



Interest Rates, Hedge Funds and the Rise of the Artificial Asset Class (July 2016)

The Problem(s)

Ultra-low interest rates have become a problem for hedge funds. Many hedge fund managers have little or no recollection of the short seller's rebate. Nevertheless, there was a time when short-term interest rates were 8% and a short seller could earn perhaps 75% of the interest generated by the proceeds of a short sale while the funds resided in the custody of the prime broker.

In the contemporary world, an easy-to-borrow equity for short sale purposes may be inexpensive to borrow, but it is still a negative-carry trade, as one must pay out, as an expense, the dividend on the shares sold short. In fact, as rates progress ever lower, such dividends become more valuable and the share prices progress ever higher. Such short sales of liquid shares are frequently generators of meaningful trading losses.

Of course, there are smaller capitalization, non-dividend paying stocks that do merit short sale. These, however, are generally hard to borrow and quite expensive when they can be borrowed.

A new risk for the short seller is that, in a world of low interest rates, companies that would normally become problematic due to excessive leverage are rescued by the availability of low cost capital. If the problems are caused by the incompetence of management, another company may borrow the funds necessary to acquire the problematic company, and do so inexpensively. If no company undertakes to act, the shares of the problematic company might still not decline to a proper valuation, given the circumstances, since it is always *possible* that some entity might act. There is always the possibility of acquisition by an activist investor, financed by borrowed capital, or a private equity fund might step in.

Unfortunately, the problems of the hedge fund manager are not limited to equities. The problems are much the same with regard to currencies. Just as there are companies with profligate capital allocation policies, there are nations with profligate financial policies. Nations will borrow too much money, may import more goods than can be paid for by productive resources of the nation, or be weighed upon by social liabilities. In any case, the temptation is very strong for the central bank to issue more money to fund the liabilities. This, of course, destroys the value of the currency. This theme appears frequently in the history of finance. Consequently, hedge funds might undertake to sell short a currency.

Unfortunately, at the current time, most nations create money to fund national liabilities. For instance, the creation of the European Union, the European Central Bank, and the euro were intended to prevent a repetition of the history of the Banca D'Italia funding the chronic deficits of the Republic of Italy with money creation and the endless depreciation of the Italian lire. Now the euro is in danger of resembling the Italian lire.



Other nations, such as the United States and Japan, have a similar problem. Which currency will remain stable? Similarly, one could sell short bonds on the theory that interest rates at this low level cannot possibly continue. Nevertheless, as of this writing, the 10-year German government bond yields 1½ basis points. The Japanese 10-year government bond yields 15 basis points. Even the 10-year U.S. Treasury yields only 1.63%.

Selling short bonds at low rates or even negative rates can be dangerous. The iShares International Treasury Bond ETF (IGOV) has only a 43 basis point yield to maturity. Its weighted average time to maturity is 9.75 years. One might well wonder how it is possible that interest rates could decline any further. In fact, this particular fund contains many bonds with negative yields to maturity. Unfortunately, at ultra-low interest rates, bonds possess incredible convexity characteristics. The IGOV ETF has YTD performance through June 9 of 10.86%. It is up 10.86% with a 43 basis point yield to maturity. That is incredible. Think of that degree of price volatility in the reverse.

The modern hedge fund must contend with another invisible adversary: the securities exchanges lease colocation space in their computer assemblages to any number of algorithmic traders. This group has the so-called “first look” at market activity. Thus, if there are hedge funds with brilliant ideas in the course of implementation, any trading patterns will be identified within nanoseconds and huge pools of capital will be deployed to trade in front of the investment managers with the brilliant ideas.

Hence, the hedge fund must contend with central banks that manipulate interest rates as well as exchange rates, prime brokers that charge not insignificant sums for securities lending, and exchanges that populate the trading cyberspace with advantageously-informed predatory traders.

If this were not enough, the prime broker is also a banker, in a sense, to hedge funds. In any meaningful market crisis, the prime brokers frequently reduce the margin available to funds. Many hedge fund managers are value investors. During market crises, these investors might discover bargains, but find that the maximum exposure available to them during a crisis is less than otherwise would be available. In a market crisis, the funds might provide some modicum of stabilizing effect, but that is the moment when margin is not easily available.

The great irony is that the governments, the prime brokers, and the exchanges are, in principle, the regulators of the system that is supposed to be fair to all market participants. Yet, if the so-called regulators regulate with regard to securing a certain outcome, however noble their intentions, that system can never be neutral to all participants.

