

1-1-2016

Undermining Bitcoin

Sam Hampton

Follow this and additional works at: <https://digitalcommons.law.uw.edu/wjlta>



Part of the [Banking and Finance Law Commons](#)

Recommended Citation

Sam Hampton, *Undermining Bitcoin*, 11 WASH. J. L. TECH. & ARTS 331 (2016).

Available at: <https://digitalcommons.law.uw.edu/wjlta/vol11/iss4/4>

This Article is brought to you for free and open access by the Law Reviews and Journals at UW Law Digital Commons. It has been accepted for inclusion in Washington Journal of Law, Technology & Arts by an authorized editor of UW Law Digital Commons. For more information, please contact lawref@uw.edu.

UNDERMINING BITCOIN

Sam Hampton^{*}

© Sam Hampton

Cite as: 11 Wash. J.L. Tech. & Arts 331 (2016)
<http://digital.lib.washington.edu/dspace-law/handle/1773.1/1559>

ABSTRACT

In March 2014, the IRS issued a notice detailing the tax treatment the agency would apply to virtual currencies such as Bitcoin. Although applauded by some as a step towards legal legitimacy for this new technology, the IRS's position severely undermines the transactional utility of virtual currencies. Using tax rules established for traditional property transactions frustrates one of virtual currencies' principal purposes: its use as a medium of exchange. Tax compliance requires calculation and payment of capital gains tax, which necessitates documentation of all acquisitions and dispositions of virtual currencies. This tax treatment will likely discourage the use of these currencies, or alternatively will encourage noncompliance by their users. Decentralized currencies like Bitcoin pose novel and difficult regulatory questions, but mechanically applying old rules will lead to an unsatisfactory outcome. The best solution is new legislation that specifically addresses the novel issues posed by virtual currencies, fosters the use of virtual currency in transactions, and still collects tax revenues from investors.

^{*} Sam Hampton, University of Washington School of Law, Class of 2016. I would like to thank Professors Michael Hatfield and Robert Gomulkiewicz for their assistance in developing this Article and their thoughtful commentary. I would also like to thank Dean Falvy for his insightful feedback.

TABLE OF CONTENTS

Introduction.....	332
I. Introduction to Virtual Currencies.....	335
II. The Current Tax Regime for Virtual Currencies.....	338
A. Property Payments: The IRS Notice	338
B. Policy Rationale Underlying Barter and Property Payments	340
C. Logistical Problems with the Adopted Tax Regime	342
1. Record Keeping and Reporting	342
2. Accounting for Virtual Currency Transactions	344
3. Businesses that Accept Virtual Currencies	345
a. Inventory	346
b. Property Used in Trade or Business.....	347
III. Alternative Tax Regimes	348
A. United States Foreign Currency Tax Regime	348
B. Other Exemptions for Personal Transactions.....	349
C. Non-Regulation or Outright Illegality.....	351
Conclusion	353

INTRODUCTION

An investor who bought Bitcoins in early January 2012 would have paid around five dollars per unit of the virtual currency.¹ The same Bitcoins could have sold for prices ranging from \$800 to \$900 in late 2013.² In early 2016, even after a steep decline in value, the virtual currency is sold for amounts between \$350 and \$450.³ The savvy speculator could have made a great deal of money in this market, realizing returns over 100 times greater than the initial investment. Not surprisingly, the IRS has clarified how it would tax such a gain.

In March 2014, the IRS published its position on the tax

¹ *Bitcoin Price Index Chart*, COINDESK, <http://www.coindesk.com/price/> (last visited Mar. 2, 2016). This website is a web tool that allows users to search historical Bitcoin market prices.

² *Id.*

³ *Id.*

implications of virtual currencies like Bitcoins.⁴ The agency elected to treat virtual currency as property, and stated that established rules for property transactions would apply.⁵ This position has the practical effect of transforming each transaction in virtual currency into a taxable event with record keeping and reporting requirements for the taxpayer, no matter how small the gain.

Reactions to the IRS's position were mixed. Some commentators applauded the move as a step towards greater legal legitimacy for virtual currencies,⁶ while others worried about the practical compliance problems that the regime would impose on individual users.⁷ While the position was founded on well-established tax principles, the unsatisfactory results for those who regularly transact in virtual currencies speak to the need for new legislation addressing the issues unique to this new payment system.

Federal taxation of virtual currencies concerns three principal groups.⁸ First, there are those individuals and groups who "mine" it, i.e., create new virtual currency as income.⁹ Second, some users invest in virtual currency like stocks, bonds, or other securities.¹⁰

⁴ See Notice 2014-21, 2014-16 I.R.B. 938.

⁵ *Id.* (answer to Q-1 in Section 4).

⁶ See, e.g., Paul Caron, *Marian: Bitcoin and Notice 2014-21*, TAXPROF BLOG (Mar. 26, 2014), http://taxprof.typepad.com/taxprof_blog/2014/03/marian-bitcoin.html.

⁷ See, e.g., Victor Fleischer, *Taxes Won't Kill Bitcoin, but Tax Reporting Might*, N.Y. TIMES DEALBOOK, (Mar. 26, 2014 10:02 AM), <http://nyti.ms/1g0P5KU>; see also Erin M. Hawley & Joseph J. Colangelo, *Bitcoin Taxation: Recommendations to Improve the Understanding and Treatment of Virtual Currency*, 15 ENGAGE: J. FEDERALIST SOC'Y PRAC. GROUPS 4 (2014).

⁸ These conceptual groups are not mutually exclusive; rather, virtual currency enthusiasts probably engage in all three activities. However, it is helpful to strictly demarcate them when considering policy objectives.

⁹ See generally *Mining*, BITCOIN WIKI, <https://en.bitcoin.it/wiki/Mining> (last modified Dec. 8, 2015).

¹⁰ Many websites exist that allow for the trading of virtual currencies for real world currencies. See, e.g., CEX.IO, <https://cex.io/> (last visited Mar. 2, 2016).

Finally, there are those who transact in it as a unit of exchange.¹¹ The IRS notice adopts a sound policy position in its treatment of the first two groups, establishing rules analogous to existing provisions for income and gains on capital assets. However, those individuals hoping to use virtual currency to purchase goods and services will find that their interests are not given as much weight. The interests of these individuals are the focus of this Article.

