HORIZON KINETICS

Cryptocurrency Musings

(March 13, 2018 - An Ongoing Series)

BITCOIN AND RISK

A most popular argument against the purchase of bitcoin is that over the past two years it has produced an enormous rate of return of perhaps a 20+ fold increase in value and that there is no fundamental justification for such an increase, because bitcoin has no identifiable financial fundamentals.

In reality, bitcoin possesses about the most identifiable and valuable fundamental property of any financial asset, which is a known scarcity value, such that it cannot be diluted or debased. There has never been a form of money with this property that can be employed by the general public. Every known currency in history has ultimately collapsed. There are any number of collectible coins that have had known scarcity value, and which have appreciated tremendously over time, but they are not mass market instruments. Nevertheless, in this commentary, we will evaluate the failure case of a possible 90% loss forecast, since any responsible investment decision must consider both the success and failure scenarios.

The Bitcoin Failure Scenario: Less Risky Than a Bond Portfolio?

If one were to purchase a 1% bitcoin position in a portfolio and the draconian forecast is correct then, obviously, the portfolio loss would be 90 basis points. If one were to invest 50% of a portfolio in conventional equity indexes, which now trade at all-time high valuations, and equity prices were to decline by 1.8% from these all-time record highs—surely a benign outcome—the portfolio loss would also be 90 basis points. A 1% bitcoin position losing 90% of its value is algebraically equivalent to a portfolio with a 50% equity exposure experiencing a very benign 1.8% correction. It should be noted that price changes of this magnitude not infrequently occur in a single day.

Alternatively, one could say that a 1% position in bitcoin losing 90% of its value is algebraically equivalent to a fully invested equity portfolio experiencing a 90-basis point correction; in other words, less than 1%. Even a 100% loss in bitcoin at the 1% position level is algebraically equivalent to a fully invested equity portfolio that experiences a 1% correction. Such a stock market drawdown happens, in technical terms, 'all the time'.

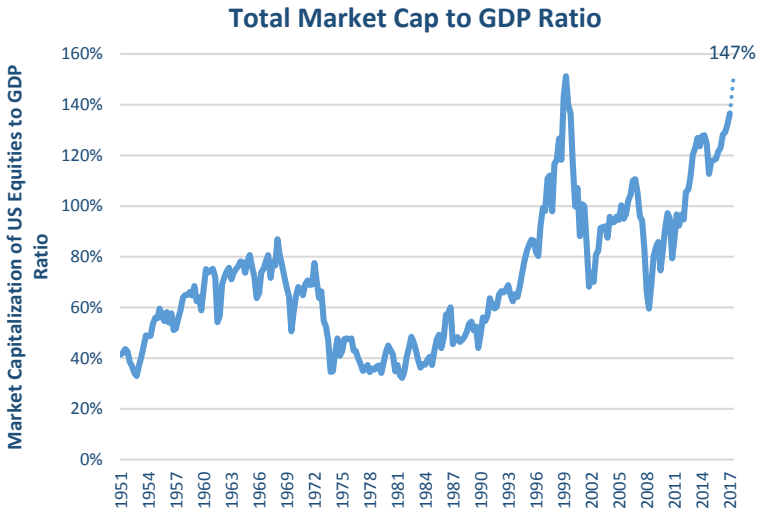
While on this line of reasoning, the comparison is actually more absurd in the bond market. Suppose one were to invest 50% of a portfolio in a diversified bond fund like the iShares Core U.S. Aggregate Bond ETF (AGG). The 30-day SEC yield is 2.71%.[i] A reasonably affluent New York City resident might effectively be in the 54% tax bracket. Thus, a 2.49% yield really would be a 1.15% yield after taxes. With a 2% inflation rate, the result would be an 85–basis point negative real rate of return. If the inflation rate were 2.15%, the result would be the certainty of a 1% annual negative real rate of return. This is entirely apart from the non-trivial price decline that would result from even a modest increase in interest rates. It is difficult to imagine that interest rates will decline from current levels.

It is philosophically possible, however implausible, that in the case of equities there might never be any decline in prices. For bonds, though, the current real rate of interest for the asset class is actually negative, which is a certainty that the purchasing power of one's fiat currency will be lost. This is the reason the value investor buys bitcoin in the first place.