A Response—A Simultaneously Long and Short Global Hedge

Consequently, it is only reasonable that some market participants would seek an investment environment free from regulation, which some would say is free from manipulation. Thus, modern



computer science has made possible the artificial asset class. One example of this is Bitcoin, a cryptocurrency. Bitcoin, at the time of this writing, had a market capitalization of roughly \$9 billion.

In principle, the world certainly has enough currencies. Yet, if governments that issue currencies permit them to lose purchasing power continually, so the debtors of the world (which include the issuers of the currencies) can continue to borrow and spend as they see fit, people quite rightly will lose confidence in the currency.

Bitcoin, by contrast, offers a fixed number of units, which ultimately will be 21 million.

A purchase of Bitcoin, however small, is nothing other than a short sale of the currencies of the world. It should be obvious that if it were to gain the confidence of a meaningful number of investors, it would not trade at a market capitalization of only \$9 billion.

If it were worth \$10 trillion, this would be equivalent only to the current value of government debt with a negative yield (which is one-sixth or one-seventh of all government debt in the world as calculated by economists). This is a nominal, or trading-price, negative yield. The quantity of global government debt with a real negative yield, which takes account of the inflation rate in those nations, is much greater. If Bitcoin were simply to be equal—via market demand—to the value of all government bonds with negative yields, the increase in value would be 1,111.11 times. This might even be an underestimate, since the quantity of bonds with negative yields is constantly increasing.

If a portfolio having a 1% position experiences a 1,111.11 times appreciation in that position, the portfolio increases by .01 multiplied by 1,111.11, or 11.11 times. If this occurs over a five-year time period and if the price of every other position remains unchanged, this would be equivalent to a 64.68% annualized rate of return. But that's hardly impressive enough: if all the other investments were to become worthless during this hypothetical time period and no dividends or interest were collected on any position, this portfolio's rate of return would decline to 61.86%. Talk about a hedge!

Of course, the worst that could happen to Bitcoin would be a 100% loss, which would be a 1% loss to the portfolio. It should be obvious why a very small number of investors believe that Bitcoin is both a new asset class and a particularly effective hedge. It is a long position that is, in effect, a short position on world currencies.

Bitcoin is not the only cryptocurrency. There are aspirants to the status of digital currencies that have no fixed limit upon eventual issuance. An example of such is Ethereum. There are also alternative cryptocurrencies that might be termed social currencies, such as SolarCoin. It is given free to verified owners of solar power producing assets. It is essentially a rewards program that gives one SolarCoin, or SLR, for each megawatt hour of solar power produced. It has been calculated that 1 megawatt hour saves the creation of 1,500 pounds of CO₂.



The reward, granted by the SolarCoin Foundation, has a trading value of 1 SLR to 17.56 cents. Its price, interestingly, is ordinarily quoted in Bitcoin. On January 1, 2016, it was trading at 0.00003739 Bitcoin. On June 11, 2016, it was quoted trading at .00030116 Bitcoin, an eightfold increase in Bitcoin terms. It now trades at about 33,817 SLR per day. The market capitalization of the instrument is now \$6 million. The SolarCoin Foundation would like to issue \$4 billion worth of SolarCoin.

The essential point is that the worldwide spread of computer technology means that Blockchain as a technology—the transparent, permanent ledger of historical transactions underlying Bitcoin—and the basic idea of a commonly agreed upon store of value is very difficult to stop.

Bitcoin as a medium of exchange for the purchase of goods and services

While it might be very good if Bitcoin were adopted as a transactional currency, we do not believe that outcome is not essential for its success.

Almost every instance of government manipulation of currencies has had disastrous results. In post-World War II Germany, cigarettes were a store of value, because they were accepted as such. You could buy virtually anything with cigarettes. However, the non-uniformity of a currency (apart from paper) is not a trivial problem. Throughout history, it has been a significant issue. In colonial Virginia, they used leaves of tobacco. In colonial Massachusetts, the Wampanoag Tribe's wampum was made legal tender at the rate of six white beads or three purple beads per penny. Unfortunately, the supply of beads was limited. It was hard for prices to rise in the sense that the bead, as an instrumentality, was not divisible.¹ In other societies, seashells have been used, as have copper, bronze, silver, and gold.

The challenge is to find a type of money of which the supply is relatively constant. Supply controls the value. But all the forms of money that were employed historically were either reproducible or could be counterfeited. It is not commonly known that in the 19th century, bank notes were legal tender. There were thousands of banks in the United States and you could present a bank note as legal tender and vendors, landlords, or whomever would have to accept it.

