

BITCOIN IN THE DARK WEB: A SHADOW OVER BANKING SECRECY AND A CALL FOR GLOBAL RESPONSE

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I. INTRODUCTION

Revolution and evolution are often two sides of the same coin. Since the industrial revolution, law and technology are in constant chase of each other like a statue and its shadow.

The Internet – just as the telegraph, the telephone, and airplanes before it – has become as easy to access as it is hard to grasp. This discrepancy may be considered as one of the reasons for the current lack of comprehensive regulation of the Web. However one wishes to approach the regulation of the Internet, the Internet is not no man’s land and as such, especially the remote and least known area of the Dark Web, requires more detailed regulation, particularly when lack thereof frustrates goals generally pursued outside cyberspace.

Virtual currencies play a key role in the transformational change affecting the world economy given the expanded venues available to consumers to access goods and services since the advent of the Web.¹ Indeed, virtual currencies offer a peer-to-peer exchange mechanism whereby traditional central clearinghouses are avoided.² However, while virtual currencies are not legal tender, they may have equivalent traditional currency value.³ Within this category, Bitcoin has developed and gained a primary status among virtual currencies that can be exchanged for traditional currencies.⁴ This reality is complicated considering the role of

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¹ International Monetary Fund, *Virtual Currencies and Beyond Virtual Currencies and Beyond: Initial Considerations*, 5, available at <https://www.imf.org/external/pubs/ft/sdn/2016/sdn1603.pdf>.

² *Id.*

³ Feature, Sarah J. Hughes & Stephen T. Middlebrook, *Advancing a Framework for Regulating Cryptocurrency Payments Intermediaries*, 32 YALE J. ON REG. 495, 504 (2015).

⁴ *Id.*

the Dark Web: a layer of the Web accessible only through specific software and where users can maintain nearly absolute anonymity.⁵

Given the combination of relatively easy access to the Dark Web and the use of virtual currencies as consideration in Dark Web transactions, in the absence of a minimum international standard of regulation, bank secrecy is allowed *de facto* on the Dark Web. This result directly frustrates the purpose of universally accepted banking transparency rules. In fact, the American Bank Secrecy Act and similar legislation enacted in other countries seek to combat money laundering by imposing reporting duties on banking institutions.⁶ However, availability of anonymous virtual currencies and of the Dark Web anonymous feature provide a way to launder money that is hardly traceable by law enforcement. This article proposes the adoption of a global standard to regulate Bitcoin and similar virtual currencies.

Part II provides an overview of the technology and functioning of the Internet, the Dark Web, and Bitcoin. Part II also surveys the criminal reality present in the Dark Web and the role of Bitcoin in those criminal transactions.

Part III discusses the current regulatory framework regarding Bitcoin developed by the American, European, and Chinese legal systems. Part IV examines the global battle against tax evasion, which has successfully combated the enabling system of bank secrecy. Part IV further illustrates how, although freedom of expression must be protected across media, as the U.N. Special Rapporteur David Kaye has stated in his 2015 report, the dangers associated with fostering encryption and anonymity too broadly risk affecting a wider spectrum of rights than the freedom of speech. In fact, if not moderately curtailed, encryption privileges risk defeating exacting the same goal of curbing tax evasion that countries have long fought for in “real life” by giving *cart blanche* to criminals using Bitcoin and similar virtual currencies on the Dark Web. This combination would enable what has been called the “wild wild web”: a reality where “little regulation and numerous opportunities” exist.⁷ Indeed, why permit anonymous transactions in the Dark Web that would otherwise not be possible real life? Why allow a wild reality where criminals can evade prosecution by the country with jurisdiction? A global response to better monitor the use of Bitcoin, particularly on the Dark Web where crimes such as child pornography, human and drug trafficking, murder, and money laundering are either committed or arranged for, is necessary to ensure respect of the law.

⁵ Stuart Dredge, *What is Tor? A Beginner's Guide to the Privacy Tool*, THE GUARDIAN, (Nov. 5, 2013 07:47 AM), <http://www.theguardian.com/technology/2013/nov/05/tor-beginners-guide-nsa-browser> (last visited Nov. 24, 2015).

⁶ The Currency and Foreign Transaction Reporting Act (“Bank Secrecy Act”), Pub. L. No. 91-508, 84 Stat. 1118 (1970).

⁷ Note, Shamoil Shipchandler, *The Wild Wild Web: Non-Regulation as the Answer to the Regulatory Question*, 33 Cornell Int'l L. J. 435 (2000).

II. THE DARK ABYSS OF THE DEEP WEB

A. EVOLUTION OF THE INTERNET

The Internet as we conceive it today is the evolution of a U.S. Department of Defense project that started with two computers (later described as “nodes”), one at the University of California, Los Angeles and the other at the Stanford Research Institute, that were linked together through *ad hoc* telephone connection in 1969.⁸ This became known as the ARPANET.⁹ The project steadily evolved and, in the words of computer historians Katie Hafner and Matthew Lyons, “the ARPA network was growing at a rate of about one node per month.”¹⁰ Indeed, by the end of 1969 two more computers were added to the network and by August 1972 ARPANET connected twenty-nine nodes located at various universities across the country.¹¹

As a need for a civilian network arose, supervision of the nascent Internet migrated from the Department of Defense to the National Science Foundation (NSF) in 1980.¹² The NSF promoted the development of a Computer Science Network (CSNET), later substituted by NSFNET in 1985.¹³ This marked a turning point in cyberspace history.¹⁴ Creating a three-tiered network architecture, NSFNET “connected campuses and research organizations to regional networks, which in turn connected to a main backbone linking six nationally funded super-computer centers” at the then breathtaking speed of 58 kilobits per second (Kbps).¹⁵

The Internet has continued to develop and expand its reach at light-speed pace.¹⁶ Global access has risen from 0.4% of the world population in December 1995 to 15.7% in December 2005, to 45.0% in June 2015.¹⁷ To better grasp the sense of just how much the Internet has penetrated civilian society, it is telling that, in the last 10 years, Internet users have escalated from one billion in 2005 to two billion in 2010, to three billion in 2014.¹⁸ Accordingly, throughout its relatively short existence, the Internet has been subject to incredible technical development, that have resulted in global accessibility by lay people. By obtaining an Internet Protocol (“IP”) address¹⁹ and logging into a router, individuals were enabled to

⁸ MARGARET WERTHEIM, *THE PEARLY GATES OF CYBERSPACE* 222 (Virago, 1999).

⁹ *Id.*

¹⁰ KATIE HAFNER & MATTHEW LYON, *WHERE THE LIZARD STAYS UP LATE: THE ORIGINS OF THE INTERNET* 151-155 (Simon and Schuster, 1996).

¹¹ MARGARET WERTHEIM *supra* note 8, at 223.

¹² *Id.* at 224.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *The Evolution of the Internet*, CISCO, <http://www.cisco.com/cpress/cc/td/cpress/design/isp/lispint.htm>.

¹⁶ MARGARET WERTHEIM *supra* note 8, at 222.

¹⁷ *Internet Growth Statistics*, INTERNETWORLDSTATS, <http://www.internetworldstats.com/emarketing.htm>.

¹⁸ *Internet Users*, INTERNETWORLDSTATS, <http://www.internetlivestats.com/internet-users/>

¹⁹ IP addresses are comparable to physical person’s addresses in that they serve a localization purpose. IP addresses are unique to each device present on the Internet and are made of four eight-bit numbers (e.g. Google’s IP is 216.239.51.99). Each IP address on the surface web has an alternative

communicate across a “network of networks” estimated to link over 50,000 distinct local area networks (LANs).²⁰ As the Internet became more accessible, users’ ability to interact (for example through social media) and publish material on blogs and bulletin boards has increased.²¹ However, wide spread use of the Internet does not correspond to an equivalent spread of knowledge of its mechanisms and functioning. In fact, while the vast majority of people may know how to surf the web or send emails, this does not correspond to an equal understanding of the underlying structure or operation of the Internet. Nonetheless, a new dimension – cyberspace – had been created with the Internet being its most visible manifestation.²²

B. GEOPHYSICS OF THE WEB

The World Wide Web (hereinafter “the Web”) and the Internet are commonly mistaken as synonyms. However, while the Internet is a network infrastructure, the Web is a way of accessing information through the Internet medium.²³ Specifically, the Web has often been compared to the ocean: a fluid pool of data made of layered accessible levels.²⁴

The first layer contains the “indexed” portion of the Web that search engines like Google and Bing have made readily accessible to users.²⁵ Below this superficial level, lays a deeper and larger layer: the Deep Web (also referred to by commentators as Hidden Web or Invisible Web),²⁶ whose content has not been indexed, and thus is not searchable through standard search engines.²⁷ For perspective, it is important to note that “Google – currently the largest search engine – has only indexed 4 to 16 percent of the [s]urface [w]eb. [While] [t]he Deep Web is approximately 400 to 500 times more massive. . . .”²⁸ While, society tends to believe the superficial layer of Internet has the answer to any question – modern society’s common maxim “Just Google it!” – the Deep Web has a broader and potentially infinite pool of content.²⁹

alphabetic address rendering surfing the Web easy (e.g. “google.com”). *The Internet*, BBC.COM, <http://www.bbc.co.uk/education/guides/zip9jpv4/revision/6>.

²⁰ Note, Allison E. Horton, *Beyond Control?: The Rise and Fall of Defamation Regulation on the Internet* 43 VAL. U. L. Rev. 1265, 1276.

