Regulatory Implications of Cryptocurrency On The Bank Of England

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Introduction

Cryptocurrencies are digital assets that operate independently of central banks. Since the world’s first and largest cryptocurrency by market capitalization, Bitcoin, was introduced in 2009, the global market capitalization of an ever-expanding variety of cryptocurrencies has exceeded $700 billion (“Cryptocurrency Market…””) and enticed an estimated six million daily users of cryptocurrency wallets (Hileman and Rauchs). The explosive growth of cryptocurrencies, which are now accepted as payment at Microsoft, the Japanese airline Peach Aviation, and even at some Subway sandwich franchises, has garnered attention by financial regulators worldwide.

The three main financial regulators in the UK are the Financial Conduct Authority (FCA), Her Majesty’s Revenue and Customs, and the Bank of England (BoE)—overseeing consumer protection, taxation, and financial stability, respectively. Cryptocurrencies present serious and untested risks to each of these institutions and their collective goal to protect the UK economy from crisis. Importantly, as the central bank that unilaterally supplies and backs the British pound sterling, the BoE is the regulator whose mission most directly conflicts with the existence of international, decentralized currencies.

This article evaluates the BoE’s current cryptocurrency policies, potential tools for regulating cryptocurrencies, and useful indicators for further regulatory response. Overall, the BoE’s prudent posture toward cryptocurrency regulation establishes its position as a progressive second-mover in cryptocurrency central bank policy. In treading the fine line between over-regulation and under-regulation, the BoE is setting a path for measured economic growth via cryptocurrencies and blockchain technology while also hedging systemic risks to the UK financial system.
The UK’s Stake in Cryptocurrencies

The significance of cryptocurrencies in the UK stems from its oversized role in foreign exchange (FX) trading, cryptocurrency exchanges, and financial technology (fintech) more broadly.

Foreign Exchange Trading

The UK has a deep-rooted history in global trade and finance. A central time zone between the opening US financial markets and closing Asian financial markets has allowed the UK to establish itself as a leader in foreign currency exchange in particular. The UK accounts for about 37% of all $5 trillion in daily FX volume—the US is second with about 18% (“Triennial Central…”). The UK’s historic strength in currency exchange suggests an organic interest in establishing itself as a center for cryptocurrency transactions.

Exchanges and Wallets

As a natural outgrowth of its entrenched position as an FX leader, the UK has already established itself as a leader in cryptocurrency exchange and management. A recent study from Cambridge University’s Centre for Alternative Finance defines cryptocurrency exchanges as “entities that allow customers to exchange cryptocurrencies for other forms of money or assets” (Hileman and Rauchs). According to this study, the UK has more exchanges than any other country—accounting for 18% of the world’s total exchanges (Hileman and Rauchs). Often used with exchanges, cryptocurrency wallets are programs that allow users to store, send, and receive cryptocurrencies. The UK is second in the global market share of cryptocurrency wallets, at about 15% (Hileman and Rauchs).

Financial Technology

Due to its dominance in traditional financial services and growing prominence in cryptocurrency exchanges, the UK serves as a natural backdrop for attracting companies and capital in areas that support cryptocurrency technology such as fintech—computer programs and other technology used to support or enable banking and financial services. The UK’s fintech sector is disproportionately competitive on the world stage and vital to the national economy—employing an estimated 60,000 Britons (“UK FinTech…”) and commanding $1 billion in annual venture capital funding, which ranks third only to annual fintech venture capital funding in China and the US (“The Global FinTech…”). In 2016, cryptocurrencies and blockchain technology accounted for 8% of UK fintech venture capital investment (“FinTech Venture…”).

The Bank of England’s Stake in Cryptocurrencies

Given the rapidly growing importance of cryptocurrencies to the UK, the BoE must juggle support for this nascent economy while also upholding its mandate to provide “monetary and financial stability” to the British people. To the BoE, stability is effectively derived from stable prices and confidence in the currency (“What Does…”) and achieved via a combination of setting interest rates in order to achieve a 2% inflation target and by applying directives for financial institution capital requirements and corporate structure. Additionally, the BoE reserves a monopoly on the supply of banknotes, so that in extreme circumstances, such as bank runs, the BoE can assume the role of lender of last resort (“Scottish…”).

The BoE’s centralized oversight regarding the issuance of pound sterling as the national currency is fundamental to the institution’s existence and regulatory mandate. The advent of decentralized cryptocurrencies, which are created and transacted in the absence of a central bank, directly challenges this paradigm of centralized monetary control.

