

HASHING IT OUT: PROBLEMS AND SOLUTIONS CONCERNING CRYPTOCURRENCY USED AS ARTICLE 9 COLLATERAL

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ABSTRACT

The article analyzes the potential uses of cryptocurrency as collateral in Article 9 secured transactions. At present, there is no clear guidance as to what status, if any, cryptocurrency has as collateral under Article 9. This paper briefly defines cryptocurrency, explains how it functions in its various forms, and shows why it would behoove lenders to utilize cryptocurrency as collateral. The current regulatory efforts over cryptocurrency are discussed to provide some context, through which the proposed actions and revisions of Article 9 are viewed. Finally, this paper recommends how cryptocurrency can be used as collateral under Article 9 under the current system, suggests possible revisions or explanatory notes which can be added to Article 9 to provide clearer guidance for policymakers and lenders alike.

INTRODUCTION

This paper is intended to provide a general overview of what cryptocurrency is, why it can be useful for secured lenders to utilize it as collateral, and how that might be accomplished both now and in the future. The scope of this paper is not to provide an in-depth explanation of the functioning of the various cryptocurrency networks, as many of the sources in this area attempt to do, as they are too numerous, varied, and complex to detail.¹ In addition, the functioning of cryptocurrency networks can be entirely changed by their administrator(s), meaning that any specific descriptors could be rendered obsolete when the source code is changed.² Therefore, only the technical details, which are relevant for secured lenders and the underlying security agreements, will be dealt with in any detail in this paper.

The paper will then examine the various regulatory approaches taken regarding cryptocurrency within the United States as context for subsequent discussions as to how a secured transaction utilizing cryptocurrency as collateral might be accomplished, both now and under proposed amendments or clarifications to Article 9 of the Uniform Commercial Code. The manner in which Article 9 is utilized and then clarified or amended may well have an impact upon the legislative response to cryptocurrency, and would work toward the sorely needed unified regulatory response thereto. Secured lending is built upon creating as much certainty as possible, and a unified set of laws would do much to bring that about.

Finally, the paper will examine how secured transactions might be affected under the current regulatory scheme, and how Article 9 could be amended or clarified to create the necessary surety from which secured lenders would benefit. Under current law, the security agreement itself, as a contract, could be written to take into account the particularities of the cryptocurrency in question and how the parties would ensure the lender's possession of the cryptocurrency in the event of default.³ This would vary according to the type of cryptocurrency at issue, and some example scenarios will be put forward to show how such an arrangement might be done in a manner agreeable to all parties. Thereafter, a number of possible clarifications and possible amendments will be proposed, namely amending Article 9 to define cryptocurrency and its status within secured transactions, viewing cryptocurrency as currency for the purposes of

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1. For example, at the time of writing, cryptocointalk.com, a popular cryptocurrency forum site, has many hundreds of cryptocurrencies with varying algorithms, distribution methods, and approaches. The site contains many, but not all, of the various types of active and inactive cryptocurrency networks. CRYPTOCOINTALK, <http://cryptocointalk.com> (last visited March 2, 2015).
 2. This can be done by means of a “fork” within the code. Bitcoin.org, *Bitcoin Developer Guide*, <https://bitcoin.org/en/developer-guide#block-chain-overview> (last visited March 2, 2015).
 3. U.C.C. § 9-201.

Article 9, defining cryptocurrency as a security under Article 8 of the Uniform Commercial Code, or defining cryptocurrency as investment property under Article 9.

I. CRYPTOCURRENCY DEFINED

The term “cryptocurrency” or “coins” will be utilized when referring to currencies, which rely upon cryptogenic algorithms to ensure network and transactional validity, and are distributed over the internet, but are not issued by any centralized source.⁴ This is the structure utilized by the majority of more visible coins, such as Bitcoin, Litecoin, and Dogecoin.⁵ These are distinguished from “virtual currency,” such as e-Gold, Amazon Tokens, Linden Dollars in the game Second Life, and other currencies that are exchanged solely through the Internet, but are also issued and controlled from a centralized source.⁶ To avoid confusion, these terms will not be used interchangeably, though they are in many reference sources.

Cryptocurrencies are held by means of a “wallet,” which is an address within the coin’s network specific to a private key.⁷ For the purposes of a secured transaction, the wallet can be held by the lender, an escrow agent, a currency exchange, or even the debtor. Access to the wallet is based upon possession of the wallet’s private key, and any transactions made by that individual are irreversible.⁸ Therefore, as attorneys must take care when crafting the security agreement and determining which party holds the coins during the secured period, as discussed below.⁹

Cryptocurrency comes in a variety of non-mutually exclusive forms, and many cryptocurrencies involve integrating a number of these approaches. The nature of the cryptocurrency’s network will likely have bearing upon who holds the coins and the structure of the security agreement. The first variety is “proof-of-work.” Proof-of-work cryptocurrencies are gained by “mining,” which is verifying encoded