²¹ *Id.*

²² “[C]yberspace refers to the interaction of people and business over computer networks, electronic bulletin boards and commercial online services. The largest and most visible manifestation of cyberspace is the Internet – a worldwide network of networks electronically connecting millions of computers and computer users.” R. Timothy Muth, *Old Doctrines on a New Frontier: Defamation and Jurisdiction in Cyberspace*, WIS. L. 10, 11 (1995).

²³ Vangie Biel, *The Difference Between the Internet and World Wide Web*, WEBOPEDIA (last updated Dec. 14, 2015), http://www.webopedia.com/DidYouKnow/Internet/Web_vs_Internet.asp.

²⁴ Daniel Sui, James Caverlee, Dakota Rudesill, *The Deep Web and the Darknet: A Look inside the Internet’s Massive Black Box*, Wilson Center, Science + Technology Innovation Program, (Aug. 2015), https://www.wilsoncenter.org/sites/default/files/stip_dark_web.pdf.

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

²⁸ See, e.g., *Do Anything with Data*, brightplanet.com (last visited Nov. 24, 2015).

²⁹ See, e.g., Jordain Carney, *Senators to Feds: ‘Just Google it’*, THE HILL (June 22, 2015, 3:43 PM), <http://thehill.com/blogs/floor-action/senate/245737-senators-just-google-it>; see *contra* Jane Shilling, *If you Value your Intelligence, Don’t ‘Just Google it’*, THE TEL. (Apr. 1, 2015, 7:07 PM),

Even deeper than the Deep Web is a third layer commonly referred to as the Dark Web (also referred to by commentators as Darknet, Dark Net, or Dark Internet.)³⁰ It is important to stress that the Deep and Dark Web are two distinct and separate layers.³¹ Indeed, while the Deep Web contains unsearchable pages, they are still accessible to those who know where to look. In contrast, the Dark Web's content is, as the name suggests, even more difficult to access. What happens in the Dark Web stays in the Dark Web. In fact, the main characteristic of the Dark Web is that it is not accessible through normal web browsers; instead, special software is necessary to gain access. While technically advanced, the process to actually access and surf the Dark Web is relatively simple because of a combination of user-friendly software and readily accessible "how-to" guides and forums available on the Surface Web.³² Indeed, the Center for International Governance Innovation ("CIGI") recently stated that "[o]ne of the things driving the rapid rise in cybercrime is that the cybercriminal does not have to be a master hacker since the exploits can be bought."³³

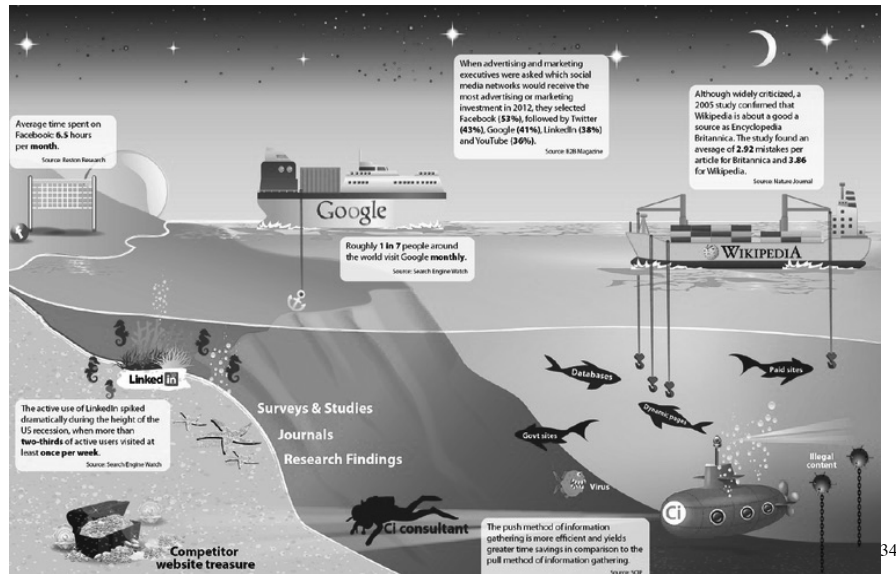
<http://www.telegraph.co.uk/men/thinking-man/11508889/If-you-value-your-intelligence-dont-just-Google-it.html>.

³⁰ Sui, Caverlee, Rudesill, *supra* note 24.

³¹ Joseph Cox, *Problem: The Government Still Doesn't Understand the Dark Web*, VICE.COM (Mar. 12, 2015, 11:00 AM) <http://motherboard.vice.com/read/problem-the-government-still-doesnt-understand-the-dark-web> (reporting some consider the Dark Web a portion of the Deep Web).

³² Tor enables users to anonymously browse the web by hiding their IP addresses and allows interaction through so-called *rendez-vous* protocols. To achieve the result, the network routes messages through a series of nodes so that, while it may be possible to locate an introduction point, it is not possible to view content unless invited to. Tor, *Hidden Service Protocol*, TORPROJECT, <https://www.torproject.org/docs/hidden-services.html.en>. The easiness of accessibility through Tor and use of the Dark Web was portrayed in popular Netflix series *House of Cards* when Lucas Goodwin (Sebastian Arcelus), a senior political editor looks for a hacker on the Deep Web to access U.S. Vice President Francis Underwood's (Kevin Spacey) phone records. *House of Cards*, Season 2, Episode 2, (Netflix 2014).

³³ Michael Chertoff & Toby Simon, *The Impact of the Dark Web on Internet Governance and Cyber Security*, CIGI (Feb. 2015), https://www.cigionline.org/sites/default/files/gcig_paper_no6.pdf.



At the basis of the anonymity granted to Dark Web users is Tor, a free software that allows anonymous communication.³⁵ Tor was originally developed “by the U.S. Navy and has received about 60% of its funding from the State Department and Department of Defense, although its other backers have included digital rights groups such as the Electronic Frontier Foundation, journalism and community body Knight Foundation and the Swedish International Development Cooperation Agency.”³⁶

When it was launched in 2002, TOR’s project intended to “stop people – including government agencies and corporations – from learning [one’s] location or tracking [one’s] browsing habit[,]” nonetheless, its potential use for mischief was quite clear to its creators.³⁷

While the anonymity feature of Tor may overall benefit society, such as enabling whistleblowers to provide documents to journalists or authorities, this feature may also, and does, attract significant criminal activity.³⁸ The famous case of the Silk Road market place underscores the Dark Web’s criminal activity.³⁹ The Silk Road was the first of a kind: a virtual market place for drugs (from marijuana to ecstasy and heroin) that

34 Image available at <http://www.taringa.net/posts/imagenes/18869191/La-Deep-Web-Imagenes.html> (last visited Nov. 23, 2015).

35 Tor is also known as the Onion Router from the original software from which it developed. See, generally, Tor, <https://www.torproject.org/docs/faq#WhyCalledTor>.

36 Dredge, *supra* note 5.

37 *Id.*

38 Dissenter 1, *The Deep Web: A Case for Internet Regulation*, URBANDISSENT (Sep.16, 2015) <http://urbandissent.com/2015/09/16/deep-web-a-case-for-internet-regulation/> (last visited Nov. 24, 2015) (noting “[w]ikiLeaks used the deep web to attain the classified information they received which exposed thousands of pages of government secrets.”).

39 Dredge, *supra* note 5 (noting that the US Navy is still a key user); *Silk Road Drug Website Founder Ross Ulbricht Jailed*, BBC.COM (May 30, 2015) <http://www.bbc.com/news/world-us-canada-32941060>.

profited its owners millions of dollars before the FBI shut it down in 2013.⁴⁰ Indeed, “[v]ery naughty people use TOR” to say the least.⁴¹ In fact, the content of the Dark Web, which accounts for approximately 97% of the total content available on the Web, varies from “messaging boards of political dissidents, drug trafficking, weapons trafficking, hit men for hire, and pedophile websites.”⁴²

C. A NEW CURRENCY FOR A NEW DIMENSION: BITCOIN

Satoshi Nakamoto – an alias⁴³ – was the first to introduce Bitcoin when he posted a technical paper on the Internet describing the protocol in 2008.⁴⁴ The protocol was first implemented in 2009 and, since then, several versions of the cryptocurrency have been created and are easily available for download.⁴⁵

Before explaining the functioning of Bitcoin and its role in today’s economy, it is helpful to remember that traditional currencies are defined as a system of money used and generally accepted in a country (or union of countries as in the European Union’s Eurozone) as form of payment.⁴⁶ Traditional currencies are also known as fiat currencies from the Latin term *fiat* meaning “let it be done” or “so it shall be” in the sense of a governmental decree or order. This is so because, differently than commodity-based money like gold, silver or copper-backed coins, fiat currencies do not have an intrinsic value. Instead, the national government, as issuer, declares its value as legal tender. Indeed, fiat currencies are part of multi-layer national infrastructure comprehensive of a national bank or system of banks (e.g., the U.S. Federal Reserve) and an agency or department entrusted with the production of currency (e.g., the U.S. Department of the Treasury Bureau of Engraving and Printing.)⁴⁷

A virtual currency is a “medium of exchange existing entirely in intangible form that is not legal tender but which can substitute for legal tender.”⁴⁸ Within this broader category of virtual currencies often used for online games (e.g., the “Linden Dollar” used in Second Life) and social

40 Dissenter 1, *supra* note 38.

41 Dredge, *supra* note 5. (discussing an NSA document).

42 Dissenter 1, *supra* note 38.

43 While Bitcoin has developed since Nakamoto first published its protocol, the true identity of its designer (or designers) is still unknown. After posting the protocol, Nakamoto, other than for a few messages, has disappeared and, in his words, “[has] moved on to other things.” *Who is Satoshi Nakamoto?*, THE ECONOMIST (Nov. 2, 2015 23:27) <http://www.economist.com/blogs/economist-explains/2015/11/economist-explains-1> (discussing how, among other things, Nakamoto’s own funds have remained untouched). Several individuals and agencies, spanning from John Nash to the NSA, have been thought to be the “face” behind the Nakamoto mask, but no ultimate finding has been made. See, e.g. Justin O’Connell, *10 People who have been Called the Inventor of Bitcoin, Satoshi Nakamoto*, CRYPTOCOINSNEWS (Aug. 21, 2015), <https://www.cryptocoinsnews.com/called-the-inventor-of-bitcoin-satoshi-nakamoto/> (on the ten people who have been thought to be the inventor).

