

# Is Bitcoin Intrinsically Worthless?

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## **Abstract**

Monies are typically categorized as commodity or fiat, depending on whether the money in question is intrinsically worthless. In the case of bitcoin, its category is not clear. I consider the superficial subjective value argument often put forward by nonmonetary economists and a more sophisticated payments technology argument. After dismissing both, I argue that there are two reasonable views on the value of bitcoin. One might claim bitcoin lacks intrinsic worth, in which case its value depends on foresight and coordination. Alternatively, one might claim that bitcoin has intrinsic worth, even if no one else accepts it, because some users have peculiar preferences. In either case, bitcoin's existence calls into question the practical relevance of the regression theorem.

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## **I. Introduction**

Monies are typically categorized as commodity or fiat. In the case of bitcoin, its category is not so clear. Some maintain that bitcoin is a commodity money (e.g., Graf 2013a, 2013b; Surda 2014).<sup>1</sup> Others claim it is a (private) fiat money (e.g., Velde 2013; Sieroń 2013). Selgin (2015) goes so far as to construct a new classification scheme altogether, wherein bitcoin is described as a synthetic commodity money.<sup>2</sup>

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<sup>1</sup> Surda's (2014, p. 22) position, that bitcoin is a commodity money, does not follow if his assertion that the "utility of Bitcoin is derived from a reduction of transaction costs of exchange" is meant to be exclusive. If bitcoin has no utility apart from its role in reducing transaction costs as a medium of exchange, it is not a commodity money.

<sup>2</sup> Selgin (2015) describes items with some nonmonetary use and absolute scarcity as commodity monies; with no nonmonetary use and contingent scarcity as fiat monies; with no nonmonetary use and absolute scarcity as synthetic commodity monies; and with some nonmonetary use and contingent scarcity as Coase durable monies.

Sorting bitcoin into any of these categories requires answering one seemingly simple question: is bitcoin intrinsically worthless? Widespread disagreement remains.<sup>3</sup> One argument maintains that since all value is subjective, it is meaningless to consider whether bitcoin is intrinsically worthless. Another posits that bitcoin's intrinsic worth can be found in its distributed ledger technology, which permits lower-cost payments. I dismiss both of these views and offer two reasonable alternatives. On the one hand, bitcoin can be thought of as an intrinsically worthless item, in which case its positive exchange value depends on foresight and coordination. On the other hand, bitcoin can be thought of as having some intrinsic worth to individuals with peculiar preferences. In either case, bitcoin's existence calls into question the practical relevance of the regression theorem.

Two items are worth clarifying at the outset. First, some would object to classifying bitcoin as *any* type of money. Money is defined as a commonly accepted medium of exchange. Bitcoin certainly functions as a medium of exchange. Whether it is commonly accepted depends on how one defines the word "common." White (2015) notes that, at \$4.05 billion, bitcoin's market capitalization already exceeded that of many national currencies by March 2015. At the time of this writing, in August 2017, bitcoin's market capitalization stands at \$70.84 billion. Either valuation suggests high demand for bitcoin. However, bitcoin circulates over a much larger region than do national currencies with comparable market capitalizations, and the demand for bitcoin might reflect more than just the demand to use bitcoin as a medium of exchange. Reasonable people might disagree as to whether bitcoin should be considered a money or merely a potential money.<sup>4</sup> Either way, the question regarding bitcoin's intrinsic worth remains.

Second, if bitcoin does not constitute a genuine money on the grounds that it is not commonly accepted, one might wonder whether the recent experience of bitcoin can shed any light on the regression theorem. As discussed below, Mises is quite clear that the

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<sup>3</sup> Government agencies have also struggled to classify bitcoin consistently. In the United States, for example, the Internal Revenue Service considers bitcoin to be a commodity, subject to taxes on capital gains, while the Financial Crimes Enforcement Network treats bitcoin as money, requiring payment processors and exchanges to register as money transmitters. See Luther (2017b).

<sup>4</sup> On the money or nothing fallacy, see Graf (2013b). I use the term "money" for ease of exposition.

regression theorem applies to *any* medium of exchange, not merely those earning the label “money.” To gain circulation—that is, to function as a medium of exchange—he claims an item must have some nonmonetary use. For Mises, the attention is on the launch. Once an item gains circulation, the trick is done. There is no denying that an item must have value to be employed as a medium of exchange. The question is whether that value must result from some nonmonetary use, as Mises claims, or whether that value might also stem from shared beliefs that an item will function as a medium of exchange in the future. In answering this question, the distinction as to whether bitcoin should be properly thought of as a money or merely a potential money is irrelevant. It functions as a medium of exchange and, as such, might shed some light on our understanding of the regression theorem.