The Bank of England’s Response to Cryptocurrencies

In presenting the potential for a new paradigm shift and unknown stability risks, the BoE might be expected to heavily regulate cryptocurrencies. However, the BoE does not regulate cryptocurrencies. As of January 1, 2018, there is no official statement published
by the BoE regarding its position toward Bitcoin or other cryptocurrencies (Naqvi and Southgate).

The BoE’s restrained approach to cryptocurrency regulation stems from the belief that the cryptocurrency economy—in its current form—does not impede the institution’s mission to provide monetary and financial stability to the UK. The BoE suggests that “digital currencies do not currently pose a material risk to…stability in the United Kingdom, given the small size of such schemes” (“Quarterly Bulletin…”). The BoE is establishing size as grounds for assessing cryptocurrencies’ potential threat and acknowledges that cryptocurrencies lack significant adoption or market value to date.

BoE research economist John Barrdear further defends this position as it relates to both financial and monetary stability. Looking at financial stability, Barrdear explains that cryptocurrencies could pose a risk if they achieve critical usage—reflecting a situation where “households, businesses, and the financial sector” would be sufficiently exposed to cryptocurrencies such that a crash in its price could send ripple effects across the financial system. In terms of monetary stability, “so long as items are quoted in sterling pound and pence rather than Bitcoin, and digital currency is only used alongside sterling-based payments, then the bank’s ability to deliver price stability according to a 2% CPI target will not likely be affected” (“Quarterly Bulletin…”). Essentially, cryptocurrencies will only warrant sufficient attention if financial institutions become increasingly exposed and a behavioral shift occurs in which cryptocurrencies are used as an alternative to pound sterling rather than a pure store of value. Importantly, the value of Bitcoin alone increased 18-fold and the number of UK venues that accept Bitcoin as payment has nearly doubled in the three years since the BoE’s latest official statements were published, in 2014. Hence, it is imperative to determine when the BoE might want to reassess its current lack of oversight.

**Potential Indicators of Need for Regulation**

In 2015, the European Central Bank (ECB) published a report that establishes several indicators of the materiality of cryptocurrencies with regard to financial and monetary stability. These indicators include cryptocurrencies’ market capitalization versus the fiat currency in circulation (i.e., M1 money supply) and the relative use of cryptocurrency in payments (“Virtual…”).

Beginning with relative market capitalization, at the end of 2017, the UK M1 money supply was approximately $1.7 trillion. In 2017, the value of all global cryptocurrency in circulation peaked at approximately $700 billion. Given that pound sterling accounts for only 1.2% of total cryptocurrency transaction volume, this optimistically suggests that merely $7 billion of the world’s cryptocurrency holdings were purchased with British currency and are potentially held by British businesses and individuals (“Quarterly Bulletin…”). Therefore, potential cryptocurrency held by all UK businesses and individuals is only 0.4% of the UK’s money supply. In fact, this figure is merely 20% of the median trailing 12 months monthly standard deviation of the UK’s money supply¹ (“M1 for…”). By this estimate, even a complete collapse in the price of UK-held cryptocurrency would be less than one-quarter of M1 volatility and thus mere economic noise until global cryptocurrency market value grows four-fold.

Although it sounds considerable, four-fold growth in a year is tame by cryptocurrencies’ standards. Additionally, market capitalization may not be a representative measure of the UK financial system’s exposure to cryptocurrency risk. Julie Maupin—a senior researcher at the Max Planck Institute for Comparative Public Law and International Law and a member of the fintech advisory committee to the German Ministry of Finance—expressed deep concern regarding the introduction of cryptocurrency derivatives by two of the world’s leading derivative exchanges—the CME Group and Chicago Board Options Exchange—in late 2017. Cryptocurrency derivatives create additional, unknown opportunities for investors to use debt to speculate on cryptocurrency prices.

¹Median monthly standard deviation approximated in dollars from St. Louis FRED data through January 2007 to November 2017.
beyond the market value of cryptocurrencies. This is a potential alarm for the BoE given that the collateralized mortgage obligation—a derivative whose value ultimately stemmed from speculative mortgages—dramatically increased the risk of the global financial system pre-2009 (Mendales).

Nevertheless, cryptocurrencies are far from mainstream in the UK—fewer than 400 venues in the UK accept Bitcoin as payment as of November 2017 (“CoinMap.Org”). This does not compose even one-hundredth of a percent of the more than 5.5 million private sector businesses in the UK (“Business Statistics”). Such weak acceptance of Bitcoin as a legitimate form of payment is consequential in the BoE’s determination that the penetration of cryptocurrency in UK society poses negligible prudential or other risks.

