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The Development and Regulation of Cryptoassets: Hong Kong Experiences and a Comparative Analysis

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Abstract
Cryptoassets have emerged as a new category of financial products in recent years and have attracted a great deal of attention from market participants and regulators. While the characteristics of cryptoassets, such as anonymity and disintermediation in transactions, bring significant benefits, they come with a range of significant risks concerning investor protection and market integrity. Due to the difficulties in regulating cryptoassets under the traditional framework, Hong Kong has set up its first comprehensive regulatory regime on cryptoassets in November 2018, imposing new standards on cryptoasset fund managers, distributors and platform operators. By means of a comparison with four major jurisdictions overseas, including Mainland China, the US, the UK, and Singapore, the strengths and potential concerns of Hong Kong's new regime are analysed. Overall, the new regulatory regime for cryptoassets in Hong Kong is a significant development, addressing the issues of regulatory gaps and regulatory arbitrage that existed under the previous framework as well as introducing enhanced regulatory standards. This has the effect of improving investor protection, but there are some remaining concerns. Chief amongst them are the problems with regulatory scope, the application of traditional regulatory standards to cryptoassets that do not fall within the definition of securities or futures, problems with the sandbox mechanism, and ultimately as a matter of regulatory philosophy, the need for a better balance between investor protection and market development.

Keywords: Cryptoassets, Fintech, Blockchain, Financial innovation, Investor protection, Hong Kong

1 Introduction

Although generalised under one wide umbrella categorisation, cryptoassets comprise a myriad of different products, each with different features. Indeed, since Bitcoin was first created in 2008,[1] cryptoassets have been widely used in raising capital through Initial Coin Offerings (ICOs) and in peer-to-peer electronic cash systems, which allow online payments to be made between parties without the need for a financial intermediary.[2] This polymorphic nature rationalises the particular difficulty faced by regulators in devising a framework which comprehensively captures all cryptoassets and applies the appropriate regulations according to their features.[3] At the international level, jurisdictions have thus adopted different regulatory approaches[4] in an attempt to achieve a right balance between ensuring effective investor protection and supporting cryptoasset market development.

In Hong Kong, cryptoassets have traditionally been regulated by the Securities and Futures Commission (SFC) under the existing securities law framework. Over the years, the SFC has displayed a rather cautious stance towards cryptoassets, and adopted a piecemeal approach to dealing with the regulatory issue. As the cryptoasset market grows, this piecemeal approach has become increasingly inadequate as evidenced in the issues of regulatory gaps and regulatory arbitrage. Owing to the growing concerns of investor protection, on 1 November 2018 the SFC issued the Statement on Regulatory Framework for Virtual Asset Portfolios Managers, Fund Distributors and Trading Platform Operators (2018 Statement on Regulatory Framework).[5] This is the first time that the SFC has issued a special rule on cryptoassets, representing a significant development in the regulatory approach towards cryptoassets in Hong Kong. Under this rule, the SFC interchangeably uses the terms cryptoasset, virtual asset, cryptocurrency, digital token, and so on, so does this article.

The objective of this article is to critically evaluate the new regulatory regime for cryptoassets in Hong Kong as established by the 2018 Statement on Regulatory Framework. Given that cryptoasset regulation presents itself as a challenge to worldwide regulators, the implication of this evaluation extends beyond Hong Kong, providing important lessons for overseas jurisdictions to draw on. As a global financial centre, Hong Kong should not only embrace the future of cryptoassets, but also shape it.

The remainder of this article is structured as follows. The basic concept of cryptoassets and the underlying distributed ledger technology (DLT) are first discussed in Sect. 2. The new Hong Kong regulatory regime is then introduced in Sect. 3. This is followed by an appraisal of the new regime through a comparison with four selected overseas jurisdictions, including Mainland China, the US, the UK, and Singapore, which represent a broad spectrum of regulatory philosophies and standards. The major achievements and strengths of the new regime are then highlighted in Sect. 4, and potential weaknesses and avenues to improvement are explored in Sect. 5. The paper ends with concluding remarks in Sect. 6.

[1] Nakamoto (2008).
[2] For a more detailed discussion of the concept of cryptoassets, see below Sect. 2.
[3] Arnold et al. (2018), p 22.
[4] Hughes and Middlebrook (2015), p 512.
[5] Hong Kong Securities and Futures Commission (2018). To provide more guidance, this new regulation contains Appendix 1 (Regulatory Standards for Licensed Corporations Managing Virtual Asset Portfolios) and Appendix 2 (Conceptual Framework for the Potential Regulation of Virtual Asset Trading Platform Operators).

2 Background: A Risk-Benefit Analysis

In order to appraise the appropriateness of regulatory approaches, it is necessary to first understand the workings of cryptoassets and their inherent characteristics, which give rise to relevant risks and benefits.

2.1 Basic Concepts of Cryptoassets

In general, a cryptoasset is a cryptographically secured digital representation of value which employs some form of DLT, and can be transferred, stored or traded electronically. DLT is a technology which enables the sharing and updating of information in a distributed and decentralised way. The term 'blockchain' is often used interchangeably with DLT and refers to a specific way of structuring data on a DLT platform. In the context of cryptoassets, a blockchain serves as a public ledger which includes a full record of transactions on the network. Each user of the blockchain keeps a copy of the entire ledger, which is updated and synchronised with a new block added every time a new transaction occurs.[6] This feature removes the need for a third-party intermediary as in conventional transactions, as transactions are verified by users and permanently recorded on an immutable ledger accessible by all network participants.[7] It should be noted that cryptoassets are just one application of DLT, with other common examples including smart contracts, asset storage and transaction validation.[8]

Depending on the design of the underlying blockchain, the purposes for which the cryptoasset is created, and the rights it grants its owners, cryptoassets can vary greatly in terms of their features. While the UK Cryptoassets Taskforce has observed that there 'is not a single widely agreed definition of a cryptoasset',[9] the UK Financial Conduct Authority (FCA) has defined cryptoassets as 'any publicly available electronic medium of exchange that features a "permissionless" distributed ledger and a decentralised system for exchanging value'.[10]

Existing cryptoassets can be broadly categorised into three types, namely exchange tokens, security tokens and utility tokens. Exchange tokens are used as a means of exchange or for investment, and are not backed by a central body. Security tokens usually provide rights such as ownership, the repayment of a specific sum, or an entitlement to a share in future profits. Utility tokens can be redeemed for access to a specific product or service that is typically provided using a DLT platform. Cryptoassets are commonly used as a means of exchange, for investment, and to support the raising of capital through ICOs.[11]

2.2 Risks Associated with Cryptoassets

Cryptoassets carry a number of inherent risks due to their characteristics and the operations of cryptoasset funds and trading platforms.[12] The International Organisation of Securities Commissions (IOSCO) has in fact recognised the potential conduct and market integrity risks

