

The first article describes the confusion about Bitcoin as money. If anyone has read von Mises' masterpiece: *The Theory of Money and Credit* www.mises.org/books/tmc.pdf, Bitcoin is token money just like the tokens you can buy at a county fair. You exchange dollars for tokens that you can then use for rides and entertainment. If you have unused tokens, you can turn them back into dollars. The Bitcoin market now is a classic case study of a bubble—prices rising due to momentum buying. A good review to learn more about money would be to read the two articles after *Rude Numbers*.

Rude Numbers

Targets, Predictions and Wild Guesses

11

cents per share reported by aluminum giant Alcoa was enough to beat analysts' earnings estimates last night. Despite the beat, shares are slightly lower in premarket trading.

\$1,573

buys an ounce of gold this morning...

\$27.25

gets you an ounce of silver.

\$204

is the price of one Bitcoin at the moment. It's up approximately \$100 since April 1. It's moving so fast that I've already had to update this number three times this morning...

1,560

is where you'll find S&P futures this morning. It took the broad market only two trading days to close the gap created by Friday morning's dismal jobs report.



Rude Trends

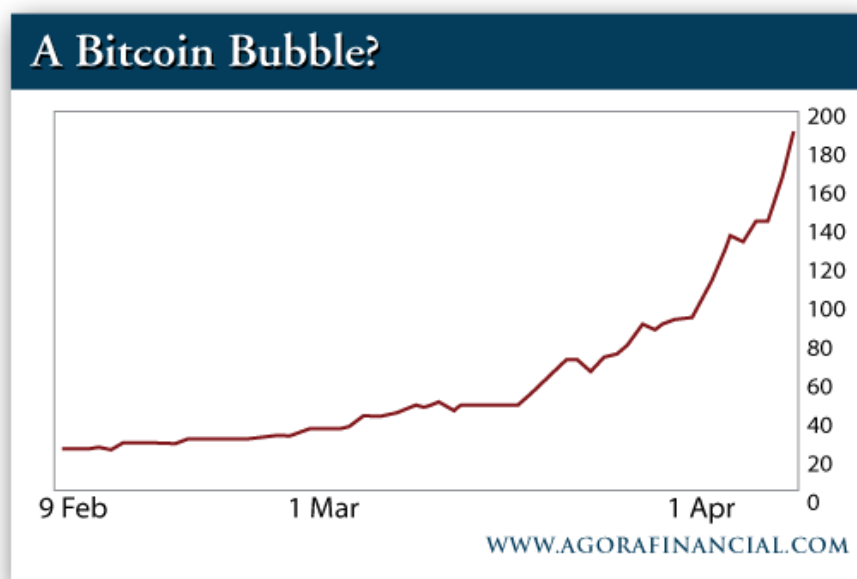
When to Buy... When to Sell

"The astonishing rise in the use of Bitcoins may be an indication that gold and silver, as stores of value, are losing their cachet," writes a reader. "Bitcoins allow people to bypass conventional methods of paying for goods and services no matter where they are in the world; that's rather difficult to do with gold and silver. As such they act as a replacement for the U.S. dollar as a medium of global exchange. Bitcoins are essentially just another fiat currency and

require a similar faith among users that their value will not be deliberately debased, as has not been the case with the dollar."

One day, Bitcoin might find its place in the world as a portable reserve currency. But right now, it's just too early to tell.

I understand the attraction--but there are far too many unknowns to begin calling Bitcoin a store of value. By the looks of its chart, I have to label it a wild speculation at the moment:



I've seen plenty of charts like this. All of them play out the same way eventually. Buyer beware.

Bitcoin: Money of the Future or Old-Fashioned Bubble?

by Patrik Korda on April 9, 2013

Bitcoin has been all the rage lately. The stuff, or lack thereof, runs on peer-to-peer technology, is fully decentralized, has no patents, and is open source. Currently, there are almost 11 million bitcoin units in existence and the maximum amount of bitcoin units that will ever be created by the logic of its design are 21 million. For more details on how they work, see the recent Mises Daily ["The Money-Ness of Bitcoins"](#) by economist Nikolay Gertchev (In Appendix on page 5).

The Issue

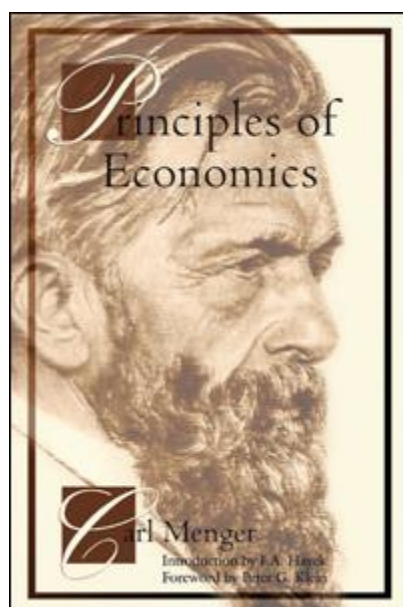
While bitcoins are designed so that they cannot be hyper-inflated in name, **they certainly can be hyper-inflated in substance.** Already, there are numerous knockoffs such as litecoin, namecoin, and freico in

place. This is a particularly valid point because bitcoin is a starfish, i.e., it is fully decentralized. As stated by Ori Brafman and Rod A. Beckstrom,

The starfish doesn't have a head. Its central body isn't even in charge. In fact, the major organs are replicated throughout each and every arm. If you cut the starfish in half, you'll be in for a surprise: the animal won't die, and pretty soon you'll have two starfish to deal with.[1]

After the music-sharing service Napster went under, Niklas Zennström (the creator of Skype) stepped in with his creation called Kazaa, which had no central server that could be shut down. Eventually, such peer-to-peer programs became more numerous, to include Kazaa Lite, eDonkey, eMule, BitTorrent, etc. While this may be good news for people who like to download and share content for free, it certainly is not for people who are under the impression that bitcoin is a hedge against inflation. Those who compare bitcoin to a language neglect the fact that most people do not have an incentive to create a new language out of the blue. On the other hand, a great chunk of human history consists of people searching for the philosopher's stone to magically produce gold. **There can be no doubt that bitcoin has a built-in gold rush mechanism, which has already spilled over to litecoin and will be sure to spill over to subsequent knockoffs as well.**[2]