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4. Matthew Kien-Meng Ly, *Coining Bitcoin’s “Legal Bits:” Examining the Regulatory Framework for Bitcoin and Virtual Currencies*, 27 HARV. J. LAW & TEC 587, 590 (Spring 2014).
 5. There are, however, limited exceptions to this, such as Ripple, which is centrally managed. David Schwartz, Noah Youngs & Arthur Britto, *Consensus Whitepaper* (2014), <https://ripple.com/consensus-whitepaper> (last retrieved on March 2, 2015).
 6. Stephen T. Middlebrook & Sarah Jane Hughes, *Regulating Cryptocurrencies in the United States: Current Issues and Future Directions*, 40 WM. MITCHELL L. REV. 813, 819-21 (2014).
 7. Isaac Pflaum & Emmeline Hatley, *A Bit of a Problem: National and Extraterritorial Regulation of Virtual Currency in the Age of Financial Disintermediation*, 45 GEO. J. INT’L L. 1169, 1176-77 (2014).
 8. Reuben Grinberg, *Bitcoin: An Innovative Alternative Digital Currency*, 4 HASTINGS SCI. & TECH. L.J. 159, 165 (2012).
 9. Pamela J. Martinson & Christopher P. Masterson, *Bitcoin and the Secured Lender*, Banking & Fin. Services Pol’y Rep. 13, June 2014, at 15 [hereinafter Martinson & Masterson, *Secured Lender*].

transactions on the cryptocurrency's network before other miners do,¹⁰ or purchasing or trading the coins on an exchange.¹¹ Pure proof-of-work coins do not bear interest through the network for holding the coins.¹² The other relevant variety of cryptocurrency, "proof-of-stake," does provide such interest when held in a wallet.¹³ The amount of interest gained, and the frequency thereof will depend on the coin in question, but this additional income can be either a source of income for the secured party, an incentive to the debtor to pledge the coins to the creditor, or a combination of both.

II. WHY CRYPTOCURRENCY IS A DESIRABLE SOURCE OF COLLATERAL

Cryptocurrency recently entered the public view in a variety of ways, from politicians roundly denouncing it,¹⁴ to its utilization as a method of sending the Jamaican bobsled team to the Olympic Games.¹⁵ This broader awareness of what it is and its uses, both current and potential, has worked to remove much of the stigma which was originally placed upon it based upon the SilkRoad incident, where Bitcoins were utilized to purchase illegal drugs anonymously over the internet.¹⁶ What was once viewed as being solely the domain of fringe libertarians or anarchists has transformed into an accepted and encouraged form of payment in traditional brick-and-mortar establishments¹⁷ and is distributed by automatic teller machines.¹⁸

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10. Anthony Volastro, *CNBC Explains: How to Mine Bitcoins on Your Own*, January 23, 2014, <http://www.cnn.com/id/101332124> (last visited March 2, 2015).
 11. A full listing of exchanges and their respective trading volumes in Bitcoin is available at <https://www.cryptocoincharts.info/markets/info> (last visited March 2, 2015).
 12. Cryptsy.com, for example, provides daily interest for Bitcoin and Litecoin held with the exchange even though those coins do not provide interest through their networks.
 13. Vitalik Buterin, *What Proof of Stake Is and Why It Matters*, Bitcoin Magazine (August 26, 2013), <https://bitcoinmagazine.com/articles/what-proof-of-stake-is-and-why-it-matters-1377531463> (last visited March 2, 2015). An exchange may or may not pass the coins gained in interest on to the user however, and whether or not this is the case should be taken in to account when creating the security agreement.
 14. Danton Bryans, *Bitcoin and Money Laundering: Mining an Effective Solution*, 89 IND. L.J. 441, 448-49 (2014).
 15. Kavitha A. Davidson, *Jamaican Bobsledders Ride Dogecoin Into Olympics* (February 4, 2014), <http://www.bloombergview.com/articles/2014-02-04/jamaican-bobsledders-ride-dogecoin-into-olympics> (last visited March 27, 2015).
 16. David Groshoff, *Kickstarter My Heart: Extraordinary Popular Delusions and the Madness of Crowdfunding Constraints and Bitcoin Bubbles*, 5 WM. & MARY BUS. L. REV. 489, 519-20 (2014).
 17. See generally Chock Soder, *Bitcoin Boulevard US: Merchants on Lee Road in Cleveland Heights Expand Acceptance of Digital Currency* (April 23, 2014), <http://www.crainscleveland.com/article/20140418/FREE/140419820/bitcoin-boulevard-us-merchants-on-lee-road-in-cleveland-heights> (last visited March 27, 2015).

Some controversy still remains after the bankruptcy of a large cryptocurrency exchange, Mt. Gox,¹⁹ but prior stories of the record high prices of late 2013 were widely circulated,²⁰ thereby giving the general public a lingering awareness of the concept at very least.