## **II. The Superficial Subjective Value Argument**

Despite its importance for classifying bitcoin, some dismiss the question of whether bitcoin is intrinsically worthless on the grounds that value is subjective. Faggart (2014) provides a representative statement:

Those who claim that money needs “intrinsic” value fail to realize that there is no intrinsic value, it is created in the minds of individuals. . . . All value that exists in objects of human interaction and exchange is “imaginary.” There is no value that exists independently of the minds of human beings.

If all value is subjective, the argument goes, then it is pointless to ask whether bitcoin is intrinsically worthless. Everything is intrinsically worthless because there is no intrinsic worth.

The problem with this view, which I refer to as the superficial subjective value argument, is that it misunderstands what monetary economists mean by “intrinsic.” Monetary economists do not deny that all value is subjective. By “intrinsic worth,” they mean nonmonetary value—or, value apart from any role the item might play as a medium of exchange. All value is subjective. But there is one’s subjective valuation of an item’s usefulness as a medium of exchange and one’s subjective valuation of an item’s usefulness apart from that role. One need not reject the fundamental principle of subjective value to distinguish between monetary and nonmonetary uses. Indeed, valuations of both uses are typically presumed to be entirely subjective.

To see the issue more clearly, consider a simple value function for an item that might be employed as a medium of exchange. Let there be a world populated by  $N$  infinitely lived money-using agents. The utility a representative agent derives from using a particular item as money from time  $T$  onward can be written as  $u(T) = (an + b) \int_T^\infty e^{-r(t-T)} dt = (an + b)/r$ , where  $a$  and  $b$  are fixed parameters,  $r$  is the discount rate,  $n \equiv \ln(\theta N)$ , and  $\theta$  is the fraction of agents using the item as money.<sup>5</sup>

The item's monetary value is captured by the first term in the value function,  $an/r$ . The benefit a representative agent enjoys from using the item as a medium of exchange depends, in part, on its acceptability—that is, the number of other agents using the item. Specifically, we assume that the representative agent derives no benefit from employing the item as a medium of exchange if no one else accepts it. Hence,  $an = 0$  when  $\theta N = 1$ . Moreover, we assume that the benefit to the representative agent of employing an item as a medium of exchange increases at a diminishing rate as more and more agents accept the item. Hence,  $\partial n / \partial \theta N > 0$  and  $\partial^2 n / \partial \theta N^2 < 0$ . Finally, the parameter  $a$  captures the extent to which the characteristics of the item (e.g., durability, portability, divisibility, uniformity, etc.) make it more or less suitable for use as a medium of exchange.

The item's nonmonetary value is captured by the second term in the value function,  $b/r$ . Unlike the monetary value, the nonmonetary value does not depend on the number of users. As such, it reflects any benefit the representative agent derives from the item other than those associated with its use as a medium of exchange.

Monetary economists denote an item as possessing intrinsic worth if and only if  $b/r > 0$ . The expression need not imply that  $b/r$  is derived from nature or some fundamental feature of the item itself. It is entirely consistent with the principle of subjective value. If the representative agent would be willing to exchange some valuable good or service for an item when  $an/r = 0$ , we say that item has some nonmonetary value, or intrinsic worth, to the representative agent. As such, the superficial subjective value argument, which

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<sup>5</sup> Following Dowd and Greenaway (1993), Luther (2016b) uses a similar value function to discuss the network effects cryptocurrencies face. See also Luther (2017a).

maintains that no item has *intrinsic* worth because all value is subjective, completely misses the point.

### III. The Payment System Technology Argument

Another no-less-problematic approach to considering whether bitcoin is intrinsically worthless focuses on the usefulness of its distributed ledger payment system technology. As Tucker (2014) explains,

Bitcoin is both a payment system and a money. The payment system is the source of value, while the accounting unit merely expresses that value in terms of price. . . . We are all used to thinking of currency as separate from payment systems. This thinking is a reflection of the technological limitations of history. There is the dollar and there are credit cards. There is the euro and there is PayPal. There is the yen and there are wire services. In each case, money transfer relies on third-party service providers.