In any event, the success of bitcoin is by no means assured. Even the most passionate believer in crypto-currency must admit there is a real risk of substantial loss in bitcoin or any other consensus money. However, the risk is easily manageable through the constraint of position size on a cost basis. If the reasonable chance of a 90% or 100% loss at a 1% position size is too frightening, the position at cost can be constrained to 50 basis points, or even lower, or even to whatever level a particular investor considers to be the border of de minimis or inconsequential.

The problem with modern asset allocation is that the primary asset allocation building blocks come in enormous sizes. For instance, a 50% allocation to equities is considered to be conservative. The risk of a 50% equity exposure is easily measured.

A standard valuation tool of value investors, perhaps the purest, is the market-capitalization-to-GDP ratio. It strips away all sorts of subtleties and sophisticated methodologies of the measures preferred by non-value investors. No long explanations required. The Federal Reserve Bank of St. Louis calculates the market capitalization of all the publicly traded stocks in the U.S. at around $26.95 trillion (as of 3Q 2017)[ii]. This figure is very close to the market value of all the stocks in the Wilshire 5000. Since then, the Wilshire 5000 is 7.9%[iii] higher, and the U.S. GDP is currently about $19.74 trillion, which would make the ratio now roughly 1.5x. A ratio of less than 0.5x is considered to be very undervalued, a ratio of 0.75x to 0.9x is considered to be fairly valued, and ratio of 1.15 is considered to be overvalued.



The ratio of almost 1.5x nearly matches the Internet Bubble peak, and no other period in almost the past 70 years has even approached this level. If one assumes that the ratio will return to the upper end of the fair value range of roughly 0.9x without dipping any lower than 0.9x, and if the GDP does not decline at all, the loss potential or contingent drawdown in that circumstance is 40%. That scenario assumes no recession.

A portfolio with a 50% equity exposure thus hazards a 20% drawdown, which is 10x as dangerous as a 1% bitcoin position becoming worthless. One need not forecast a return to more normal valuations in order to imagine equity risk in what is defined as a conservatively oriented portfolio vastly exceeding the risk of a 1% bitcoin position.

The Government Suppression Argument (Ignores What the Government Actually Says)

The most draconian bitcoin risk argument is the government suppression argument. It is frequently expressed and receives no logical scrutiny. It essentially asserts that bitcoin and all other cryptocurrency imitators deprive governments of the currency issuance privilege. It is readily acknowledged that governments routinely debase fiat currencies, but according to this viewpoint, the government needs this privilege to manage high levels of debt properly. Ergo, the public must acquiesce to debasement of

savings. If the public does not acquiesce, the government will have no choice but to use its power of legal sanction to suppress cryptocurrency.

Practical Considerations

Leaving aside the obvious objection that governments should rule in accordance with the will of the people, as of this writing, there are 1,551[iv] cryptocurrencies or tokens, and rarely a day passes without the creation of at least one new one. All of them are encrypted. Any government would undertake quite a challenge to detect the presence of these cryptocurrencies, and possibly others, on the billions of smartphones, tablets, and personal computers on the planet. It would be quite a logistical undertaking that would require the cooperation of all the governments in the world.

Since the citizens of any one nation might interact with the citizens of another, all the various nations would need to share financial data on their citizenry with each other. This process would inevitably mean that individual personal financial data would come into the possession of many people and agencies. It is presumed that these people and agencies are all benign government officials and regulators, but unfortunately not all governments are benign, and even within relatively benign governments, not all regulators are necessarily public-spirited.

The comprehensive international data sharing needed to commence an enforcement effort would be an opportunity for enormous mischief. Moreover, the international enforcement effort is only as strong as the weakest regulator. Would Iran effectively collaborate with the United States? Would Saudi Arabia effectively collaborate with Iran? Would Iran collaborate with Israel? Would Vietnam effectively collaborate with China? Would Russia effectively collaborate with the Ukraine (or the U.S.)? The possibilities for disagreement among nations are endless.

In addition, in some nations, various parts of the regulatory apparatus routinely disagree with each other. It is legitimate to wonder whether the SEC would collaborate with the CFTC. In another circumstance, would Hungary, the Czech Republic, Poland, and Austria voluntarily cede this type of regulatory power to the European Union, considering their differences of opinion over the free movement of people across borders?