[6] Kakavand et al. (2017), p 7. In the process of synchronisation, new transactions between users are broadcast across the network, verified by cryptographic algorithms, and grouped into blocks. The blocks are then added to the blockchain and can no longer be altered.
[7] Robinson (2018), p 908.
[8] European Securities and Markets Authority (2016), p 8.
[9] HM Treasury (2018), p 11.
[10] Financial Conduct Authority (2017), p 11. A 'permissionless' network is one which anyone is allowed to validate and add new records to the existing set of records. This is in contrast to 'permissioned' networks, where only users with specific rights can perform the same actions.
[11] Ibid.
[12] UK Parliament (2018), para. 10.

of cryptoassets as one of its top priorities.[13] In addition, while some risks are not at present significant, they can proliferate through time and pose a threat to financial stability, and are therefore worth addressing at an early stage.[14]

2.2.1 Market Immaturity Risks

The market for cryptoassets is far from mature, usually with high levels of price volatility, which poses significant risks for their use or investment therein. For instance, the price of bitcoin since its launch in 2009 had been relatively stable before 2013, with a steady appreciation in value until 2017, upon which there has been a big jump in value from USD 1,000 to approximately USD 19,000, followed by a dramatic drop to USD 8,000.[15] This price volatility poses difficulty for pricing goods and services based on cryptoassets and hence limits their potential widespread applications.[16] Indeed, cryptoassets have a highly speculative nature, due to the lack of backing by any physical items.

Further, as a relatively new market, immature market infrastructures give rise to concerns with liquidity and a difficulty in price valuation. This is particularly the case for less widely traded cryptoassets where there is no guarantee of liquidity in the secondary market. It has also been observed in the UK that cryptoasset exchanges, trading platforms and wallet providers can charge high and variable fees, of which consumers may not be made aware.[17] There is no agreed standard on the assessment of the value of cryptoassets under current accounting frameworks, in relation to obtaining audit evidence for cryptoassets and judging the reasonableness of valuations.[18]

Finally, the market immaturity risks may be intensified by vicious market competition. As Fintech companies often race to launch products ahead of their peers, their trial-and-error mode of innovation may push immature products to the market. It has been suggested that network effects tend to amplify risks, which cause substantial financial losses and result in operational risks and compliance issues.[19]

2.2.2 Market Abuse Risks

The novel nature of the cryptoasset market means that market abuses may arise with relative ease, such as the dissemination of misleading information and price manipulation.[20] Indeed, compared to traditional financial markets, there is a heightened risk of market abuse in relation to cryptoassets.

Disclosure problems have already been well documented in the traditional financial markets. For instance, the Lehman Minibond Saga in Hong Kong in 2008 has made it clear that where the disclosure of product information is ineffective, investors are likely to be exposed to little or no protection and the available remedies may be limited.[21] For cryptoassets, disclosure

[13] The IOSCO is an association of securities regulators, which acts as the global standard-setter for worldwide securities regulation.
[14] Azgad-Tromer (2018), p 104.
[15] Bitcoin.com (2018).
[16] Sonderegger (2015), p 186.
[17] HM Treasury (2018), p 37.
[18] Hong Kong Securities and Futures Commission (2018), p 2.
[19] HKEX (2018), p 19.
[20] HM Treasury (2018), p 37.
[21] Securities and Futures Commission (2008), pp 2, 16, 35, 37. The Lehman Minibonds were an unlisted investment product which led to significant investor losses in 2008. Investigations by the SFC showed that although disclosure on the marketing leaflet complied with the law, the intermediaries adopted improper selling practices and were given inadequate financial advice, which resulted in investors purchasing unsuitable products

issues can be aggravated by their novelty and complexity. In the context of ICOs, for instance, due to the lack of standardisation of 'white paper' documents which accompany ICOs, there are numerous cases of inadequate disclosure, and even false or misleading disclosure.[22] Even if there are warnings regarding the risks of cryptoassets, it can be very difficult for investors to truly understand them, let alone to accurately factor them into the pricing process. A 2018 research has found that almost 25% of ICOs are fraudulent, and 46% of ICOs issued in 2017 had failed by end of 2018.[23]

Further, without having access to adequate information about the products and their risk profiles, investors are prone to purchasing unsuitable products which do not match their risk profile and needs or those which may be of poor value, due to unclear price formation and pricing practices, high fees and the difficulty in assessing their fundamental value.[24] For the secondary trading of cryptoassets on exchanges, there are also potential conflicts of interest, as cryptoasset exchanges may act both as agents for their customers and as principal dealers trading their own book.

2.2.3 Security Risks

Security risks refer to the risks of loss or theft during a security breach or technological failure, fraud or unauthorised use.[25] Losses suffered by cryptoasset holders may result from disruptions to cryptoasset systems.[26] Investors may also suffer from errors caused by cryptoasset intermediaries,[27] as transactions of cryptoassets are often irreversible, and there is no third party to absorb risks due to the decentralised nature of cryptoassets.[28] A new form of cybercrime known as 'cryptojacking' has also emerged, which involves the hijacking of customers' computer processing power to mine cryptoassets without their explicit knowledge and permission.[29]

Not surprisingly, security risks are not limited to retail investors. Owing to the ineffective security measures adopted by exchanges and wallet providers in safeguarding consumer assets, cryptoasset intermediaries are common targets for cybercrimes such as hacking and theft.[30] A further concern of regulators regards the safe custody of cryptoassets by exchanges, particularly in light of cybersecurity breaches and hacks.[31] A number of major platform hacks have occurred in Japan, with 850,000 Bitcoins stolen from Mt Gox in 2014,[32] USD 540 million from Coincheck in January 2018, and USD 60 million from Zaif in September 2018.[33] Similar incidents have been reported in Canada, with USD 654,000 worth of cryptoassets stolen from Flexcoin in 2014.[34] Due to the international nature and the variable traceability of cryptoassets, it is often difficult for law enforcement agencies to track

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that were overly complex and risky. This catastrophe exposed the weaknesses of the disclosure-based regulatory model, particularly for more complex and opaque financial products.

[22] Azgad-Tromer (2018), p 109; Zetzsche et al. (2017), p 15.

[23] Bank for International Settlements (2018), p 107.

[24] Gilson and Kraakman (1984), p 552.

[25] The Clearing House and Independent Community Bankers of America (2014), pp 4-5.

[26] International Monetary Fund (2016), p 28.

[27] Ibid.

[28] Ibid., p 29.

[29] National Cyber Security Centre (2018), p 25.

[30] Brookes (2018), p 84.

[31] Hong Kong Securities and Futures Commission (2018), p 2.

[32] Wieczner (2018), p 70.

[33] Das (2018).

[34] Ponsford (2015), p 30.

stolen assets and take action against perpetrators, which render resultant consumer losses irrecoverable. The need for an effective regulation of intermediaries is evident.