Bitcoin, in contrast, couples a medium of exchange (bitcoin) with a system for transferring that medium of exchange (bitcoin protocol).<sup>6</sup> Since the distributed ledger payment system technology is useful, the argument goes, bitcoin has some intrinsic worth at the outset.

The problem with the payment system technology view is that the supposed nonmonetary usefulness is, in fact, contingent on the item being employed as a medium of exchange. As such, the bitcoin protocol contributes to bitcoin's monetary value—not its nonmonetary value. In terms of the value function described above, the bitcoin protocol is captured in the  $a$  term. This is readily apparent when one considers the value of the bitcoin protocol in transferring balances when no one else accepts bitcoin:  $\theta N = 1$  and  $an = 0$ , even if the distributed ledger technology means  $a > 0$ . In other words, the payment system technology is *only* valuable if there is a network of users willing to send and receive payments.

Including payment system technology features in the monetary parameter in no way denies that bitcoin differs from historical hand-to-hand currencies in important ways. As Graf (2013b, p. 19) explains, the “technical layers involved in the production and exchange of physical commodity units are obviously quite different

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<sup>6</sup> Tucker (2014) uses the term “blockchain” instead of “bitcoin protocol.” Since blockchain is a generic term that might refer to any distributed ledger protocol, I use the term bitcoin protocol to clarify that I am referring to bitcoin's blockchain.

from the corresponding technical layers for decentralized cryptographic currency units.” Nonetheless, “both technical and economic layers are always present, and not just with Bitcoin.” Indeed, Tucker (2014) concedes as much in acknowledging the congruence of money and payment system for traditional monies in the case of physical proximity. Cash is quite portable for face-to-face transactions. It is less portable for transactions taking place over a great distance. That bitcoin can be transferred to someone on the other side of the world as easily as it can be transferred to one’s neighbor makes it *more* portable in general than traditional hand-to-hand currencies. But it is a difference of degree, not a difference in kind.

#### **IV. Two Reasonable Views on the Intrinsic Value of Bitcoin**

Reasonable people might disagree as to whether bitcoin is intrinsically worthless. Some maintain that bitcoin is intrinsically worthless. Others hold that bitcoin has nonmonetary use value. I discuss both views in turn.

##### *A. Option 1: Bitcoin Is Intrinsically Worthless*

It is natural to assume that bitcoin is intrinsically worthless. It was designed to function as a medium of exchange, and alternative uses are not immediately obvious. Even those who claim that bitcoin has some nonmonetary use admit that such uses are difficult to identify (Graf 2013a; Surda 2014, p. 6). As such, one might reasonably maintain that bitcoin is intrinsically worthless.

If bitcoin is intrinsically worthless, it would seem to be the first intrinsically worthless item to get off the ground through the coordination of decentralized, private agents. Although there are many other intrinsically worthless items circulating as money today, they have all been introduced and supported by governments (Selgin 2003). The relationship is so widely accepted that economists treat the terms “intrinsically worthless” and “fiat”—which means “by decree”—as synonyms. Bitcoin does not benefit from public receivability or legal tender laws. Indeed, some governments have even attempted to discourage users from transacting with bitcoin (Hendrickson, Hogan, and Luther 2016; Hendrickson and Luther forthcoming).<sup>7</sup>

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<sup>7</sup> Luther and Salter (forthcoming) consider whether political factors might encourage users to adopt bitcoin.

Of course, government support is not essential for an item to function as money (Salter and Luther 2014). Luther and White (2016), Luther (2013), and King (2004) consider cases where government support for an intrinsically worthless item is removed and, yet, it continues to function as money. However, those fiat monies did not *emerge* without government support. Having been launched by a government, they enjoyed a long period of historical acceptance that later enabled their continued use. Commodity monies such as gold, silver, and salt are believed to have emerged without government support. But commodity monies (as the name implies) have nonmonetary uses. As such, they are able to follow the standard process described by Menger (1892) whereby an item is first exchanged as a good and then, given its high degree of salability, comes to be accepted more generally as a medium of exchange.<sup>8</sup> The standard Mengerian process cannot account for the successful launch of an intrinsically worthless item.

If bitcoin is intrinsically worthless, how did it get off the ground without government support? As Velde (2013, p. 2) explains, such an item would depend solely on “the belief that [it] may be accepted by someone else.” Of course, the belief that someone else will accept an intrinsically worthless item implies a belief that someone else believes that yet another will accept an intrinsically worthless item, and so on. Hence, successfully launching an intrinsically worthless item without government support requires foresight and the ability to coordinate beliefs. Krawisz (2013) provides a clear statement:

When Bitcoin was first invented, bitcoins had no exchange value and were given away free just to generate interest. However, once the right entrepreneurs began to suspect that bitcoins might actually be used as money some day, they were willing to pay dollars to have larger amounts than were available for free.