Money



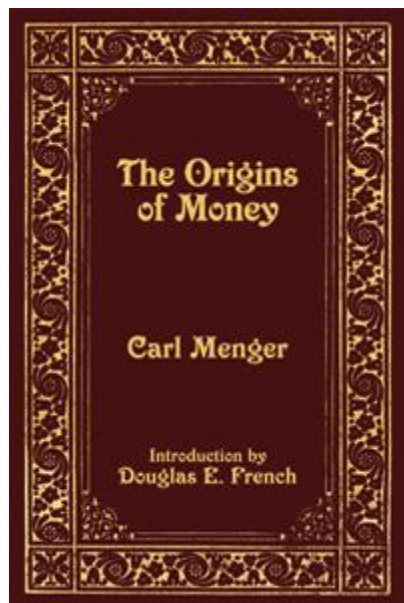
Does bitcoin jibe with the Austrian stand on money? The only way to find out is to read what the great Austrians had to say. Let's start with Carl Menger. In *Principles of Economics*, Carl Menger made the point that **money, a general medium of exchange, has always tended to be the most "saleable" (i.e., "marketable" or "liquid") commodity of the time.**

What is **saleability**? It is not simply value. One may have a Picasso at home, which will fetch quite a sum at a Sotheby's auction during a boom, but a Picasso, like a poem by Friedrich Schiller, a work of Sanskrit, or a decades-old bottle of red wine can never be the most saleable good. As Menger put it, saleability is the

facility with which [a good] can be disposed of at a market at any convenient time at current purchasing prices, or with less or more diminution of the same. (...) Compare only the number of persons to whom bread and meat can be sold with the number to whom astronomical instruments can be sold.

Menger went on to point out that cattle were the most saleable commodity in the ancient world. This is perfectly understandable in a world where bare-bones subsistence is a reality for most people and the structure of production is virtually nonexistent. As society progressed, however, cattle became less and less marketable.

As civilization progressed, Menger states that,



... peoples who were led to adopt a copper standard as a result of the material circumstances under which their economy developed, passed on from the less precious metals to the more precious ones, from copper and iron to silver and gold, with the further development of civilization, and especially with the geographical extension of commerce.

Gold won out due to a variety of reasons, such as being durable, amalgamable, malleable, divisible, homogeneous, and rare. Yet, the ultimate reason that gold won out is because it was the most saleable of commodities. As Menger went on to write,

Gold nuggets extracted from the sands of the Aranyos River by a dirty Transylvanian gypsy are just as saleable in his hands as in the hands of the owner of [the] gold mine, provided the gypsy knows where to find the right market for his commodity. Gold nuggets can pass through any number of hands without any decrease whatsoever in marketability. But articles of clothing, bedding, prepared foods, etc., would be suspect and almost unsaleable, or at any rate of greatly depreciated value, in the hands of the gypsy, even if they had not been used by him, and even if he had, from the beginning, acquired them only with the intention of passing them on in exchange.

This leads us to another criticism of bitcoin: It can never be the most saleable good. The reasoning for this is quite simple. Until the majority of the 7 billion or so people that inhabit this planet have either a smart phone or frequent access to the internet, a digital currency is out of the question.

Gold, on the other hand, is easily recognizable, as opposed to silver that may be mistaken for other metals such as nickel. Moreover, it melts at a relatively low temperature and is a relatively soft metal, which provides superior amalgamation and partly explains why it historically won out over metals such as platinum. If one questions the role of gold in the present monetary system, one only has to walk down the street in a metropolitan area and see a 'We Buy Gold' sign. Moreover, central banks hold gold and lots of it. They do not hold cattle, wheat, soybeans, copper, silver, or bitcoins.

Menger also wrote,

I am ready to admit that, under highly developed conditions of trade, money is regarded by many economizing men only as a token. But it is quite certain that this illusion would immediately be dispelled if the character of coins as quantities of industrial raw materials were lost. [3]

While it may very well be true that some early adopters valued bitcoins with what Menger described as *imaginary value*, the point of the most saleable good bears repeating. Gold is and has been seen as an object of beauty since the dawn of civilization. Thus, the argument that bitcoins are in accord with the regression theorem because a handful of people consume them as they would a Picasso, is like saying paper money has value because John Law or Ben Bernanke really enjoy playing monopoly. In fact, we might as well say that alchemy works, considering that a significant amount of human history and energy was spent in attempting to find the philosopher's stone. Some people may enjoy work just for the sake of working. Unfortunately, this is not a sufficient justification for slavery nor the labor theory of value.

Anonymity

With the imminent hyperinflation meme fading away and no longer holding much water, the new reason to hold bitcoins is the anonymity, nay, the freedom that it provides. Want to gamble online or buy something illegal? Bitcoins are the solution. It is a way of circumventing the authorities and uplifting free and voluntary trade, or so goes the story. Unfortunately for many of the misinformed, the reality is *toto caelo*. It would be best to take it from bitcoin developer Jeff Garzik himself. [The fun starts at 3:20.](#)

The ironic part about this is that anyone and everyone who has participated in illegal activity using bitcoins, presumably because they thought it was anonymous, now has a permanent record of every single one of their transactions contained on the public ledger. Those who think they are clever by using add-ons such as Tor are just as foolish as those who think prepaid cards or smart phones are anonymous. Imagine if bitcoins existed 50 years ago. Chances are, none of the last three presidents (including Barack Obama) would have run for office.

Bubble Time?

The question left to be answered is whether or not bitcoin is once again taking the shape of a bubble. **The answer is yes. There is present a reflexive pattern of people buying because prices are rising, and prices rising because people are buying.** The myopic are extrapolating the price trend of the past four months, which they deem is normal, and in so doing they exacerbate it to the upside, thus attracting even greater fools. The inflection point will come when the continuity of bullish thought is broken. One thing is for sure, the amount of suckers left who are willing to jump on the moving and ever-accelerating train is drawing thin, and so are their pockets.

