Cryptocurrencies and their impact on Japan

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Abstract

Cryptocurrencies being digital assets meant to function as a medium of exchange have become exceptionally popular in Japan. The purpose of this paper is to examine why Japanese people are opting to purchase cryptocurrencies over the traditional state issued currency. Within Austrian economic theory formulated by economist Ludwig von Mises and Friedrich Hayek there is this concept of time preference being the inclination of an individual to consume goods in the present over saving goods for future use.[1]An individual most commonly expresses his time preference through using currency either to purchase or save. The state issued yen is controlled by the Bank of Japan which practices Keynesian monetary policy by increasing the money supply to stimulate demand. From an Austrian economic perspective, inflationary monetary policy artificially alters the perception of a society's time preference to consume rather than save in an unstainable manner causing economic booms and busts; in Japan's case manifesting as the asset price boom in the 1980s leading to the economic recession known as the Lost Decade. Japanese people are drawn to cryptocurrencies such as bitcoin because they can express a more authentic time preference without the inflationary manipulation of state-backed currency.

Introduction

The advent of blockchain technology the essential component of cryptocurrencies offers to revolutionize how we once conceptualized and use mediums of exchange. In 2008 the mysterious Satoshi Nakamoto (presumably an alias) digitally published the white-paper called "Bitcoin: A Peer to Peer Electronic Cash System"[2] where he explains blockchain technology. As this is an economics paper I will not delve into the blockchain's exact technological details but explain how it allows the creation of a decentralized currency. The blockchain is essentially a public digital ledger of transactions that's authenticated and audited by multiple parties. For example the bitcoin blockchain has a designed limit of only having 21 million units of bitcoin this limitation is assured by the fact that the ledger is not controlled by a single administrator

[1] For more detailed explanation of time preference read Frank Shostak's article at https://mises.org/wire/more-interest-rates-and-time-preference

[2] To understand the technical aspects of bitcoin and blockchain technology see Nakamoto's whitepaper at https://bitcoin.org/bitcoin.pdf

but several parties usually composed of miners (individual who contribute computing power to process transactions) verifying transactions through a consensus. The distributed ledger makes cryptocurrencies not subject to arbitrary manipulation. This is not the case with government issued currencies which are controlled monopolistically by a central bank. The central bank forms the sole entity having control of the "ledger" and may create more units of currency at will. The emergence of free-market cryptocurrencies to challenge the dominance of the state-issued yen presents a new and interesting development in economics.

The first section this paper will address monetary policy conducted by the Bank of Japan (BOJ) and critique it from an Austrian economic perspective. The second section will delve into the created demand for an alternative currency due to the BOJ's actions in manipulating the currency discussed in the first section. The second section will mostly discuss Japanese demand for cryptocurrencies in terms of bitcoin as it is the first and most popular blockchain. The third section will address the problems of bitcoin and cryptocurrencies in becoming effective medium of exchange.

Austrian Critique of Japan's Monetary Policy

In the period before the Lost Decade, Japan's economic growth was the envy of the world with its economy predicted to eventually eclipse the United States but in 1991 the asset price of real estate and stocks came crashing down signaling the end of Japan's explosive economic growth. The monetary policy leading to the boom then bust was inspired by economist John Maynard Keynes, the Japanese government was fully introduced to Keynesian economics since the post-WWII period under American occupation and combined some aspects of Keynesianism with neo-classical thinking to form what was called "kindai keizaigaku" (modern economics)[3]; implying that other schools of economic thought were passé and outdated. Central to how Keynes was received in Japan was the book "Saving American Capitalism" by Harvard economist Seymour Harris where he advocated government policy on supporting "high consumption model economy".[4] The Japanese economy formed a quasi-capitalist market with the Bank of Japan controlling the supply of the yen to fulfill the policy objective of prompting aggravate demand.

In 1985 the Plaza Accord took place where the BOJ agreed to appreciate the value of yen compared to the US dollar to correct trade imbalances but the falling levels in domestic demand in the Japanese economy was considered undesirable. In 1986 the BOJ began depreciating the yen to increase overall consumption by pumping new money into the banking sector it caused interest rates to drop from 5.0 to 3.0% and in 1987 drop to 2.5%[5]. The low interest rates encouraged entrepreneurs to take out loans and buy into the real estate and stocks causing the price of those assets to skyrocket. Japan experienced an economic boom

[3] Japanese academics and economist were familiar with Keynes's work before the WWII but his ideas only came to prominence during the American occupation http://jshet.net/docs/conference/79th/wakatabe.pdf

[4] The Growth Idea: Purpose and Prosperity in Postwar Japan, pg 100-102

[5] The BOJ interestingly enough did not believe its quantitative easing was causing the increase in real estate prices but instead believed it "was mainly caused by greater demand for office buildings rather than monetary easing."(also for charts see the end of the paper here)https://www.imes.boj.or.jp/research/papers/english/15-E-12.pdf pg 35-50

with the inflation of its currency making investments cheaper which is typically praised by mainstream economists but the Austrian school has a different perspective.