In other words, those in the bitcoin community coordinated to generate a set of shared beliefs about the future acceptability of bitcoin and then acted on those beliefs in the present, bootstrapping its value.

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<sup>8</sup> On the spontaneous emergence of inside money, see Selgin and White (1987, 1994).

### *B. Option 2: Bitcoin Has Nonmonetary Use Value*

Some deny that bitcoin is intrinsically worthless. Usually, they reach this position by reasoning back through the Mengerian process described above or by referring to the regression theorem considered in the following section. In brief, they argue that a medium of exchange emerging without government support must first be valued for some nonmonetary use. Bitcoin is currently employed as a medium of exchange.<sup>9</sup> Therefore, bitcoin must have had some nonmonetary use prior to being employed as a medium of exchange. Indeed, Graf (2013a) maintains that “failing to find any prior direct-use or direct-exchange values, we would still know that bitcoins had had one. All that we would establish by not finding one would be the failure of our own interpretive efforts.”

Those claiming that bitcoin is a commodity point to nonmonetary uses that are “primarily psychological or sociological in character” (Graf 2013a). Luther (2016b) describes the natural appeal of bitcoin to anarchocapitalists and technologists, who might signal their respective views by holding bitcoin. Additionally, Graf (2013b, pp. 27–28) points to their use in testing the network—which might be valuable to those with a theoretical or scientific interest in money or cryptography or to those appreciating a challenging programming problem—and as a collectible, which might be valuable to those who desire digital objects in general or would like to signal the degree of their participation in the bitcoin social project with a sort of badge of membership and commitment. “Even now, well after their initial emergence,” Graf (2013a) notes, “there appears to be a ‘mystique value’ and a ‘curiosity value’ attached to bitcoins among widening circles of newcomers who, compared with founders and earlier adopters, tend to understand the underlying mechanics of the system less and less, but have the impression that participation is a way to be proud and to send a message of being techno-savvy, up to date, in the know, etc.”

There is empirical support for the idea that bitcoin had nonmonetary use value at the outset. Analyzing Google Trends, Yelowitz and Wilson (2015) find that bitcoin was popular among computer programming enthusiasts. They find no support for the idea that bitcoin was especially popular among those with a more libertarian political philosophy. The best evidence is perhaps that a handful of individuals spent time designing the protocol and incurred

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<sup>9</sup> Luther (2016a) discusses bitcoin’s future prospects.

nontrivial costs mining and transferring bitcoin well before most people had even heard of it, let alone considered using it as a medium of exchange. With this in mind, Graf (2013b, p. 23) concludes that “bitcoins had some value to some people, but going out and buying something with bitcoins—facilitating trades with them—was not among the available uses.”

### C. Discussion

Proponents of the view that bitcoin has nonmonetary value occasionally suggest that this *must* be the case. For example, Block (2013) maintains that “surely, before it became a money (if it does) it was SOMETHING of value . . . because it cannot be denied that some people valued it.” In other words, since bitcoin had some value prior to its use as a medium of exchange, that value must indicate some nonmonetary use.

There is no denying that some people valued bitcoin prior to its use as a medium of exchange. But the question is not *whether* people valued bitcoin; it is *why* people valued bitcoin. Did they value it because it had nonmonetary uses? Or, did they value it on the expectation that it would be useful as a medium of exchange?

The value function considered above can be modified to account for variable monetary and nonmonetary uses over time. Specifically, let  $u(T) = \int_T^\infty (a_t n_t + b_t) e^{-r(t-T)} dt$  represent the utility a representative agent derives from using bitcoin from time  $T$  onward, where  $a_t n_t$  and  $b_t$  represent the expected monetary and nonmonetary values of bitcoin at time  $T$  to the representative agent in period  $t$ , respectively. Effectively, Block (2013) argues that, since bitcoin had a positive price at time  $T$  and  $a_T n_T = 0$ , then  $b_T > 0$ . But that does not necessarily follow. Bitcoin might also have had a positive price at time  $T$  if  $a_T n_T = 0$ ,  $b_t = 0$  for all  $t$ , and  $a_y n_y > 0$  for some  $y > T$ . In other words, the observed positive price might merely indicate the expectation that bitcoin would function as a medium of exchange in the future.