2.2.4 Financial Crime Risks

Cryptoassets have a high level of anonymity as owners are 'not identified by name on the ledger, but [only] letters and numbers representing their public [cryptoasset] address'.[35] Anonymity-based abuse risks then arise as cryptoassets may be used in facilitating unlawful activities, which are very difficult to be detected and traced. In 2017, the UK National Risk Assessment reported on the role which cryptoassets can play in laundering proceeds of crimes conducted through computer technology, as a method of payment between criminals and the purchase of illicit goods or services. Increasing signs of cryptoassets being used as a means to handle illicit proceeds from offline crime have also been observed since 2017.[36] This rise of illicit use in money laundering is not only linked to the inherent anonymity of users and the privacy features of some cryptoassets, but also their growing accessibility.[37] A lack of effective regulation can only exacerbate these anti-money laundering (AML) concerns. Infamous examples include the 'Silk Road' digital black market which made use of the anonymity and high-tech feature of Bitcoin to trade illegal drugs on its website, and the online criminal marketplace AlphaBay which traded illegal drugs, hacking tools and firearms.

At the international level, cryptoassets have furthermore raised terrorist financing concerns due to their accessibility, global reach and anonymous nature.[38] There have been cases in which terrorist groups have used social media to solicit donations and posted bitcoin addresses for payment, such as a group that claimed to be supporting Syrian fighters.[39] These raise concerns with regard to combating the financing of terrorism (CFT) and the call for effective regulation.

2.2.5 Financial Stability Risks

The Financial Stability Board (FSB) has assessed the financial stability implications of the use of cryptoassets, adopting the view that cryptoassets did not pose a material risk to global financial stability in October 2018.[40] However, owing to rapid market evolution, risks to financial stability may emerge in the future and regulators must remain vigilant to potential 'transmission channels', through which risks from the cryptoasset market may leak into the formal financial system.[41] These include the use of cryptoassets in payment and settlement, the exposure of systemically important financial institutions to cryptoassets, and links between cryptoasset markets and systemically important markets.[42] Fintech companies which have achieved a 'critical mass' will become systemically important institutions, and may threaten financial stability if their inherent business model is not sufficiently robust. It would therefore be sensible for regulators to plan ahead and design their regulatory approaches, in such a way

[35] Marian (2015), p 56.
[36] HM Treasury (2017), p 40.
[37] Brookes (2018), p 82; Corbet et al. (2019), p 193.
[38] Twomey (2013), p 72.
[39] Tritten (2018).
[40] Financial Stability Board (2018b), p 14. The FSB is an international body which monitors and makes recommendations for the global financial system. It should be noted that this view may change in light of the rapid developments of technology in this field.
[41] Ibid., p 8.
[42] HM Treasury (2018), p 38.

which allows for effective oversight of the transmission channels and the mitigation of any potential risks to financial stability as the market grows.[43]

2.3 Benefits of Cryptoassets

While there are various risks associated with cryptoassets, they have important benefits. The UK Cryptoassets Taskforce is of the view that although there is so far limited evidence of the current generation of cryptoassets delivering benefits, the potential for benefits to materialise in the future has been recognised.[44] The International Monetary Fund (IMF), while acknowledging the risks, has expressed a similarly favourable stance towards cryptoassets regarding their potential.[45] A closer look at these potential benefits sheds light on the embracive, albeit cautious stance adopted by regulators.

2.3.1 Efficient Financial Transactions

Cryptoassets enable efficient and inexpensive financial transactions through the reduction of a third party such as a trusted 'bank, credit card company, escrow agent, or recording agency' which is required in validating traditional transactions, and transaction costs are substantially reduced.[46] This reduction of 'costs or charges in connection with the currency exchange rates and other governmental barriers'[47] is particularly advantageous to smaller businesses and 'nations without developed financial sectors'.[48] The peer-to-peer exchange platform offered by cryptoassets also fosters greater speed and efficiency in making payments, in particular for cross-border transactions.[49] It is commonplace for retail cross-border payments to be completed 'instantly and securely' and not requiring 'third party approval or support',[50] whereas the same transaction would require one to two days under a traditional payment system.

In addition, cryptoasset transactions are securely and permanently recorded on a ledger which improves the transparency and traceability of transactions, thanks to the underlying DLT.[51] These features have far-reaching implications for the financial sector and beyond, with potential applications capable of benefiting record-intensive industries such as the healthcare and property sectors. A noteworthy idea is the process of 'tokenisation', of representing existing assets as tokens on DLT platforms to improve processes around trading in and the transfer of the assets.[52] In this way, cryptoassets can be used as a means to boost efficiency in traditional transactions.

2.3.2 Diversification of Financial Landscapes

As a fintech innovation, cryptoassets have the potential to widen access to new and different types of financial products and services, thereby creating new fundraising and investment opportunities. In particular, cryptoasset benefits are most likely to materialise through their use as a capital raising tool in ICOs.[53] Not only does this facilitate a more streamlined and cost-

[43] Zetzsche et al. (2017), p 17.
[44] HM Treasury (2018), p 31.
[45] International Monetary Fund (2018), p 26.
[46] Marian (2015), p 55.
[47] Sonderegger (2015), p 183.
[48] Ibid., p 177.
[49] International Monetary Fund (2016), p 5.
[50] Ametrano (2016), p 10.
[51] Anderson (2018), p 9.
[52] HM Treasury (2018), p 13.
[53] Ibid., p 32.

efficient capital raising process, ICOs also support innovation and incentivise improvements in traditional capital raising processes by introducing more competition, which ultimately results in improvements to the market as a whole.[54] The global accessibility of ICOs may also unlock new sources of capital, particularly for high-risk, early-stage projects which would likely struggle to raise funds under the traditional fundraising model.

Moreover, cryptoassets will not completely eliminate the need for trusted intermediaries such as brokers and bankers, but their use will lead to a diversification of the financial landscape with a better balance between centralised and decentralised service providers. With more diversification, this would create a financial ecosystem that is more efficient and resistant to threats. Importantly, this supports the idea of incorporating cryptoassets into existing financial systems, which has emerged as a common theme in cryptoasset regulation.[55]

2.4 Implications for a Regulatory Approach

As a coin has two sides, cryptoassets have both risks and benefits, and the goal of the regulation is to maximise the benefits while controlling the risks. The challenges in designing a suitable regulatory framework are closely linked to the risk-benefit profile of cryptoassets. It is important to note that while most potential benefits are to be harvested by the market and its users, it is the investors who bear the most imminent risks. Indeed, concerns about market integrity arise due to a combination of factors such as market immaturity, market abuse and security risks, which may affect the effective operation of the market and damage user confidence.[56]

Hence, investor protection should be given sufficient attention in the regulation. Yet, the novelty and complexity of cryptoassets have posed difficulties for their regulation under traditional frameworks, and there is a great need for finding a new way to effectively regulate cryptoassets.

3 The Regulatory Regime in Hong Kong: Recent Developments

3.1 Overview

In Hong Kong, cryptoassets do not qualify as money and are not regulated as legal tender by the Hong Kong Monetary Authority (HKMA).[57] Prior to the introduction of the 2018 Statement on Regulatory Framework, cryptoassets had generally been regulated by the SFC under existing securities laws.

