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Do Cryptocurrencies Such as Bitcoin Have a Future?

Innovative alternative currencies come with great possibilities—but also great risks

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Despite the mystery, the whiff of scandal, and general public unfamiliarity with the concept, somebody out there is buying, and selling, not just bitcoin but dozens of other cryptocurrencies as well. The total market capitalization for these unregulated electronic forms of payment was roughly \$4.04 billion as of mid-February, according



PHOTO: BLOOMBERG NEWS

to coinmarketcap.com, a website that tracks trading in alternative currencies. More than 500 altcoins, as they are also known, were represented on the site recently.

Growing global demand for low-cost, swift transactions—by cutting out banks—is one of the main forces driving interest in alternative currencies in recent years. Another, of course, is pure speculation.

Perhaps the most common criticism of cryptocurrencies is that, unlike traditional currencies, they have no basic underlying value. Supporters will counter that, like a lot of investments, a cryptocurrency is worth whatever the market says it is.

But that's an argument that can cut both ways, especially in bitcoin's case: Since reaching roughly \$1,147 in December 2013, the value of a bitcoin, the leading

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cryptocurrency by market cap, has plunged about 80%.

Time will tell which alternative currencies, if any, will grow in acceptance and value.

Are we at the start of an era in which new monetary systems will be adopted?

Or should we keep our hands on our wallets?

Arguing that there is indeed a future for cryptocurrencies, or at least the technologies that some of them are based on, is Campbell R. Harvey, a professor of finance at Duke University in Durham, N.C. Taking the other side, that the lack of guarantees and controls cannot be overlooked, is Eric Tymoigne, an assistant professor of economics at Lewis & Clark College in Portland, Ore.

YES: Don't Judge Bitcoin by Its Early, Inevitable Problems

By Campbell R. Harvey

Successful innovations solve important problems. Here are some of the problems that bitcoins solve.

- Bitcoins allow online transactions without worrying that personal data (such as credit-card or bank-account details) will be compromised.
- Anyone with a cellphone or Internet connection can execute seamless transactions, even in amounts less than a penny. This is important for many who lack bank access,

especially in the developing world.

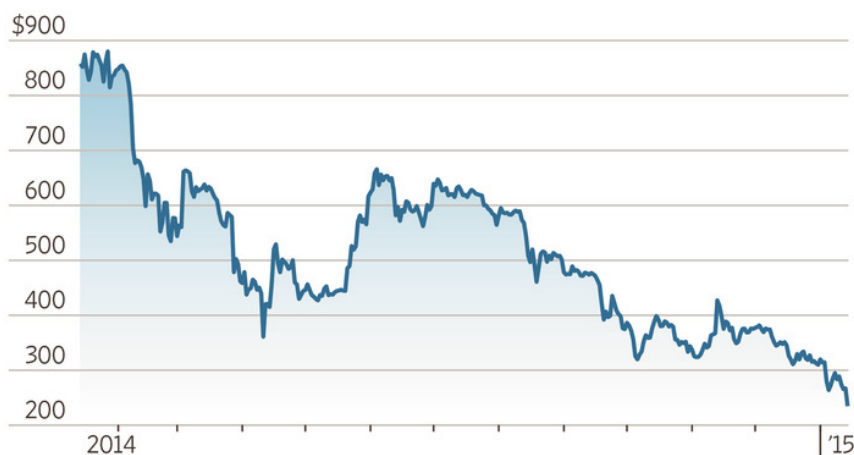
- International remittances carry trivial fees compared with the 10% charged by current firms in this space.
- Transaction fees for merchants are minimal, compared with credit-card fees, which is good for retailers with narrow margins.
- And there is no inflation risk. The rate at which bitcoins are created is slow, and the total of coins that can be created is limited, according to the mathematical dictates of the system. Bitcoin provides an alternative way to transact for countries experiencing economic or political stress.

Valuing Bitcoin as a Technology

True, bitcoin isn't backed by any central authority. But that doesn't matter. Bitcoin exists because users assign value to it. To say it violates the rules of finance because it lacks a central issuer is problematic on many levels. Governments don't "guarantee" stability of their currencies—look at the ruble and Swiss franc. Similarly, the fair price of a bitcoin as measured by the discounted value of future cash flows may be zero. But the same is true of fiat currencies, including the euro and U.S. dollar. No commodity underpins the value of a euro or dollar. You tend to lose money when you hold cash. This doesn't deter people from holding cash.

Putting the Bite on Bitcoin

The value of one bitcoin, in dollars



Source: CoinDesk Bitcoin Price Index

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But forget about exchange rates for a moment. The most exciting thing about bitcoin is the technology behind it, the block chain, an online, transparent record of every transaction on every bitcoin. It is a giant electronic financial ledger that is used to authenticate each transaction and, in the process, produce more bitcoins.

The block chain's potential

reaches far beyond bitcoin the currency. It is a way to both verify ownership and to set up contracts. Imagine getting into your car. Through your mobile device, the car locates your identity code and proof of purchase in the block chain. This allows the car to start. But say you have missed three payments on your car loan. Additional terms in the block chain make sure the car will only start for the person or institution that lent you the money.