And would not some independent regime seize the economic opportunity to anoint itself open for business—the business of hosting cryptocurrency activity? There are some remarkably small nations, principalities and bailiwicks that are known for permissive tax structures and that host impressive volumes of commercial activity from around the world, typically of a strictly contractual nature.

A modest amount of reflection would prompt an objective person to realize the enormity of the challenge of worldwide government control or suppression of cryptocurrency.

The Question of Actual Government Policy

In December 2017, the Commodity Futures Trading Commission supported, following much mutual evaluation, the trading of Bitcoin futures on both the CME and CBOE exchanges.

On February 6th, 2018, the U.S. government, or at least one important agency of it as would impact policy toward cryptocurrency. Specifically, the Chairman of the Commodity Futures Trading Commission made a presentation to the Senate Banking Committee, explicitly recommending the continued development

of Bitcoin futures and regulations that would support it. The full, as well as an abridged, version of this address may be accessed via these web link[1].

Separately, in February 2018, the Arizona State Senate legislature approved a bill permitting payment of state income taxes with bitcoin. This month, the Ways and Means Committee of the Arizona House of Representatives advanced the measure, suggesting that upon an affirmative vote, the bill will be sent to the Governor for signature.

The central banks of both Japan and Australia last year modified their banking regulations to accept bitcoin as a legal means of payment, thereafter removed an excise tax that had been previously imposed on purchases of goods and services made with bitcoin, and Japan thereafter licensed 16 cryptocurrency exchanges[v].

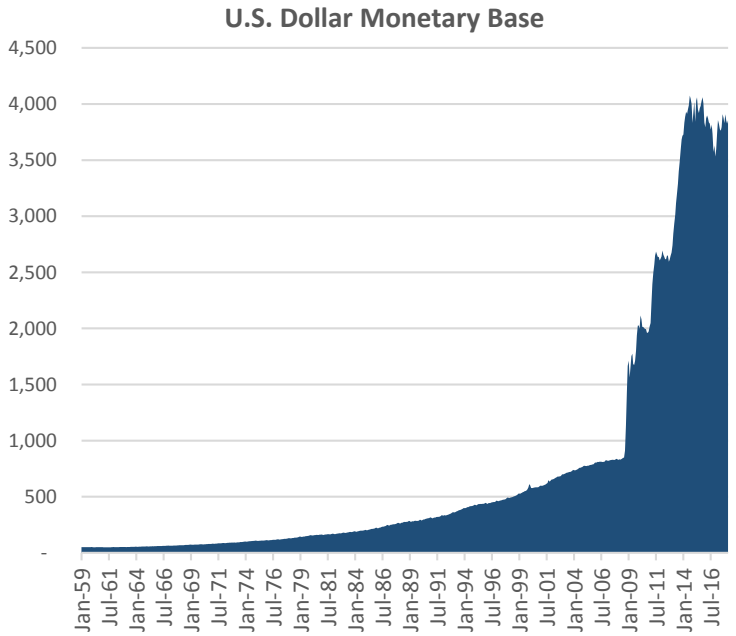
These are but a few statements, through action, of the evolving policy positions of governments and government agencies toward Bitcoin specifically if not cryptocurrencies in general.

The Question of Fundamentals

Imagine that an objective observer is willing to concede that sudden death of cryptocurrency by regulatory fiat is an extremely difficult undertaking. In that case, the obvious risk is the sudden plunge in value because cryptocurrencies are overvalued.

Bitcoin is but one of the cryptocurrencies that some believe have the potential to one day be accepted as a worldwide, noninflationary currency. The current market capitalization of bitcoin is $150 billion[vi]. According to the St. Louis Federal Reserve, the value of the M2 money stock in the United States is $13.455 trillion[vii]. Moreover, this figure is constantly increasing. Last year, the M2 money supply increased by 2.5% greater than GDP. As a measure of loss of purchasing power, 2.5% of $13.85 trillion is $346 billion, which obviously is much greater than the market value of bitcoin.

Over a working lifetime (i.e., over the 50+ years since January 1965), the U.S. monetary base increased 86.3x, or 8.8%/year. GDP growth, in constant dollars, was 4.6x, or 2.9%/year[viii]. So, $1,000 of monetary base became $86,300, while $1,000 of economic output became $4,598. In that sense, the monetary base was diluted by 95%, roughly 5% per year. Is something less of a bubble if it loses 95% over an extended period, instead of all at once? The chart on the right is a picture of the destructive power of a currency being debased, and it is the stated policy of the Federal Reserve to inflate the currency at a 2% rate. Not that they can't miss their target,



[1] http://horizonkinetics.com/wp-content/uploads/CFTC-Testimony_Feb-2018_Final.pdf

everyone does now and then; it could be higher. One needs protection.