44 P. CARL MULLAN, THE DIGITAL CURRENCY CHALLENGE – SHAPING ONLINE PAYMENT SYSTEMS THROUGH U.S. FINANCIAL REGULATIONS 85 (Palgrave MacMillan eds., 1st ed. 2014).

45 *Id.* at 86.

46 Article, Ralph E. McKinney Jr. et al., *The Evolution of Financial Instruments and the Legal Protection against Counterfeiting: A Look at Coin, Paper, and Virtual Currencies*, 2015 U. Ill. J. L. TECH. & POL’Y 273, 274.

47 *Id.* at 277.

48 Hughes & Middlebrook, *supra* note 3 at 504.

media are cryptocurrencies, Bitcoin being an example.⁴⁹ Cryptocurrencies are distinguishable from other virtual currencies in that the former is “an internet-based virtual currency in which the ownership of a particular unit of value is validated using cryptography.”⁵⁰

Accordingly, Bitcoin is a virtual currency with equivalent value in real currency but no legal tender status, at least in most places.⁵¹ Given Bitcoin’s nature, mathematical formulas and cryptography respectively control its issuance and use.⁵² While users’ software clients store a public record of all transactions – the block chain – the actual identity of the transacting parties remains anonymous, as no personal information is required to create an account on the platform or exchange Bitcoins.⁵³ Elimination of a third party intermediary, such as a bank, ensures anonymity within Bitcoin transactions.⁵⁴ Anonymity is furthered by the absence of reporting requirements and regulatory agencies, such as central banks and taxing authorities.

Participants voluntarily record each transaction in the block chain.⁵⁵ However, the voluntary character of this recording is disputable. In fact, users who do record their transactions in the block chain are rewarded with newly minted Bitcoins.⁵⁶ Though an effective method, this may not be sufficient as Bitcoin develops and penetrates the market further. This incentive-based policy explains, at least in part, the steady growth of Bitcoin systems.⁵⁷

Each user has a private encryption key that provides access to their personal account and, when paired with the public key, allows transactions to go through.⁵⁸ In fact, a transaction requires a “pair of interlocking encryption keys” acting as peer-to-peer signatures (as exemplified in the figure below.)⁵⁹ The use of digital encrypted signatures to authenticate transactions ensures authentication, non-repudiation, and integrity of payment messages.⁶⁰

49 *Id.*

50 *Id.*

51 *In Re Coinflip, Inc. et al.*, CFTC Docket No. 15-29 (CFTC Filed Sept. 17, 2015) available at <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>.

52 MULLAN *supra* note 44, at 86-87.

53 *Id.* (noting that the issuance is limited to 21M units).

54 Federal Reserve Board, *Bitcoin: Technical Background and Data Analysis*, 5 available at <http://www.federalreserve.gov/econresdata/feds/2014/files/2014104pap.pdf>.

55 *Id.*

56 *Id.* (minting refers to the creation of new Bitcoins).

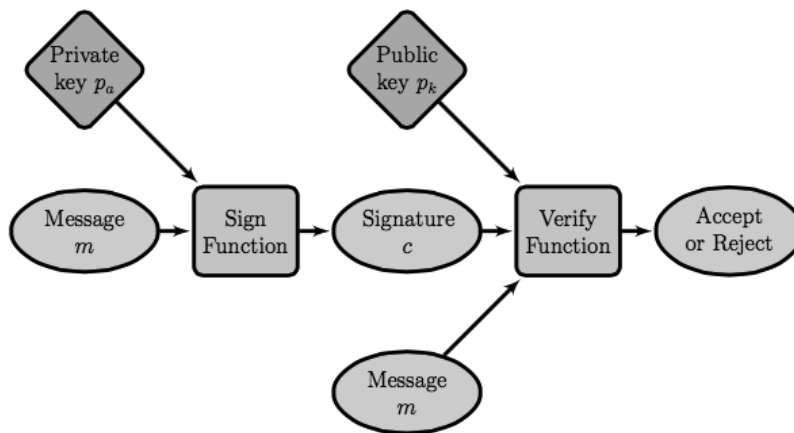
57 *Id.*

58 MULLAN *supra* note 44, at 86.

59 *Id.*

60 Federal Reserve Board, *supra* note 54, at 8.

Bitcoin transactions are final and irreversible: voluntary refunds are the only venue to revert the effect of the transfer—differently than fiat currency transfers made using traditional banking services.⁶¹ Because there is no administrator, no user, or merchant, no transaction can be blocked or penalized.⁶² Furthermore, Bitcoin users have the option to either keep a Bitcoin wallet (also called Dark Wallet when kept on Dark Web exchanges), on their own or through third parties, or convert the currency back to their local currency.⁶³ The latter option may, depending on the method used, entail a potential for identity discovery.⁶⁴ Indeed, it should not surprise that a commonly heard phrase in the Bitcoin industry is “buyer beware.”⁶⁵



Bitcoin further differs from traditional currencies in that no central bank controls the amount of currency available and no jurisdiction guarantees it.⁶⁶ Instead, a mathematical protocol with no central administrating or monitoring authority generates the Bitcoin.⁶⁷ Most importantly, given the math-based issuance of the Bitcoin, while the currently cap of twenty-one million dollars is believed to be reached not earlier than 2140, each unit can be divided in fractional units, thus enhancing the presence and spread of the currency.⁶⁸ The cap in Bitcoin availability tends to suggest a commodity-like nature. However, unlike traditional natural commodities, Bitcoin’s cap is mathematically forced and easily transformable, which adds a further layer of complexity.

61 MULLAN *supra* note 44, at 87.

62 *Id.*

63 Steve Kovach, *What It's Like Using an ATM that Automatically Turns Your Cash into Real Bitcoins*, BUSINESSINSIDER.COM (Mar. 10, 2014 5:00 PM), <http://www.businessinsider.com/bitcoin-atm-2014-3> (on how to buy and cash Bitcoin).

64 *Id.*

65 MULLAN *supra* note 44, at 87.

66 FATF Report, *Virtual Currencies Key Definitions and Potential AML/CFT Risks* (June 2014), <http://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf>.

67 *Id.*

68 *Id.*

Furthermore, tools and services like TOR, the Dark Wallet, and Bitcoin-laundering services intentionally designed to obscure the source of a Bitcoin transaction, enhance the Bitcoin's already anonymous character and further complicate traceability.⁶⁹ Indeed, in the case of laundering services, the chain of transactions on the block chain is obscured by "linking all transactions in the same bitcoin address and sending them together in a way that makes them look as if they were sent from another address."⁷⁰ Other services pursuing the same goal instead "comingle" different series of transactions rendering impossible the identification of the user to whom the sender intended to direct the funds.⁷¹

Bitcoin acceptance peaked in 2013 with over sixty-four thousand businesses around the globe accepting it as form of payment.⁷² However lucrative of a business, Mt. Gox, the largest Bitcoin exchange, filed for bankruptcy in 2014, after Bitcoin valued at around five-hundred million U.S. dollars mysteriously disappeared.⁷³ This example, considering the anonymous features of the currency, illustrates the great volatility and risks associated with the trading in Bitcoin. Enforcement agencies soon picked up on Bitcoin, and, relatively soon after its creation, the Financial Crimes Enforcement Agency ("FinCEN") intervened, issuing an interpretative guidance discussed later in Section III of this article.

D. CRIME IN THE DARK WEB AND THE ENABLING ROLE OF BITCOIN

Simply being unobservable does not make cybercrimes and cyber-enabling of crimes nonexistent—quite the contrary. While the Deep and Dark Web have clear benefits, it is undisputed those channels provide criminals dimensions—anonymity and lack of regulation—that facilitate their safe organization, transaction, and execution of crimes.

The array of crimes committed or organized in the Dark Web is not necessarily different than the real world one. Indeed, the Dark Web is foremost a means of safe communication (i.e. anonymous) and not necessarily the means used to perpetrate crimes—differently than for cyber crimes such as hacks and data-theft, where the surface web is both the location and means of perpetration.