Making contracts part of a block chain would be easy by introducing “if, then” statements to the chain in computer code.

Almost any financial instrument, including stocks, bonds or options, could be represented and made verifiable in such a format.

Disrupting Markets

Just as block-chain technology has created a currency that operates without need of a bank, it could help users get loans without a bank, or make investments without a broker or exchange.

Yes, the value of a bitcoin has fallen sharply over the past year. However, it is a serious mistake to judge bitcoin’s future based on the movement in the exchange rate. A better indicator is the activity of highly respected venture capitalists who are pouring money into hundreds of bitcoin- and block-chain related ventures.

It is true that bitcoin is currently too volatile to be a long-term store of value. But much of this is due to illiquidity, which is not unexpected when the technology is so new. A regulated, insured, U.S.-based bitcoin exchange opened in January that is backed by the New York Stock Exchange, which should add liquidity and reduce volatility.

There are risks, as the Mt. Gox debacle showed, when hundreds of millions of dollars in bitcoins vanished from the failed exchange. But with a nascent technology, many new firms enter the industry—some good and some bad. As bitcoin develops, it is likely the number of firms following best practices that safeguard people’s money will grow. The support of experienced venture capitalists also increases the chance that high-quality firms will arrive.

Finally, many associate bitcoin with illegal transactions. The real target for illegal transactions should be cash. Cash is anonymous and private. There is no ledger detailing every transaction with cash. Indeed, it is ridiculous that of all the cash in U.S. dollars circulating, 78% is represented by \$100 bills. How many \$100 bills are in your

wallet?



Campbell R. Harvey. PHOTO: NATALIA WEEDY

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NO: As a Currency, Bitcoin Violates All the Rules of Finance

By Eric Tymoigne

Bitcoins are an odd sort of commodity. They are not financial instruments. The value fluctuates widely, in line with changing views regarding the overall usefulness of the bitcoin payment system and the speculative manias surrounding such views. There is no financial logic behind bitcoins' face value.

In other words, if you like to gamble, this is a perfect asset. If you are looking for an alternative monetary instrument, look elsewhere.

The bitcoin system has two components: the means of payment themselves, and an online ledger, called the block chain, which is a record of all bitcoins that have been created and who holds them. The ledger is the main innovation. It provides an open, decentralized, fast, cheap and supposedly secure means of completing transactions.

Volatile and Illiquid

But as an alleged alternative currency, bitcoin is unacceptable. Its volatility and lack of liquidity pose risks far beyond most traditional currencies.

To understand why, take a quick look at how *real* money works. Monetary instruments are securities. As such, they have a term to maturity (instantaneous) and an issuer—often a central bank or private banks—that promises to pay the bearer the full face value. Gold coins are a collateralized form of such security. Paper, cheap metal, and electronic entries are the forms such securities take today. The characteristics of these

securities allow them to circulate at a stable nominal value (par) in the right financial infrastructure and as long as the creditworthiness of the issuer is strong. This provides a reliable means to complete transactions and, more important, service debts.

Bitcoins, meanwhile, violate all of the rules of finance. There is no central issuer guaranteeing payment at face value to the bearer; in fact, there is no underlying face value, and subsequently no imputed value at maturity, which means they are completely impractical for use in servicing of debt. The fair price of bitcoins as measured by the discounted value of future cash flows is zero.

Bitcoins pose a huge liquidity risk. Ultimately, anyone with bitcoins has to convert them into a national unit of account—dollars, say, or euros—to pay taxes or personal debts and to make other transactions. Their extreme volatility makes them a bad bet if one plans to buy a house in a few years, is saving for college, or has regular payments on, say, a mortgage or car. If bitcoins were a large asset in a portfolio, the investor's solvency would be at risk. This certainly would be the case if bitcoins were promoted for poorer individuals who don't have access to banking today.

Logic and Illogic

For an economy to work well, money needs to be created (for example, through bank credits or government spending) and withdrawn (through debt servicing and tax payments) following economic logic. We have all seen recently, in the global financial collapse of 2008-09, how irresponsible behavior on the part of big banks with regard to their lending and debt-servicing practices can set off widespread financial panic followed by years of economic stagnation.

The mechanics of creating and withdrawing money need to operate not only with sound economic logic. They also should be simple, to accommodate quickly the needs of a flexible economy. Today, money is created and destroyed in seconds through digital entries.

Bitcoins, by contrast, are created using a purely mathematical logic that lacks financial or economic underpinnings (currently 25 new bitcoins every 10 minutes); and they can't be retired as needed to maintain their scarcity. Given the lack of economic logic behind the net injection of bitcoins, there is increased risk of financial and price instability.

The block chain is useful as an authentication tool and is the main innovation. But it's

too soon to tell whether it can have other applications. For now, unfortunately, it's a potential step forward accompanied by an actual step backward.



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Eric Tymoigne. PHOTO: ALINE MASSUCA

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