Key Arguments Regarding Cryptocurrency Regulation

Pro-regulation

If the BoE were to take action in response to the explosive growth of cryptocurrencies and the introduction of cryptocurrency derivatives, the BoE should consider both pro-regulation and anti-regulation views to determine the extent of regulation required. There are four main reasons that the BoE might champion cryptocurrency regulation. These views are expressed as primary research questions in the BoE’s 2015 paper on central bank digital currencies (CBDCs): 1) monetary stability, 2) financial stability, 3) business cycle implications, and 4) economic growth (“Why Might…”).

Monetary stability

If alternative forms of currency, such as cryptocurrency, establish widespread use to the extent that a significant portion of household and business activity is driven by cryptocurrency transactions, then the ability of the BoE to influence prices via its resultantty diluted fiat currency would suffer.

Financial stability

If major financial institutions owned or provided credit to investors in cryptocurrencies, then the UK’s financial institutions may face increased risk of insolvency. Such failures in the financial system could have significant implications on the broader economy. Additionally, there are fears that in times of panic, customers could transition funds from checking and savings accounts into digital currencies, which could exacerbate potential bank runs (Atkins and Noonan).

Business cycle implications

The BoE is unsure of the extent to which digital currency might affect the volatility of the business cycle. For instance, could leveraged, speculative investments in cryptocurrencies via consumer credit cards or other loans prolong contractions and credit needs in the event of a downturn? Writing down non-performing cryptocurrency loans on a bank’s balance sheet could prevent financial institutions from lending within a normal timeline after a financial crisis.

Economic growth

Catherine Mulligan, co-director of Imperial College London’s Centre for Cryptocurrency Research and Engineering, believes that insufficient regulation could be holding back start-ups and the growth of fintech rather than creating opportunities. She explains, “We have the situation in the UK where many start-ups are chasing the regulator to say, ‘How are we going to be regulated?’ rather than the other way round” (Rees). Increased regulation is not normally desired within most industries. However, cryptocurrency-based fintech companies may need to be regulated in order to sell their services to regulated clients, such as financial services firms. Thus, regulation may provide the approval and sense of certainty needed to transition from niche market to the mainstream (Robinson).

Anti-regulation

The BoE must also consider compelling arguments against regulation of cryptocurrency. These reasons include 1) economic growth, 2) immateriality of the cryptocurrency market,
3) insufficient information to regulate, and 4) international competitiveness.

**Economic growth**

A growing number of cryptocurrencies, such as Ethereum, are not merely currencies but also smart-contract platforms by which commerce is spawned and shared. Regulating the early development of such platforms could impede the development of UK start-ups that might leverage cryptocurrency technology to fundraise and deliver value to the greater economy. For instance, over $3 billion has been raised worldwide across more than 200 initial coin offerings (ICOs) in 2017, including UK-based cryptocurrency start-up Electroneum, which raised $40 million (“Electroneum…”). In extreme regulatory environments where cryptocurrency might be banned, entrepreneurs and investors would not be able to access this roaring, multi-billion-dollar marketplace.

**Immateriality of the cryptocurrency market**

Although growing rapidly, cryptocurrencies are still a nascent asset and technology far from mainstream adoption within the UK. Cryptocurrencies’ daily transaction volume of less than $20 billion (“Cryptocurrency Market…””) pales in comparison to traditional FX trading’s approximately $5 trillion. Moreover, the UK manages a tiny fraction (1.2%) of cryptocurrency trading volume compared to 37% of FX trading volume. As such, the BoE expressed that the scope of cryptocurrency trade does not yet warrant significant risks to financial stability.

**Insufficient information to regulate**

Throughout 2017, the Financial Services Authority (FSA) of Japan—a Japanese financial regulator—acknowledged that it might not have a reasonable framework for deciding the extent to which cryptocurrencies should be regulated (“Japan to…”). Given the nascence of the cryptocurrency industry, the BoE is similarly unsure of the extent to which it might consider imposing regulation and is demonstrating a wait-and-see approach to next steps (“Bitcoin and Beyond…”).

**International competitiveness**

Becoming the epicenter of cryptocurrency commerce might provide significant sources of revenue and even strengthen the local currency if the world utilizes the pound sterling to conduct cryptocurrency transactions. If the BoE over-regulates or under-regulates cryptocurrency relative to other countries, the UK might risk losing global competitiveness in a growing, lucrative industry. This phenomenon has already been demonstrated as the Chinese yuan’s share of cryptocurrency trade dropped from over 95% to less than 20% of volume amidst Chinese bans on cryptocurrency trading in 2017—ceding the top rank to the Japanese yen (Deng).