In success mode, a worldwide currency would have a valuation that is at least equivalent to the U.S. M2. Indeed, one could make the argument that it should be worth much more than this figure for several reason: (a) a noninflationary currency is inherently more desirable than an inflationary currency; (b) U.S. M2 is only one part of the much higher worldwide supply of M2; and (c) U.S. M2 is constantly increasing.

If bitcoin merely were to attain the current valuation of U.S. M2 and U.S. M2 does not increase, its valuation would expand by 89.7x. If this transformational change were to happen over the course of a decade, it would amount to a 56.95% annualized rate of return. If it were to happen over the course of five years, it would be a 146.33% annualized rate of return. Much higher return forecasts can easily be imagined.

Having lived for most of a century with the world's reference currency, Americans are not generally aware of what a weak currency means. People in other countries are exquisitely sensitive to the relative strength of their currency versus others. Since 1942, Brazil's currency has had many iterations. It has been the reis, the first cruzeiro, the novo cruzeiro, the second cruzeiro, the cruzado, the novo cruzado, the third cruzeiro, the cruzeiro real, and the modern real, which is known as the reais, to be distinguished from the 1942 real known as the reis. According to some calculations, one would need to purchase 2.75×10^{18} modern reais (real) to have the purchasing power of one 1942 reis.

A reasonable question to ask is whether Brazilians should hold the reais, backed as it is by the full faith and credit of the Brazilian government, or should they hold bitcoin? According to CEIC Data, a division of Euromoney Institutional Investor PLC (ERM LN), the Brazil M2 money supply was $748.49 billion in November 2017. Bitcoin's market capitalization is $150 billion, or 20% of the Brazilian M2. Bitcoin bubble theorists implicitly assert that bitcoin is much more dangerous than the Brazilian currency, which inflated 2.75 sextillion times over the course of three-quarters of a century. The supply of bitcoin is fixed at 21 million units. Surely some Brazilian citizens would be willing to risk 1% of their investment, knowing that the Brazilian government is not likely to protect its citizens from inflation risk.

Naturally, there is a reasonable chance of failure; and a loss of 90% in a 1% position would result in a portfolio loss of 90 basis points. Portfolio managers routinely spend 90 basis points annually to hedge a conventional equity portfolio with S&P options, and they expect they will likely lose 90 basis points of the portfolio each and every year as a cost of this insurance. In this sense, surely it is not unreasonable to spend 90 basis points ***just once*** and receive debasement protection with the bitcoin optionality, or that of another currency, and have no expiration date.

Foregoing a possible one-time expense of 90 basis points is not risk control. Viewed in relation to the certainty of the annual – and lifetime – loss of purchasing power of the U.S. dollar, one should seriously reflect upon the risk of not buying some suitable amount of cryptocurrency as purchasing power insurance. And while so reflecting, one might ponder the fact that every single fiat currency ever issued has been ruthlessly debased. Viewed in this light, the implications of not owning some bitcoin might weigh more heavily in the balance than the risk of owning.

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[i] As of March 7, 2018. Source: www.ishares.com

[ii] Source: Federal Reserve Bank of St. Louis, Market Capitalization. Market Capitalization as measured by the Corporate Equities Level (field NCBEILQ027S)

[iii] Source: Bloomberg. Wilshire 5000 Total Return Index return from September 30, 2017 through February 28, 2018.

[iv] As of March 9, 2018. Source: www.coinmarketcap.com

[v] http://kantou.mof.go.jp/kinyuu/pagekthp0130000001.html

[vi] As of March 9, 2018. Source: www.coinmarketcap.com

[vii] As of March 2017. Not seasonally adjusted. Source: https://fred.stlouisfed.org/series/M2

[viii] Source: https://fred.stlouisfed.org, Adjusted Monetary Base, Not Seasonally Adjusted (quarterly data). This is comprised of commercial banks' accounts with the central bank plus the total currency circulating in the public, plus currency physically held in banks' vaults.