On 5 September 2017, the SFC issued a statement to the effect that under the Securities and Futures Ordinance (Cap 571) (SFO) cryptoassets may constitute a ‘security’ based on their terms and features, and parties engaging in a ‘regulated activity’ associated with securities must be licensed or registered with the SFC, so long as such activities target the Hong Kong public.[58] ICOs and the secondary trading of cryptoassets on exchanges must similarly comply with registration or authorisation requirements.[59]

[54] European Securities and Markets Authority (2018), p 9, para. 30.
[55] Demertzis and Wolff (2018), p 2.
[56] European Banking Authority (2019), p 17.
[57] Chan (2018).
[58] Securities and Futures Commission (2017c).
[59] Registration requirements refer to the prospectus regime for securities such as shares under Parts II and XII of the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap 32) (CWUMPO), while the authorisation requirement under Part IV of the SFO means SFC authorization for collective investment scheme products such as funds.

On 11 December 2017, regulation was extended to cover derivatives of cryptoassets falling under the definition of 'securities' and 'futures contracts' (SF cryptoassets).[60] It was made clear that while Bitcoin itself is not considered a 'security', Bitcoin futures contracts are regulated under the SFO as 'futures contracts', and intermediaries must possess a Type 2 (dealing in futures contracts) licence and observe the relevant 'suitability' and 'conduct' requirements. Importantly, the licensing requirements also apply to funds investing in Bitcoin futures contracts and other forms of cryptoasset-related investment products which are regarded as 'securities', and cover marketing, managing and advising activities.

Furthermore, the extension of notification requirements to all cryptoassets on 1 June 2018,[61] which required intermediaries to notify the SFC of any changes in their cryptoasset-related trading and asset management activities, highlighted the SFC's growing concern with regard to the effectiveness of intermediaries in discharging their gatekeeping function, and the lack of regulation over cryptoassets which are not regarded as 'securities' or 'futures contracts' (non-SF cryptoassets).

In sum, cryptoassets are broadly divided into SF cryptoassets and non-SF cryptoassets in Hong Kong, and it is hard to regulate both of them via a piecemeal approach under the traditional framework. Hence, as noted earlier, the SFC issued the 2018 Statement on Regulatory Framework (with two appendices), reflecting a more holistic approach to the regulation of cryptoassets. Two points are worth noting here. First, the new regime is still based largely on the existing securities regulation, and not on a stand-alone, specific regime for cryptoassets. Mr Ashley Alder, the CEO of the SFC, has stated that it is too early at this point to introduce legislation that is specific to cryptoassets, with international consensus on regulatory standards yet to crystallise.[62] Second, under the new regime, investments in cryptoasset funds are largely restricted to only professional investors, who are traditionally better positioned to assess and bear risks from investment in sophisticated and risky financial products.

This reflects the cautious and gradualist approach that the SFC takes towards cryptoassets, with an emphasis on risk control and investor protection. More specifically, to give technical effect to this regulatory principle, the new regime provides an elevated regulatory standard for managers and distributors of funds investing in cryptoassets, and opens up the SFC Regulatory Sandbox to operators of cryptoasset trading platforms. These key elements will be discussed below in turn.

3.2 Portfolio Managers

The new regime imposes new standards on managers of funds investing in non-SF cryptoassets. First, a Type 1 licence (dealing in securities) is required for firms *managing* and *distributing* funds solely investing in non-SF cryptoassets. Second, firms already licensed for Type 9 regulated activity (asset management) may manage portfolios investing solely or partially (subject to the *de minimis* requirement)[63] in non-SF cryptoassets. It should be noted that while the portfolio managers of funds solely investing in non-SF cryptoassets (where the managers do not also distribute the funds) and those of portfolios with less than 10% GAV investment in

[60] Securities and Futures Commission (2017b).

[61] Securities and Futures Commissions (2018b). Under Section 4 and Schedule 3 to the Securities and Futures (Licensing and Registration) (Information) Rules (Cap 571S), intermediaries are required to notify the SFC of any 'significant changes' in the nature of their business and the types of service they provide. Importantly, the notification requirements cover all cryptoassets, regardless of whether they qualify as securities or not.

[62] Adler (2018), p 7.

[63] Hong Kong Securities and Futures Commission (2018), p 4. The *de minimis* requirement provides that only portfolio managers who intend to invest 10% or more of the gross asset value (GAV) of their portfolios in cryptoassets will be subject to the SFC's oversight in this way.

non-SF cryptoassets are not subject to the requirements in this section, such funds are regulated through their distribution under the requirements to be discussed in the next section, which apply to all cryptoasset funds.

The management activities of the above two types of funds investing in non-SF cryptoassets will be overseen by the SFC through the imposition of licensing conditions, subject to the same standard as that currently applied to portfolio managers investing in traditional SF products (Existing Requirements).[64] This is regardless of whether the portfolios invest solely or partially in cryptoassets, and whether the cryptoassets concerned are SF or non-SF.[65]

To provide additional clarity, the SFC has provided a set of standard terms and conditions (Terms and Conditions), which outlines the essential terms of the Existing Requirements.[66] The Terms and Conditions will be applied in a principles-based manner, with the possibility of minor variations and elaborations being made, so as to adapt to the business model of the particular cryptoasset portfolio manager.[67]

Third, licence applicants and licensed firms are required to inform the SFC if they are presently managing or planning to manage portfolios investing in cryptoassets. This is not subject to the *de minimis* requirement and covers all firms with cryptoasset portfolios. The SFC will consider the firm's business activities, and provide the firm with a set of proposed Terms and Conditions which will be imposed as part of the licensing conditions. Non-compliance with licensing conditions will likely be considered as misconduct under the SFO, which may affect the intermediary's fitness and properness, or even attract regulatory action. Licence applicants that do not agree to the Terms and Conditions will have their application rejected, and licensed firms will be required to unwind their relevant cryptoasset portfolios within a reasonable period of time.[68]

3.3 Fund Distributors

The new regime also imposes new standards on the distribution of cryptoasset funds. Firms which distribute funds investing solely or partially in cryptoassets in Hong Kong will require a licence or registration for Type 1 regulated activity (dealing in securities). This is regardless of

[64] Ibid. The Existing Requirements refer to existing requirements under the SFO, the Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission (Code of Conduct), the Fund Manager Code of Conduct, and guidelines, circulars and frequently asked questions issued by the SFC.

[65] Ibid.

[66] In essence, the Terms and Conditions cover:

(i) *The type of investors and disclosure to investors*: portfolio managers should ensure that only 'professional investors' are permitted to invest into cryptoasset portfolios (subject to the *de minimis* requirement), and ensure risk disclosure to investors and distributors;

(ii) *Safeguarding of assets*: portfolio managers should select appropriate custodial arrangements by assessing the accessibility and security of stored assets. A duty of care, skill and diligence is imposed. Additional requirements covering insurance and disclosure apply to cases of self-custody;

(iii) *Portfolio valuation*: with no generally accepted valuation principles for cryptoassets, managers should select reasonably appropriate valuation methodologies in the best interests of investors;

(iv) *Risk management*: managers should set appropriate limits for each product, market and counterparty, conduct periodic stress testing, and assess the reliability and integrity of cryptoasset exchanges;

(v) *Auditors*: managers should appoint an independent auditor with capability in cryptoassets to audit the financial statements of funds; and

(vi) *Liquid capital*: different levels of liquid capital requirement are imposed on managers depending on whether they hold client assets.