**Potential Regulatory Tools Available to the Bank of England**

After determining an appropriate degree of regulation that protects the financial system without stifling innovation or international competitiveness, the BoE must then evaluate which regulatory tools could be applied to cryptocurrency. Potential tools include prudential regulatory requirements for commercial banks, holding cryptocurrency exchange reserves, and introducing a CBDC.

**Prudential Regulatory Requirements**

In the interest of reducing the impact of potentially damaging cryptocurrency events on the UK financial system, the BoE might consider imposing prudential supervision via the Prudential Regulation Authority on financial institutions with exposure to cryptocurrency. Currently, the Prudential Regulation Authority oversees the soundness of over 1,500 financial institutions—specifically, commercial banks and insurance companies—by implementing directives for capital requirements and corporate structure that encourage banks to maintain enough capital to offset risky investments (“Prudential…”). In extending this role to cryptocurrencies, the BoE could
assign the maximum risk weight (150%) to loans provided by banks for cryptocurrency businesses or investors. This maximum risk weight would be reasonable considering the extreme volatility of cryptocurrencies, their absence of backing by sovereigns or corporations, and their lack of regulation.

However, experts such as Mulligan assert that the most prevalent prudential risks exist in the consumer space, such as protecting individuals from hacks at cryptocurrency exchanges and punishing sellers of fraudulent cryptocurrencies. Consumer regulation falls mainly under the jurisdiction of the FCA, but the BoE could promote consumer regulatory responses, as the BoE and FCA cooperate on such issues via the Joint Fraud Taskforce. Potential consumer regulation of cryptocurrency could include requiring exchanges to hold licenses that demonstrate acceptable security and insurance protocols, as is promoted in Japan via the FSA (Southurst). Currently, there are no regulatory requirements for cryptocurrency exchanges in the UK in terms of receiving licenses and related insurance or security risks. This puts the government, traders, and investors at risk of theft and unreported malicious cryptocurrency activity.

**Cryptocurrency Exchange Reserves**

Central banks around the world employ another tool to manage monetary policy and financial stability—FX reserve assets, which are assets, such as government bonds, that are denominated in foreign currency. The BoE is no exception. As of the end of December 2017, the BoE held $25 billion of FX reserve assets (“UK International...”). Holding these assets allows the BoE to potentially influence the exchange rate between the pound sterling and other foreign currencies, which could be used as a monetary policy tool for achieving target inflation.

Theoretically, cryptocurrencies could also be held in the BoE’s reserves and exchanged in the future if and when necessary to prop up the pound sterling. Such reserves would hedge against a monetary future that is uncertain for the UK in which cryptocurrency might continue to grow relentlessly at over 1,000% per annum and proliferate throughout UK households and businesses. Given that China’s central bank (People’s Bank of China [PBoC]) and other central banks are considering the purchase of cryptocurrency reserves, the BoE may soon have a roadmap to use cryptocurrency exchange reserves as a financial stability tool (Maupin).

**Central Bank Digital Currency**

Another way to regulate cryptocurrency is by competing with it. In February 2015, the BoE published a research agenda for RSCoin—a potential CBDC (Evans-Pritchard). A CBDC could provide all the benefits of digital cryptocurrencies, such as low transaction fees and instant transferability, without the risks of no backing by a government. Additionally, in July 2016, the BoE published a staff working paper that outlines why centralized digital currencies might be superior to cryptocurrencies. Specifically, the BoE points to the negative externality of environmental degradation, as the electricity consumption used in a proof-of-work mining system for some cryptocurrencies far exceeds the drain on resources for producing centralized currencies (Barrdear and Kumhof). In fact, Bitcoin transactions alone consume more electricity than does all of Ireland—with each individual Bitcoin transaction requiring 300 kWh of electricity (Hern). Centralizing the production of digital currency would be orders of magnitude more energy efficient.

However, the BoE acknowledges that there may be serious repercussions from introducing a CBDC. In June 2017, the BoE commented on the status of digital currency development—acknowledging several policy implications that may impede adoption of CBDC (Cleland). First is the unknown effect on the transmission of interest rates through a financial system as a result of consumers’ increased access to central bank currency. This is because consumers would be able to directly borrow at interest rates set by the BoE rather than an intermediate commercial bank, which could be potentially destabilizing to the financial system if policy makers were to miscalculate and mistime the effects of monetary policy on inflation. Second is the adoption of digital currency as a substitute
for bank deposits. This could fundamentally change the structure of the financial system if customers of commercial banks had the option to immediately switch all holdings to a digital currency that circumvents commercial bank deposits. Would consumers withdraw all of their money from commercial banks and cause a bank run? The repercussions from introducing a CBDC could be dramatic and are currently unknown. Fortunately, Japan and other countries appear likely to experiment with CBDCs soon, which the BoE could leverage as a second-mover in cryptocurrency policy.