When prices for any asset go parabolic, it does technical damage to a chart. It is sort of like someone deciding to go full speed in the middle of a marathon. Surely, one would look good for a few minutes. However, at a certain point one would inevitably collapse, with the possibilities of finishing the race being greatly diminished, let alone doing as well as they would have otherwise.

Gold went parabolic toward the second half of 2011 to \$1,900/oz., which did a lot of technical damage to the charts that gold is just now beginning to shake off. Like Icarus, who had soared too high and melted the wax on his wings, parabolic moves always end in a correction, and if prolonged, a crash. Ironically, the best thing that can happen for bitcoin naysayers is if bitcoin skyrockets to \$300/btc within a week.

There is nothing anti-Austrian about acknowledging that there exists in the market place a lot of naïve, irrational, and misinformed players. During the dotcom bubble, for example, a maintenance and building

company called Temco Services almost tripled in a matter of minutes in 1998. The reason is because by 1998 every other layperson was involved in the market. Thus, the level of competence significantly dropped. The ticker symbol for Temco is TMCO, which was fairly close to that of Ticketmaster Online, which was TMCS. Ticketmaster Online (then TMCS) just happened to trade publicly for the first time on the day that Temco Services (TMCO) tripled. Rising asset prices create euphoria, and euphoria significantly drops the IQ of the participants.

Another reason why bitcoin is so susceptible to bubble behavior is because it is perceived as being something new. “New era” thinking always attracts lots of attention. The tulip was introduced to Europe by way of Turkey in the middle of the sixteenth century. (In fact, the word tulip came from the Turkish tulipan, which means turban.) The tulip was perceived as something new to Amsterdam, a country which at the time possessed an abundance of newly discovered gold and silver from the New World. Likewise, the Mississippi bubble, which was perpetrated by John Law, promised vast riches to be had from the New World. The manias in railways, the radio, the internet, you name it, most of them involved something new or something perceived to be new.

There is no doubt that bitcoin is a spontaneous answer to the monetary instability that we see all around us today. On one side of the pond people are worried about the glorified currency peg known as the Euro and on the other about the amount of damage that Bernanke is willing to inflict upon the world’s reserve currency. However, let us not become so enamored of an innovative stateless solution that we forget Austrian economics and hitch libertarianism’s wagon to something heading for a crash.

Patrik Korda holds a bachelor’s degree in political science from BISLA and currently lives in New York, NY, where he works in market research. Follow him and Professor Mark Thornton on [Fighting Apoplithorismophobia](#). See Patrik Korda’s [article archives](#).

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Notes

[1] *The Starfish and the Spider* was originally published in 2006

[2] Consider that bitcoin started at \$35/btc in March and is currently at \$185/btc, this is an increase of 429%. However, litecoin started at \$0.07/ltc in March and is currently at \$4.49/ltc, this is an increase of 6,314%. It makes perfect sense for people to pile into knockoffs because the potential profits, due to starting from a much smaller base, are exponentially higher. This is the gold rush mechanism at work.

[3] Underline added by the present writer

The Money-ness of Bitcoins

Mises Daily: Thursday, April 04, 2013 by [Nikolay Gertchev](#)



Bitcoins have been much in the news lately. Against the background of renewed concerns about the integrity of the euro zone and the imposition of capital controls in Cyprus, the price of a bitcoin has tripled over the last month and reached more than \$141 for 1 BTC. Are we witnessing the spontaneous emergence of an alternative virtual medium of exchange, as some would put it? This article offers an answer to this question by considering three aspects of the economy of bitcoins: their production process, their demand factors, and their capacity to compete with **physical media of exchange**.

The Production of Bitcoins

A bitcoin is a unit of a nonmaterial virtual currency, also called crypto-currency, by the same name. They are stored in anonymous “electronic wallets,” described by a series of about 33 letters and numbers. Bitcoins can travel from a wallet to a wallet, by means of an online [peer-to-peer network](#) transaction. Any inter-wallet transfer is registered in the code of the bitcoin, so that the record of its entire transaction history clearly identifies its owner at any single moment, thereby preventing potential ownership conflicts. Bitcoins can be further divided into increments as small as one 100 millionth of a bitcoin. The current outstanding volume of bitcoins is above 10 million and is projected to reach 21 million in the year 2140.

This brings us to the truly fascinating production process of the bitcoins. They are “mined” based on a pre-defined mathematical algorithm, and come in a bundle, currently of 25 units, as a

reward for carrying out a large number of computational operations that aim at discovering the solution to what could be described as a randomized mathematical puzzle. The role of the algorithm is to ensure a declining progression of the overall stock of bitcoins, by halving the reward every four years. Thus, somewhere in the beginning of 2017, the reward bundle will consist of 12.5 units only. Also, the more bitcoins are produced, the harder are the randomized mathematical puzzles to be solved.

Bitcoins come about as the uncertain pay-off for an energy—and hardware—consuming process that is extended through time. The per-time pay-off varies, based on the efficiency and sophistication of the more-or-less specific hardware used for the mining. Individual miners have started to pool their efforts, and this cooperation has tremendously reduced the uncertainty that each individual miner bears.

Due to this costly production process, bitcoins, although virtual, are constrained by scarcity. While a bitcoin has no material shape or content, the algorithm that generates it has been designed to replicate the competitive production of a scarce good. First, entry in the business of producing bitcoins is open to anybody. Second, the production process is capital and labor intensive, extended through time, and also uncertain. Third, production is subject to decreasing returns, thereby conforming to the generalized scarcity faced by acting individuals in the better-known physical world. Thus, bitcoins turn out to be the exact opposite of the “Linden dollars” of the [Second Life](#) “virtual world.” The latter are produced by a monopolist central authority, out of thin air, and without any other limitation but the very discretion of that same monopolist authority.

However, it is not their costs of production that bestow on bitcoins the status of an economic good. After all, scarcity is not rooted in the absolute quantitative limitation of something; it comes from the insufficiency of the stock of that something, perceived as useful in some regard, relative to the individuals’ needs. Hence, we must ask ourselves how bitcoins have come to be valued at all. This leads us to an analysis of their demand.

