HORIZON KINETICS

Cryptocurrency Musings
(December 13, 2017** -* An Ongoing Series)***

It's Not Just Bitcoin

The genie is out of the bottle. New knowledge and technology is extraordinarily difficult to suppress, as was made abundantly clear in 1976 by Princeton undergraduate student John Aristotle Phillips who, for his physics term paper, wrote a 40-page instruction set for building a nuclear bomb. Although page 20 was withheld from the public, due to its sensitive nature, he nonetheless relied on publicly available information in the first place. He put the cost, incidentally, at about $152,000. One would be hard pressed to support the thesis that nuclear weapons serve a constructive good in the broadest human or public good sense, and obviously they have no utility to the average individual. Yet, there it was.

On the other hand, the enabling technology of cryptocurrencies is now globally distributed and, if it comes to be accepted, it does have very particular – indeed, unique, important and never previously available – utility to the average individual. If the market potential is even vaguely on the order speculated upon above, it would, as a virtual iron law of human behavior, attract a great many creative and motivated individuals to capitalize upon its potential economic rewards. Think of the explosion of creative software and business service activity ignited by the mere fact of the iPod and iPhone. In which case, variations, improvements and new applications of and around the coin itself, as well as the blockchain and related technologies, should be expected. It would be a whole new class of alternative assets. Accordingly, it bears highlighting some of these from time to time.

An Introduction to a Bitcoin Competitor: Ripple or XRP

Ripple is not, properly speaking, a cryptocurrency. It is a real-time gross settlement system, currency exchange, and remittance network. The existing, conventional international network is known by its acronym, SWIFT, which stands for Society for Worldwide Interbank Financial Telecommunication. It is a Belgian cooperative society founded in 1973 that is owned by its member banks, and connects more than 11,000 banks in at least 200 different countries. Although SWIFT is considered highly secure, it is not a payment system. It is simply a message system. In other words, payment orders are sent via SWIFT, and these must then be settled by correspondent accounts that the banks have with one another. These accounts frequently require banks to have compensating balances in such accounts with one another.

Naturally, these compensating balances earn no meaningful interest, and tend to lessen the interest rate spreads that banks earn, since the money is not "working," so to speak. It also requires a great deal of manual work to keep track of thousands of bank capital accounts with meaningful balances. Moreover, some of these accounts are at banks located in nations with various forms of political or financial risk. Thus, the more credit-worthy banks experience capital charges by their home country regulators just for having accounts of that type.

After all these considerations, there is the question of foreign exchange transactions. If an Argentinean firm wishes to transact with a Swedish firm, there is not necessarily a currency market for an Argentine peso / Swedish Kroner cross rate, so that the transaction must first be made into a common reference currency, such as the dollar or euro. Since SWIFT transmits about 15 million payment orders per day, the transactional friction in international trade tends to be high.

Another problem is that the U.S. government would like the right to inspect the SWIFT message system, for reasons that are obvious. The European Union has taken the position that such inspection rights would not be in accord with European Union privacy laws. Yet another problem is that nations under U.S. or United Nations sanctions can be members of SWIFT, and thereby evade international sanctions. This was the case with Iran for many years.

The most important impetus to replace SWIFT came in 2016, when $101 million was stolen from the Central Bank of Bangladesh's account at the Federal Reserve Bank of New York. About $38 million of this sum has since been recovered. As U.S. media presents the story, it is merely stated that the money was stolen from the Central Bank of Bangladesh. This is a true statement. It simply omits the fact that it was stolen from the account that the Central Bank of Bangladesh has with the New York Federal Reserve. To put it plainly, the SWIFT system has been penetrated, and the Federal Reserve has been hacked.

The technique of the hacking of the Central Bank of Bangladesh was to use forms of malware known as Dridex, Bugat, and Cridex. These employ macros from Microsoft Word, and the targets are always Windows users who open an e-mail attachment using Microsoft Word or Excel, which automatically cause the malware to be downloaded. Thus, Microsoft products are not secure.