With this familiarity, in spite of the complexity and problems associated with utilizing cryptocurrency as collateral under Article 9, it may make good business sense to do so depending on the lender's tolerance for risk.²¹ Lenders have not yet widely accepted cryptocurrency as collateral, and doing so as an early adopter would provide broad access to customers not yet reached by competitors.²² Cryptocurrency, as a collateral medium, may well become more and more desirable as additional merchants, especially Internet retailers, accept cryptocurrency as payment.²³ It also provides additional benefits, which may be in the lender's interest, such as the ability to gain interest upon the coins held by either the lender or the debtor, depending on the terms of the security agreement, by holding proof-of-stake coins. Additionally, the volatile nature of cryptocurrency's value in relation to traditional currencies produces significant investment opportunities if the lender is willing to accept the accompanying risk.²⁴ Cryptocurrency is also taxed as property, rather than currency, and this scheme may prove advantageous for lenders, especially if the lenders seek to hold the cryptocurrency as a long-term investment.²⁵

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18. CoinDesk, *Bitcoin ATM Map* (2015), <http://www.coindesk.com/bitcoin-atm-map> (last visited March 27, 2015).
 19. Yoshifumi Takemoto & Sophie Knight, *Mt. Gox Files for Bankruptcy, Hit with Lawsuit* (February 28, 2014), <http://www.reuters.com/article/2014/02/28/us-bitcoin-mtgox-bankruptcy-idUSBREA1R0FX20140228> (last visited March 27, 2015).
 20. Maureen Farrell, *Bitcoin Now Tops \$1200* (November 29, 2013), <http://blogs.wsj.com/moneybeat/2013/11/29/bitcoin-now-tops-1200> (last visited March 27, 2015).
 21. Pamela J. Martinson & Christopher P. Masterson, *Creditors Must Adapt to Emerging Payment Systems* (January 10, 2014), <http://www.law360.com/articles/500133/creditors-must-adapt-to-emerging-payment-systems> (last visited March 3, 2015). However, many of the same risks could be in place when accepting certain traditional stocks as collateral, as they too can either gain or lose value quickly.
 22. David A. Jones, *Does Bitcoin Have a Place in the Insurance Industry?* (December 18, 2013), <http://www.law360.com/articles/493748/does-bitcoin-have-a-place-in-the-insurance-industry> (last visited March 3, 2015). While the article deals with the insurance industry specifically, the same rationale applies directly to the lending industry which is also highly competitive.
 23. Jamie Hage & Thomas Wertman, *Drugs, Charity, and Patio Furniture? How Digital Currencies are Changing the Way We Look at Money*, 20 No. 1 WESTLAW J. SEC. LIT. & REG. 1 (2014).
 24. Jason M. Weinstein, *What Businesses Really Need to Know About Bitcoin* (March 5, 2014), <http://www.law360.com/articles/515708/what-businesses-really-need-to-know-about-bitcoin> (last visited March 3, 2015).
 25. Bryan Smith *et al.*, *A Close Look at the IRS' Bitcoin Guidance* (April 3, 2014), <http://www.law360.com/articles/524285/a-close-look-at-the-irs-bitcoin-guidance> (last visited March 3, 2015).

For secured lenders less interested in participating in the speculative game that is cryptocurrency trading, accepting cryptocurrency as collateral does not preclude recovery of at least some of the collateral's traditional currency value should the coin's value drop.²⁶ This approach is taken by many of the retailers who accept cryptocurrency in exchange for traditional goods and wish to convert the cryptocurrency into immediate traditional currency funds.²⁷ In essence, while a secured lender takes some risk in accepting cryptocurrency as collateral, reaching a largely untapped customer base and having significant opportunities for profit not generally available with traditional sources of collateral may make the acceptance of cryptocurrency as loan collateral an attractive option for some lenders. The acceptance is not without risk,²⁸ but the rewards can be significant.

III. ATTEMPTS AT REGULATING AND DEFINING CRYPTOCURRENCY

Even though there are definite advantages to accepting cryptocurrency as a source of collateral, one possible reason for its lack of adoption is regulatory uncertainty. As discussed briefly above, cryptocurrency gained significant publicity through the Silk Road and Mt. Gox fiascos, where cryptocurrency, especially Bitcoins, were either exchanged for drugs or allegedly stolen from an online exchange.²⁹ Given this negative publicity, a unified regulatory response is required,³⁰ but has not yet occurred. Previous efforts to deal with the issue of cryptocurrency resulted in considerable confusion, such as California sending a "cease and desist" letter to the founder of the Bitcoin currency for transmitting funds without a license in an apparent misunderstanding³¹ of the U.S. Treasury Department's Financial Crime Enforcement Network's guidance on the matter.³² New York has proposed a licensure requirement for cryptocurrency businesses.³³ Texas has also followed suit.³⁴ This is a

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26. This can be done directly through many exchanges or through sites such as www.coinbase.com or www.bitpay.com specifically tailored to merchants.
 27. A number of such methods which might be employed are contained at <https://bitpay.com/features>.
 28. Peter Leeds, *The New Test for Bitcoin Might Become Its Digital Undoing* (November 14, 2014), <http://www.law360.com/articles/595843/the-new-test-for-bitcoin-might-become-its-digital-undoing> (last visited March 3, 2015).
 29. Richard B. Levin, Aaron A. O'Brien & Stephanie A. Osterman, *Dread Pirate Roberts, Byzantine Generals, and Federal Regulation of Bitcoin*, 27 J. TAX'N F. INST. 5 (2014).
 30. Robert P. Shannon, *Disruptive Innovation Requires Delicate Regulation* (Nov. 12, 2014), <http://www.law360.com/articles/595081/disruptive-innovation-demands-delicate-regulation> (last visited March 3, 2015).
 31. Kelsey L. Penrose, *Banking on Bitcoin: Applying Anti-Money Laundering and Money Transmitter Laws*, 18 N.C. BANKING INST. 529, 529 (2014).
 32. United States Department of the Treasury, *Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies* (March 18, 2013), http://fincen.gov/statutes_regs/guidance/html/FIN-2013-G001.html (last visited March 3, 2015).
 33. New York State Department of Financial Services, *Proposed New York Codes Rules and Regulations: Title 23 Department of Financial Services, Chapter I*