The IRS's position is deficient for two main reasons. First, it establishes an onerous recording and reporting regime for transacting in virtual currencies without, in many cases, any substantial benefit. Second, it fails to clarify actual procedures for compliance both for individuals and businesses. Taken together, the IRS position does not give virtual currency users a realistic chance at compliance and legal legitimacy. Instead, it imposes unworkable standards and leaves the determination of tax liability in legal limbo. Potential new users are forced to choose among three bad options: attempting to comply with ambiguous and onerous tax provisions, disregarding the law, or not using virtual currencies at all.

The current state of the law is ill-equipped to address the new issues presented by virtual currencies. Sound policy regarding virtual currencies requires new statutory enactments with three principal considerations. First, small and routine transactions should be exempt from onerous reporting requirements. Second, sensible rules regarding basis and nature of gains and losses should be enacted and clarified. Finally, a coordinated scheme of regulations should attempt to protect consumers from theft and fraud, and mandate greater information reporting from both the users of virtual currencies and exchanges that facilitate consumer transactions.

This Article will explore tax regulations and their implications for virtual currency users. Part I briefly introduces virtual currencies and their current regulatory environment. Part II describes the regime established by the IRS notice, and outlines the rules' practical implications for individuals and businesses that use

¹¹ The Bitcoin.org website emphasizes the utility of the currency as an alternative payment system on its main page. See BITCOIN.ORG, <https://bitcoin.org/en/> (last visited Mar. 2, 2016).

and accept virtual currencies. Finally, Part III examines alternative tax treatment by looking to other domestic tax rules as well as foreign tax treatment of virtual currencies.

I. INTRODUCTION TO VIRTUAL CURRENCIES

Virtual currencies like Bitcoin operate as decentralized systems, which allow users to make secure transactions with one another without the need for a governmental or private intermediary.¹² The payments are denominated in virtual coins, or subdivisions thereof, and are carried out through virtual networks over the Internet.¹³ These transactions rely on encryption for security, hence the classification “crypto-currencies.”¹⁴ Satoshi Nakamoto first articulated the idea as a system for peer-to-peer payment in an article published online.¹⁵ Since Bitcoin’s introduction, other crypto-currencies have proliferated, using similar technological principles.¹⁶

¹² *Bitcoin*, BITCOIN WIKI, <https://en.bitcoin.it/wiki/Bitcoin> (last modified Jan. 29, 2016). This Article narrowly addresses convertible virtual currencies, as this is the express scope of the IRS notice. Notice 2014-21, 2014-16 I.R.B. 938 (Section 3). The term virtual currencies can be understood more expansively to include other virtual interests with real-world economic value. The GAO used a tripartite definition of virtual currencies: closed-flow, hybrid, and open-flow. U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-13-516, VIRTUAL ECONOMIES AND CURRENCIES: ADDITIONAL IRS GUIDANCE COULD REDUCE TAX COMPLIANCE RISKS 4 (2013). Convertible virtual currencies are open-flow under this definition. Moreover, open-flow virtual currencies are not required to follow the decentralized, crypto-currency model of Bitcoin. A private actor could conceivably operate its own virtual currency system operating under different principles; this Article focuses on the decentralized model of Bitcoin.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Bitcoin*, BITCOIN WIKI, <https://en.bitcoin.it/wiki/Bitcoin> (last modified Jan. 29, 2016); Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, BITCOIN.ORG, <https://bitcoin.org/bitcoin.pdf> (last visited Feb. 20, 2016). Satoshi Nakamoto is a pseudonym; the real-world identity of the author or authors of this article is unknown, though there is much speculation. *See Who is Satoshi Nakamoto?*, COINDESK, <http://www.coindesk.com/information/who-is-satoshi-nakamoto/> (last updated Feb. 19, 2016).

¹⁶ *See, e.g., Comparison of cryptocurrencies*, BITCOIN WIKI, https://en.bitcoin.it/wiki/List_of_alternative_cryptocurrencies (last modified

While a full discussion of the technical features of virtual currencies is beyond the scope of this Article, understanding how virtual currency transactions work and a number of the key features of the network is integral to a proper legal analysis.¹⁷

Transactions are the heart of virtual currency systems.¹⁸ They consist of an input and an output, where the input is the output of a previous transaction.¹⁹ The transactions take place between Bitcoin addresses, which are somewhat like email addresses, though it is important to note that any individual user could control many addresses.²⁰ Each transaction sends a certain balance of virtual currency between the addresses.²¹ Any individual transaction can have multiple inputs and outputs.²² Each transaction conveys the private key, which allows virtual currency in addresses to be spent.²³

The system of exchange relies on a public ledger known as the “blockchain,” a record of all transactions in virtual currency.²⁴ The public ledger authenticates transactions between addresses without

Dec. 24, 2014). This website provides a list of the most popular virtual currencies outside of Bitcoin.

¹⁷ This discussion uses Bitcoin as an example, as many other cryptocurrencies are based on the same principles. However, it is conceivable that other decentralized virtual currencies could operate differently. For more detailed and technical descriptions of how these virtual currencies operate, see Nakamoto, *supra* note 15; *see also Developer Documentation*, BITCOIN.ORG, <https://bitcoin.org/en/developer-documentation>. For a more simplistic, but still detailed description of the system, see BITCOIN WIKI, https://en.bitcoin.it/wiki/Main_Page (last modified Jan. 1, 2016).

¹⁸ *See Transaction*, BITCOIN WIKI, <https://en.bitcoin.it/wiki/Transaction> (last modified May 28, 2015).

¹⁹ This chain extends back to the generation transaction, the result of mining; the system is somewhat analogous to a chain of title. *See id.*; *see also Mining*, BITCOIN WIKI, <https://en.bitcoin.it/wiki/Mining> (last modified Dec. 8, 2015).

²⁰ *Address*, BITCOIN WIKI, <https://en.bitcoin.it/wiki/Address> (last modified Jan. 29, 2015).

²¹ *See Mining*, *supra* note 19.

²² *Id.*

²³ *Id.*; *see also Private key*, BITCOIN WIKI, https://en.bitcoin.it/wiki/Private_key (last modified Feb. 10, 2015).