**Guiding Principles of Other Central Banks**

As a second-mover, the BoE stands to benefit from lessons learned in past cryptocurrency calamities, the international responses of financial regulators, and guiding principles toward cryptocurrency at other central banks.

The central bank whose attitudes and principles might most closely mirror those of the BoE is the ECB. Like the BoE, it does not regulate cryptocurrency, but it is cautious and not overly exuberant so as to accept cryptocurrencies as legal tender. In October 2017, Mario Draghi, ECB President, summarized the ECB's wait-and-see stance to cryptocurrencies (Kharpal, “Cryptocurrencies...”). Like the BoE, the ECB is waiting for further indication that cryptocurrencies have a strong connection to the real economy before taking further steps to consider them as relevant to monetary policy (“Virtual...”). Hence, the ECB serves as a prudent benchmark for the BoE to postulate cryptocurrency regulation.

Conversely, considered one of the most accepting if not the most accepting central banks of cryptocurrency, the Bank of Japan (BoJ) is beginning to test progressive policies that may be of interest to the BoE. In March 2017, the BoJ recognized cryptocurrency as a legal payment method and also recently approved the 2020 launch of J Coin, an electronic currency that matches the yen 1:1 (Kharpal, “Bitcoin...”). Unsurprisingly, such a progressive central bank facilitated an environment such that approximately 60% of global cryptocurrency trading volume is denominated in Japanese yen.2 However, this does not come without significant risks. Japan has been the epicenter of the world’s two largest cryptocurrency exchange hacks. In 2014, Mt. Gox—a Japanese cryptocurrency exchange and at that time the largest cryptocurrency exchange in the world—was hacked for nearly $500 million. Similarly, in 2018, Tokyo’s Coincheck was hacked for a record $530 million. The BoE should cautiously consider the BoJ’s experience as a case study on whether and how to expand its own legal definition of cryptocurrency and potentially introduce a CBDC.

At the other extreme, the PBoC is an example of relatively harsh cryptocurrency regulation. In September 2017, the PBoC declared ICOs illegal and issued a ban against cryptocurrency trading on exchanges—a response among the most draconian yet by central banks. Former president of the Bank of China Limited Li Lihui issued a warning that speculative cryptocurrency trading destabilizes markets (Goh). Moreover, there is concern that cryptocurrencies provide an avenue for significant capital flight out of China—potentially exerting downward pressure on the yuan’s value (Wildau). The PBoC’s effectiveness in responding to cryptocurrency fears will help the BoE set an upper bound on a widening spectrum of regulatory actions under consideration.

**Conclusion**

Undeniably, cryptocurrencies are a growing, high-profile concern for the UK’s financial regulators and central banks around the world. Fundamentally, cryptocurrencies even go so far as to challenge the existence of central banks, including the BoE and its centralized, state-backed currency. However, as of the end of 2017, the BoE has justifiably deemed cryptocurrency’s threat to be immaterial given the relatively insignificant proportion of UK cryptocurrency assets currently held and accepted as payment.

Thus, the BoE has pursued accom-
modative cryptocurrency regulation to the extent that it may fulfill its mandate to deliver long-term financial stability while also bolstering the UK’s dominance in FX trading, fintech, and financial services. In doing so, the BoE has positioned itself as a progressive second-mover in cryptocurrency regulation.

Despite cryptocurrency’s immateriality to the BoE as of the end of 2017, leaders in the European cryptocurrency regulatory arena, such as Mulligan and Maupin, have expressed concern and expectations for urgent responses in the near term—namely, protections from fraudulent ICOs and a re-assessment by the BoE of the credit-fueled speculation posed by new cryptocurrency derivatives. As these developments continue and cryptocurrencies exceed the status of mere economic noise, the BoE must prepare to deploy new tools, including prudential regulation, cryptocurrency reserves, and CBDCs, to address potential systemic risks.

Internalizing the varied principles, successes, and failures of its international counterparts will fuel the BoE’s second-mover advantage in cryptocurrency regulation—thus providing necessary calibration and reinforcement for the UK’s finance and technology–driven economic machine.
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