It would be hard to rule out the existence of any expectation from the outset that bitcoin might function as a medium of exchange. That, after all, was the stated intention of its designer and featured prominently in early discussions in the bitcoin community (Nakamoto 2008; Luther 2017a). Introspection might suggest that nonmonetary uses were valued, and early bitcoin users have said as much (Graf 2013a, 2013b; Surda 2014). However, as an outsider, one

must consider the reliability of such reports. Simply put: it is impossible to observe another's utility function directly and difficult to determine another's utility function indirectly from observed actions. As such, I maintain that either position regarding the intrinsic worth of bitcoin can be reasonably held.

## V. Implications for the Regression Theorem

Much of the discussion regarding the intrinsic worth of bitcoin to date has revolved around whether bitcoin violates Ludwig von Mises's regression theorem. The regression theorem holds that individuals value money at time  $t$  by considering its value at time  $t - 1$ . Of course, this implies that they valued the money at time  $t - 1$  by considering its value at time  $t - 2$ , and so on. As such, Mises (1934, p. 131) argues, "an object cannot be used as money unless, at the moment when its use as money begins, it already possesses an objective exchange value based on some other use."

To be clear, the practical relevance of the regression theorem is in (1) distinguishing which items might emerge as money without government support and (2) offering suggestions as to how the government might launch a money that could not emerge naturally.<sup>10</sup> Specifically, it maintains that commodity monies can emerge naturally; fiat monies cannot. Fiat monies can be imposed by governments, either by revoking the contractual obligation to redeem for commodity-backed notes or by issuing a fiat money *ex-nihilo*. In the latter case, a government can *simulate* commodity backing by introducing irredeemable notes at a fixed exchange value with some existing money. It might also prop up demand for fiat monies by making them publicly receivable or designating them legal tender. And, given its privileged position in an economy, a government might anchor expectations to enable large-scale coordination on a new money.

Regardless of where one comes down on the question of intrinsic worth, bitcoin's existence calls into question the practical relevance of the regression theorem. This is widely understood in the case where one maintains that bitcoin is intrinsically worthless. If bitcoin is intrinsically worthless, observing its use as a medium of exchange demonstrates that the regression theorem is invalid; and if the regression theorem is invalid, it has no practical relevance. It is less widely acknowledged, however, that efforts to preserve the validity of

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<sup>10</sup> Selgin (1994, 2003) uses the regression theorem to these ends.

the regression theorem do so by eroding its practical relevance. Ultimately, one must conclude that the regression theorem is either invalid, irrelevant, or—at a minimum—far less important than those working in the Austrian tradition have suggested in the past. To make this clear, I briefly discuss the two methods employed to preserve the validity of the regression theorem given bitcoin’s successful launch.

Some have attempted to preserve the validity of the regression theorem by narrowing its scope. According to Davidson and Block (2015, p. 318), the regression theorem merely “explicates how a barter economy—where all economic calculation is conducted ordinally—becomes a monetary economy in which calculation is performed cardinally.” In their view, the regression theorem “is not an explanation for the origin of all monies or all media of exchange” and does not apply “once a calculational framework in terms of money prices is established.” As such, they maintain that bitcoin poses no threat to the validity of the regression theorem.

Mises does not seem to have limited the scope of his theory along the lines described by Davidson and Block. Rather, Mises (1949, p. 407) claims that it offers pattern predictions that can be used to explain historical events in a wide range of contexts:

This always happens when the conditions appear; whenever a good which has not been demanded previously for the employment as a medium of exchange begins to be demanded for this employment, the same effects must appear again; no good can be employed for the function of a medium of exchange which at the very beginning of its use for this purpose did not have exchange value on account of other employments. And all these statements implied in the regression theorem are enounced apodictically as implied in the apriorism of praxeology. It must happen this way.

More importantly for our purposes here, limiting the scope of the regression theorem in this manner completely eliminates its practical relevance. If the regression theorem only applies to barter economies, it no longer distinguishes which items are potential monies in the absence of government support nor offers guidance for launching a new money. In other words, Davidson and Block preserve the regression theorem by rendering it irrelevant.