²⁴ *See Block chain*, BITCOIN WIKI, <https://en.bitcoin.it/wiki/Blockchain> (last modified Oct. 21, 2015).

the need for a third party to act as an intermediary.²⁵ The blockchain stores all the transactions of the various blocks and is searchable in terms of addresses and transactions.²⁶ This information is public, so transactions are not actually anonymous. That said, the names and personal information of parties are not automatically associated with identified individual users without further investigation, so the system is better characterized as pseudonymous.²⁷

Finally, wallets are the user interface by which casual users store virtual currencies.²⁸ A wallet stores the private keys for multiple addresses, and often keeps records of transactions made in virtual currency by the owner of the wallet.²⁹

The regulatory and legal environment concerning virtual currencies is newly emerging.³⁰ This Article is narrowly focused on the federal tax implications of the new currency. Other facets of virtual currencies that have been addressed include registration and regulation as money transmitters,³¹ use of virtual currencies in elections,³² and classification of virtual currency as a security.³³

²⁵ *Id.*

²⁶ *See, e.g.*, BITCOIN BLOCK EXPLORER, <https://blockexplorer.com> (last visited Mar. 2, 2016) (Feb. 20, 2016). This website is an example of such an online blockchain search engine.

²⁷ *See* U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-13-516, VIRTUAL ECONOMIES AND CURRENCIES: ADDITIONAL IRS GUIDANCE COULD REDUCE TAX COMPLIANCE RISKS 6 (2013).

²⁸ *Wallet*, BITCOIN WIKI, <https://en.bitcoin.it/wiki/Wallet> (last modified Dec. 3, 2015).

²⁹ *Id.*

³⁰ *See, e.g.*, Nicholas Godlove, *Regulatory Overview of Virtual Currency*, 10 OKLA. J.L. & TECH. 71, 8–12 (2014) (providing an overview of regulatory developments).

³¹ *See FIN-2014-R012*, FINCEN (Oct. 27, 2014), http://www.fincen.gov/news_room/rp/rulings/pdf/FIN-2014-R012.pdf; *see also FIN-2014-R011*, FINCEN (Oct. 27, 2014), http://www.fincen.gov/news_room/rp/rulings/pdf/FIN-2014-R011.pdf.

³² *See AO 2014-2*, FEC, (May 8, 2014), *available at* <http://www.fec.gov/pages/fecrecord/2014/june/ao2014-02.shtml>.

³³ SEC v. Shavers, No. 4:13-CV-416, 2013 WL 4028182 (E.D. Tex. Aug. 6, 2013).

II. THE CURRENT TAX REGIME FOR VIRTUAL CURRENCIES

A. *Property Payments: The IRS Notice*

At its core, the IRS position elects to treat virtual currency as property, rather than apply any special treatment under existing law, such as foreign currency rules.³⁴ The subsequent answers in the IRS notice stems logically from this conceptualization of virtual currencies.³⁵ Treating virtual currency as property for the purposes of income rules and business reporting requirements simply extends current tax principles.³⁶ However, both logistical and theoretical problems arise when these rules are applied to virtual currency transactions.

The acquisition and disposition of property, including virtual currencies under the IRS position, have tax implications—namely, a gain includable in taxable income, or a potentially deductible loss.³⁷ Whether the amount realized exceeds the adjusted basis of the property determines whether there is a gain or loss upon disposition; these gains or losses are recognized unless there is an exception within the code.³⁸ The adjusted basis³⁹ of virtual

³⁴ Notice 2014-21, 2014-16 I.R.B. 938 (Apr. 16, 2014) (answer to Q-1). The IRS notice explicitly rejects the concept that virtual currencies are to be treated as foreign currency. *Id.* (answer to Q-2).

³⁵ For example, conceptualizing mining as income fits within the definition of gross income as “all income from whatever source derived” including “[g]ains derived from dealings in property.” 26 U.S.C. § 61(a) (2012) (1984). Similarly, information reporting requirements for payments in property over \$600 is a straightforward application of existing law. *See* 26 U.S.C. § 6041(a) (2012).

³⁶ *See generally* BORIS I. BITTKER & LAWRENCE LOKKEN, FEDERAL TAXATION OF INCOME, ESTATES AND GIFTS ¶¶ 41–43 (3d ed. 1999) (discussing taxation of property transactions).

³⁷ *See* 26 U.S.C. § 61(a)(3) (2012); 26 U.S.C. § 165 (2012).

³⁸ 26 U.S.C. § 1001(a), (c) (2012).

³⁹ The IRC contains numerous interrelated basis rules. *See generally* 26 U.S.C. §§ 1011–1016 (2012). Adjusted basis is generally used to determine gain or loss; it is the basis as adjusted by the code. 26 U.S.C. § 1011(a) (2012). Basis is simply the cost of property. 26 U.S.C. § 1012 (2012). Numerous potential adjustments to basis are detailed in the code, but none are applicable in the case of virtual currency. *See generally* 26 U.S.C. § 1016 (2012). Therefore, in the case of virtual currencies, adjusted basis is in all cases simply the cost of the

currency is calculated upon acquisition as determined by the fair market value of the cash, goods, or services exchanged for the virtual currency.⁴⁰ A gain is realized upon the disposition of the virtual currency for goods, services, or cash when the fair market value of the goods or services received exceeds the adjusted basis; a loss is realized when the consideration received is below this basis.⁴¹

The IRS notice states that the character of the gain or loss depends on whether the virtual currency is a capital asset as held by the taxpayer.⁴² A typical individual user of virtual currencies would hold property as a capital asset, not qualifying for any special exception for ordinary gain or loss treatment.⁴³ However, a business holding virtual currencies may qualify for such exceptions.⁴⁴

Tax compliance therefore requires the recording of the following information for any transaction using virtual currencies: (1) an indication of what specific virtual currency units were used; (2) the basis for these units, calculated as the fair market value on the day of acquisition; and (3) the date and fair market value of the disposition transaction. Only with this information can gains and losses be accurately reported, as all taxable income must be under

currency upon acquisition.

⁴⁰ 26 U.S.C. § 1001(a) (2012). *See also* 26 C.F.R. 20.2031-1 (2010) (defining “fair market value” as “the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts”).

⁴¹ 26 U.S.C. § 1001(a) (2012).

⁴² Notice 2014-21, 2014-16 I.R.B. 938 (answer to Q-7 in Section 4).