The Demand for Bitcoins

At their inception, bitcoins were created and first held within a “crypto-punk” community. It could then be safely assumed that they served the purpose of conveying a specific antiestablishment worldview. The first demand factor, initially for producing bitcoins, and then unavoidably but only indirectly for holding them, was rooted in their capacity to project a certain

point of view. In a sense, bitcoins were comparable to an artistic medium of expression, such as music, literature, and painting.

Thanks to that initial source of value, bitcoins had a reference point that positioned them relative to other goods and services. From there onward, the technological features that characterize them led to an expansion of their demand. Bitcoins are imperishable. Storage and protection against theft or accidental loss come at a very low cost, as these are accessory services rendered by standard antivirus and back-up software. Marginal transaction costs are also practically zero, once the fixed cost of establishing and maintaining a network connection has been accounted for. All these aspects are common to real wealth assets. Thus, the second demand factor for bitcoins is explained by their capacity to store wealth at a low cost. From the status of a good which, as a “worldview-conveyor,” was largely used for personal enjoyment (and hence consumption), bitcoins evolved into an investment good that has become attractive well beyond its original crypto-punk community.

The growing investment demand also spurred the development of intermediary dealers in bitcoins. There are a number of exchanges where bitcoins can be bought and sold against currencies. Specialized online storage, presumably with increased security, has also been made available. Intermediation, though open to free entry, is likely to remain rather monopolistic, given the very low margins associated with transacting in and with bitcoins.

This latter aspect, namely the intrinsically low transaction fee, contributes to a third demand factor for bitcoins, namely as a means of payment. A number of online vendors, who are mostly specialized in web-related services and online sales of rather exotic items, accept final payment in bitcoins, not the least because of the guarantee for almost absolute anonymity. This last component of the demand for bitcoins is still nascent. After all, a very limited set of items can be purchased with bitcoins, and sellers still price their goods in dollars, euros, etc. The price is then converted into bitcoins, according to the prevailing exchange rate, at the final stage of finalizing the payment method of the transaction. Thus, while bitcoins do appear to serve as a means of payment, they are definitely not used yet for business calculation. This is most certainly attributable to their still very limited demand to hold as a means of exchange. Nevertheless, couldn't they become full-fledged money in the foreseeable future?

Bitcoins as Money

Prima facie, bitcoins possess all the qualities required from a money (a generally-used medium of exchange). They are perfectly homogeneous, easily cognizable, conveniently divisible, storable at practically no cost, and imperishable. Also, they seem to be fully shielded from counterfeiting. In addition, because they exist as a consumption and investment good, they are appraised on their own, thereby satisfying the [Misesian regression criterion](#)¹ for the free-market inception of a

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- ¹ XVII. INDIRECT EXCHANGE

4. The Determination of the Purchasing Power of Money

As soon as an economic good is demanded not only by those who want to use it for consumption or production, but also by people who want to keep it as a medium of exchange and to give it away at need in a later act of exchange, the demand for it increases. A new employment for this good has emerged and creates an additional demand for it. As with every other economic good, such an additional demand brings about a rise in its value in exchange, i.e., in the quantity of other goods which are offered for its acquisition. The amount of other goods which can be obtained in giving away a medium of exchange, its "price" as expressed in terms of various goods and services, is in part determined by the demand of those who want to acquire it as a medium of exchange. If people stop using the good in question as a medium of exchange, this additional specific demand disappears and the "price" drops concomitantly.

Thus the demand for a medium of exchange is the composite of two partial demands: the demand displayed by the intention to use it in consumption and production and that displayed by the intention to use it as a medium of exchange. [7] With regard to modern metallic money one speaks of the industrial demand and of the monetary demand. The value in exchange (purchasing power) of a medium of exchange is the resultant of the cumulative effect of both partial demands.

Now the extent of that part of the demand for a medium of exchange which is displayed on account of its service as a medium of exchange depends on its value in exchange. This fact raises difficulties which many economists considered insoluble so that they abstained from following farther along this line of reasoning. It is illogical, they said, to explain the purchasing power of money by reference to the demand for money, and the demand for money by reference to its purchasing power.

The difficulty is, however, merely apparent. The purchasing power [p. 409] which we explain by referring to the extent of specific demand is not the same purchasing power the height of which determines this specific demand. The problem is to conceive the determination of the purchasing power of the immediate future, of the impending moment. For the solution of this problem we refer to the purchasing power of the immediate past, of the moment just passed. These are two distinct magnitudes. It is erroneous to object to our theorem, which may be called the regression theorem, that it moves in a vicious circle. [8]

But, say the critics, this is tantamount to merely pushing back the problem. For now one must still explain the determination of yesterday's purchasing power. If one explains this in the same way by referring to the purchasing power of the day before yesterday and so on, one slips into a *regressus in infinitum*. This reasoning, they assert, is certainly not a complete and logically satisfactory solution of the problem involved. What these critics fail to see is that the regression does not go back endlessly. It reaches a point at which the explanation is completed and no further question remains unanswered. If we trace the purchasing power of money back step by step, we finally arrive at the point at which the service of the good concerned as a medium of exchange begins. At this point yesterday's exchange value is exclusively determined by the nonmonetary --industrial-- demand which is displayed only by those who want to use this good for other employments than that of a medium of exchange.

But, the critics continue, this means explaining that part of money's purchasing power which is due to its service as a medium of exchange by its employment for industrial purposes. The very problem, the explanation of the specific monetary component of its exchange value, remains unsolved. Here too the critics are mistaken. That component of money's value which is an outcome of the services it renders as a medium of exchange is entirely explained by reference to these specific monetary services and the demand they create. Two facts are not to be denied and are not denied by anybody. First, that the demand for a medium of exchange is determined by considerations [p. 410] of its exchange value which is an outcome both of the monetary and the industrial services it renders. Second, that the exchange value of a good which has not yet been demanded for service as a medium of exchange is determined solely by a demand on the part of people eager to use it for industrial purposes, i.e., either for consumption or for production. Now, the regression theorem aims at interpreting the first emergence of a monetary demand for a good which previously had been demanded exclusively for industrial purposes as influenced by the exchange value that was

ascribed to it at this moment on account of its nonmonetary services only. This certainly does not involve explaining the specific monetary exchange value of a medium of exchange on the ground of its industrial exchange value.