Currency as a medium of exchange should represent actual value for products or resources in the economy when the BOJ creates more yen it merely creates the impression to entrepreneurs that resources have been added into the economy when in fact no such thing has occurred. In observing the inflationary policy enacted by the Federal Reserve leading to the Great Depression economist Murray Rothbard explains that

"When banks print new money and lend it to businesses. The new money pours forth on the loan market and lowers the loan rate of interest. It looks as if the supply of saved funds for investment has increased, for the effects is the same: the supply for funds for investment apparently increases, and the interest rate is lowered. Businessmen in short, are misled by bank inflation into believing that the supply of saved funds is greater than it really is"[6]

In the Austrian conception of economics, saving coming from decreases in consumption are essential for economic growth as those saving can eventually be put towards long term investment to improve overall production. The amount of goods saved versus amount of goods consumed is determined by individual time preference. The supply and demand of currency acts as the medium for expressing a society's time preference, when people feel they are holding too much money their time preference will increase as they exchange money for goods and the opposite will occur if people feel their supply of money is too low cause time preference to decrease as money is saved[7]. In an entirely free market without central bank's inflationary intervention the interest rate for loaning capital would mostly be determined by time preference plus a premium on risk since the future is uncertain. A low time preference would lower the interest rate as saving increased and a high time preference would increase the interest rate as consumption was favored over saving. Economist Howard Baetjer refers to the rate of interest as the most important "knowledge surrogate" in the economy coordinating the exchange of goods and services across time by communicating to entrepreneurs which projects should or should not be invested in.[8] When the BOJ increased the supply of money it lowered interest rates to 2.5% encouraging investment projects that would otherwise be avoided at a 5.0% interest rate.

The inflationary prompted investments are doomed to fail as no actual capital has been stored to sustain them but as long as BOJ prints new yen into the economy the mal-investments are continued, keeping stock and real estate prices high. Eventually central banks in order to avoid high inflation must cease from inflating the money supply. In 1989 the BOJ began "avoiding inflation in domestic prices by rapid and preemptive policy action"; the growth rate of the money supply declined from an annual rate of 12% to 3.6% in terms of M2+CD. [9]With new money no longer going into banking sector, the interest rate raised to 6.0%. The investments carried out during the inflationary boom could no longer be extended with cheap credit causing

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[6] Rothbard, America's Great Depression pg 10
[7] Shostak https://mises.org/blog/how-interest-rates-affect-time-preference-%E2%80%94-and-vice-versa
[8] Baetjer, Free our Markets, pg 194
[9] Itoh,Koike, Shizume https://www.imes.boj.or.jp/research/papers/english/15-E-12.pdf pg 88-89

Japan's real estate and stock price to collapse in 1991 signaling the beginning of what is known as the Lost Decade an economic stagnation in terms of GDP that continues onto today.

In the typical Keynesian style the BOJ responded to the bust by once again printing new money into the economy to stimulate demand and to lower interest rates which even today remain at the unconventional rate of near 0% going as low as -0.10% in January of 2016.[10] To the BOJ surprise the yen is in fact experiencing deflation despite their attempts to inflate the currency[11]. While many causal factors such as population decline are attributed to the deflation very simply Japanese people are holding yen rather than spending them without any monetary circulation the yen is appreciating in value.

While mainstream economists lament the bust, Rothbard presents a different perspective stating "the crisis signals the end of this inflationary distortion and the depression is the process by which the economy returns to the efficient service of consumers. In short… the depression is the recovery process"[12]. During the recovery process it's natural for the demand for money to increase as people become more cautious with their spending and to increase their overall savings relative to their consumption. Saving must be accumulated to pay off the failed loans during the boom period and allow for future capital to be loaned out for investment projects. The BOJ attempts to encourage consumption through inflationary monetary policy especially after a bust when savings are already depleted serves only to exacerbate the depression by hindering attempts to increase actual savings. If the yen was to depreciate through inflation, yen holders would feel compelled to stop saving and spend their currency in fear that the yen will drop in value. The BOJ failed attempts to inflate the yen despite adding to the money supply may represent a sort of Keynesian fatigue among the Japanese people.