Hong Kong Securities and Futures Commission (2018), Appendix 1 (Regulatory Standards for Licensed Corporations Managing Virtual Asset Portfolios), pp 3-6.

[67] Ibid., p 5.

[68] Ibid.

whether the underlying cryptoassets are SF or non-SF. The distribution of these funds will be overseen by the SFC and the standard is that of the Existing Requirements.[69] Hence, the distribution requirements serve as a catch-all measure to ensure protection for funds which are not regulated through their portfolio management as noted earlier.

In addition, on 1 November 2018 the SFC issued, together with the 2018 Statement on Regulatory Framework, the Circular to Intermediaries: Distribution of Virtual Asset Funds (2018 Circular on Fund Distribution).[70] Under this circular, intermediaries which distribute cryptoasset funds are required to ensure compliance with paragraph 5.2 of the Code of Conduct as supplemented by the suitability obligations.[71] In effect, intermediaries must ensure that the suitability of the recommendation or solicitation for clients is reasonable in all the circumstances, having regard to information about the client through due diligence.[72]

Furthermore, intermediaries are required to follow a set of additional requirements if they distribute cryptoasset funds that are not authorised by the SFC (subject to the *de minimis* requirement, except where the intermediary has been advised that the fund manager intends to shortly reduce the fund's investment in cryptoassets to below 10% of the fund's GAV). These additional requirements encompass:[73]

(i) *Selling restrictions and concentration assessments*: distribution is limited to professional investors. Except for institutional professional investors, distributors should assess client knowledge in cryptoassets, act in their best interests, and ensure that their aggregate investment in cryptoassets is reasonable;
(ii) *Due diligence on cryptoasset funds that are not authorised*: distributors should conduct due diligence on cryptoasset funds, their fund managers, and counterparties such as custodians; and
(iii) *Information for clients*: information disclosure and warning statements regarding the risks of cryptoassets.

3.4 Platform Operators

Compared to distributors and managers of cryptoasset funds, platform operators present far greater difficulties for the SFC, due to their various business models and the inherent characteristics of the underlying technology for cryptoassets. The SFC has shown determination and a willingness to explore ways of regulating platform operators.

To begin with, the SFC looks at licensing as a possible regulatory approach. The 2018 Statement on Regulatory Framework states that '[i]f the SFC is minded to license any virtual asset trading platforms, it is proposed that the standards of conduct regulation for virtual asset trading platform operators should be comparable to those applicable to existing licensed providers of automated trading services'.[74] To facilitate the licensing idea, the new regime opens up the SFC Regulatory Sandbox mechanism previously set up on 29 September 2017 to cryptoasset trading platform operators.[75] The sandbox adopts an opt-in approach, in the sense

[69] Ibid.
[70] Securities and Futures Commission (2018a). The statement contains further regulations that cryptoasset fund distributors are subject to.
[71] Ibid., p 1. The suitability obligations for fund distribution refer to the Frequently Asked Questions on Compliance with Suitability Obligations by Licensed or Registered Persons, and the Frequently Asked Questions on Triggering of Suitability Obligations.
[72] Ibid., p 1.
[73] Ibid., p 2.
[74] Hong Kong Securities and Futures Commission (2018), p 6. Automated trading services are Type 7 regulated activities under the SFO.
[75] Securities and Futures Commission (2017a).

that platform operators have the freedom to choose to participate in the sandbox. Through joining the sandbox, platform operators may 'set themselves apart from other platforms' by taking a head start in obtaining a licence.[76]

The sandbox regulatory experimentation is split into two stages. First in the initial exploratory stage, the SFC does not grant participating platforms a licence, but instead observes their live operations under the SFC's expected regulatory standards, and considers the effectiveness of the proposed regulatory requirements in addressing risks and providing investor protection. The main purpose at this stage is for the SFC to consider whether cryptoasset trading platforms are appropriate to be regulated by the SFC. Importantly, participation in the sandbox in the initial stage is to be kept confidential. In the case that the SFC positively determines that cryptoasset platforms are suitable for regulation, it would consider granting a licence to qualified operators, which imposes licensing conditions and moves the operator to the second stage of the sandbox.[77] In the second stage, the operator will be subject to more frequent reporting, monitoring and reviews by the SFC, with the aim of enhancing internal controls and addressing the SFC's concerns associated with the conduct of its business. After a minimum 12-month period, the operator may apply to the SFC for removal or variation of some licensing conditions and exit the sandbox. The licensing status of the operator will be made public at this point. The standards of conduct regulation to be applied to platform operators will likely be comparable to the existing standards for automated trading services.[78]

It should be noted that there are entry requirements for platform operators intending to participate in the sandbox.[79] First, at this stage, the sandbox will only be open to those platforms that provide trading, clearing and settlement services for cryptoassets and have control over investors' assets. Other platforms which only provide a direct peer-to-peer marketplace for transactions by investors who retain control over their own assets, or trade cryptoassets for clients but do not provide automated trading services themselves, are not invited to participate in the sandbox. Second, they must operate an online trading platform in Hong Kong, and offer trading of at least one cryptoasset categorised as 'securities' on its platform.

After the completion of the first stage of 'exploratory analysis', the SFC announced its determination to regulate platform operators on 6 November 2019, when it published the 2019 Position Paper on Regulation of Virtual Asset Trading Platforms (2019 Position Paper).[80] The SFC concluded that the same regulatory standards for licensed automated trading service (ATS) providers and securities brokers can be applied to regulate cryptoasset trading platforms, and it now accepts licensing applications from qualified platform operators.[81] Applicants are expected to comply with all relevant regulatory requirements, including the Terms and Conditions outlined in the Position Paper.[82] Upon becoming licensed, a platform operator will be moved

[76] Ibid., p 6.

[77] Ibid., p 7. The licensing conditions include five mandatory 'core principles', and a list of 'proposed terms and conditions' which may be modified based on discussions between the SFC and the platform operator. Hong Kong Securities and Futures Commission (2018), Appendix 2 (Conceptual Framework for the Potential Regulation of Virtual Asset Trading Platform Operators), pp 3-5.

[78] Ibid., p 6.

[79] Hong Kong Securities and Futures Commission (2018), Appendix 2 (Conceptual Framework for the Potential Regulation of Virtual Asset Trading Platform Operators), p 2.

[80] Hong Kong Securities and Futures Commission (2019).

[81] Ibid., pp 6,7. Cryptoasset platform operators which operate a centralised online trading platform and offer trading of at least one security token on its platform are regulated by the SFC, and require a licence for Type 1 (dealing in securities) and Type 7 (providing ATS) regulated activities.