⁴³ Capital assets are all assets held by a taxpayer unless they meet certain exceptions. 26 U.S.C. § 1221 (2012). These exceptions are all premised on the operation of a business. *Id.* Therefore, a taxpayer transacting in virtual currency in her personal capacity would hold the property as a capital asset. *See also* BITTKER & LOKKEN, *supra* note 36, at ¶ 47.1.

⁴⁴ Specifically, a business may meet the criteria of the exception for inventory, namely “property held by the taxpayer primarily for sale to customers in the ordinary course of his trade or business.” 26 U.S.C. § 1221 (2012). *See also* BITTKER & LOKKEN, *supra* note 36, at ¶ 47 (discussing the distinction between capital and non-capital assets).

the IRC.⁴⁵

The acquisition of this information may seem manageable, if inconvenient, on its face. However, the requirement that every transaction be reported acts as an enormous impediment to using virtual currencies for routine commercial transactions. It is especially problematic given that the notice expressly applies retroactively; taxpayers who have regularly transacted in these currencies will have to reassemble and report all their prior transactions.⁴⁶ Those who have been using virtual currencies for purchases are now in a state of tax uncertainty.

B. Policy Rationale Underlying Barter and Property Payments

Property payment rules as applied to virtual currencies are similar to tax rules as applied to barter transactions.⁴⁷ In addressing tax rules for virtual currencies, tax authorities in both Australia and Canada explicitly compare virtual currency transactions to barter transactions.⁴⁸ However, such reasoning by analogy does not adequately capture the practical and conceptual differences between traditional barter transactions and the emergence of a global, decentralized unit of exchange. Application of these provisions fails on policy grounds because barter and virtual currencies have several key differences.

The first difference is purposive: in developed economies, people participated in barter to make use of their skills and

⁴⁵ See 26 U.S.C. § 6001 (2012); see also 26 C.F.R. § 1.6001-1(a) (1990).

⁴⁶ Notice 2014-21, 2014-16 I.R.B. 938 (answer to Q-16 in Section 4).

⁴⁷ For a general discussion of taxation of barter, see MARTIN J. MCMAHON, JR. & LAWRENCE A. ZELENAK, *FEDERAL INCOME TAXATION OF INDIVIDUALS* ¶ 3.03 (2d ed. 2014). For IRS rulings on barter transactions, see Rev. Rul. 79-24, 1979-1 C.B. 60; see also Rev. Rul. 83-163, 1983-2 C.B. 26. For a scholarly take on the taxation of barter and the utility of the informal economy, see Sergio Pareja, *It Taxes a Village: The Problem with Routinely Taxing Barter Transactions*, 59 CATH. U. L. REV. 785 (2010).

⁴⁸ See *Tax treatment of crypto-currencies in Australia – specifically bitcoin*, AUSTRALIAN TAXATION OFFICE, <https://www.ato.gov.au/General/Gen/Tax-treatment-of-crypto-currencies-in-Australia---specifically-bitcoin/> (last modified Dec. 18, 2014); *What you should know about digital currency*, CANADA REVENUE AGENCY, <http://www.cra-arc.gc.ca/nwsrm/fctshts/2013/m11/fs131105-eng.html> (last modified Dec. 3, 2014).

property outside the ordinary economic system.⁴⁹ In effect, bartering is the exchange of goods or services within a community, without engagement with the monetary economy. Users of virtual currency cannot effectuate this purpose; traditional currency is necessarily exchanged for a stake in the system, either directly in the case of purchase of virtual currency on exchanges, or indirectly from the real expenses associated with mining, principally electricity.⁵⁰ Though users of virtual currencies are often looking for an alternative payment system, they cannot entirely avoid the monetary economy—dollars are put on the line somewhere along the line. The concern that barter is used in an attempt to understate income is not as concerning in the case of virtual currency.⁵¹

Second, both barter and other property transactions are comparatively inefficient systems that accommodate a clunky tax regime. The actual swapping of goods or services would presumably require direct contact, would not use a medium of exchange, and would therefore be relatively discrete and infrequent. The property transaction tax rules serve such a system adequately, though with less than ideal efficiency. Virtual currency transactions are much more similar to other modern electronic payments systems, and the property rules do not accommodate the frequency and ease with which virtual currency can be used. The apparent congressional intent in enacting the IRC's special foreign currency rules (discussed below) is to recognize the absurdity of

⁴⁹ This income tax evasion concern informed the IRS rulings on the subject. *See* Rev. Rul. 79-24, 1979-1 C.B. 60; *see also* Rev. Rul. 83-163, 1983-2 C.B. 26.

⁵⁰ Dedicating computer hardware to mining virtual currencies is not a costless proposition; whether mining will be profitable depends on electricity rates, the purchase of specialized computer hardware, cooperative efforts, and other factors. *See generally* *How to Calculate Mining Profitability*, COINDESK, <http://www.coindesk.com/information/mining-profitability/> (last visited Mar. 2, 2016).

⁵¹ Such concern evidently underlies the IRS rulings on barter of services and barter clubs, which clarify that such activities are includable in a taxpayer's gross income. *See* Rev. Rul. 79-24, 1979-1 C.B. 60; *see also* Rev. Rul. 83-16, 1983-1 C.B. 235. That said, failure to report gains on virtual currency has serious income tax evasion implications. Further, payments for goods and services in virtual currencies could act as the unit of exchange for people avoiding the monetary economy and evading income taxation.

tracking and reporting every small gain from foreign currency transactions.⁵² This is more closely analogous than the capital gain realized on the bartering of property.

Finally, barter has historically been a necessarily local affair. Direct barter takes place face-to-face. At its most sophisticated, collective bartering could be organized around a club, which would act as a central authority.⁵³ Such clubs use units to represent stake.⁵⁴ But even in those cases, the scope would be relatively local, whereas parties can currently conduct Bitcoin transactions across the globe with confidence and security. The market is much larger, and resembles something closer to a precious metal or a fiat currency than an interest in a local barter club. Again, though the IRS's position rejects this view, foreign currency seems a better analogy for the function of virtual currencies.

Analogizing virtual currency to a barter system only captures the legal rule to be imposed on the transaction. Actual practices in either sort of transaction differ substantially. These differences speak to the impetus for new rules, rather than transplants from a dissimilar regime.