positive first step in providing the requisite regulatory certainty needed to create a robust framework for cryptocurrency to gain widespread acceptance as a source of collateral. However, this provides a significant risk of inconsistent and patchwork legislation, as the fluid and sometimes rapidly changing world of cryptocurrency is not one that lends itself easily to regulatory oversight.³⁵ Especially when the laws are implemented on a state-by-state basis by lawmakers who may well not be well-versed in the subject matter.

A possible unifying response may come from the National Conference of Commissioners on Uniform State Laws.³⁶ While a proposed uniform law would present a very positive step in providing the required unified regulatory response, which would enable cryptocurrency to be utilized as a more widespread source of collateral, uniform laws must be subsequently adopted by the individual states.³⁷ However, given that even the proposal of new uniform laws is a slow and deliberative process,³⁸ the proposals below will begin with how cryptocurrency might be used as collateral under Article 9 as it now stands, and will follow with proposed amendments and clarifications to the same.

IV. CRYPTOCURRENCY AS COLLATERAL UNDER THE PRESENT SCHEME

Given the opportunities detailed above, such a security agreement could be effectively utilized under the current system through a number of means, namely the debtor pledging the coins to the lender during the term of the security agreement, an escrow agent holding the cryptocurrency on the parties' behalf, or by the coins remaining in the possession of the debtor. These agreements are arranged in order from the most advantageous to the lender to the least, but all provide viable scenarios for secured lending.

The first possibility takes the form of a pledge, where the debtor gives control of the coins to the creditor.³⁹ As stated above, the terms of this

Regulation of the Superintendent of Financial Services, Part 200 Virtual Currencies, <http://www.dfs.ny.gov/about/press2014/pr1407171-vc.pdf> (last visited March 3, 2015); Marcus Asner, *Inside New York's Proposed Virtual Currency Regulation* (August 19, 2014), <http://www.law360.com/articles/567974/inside-new-york-s-proposed-virtual-currency-regulation> (last visited March 3, 2015).

34. Jess Davis, *Texas Bank Regulator Says Bitcoin Exchanges Need Licenses* (April 4, 2014), <http://www.law360.com/articles/525406/texas-bank-regulator-says-bitcoin-exchanges-need-licenses> (last visited March 3, 2015).
35. In large part by design of the various developers who are largely distrustful of centralized authority over currencies in general, let alone cryptocurrency.
36. Fred Miller, *Bitcoin and the Like* Bench & B. Minn., Dec. 2014, at 20.
37. This doesn't always happen. Adoption of model laws is piecemeal and subject to alteration by the states which do adopt them.
38. Yves Smith, *Is UCC Article 9 Going to Kill the Use of Bitcoin by US Businesses?* (March 13, 2014), <http://www.nakedcapitalism.com/2014/03/ucc-article-9-going-kill-us-bitcoin-us-businesses.html> (last visited March 3, 2015).
39. U.C.C. § 9-314.

agreement regarding use of the cryptocurrency are essentially unlimited.⁴⁰ In essence, under this model, the debtor would transfer the coins to the creditor, and the creditor would hold the coins, or actively trade them if the security agreement so allowed.⁴¹ If trading by the secured lender was permitted, the security agreement should allocate the risk of loss amongst the parties. This could be imposed upon either the creditor or debtor entirely, or proportionately between the parties. Another possibility to induce debtors to agree to such a pledge agreement would be the use of proof-of-stake coins, with the creditor returning the interest created by holding the coins to the debtor. A profit-sharing agreement could also be entered into by the parties where any profits realized by trading the coins could be split according to pre-arranged proportions. Such an arrangement would be the most beneficial to the creditor, but the debtor could also stand to gain from the arrangement as well, depending on the terms of the security agreement.

The next possibility is an escrow agent holding the cryptocurrency in security, rather than the creditor.⁴² Such an arrangement may be preferable to a lender who lacks the ability or expertise to securely store the cryptocurrency or is worried about theft of the coins.⁴³ This could grant the creditor and debtor some additional security ensuring the coins reach the required recipient, and could serve as an insurance buffer in the case of theft or loss should the terms of the escrow agreement so provide. However, the benefits such as potential trading, profit sharing, or grants of interest earned may not be present with an escrow agent as they were when the coins were pledged to the creditor, as the escrow agent may well include the interest gained as part of their fee. For this reason, the additional security added by the escrow agreement might still make this an attractive option for both parties.

Finally, the debtor could retain possession of the coins subject to the creditor's security interest. The nature of cryptocurrency wallets, as described above, allows access to the wallet when the private key is made available to a party.⁴⁴ The debtor could retain control over the coins within the wallet and grant the creditor access to the wallet by providing the private key.⁴⁵ This would not provide protection against the debtor

40. U.C.C. § 9-201. The only restrictions concern consumer protections which are not applicable to the type of security agreement contemplated within this paper.