[82] Ibid., pp 8,9. In essence, the Terms and Conditions cover:

(i) *Safe custody of assets*: platform operators should hold client assets on trust, predominantly in cold wallets, have in place procedures for handling cryptoasset transfers, procure insurance, and safely manage private keys for digitally signing transactions;

to the second stage of the SFC Regulatory Sandbox, where its internal controls and risk management are further improved under the SFC's close supervision.[83]

4 Evaluating the Hong Kong Experience: Strengths and Merits

As discussed above, the new regime in Hong Kong represents great efforts made to regulate cryptoassets, addressing the lacunas that existed in the preceding framework. Through a comparison with four major Fintech jurisdictions, including Mainland China, the US, the UK, and Singapore, this article will conduct a multi-faceted examination of the new Hong Kong regime. The inclusion of Mainland China is for the apparent reason that there is an increasingly strong economic integration between it and Hong Kong; the US and the UK are included owing to their leading roles in the regulation of cryptoassets, and Singapore is Hong Kong's long-time arch-rival in becoming the top financial centre in Asia and beyond.

4.1 Regulation Instead of Prohibition

To start with, the choice of regulation over prohibition is a sensible one, and the new SFC regime should be a welcoming move for the Hong Kong cryptoasset market. While the majority of overseas jurisdictions have embraced cryptoasset business activities and put forth regulatory responses, jurisdictions such as Mainland China have gone the opposite way in banning cryptoassets altogether.[84]

Having defined cryptoassets to be without legal status as fiat currency, Mainland China has all along adopted a considerably cautious and sceptical approach.[85] The curb on cryptoassets was intensified when requirements for the monitoring of suspicious and illegal

(ii) *Know-your-client (KYC):* platform operators should comply with KYC requirements, ensure clients have sufficient knowledge of cryptoassets and associated risks before providing trading services or otherwise provide training, and assess concentration risks by setting trading or position limits;
(iii) *AML and CFT*: platform operators should implement adequate AML/CFT systems, regularly review and enhance them based on SFC guidance and FATF recommendations, for example by deploying cryptoasset tracking tools;
(iv) *Prevention of market manipulative and abusive activities*: platform operators should implement written policies and controls for the proper surveillance of activities, take immediate steps to restrict or suspend trading upon discovery of manipulative or abusive activities;
(v) *Accounting and auditing*: platform operators should select and appoint auditors with experience and track record in virtual asset related businesses;
(vi) *Risk management*: platform operators should have a risk management framework to identify, measure, monitor and manage risks, and require customers to pre-fund their accounts;
(vii) *Conflicts of interest*: platform operators should not engage in proprietary trading or market-making activities except at arm's length via an independent external party, and regulate employees' dealings; and
(viii) *Virtual assets for trading*: platform operators should set up a function to establish, implement and enforce the rules on cryptoasset issuers, the criteria for cryptoasset inclusion, and the criteria for halting, suspending and withdrawing cryptoassets from trading, and perform due diligence.

Hong Kong Securities and Futures Commission (2019), Appendix 1 (Licensing Conditions and Terms and Conditions for Virtual Asset Trading Platform Operators).

[83] Hong Kong Securities and Futures Commission (2019), p 15.

[84] South Korea also imposes an outright ban. Carlson and Selin (2018), p 23.

[85] *Guanyu Fangfan Bitebi Fengxian de Tongzhi* (关于防范比特币风险的通知) [Notice on Precautions Against the Risks of Bitcoins] (promulgated on 5 December 2013 by the People's Bank of China and others). In December 2013, the PBOC issued the Notice on Precautions Against the Risks of Bitcoins, which defines Bitcoin as a 'specialised virtual commodity' without legal status as fiat currency. Financial institutions are prohibited from engaging in Bitcoin-related business activities and must observe Bitcoin-related AML obligations.

fundraising activities were heightened in September 2016,[86] and investigative powers were enhanced in August 2017.[87] On 2 September 2017, ICOs were declared to be a form of 'unapproved illegal public financing', with rectification work and assessments to be conducted on ICOs on a case-by-case basis, and all new ICOs must be called off.[88] This quickly escalated two days later on 4 September 2017, when the Announcement on Preventing the Financing Risks of ICOs was made by the People's Bank of China (PBOC), effectively amounting to an absolute ban which outlawed all fundraising activities through ICOs.[89] On 17 January 2018, the PBOC followed up by requiring each of its units to conduct self-examination to ensure that no payment services are being provided for cryptoasset transactions.[90]

Compared to the outright ban approach as adopted in Mainland China, the choice of regulation is more suitable for Hong Kong. First and foremost, as discussed before, cryptoassets have important benefits to offer and may be one of the most important financial innovations for the future. Indeed, it has been suggested that even China's ban is likely to be only temporary, owing to the fact that economic development is a major strategy of the Mainland Chinese government.[91]

Second, China's particular concern with cryptoassets inevitably relates to its less well-developed market regulations and infrastructure as compared to other more economically advanced jurisdictions. This is partly attributable to the late opening up of its capital market and its generally less sophisticated investors. The situation is quite different in Hong Kong, with its markets having been developed on par with international standards. Regulation is therefore a sufficient and more appropriate means of addressing cryptoasset-related concerns.

Finally, if Hong Kong were to maintain and consolidate its status as a global financial centre, cryptoassets are certainly something that it cannot afford to miss. In fact, the ban in Mainland China has led to substantial business opportunities being diverted to the Hong Kong cryptoasset market. Following the ban, many Mainland Chinese issuers have flocked to Hong Kong and Singapore to seek ICO opportunities.[92] Singapore, the arch-rival of Hong Kong in the area of financial services, already ranks as the top ICO hub in Asia.[93] The key for Hong Kong to win this race is to face up to the risks of cryptoassets and explore ways to establish a robust regulatory regime.[94]

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[86] *Guanyu Jinyibu Jiaqiang Dui Shexian Feifa Jizi Zijin Jiaoyi Jiance Yujing Gongzuo de Zhidao Yijian* (Yinfa 2016 No. 201) (关于进一步加强对涉嫌非法集资资金交易监测预警工作的指导意见 (银发 2016 201 号)) [Further Strengthening the Monitoring and Early Warning of Suspected Illegal Raising Fund Transactions] (promulgated on 9 September 2016 by the People's Bank of China).

[87] *Chuzhi Feifa Jizi Tiaoli* (Zhengqiu Yijiangao) (处置非法集资条例(征求意见稿)) [Exposure Draft of a Regulation to Handle Illegal Fundraising Released] (promulgated on 24 August 2017 by the China Banking Regulatory Commission).

[88] *Guanyu Dui Daibi Faxing Rongzi Kaizhan Qingli Zhengdun Gongzuo de Tongzhi* (关于对代币发行融资开展清理整顿工作的通知) [Notification Concerning the Undertaking of Cleaning-up and Rectification Work on ICOs (Notification No. 99)] (promulgated on 2 September 2017 by the Office of the Leading Group for the Special Campaign against Internet Financial Risks).

[89] *Guanyu Fangfan Daibi Faxing Rongzi Fengxian de Gonggao* (关于防范代币发行融资风险的公告) [Announcement on Preventing the Financing Risks of Initial Coin Offerings] (promulgated on 4 September 2017 by the People's Bank of China and other departments).

