might hinder the efficiency of the payment system.³⁹¹

2. *Application to Virtual Currency*

Ultimately, the justification for regulation of banks centers on the fact that bank failure “can have significant external costs (e.g., on depositors, borrowers, and local communities)” that extend beyond the bank and its customers.³⁹² If a bank fails or loses the trust of its customers, the national payment system suffers, a run on banks occurs, “[e]nterprises are stopped[,] [b]usiness is brought to a standstill[,] [f]oreclosures occur [and] . . . [p]roperty is sacrificed.”³⁹³ As such, when assessing whether regulation of Bitcoin is justified on the basis of the policy goals of banking laws, it is important to assess whether Bitcoin imposes similar external costs on society. The following sections will consider whether Bitcoin, like banks, can be viewed as “special” and will identify lessons that can be taken from the regulatory objectives of banking laws to develop effective virtual currency regulation.

a. *Is Bitcoin Susceptible to Runs or Panics?*

The failure of the Japan-based Bitcoin exchange, Mt. Gox, indicates that bitcoin exchanges operate in a manner similar to traditional banks with respect to “runs” or “panics.” In 2014, an online attack on the exchanges’ currency reserves triggered what came to known as “a digital age bank run.”³⁹⁴ In response, Mt. Gox froze the accounts of its customers and “refus[ed] to give customers their . . . [bitcoins] back.”³⁹⁵ Customers were, however, still permitted to “trade the Bitcoins in their accounts for other currencies” and in their fear that they might only receive partial repayment of their initial investment “panicked customers carried out \$32M USD of transactions on the site, nearly five times the normal daily volume.”³⁹⁶

391. *Id.* at 51–52; *see also* TATOM, *supra* note 381, at 5.

392. CARNELL, MACEY, & MILLER, *supra* note 369, at 55.

393. *Id.* at 55 (quoting *Schaake v. Dolley*, 118 P. 80, 83 (Kan. 1911)); *see also* TATOM, *supra* note 381, at 5.

394. Jason Mick, *Mt. Gox Bitcoin Bank Run Intensifies, 1 Million Customers at Risk*, DAILYTECH.COM (Feb. 7, 2014, 1:04 PM), <http://www.dailytech.com/Mt+Gox+Bitcoin+Bank+Run+Intensifies+1+Million+Customers+at+Risk/article34293.htm>.

395. *Id.*

396. *Id.*

Of course, the “digital run” on the Mt. Gox exchange did not have the same impact as the run on the banks that precipitated the Great Depression. It implicated only \$460 million worth of bitcoins and other exchanges began to distance themselves from Mt. Gox, preventing a cascading effect.³⁹⁷ However, should Bitcoin become a true competitor to government backed currencies or should traditional banks begin to invest in the virtual currency, protections against runs may need to be implemented. In fact, some have suggested that Bitcoin should be required to adopt insurance comparable to that of the FDIC else they “risk losing everything in bank runs.”³⁹⁸

b. Is Bitcoin Involved in the Creation and Destruction of Money?

Bitcoin does not create money in the same way as banks because loans are not made in connection with a fractional reserve system. Accordingly, Bitcoin does not pose precisely the same regulatory concerns. However, Bitcoin could be viewed as adding currency to the money supply in a broader sense. As discussed briefly above, bitcoins are created through a process of “mining” (or the decryption of online Bitcoin transactions by bitcoin users). The process of mining is slow and ensures that bitcoins are “created at a predictable and decreasing rate—automatically halving over time until issuance halts with a total of 21 million bitcoins in existence.”³⁹⁹ Thus, although the Bitcoin service cannot be said to maintain a fractional reserve, the “mining” process may create a somewhat similar result. Some bitcoins are exchanged for traditional currencies but other are simply created, through the mining process, in a manner that is in some ways comparable to the money created when a bank extends a loan without additional physical currency to back its value. As such, should Bitcoin grow in popularity and begin to be more commonly accepted as a form of currency, mining may have a direct impact on the total money supply and might justify bank-like regulation on those grounds. Even so, the differing type and level risk posed by Bitcoin at this time does not appear to support the conclusion that Bitcoin should be regulated like banks on the basis of their similarity in ability to create money.

397. Robert McMillan, *The Inside Story of Mt. Gox, Bitcoin's \$460 Million Disaster*, WIRED (Apr. 3, 2013), <http://www.wired.com/2014/03/bitcoin-exchange/>.

398. Mick, *supra* note 394.

399. Matthew J. Belvedere, *Big Bitcoin Selling Point Not Set in Stone: Mine*, CNBC (Apr. 7, 2014), <http://www.cnbc.com/id/101560477>.

c. *The Role of Bitcoin in the Payment System*

At the present stage of its development, Bitcoin cannot be said to be central to the payment system, which is still dominated by traditional banks. However, one could imagine a payment system that operates independently of any bank.⁴⁰⁰ In fact, Bitcoin advocates Cameron and Tyler Winklevoss have already envisioned such a system, arguing that the Bitcoin's true benefit is what it has to offer "in terms of payments, [because] it [i]s a transaction free, borderless global payments system Bitcoin can send 50 cents across the world and with the traditional system you can't do that."⁴⁰¹ Should the Winklevoss' vision of a Bitcoin-based payment system be realized, Bitcoin might displace banks as the dominant player in the payments system and, thereby, necessitate further regulation to ensure the health of that system. However, such a result does not appear supported at present because Bitcoin has yet to achieve, and realistically may never achieve, a level of acceptance that its failure as a payment system would have a crippling effect on the economy.