Finally it was objected to the regression theorem that its approach is historical, not theoretical. This objection is no less mistaken. To explain an event historically means to show how it was produced by forces and factors operating at a definite date and a definite place. These individual forces and factors are the ultimate elements of the interpretation. They are ultimate data and as such not open to any further analysis and reduction. To explain a phenomenon theoretically means to trace back its appearance to the operation of general rules which are already comprised in the theoretical system. The regression theorem complies with this requirement. It traces the specific exchange value of a medium of exchange back to its function as such a medium and to the theorems concerning the process of valuing and pricing as developed by the general catallactic theory. It deduces a more special case from the rules of a more universal theory. It shows how the special phenomenon necessarily emerges out of the operation of the rules generally valid for all phenomena. It does not say: This happened at that time and at that place. It says: 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. Nobody can ever succeed in construction a hypothetical case in which things were to occur in a different way.

The purchasing power of money is determined by demand and supply, as is the case with the prices of all vendible goods and services. As action always aims at a more satisfactory arrangement of future [p. 411] conditions, he who considers acquiring or giving away money is, of course, first of all interested in its future purchasing power and the future structure of prices. But he cannot form a judgment about the future purchasing power of money otherwise than by looking at its configuration in the immediate past. It is this fact that radically distinguishes the determination of the purchasing power of money from the determination of the mutual exchange ration between the various vendible goods and services. With regard to these latter the actors have nothing else to consider than their importance for future want-satisfaction. If a new commodity unheard of before is offered for sale, as was, for instance, the case with radio sets a few decades ago, the only question that matters for the individual is whether or not the satisfaction that the new gadget will provide is greater than that expected from those goods he would have to renounce in order to buy the new thing. Knowledge about past prices is for the buyer merely a means to reap a consumer's surplus. If he were not intent upon this goal, he could, if need be, arrange his purchases without any familiarity with the market prices of the immediate past, which are popularly called present prices. He could make value judgments without appraisalment. As has been mentioned already, the obliteration of the memory of all prices of the past would not prevent the formation of new exchange ratios between the various vendible things. But if knowledge about money's purchasing power were to fade away, the process of developing indirect exchange and media of exchange would have to start anew. It would become necessary to begin again with employing some goods, more marketable than the rest, as media of exchange. The demand for these goods would increase and would add to the amount of exchange value derived from their industrial (nonmonetary) employment a specific component due to their new use as a medium of exchange. A value judgment is, with reference to money, only possible if it can be based on appraisalment. The acceptance of a new kind of money presupposes that the thing in question already has previous exchange value on account of the services it can render directly to consumption or production. Neither a buyer nor a seller could judge the value of a monetary unit if he had no information about its exchange value--its purchasing power--in the immediate past.

The relation between the demand for money and the supply of money, which may be called the money relation, determines the height of purchasing power. Today's money relation, as it is shaped on the ground of yesterday's purchasing power, determines today's purchasing power. He who wants to increase his cash holding restricts [p. 412] his purchases and increases his sales and thus brings about a tendency toward falling prices. He who wants to reduce his cash holding increases his purchases--either for consumption or for production and investment--and restricts his sales; thus he brings about a tendency toward rising prices.

Changes in the supply of money must necessarily alter the disposition of vendible goods as owned by various individuals and firms. The quantity of money available in the whole market system cannot increase or decrease otherwise than by first increasing or decreasing the cash holdings of certain individual members. We may, if we like, assume that every member gets a share of the additional money right at the moment of its inflow into the system, or shares in the reduction of the quantity of money. But whether we assume this or not, the final result of our demonstration will remain the same. This result will be that changes in the structure of prices brought about by changes in the supply of money available in the economic system never affect the prices of the various commodities and services to the same extent and at the same date.

Let us assume that the government issues an additional quantity of paper money. The government plans either to buy commodities and services or to repay debts incurred or to pay interest on such debts. However this may be, the treasury enters the market with an additional demand for goods and services; it is now in a position to buy more goods than it could buy before. The prices of the commodities it buys rise. If the government had expended in its purchases money collected by taxation, the taxpayers would have restricted their purchases and, while the prices of goods bought by the government would have risen, those of other goods would have dropped. But this fall in the prices of the goods the taxpayers used to buy does not occur if the government increases the quantity of money at its disposal without reducing the quantity of money in the hands of the public. The prices of some commodities--viz., of those the government buys--rise immediately, while those of the other commodities remain unaltered for the time being. But the process goes on. Those selling the commodities asked for by the government are

now themselves in a position to buy more than they used previously. The prices of the things these people are buying in larger quantities therefore rise too. Thus the boom spreads from one group of commodities and services to other groups until all prices and wage rates have risen. The rise in prices is thus not synchronous for the various commodities and services.

When eventually, in the further course of the increase in the quantity [p. 413] of money, all prices have risen, the rise does not affect the various commodities and services to the same extent. For the process has affected the material position of various individuals to different degrees. While the process is under way, some people enjoy the benefit of higher prices for the goods or services they sell, while the prices of the things they buy have not yet risen or have not risen to the same extent. On the other hand, there are people who are in the unhappy situation of selling commodities and services whose prices have not yet risen or not in the same degree as the prices of the goods they must buy for their daily consumption. For the former the progressive rise in prices is a boon, for the latter a calamity. Besides, the debtors are favored at the expense of the creditors. When the process once comes to an end, the wealth of various individuals has been affected in different ways and to different degrees. Some are enriched, some impoverished. Conditions are no longer what they were before. The new order of things results in changes in the intensity of demand for various goods. The mutual ratio of the money prices of the vendible goods and services is no longer the same as before. The price structure has changed apart from the fact that all prices in terms of money have risen. The final prices to the establishment of which the market tends after the effects of the increase in the quantity of money have been fully consummated are not equal to the previous final prices multiplied by the same multiplier.

The main fault of the old quantity theory as well as the mathematical economists' equation of exchange is that they have ignored this fundamental issue. Changes in the supply of money must bring about changes in other data too. The market system before and after the inflow or outflow of a quantity of money is not merely changed in that the cash holdings of the individuals and prices have increased or decreased. There have been effected also changes in the reciprocal exchange ratios between the various commodities and services which, if one wants to resort to metaphors, are more adequately described by the image of price revolution than by the misleading figure of an elevation or a sinking of the "price level."