41. The security agreement would almost certainly have a guaranteed return of the number of coins pledged to the creditor if this were allowed, however.

42. Martinson & Masterson, *Secured Lender*, *supra* note 9, at 18-19.

43. Ruoke Yang, *When is Bitcoin a Security Under U.S. Securities Law?*, 18 J. TECH. L. & POL'Y 99, 121 (2013). Cryptocurrency thefts do occur, but it is unclear how often this actually happens as such claims may be excuses for technological mistakes made by system administrators or as cover for fraudulent activity. Actual thefts do occur, but due to the cryptogenic nature of the coins, security is generally quite stringent.

44. Pflaum & Hatley, *supra* note 7, at 1177-78.

45. Martinson & Masterson, *Secured Lender*, *supra* note 9, at 18-19.

irreversibly transferring the cryptocurrency out of the wallet,⁴⁶ but would provide a means for the secured lender to know if coins had been removed. Similarly, if the debtor were enabled through security agreement to trade and exchange the cryptocurrency while it is held as collateral, the creditor would have to be given access to the debtor's exchange account. While the proceeds of these exchanges may well also attach under Article 9,⁴⁷ collection of those proceeds if they are transferred away from the exchange or to another wallet would be very difficult.⁴⁸ If the debtor were to make such a wrongful transfer, the creditor would have a cause of action in breach of contract and possibly conversion, but the security interest may well be lost as the coins have disappeared into the ether that is the highly encrypted peer-to-peer networks that comprise the various cryptocurrencies. The nature of cryptocurrency makes tracking the identity of a recipient very difficult, and the problem is compounded when there are many such transfers, potentially amongst many different types of cryptocurrency. Accordingly, the debtor retaining possession and control over the coins is the least attractive option for the creditor, but could be utilized in situation where there is a low risk of default or where other collateral is secured.

It bears mentioning that, under both the present law and the proposals detailed below, when cryptocurrency is secured as collateral under a larger class, additional measures may be needed to ensure that it is properly repossessed in the event of default. Since cryptocurrency can be transferred largely in an instantaneous and untraceable manner, the only sure means of securing the coins not in the creditor's possession at the time of default would be by a "freezing" injunction done without notice.⁴⁹ This is admittedly a harsh remedy, as any device or account which might house a cryptocurrency wallet would have to be removed from the debtor's control. Concerning this harshness, however, it should also be noted that the creditor and debtor are, at least in theory, free to contract as to what does and does not constitute collateral, and if the debtor wishes that cryptocurrency be excluded, then the security agreement should so dictate. Given the fluid nature of cryptocurrency and the rapidity in which assets can be transferred out of the creditor's grasp, the method is also imperfect. This would, in essence, constitute a race between the debtor and creditor to lock down the assets before they could be removed. However, if the amount of cryptocurrency at issue is large or if the creditor is unlikely to be

46. Grinberg, *supra* note 8 at 165.

47. *See generally* U.C.C. §§ 9-315, 9-325.

48. Martinson & Masterson, *Secured Lender*, *supra* note 9, at 18. The difficulty would be compounded if the exchange from the "base" cryptocurrency went to multiple other cryptocurrencies, each possibly being traded multiple times thereafter.

49. U.C.C. § 4A-503; National Conference of Commissioners on Uniform State Laws, *Asset Freezing Orders* (2011), http://www.uniformlaws.org/shared/docs/asset_freezing_orders/afo_mtgdraft_nov_11.pdf (last visited March 27, 2015). The draft uniform law gives the ability to seize without notice, and it is possible that such an order could be so granted given the ease with which the assets could disappear.

able to achieve relief based upon a breach of contract or conversion claim as detailed above, this may present the best, or possibly only, option to secure the collateral.

V. POSSIBLE SOLUTION: DIRECT AMENDMENT TO ARTICLE 9

Given the recommendations contained above as to how cryptocurrency can be utilized under the present scheme, this paper will now examine how Article 9 could be amended or clarified in order to provide a clearer legal basis for such uses. The first, and most directly helpful change, is an explicit amendment to Article 9, which defines the status of cryptocurrency as collateral.⁵⁰ The final determination of how cryptocurrency is to be viewed under Article 9 is not ultimately important, simply being defined as any category of collateral would be sufficient. Once the cryptocurrency has been defined, the mechanics of using cryptocurrency as collateral will come about organically through trial, error, and clever drafting of security agreements. Repetition breeds standardization, and standardization brings about certainty. Therefore, unless explicitly excluded from the scope of Article 9, any and all explicit action to amend the Article would only serve to benefit this emerging source of collateral.

VI. PROPOSED CLARIFICATIONS

However, as mentioned above, such as an explicit amendment is almost certainly not going to be immediately forthcoming,⁵¹ and states would have to individually adopt the amended section. For this reason, and because of the rapid pace at which technology and commercial lending needs are evolving, a more expedient course of action could be the issuance of explanatory notes concerning the status of cryptocurrency under Article 9. There are three such proposed clarifications, namely defining cryptocurrency as currency, defining cryptocurrency as a security under Article 8, or viewing cryptocurrency as investment property. These proposed clarifications are described in descending order as to their usefulness in properly defining cryptocurrency in the Article 9 context, but any clarification would be of great benefit as no clear legal guidance on the matter has yet been put forward. Each of the proposed clarifications will be dealt with in turn.