Rise of Cryptocurrencies

Bitcoin currently being the first cryptocurrency has garnered a sense of trust and prestige in the crypto market, having the highest market capitalization among cryptocurrencies of 172 billion (USD) and making up to 33% of the entire cryptocurrency market which stood at 636 billion (USD) on January 20 of 2018 .[13] The Japanese economy holds 56% of all bitcoin with the United States economy in second place holding 28% of bitcoin. [14] While the exact Japanese holding in alt-coins (all cryptocurrencies not including bitcoin) is unknown, Japan's surprisingly favorable laws concerning cryptocurrencies have attracted much of the crypto market. In April of 2017

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[10] The BOJ frustrated with the lack yen deflation began Zero Interest Rate Policy (ZIRP) in 1998 https://tradingeconomics.com/japan/interest-rate
[11] file:///C:/Users/CC/Downloads/WP_309.pdf pg 8
[12] Rothbard, , America's Great Depression pg 12
[13] To see the full cryptocurrency market see https://coinmarketcap.com/
[14]Mamtstani https://www.japantimes.co.jp/news/2018/01/23/business/japan-global-leader-cryptocurrency-investment/#.WnKn2YjwaUl

the Japanese government passed the Virtual Currency Act recognizing bitcoin and other cryptocurrencies not as official currency but a miscellaneous asset subject to capital gains tax but not Japan's 8% consumption tax for purchase and selling which it was previously subject to.[15] In other countries cryptocurrencies remains in a legally dubious situation with people unsure how their respective government will react to the crypto market or the government has already highly regulated the market. Japan is the first country to pass official cryptocurrency regulation that is comprehensive and relativity minimal in terms of government involvement. Despite not being considered an official currency bitcoin is increasingly used as a medium of exchange for private sector transactions in Japan.

Some Austrian economists have been critical of bitcoin being considered a form of currency since it does not originate from a salable commodity like gold or silver as described traditionally in the regression theorem. Economist Walter Block believes that bitcoin does in fact coincide with the regression theorem explaining that while the traditional understating of the theorem implied the need for a physical commodity, intangible goods in the modern age can have value as bitcoin did among its first adopter before it became usable as a medium of exchange [16] George Selgin of the CATO Institute also contributes to our understanding of bitcoin as a currency by defining it as a "synthetic commodity money" combing features of both fiat and commodity mediums of exchanges. [17] Bitcoin is not backed by physical product like government issued fiat currency but is naturally scarce if not even more effectively scarce then commodity based money.

The main factor contributing to bitcoin's popularity in Japan is the matter of certainty that the value of bitcoin cannot be manipulated by inflation because it's assured by the multiparty verification of the blockchain ledger. This factor of trust is the most important attribute a currency can have, as a medium of exchange its value should represent actual goods and not claims to imaginary goods as what occurs when new money is created and price inflation to match the money supply has not occurred. Japanese consumers after suffering from the inflationary boom have developed a low time preference evident by their holding rather than spending of currency and wish to increase their savings. Bitcoin having a predestined limit of 21 million coins is naturally deflationary more so then the yen which the BOJ, while ineffective still attempts to inflate. Bitcoin presents stronger deflationary qualities then even gold which can be mined and added to the money supply though at a more predictable rate then fiat currency. Also unlike gold which governments have historically seized from time to time, it is more difficult to expropriate bitcoin as it is an intangible good existing in the confides of the internet. The significance of bitcoins deflationary feature is only appreciated by the Austrian economic perspective which understands the importance of

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[15] Parker, https://bravenewcoin.com/news/bitcoin-regulation-overhaul-in-japan/

[16] Block address the Austrian critique of bitcoin in full detail https://mises.org/system/tdf/Bitcoin%20the%20Regression%20Theorem%20and%20the%20Emergence%20of%20a%20New%20Medium%20of%20Exchange.pdf?file=1&type=document

[17] Selgin , Synthetic Commodity Money

savings so a currency whose value can't be arbitrarily devalued by the government is a boon for the Japanese people.

Problem with Cryptocurrencies

The most obvious problem is the political dimension as the state holds a monopoly on force and requires Japanese citizens to pay taxes and other government fees through yen and not through cryptocurrencies making yen comparatively more useful. Also while the Japanese government has passed relativity favorable crypto regulation it may yet reverse its position and crack down on cryptocurrencies

In terms of the economic dimension especially in regards to bitcoin the price is far too volatile with the value of a single bitcoin jumping from 10,000 to 20,000(USD) in matter of months presents difficulties for its use as a medium of exchange. If bitcoin is to be used for everyday transactions as a currency typical should, its volatility makes that undesirable. Japanese bitcoin users will feel more compelled to simply hold bitcoins or trade it like a stock undermining intended use as a currency. Also cryptocurrencies lack liquidity as it is not as widely used as the yen and also currently lacks the financial infrastructure for loans.