We may at this point disregard the effects brought about by the influence on the content of all deferred payments as stipulated by contracts. We will deal later with them and with the operation of monetary events on consumption and production, investment in capital goods, and accumulation and consumption of capital. But even in setting aside all these things, we must never forget that changes in the quantity of money affect prices in an uneven way. It depends on the data of each particular case at what moment and to what [p. 414] extent the prices of the various commodities and services are affected. In the course of a monetary expansion (inflation) the first reaction is not only that the prices of some of them rise more quickly and more steeply than others. It may also occur that some fall at first as they are for the most part demanded by those groups whose interests are hurt.

Changes in the money relation are not only caused by governments issuing additional paper money. An increase in the production of the precious metals employed as money has the same effects although, of course, other classes of the population may be favored or hurt by it. Prices also rise in the same way if, without a corresponding reduction in the quantity of money available, the demand for money falls because of a general tendency toward a diminution of cash holdings. The money expended additionally by such a "dishoarding" brings about a tendency toward higher prices in the same way as that flowing from the gold mines or from the printing press. Conversely, prices drop when the supply of money falls (e.g., through a withdrawal of paper money) or the demand for money increases (e.g., through a tendency toward "hoarding," the keeping of greater cash balances). The process is always uneven and by steps, disproportionate and asymmetrical.

It could be and has been objected that the normal production of the gold mines brought to the market may well entail an increase in the quantity of money, but does not increase the income, still less the wealth, of the owners of the mines. These people earn only their "normal" income and thus their spending of it cannot disarrange market conditions and the prevailing tendencies toward the establishment of final prices and the equilibrium of the evenly rotating economy. For them, the annual output of the mines does not mean an increase in riches and does not impel them to offer higher prices. They will continue to live at the standard at which they used to live before. Their spending within these limits will not revolutionize the market. Thus the normal amount of gold production, although certainly increasing the quantity of money available, cannot put into motion the process of depreciation. It is neutral with regard to prices.

As against this reasoning one must first of all observe that within a progressing economy in which population figures are increasing and the division of labor and its corollary, industrial specialization, are perfected, there prevails a tendency toward an increase in the demand for money. Additional people appear on the scene and want to establish cash holdings. The extent of economic self-sufficiency, i.e., of production for the household's own needs, shrinks and people become more dependent upon the market; this will, by and large, [p. 415] impel them to increase their holding of cash. Thus the price-raising tendency emanating from what is called the "normal" gold production encounters a price-cutting tendency emanating from the increased demand for cash holding. However, these two opposite tendencies do not neutralize each other. Both processes take their own course, both result in a disarrangement of existing social conditions, making some people richer, some people poorer. Both affect the prices of various goods at different dates and to a different degree. It is true that the rise in the prices of some commodities caused by one of these processes can finally be compensated by the fall caused by the other process. It may happen that at the end some or many prices come back to their previous height. But this final result is not the outcome of an absence of movements provoked by changes in the money relation. It is rather the outcome of the joint effect of the coincidence of two

medium of exchange. However, in order to become a viable alternative to existing monies, bitcoins must generate a sufficiently large demand so that their usage becomes generalized.

processes independent of each other, each of which brings about alterations in the market data as well as in the material conditions of various individuals and groups of individuals. The new structure of prices may not differ very much from the previous one. But it is the resultant of two series of changes which have accomplished all inherent social transformations.

The fact that the owners of gold mines rely upon steady yearly proceeds from their gold production does not cancel the newly mined gold's impression upon prices. The owners of the mines take from the market, in exchange for the gold produced, the goods and services required for their mining and the goods needed for their consumption and their investments in other lines of production. If they had not produced this amount of gold, prices would not have been affected by it. It is beside the point that they have anticipated the future yield of the mines and capitalized it and that they have adjusted their standard of living to the expectation of steady proceeds from the mining operations. The effects which the newly mined gold exercises on their expenditure and on that of those people whose cash holdings it enters later step by step begin only at the instant this gold is available in the hands of the mine owners. If, in the expectation of future yields, they had expended money at an earlier date and the expected yield failed to appear, conditions would not differ from other cases in which consumption was financed by credit based on expectations not realized by later events.

Changes in the extent of the desired cash holding of various people neutralize one another only to the extent that they are regularly recurring and mutually connected by a causal reciprocity. Salaried people and wage earners are not paid daily, but at certain pay days [p. 416] for a period of one or several weeks. They do not plan to keep their cash holding within the period between pay days at the same level; the amount of cash in their pockets declines with the approach of the next pay day. On the other hand, the merchants who supply them with the necessities of life increase their cash holdings concomitantly. The two movements condition each other; there is a causal interdependence between them which harmonizes them both with regard to time and to quantitative amount. Neither the dealer nor his customer lets himself be influenced by these recurrent fluctuations. Their plans concerning cash holding as well as their business operations and their spending for consumption respectively have the whole period in view and take it into account as a whole.

It was this phenomenon that led economists to the image of a regular circulation of money and to the neglect of the changes in the individuals' cash holdings. However, we are faced with a concatenation which is limited to a narrow, neatly circumscribed field. Only as far as the increase in the cash holding of one group of people is temporally and quantitatively related to the decrease in the cash holding of another group and as far as these changes are self-liquidating within the course of a period which the members of both groups consider as a whole in planning their cash holding, can the neutralization take place. Beyond this field there is no question of such a neutralization.

[7]. The problems of money exclusively dedicated to the service of a medium of exchange and not fit to render any other services on account of which it would be demanded are dealt with below in section 9.

[8]. The present writer first developed this regression theorem of purchasing power in the first edition of his book *Theory of Money and Credit*, published in 1912 (pp. 97-123 of the English-language translation). His theorem has been criticized from various points of view. Some of the objections raised, especially those by B. M. Anderson in his thoughtful book *The Value of Money*, first published in 1917 (cf. pp. 100 ff. of the 1936 edition), deserve a very careful examination. The importance of the problems involved makes it necessary to weigh also the objections of H. Ellis (*German Monetary Theory 1905-1933* [Cambridge, 1934], pp. 77 ff.). In the text above, all objections raised are particularized and critically examined.