C. Logistical Problems with the Adopted Tax Regime

1. Record Keeping and Reporting

Far and away the most undesirable consequences of the principles adopted in the IRS notice for individual users are the record keeping and reporting implications. Tax law requires that each transaction in virtual currency be reported, which in turn requires extensive record keeping to accurately state gains and losses.⁵⁵ This extra step is likely to discourage use or encourage non-compliance.

Information about what was exchanged in each transaction must be recorded; if one fails to do so during the exchange, reassembling all the necessary data would be cumbersome or even

⁵² See generally 26 U.S.C. §§ 985–988 (2012).

⁵³ Pareja, *supra* note 47, at 786.

⁵⁴ *Id.* at 787.

⁵⁵ See 26 U.S.C. § 6001 (2012); see also 26 C.F.R. § 1.6001-1(a) (1990).

impossible after the fact. This problem is particularly acute because the rules will be applied retroactively, as the IRS notice expressly states.⁵⁶ That said, wallet software typically keeps a comprehensive log of transactions for a user.⁵⁷ Operating under the assumption that virtual currency was exchanged at fair market value, reconstructing the records may be done with relative ease provided that users still have access to these digital records.⁵⁸

Second, each transaction would require individual reporting on tax returns.⁵⁹ While not a complicated problem in theory, the practical burden could mean the end of virtual currencies as a convenient unit of exchange. The effort of reporting each transaction is effectively a tax on the transaction—one more burdensome than even a significant sales tax, presuming that every purchase of coffee must be individually reported on an individual's annual tax return under this regime.⁶⁰

Finally, the information readily available to the IRS does not lend itself to enforcement at this time—a factor that may lead taxpayers to disregard the law.⁶¹ This is a particularly undesirable outcome, as the requirements of the IRC will lose their legitimacy

⁵⁶ Notice 2014-21, 2014-16 I.R.B. 938 (answer to Q-16 in Section 4 explains that there may be penalties for failure to comply prior to notice).

⁵⁷ See *Wallet*, BITCOIN WIKI, <https://en.bitcoin.it/wiki/Wallet> (last updated Dec. 3, 2015).

⁵⁸ This can be more problematic than it may sound. A common problem is losing access to one's virtual currency wallet, effectively cutting off anyone from using those coins again. See *Controlled supply*, BITCOIN WIKI, https://en.bitcoin.it/wiki/Controlled_supply (last updated Jan 15, 2016).

⁵⁹ Individuals file Form 1040, which includes a total for capital gains or losses on line 13. See Form 1040, Internal Revenue Service, (2015), <https://www.irs.gov/pub/irs-pdf/f1040.pdf>. Total gains or losses for capital transactions are reported on Schedule D of Form 1040 for individual taxpayers. See Schedule D (Form 1040), Internal Revenue Service, (2015), <https://www.irs.gov/pub/irs-pdf/f1040sd.pdf>.

⁶⁰ Schedule D includes totals capital gains or losses for various categories of capital gain transactions. See Schedule D (Form 1040), Internal Revenue Service, (2015), <https://www.irs.gov/pub/irs-pdf/f1040sd.pdf>. Individual transactions are to be listed on Form 8949—and, for those who use virtual currency regularly, will likely require many copies of this form. See Form 8949, Internal Revenue Service (2015) <https://www.irs.gov/pub/irs-pdf/f8949.pdf>.

⁶¹ That said, the digital records of virtual currency transactions would be available to the IRS under the IRC. See 26 U.S.C. § 7602 (2012).

by imposing onerous requirements while providing little to no benefit to the government. If other provisions of the tax code are to be taken seriously, then rules about documenting these transactions must be sensible and promote compliance.

Fortunately, new services may provide a solution. The first group of services, offered by companies like Libra, provide a technological solution to this technological problem.⁶² Taking advantage of the permanent record of transactions within the blockchain, the service reconstructs a user's virtual currency transactions, applies tax accounting rules, and even prepares tax documents for returns. A second option for businesses that do not want to engage with the tax issues presented by accepting virtual currencies is to outsource the work to a third party. This is the approach Overstock.com takes to accept virtual currency; Overstock uses a processor called Coinbase, which provides the company with cash receipts.⁶³ However, these services are not free. The IRS position should have sensible requirements that do not necessitate dedicated services and technology.

2. Accounting for Virtual Currency Transactions

The conceptualization of virtual currencies as property is easy in the abstract. The IRS notice goes no further than stating that virtual currency is property. But virtual currency is not a typical piece of property, and the notice offers little guidance for compliance. A unit of virtual currency is not a tangible thing—there is no bank holding virtual coins, notes, or instruments. Accounting for such an asset poses a challenge and strains existing principles.⁶⁴

The most conservative approach is tracking each individual unit of currency separately. This approach applies the IRS position quite literally: each balance of virtual currency is a discrete piece

⁶² See generally LIBRA, <http://libratax.com/> (last visited Mar. 2, 2016).

⁶³ See Al Moldof, *Accountability: Bitcoins, an All-Digital Currency and How it Affects Financial and Managerial Account: Part II* (May/June 2014), available at 2014 WL 2531958.

⁶⁴ *Id.* (arguing traditional financial accounting methods cannot be properly applied to virtual currencies).

of property, and exchanges should be treated under the established rules for property transactions. However, this method is extremely cumbersome to apply in practice because basis, value on acquisition, and disposition must be tracked for each individual currency balance, as described above.

A slightly more aggressive approach is to use an inventory accounting system.⁶⁵ Though it lacks specific statutory authorization, inventory accounting of virtual currency simplifies the process considerably.⁶⁶ Others have suggested such a method is appropriate.⁶⁷ Further, the tax preparation service Libra applies an inventory accounting method for their products.⁶⁸

The Internal Revenue Code is somewhat permissive when it comes to accounting methods, and allows an individual taxpayer to elect his or her accounting period and accounting method.⁶⁹

3. Businesses That Accept Virtual Currencies

The IRS notice states that the nature of the gain depends on the purpose for which the asset is held.⁷⁰ Gains from a capital asset are capital gains, whereas other sorts of assets qualify for ordinary gains and loss treatment.⁷¹ For consumers, virtual currency would almost certainly be held as a capital asset—exceptions are almost exclusively for businesses.⁷² Individual taxpayers benefit from a favorable rate for long-term capital gains on appreciated capital

⁶⁵ The Internal Revenue Code allows “first in, first out” and “last in, first out” inventory accounting systems. *See* 26 U.S.C. §§ 471, 472 (2012). It also authorizes the Secretary of Treasury to require inventory accounting where it most clearly reflects income. 26 U.S.C. § 471 (2012). However, the Secretary has not prescribed inventory accounting for virtual currencies.