Another attempt to rescue the regression theorem requires arguing that bitcoin has some nonmonetary use. As discussed above, it is a plausible view. Value is subjective and some people have peculiar preferences. It also provides a convenient explanation for

how bitcoin got off the ground. However, maintaining that bitcoin has some nonmonetary use preserves the validity of the regression theorem while simultaneously relaxing the constraint the regression theorem imposes on the set of potential monies. The inclusion of psychological or sociological uses—while perfectly reasonable—means the divide between fiat and commodity monies is not so large. Many items that would have been ruled out by a traditional understanding of the regression theorem suddenly become viable candidates to emerge without sovereign support. As Surda (2014, p. 9) puts it, “The threshold for the emergence of liquidity for goods like Bitcoin is relatively low.”

Even pieces of paper of a particular dimension and design, which seem to serve no other use aside from their potential role as media of exchange, can be said to have intrinsic value because some people derive pleasure from their aesthetic features. Nothing seems to be ruled out—and, therefore, nothing is obviously excluded as a potential money by the regression theorem. As such, arguing that bitcoin has some nonmonetary use makes the regression theorem far less important than those scholars working in the Austrian tradition have claimed.

Perhaps that is how it should be. As Graf (2013b, p. 16) notes, the “sometimes-touted industrial and electronic uses of gold and silver are all quite modern and therefore entirely irrelevant to *the first emergence* of these metals in a monetary trading role in various places many centuries earlier” (emphasis original). Originally, these commodities were mere collectibles. Indeed, the emergence of most commodity monies seems to have begun with “a few of mankind’s ‘crazy ones’ . . . playing around with and collecting things that were useless for anything that would have been considered a generally ‘practical’ purpose at the origin phases in question, such as shell beads, shiny metals, or bitcoins” (Graf 2013b, p. 29).

As shown above, the bitcoin experience—regardless of what one thinks about its intrinsic worth—calls into question the practical relevance of the regression theorem. However, this argument does not imply that there is nothing one can learn from Mises in this regard. It only acknowledges that the Misesian position goes too far. Rather than thinking of intrinsic worth as a necessary condition, one should, instead, think of it as a contributing factor. For two items equally suitable for use as a medium of exchange and with equal potential for coordination, the item with some nonmonetary use is perhaps more likely to get off the ground than one without. In other

words, the intrinsically worthless item has an additional hurdle to overcome since agents must coordinate on its use. Similarly, an item with more intrinsic worth—*ceteris paribus*—seems more likely to function as a medium of exchange to the extent that it is more salable.

At the same time, it is to acknowledge that the Misesian position does not go far enough with respect to the significance of coordination. The typical Mengerian story of money emerging out of barter, which forms the foundation for the regression theorem, essentially ignores the role of coordination. Each person, pursuing her own ends, reinforces the salability of an item until it is regarded as a commonly accepted medium of exchange. Explicit coordination is unnecessary. However, just because such a result is possible does not mean it is probable. Humans communicate. Surely some communication about what items people are currently accepting, thinking about accepting, or would prefer not to accept will influence the particular money that emerges. Hence, coordination—while not strictly necessary—is a contributing factor, much like intrinsic worth.

Mises was, in many respects, ahead of his time (Luther 2014, 2016c). Despite having limited experience with fiat monies, he correctly identified major issues that would arise when issuing them. That he stated his position too strongly should be acknowledged. But so, too, should his contribution. Likewise, the modern Austrian position on the emergence of money should be updated by incorporating what has been learned from recent experiences.

## VI. Conclusion

It is not easy to sort bitcoin into traditional categories such as fiat or commodity. Some maintain that bitcoin is intrinsically worthless. Others hold that bitcoin has some nonmonetary use. Although some arguments put forward to date can be dismissed, reasonable disagreements remain.

It is not obvious whether bitcoin is intrinsically worthless. However, the broad implications for the regression theorem are clear. In brief, bitcoin's successful launch means the regression theorem is much less important than previously thought. For those who maintain that bitcoin is intrinsically worthless, the currency serves as counterevidence; it renders the regression theorem invalid. For those who maintain that bitcoin has intrinsic worth, the regression theorem no longer places a significant constraint on the set of potential

monies. In either case, bitcoin calls the practical relevance of the regression theorem into question.

With this in mind, I suggest that those working in the Austrian tradition revise their beliefs. Less attention should be given to whether an item has intrinsic worth—though nonmonetary uses might contribute to a successful launch. More attention should be given to the role of coordination. How are shared beliefs proposed, established, and perpetuated? What factors encourage or inhibit coordination? Addressing these questions provides a natural approach for extending the Austrian view on the emergence of money.

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