[90] *Guanyu Kaizhan Wei Feifa Xuni Huobi Jiaoyi Tigong Zhifu Fuwu Zicha Zhenggai Gongzuo de Tongzhi* (Yinguan Zhifu 2018 No. 11) (关于开展为非法虚拟货币交易提供支付服务自查整改工作的通知 (银管支付 (2018) 11 号) [Notification on Self-inspection and Rectification Work on the Provision of Payment Services for Illegal Virtual Currency Transactions] (promulgated on 17 January 2018 by the People's Bank of China).

[91] Deng et al. (2018), pp 466, 493.

[92] Liu (2018).

[93] Singapore Business Review (2018), p 1.

[94] Yiu and Lee (2018).

4.2 Enhanced Investor Protection

4.2.1 Lacunas in the Previous Regulatory Regime

Prior to 1 November 2018, it was evident that significant regulatory gaps existed in the preceding framework. While the 5 September 2017 statement and the 11 December 2017 circular set out the regulatory standard for SF cryptoassets and their derivative products, non-SF cryptoassets remained largely unregulated and were only subject to the notification requirements under the 1 June 2018 circular. Despite active enforcement against non-compliant intermediaries,[95] the SFC has acknowledged its potential lack of jurisdiction over cryptoasset exchanges and ICO issuers that have no nexus with Hong Kong, or provide trading services for non-SF cryptoassets. Investors have also been warned not to invest, unless they are 'prepared for a significant loss'.[96]

In addition, investors have been exposed to cryptoassets through their investment in funds.[97] Without protection by the SFO, non-SF cryptoassets are traded on unregulated exchanges and funds investing in non-SF cryptoassets are managed by unregulated portfolio managers. In addition to the lack of scrutiny over their fitness, properness, financial soundness and competence, there is no regulation to ensure the safe custody of assets and market fairness, both of which are items of particular concern in the context of cryptoassets.[98] This weakness is evinced by the numerous investor complaints received by the SFC regarding significant losses arising from the misappropriation of assets, market manipulations and technical breakdowns of cryptoasset exchanges.[99] Upon suffering a loss, investors are also likely to have little or no recourse due to the limited regulatory scope and extraterritorial nature of exchanges.

4.2.2 Improved Investor Protection

The new regime provides comprehensive regulatory coverage for all types of cryptoassets, addressing the issue of regulatory gaps and regulatory arbitrage which existed in the previous framework. To start with, investor protection has been significantly enhanced through the imposition of regulations on non-SF cryptoassets, effectively closing much of the regulatory gaps under the previous framework, particularly in relation to funds. Under the new regime, regulation is extended to cover the management and distribution activities of non-SF cryptoasset funds, applying standards equal to those applied to traditional funds. Not only does the new regime result in enhanced protection for investors, it furthermore provides a pathway through which cryptoasset funds can be effectively incorporated into the existing financial regulatory framework.

As all types of cryptoassets are subject to the same regulatory standard, the new regime gets around the previous difficulty with categorising cryptoassets under the SF-based taxonomy, and the associated problem of regulatory arbitrage where certain SF cryptoassets may opportunistically morph into non-SF ones to avoid regulation. In particular, a major challenge faced by global regulators has been the characterisation of cryptoassets under their applicable laws and regulations.[100] As the Financial Stability Board (FSB) critically points out, whether a

[95] Securities and Futures Commission (2018c).
[96] Securities and Futures Commission (2018d).
[97] Adler (2018), p 5.
[98] Hong Kong Securities and Futures Commission (2018), p 1.
[99] Girasa (2018), p 217.
[100] Barsan (2017), p 54.

cryptoasset is a security, commodity or some other financial product is a threshold question in financial regulation.[101]

As a starting point, 'security' is defined in the SFO to include, *inter alia*, shares, debentures, and interests in a collective investment scheme (CIS).[102] The test for determining whether a particular cryptoasset or derivative product fits within the definition of a 'security' has also been set out in the landmark US Supreme Court case of *SEC v. W. J. Howey Co.*[103] to be 'an investment of money in a common enterprise with an expectation of profits solely from the efforts of others'. This is however not a straightforward question at all, particularly when cryptoassets are designed to be used in multiple economic activities. A representative illustration is that cryptoassets are regulated in the US both as securities and as commodities, with much murkiness still remaining in this distinction. The same issue exists in the UK where it is difficult to determine whether a cryptoasset falls under a 'regulated activity' and is consequently subject to regulation.[104]

This provides room for regulatory arbitrage where the issuers deliberately design cryptoassets to avoid relevant regulation. Further, regulatory confusion may arise in cases where the nature of cryptoassets may morph over time. Under the *Howey* test, a cryptoasset can be considered to have transformed from a security to a commodity when its value is no longer based primarily on the efforts of others, but on its own intrinsic value. For instance, the US Securities and Exchange Commission (SEC) stated in June 2018 that Ethereum is not a security, as it started as a security offering upon its ICO, but subsequently morphed into a non-security due to its decentralised nature and establishment of clear utility.[105] In sum, such a cryptoasset will be regulated as a security by the SEC in its earlier stages, but as a commodity by the Commodity Futures Trading Commission (CFTC) subsequently.

In contrast, through imposing the same standard on both SF and non-SF cryptoassets, the new regime in Hong Kong ensures that all cryptoassets are regulated, regardless of whether they qualify as securities or not. This helps to avoid the difficult, and somehow artificial, task of categorising a cryptoasset, and to eliminate the problems of regulatory gaps and regulatory arbitrage. Investor protection is thus improved as a result of the comprehensiveness of the new regime in Hong Kong.

4.3 Innovative Regulatory Sandbox

Although the concept of a regulatory sandbox is nothing new, the two-staged sandbox for cryptoasset platform operators in Hong Kong is a first of its kind as an attempt to develop a robust regulatory framework for cryptoasset exchanges. The SFC's concept is rather innovative, in the sense that instead of testing novel financial products, the sandbox is deployed to explore and fine-tune the regulatory approach for cryptoasset exchanges itself. Indeed, among the jurisdictions examined in this article, while the UK and Singapore have applied regulatory sandboxes in cryptoasset regulation, their objectives are to test innovative financial products. Further, the SFC sandbox is exclusively applied to cryptoasset exchanges, while the UK and Singapore ones are broadly applied to fintech innovations.

A direct comparison reveals a number of differences in features between the UK, Singapore and Hong Kong sandboxes. First, the SFC sandbox more closely resembles the

[101] Financial Stability Board (2018a), p 5.
[102] Securities and Futures Ordinance, Sch. 1, Pt. 1, Sec. 1.
[103] *SEC v. W. J. Howey Co.*, 328 US 293 (1946), p 293.
[104] In the UK, cryptoasset-related activities are only subject to regulation if they are considered to be 'regulated activities' under the Financial Services and Markets Act 2000 (Regulated Activities) Order (RAO) and the Payment Services Regulations 2017. Bailey (2018), p 1.
[105] Securities and Exchange Commission (2018).