As mentioned above, the Dark Web provides a great platform for drug dealing—as in the case of the Silk Road—but, just like the Surface Web, the possibilities are endless. Indeed, the Dark Web offers a venue for various activities including:

1. Illegal sale of weapons, exotic animals, stolen goods and information;
2. Murder, both in the more direct form of finding a hit man for hire, but also, and probably even more frightening, by betting on

69 *Id.*

70 *Id.*

71 *Id.*

72 Federal Reserve Board, *supra* note 54, at 5.

73 *Id.* at 2.

people's lives and profiting from accurately guessing death dates (this is the case of the "Assassination Market," a website comparable to an exchange market where future options are invested in with the difference lying on the underlying commodity);

3. Terrorism, in fact, given the anonymity provided, the Dark Web offers a great tool for "propaganda, recruitment, financing, and planning";
4. Hacktivism (this is more controversial conduct considering, for example, the recent group Anonymous and its actions);
5. Gambling;
6. Pedophilia;
7. Human experimentation (as in a horror movie, a website existed, "The Human Experiment," where details of experiments conducted on homeless, usually unregistered, people—or so it was claimed—could be found);
8. Human trafficking; and
9. Illegal financial transactions.⁷⁴

Bitcoin becomes particularly central in the realm of illegal sales, gambling, and illegal financial transactions. In fact, anytime a crime is financed through Bitcoin, there is an added layer of difficulty for law enforcement. Those crimes and Bitcoin are, in those instances, intertwined on two layers: not only do Bitcoins provide a practically untraceable currency for transactions, but the Dark Web has developed in part "to facilitate untraceable financial transactions."⁷⁵ This result is achieved, among other ways, through "launder[ing] bitcoin by disguising the true origin of the transactions or giv[ing] users an anonymous debit card issued by a bank. Users are also given virtual credit cards issued by trusted operators in the dark Web."⁷⁶ Those websites (for example, Banker & Co. and InstaCard) act at the backend of the transaction and provide a "safe" gateway in the part of the transaction that has the potential for exposing a party's identity if they wish to cash the Bitcoin instead of keeping a wallet.⁷⁷ Accordingly, a comprehensive and global categorization of Bitcoin and Bitcoin exchanges within existing legal framework is needed to ensure legality on the Internet.

⁷⁴ Chertoff & Simon, *supra* note 33 at 4–5.

⁷⁵ *Id.* at 5; Already in 1999, economist Milton Friedman foresaw that features enabling anonymous funds exchange on the Internet would soon "develop . . . and that will make it even easier for people using the Internet. Of course, it has its negative side. It means the gangsters, the people who are engaged in illegal transactions, will also have an easier way to carry on their business." Steve H. Hanke, *Friedman and Hanke on Bitcoin*, CATO AT LIBERTY (Feb. 20, 2014 2:35 PM), www.cato.org/blog/friedman-hanke-bitcoin (quoting Interview by John Berthoud with Milton Friedman, in San Francisco, Cal. (1999)).

⁷⁶ Chertoff & Simon, *supra* note 33 at 5 *Id.*(citing Matt Dean, *Digital Currencies Fueling Crime on the Dark Side of the Internet*, FOX BUSINESS (Dec. 18, 2014), <http://www.foxbusiness.com/features/2014/12/18/digital-currencies-fueling-crime-on-dark-side-internet.html>).

⁷⁷ *Id.*

III. NATIONAL BITCOIN REGULATION: NECESSARY BUT NOT SUFFICIENT

Bitcoin, like other similar virtual currencies, has not been the subject of specific regulation, nor does this article suggest it should be. Instead, what is crucial is accepting a uniform definition of Bitcoin as falling within one of the broader existing categories of financial instruments and to regulate it under the relative existing statutes and regulations. Indeed, the subject of discussion is not whether or not Bitcoin should be regulated, but whether it should be regulated as a currency, security, or commodity.

Subsection A illustrates Bitcoin's current regulatory framework in the United States at both the federal and state level. Given the lack of a universal definition of Bitcoin, its status and consequent regulation differs greatly depending on whether it is categorized as a form of money, a security, or a commodity.

Subsection B illustrates the international approaches of the European Union and the Republic of China. Part B also discusses the Chinese Bitcoin bubble to highlight the major role played by the Chinese market in Bitcoin trades and value assessment.

A. AMERICAN REGULATORY FRAMEWORK

1. *FinCEN's Regulation and Bank Secrecy Act Applicability*

Due to its anonymous features, Bitcoin users and exchanges are subject to the Bank Secrecy Act ("BSA"), as clarified by FinCEN, a branch of the US Department of the Treasury, in 2013.⁷⁸ While the guideline does not go as far as classifying Bitcoin's status, it explains the BSA applies "to persons creating, obtaining, distributing, exchanging, accepting, or transmitting virtual currencies." The BSA further defines a "money transmission service" as "acceptance of currency, funds, or other value that substitutes for currency from one person *and* the transmission of currency, funds, or other value that substitutes currency to another location or person by any means."⁷⁹

The FinCEN 2013 guideline considers Bitcoin administrators and exchangers, but not users, Money Services Businesses ("MSB") that must comply with the appropriate Treasury Department registration process.⁸⁰ Furthermore, Money Transmitting Services, as defined by the guideline, are also covered by the USA PATRIOT ACT of 2001, which imposes

⁷⁸ Dep't of the Treasury Fin. Crimes Enforcement Network, Guidance Paper FIN-2013-G001, Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies (2013), available at <https://www.fincen.gov/resources/statutes-regulations/guidance/application-fincens-regulations-persons-administering>.

⁷⁹ *Id.*

⁸⁰ *Id.* (emphasis in original); *Money Services Business (MSB) Registration*, FINCEN, https://www.fincen.gov/financial_institutions/msb/msb_registration.html, (last accessed Feb. 5, 2016).

finances, for example, for lack of registration and obtainment of a Money Transmitter license.⁸¹

While it took time, FinCEN's finding that BSA applies to Bitcoin is a major move towards a thorough regulation of Bitcoin given the pivotal role the cryptocurrency has in Dark Web financial crimes.

2. *United States District Courts Split: Texas Declares Bitcoin a Form of Money while Florida Rejects the Argument*

In July 2013, four months after FinCEN's guideline publication, a Texas District Court ruled on an issue of first impression and set the first legal precedent that "[i]t is clear that Bitcoin can be used as money."⁸² The court reached this conclusion by acknowledging that "[Bitcoin] can be used to purchase goods or services, and as Shavers stated, used to pay for individual living expenses."⁸³ While limited in terms of market acceptance, Bitcoin "can also be exchanged for conventional currencies, such as the U.S. dollar, Euro, Yen, and Yuan."⁸⁴ Accordingly, the Texas court found that "Bitcoin is a currency or form of money."⁸⁵

Although groundbreaking, the ruling should be taken with a grain of salt. While Bitcoin is indeed used as a form of currency, it lacks traditional characteristics of currency: it is not backed by a central authority such as the U.S. Treasury for the U.S. dollar, and it does not have an intrinsic value, as in the case of commodities.⁸⁶ Absent these characteristics, some have argued Bitcoin cannot constitute a currency because it does not have both of the required characteristics: being a means of exchange *and* being a store of value.⁸⁷

The lack of national infrastructure backing up the Bitcoin, as compared to *fiat* currencies, is of great importance when considering whether to classify Bitcoin as currency. Indeed, except as in extraordinary circumstances, a national currency can always be exchanged for and accepted as form of payment. Bitcoin, instead, being the fruit of an Internet mathematical protocol and given the absence of a physical "paper trail" backing up the block chain, could vanish because of the very nature of the Internet and computers being subject to viruses.⁸⁸

⁸¹ Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT ACT) Act of 2001, Pub. L. No. 107-56.

⁸² SEC v. Shavers, 2013 U.S. Dist. LEXIS 110018 (E.D. Tex. Aug. 6, 2013) (Addressing the issue of whether jurisdiction under the Securities Acts of 1933 and 1934 applied to the facts of the case involving a Bitcoin Ponzi scheme).

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.* (The court's ultimate finding was that investors wishing to invest in BTCST provided an investment of money).

⁸⁶ See Paul Krugman, *Bitcoin Is Evil*, N.Y. TIMES (Dec. 28, 2013), http://krugman.blogs.nytimes.com/2013/12/28/bitcoin-is-evil/?_r=0.

⁸⁷ John Authers, *Time to Take the Bitcoin Bubble Seriously*, FIN. TIMES (Dec. 11, 2013), <http://www.ft.com/cms/s/0/4ad1bba0-61fa-11e3-aa02-00144feabdc0.html#axzz3sNu5guRP>.