⁶⁶ A full overview of accounting rules is beyond the scope of this Article. For more information, see BITTKER & LOKKEN, *supra* note 36, at ¶¶ 105–109.

⁶⁷ Timothy R. Koski, *Bitcoin—Tax Planning in the Uncertain World of Virtual Currency*, 93 PRACTICAL TAX STRATEGIES 255, 256 (2014).

⁶⁸ *Libra for Individuals*, LIBRA, <http://www.libratax.com/libra-for-individuals/> (last visited Mar. 2, 2016).

⁶⁹ *See* BITTKER & LOKKEN, *supra* note 36, at ¶ 105.1.3.

⁷⁰ Notice 2014-21, 2014-16 I.R.B. 938 (answer to Q-7 in Section 4).

⁷¹ *See* 26 U.S.C. § 1222 (2012).

⁷² *See generally* 26 U.S.C. § 1221 (2012).

assets.⁷³ However, there are also limitations on the deductibility of capital losses.⁷⁴ A business that wants to ensure that its losses are fully deductible would prefer ordinary gain and loss treatment.⁷⁵

The notice's language anticipates that some businesses and taxpayers may qualify for ordinary treatment of virtual currency gains and losses. However, the IRC and related case law are not particularly helpful in making this determination. Two possible avenues for ordinary character of losses are inventories and property used in a trade or business.

a. Inventory

Gains or losses on certain property are assessed as ordinary gains and losses, including "property held by the taxpayer primarily for sale to customers in the ordinary course of his trade or business."⁷⁶ It is not clear whether all businesses that transact in virtual currency would qualify under this definition. A business that holds virtual currency solely for the purpose of liquidating into U.S. dollars would likely qualify for ordinary gains and losses under current jurisprudence.⁷⁷

However, this legal determination would be considerably complicated if the business used virtual currency for purchases or payments to employees and vendors. The exemption anticipates a secondary purpose for the property in the use of the word "primarily," but where this line is drawn is not clear.⁷⁸ Further,

⁷³ See 26 U.S.C. § 1(h) (2012). However, there is no corresponding favorable rate for the taxation of corporations. See 26 U.S.C. § 11 (2012).

⁷⁴ Corporations can only take capital losses against capital gains. 26 U.S.C. § 1211(a) (2012). Individuals can take the lesser of capital losses against gains or \$3000. 26 U.S.C. § 1211(b) (2012). See generally 26 U.S.C. §§ 165(f), 1211, 1212 (2012).

⁷⁵ See 26 U.S.C. § 165 (2012).

⁷⁶ 26 U.S.C. § 1221 (2012).

⁷⁷ See BITTKER & LOKKEN, *supra* note 36, at ¶ 47.2 (discussing case law interpreting § 1221; where property is held solely for sale, even if not to customers, it is considered in compliance with the section).

⁷⁸ The Supreme Court validated dual purposes for inventories, with "primarily" meaning the purpose "of first important." See *Malat v. Riddell*, 383 U.S. 569, 572 (1966).

current case law addressing property such as securities or real estate is not likely to be factually analogous—a business is much more likely to make regular sales of virtual currency.⁷⁹ Moreover, a business that regularly uses virtual currency as a payment method for vendors and employees may not fall into the exception to capital asset treatment; there may no longer be a clear primary purpose of resale. Absent a new statutory enactment, businesses that desire ordinary treatments of gains and losses should not use virtual currency to make payments.

b. Property Used in Trade or Business or Section 1231 Property

To qualify for ordinary gains and losses, vendors who accept virtual currency could also attempt to characterize the held currency as property “used in trade or business.”⁸⁰ However, the property must be depreciable under the IRC in order to qualify.⁸¹ Virtual currencies do not experience wear and tear like physical property; in fact, the deflationary bias of most virtual currencies would result in an increase in their value over time.⁸²

The quasi-capital gain regime established by 26 U.S.C. § 1231 is not applicable either, as it relies on a similar definition.⁸³ Specifically, property must be depreciable under Section 167.⁸⁴ Again, virtual currencies are not a depreciable asset. Section 1231 treatment is highly favorable: capital character on gains and ordinary character of losses.⁸⁵ However, absent new enactments,

⁷⁹ For an excellent survey of the case law on this subject, see BITTKER & LOKKEN, *supra* note 36, at ¶ 47.2.

⁸⁰ 26 U.S.C. § 1221(a)(2) (2012).

⁸¹ *Id.*

⁸² The number of Bitcoins in circulation will reduce over time and eventually be fixed. See *Controlled supply*, BITCOIN WIKI https://en.bitcoin.it/wiki/Controlled_supply (last modified Jan. 15, 2016). Assuming increasing or fixed demand over time, this will lead to a deflationary bias, i.e. a single unit of Bitcoin will be worth more relative to real currencies.

⁸³ See 26 U.S.C. § 1231 (2012); see also BITTKER & LOKKEN, *supra* note 36, at ¶ 50.

⁸⁴ 26 U.S.C. § 1231(b)(1) (2012).

⁸⁵ See 26 U.S.C. § 1231 (2012); see also BITTKER & LOKKEN, *supra* note 36, at ¶ 50.

this treatment is not available for non-depreciable property like virtual currencies. Other exceptions to capital gains status are not applicable to the receipt of virtual currency for payments either.⁸⁶

III. ALTERNATIVE TAX REGIMES

A. *United States Foreign Currency Tax Regime*

Current foreign currency tax provisions would give preferable treatment to those who regularly transact in virtual currencies.⁸⁷ The policies underlying these enactments apply more logically to virtual currencies than rules for traditional barter. Two particular rules implemented in the IRC have favorable implications when applied to virtual currencies. This is not to say that the legal status as a currency is in itself important, only that that tax policy should be enacted with regard to the function of the asset in question.

The first advantage of foreign currency rules is non-recognition of gains for personal transactions where the realized gain is below a certain threshold—currently \$200.⁸⁸ While capital gains are paid by businesses and by individuals making foreign currency investments, an individual's dining out in Canada, for example, does not require reporting any *de minimis* gains or losses resulting from daily fluctuations in foreign exchange markets. This hybrid approach would allow for the taxation of significant gains for virtual currency held as an investment asset, while still allowing virtual currencies to be used as effective units of exchange without tax consequences.