The technological dimension presents other significant issues. The blockchain for bitcoin is difficult to maintain as it becomes used more often, the transactions become more complex requiring more computing power and electricity which increases fees for using bitcoin. The fees may deter overall bitcoin use as it becomes too expensive to process transactions. The large amount of computing power and electricity also limits the number of miners working on the bitcoin blockchain, reducing the number of parties verifying the ledger therefore eroding the level trust in the assurance of bitcoin's overall supply. Bitcoin can also only process These technological problems are currently being addressed by altcoins such as NEM [18], Miota[19],Ripple[20] and others which promise a more efficient blockchain. Bitcoin blockchain itself may soon be updated by what has been called the "lighting network" which promises to lower transaction fees and make the transaction process quicker[21].

Conclusion

Cryptocurrencies while still lacking in many areas may present an opportunity for the people in Japan and around the world to eventually escape the currency monopolies of central banks. While the Lost Decade is lamented by mainstream economist the recession allows for the economy to correct the destruction caused by inflationary monetary policy and with the assistance of cryptocurrencies, may allow for the Japanese economy to have actual economic growth instead of merely nominal economic growth.

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[18] Wong, New movement economy white paper https://nem.io/wp-content/themes/nem/files/catapultwhitepaper.pdf

[19] Popov, Miota whitepaper https://iota.org/IOTA_Whitepaper.pdf

[20] Ripple white paper https://ripple.com/files/ripple_solutions_guide.pdf

[21]Poon. Dryja. Lighting network whitepaper https://lightning.network/lightning-network-paper.pdf

Works Cited

Shostak, Frank. 2017. More on Interest Rates and Time Preference. Mises Wire. https://mises.org/wire/more-interest-rates-and-time-preference

Nakamoto, Satoshi. 2008. Bitcoin: A Peer-to-Peer Electronic Cash System. https://bitcoin.org/bitcoin.pdf

Wakatabe, Masazumi.2014. Keynesianism in Japan. http://jshet.net/docs/conference/79th/wakatabe.pdf

O'Bryan, Scott. 2009. The Growth Idea: Purpose and Prosperity in Postwar Japan. Studies of the Weatherhead East Asian Institute, Columbia University. pg 100-102

Itoh,Masanao. Koike, Ryoji. Shizume, Masato. 2015. Bank of Japan's Monetary Policy in the 1980s: a View Perceived from Archived and Other Materials. IMES Discussion Paper Series. Institute for Monetary and Economic Studies Bank of Japan. https://www.imes.boj.or.jp/research/papers/english/15-E-12.pdf pg 35-50. pg 88-89

Rothbard, Murray 2000. America Great Depression. 5th edition. Ludwig von Mises Institute, Alabama pg 10,12

Shostrak, Frank 2016. How Interest Rates Affect Time Preference — and Vice Versa. https://mises.org/blog/how-interest-rates-affect-time-preference-%E2%80%94-and-vice-versa Mises Wire.

Baetjer, Howard. 2013. Free Our Markets, Jane Philp Publicantions,LLC pg 194

Wakatabe, Masazumi.2012. Turning Japanese? Lessons from Japan's Lost Decade to the Current Crisis. Colombia Business School. file:///C:/Users/CC/Downloads/WP_309.pdf. Pg 8

Matsutani, Minoru, 2018. Japan a global leader in cryptocurrency investment. The Japan Times. https://www.japantimes.co.jp/news/2018/01/23/business/japan-global-leader-cryptocurrency-investment/#.WnQLdIjwaUm

Parker.Luke 2017. Bitcoin regulation overhaul in Japan. Brave New Coin. https://bravenewcoin.com/news/bitcoin-regulation-overhaul-in-japan/

Block, Walter. Davidson, Laura.2015 Bitcoin, the Regression Theorem,

and the Emergence of a New Medium of Exchange. The Quarterly Journal of Austrian Economics. Vol 18.
https://mises.org/system/tdf/Bitcoin%20the%20Regression%20Theorem%20and%20the%20Emergence%20of%20a%20New%20Medium%20of%20Exchange.pdf?file=1&type=document

Selgin, George. 2013. Synthetic Commodity Money.
file:///C:/Users/CC/Downloads/SSRN-id2000118%20(1).pdf

Wong, Lon. 2016. NEM CATAPULT.
Dragonfly Fintech Pte Ltd.
https://nem.io/wpcontent/themes/nem/files/catapultwhitepaper.pdf

Popov, Serguei. 2017. The Tangle.
https://iota.org/IOTA_Whitepaper.pdf

Ripple .Solutions Overview. https://ripple.com/files/ripple_solutions_guide.pdf

Poon, Joseph, Dryja. Thaddeus. 2016 The Bitcoin Lightning Network: Scalable Off-Chain Instant Payments. https://lightning.network/lightning-network-paper.pdf