⁸⁸ An example of a more structured and more reliable alternative currency is the Unified System for Regional Compensation (SUCRE). SUCRE started as a virtual currency for transaction between Ecuador and Venezuela and was intended as a medium to replace the US dollar as means of exchange to limit and decrease the US influence and control over Latin American trade and, at the same

Based at least in part on those premises, on July 22, 2015, District Court Judge Pooler ruled Bitcoin is not money.⁸⁹ The judge dismissed charges of money laundering of Bitcoin, reasoning that Bitcoin does not qualify as currency because it lacks a bank or government infrastructure and its non-tangible nature, as, in the words of Judge Pooler, “[Bitcoin] cannot be hidden under a mattress like cash and gold bars.”⁹⁰ The case before the Miami District Court saw website designer Michell Espinoza charged with money laundering based on its sale of Bitcoin to undercover agents who told him they wanted to use the money to buy stolen credit-card numbers.⁹¹ The court importantly highlighted that while “it is not an expert in economics; however, it is very clear, even to someone with limited knowledge in the area, the Bitcoin has a long way to go before it the equivalent of money,” and instead, the court considered the sale a mere sale of property, not currency.⁹² The court decision was also motivated by the very statute on which the charges were based and which the Judge considered too vague.⁹³ The Florida statute indeed provides that one can be charged with money laundering if they engage in a financial transaction that will “promote” illegal activity.⁹⁴ The court explained that “[it] is unwilling to punish a man for selling his property to another, when his actions fall under a statute that is so vaguely written that even legal professionals have difficulty finding a singular meaning,” but, Judge Pooler wishes the Florida legislature to take proactive steps in the field, recognizing Bitcoin’s role in crime.⁹⁵ Indeed, law enforcement has long struggled with Bitcoin and its role in illegal activities.⁹⁶ While the Florida ruling seems more in line with other regulatory players as discussed below, its importance remains as it will probably spark further development of the industry and also motivate regulators to take action.

time, increase stability of those markets. Mercedes Alvaro & Jeffrey T. Lewis, *Who Needs Bitcoin? Venezuela has its “Sucre,”* (Jan. 2, 2014 6:51 pm), <http://www.wsj.com/articles/SB10001424052702304202204579256062854362716>. See also generally, Caroline R. Hurtado, Note, *Fiscal Policies as Decisive Solutions for Troubled Economies: Differing Legislative Enactments in Argentina and Ecuador*, 24 LOY. L.A. INT’L & COMP. L. REV. 391 (discussing the dollarization process undergone Latin American countries to obviate to economic instability).

⁸⁹ Florida v. Espinoza, F14–2923, 6 (Fl. Dist. Ct. 2016), available at [http://www.miamiherald.com/latest-news/article91701087.ece/BINARY/Read%20the%20ruling%20\(PDF\)](http://www.miamiherald.com/latest-news/article91701087.ece/BINARY/Read%20the%20ruling%20(PDF)).

⁹⁰ *Id.*

⁹¹ *Id.* at 2.

⁹² *Id.* at 6; *Id.* at 7.

⁹³ *Id.* at 7.

⁹⁴ *Id.*

⁹⁵ *Id.* at 7; *Id.* at 6.

⁹⁶ David Ovalle, *Bitcoin is not Money, Miami Judge Rules in Dismissing Laundering Charges*, MIAMI HERALD (July 25, 2015 10:22 AM), <http://www.miamiherald.com/news/local/crime/article91682102.html>.

3. *Bitcoin as a Security*

While the court in *Shavers* found that Bitcoin could be used as a security, it did not address the issue of “whether the Bitcoin itself could be a security.”⁹⁷

In economic terms, a security is any form of investment. However, the legal definition of the same term varies, sometimes significantly, from country to country. In the U.S., the relevant governing law, section 77(b) of the Securities Act of 1933, provides, in relevant part, that “security means any note, stock, treasury, stock, security future, security-based swap, bond . . . investment contract . . . or, in general, any interest or instrument commonly known as a ‘security’”⁹⁸

Courts typically determine whether an interest is a security under the Securities Act of 1933 through the Howey test.⁹⁹ The Court, applying a literal analysis of the law, reasoned that in order to understand what falls within the definition of security, it is first necessary to determine what an “investment contract” is.¹⁰⁰ The Howey test determines whether, at the time of the interest issuance, the “investment contract,” and consequently security, is

“a contract, transaction or scheme whereby a person invests his money in a common enterprise and is led to expect profits solely from the efforts of the promoter or a third party, it being immaterial whether the shares in the enterprise are evidenced by formal certificates or by nominal interests in the physical assets employed in the enterprise.”¹⁰¹

However, applying the Howey test to Bitcoin, no final determination can be made as its features do not markedly point in one direction or the other.¹⁰² Accordingly, while Bitcoin may under certain circumstances be used as a security, it is not clear whether it does unequivocally qualify as such.¹⁰³

4. *Bitcoin as a Commodity*

A commodity is a “basic good used in commerce that is interchangeable with other commodities of the same type.”¹⁰⁴ A particular characteristic of commodities is that their quality is essentially uniform

⁹⁷ Daniela Sonderegger, Note, *A Regulatory and Economic Perplexity: Bitcoin Needs Just a Bit of Regulation*, 47 WASH. U. J.L. & POL’Y 175, 195.

⁹⁸ 15 U.S.C.S.USCS § 77b.

⁹⁹ See SEC v. W. J. Howey Co., 328 U.S. 293 (1946)..

¹⁰⁰ “Section 2 (1) of the Act defines the term ‘security’ security to include the commonly known documents traded for speculation or investment. This definition also includes ‘securities’ securities of a more variable character, designated by such descriptive terms as ‘certificate of interest or participation in any profit-sharing agreement,’ ‘investment contract’ contract and ‘in general, any interest or instrument commonly known as a ‘security.’” SEC v. W. J. Howey Co., *supra* note 91, at 297.

¹⁰¹ SEC v. W. J. Howey Co., *supra* note 991, at 298–99.

¹⁰² Sonderegger, *supra* note 97, at 195.

¹⁰³ *Id.* at 196.

¹⁰⁴ *Commodity*, INVESTOPEDIA, <http://www.investopedia.com/terms/c/commodity.asp> (last visited Feb. 6, 2016).

across producers.¹⁰⁵ Indeed, all commodities must meet three conditions to qualify as such: (1) be standardized; (2) be usable upon delivery; (3) and its price must vary enough to justify creating a market for the item.¹⁰⁶ Typical examples include energy-related goods like gas, coal, and oil; precious metals like gold, silver, and copper; as well as agricultural goods like wheat, oil, and coffee.¹⁰⁷

In September 2015, the U.S. Commodity and Futures Trading Commission (“CFTC”) issued its first action against an unregistered Bitcoin option-trading platform, confirming that Bitcoin, as well as other digital currencies, qualify as commodities for purposes of the Commodity Exchange Act (“CEA”).¹⁰⁸ As suggested in Part II, defining Bitcoin as a commodity raises at least one issue: contrary to traditional commodities, its availability is potentially endless. However, this is only a limited issue, in that, for example, it has been long accepted that currencies, usually currencies of countries that possess great amount of commodities or other natural resources, have long been accepted as commodities.¹⁰⁹

The CFTC explained that the definition of a “commodity” is broad and includes “all services, rights, and interests . . . in which contracts for future delivery are presently or in the future dealt in.”¹¹⁰ New York Law School Professor Houman Shadab cautions the applicability of the CFTC’s finding and suggests its implications may shake *Shaver*’s court conclusion that Bitcoin can qualify as a security.¹¹¹ In his words, “[t]he [CFTC order] puts to rest any notion that virtual currencies qualify as securities. Otherwise, the Securities and Exchange Commission would be bringing this action, not the CFTC.”¹¹² Since the CFTC has not followed the issuance of the order with further disclosures, no final determination can be made as to Bitcoin’s status as a security, but it is clear that it qualifies as a commodity.

5. *The Federal Reserve, the Internal Revenue Service, and Other State and Federal Regulators*

Given the absence of bank intermediaries in Bitcoin transactions, Federal Reserve Chairwoman Janet Yellen concluded that the agency “doesn’t have authority to supervise or regulate Bitcoin in any way.”¹¹³

¹⁰⁵ *Id.*

¹⁰⁶ *Commodity*, INVESTING ANSWERS, <http://www.investinganswers.com/financial-dictionary/commodities-precious-metals/commodity-1035> (last visited Feb. 6, 2016).

¹⁰⁷ *Commodity*, BUSINESS DICTIONARY, <http://www.businessdictionary.com/definition/commodity.html> (last visited Feb. 6, 2016).

¹⁰⁸ *In Re Coinflip, Inc. et al.*, *supra* note 51.

¹⁰⁹ See Brian Perry, *Forex Currencies: Commodity Pairs (USD/CAD, USD/AUD, USD/NZD)*, INVESTOPEDIA, <http://www.investopedia.com/university/forex-currencies/currencies8.asp> (last visited Feb. 6, 2016).

¹¹⁰ 7 U.S.C. 1(a)(9);. See, e.g., Board of Trade of City of Chicago v. SEC, 677 F. 2d 1137, 1142 (7th Cir. 1982).

¹¹¹ Pete Rizzo, *CFTC Ruling Defines Bitcoin and Digital Currencies as Commodities*, COINDESK (Sept. 17, 2015 22:06), <http://www.coindesk.com/cftc-ruling-defines-bitcoin-and-digital-currencies-as-commodities/>.