The second advantage is a type of ordinary gain and loss treatment for certain businesses that deal in foreign currency,⁸⁹ as well as a series of complicated rules regarding foreign currency contracts.⁹⁰ Similar treatment for virtual currency would clarify the ordinary gain and loss question for businesses that accept virtual

⁸⁶ See 26 U.S.C. § 1221 (2012); see also BITTKER & LOKKEN, *supra* note 36, at ¶ 47.

⁸⁷ See generally 26 U.S.C. §§ 985–988 (2012).

⁸⁸ 26 U.S.C. § 988(e) (2012).

⁸⁹ 26 U.S.C. § 988(a)(1) (2012).

⁹⁰ See generally 26 U.S.C. §§ 985–988 (2012).

currencies. It would also give tax certainty to businesses that make payments in virtual currency, which may otherwise disqualify them under the current law.

However, the decentralized nature of virtual currency differs in principle from foreign currencies. While effective units of exchange, virtual currencies lack some features common to state-issued currencies, like price stability.⁹¹ Relatedly, currencies of foreign governments are relatively stable in exchange rates, or at least are intended to be. Moreover, foreign exchange is a prerequisite for purchases with economic actors from other countries, where virtual currency is in effect an alternative to official currencies. Whether, as a matter of policy, such legal legitimacy should be lent to a private monetary system is a question upon which reasonable minds can differ; the tax advantages to doing so for individuals are quite clear.

A House bill has been proposed that would give foreign currency tax treatment to virtual currencies.⁹² While certainly an improvement over the IRS notice as related to transactions, this treatment is the best among many imperfect alternative options. Specific legislation addressing the unique issues of virtual currencies is preferable.

B. Other Exemptions for Personal Transactions

An exemption from paying or reporting gains resulting from personal transactions in virtual currency would eliminate the problem of reporting requirements imposed by the property tax treatment. Australia has adopted such a rule, excluding such transactions from capital gains tax where the valuation of the virtual currency is less than \$10,000 AU.⁹³ It is not entirely clear,

⁹¹ Stephanie Lo & J. Christina Wang, *Bitcoin as Money?*, FED. RESERVE BANK OF BOSTON (Sept. 4, 2014), <https://www.bostonfed.org/economic/current-policy-perspectives/2014/cpp1404.htm> (arguing that while an effective medium of exchange, virtual currencies like Bitcoin are deficient as units of account and stores of value).

⁹² Virtual Currency Tax Reform Act, H.R. 4602, 113th Cong. (2014).

⁹³ *Tax treatment of crypto-currencies in Australia – specifically bitcoin*, AUSTRALIAN TAXATION OFFICE, <https://www.ato.gov.au/General/Gen/Tax-treatment-of-crypto-currencies-in-Australia---specifically-bitcoin/> (last modified

however, whether all transactions less than \$10,000 AU are exempt, or if there are gain implications where transactions together exceed this limit.⁹⁴

Such a rule is similar in effect to the foreign currency provisions of the IRC, except that it turns on the value of the disposed property, not the gain from the transaction. It essentially sets a spending limit in foreign currencies before there are tax considerations. However, both work towards a similar goal: exempting transactions from recording where the gain is minimal and burdensome to report.

There are a few more conceptual distinctions. Under the Australian model, virtual currency would still be understood as property, not elevated to the level of a currency. Furthermore, the thresholds for transactions could account for virtual currencies in particular, as opposed to simply adopting foreign currency standards. Perhaps small dispositions of virtual currency, e.g. under \$600, need not be reported, whereas larger transactions, regardless of gain or loss, are large enough to be of interest.⁹⁵

The Australian policy, however, may be over-inclusive. An exemption threshold as high as \$10,000 in value, or thousands of dollars in gains, would allow many who actually hold the virtual currency as an investment vehicle to characterize investment gains as personal transactions. Demonstrating the falsity of such an asserted categorization would be difficult and perhaps prohibitively expensive because of enforcement costs. The threshold could effectively become a standard exemption, and only users who transact above that level would be taxed. In contrast, the IRC's foreign currency treatment would be effective once the gains are considerable enough in the government's estimation to warrant recognition, i.e. over \$200.⁹⁶

Dec. 18, 2014).

⁹⁴ *TD 2014/26*, AUSTRALIAN TAXATION OFFICE 17–18 (Dec. 17, 2014), <http://law.ato.gov.au/atolaw/view.htm?locid=%27TXD/TD201426/NAT/ATO/ft18%27&PiT=99991231235958#ft18> (stating that transactions purposively constructed to avoid exceeding the limit may be considered together).

⁹⁵ This \$600 is the same dollar threshold as information reporting for certain transactions under the IRC. *See* 26 U.S.C. § 6041(a) (2012).

⁹⁶ 26 U.S.C. § 988(e) (2012).

The character of the transaction is of legal significance for many tax transactions, and in theory the exemption could be limited only to personal purchases or other narrowly defined transactions.⁹⁷ This shortcoming is equally true of the foreign currency tax treatment—the exemption is only for individuals making consumer purchases.⁹⁸ However, the records available from virtual currency transactions are not particularly conducive to this inquiry.⁹⁹ The public ledger only records one side of the transactions, and does not include the consideration received for the payment. For example, a public record would not reveal whether a user transferred \$100 worth of Bitcoins to buy a pair of jeans or swapped them for \$100 in cash.

C. *Non-Regulation or Outright Illegality*

While many countries have engaged with the emergence of virtual currency within the framework of their current regulatory system, others have taken a more extreme approach. Some countries, like Iceland, have adopted harsh regulatory responses to the emergence of virtual currencies, effectively rendering them illegal.¹⁰⁰ Other countries, like Belgium, have mostly abstained from any regulation.¹⁰¹ Advocates propose similarly extreme treatment within the United States, either in the form of severe regulatory scrutiny,¹⁰² or a much more laissez-faire regulatory

⁹⁷ For example, one of such significance of is that whether property is a capital asset depends on its use. *See* 26 U.S.C. § 1221 (2012). The foreign currency non-recognition rule is similarly only for consumer transactions. 26 U.S.C. § 988(e) (2012).