Without the certainty that they can be transacted for any other good in the economy, a demand to hold them as money could not develop. It is with respect to their capacity to become and *remain* commonly used that bitcoins suffer from a relative disadvantage.

Indeed, bitcoins are embodied in a specific and highly capital-intensive technology. They can become convenient enough for standard personalized transactions only if both parties of the exchange possess the necessary technology that gives access to bitcoins. Bitcoins can do the job already for internet-based impersonalized purchases, because the marginal cost of the exchange technology they go along with is already almost zero *for those who possess it*. However, the transposition of that technology in the physical world of common face-to-face shopping (getting a haircut, buying a sandwich, or purchasing vegetables at the local grocery shop) would imply extra costs. True, these costs would decrease progressively as portable smartphones with permanent internet access become more widely used, not only by buyers, but also by sellers. The key point, however, is that bitcoins could become a generalized medium of exchange *only through the accessory use of other, specific and physical, goods* in an economy that has reached a very high level of technological development. This is a tremendous disadvantage, for at least two reasons.

First, at any given moment, the level of technological development is not uniform for all individuals within the same (national) economy. While some have access to the latest technology in a given field of activity, others prefer to stick to older versions. This is definitely due to the cost of replacing existing capital goods, but also to individual preferences, and sometimes to personal wealth. Consequently, bitcoins could become money only at the point when the technology that embodies them becomes commonly used. We are not there yet.

Second, an economy in which the medium of exchange is dependent so much upon the widespread use of a *specific* technology would be extremely vulnerable. Technologies are not given; they are the result of individual choices with respect to capital accumulation and allocation that must be made time and again, and are subject to reversal. Then, if the medium-of-exchange-linked technology is abandoned, because for instance no sufficient savings are available any longer, the economy will have to find another medium of exchange. This transition phase might then involve significant disruptions in the structure of production. A technology-linked medium of exchange does not provide enough flexibility to economic relations and might be viewed as complicating, rather than facilitating, some actions, such as shifting from one technology to another. This is a significant drawback of any virtual currency.

In trying to understand whether the increased popularity of bitcoins is reflecting the emergence of a new money, we have actually come to a fundamental distinction between virtual and material media of exchange. The latter are technology-independent and matter-embodied; the former are technology-embodied and matter independent. This distinction is not trivial as it emphasizes the great advantage that material money offers: it is good enough for anybody and at any time, and is independent from individual choices with respect to investment, allocation and maintenance of capital. Virtual monies could be programmed to reproduce some aspects of material, whether commodity or fiat, monies. However, they will always be dependent on *specific* capital investment decisions. The latter reduce their degree of commonality as well as of adaptability to changing economic conditions.

In conclusion, virtual monies, of which bitcoins seem to be the most perfected specimen up to date, do not allow acting individuals to manage the uncertainty of the future as well as material monies do. They could serve to intermediate exchanges among those who invest in the technology that creates them, stores them, and transfers them. Nevertheless, they could never achieve that degree of universality and flexibility that material monies carry with them by nature. Thus, on the free market, commodity monies, and presumably gold and silver, still have a great comparative advantage.

End

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Keith Weiner: **Gold, Redeemability, Bitcoin, and Backwardation**

I recently released a [video](#) about the Internet-based currency, Bitcoin. I asked the question: is Bitcoin money? In brief, I said no it's an irredeemable currency. This generated some controversy in the Bitcoin community. I took it for granted that everyone would agree that money had to be a tangible good, but it turns out that requirement is not obvious. This prompted me to write further about these concepts.

A human being has a physical body with physical needs, and lives in a physical world. He produces that he may eat and clothe and shelter himself. Once civilization develops beyond subsistence, men specialize to increase their production. Each relies on others, who specialize in other fields. Each trades his products for the goods produced by others.

A problem arises, called the *coincidence of wants*. One man produces food and another produces leather moccasins. When the moccasin producer is hungry, the food grower may not need new shoes. Mr. Moccasin must discover that some goods are more *marketable* than others. He can trade less-marketable moccasins for more-marketable salt, for example. He may not need the salt (though he can always use it) but he knows it is accepted in trade for food and other goods.

Eventually, **a market process finds the most marketable good**. It becomes even more marketable due to its increasing use as money (but it does not lose the attributes that made it useful in the first place).

People accept the monetary good in trade because it fills one of three needs. They will exchange it for something else later. They may want it for its own sake. Or they may accumulate a hoard during their working years so that in retirement, they can dishoard to pay their bills.

Modern civilization layers a complex financial system on top of the monetary good. It has bills, bonds, and savings accounts, etc. Most people do not want to redeem most paper credit instruments, for reasons of convenience and the preference for an income. However, it is important to keep in mind that the possibility of redemption is necessary and essential to a working financial system. Everyone must choose for himself the right balance between holding the monetary commodity directly and various earning assets that promise to be redeemed in a quantity of the monetary commodity in the future.

Only this balancing process can perform **one particular and critical function**. Hoarding, also known as managing risk, has played a vitally important role throughout human history (and which is almost unappreciated by the economics field). Hoarding and investing are balanced by risk tolerance. In a free market without central banking and bailouts, everyone must think of risk.

To the economist, redemption of paper and hoarding of the monetary good, serve to police and clean the system, force the write-offs of bad credit (as opposed to letting them accumulate), and of course empower the saver to enforce his interest-rate preference. This last, is a point that I have not seen anyone make prior to Professor Antal Fekete, and which is under-appreciated today.

To the hoarder himself, hoarding looks and feels very different. He is thinking of having something tangible in hand. A coin in his pocket does not have a risk, it can be carried anywhere, and can be accumulated in a safe place. To anyone aware that he is living in the physical world, there is no substitute to having a physical, tangible commodity.

Today, of course, legal tender laws obscure most of the above. The monetary commodity is not allowed to do its job, and we're lucky that after they removed it from the monetary system they at least once again legalized its ownership for American citizens. Even so, most people regard owning gold as a risky speculation because its dollar price is volatile. It's madness.