¹¹² *Id.*

¹¹³ Caleb Chen, *Chairwoman Yellen: The Fed Doesn’t Have Authority To Supervise Or Regulate Bitcoin in Anyway*, CRYPTOCOINS NEWS (Feb. 27, 2014),

Unlike the Federal Reserve, the Internal Revenue Service (“IRS”) has affirmed its authority over Bitcoin. The IRS did so by issuing a notice clarifying that Bitcoin shall be treated as property for taxation purposes and that “sale or exchange of convertible virtual currency, or the use of convertible virtual currency to pay for goods or services in a real-world economy transaction, has tax consequences that may result in a tax liability.”¹¹⁴

Importantly, the State of New York has proposed a “BitLicense” regulation plan that intends “to help protect consumers and root out illicit activity.”¹¹⁵ Five additional states—California, Colorado, New Hampshire, New Mexico, and Texas—have moved toward a favorable regulation of Bitcoin.¹¹⁶ The licensing process will enable states to conduct upfront investigation of Bitcoin exchanges that will evolve into easier monitoring and enforcement.¹¹⁷

B. INTERNATIONAL REGULATORY FRAMEWORK

1. *The European Approach*

The European Central Bank (“ECB”) has yet to regulate virtual currencies but has clarified that while the use of virtual currencies such as Bitcoin may have benefits, it nonetheless requires attentive monitoring because of the innate risks for price and financial stability.¹¹⁸ The ECB has stressed that, while safer versions of virtual currency may develop in the future, there is a need for legal certainty in the field, which may be achieved, among other things, by clarifying application of current legislation to Bitcoin and similar virtual currencies.¹¹⁹

Two EU member states do not consider Bitcoin an alternative form of payment.¹²⁰ However, most have issued some form of warning or informative note.¹²¹ Although the ECB, like the IRS, does not recognize Bitcoin as a form of money, but only representative of value, in October 2015, the European Court of Justice (“ECJ”) ruled that Bitcoin should be

<https://www.cryptocoinsnews.com/chairwoman-yellen-the-fed-doesnt-have-authority-to-supervise-or-regulate-bitcoin-in-anyway/>. *Id.*

¹¹⁴ IRS Notice 2014–21: Virtual Currency Notice at 1, March 25, 2014, available at <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>.

¹¹⁵ Benjamin M. Lawskey, Superintendent of Fin. Serv., Speech: NYFDS Announces Final BitLicense Framework for Regulating Digital Currency Firms (June 3, 2015), available at <http://www.dfs.ny.gov/about/speeches/sp1506031.htm> (discussing 23 NYCRR §200.1 et seq. available at https://media.scmagazine.com/documents/127/speech_-_june_3,_2015__nydfs_a_31558.pdf available at).

¹¹⁶ For more detail as to the specific actions of those states, see Daniel Cawrey, *5 US States Poised to Promote Bitcoin Friendly Regulation*, COINDESK (Aug. 31, 2014 11:00), <http://www.coindesk.com/5-us-states-poised-promote-bitcoin-friendly-regulation/>.

¹¹⁷ See *id.*

¹¹⁸ See E.C.B. Report of the European Central Bank, Feb. 2015, *Virtual Currency Schemes—A Further Analysis*, available at <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemesen.pdf>.

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ *Id.*

treated as currency, and not as a commodity, for tax purposes.¹²² This treatment renders Bitcoin tax-exempt which in turn has boosted its trading value.¹²³ The ECJ holding, while at odds with the IRS analysis, is consistent with the United Kingdom's approach and, it has been argued, it increases the chance the Bitcoin will develop as a "genuine alternative" currency.¹²⁴

Bitcoin exchange markets are highly volatile and fragile, as evidenced by, for example, the 2014 collapse of Mt. Gox, which used to be the principle market for Bitcoin, in 2013.¹²⁵ However, trade in Bitcoin exchange markets, like newly launched New York-based exchange Gemini, have seen incredible interest as "[p]eople continue to be obsessed with the currency itself. . . ."¹²⁶ Indeed, daily transactions in Bitcoin have steadily increased since 2013 reaching a daily average of 125,000 trades in 2015 as compared to a daily average of less than 50,000 trades in 2013.¹²⁷ All the same, ever-increasing interest in Bitcoin raises issues related to the Bitcoin's limited availability. That is, the additional demand is confronted with Bitcoin's innate tight demand as described above in Subsection C of Section II of this article. The increase in popularity has led EUROPOL, the European Union (EU) law enforcement agency, to seek greater powers to "identify criminals using crypto-currencies to launder money on the internet."¹²⁸

2. *The Chinese Approach*

In 2013, the Chinese government issued a notice banning Chinese banks from trading in Bitcoin.¹²⁹ The notice further stated, in line with the IRS and CEB positions, that Bitcoin is "not a currency in the real meaning of the word" but rather, as the CFTC recognized, a "virtual commodity that does not share the same legal status of a currency. Nor can, or should, it be circulated in the marketplace as a currency."¹³⁰ Accordingly, individuals may still trade traditional commodities, so long as "goods and service [are] not priced and paid for in Bitcoin."¹³¹

China offers yet another example of how Bitcoin is highly fragile yet gaining massive attention and importance in today's economy. Indeed,

122 *Id.*; Sam Schechner, *EU Rules Bitcoin is a Currency, not a Commodity-Virtually*, WALL ST. J. BLOG (Oct. 22, 2015, 6:15 AM), <http://blogs.wsj.com/digits/2015/10/22/eu-rules-bitcoin-is-a-currency-not-a-commodity-virtually/>.

123 *Id.*; Case C-264/14, *Skatteverket v. Hedqvist*, CURIA EUROPA (Oct. 22, 2015); Stephanie Bodoni & Amy Thomson, *EU's Top Court Rules that Bitcoin Exchange is Tax-Free*, BLOOMBERG BUS. (Oct. 22, 2015, 2:53 AM), <https://www.bloomberg.com/news/articles/2015-10-22/bitcoin-virtual-currency-exchange-is-tax-free-eu-court-says-ig21wzcd>.

124 As commented by tax-compliance firm Avalara Vice-Pvice-resident Richard Asquith following the ruling; Paul Vigna, *Bitcoin Franzy Back as Epic Bust Fades*, WALL ST. J., Nov. 5, 2015, at C1.

125 *Id.*

126 *Id.*

127 *Id.*

128 E.C.B. Report of the European Central Bank, *supra* note 118., at 110

129 Gerry Mullany, *China Restricts Banks' Use of Bitcoin*, N.Y. TIMES (Dec. 5, 2013), http://www.nytimes.com/2013/12/06/business/international/china-bars-banks-from-using-bitcoin.html?_r=0.

130 *Id.*

131 Sonderegger, *supra* note 97, at 203.

China accounts for the majority of Asian trading, largely because of its use by Chinese venture capitalists in major Bitcoin exchange markets (for example, BTCC, OKCoin, and Huobi).¹³²

Furthermore, and most importantly for the purpose of this article, it has been speculated that Chinese citizens attempting to evade China's capital control law, which prohibits transfers out of the country of currency amounting to more than fifty-thousand dollars, has caused a "second [B]itcoin bubble."¹³³ Indeed, on November 3, Bitcoin price rose to its 2015 peak of \$377.36, amounting to a 75 percent increase since August of the same year.¹³⁴ Interestingly, while the Bitcoin price rose globally on all markets trading it, Chinese Bitcoin exchanges were trading the cryptocurrency at leading prices, "sometimes trading at \$10/bitcoin higher than other exchanges around the world."¹³⁵ This tends to support the mentioned speculation regarding the role of Chinese capital control regulations in Bitcoin's upward trend.

IV. INTERNATIONAL MINIMUM STANDARDS FOR DARK WEB AND BITCOIN REGULATION: CASTING A LIGHT OVER THE ABYSS

A. THE END OF BANK SECRECY THROUGH THE COMMON REPORTING STANDARD

Bank secrecy as a legal principle may have been first adopted as early as 1593 in Italy when Banco Ambrosiano was founded in Milan.¹³⁶ This is the same bank that collapsed in the 1980s in the aftermath of a scandal¹³⁷ involving the Holy See and secret Masonic Society P2.¹³⁸ However, Swiss banks and article 47 of the Swiss Federal Act on Banks and Savings Banks of 1934 (hereinafter "Article 47") is most commonly associated with bank confidentiality. Accordingly, this section will illustrate the legal fundamentals of secrecy through the Swiss experience.¹³⁹

¹³² Vigna, *supra* note 124116, at C1.

¹³³ Anthony Cuthbertson, *Bitcoin Price Hits 2015 Peak Amid Speculation of 'Second Bitcoin Bubble'*, INT'L BUS. TIMES (Nov. 2, 2015), <http://www.ibtimes.co.uk/bitcoin-price-hits-2015-peak-amid-speculation-second-bitcoin-bubble-1526956>.

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ BEAT J. GULDMANN, *INSIDE SWISS BANKING* 93 (2009).

¹³⁷ The events surrounding the P2 scandal culminated in the murder of Roberto Calvi who had become President of Banco Ambrosiano in 1975 after having worked for the same bank since 1948. Calvi had become known as the Banker of God because of his tight involvement with the Holy See. Roberto Calvi, *33 Anni di Misteri dalla Morte del 'Banchiere di Dio'*, ADNKRONOS (June 18, 2015 08:32 AM), http://www.adnkronos.com/fatti/cronaca/2015/06/18/roberto-calvi-anni-misteri-dalla-morte-del-banchiere-dio_01ND912zyJmGr06E2IZUVI.html?refresh_ce. Italian director Giuseppe Ferrara offered a reconstruction of those events in a movie. *The Bankers of God – The Calvi Case* (Sistina Cinematografica 2002).

¹³⁸ GULDMANN, *supra* note 136, at 93.

¹³⁹ FAUST KALAM, *TAX HEAVENS: THE DEMONIZATION OF A SWISS WHISTLEBLOWER* 90 (2013). Bank confidentiality in Switzerland developed, at least in part, in reaction to Nazi German inquiries into Swiss accounts, predominately of Jewish holders. MAURICE AUBERT, *SWISS BANK SECRECY: GENERAL EXTENT & RECENT DEVELOPMENTS* 3 (1995).