The problem was that it difficult to know if the bank could cover the note or even if the notes were counterfeit or not. Counterfeiting was a problem in addition to the question of the bank's solvency. People began to refuse to accept the bank notes. This problem became so severe that at some point the government decided to have a monopoly on currency so that the only acceptable legal tender would be government issued.

For the first perhaps 60 or so years, the government was pretty faithful in keeping the supply of currency stable. By the end of the 19th century, though, the Democratic Party campaigned against that

¹Barry Eichengreen, *Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System* (New York: Oxford University Press, 2011), 9-10



stability, which sparked a big debate between what was called the hard money side and the inflation side. Some felt that the government should inflate the currency to allow borrowers to repay their debt with inflated dollars.

It is hard to believe that in the United States, a politician would use the promise of inflation in a campaign for office. But that was a platform of William Jennings Bryan in the 1896 presidential election. He almost won the election. In one of the most famous speeches in American history, he said, “you shall not crucify mankind upon a cross of gold.”² Bryan eventually became United States Secretary of State. He was a distinguished person.

While other nations had a central bank, the United States always opposed the creation of a central bank, because those institutions could also print money. But an important function of central banks is to be a lender of last resort in economic crises. The United States didn’t have it until the Federal Reserve Act in 1913. The country was so opposed to having a central bank that it adopted a decentralized central bank to prevent a concentration of power, and called it the Federal Reserve, not the U.S. Central Bank. The system was decentralized into 12 district Banks that, in theory, operate independently. In reality, however, they do not. Nevertheless, the whole idea was to avoid having a central bank because it was felt that sooner or later the government would be tempted to print up money. And throughout history, it’s been a serious problem.

Bitcoin’s fixed supply

In theory, the Bitcoin Foundation could say, “I want to increase the ultimate number of Bitcoin from 21 million to 50 million units,” but that would destroy the reason people buy Bitcoin. No one would use Bitcoin if the supply were not fixed and a change like this were allowed. The unique feature of Bitcoin is that through the Blockchain technology, while the identity of the holder is encrypted, each Bitcoin on the planet can be tracked. The Blockchain follows every Bitcoin, where it is and where it came from, so it cannot be double-spent or counterfeit. It would be extraordinarily difficult to counterfeit Bitcoin. And, by design, there will be a fixed supply, which is an enormously attractive feature in a currency.

Bitcoin’s resilience to rule changes and to geographic concentration

People using Bitcoin use it for one reason and one reason alone: Because the supply is fixed. You want to increase it? Users will not like that. There are 660 cryptocurrencies and, take my word for it, not one Bitcoin user would say: Don’t worry, we will gladly fix the currency.

² Kazin, Michael (2006). *A Godly Hero: The Life of William Jennings Bryan*. New York: Alfred A. Knopf.



With respect to geographic concentration, though, many Bitcoin miners are located in China, Bitcoin is not going to be ruled by China. There is no reason to believe that anybody is going to do anything to impact the value of something so lucrative. It is the same kind of logic as saying, well, the Chinese have the atomic bomb so how do we know they are not going to launch an attack against us right now? The reason is because if they were to do that, we would launch an attack against them, and it would wipe out the planet.

They will not try to manipulate the system, because any attempt to do so would lead to disaffection. People would stop using that currency and that would be the end of it. People would switch to a different currency. You cannot manipulate it even once. It would be like saying, yes, you can launch a few missiles at the United States and destroy the world. It is the same concept: mutually assured destruction. If people see any attempt at manipulation, they will not use it. Why would anybody use a cryptocurrency that is being manipulated?

The case against China making Bitcoin illegal

China wants its currency to depreciate. It is becoming ever more difficult to sell Chinese goods internationally because the currency is too expensive in relation to some other nations' currencies. But China does not want too much capital to leave the country because people with wealth will set up their establishments somewhere else. They do not want that, but they certainly do not want zero leakage of the currency either.

The number of Bitcoins is limited. The population of China is about 1.3 billion. At the moment, there are only 15.6 million Bitcoins, so every Chinese citizen, in theory, could buy a bit more than one-hundredth of a Bitcoin. Given the total amount of Bitcoin that exists right now, Chinese citizens cannot do much to remove currency from the country. Maybe if there were trillions of dollars' worth of bitcoin, more options would be available, but there's not a lot they can do right now.

Note: All the cryptocurrency exchange rates that are cited here are courtesy of coinmarketcap.com.



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