Returning to the question of Bitcoin, we have a conundrum. Bitcoin is not debt. In that sense, it is like gold—there is nothing to redeem because the thing is the final good. Unlike gold, it is not a tangible good. You cannot hold it or stack it in a safe in the floor. Other than the value you hope it has in trade, it has no utility by itself.

Bitcoin in this context is like an attempt to reverse cause and effect. Gold is money because people strongly desired it for its physical properties and then, subsequently, discovered that it was the most marketable good and thus useful as money. Bitcoin bypasses this and attempts to go straight to being money. Should hackers break its cryptography, the Internet go down for a few months, or any number of other scenarios occur, the above logic will reassert itself.

Owning Bitcoin is to be in a partially completed transaction. Until it is exchanged for a tangible good in another trade, the owner of the Bitcoin is in the position of having given up something tangible for nothing in return.

I made the point, in a previous [video](#) that redemption is not the same thing as purchasing the monetary commodity. Prior to 1933, one could go to any branch bank of the Federal Reserve and exchange dollars for gold. This was not “buying” gold, but redeeming the dollars. One accepted the dollar bill in trade, with the sure and certain knowledge of the terms (e.g. gold value) of redemption. Unlike then, today the dollar can be used to buy gold. But there is no way to know the terms—or indeed if one can even make the purchase at all—until one attempts the transaction.

It is the same with Bitcoin.

Now that I have used Bitcoin as the foil to establish several points, let’s look at the dollar and its ability to buy gold. Consider the following points that I discussed at greater length in this [video](#):

1. irredeemable debt-based currency provides no way to extinguish a debt
2. the dollar itself is a debt instrument
3. payment in dollars merely transfers the debt
4. all debt is borrowed at interest
5. eventually, the interest cannot be paid out of income
6. the only way to pay the interest in aggregate is further borrowing
7. total debt in the system grows exponentially until it cannot continue.

The system is designed to drive all participants to bankruptcy! “This is,” as they say in technology industries, “a feature, not a bug”.

In this light, the problem is not the rising quantity of dollars per se (though endless issuance by the Fed is certainly not good) **but its falling quality**. It is all headed to default when the debtors cannot borrow any more. This point was reached in Greece, but it is years away in the United States.

One might be tempted to ask why the banks and financial institutions don’t recognize this and refuse to do business in dollars. The answer is that they are regulated, they ultimately answer to investors who believe in dollars, and they are given perverse incentives to continue to play the game. For example, they can borrow short at near zero from the Fed, and lend long at near 2% to the Treasury. This transaction creates no wealth, but the banks engaging in it earn “profits”. They are fat, dumb, and happy to make this spread and many others like it.

So who understands it? The lowly gold hoarder does. His challenge is that he is sometimes distracted by the mainstream message that gold is a risky commodity that cannot be used to buy bread. He is often distracted by the gold bug message that the rising gold price is a “profit” (and the falling price is a conspiracy). If he can see through these two mirages, then he can see that all the credit in the system must inevitably and inexorably crash to earth like too many rocks impossibly kept aloft for a while by a juggler who exceeds his limited skill.

“Money is gold and nothing else,” as JP Morgan famously said in testimony before Congress. When bad credit eventually is repudiated, gold will still endure.

This is the context to my argument: permanent gold backwardation is a late symptom of the terminal monetary disease. Like jaundice in a cancer patient, signaling to the doctor that the patient is in immediate risk of death by liver failure, permanent backwardation signals to the economist that the monetary system is in immediate risk of death by gold withdrawal.

The dollar is not strictly redeemable, but it can still be used to buy gold. This provides an “escape valve”. Those who wish to convert their irredeemable paper into the monetary commodity, to complete the transaction of trading their product for dollars and dollars for the monetary commodity, can still do so.

Backwardation is when the price of a commodity in the futures market is lower than the price in the spot market. Anyone who has the commodity can make a profit by simultaneously selling the commodity in the spot market and buying a future to recover his position. This trade has no price risk, credit risk, or even spread risk. The only risk is default. Permanent backwardation is when all futures contracts fall below the spot price, and the gap keeps widening no matter how much the price rises.

The existence of now-chronic [temporary backwardation](#), is proof that gold owners are starting to become reluctant to trust the dollar system, and the lure of profit is insufficient. If they do not trust the delivery of a future, then they have to question if they will be able to buy gold on any terms. In an environment of collapsing credit and bankruptcies, this lack of trust will be quite well founded.

The final stage is brought on by the complete withdrawal of offers to sell gold for dollars (i.e. the gold bid on the dollar). Collapse will come swiftly because of asymmetry. While no gold holder will then want dollars, some dollar holders will desperately want gold. They will buy any goods that have a gold bid. The trade of dollars

à commodities à

gold will drive the prices of commodities up to any arbitrary level in dollar terms, and down nearly to zero in gold terms. Oil could become \$1,000,000 per barrel and 0.0001 gold grams per barrel at the same time. This process will continue until sellers of commodities will no longer accept dollars.

The dollar is fiat, which means imposed by force. It is debt-based, which means its value derives from the efforts of the debtors to continue to pay. And it is irredeemable which means there is no way for debtors, in aggregate, to get out of debt, and no way for creditors to know the terms by which they can get gold. The government uses force to impose the contradiction of a debt-based currency that cannot extinguish debt. People would not accept it otherwise!

The final resolution of such a contradiction is total collapse.

For those interested in tracking the backwardation occurring in both gold and silver right now, Monetary Metals publishes [The Last Contango Gold Basis Report](#) (free registration required).

Addendum, by PT:

Bitcoin has recently gone bonkers. This is to say, even more so than previously.

[Last time we wrote about it, it was at \\$70](#)

; evidently, it was still a buy at that level. See for yourself:



Bitcoin continues to go parabolic – via bitcoincharts. And there we thought that last year's rally was spectacular, but it was really nothing compared to what has happened in 2013 so far – click for better resolution.

As trading sardines go, this has to be one of the best trades of the past few years, but certainly it is a bit eerie that mere code is becoming such a bubble (even if the amounts traded are relatively small).

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