This lack of security is due to the vast numbers of programmers that Microsoft has employed on an outsourced basis to maintain the Windows franchise. Many people must necessarily have access to Microsoft source code. Only a very few malevolent people are necessary to compromise the entire system. In other words, the basic information technology sector paradigm of private networks being maintained inexpensively by outsourced programmers located around the world is now at risk. A decentralized network with open source code, made secure by the common and open inspection of a blockchain, is the only currently known solution to this computer security problem.

It is for this reason that Ripple is based upon a distributed open source internet protocol. Payment authorization is therefore made by consensus, as is the case with bitcoin. Ripple itself, as noted, is merely a payment protocol. Its token to use the system is called XRP, and this is what is traded and is used as a form of cryptocurrency. However, XRP is not designed to be a store of value, although, in principle, it can function as such.

The purpose of XRP in the Ripple system is as a common reference token to convert foreign currency. That is, instead of converting a lesser-used currency into U.S. dollars and then converting the U.S. dollars into another lesser-used currency, all members of the system would transact by converting all currencies to XRP. Balances would presumably be held in XRP rather than in inflationary currencies, so that banks would not need to accept foreign currency risk.

XRP is designed to increase in value over time. It was originally created with an aggregate denomination of 100 billion XRP. Each XRP is convertible into 1 million drops. XRP is not mined like bitcoin. At creation, 200 million XRP were given to charity, and subsequent sales by those charities is how XRP came to market. To transact in XRP, one must pay a cost of at least 0.0001 XRP. The transaction fee is not collected by another party. It is simply destroyed. Thus, the supply of XRP will gradually decline as the system is increasingly utilized.

Unlike bitcoin, there are only 616,499 Ripple accounts in existence[1], but this number is increasing. The total outstanding XRP is now down to 99,993,057,345. One can actually watch the XRP destruction on a real-time basis on xrpcharts.ripple.com. The more the system is utilized, the faster the number of XRP will decline. Therefore, this is a currency tontine designed to be deflationary. The total market capitalization of XRP is now about $24 billion[2].

Unlike bitcoin, the market capitalization is not necessarily designed to increase, although this may happen as a consequence of the manner in which XRP is destroyed. It is simply designed so that its value per unit will increase, and, as such, it is a long version of a de facto short sale of foreign currency. Hence, its value per unit can increase, possibly without its market capitalization increasing.

Although the market capitalization of XRP is $24 billion, it is generally reported on cryptocurrency websites as having a market capitalization of $9.6 billion[3]. This latter figure is actually the Ripple XRP float at the moment. Approximately 61.25 billion XRP have yet to be distributed.

To accomplish most of the remaining distribution, as pledged, Ripple placed 55 billion XRP into an escrow account in December 2017. It is envisaged that 1 billion XRP will be sold or otherwise distributed each month for 55 months. If a portion of a given monthly total is not distributed, the remainder of that month's escrow will be placed in a new escrow account, to be available in the first month after the current 55-month distribution plan is finished. This will be repeated with each monthly distribution.

Ripple had been selling, in the open market, 300 million XRP per month for the past 18 months. Thus, investors in Ripple XRP must be mindful that the float is going to greatly increase over the course of the next five years, even if there are many XRP transactions on Ripple. However, the compensating variable is that the more XRP is distributed, the more transactions there will be and, therefore, the more XRP will decrease in number of units. It is an interesting phenomenon. At the end of the day, it's a tontine.

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[1] As of December 10, 2017. Source: https://xrpcharts.ripple.com/#/accounts
[2] Based on XRP price of 0.2401 as of 11am on December 11, 2017. Source: https://ripple.com/xrp/market-performance/
[3] Representing the market capitalization of 38,739,144,847 XRP in circulation with an XRP price of $0.24/XRP. Source: https://coinmarketcap.com/currencies/ripple/