A. Cryptocurrency as Currency

The first proposed clarification to the status of cryptocurrency under Article 9 is cryptocurrency being treated as traditional currency. The

50. See generally Groshoff, *supra* note 16. While the article does not deal with Article 9 directly, the focus of the article is how the lack of coherent regulatory input harms new forms of funding, including cryptocurrency.

51. Smith, *supra* note 38.

prevailing view is that cryptocurrency does not fit this category as it is not issued by a centralized authority.⁵² However, in consideration of the forms currency has defined as historically taken, as well as the federal court decision detailed below, there may be sufficient grounds to overcome this prevailing view and allow for cryptocurrency to be viewed as currency for the purposes of Article 9.⁵³

Historically, currency or money was only a form of storing value, and has taken diverse forms from seashells to cattle.⁵⁴ Cows were not issued by the government, but were individually bred, raised, and traded by individuals, and seashells are simply found.⁵⁵ These items have no intrinsic value beyond what is assigned to them by the individuals who use them to bargain.⁵⁶ The nature of the processes which create both keep the supply relatively low. This is very much like the mining or other processes through which cryptocurrency is distributed, and cryptocurrencies are, at least nominally, based upon the electricity costs to create and maintain them. Cryptocurrency is accepted as having value within the community that utilizes it, much in the same manner that the traditional currencies above were. This is insufficient for the Uniform Commercial Code's definition of currency, but based upon the analysis below, this initial store of value is significant and would allow cryptocurrency to fit within the required definitions to be utilized as collateral.

The Uniform Commercial Code states that “‘money’ means a medium of exchange currently authorized or adopted by a . . . government.”⁵⁷ Under these definitions, the recognition of a unit of value as currency by a

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52. WILLIAM H. BYRNES & ROBERT J. MUNRO, MONEY LAUNDERING, ASSET FORFEITURE AND RECOVERY AND COMPLIANCE—A GLOBAL GUIDE, 1-4 MONEY LAUNDERING, ASSET FORFEITURE and Compliance II: *Bitcoin Is Money but NOT A CURRENCY* (Matthew Bender [2015]).
 53. This does not require amendment to the IRS' classification of cryptocurrency as property, as discussed in the final section, but only for the purposes of secured transactions. Disparate classifications of the same items within differing areas of the law is nothing new. For example, under Uniform Commercial Code § 9-102, eggs can be classified as farm products, inventory, or consumer goods depending upon where in the retail chain they happen to be at the time. The egg hasn't itself changed, only the way the law views it in that context. The same can be true with cryptocurrency, as the coins themselves haven't changed, but can be viewed differently in a taxation and collateral context.
 54. Kathryn Reed Edge, *Bank on It: The History of Money: From Cows to Bitcoins*, 50 TENN. B.J. 25 (2014).
 55. Lawrence Weshler, *BOGGS: A COMEDY OF VALUES* (University of Chicago Press) (1999). (This book provides a very interesting view of the artist J. S. G. Boggs and his clashes with the law over his artistic renderings of legal tender. Copying the works in this way was alleged to be counterfeiting, even though the images were only reproduced in an artistic form. This demonstrates both the value attached to the images presented and also the arbitrary nature as to what is viewed as having value and what does not).
 56. The same is true of precious metals, which form the basis, at least historically, of modern currencies. These days, paper money is worth even less intrinsically, and the notion of value being applied to something which otherwise would not have it is even more present.
 57. U.C.C. § 1-201(b)(24).

government is sufficient for that unit to also be viewed as currency under the Uniform Commercial Code, even if that unit is not utilized by the government itself. This may have been done in a sufficient manner in the United States, Germany, and the United Kingdom, and may eventually be done explicitly through an amendment to the Uniform Commercial Code utilized by the Oglala Sioux Tribe. Tribal governments, as will be detailed later, are traditionally viewed as sovereign in the United States.⁵⁸ The recognized adoption through any of these sources would be sufficient to satisfy the recognition requirement by a foreign power under the Uniform Commercial Code,⁵⁹ and each will be dealt with in turn.

First, cryptocurrency has been recognized by a federal court as “currency or a form of money” in *SEC v. Shavers*, which was an action brought by the Securities and Exchange Commission against the owner of a business which purported to invest Bitcoins for clients but failed to do so.⁶⁰ The court reasoned that, although cryptocurrency did not fit the traditional notions of currency, Bitcoin could be used as a form of money. Even though it was limited as to participating retailers who accepted it as such, it could be exchanged for traditional currencies and was therefore currency.⁶¹ This harkens back to the initial store of value as discussed above, and the case provides both a formal ruling by the federal government as to the status of cryptocurrency as currency based upon that community-applied value.