In Switzerland, criminal prosecution of bankers breaching duties of confidentiality accorded to account holders is achieved through a joint reading of the criminal code and the banking act. In fact, article 321 of the Swiss Criminal Code, which imposes upon enumerated professionals criminal penalties for the divulgence of privileged information, does not expressly include bankers. However, article 47 of the Banking Act effectively includes “bankers’ activity into the list of *confidants necessaires* being criminally sanctioned for the breach of the bankers’ duty of confidentiality.”¹⁴⁰ Specifically, article 47 provides, in part, that “[w]hoever divulges a secret entrusted with him in his capacity as officer, employee, mandatory, liquidator or commissioner of a bank, as representative of the Banking Commission, officer or employee of a recognized auditing company, or who has become aware of such a secret in this capacity, and whoever tries to induce others to violate professional secrecy shall be punished. . . .”¹⁴¹ Indeed, as it can be noticed from the broad and encompassing scope of Article 47, confidentiality and secrecy has been pivotal in the development and global affirmation of Swiss banks. It should be noted that confidentiality obligations of Swiss banks towards clients are based not only on Article 47 but also on the two general legal principles of right to privacy and contractual relationship.¹⁴²

In re Sealed Case illustrates how in the 1980’s courts shifted their approach against then-unassailable and religiously protected bank confidentiality rules present in certain countries like the Cayman Islands and Switzerland.¹⁴³ In that case, a bank owned by the government of Country X operated and did business in various countries, including the United States and Country Y.¹⁴⁴ Country Y is a foreign nation with banking secrecy laws that make it a criminal offense for a bank or a person to reveal to anyone other than the customer information about banking transactions or bank documents created in Country Y that relate to the customer and his transactions.¹⁴⁵ The manager of the bank’s New York City branch was a citizen of Country X but had significant family and property connections to Country Y.¹⁴⁶

The court held that the subpoena duces tecum issued by the U.S. Attorney for the District of Columbia to the manager in the course of a grand jury investigation into the alleged money laundering scheme involving American citizens and business entities did not violate the bank manager’s Fifth Amendment right.¹⁴⁷ In reaching this result, the court

140 WILLIAM L. STIMSON ET AL., MAKING TTRANSNATIONAL L. WORK IN THE GLOBAL ECONOMY 288-289 (Pieter H. F. Bekker et al. eds. 2010).

141 Federal Law Relating to Banks and Saving Banks, RECUEIL SYSTEMATIQUE DU DROIT FEDERAL [R.S.] 952.0. art. 47.

142 Maurice Aubert, *The Limits of Swiss Banking Secrecy under Domestic and International Law*, 2 BERKELEY J. INT’L L. 273, 273-274 (1984).

143 *In re Sealed Case*, 219 U.S. App. D.C. 195 (1982).

144 Being the case is sealed, the court used anonymous names in its opinion, thus referring to Country X and Y without mention of what sovereigns were intended. *Id.*

145 *Id.*

146 *Id.*

147 Specifically, the investigation pertained alleged violations of 18 U.S.C. Sec. 371 (1982) and 31 U.S.C. Sec. 5322 (1982). *Id.*

reasoned that only the banker's voluntary act of going back to Country Y would have exposed him to criminal prosecution in Country Y.¹⁴⁸

Following the courts' approach and in light of global attempts to evade national taxes by taking advantage of countries like Switzerland that embraced bank secrecy religiously, starting in 2014, the Organization for Economic Co-operation and Development (OECD) developed the Standard for Automatic Exchange of Financial Account Information, commonly referred to as Common Reporting Standard (CRS).¹⁴⁹ The CRS' legal basis is found in the Convention on Mutual Administrative Assistance in Tax Matters.¹⁵⁰ Initially adopted by forty-seven countries, the convention now includes over ninety committed jurisdictions, including long-time tax havens like Switzerland, Liechtenstein, Cayman Islands, the Seychelles, and Hong Kong.¹⁵¹ The Vatican State also entered into agreements with Italy and the U.S. to the same end but has yet to adopt the CRS.¹⁵²

The Holy See and Italy signed on April 1, 2015 a convention drafted similar to the CRS and aimed at ending tax evasion of Italian residents.¹⁵³ Just a few months later, the Holy See, to be distinguished from the Vatican City, entered the Foreign Account Tax Compliance Act (FATCA) for the automatic exchange of taxpayers' information with the United States, ultimately ending the era of banking secrecy.¹⁵⁴ In fact, according to the FATCA, foreign institutions must provide the IRS information about financial accounts held by beneficiaries evidencing any "US indicia."¹⁵⁵ Noncompliance exposes institutions to a 30 percent withholding penalty tax over all U.S. source of payment.¹⁵⁶

¹⁴⁸ *Id.*

¹⁴⁹ The CRS, similarly to FTCA agreements, targets financial institutions resident or having a branch in a participating country and requires that the institution reports the "identity and residence of financial account holders, account details, reporting entity, account balance/value and income/sale or redemption proceeds." *Automatic Exchange of Information: The Common Reporting Standard*, KPMG INTERNATIONAL (Sept. 2014.), <https://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/frontiers-in-tax/Documents/the-common-reporting-standard.pdf>.

¹⁵⁰ *Common Reporting Standards (CRS)*, ORGANIZATION FOR ECONOMIC CO-OPERATION & DEVELOPMENT, <http://www.oecd.org/tax/automatic-exchange/common-reporting-standard/> (last visited Jan. 30, 2016).

¹⁵¹ *Id.* See also, Marco Piazza, *No More Bank Secrecy with the Cayman Islands and Hong Kong*, ITALY24 (Aug. 4, 2015), <http://www.italy24.ilsole24ore.com/>; *China, Hong Kong Committed to Global Alliance to End Banking Secrecy*, S. CHINA MORNING POST (Oct. 30, 2014), <http://www.scmp.com/news/china/article/1628574/china-hong-kong-committed-global-alliance-end-banking-secrecy>.

¹⁵² See, *Convention between the Holy See and the Govern of the Republic of Italy in Fiscal Matters*, Apr. 1, 2015, http://www.vatican.va/roman_curia/secretariat_state/2015/documents/rc-seg-st-20150401_convenzione-materia-fiscale-italia-testo-definitivo.pdf; *Agreement between the United States and the Holy See, Acting also in the Name and on Behalf of the Vatican City State, to Improve International Tax Compliance and to Implement FTCA*, <https://www.treasury.gov/resource-center/tax-policy/treaties/Documents/FATCA-Agreement-Holy-See-6-10-2015.pdf>.

¹⁵³ See, *Convention between the Holy See and the Govern of the Republic of Italy in Fiscal Matters*, (Apr. 1, 2015.), http://www.vatican.va/roman_curia/secretariat_state/2015/documents/rc-seg-st-20150401_convenzione-materia-fiscale-italia-testo-definitivo.pdf.

¹⁵⁴ *Supra* note 144.

¹⁵⁵ Virginia La Torre Jeker, *FATCA Registration in Full Swing; More Countries Signing FATCA IGAs*, ANGLOINFO (Dec. 23, 2013), <http://blogs.angloinfo.com/us-tax/2013/12/23/fatca-registration-in-full-swing/>.

¹⁵⁶ *Id.*

However, it is undisputed that this result does not and shall not interfere with the right of privacy accorded to all citizens of the world by article 12 of the United Nations Declaration of Human Rights (UNDHR) as explored in Subsection B.¹⁵⁷

B. THE UNITED NATION ENCRYPTION AND ONLINE ANONYMITY
PROMOTION RISKS TO FRUSTRATE THE CRS GOAL OF ABOLISHING BANK
SECRECY

As United Nations (“U.N.”) institutions get more involved in Internet governance, the Internet itself is gaining stronger status as a right.¹⁵⁸ In fact, in 2011 the U.N. Special Rapporteur on the Promotion and Protection of the Right to Freedom of Opinion and Expression declared that, although access to the Internet is not yet a human right as such, the Special Rapporteur would like to reiterate that States have “a positive obligation to promote or to facilitate the enjoyment of the right to freedom of expression and the means necessary to exercise this right, which include the Internet.”¹⁵⁹ While the media has gone one step further interpreting the report as recognizing a “new human right to the Internet,” it is important to note that, as of now, it is not. However, human rights should be protected also via and on the Internet.¹⁶⁰

The new U.N. Rapporteur May 2015 report similarly seeks to further foster protection of human right on the Internet.¹⁶¹ Specifically, the new report, highlighting how the Internet has become central in fostering freedom of opinion and expression, indicates the pivotal role of “[e]ncryption and anonymity, separately or together, [to] create a zone of privacy to protect opinion and belief.”¹⁶² The report underscores that only “necessary” protection to specified interests may justify limitations to the right to privacy and, even where a potential limitation exists, they must be

¹⁵⁷ Article 12 of the Declaration states that “[n]o one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks.” Universal Declaration of Human Rights, G.A. Res. 217A(III), 3 U.N. GAOR Supp. (No. 16), U.N. Doc. A/810 (1948).

¹⁵⁸ Molly Land, *Toward an International Law of the Internet* 54 HARV. INT’L L.J. 393, 395-396.

¹⁵⁹ U.N. G.A. Rep. of the Special Rapporteur to the General Assembly on the Right to Freedom of Opinions and Expression Exercise Through the Internet, Sept. 9, 2015, <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N11/449/78/PDF/N1144978.pdf?OpenElement>.