⁹⁸ 26 U.S.C. § 988(e) (2012).

⁹⁹ That said, the Secretary of the Treasury has broad powers to examine all relevant records material to determining tax liability. *See* 26 U.S.C. § 7602 (2012). An actual audit of a virtual currency user could demonstrate acquisition and disposition of virtual currency, and potentially upon what it was spent.

¹⁰⁰ *See World, MERKLE TREE*, <http://www.merkletree.io/> (last visited Feb. 2, 2016) (providing a map detailing virtual currency regulations across countries).

¹⁰¹ *Id. But see* Nermin Hajdarbegovic, *Belgian Regulators Issue Joint Bitcoin Warning*, COINDESK (Jan. 16, 2014), <http://www.coindesk.com/belgian-regulators-issue-joint-bitcoin-warning> (describing a governmental statement warning of virtual currency volatility).

¹⁰² Brian Fung, *Sen. Joe Manchin calls for a Bitcoin ban as regulators seek*

attitude.¹⁰³ Yet from tax and regulatory perspectives, neither approach is warranted or likely to be productive.

The deregulatory approach would amount to a major acquiescence. The markets for Bitcoin and other virtual currencies are active, volatile, and deeply traded—there are considerable gains being realized on a daily basis. There is no good reason for the users of virtual currencies to be exempt from ordinary tax treatment like other commodities and markets.¹⁰⁴ While the tax rules must be sensible given the unique issues presented by virtual currencies, new legislation should enact good policy, not simply turn a blind eye.

On the other end of the spectrum, proposals such as outlawing or severely restricting usage of virtual currencies usually have more to do with the potential for facilitating criminal acts than tax regulations.¹⁰⁵ Even so, many countries are concerned that virtual currencies are unreliable and risky investment vehicles for the unwary, and are worried about their potential use as tax shelters.¹⁰⁶

Ultimately, the prohibitory approach is unsatisfactory. Virtual currencies have enormous potential as units of exchange, particularly as alternatives to the current system of financial intermediaries and fees.¹⁰⁷ They do not pose a legitimate threat to the primacy of the dollar or any other official currencies.¹⁰⁸

'accelerated push', WASH. POST (Feb. 26, 2014), <http://www.washingtonpost.com/blogs/the-switch/wp/2014/02/26/sen-joe-manchin-calls-for-a-bitcoin-ban-as-regulators-look-for-an-accelerated-push/>.

¹⁰³ Pat Garofalo, *Don't Regulate Bitcoins ... Yet*, U.S. NEWS & WORLD REPORT (Mar. 5, 2014), <http://www.usnews.com/opinion/blogs/pat-garofalo/2014/03/04/dont-regulate-or-ban-bitcoins-yet>.

¹⁰⁴ Regardless of the label applied, be it currency or property, gains on the sale of virtual currency are clearly within the IRC's definition of gross income: "all income from whatever source derived." 26 U.S.C. § 61(a) (2012).

¹⁰⁵ See, e.g., Derek A. Dion, *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 (2013) (detailing the potential for criminal facilitation with virtual currencies and arguing for strict regulation).

¹⁰⁶ See, e.g., Hajdarbegovic, *supra* note 101 (describing a governmental statement warning of virtual currency volatility).

¹⁰⁷ See Godlove, *supra* note 30, at 71.

¹⁰⁸ *Virtual Currency Schemes*, EUROPEAN CENTRAL BANK (Oct. 2012), <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf>.

Further, the principles involved in the technology may be useful for financial institutions.¹⁰⁹ Discouraging use by complicated tax compliance is a curious approach, whereas a natural alternative would be regulation of the actual bad behavior. The idea that individuals who would use virtual currency for illicit goals would be discouraged by the current tax treatment is a dubious proposition.

Disengagement from the emergence of virtual currencies is a similarly poor policy. Instead, a sensible tax regime for virtual currencies should achieve the following: first, transactions should be facilitated by the law to the extent practicable; second, significant gains and losses should be recognized and taxed as such; and finally, regulation should protect consumers from theft, fraud, and other dangers as well as promote greater informational transparency.

CONCLUSION

Virtual currencies present novel legal issues. Preexisting tax rules do not establish an effective regime for encouraging compliance and reducing regulatory burdens on individuals and businesses, while still imposing taxes on significant gains.

There are two sides to every Bitcoin. On the one hand, it is an exceptionally effective unit of exchange: fungible, portable, and secure. It carries the relative anonymity of cash and does not require intermediaries. On the other hand, it has a broad and active market. Prices fluctuate greatly; investors are betting that the price is on the rise, and speculators try to game the ups and downs. Any sensible tax treatment must capture both facets of virtual currency. Accommodating one aspect to the exclusion of the other neglects an important consideration—either tax compliance or a useful technology.

Current tax rules artificially undercut the usefulness of virtual currencies as units of exchange. Record keeping and tax reporting

¹⁰⁹ See Adrian Blundell-Wignall, *The Bitcoin Question: Currency versus Trust-less Transfer Technology*, ORG. FOR ECON. COOPERATION & DEV. (June 16, 2014), http://www.oecd-ilibrary.org/finance-and-investment/the-bitcoin-question_5jz2pwjd9t20-en.

make transactions unattractive for those who wish to comply with tax law, and legally risky for those who do not. Yet the very utility that underpins the value of virtual currency is the expectation that another person ascribes value to it, and that it will be accepted in the future as payment for goods and services. Making these transactions difficult is a blow not just to the value of virtual currencies as units of exchange, but also to their very utility.

The most sensible policy to protect the utility of virtual currencies is the exemption of minor transactions from record keeping and reporting requirements, new enactment to clarify tax compliance procedures, and new regulations to foster consumer protection and address concerns of illegality.

PRACTICE POINTERS

- Individuals should retroactively amend tax returns for their past use of virtual currencies.
- Individuals should consider employing a service that will prepare returns to reflect their virtual currency gain or loss.
- Taxpayers should either track basis for each individual transaction, or, adopting a more aggressive stance, use an inventory accounting system to reflect their virtual currency gain or loss.
- Businesses should not make payments in virtual currencies if they want ordinary loss treatment for virtual currencies transactions.
- Businesses should consider using a third-party payment processing service to avoid the reporting requirements otherwise associated with accepting virtual currencies.