As a result, cryptocurrency can be seen as recognized as currency within the United States and can be accordingly utilized under Article 9 as collateral in the same manner as traditional currency would be.⁶² Even though many cryptocurrencies cannot be exchanged directly for traditional currency, all of them can be traded for “base” currencies that can be exchanged in that manner. This exchangeability, even if indirect, can still be sufficient for any cryptocurrency to be viewed as currency within this view.⁶³

Additionally, the governments of Germany⁶⁴ and the United Kingdom⁶⁵ recognized cryptocurrency as a form of “private money.” While

58. Office of the Press Secretary, *Memorandum for the Heads of Executive Departments and Agencies* (September 23, 2004), <http://georgewbush-whitehouse.archives.gov/news/releases/2004/09/20040923-4.html>.

59. U.C.C. § 1-201(b)(24).

60. *SEC v. Shavers*, No. 4:13-CV-416, 2013 WL 4028182 (E.D. Tex. Aug. 6, 2013) (The ruling was specific to Bitcoin, but the same reasoning applies to cryptocurrency generally.).

61. *Id.*

62. U.C.C. § 1-201(b)(24).

63. Such a view is also helpful outside of the realm of cryptocurrency. For example, virtual currencies, such as in-game currencies in *World of Warcraft* or *Star Wars: The Old Republic*, which can be purchased for traditional currencies (albeit illicitly) can also be regulated if required.

64. Matt Clinch, *Bitcoin Recognized by Germany as ‘Private Money’* (August 19, 2013), <http://www.cnn.com/id/100971898>.

65. Her Majesty’s Revenue & Customs, *Revenue and Customs Brief 9 (2014): Bitcoin and Other Cryptocurrencies* (March 3, 2014),

cryptocurrency does not have a direct analogue within the Uniform Commercial Code, the taxation structure of cryptocurrency in the United Kingdom as subject to capital gains tax⁶⁶ is directly analogous to the approach taken by the Internal Revenue Service,⁶⁷ despite being categorized as private money.⁶⁸ The IRS similarly taxes cryptocurrency on a capital gains basis.⁶⁹ Such a categorization can be then viewed in light of *Shavers*, where currency does not have to be backed by a sovereign, but instead must be redeemable for traditional currencies. This notion of “private money” meshes with the reasoning in *Shavers*, and further strengthens the assertion that cryptocurrencies can be viewed and utilized as currency for the purposes of Article 9 because of the adoption as such by foreign sovereigns.⁷⁰

Finally, it is possible that one form of cryptocurrency, MazaCoin, will be formally adopted as official currency.⁷¹ Efforts are reportedly underway to propose an amendment to the Uniform Commercial Code, as adopted by the Oglala Sioux Tribe.⁷² While it is unclear whether such a proposal would be adopted by the Oglala Sioux Tribe, if such an adoption were to occur, it would satisfy the foreign sovereign adoption requirement.⁷³ Native American tribes are recognized as self-governing,⁷⁴ and self-governance is foundational to sovereignty. Therefore, if or when such an adoption of MazaCoin were to occur, it, and by extension cryptocurrency by its freely exchangeable nature, would be adopted as currency by a foreign power.

<https://www.gov.uk/government/publications/revenue-and-customs-brief-9-2014-bitcoin-and-other-cryptocurrencies/revenue-and-customs-brief-9-2014-bitcoin-and-other-cryptocurrencies> (last visited March 3, 2015).

66. *Id.*

67. See generally *Internal Revenue Service, Notice 2014-21*, <http://www.irs.gov/pub/irs-drop/n-14-21.pdf> (last visited March 3, 2015).

68. British Broadcasting Corporation, *HMRC Scraps VAT on Virtual Currency Bitcoin* (March 3, 2014), <http://www.bbc.com/news/business-26426550> (last visited March 3, 2015).

69. Internal Revenue Service, *supra* note 67.

70. U.C.C. § 1-201(b)(24).

71. See generally *MazaCoin, About MazaCoin* (2015), <https://mazacoin.org/about-mazacoin> (last visited March 3, 2015).

72. See generally *MazaPayu, Tribal UCC Addition Draft 1 Seeking Comments and Feedback* (Jan. 7, 2015), https://www.reddit.com/r/mazacoin/comments/2rmlg1/tribal_ucc_addition_draft_1_seeking_comments_and (last visited March 4, 2015).

73. U.C.C. § 1-201(b)(24).

74. Office of the Press Secretary, *supra* note 58. This contains reference to a number of Executive Orders, which support the government-to-government interaction between the United States and tribal governments.

The next possible clarification is classifying cryptocurrencies as securities under Article 8.⁷⁵ There are two means for defining cryptocurrency as securities: through the language of the Securities Act of 1933, and through Article 8 itself. Concerning the Securities Act, the definition of “securities” is very broad, and includes “a certificate of interest” and shares.⁷⁶ The coins held by a user within a cryptocurrency’s network are part of the whole and represent that user’s holdings of the available coins within the network. This is not unlike a share within a corporation, which represents an individual’s holding within the larger distributed value at the time. While, as a general rule, cryptocurrency networks are not “owned” by any particular individual, they are essentially owned by the users participating in the network’s activities.⁷⁷ The users are responsible for the maintenance of the network through mining and the holding of wallets, essentially functioning as employees because, without them, the network would come to a standstill. Such an arrangement is not unheard of in the corporate world, as employee-owned businesses or public corporations exist and trade stock. Therefore, coins within a cryptocurrency’s network can be viewed as shares or interests in the larger whole, and therefore a security within the meaning of the Securities Act.⁷⁸