¹⁶⁰ See, e.g., Jonathon W. Penney, *Internet Access Rights: A Brief History and Intellectual Origins*, 38 WM. MITCHELL L. REV., 10, 12; (2011); Nathan Olivarez-Giles, *United Nations Report: Internet Access Is a Human Right*, L.A. TIMES (June 3, 2011 6:42 PM), <http://latimesblogs.latimes.com/technology/2011/06/united-nations-report-internet-access-is-a-human-right.html>; David Kravets, *U.N. Report Declares Internet Access a Human Right*, WIRED (June 3, 2011 2:47 PM), <http://www.wired.com/2011/06/internet-a-human-right/Vinton>. But see, e.g., Vinton G. Cerf, *Internet Access Is Not a Human Right*, N.Y. TIMES (Jan. 5, 2012), <http://www.nytimes.com/2012/01/05/opinion/internet-access-is-not-a-human-right.html>; Devin Coldewey, *Is the Internet a Human Right?*, TECHCRUNCH (Jan. 5, 2012), <http://techcrunch.com/2012/01/05/is-the-internet-a-human-right>.

¹⁶¹ U.N. G.A. Rep. of the Special Rapporteur to the General Assembly on encryption, anonymity, and the human rights framework, David Keye, <http://www.ohchr.org/EN/Issues/FreedomOpinion/Pages/CallForSubmission.aspx>.

¹⁶² *Supra* note 150.

narrowly construed.¹⁶³ Accordingly, any imposed limitations shall be eliminated once the objective is reached.¹⁶⁴

Many commentators suggest that the Internet has fostered a sentiment of entitlement to anonymity that serves appropriate purposes, as in the case of fostering freedom of information, speech and religion, but “anonymity does not exist in a vacuum . . . [and while s]ome legal protection of anonymity is useful [,] perfect anonymity is a fool’s gold.”¹⁶⁵ Indeed, some use of technology has always been entailed in evading recognition, whether through Guy Fawkes masks or voice changer programs and now the Internet.¹⁶⁶

Although courts have considered the abuses of anonymity a necessary cost entailed in the protection of a higher good, some guidelines and mandatory minimum standards should be enacted as will be suggested in more detail in Part IV of this article.¹⁶⁷ Notwithstanding whether a right to encryption will develop, crimes perpetrated on the Dark Web using Bitcoin could still be prosecuted by focusing on the specific use of the Dark Web rather than on individuals’ potential general right to anonymity. In fact, while a right to anonymity as means to freely express one’s view should be fostered, the right cannot be used as a shield against prosecution.

While this article does not intend to suggest that freedom of expression on the Internet should not be protected, it does intend to stress that if anonymity and encryption are fostered by countries beyond control, the result will be the frustration of the same goals the same countries have so long fought for, like, for example, ending tax evasion through abolishing bank secrecy. While anonymity reinforces freedom of expression, anonymity in the context of the Dark Web defeats law and tax enforcement. In fact, anonymity in the Dark Web is mostly an enabling feature that fosters criminal behavior. Accordingly, while it may result in some curtailment of the freedom of expression, absolute anonymity on the Dark Web should be restricted in the name of justice.

C. GLOBAL STANDARD GUIDELINES TO ENSURE LEGALITY OF ON-LINE TRANSACTIONS

It has long been debated whether the Internet requires a tailored set of rules or whether all its aspects may be successfully monitored through mere adaptation and interpretation of the traditional sets of rules now existing.¹⁶⁸ Independently of what the answer to this question may be and although “cyberspace has no territoriality” given its nature, the law applicable to Internet behavior is multi-jurisdictional in that it comprises both national, transnational, and international law.¹⁶⁹ Although Internet behavior is

163 *Id.*

164 *Id.*

165 Brian H. Choi, *The Anonymous Internet*, 72 MD. L. REV. 501, 541 (2013).

166 *Id.*

167 *McIntyre v. Ohio Elections Comm’n*, 514 U.S. 334 (1995).

168 *See*, Lawrence Lessig, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 501 (1999).

169 Shipchandler, *supra* note 7 at 443.

subject to national law, this does not foreclose international standards where, as in the case of Bitcoin, the effects felt and the very nature of the behavior entails multiple jurisdictions.

A global set of standards regulating Bitcoin would follow the general principle already applied in the banking sector where setting an international minimum level of regulation is necessary given the international interactions and consequences inherent in the nature of behavior entailed. Indeed, international agreements in the banking sector, within which Bitcoin may be fit, are not new and instead are generally accepted as a way to facilitate cross-border business and competition.¹⁷⁰ The Bank for International Settlements (BIS) would possibly be the most suitable body to enact those standards given its mission to promote, among other goals, financial stability.¹⁷¹

This article specifically suggests implementation of an international standard requiring Bitcoin exchangers to require users to identify themselves at registration, while allowing for anonymous trades, and keep a record of the transactions occurring on their network similar to what is presently required in the US by FinCEN guidelines.¹⁷² Acceptance of those standards shall be a condition precedent to the legal use, within a country's boarder, of Bitcoin or similar virtual currency instruments. This requirement would foster national cooperation and potential implementation by the individual countries of internal regulations setting a more detailed set of rules applicable to national users and exchangers.

The suggested universal standard should require that account holders be identifiable and that no purely alphanumeric accounts be allowed. Requiring personal identification, in the form of national identity card or passport, to create an account would promote transparency and, when necessary, allow traceability by enforcement agencies. Because anonymity is the core strength of Bitcoin and similar currencies, anonymous trades and exchanges should not be banned among users. Users should only need to disclose their identity to the issuer to create an account and then they should be allowed to make transfers anonymously. This would benefit both users and the market since this would prevent, or at least deter, abuse. Indeed, upon the opening of an investigation into a transaction or individual, Bitcoin exchanges, like banks, would be able or required to share with enforcement agencies, upon proper warrant, subpoena or similar investigative instrument, the information regarding the account holder it has gathered since the opening of the account (including identity and exchanges). Bitcoin exchanges should not be allowed to exist the Dark Web or on similarly evasive networks because of their obscure and anonymous nature.

170 William R. White, *International Agreements in the Area of Banking and Finance: Accomplishments and Outstanding Issues* 4 (Bank for Int'l Settlements Monetary and Economic Dep't, Working Paper No. 38, 1996), <http://www.bis.org/publ/work38.pdf>.

171 *BIS Mission Statement*, BANK FOR INT'L SETTLEMENTS, <http://www.bis.org/about/mission.htm>.

172 Dep't of the Treasury Fin. Crimes Enforcement Network, *supra* note 78.

Establishing the illegality of such Dark exchanges, while not entirely eliminating the issue, would enhance law enforcement's power of action in defeating crime in the Dark Web. In fact, as pointed out in Subsection D of Part II, the Dark Web is majorly used to arrange and pay for criminal behavior. Thus, enhancement of traceability through required disclosures, global regulation of Bitcoin exchanges, and the ban of Dark exchanges would ensure the end of bank secrecy, allow better monitoring of illegal behavior taking place on the Dark Web, and counter law evasion.

V. CONCLUSION

In light of the multi-national nature of the Internet and of the technical functioning and volatility of Bitcoin an international move towards setting global minimum standards is necessary to enable the organized functioning of cryptocurrencies. Internet behavior should remain subject to national laws, however, given Bitcoin's great potential of being exploited not only by financial criminals but also Dark Web traffickers, an international agreement should be implemented. Indeed, "international cooperation based on home country control" has proven, so far, to be the best enforcement method in the field.¹⁷³ This is because each sovereign maintains control over local enforcement of internationally set standards.

Bitcoin is publicly recognized as the best current method to evade national and international rules related to money laundering and tax evasion because of its undefined nature and countries reluctance to regulate it.¹⁷⁴ Bitcoin's anonymous functioning coupled with the Dark Web's features provide a whole new set of tools for criminals to disguise their identity and evade law enforcement. Indeed, while law enforcement agencies have tools to penetrate the Dark Web, the resources necessary to do so do not warrant policing at large in a dimension where instead, just as the physical one, if not more, criminal action occurs constantly. Accordingly, if the new generation of financial instrument is to remain, a uniform approach is necessary whereby international cooperation is not only feasible but also manageable.

A set of globally accepted minimum standards in the field of Bitcoin-like currencies abolishing anonymity in conformity with the achieved end of bank secrecy would reach such result without overly burdening law enforcement agencies with the costs associated with Dark Web investigations. Setting global standards would allow countries to intensify Bitcoin regulation within their national boundaries, enabling system-specific rules. This would permit uniformity without intruding sovereign's powers.

¹⁷³ KAPSTEIN, ETHAN B., *GOVERNING THE GLOBAL ECONOMY* (Harvard Univ. Press, 1994).

¹⁷⁴ See e.g., Andrew Henderson, *Do Anonymous and Numbered Offshore bank Accounts Exist?*, NOMAD CAPITALIST (Apr. 4, 2014), <http://nomadcapitalist.com/2014/04/04/numbered-offshore-bank-accounts-exist/> (on how bank secrecy is no longer achievable and what is the best route to obtain the closest level of anonymity through the use of Bitcoin).

National legislation could also achieve legislative stimulation and evolution of best practices and requirements. By globally requiring identity disclosures, enhancing exchange regulation, and banning Bitcoin exchanges from the Dark Web, those standards would lower the costs associated with investigations and render Bitcoin less attractive to both Web and Dark Web criminals. Accordingly, so regulated, Bitcoin could inspire investors' confidence and gain a stable role in the global economy.