In sum, evaluating the regulatory goals of banking regulation and the other laws discussed in this Part IV facilitates a broader discussion of the unique risks of virtual currency and how best to regulate it. A number of lessons can be extracted from this process. First, it is clear that virtual currency implicates a spectrum of considerations that span a number of different existing frameworks. As such, the regulation of virtual currency appears justified on the basis of the legitimate goals of existing currency, payments, financial services, banking, and investment laws. Moreover, the need for interagency communication and a global perspective is intensified. Second, despite sharing similar regulatory considerations, virtual currency often creates a distinctly different level of concern (potentially greater than or lower than the original subject of regulation). Additionally, the unique aspects of virtual currency often make existing regulatory requirements ill-suited for extension. Therefore, policymakers can use regulatory goals and compliance requirements of existing law as a starting point, but will likely need to modify or create new methods of regulating virtual currency in order to advance the same regulatory goals in the context of virtual currency. Taken together, this process provides a mechanism for (1) thinking more

400. See CARNELL, MACEY, & MILLER, *supra* note 369, at 51.

401. Robert England, *Winklevoss Interview: Bitcoin Payment System Worth \$400 Billion*, INVESTOPEDIA (Apr. 10, 2014), <http://www.investopedia.com/articles/active-trading/040814/winklevoss-bitcoin-payment-system-worth-400-billion.asp>.

globally about all the pieces that may make up an effective system of virtual currency regulation, and (2) encouraging both communication and collaboration between the various regulatory stakeholders.

CONCLUSION

Decentralized virtual currency blurs the lines between traditional financial services, payment systems, and investment regulation. The innovative nature of virtual currency has allowed it to be used in many ways that resemble products and services that are subject to existing regulatory regimes. Virtual currency, however, is an entirely new medium of payment and investment. Like other technological innovations, Bitcoin brings novel regulatory challenges and places pressure on established regulatory frameworks that were developed to respond to other recognized forms.⁴⁰²

These challenges are nothing new. Regulation often lags behind the rapid growth of a new technology such that early entrants enjoy what has been called the “lawlessness of new frontiers” (or a low level of regulation) as the law catches up to the new public policy challenges that are created,⁴⁰³ often prompting the need to reassess legal and regulatory frameworks that do not fit.⁴⁰⁴ For example, legislators, regulators, and the judiciary struggled to develop a model for regulation of the Internet in the mid-1990s.⁴⁰⁵ Like the virtual currency discussed here, certain legal issues arising from the Internet could potentially be managed with existing law⁴⁰⁶ while other unique regulatory concerns were incapable of reconciliation by the simple application of existing approaches from related industries.⁴⁰⁷ Although Bitcoin is unlikely to ever have the same degree of transformational impact as the internet, this example illustrates a path forward.

402. See Donald E. Lively, *The Information Superhighway: A First Amendment Roadmap*, 35 B.C. L. REV. 1067, 1090 (1994) (noting that the “[e]mergence of a new . . . medium generates significant pressure upon established regulatory regimes conditioned to respond to recognized forms and experiences”).

403. See Steven R. Salbu, 11 HARV. J.L. & TECH 429, 431 (1998) (citing T.R. Goldman, *How Microsoft Gets Its Way in Washington*, LEGAL TIMES, Oct. 28, 1996, at 1).

404. *Id.* at 430–31 (discussing “unprecedented” issues raised by the Internet).

405. *Id.*

406. See Mark L. Caden & Stephanie E. Lucas, Comment, *Accidents on the Information Superhighway: On-Line Liability and Regulation*, 2 RICH. J.L. & TECH. 3, 65 (1996); Nicholas Robbins, *Baby Needs a New Pair of Cybershoes: The Legality of Casino Gambling on the Internet*, 2 B.U.J. SCI. & TECH. L. 7, 31 (1996).

407. See David P. Miranda, *Defamation in Cyberspace: Stratton Oakmont, Inc. v. Prodigy Services Co.*, 5 ALB. L.J. SCI. & TECH. 229, 247 (1996).

We have argued that the regulation of Bitcoin is justified on the basis of its propensity to raise the similar regulatory concerns as those that prompted the enactment of several existing laws. Though the degree of risk may differ, the legitimate policy goals of these laws would be served to some degree by regulating decentralized virtual currency. However, we have also shown that the mere extension of laws crafted to respond to the risks presented by established payment systems, financial services, and investment vehicles tend to be insufficient to control the same dangers when they are transferred to the online world of virtual currency. Accordingly, we contend that current efforts in the U.S., which can be characterized generally as pursuing such a limited approach to clarifying the treatment of virtual currency under existing frameworks, runs the risk of coming up short.

Instead of narrowly focusing on the technical question of whether and how an existing law applies to virtual currency, we encourage a more holistic approach. Specifically, we contend that the development of an efficient regulatory regime necessitates greater interagency communication about the spectrum of regulatory considerations raised by virtual currency and the pursuit of cohesive (if not unified) action. To that end, we posit that there is much to learn from: (1) divesting from attempts to define or conceptualize virtual currency via established constructs for payment systems or investment vehicles, and (2) evaluating the policy goals (not the statutory language) of existing law as applied to the unique nuances of virtual currency. In doing so, policymakers can identify the considerations unique to virtual currency and develop appropriate regulatory requirements to mitigate the actual risks raised by virtual currency free from self-imposed constraints.

It seems relevant to note in conclusion that this analysis does not seek to downplay the risks or opportunities presented by novel virtual currencies such as Bitcoin, nor does it seek to advocate for a particular regulatory response. Rather, it merely suggests that by avoiding an unnecessarily narrow debate constrained by the limits of presently existing regulatory structures and language, a more workable, comprehensive, and cohesive regulatory regime for virtual currencies might be forged.