The result under Article 8 is similar. A security is defined by means of a four-stage test, namely as “an interest in property,” the security is “registered upon books maintained for that purpose,” “is divisible into a class ... of shares, participations, interests, or obligations,” and is “dealt in or traded on securities exchanges.”⁷⁹ A share is defined as “a share or similar equity interest issued by a corporation, business trust, joint stock company, or similar entity.”⁸⁰ Applying the test set forth, cryptocurrency is an interest in property and satisfies the first element.⁸¹ Based on the IRS’ guidelines, cryptocurrencies are considered property for tax purposes,⁸² or, viewed in another manner, an interest in the larger whole of the cryptocurrency’s network. This therefore satisfies the first element with relative ease.

Second, while cryptocurrencies are not registered in literal books, the transactions are recorded in a public ledger.⁸³ Even though the individuals

75. Bob Lawless, *Is UCC Article 8 Bitcoin’s Savior (for Commercial Law)?* (March 28, 2014), <http://www.creditslips.org/creditslips/2014/03/is-ucc-article-8-bitcoins-savior-for-commercial-law.html> (last visited March 4, 2015).

76. 15 U.S.C. § 77b(a)(1).

77. Lawless, *supra* note 75.

78. *See* 15 U.S.C. § 77b(a)(1).

79. U.C.C. § 8-102(a)(15).

80. U.C.C. § 8-103(a).

81. *See* U.C.C. § 8-102(a)(15).

82. Internal Revenue Service, *supra* note 67, at 2.

83. *See* Catherine Martin Christopher, *Whack-a-Mole: Why Prosecuting Digital Currency Exchanges Won’t Stop Online Money Laundering*, 18 LEWIS & CLARK L. REV. 1, 35 (2014).

holding the coins are not named individually, the addresses within the network where every coin is kept is recorded and may be viewed. Article 8 does not require individuals to be named within the ledger, only that transactions be recorded.⁸⁴ Therefore, public ledgers satisfy the second element.

Third, cryptocurrency is divisible into particular and definable units.⁸⁵ Most cryptocurrencies are divisible to eight decimal places in addition to whole units, as opposed to decimal currency, which is often divided into hundredths. However, the amount of division is not essential, as the only requirement for the third element is that the amount is able to be defined. A coin is an equity interest in the cryptocurrency's network's value, and can therefore be viewed as a share.⁸⁶ Therefore, because cryptocurrencies can be divided into knowable units as part of the larger whole, the second element is also satisfied.

Finally, cryptocurrencies are traded in exchanges, satisfying the final element.⁸⁷ While it is true that such exchanges are not required for transfers to take place, as individual holders may meet in person to trade their currencies⁸⁸ or send funds directly from their respective wallets, they represent a very significant amount of trade volume.⁸⁹ The same can be said of traditional stock trading, as shares can be transferred without intermediaries, but the vast majority are traded within recognized exchanges. Therefore, cryptocurrencies satisfy the fourth and final element and fulfill the requirements as securities under Article 8. If this definition is adopted, they could be utilized as collateral with the same status as more traditional securities.

C. Cryptocurrency as Investment Property

The final possible clarification is viewing cryptocurrency as investment property under Article 9, based upon and including the analysis contained within the Article 8 section above. The definition of "Investment Property" includes securities.⁹⁰ Based upon the above analysis concerning the Securities Act and Article 8 definition of "security", cryptocurrency could therefore be viewed as investment property within Article 9 without much difficulty if either of those viewpoints are accepted.

84. See U.C.C. § 8-102(a)(15)(i).

85. See U.C.C. § 8-102(a)(15)(ii).

86. See U.C.C. § 8-103(a).

87. See U.C.C. § 8-102(a)(15)(iii).

88. See *generally Buy and Sell Bitcoins Near You*, LOCALBITCOINS (Mar. 29, 2015), <https://localbitcoins.com>.

89. See *generally Cryptocurrency Exchanges / Markets List*, CRYPTOCOIN CHARTS, <https://www.cryptocoincharts.info/markets/info> (only representing volume in Bitcoin but illustrative as to the amount of trading which occurs).

90. U.C.C. § 9-102(a)(49).

Cryptocurrencies represent both a useful opportunity to lenders and debtors alike, and can be effectively utilized, even under the current regulatory and legal schemes, as collateral. The varied nature of cryptocurrencies and the flexibility afforded to the parties in the terms and drafting the security agreements allow for tailored solutions in which both creditor and debtor can benefit from the arrangement and still maintain the required level of security sought by the creditor. However, the framework for such security agreements is still uncertain, and, while explicit amendment of Article 9 to clarify the status of cryptocurrency as collateral is unlikely to happen soon, it represents the best solution to the present uncertainty. Given that uncertainty, clarifications can be done in the interim, namely classifying cryptocurrency as currency for the purposes of Article 9 based on recognition as such within the United States and abroad, classifying cryptocurrency as securities under the Securities Act or Article 8, or viewing cryptocurrency as investment property under Article 9 based on the same analysis available under the Securities Act and Article 8. Until clear guidance is given, these proposed frameworks may provide some additional clarification in the interim.