Singaporean counterpart in adopting a more *ad hoc* approach and accepts applications on a rolling basis; while the UK conducts testing in prescribed cohorts with predefined milestones. Second, the UK sandbox has a broader range of supportive mechanisms available, such as the possibility to waive certain FCA rules and even issue no enforcement action letters; in contrast the SFC and Singaporean sandboxes provide support mainly by relaxing certain regulatory requirements. Third, while both the UK and Singapore sandboxes have set out similar methods in determining the eligibility of applicants, this has not been done in the SFC sandbox. Fourth, while both the Singaporean and SFC sandboxes categorise regulatory requirements to be imposed on participants into core and non-core requirements, the SFC core requirements are notably more restrictive, such as limiting trading to professional investors and established ICOs, and requiring investments to be prefunded.

Overall, the SFC sandbox possesses features that are comparable to its counterparts in the UK and Singapore, in imposing requirements to ensure financial soundness, proper custody of customer assets, and AML and CFT compliance. In line with its customer protection mandate, the SFC sandbox places more emphasis on maintaining a fair market and proper customer treatment.

4.4 Enhanced AML and CFT Standards

Another achievement of the new Hong Kong regime lies in the enhanced protections through elevated AML and CFT standards, which are key regulatory challenges in cryptoasset regulation. Often offering features such as user anonymity and transactions without a third-party intermediary, cryptoassets are often prone to AML and CFT concerns. For example, the strong market reaction of Bitcoin following the shutdown of Silk Road, a major marketplace for illegal drugs in October 2013, points towards the existence of large-scale illicit activities based on cryptoassets.[106] Despite having emerged only a decade ago, the cryptoasset industry has experienced rapid growth, in terms of both market size and product sophistication. It is clear that regulatory standards must catch up at a similar pace in order to remain effective.

In view of this, international standard-setting bodies have led regulatory developments on a global level. Other than the aforementioned IMF and FSB, which have monitored cryptoasset-related risks and called for heightened AML and CFT standards, the Financial Action Task Force (FATF) has similarly revised its recommendations in October 2018 to call for the regulation of cryptoasset service providers such as trading platforms, with a particular emphasis on imposing AML and CFT obligations.[107] As a member state of the FATF, it is only a matter of time before Hong Kong updates its cryptoasset regulations to reflect these enhanced standards. A similar response is seen worldwide, with Singapore enacting a new Payment Services Bill in 2019 that imposes licensing requirements and AML and CFT obligations on cryptoasset exchanges.[108]

The new Hong Kong regime answers the FATF's call for elevated AML/CFT standards, as is evident from the AML/CFT obligations imposed on platform operators in the sandbox, which cover areas such as KYC obligations, customer due diligence, and transaction monitoring.[109] Interestingly, the model terms and conditions proposed by the SFC apply in a principles-based manner, which is generally seen as an effective way to deal with complex problems. Principles-based regulation sets general objectives that are linked to risks, and devolves responsibility for achieving the objectives to the industry, allowing each intermediary

[106] Bank for International Settlements (2018), p 107.
[107] Financial Action Task Force (2018), p 15. The FATF is an intergovernmental organisation and the global standard setter for AML and CFT regulations.
[108] Ong (2019).
[109] Hong Kong Securities and Futures Commission (2018), Appendix 2, p 6.

to respond to the regulator's principles in its own internal policies.[110] This allows for less prescriptive regulation and enables the regulator to engage more freely in risk-based regulation.

5 Remaining Concerns and the Way Forward

5.1 Problems with Regulatory Scope

While the new regime represents an overall improvement in investor protection, a number of lacunas remain unaddressed. First, as noted before, the distribution of cryptoasset funds and the trading of cryptoassets on regulated exchanges are restricted to only professional investors. The combined implication of these two factors is that retail investors who are eager to access cryptoassets may end up trading directly on unregulated exchanges, which exposes them to further risk. This may be a lacuna under the new regime, which needs to be mitigated in the next stage of regulatory reform, potentially by broadening the regulatory scope on exchanges. The SFC has already hinted that the restriction to professional investors may be relaxed in the next stage of regulation.[111]

Second, certain cryptoasset exchanges remain unregulated under the new regime. If a cryptoasset exchange offers the trading of non-SF cryptoassets as opposed to SF cryptoassets, it will not be subject to the regulation of the SFC.[112] The reason is that, as a securities and futures regulator, the SFC only has power to regulate what falls within the definition of securities or futures. Hence, as the SFC acknowledged, '[s]ome of the world's largest virtual asset trading platforms have been seen operating in Hong Kong, but they fall outside the regulatory remit of the SFC'.[113] In contrast, as noted earlier, the 2018 Statement on Regulatory Framework enables the SFC to regulate all distributors and managers of funds investing in cryptoassets, irrespective of whether the cryptoassets are classified as SF cryptoassets or not. This is on the premise that cryptoassets, as an asset class, have similar features and risk characteristics, whether or not they amount to 'securities' or 'futures contracts'. As the SFC has general jurisdiction over funds, it has the power to regulate all types of cryptoasset funds.

At a fundamental level, the above problem stems from the sectoral financial regulatory structure in Hong Kong. The sectoral regulatory model demarcates regulatory responsibilities based on financial sectors, with the securities, banking and insurance sectors being regulated by different regulators separately.[114] In the case of Hong Kong, the SFC is responsible for regulating securities and futures, while other financial products fall under the purview of other regulators, including the Hong Kong Monetary Authority (HKMA) as the banking regulator and the Insurance Authority as the insurance regulator.[115] For the time being, a practical solution would be to strengthen the regulatory cooperation between the SFC and other relevant regulators. Indeed, there have been numerous occasions on which the SFC and other regulators, notably the HKMA, have collaborated in cross-sectoral regulation, and a similar approach can be adopted for cryptoasset regulation. In the longer term, Hong Kong may consider a structural reform of financial regulation, changing from the sectoral model to the twin-peaks model under which the SFC will become a business-conduct regulator, with powers and regulatory scope to be expanded to cover all financial products, including all types of cryptoassets.

[110] Michael (2015), p 21.
[111] Adler (2018), pp 5-6.
[112] Hong Kong Securities and Futures Commission (2018), p 6.
[113] Ibid.
[114] Huang and Schoenmaker (2015), p 251.
[115] Ibid., p 225.

5.2 Applicability of Traditional Regulatory Standards to Non-SF Cryptoassets

A common challenge for cryptoasset regulators has been the operational difficulty in policing cryptoasset-related activities. As the Bank for International Settlements (BIS) has pointed out, cryptoassets can largely function in isolation from existing institutions and infrastructure, and consequently lack a legal entity or person that can be brought into the regulatory perimeter, with a legal domicile that may be offshore or impossible to be clearly established.[116] A solution is to regulate cryptoassets indirectly by targeting infrastructure providers which offer services specific to cryptoassets, for instance crypto wallets and institutions exchanging cryptoassets into sovereign currencies.[117] In resonance with this theory, the new Hong Kong regime has effectively targeted infrastructural service providers as a means of indirect regulation. A considerable regulatory burden has been shifted from the SFC to intermediaries, by applying standards of traditional securities regulation on cryptoasset service providers. An example is that portfolio managers are now vested with the responsibility to select appropriate custodians and auditors.[118]

While it is a rational and convenient approach to apply the same regulatory standards over traditional financial products and their cryptoasset counterparts, there can be both philosophical and practical problems. On the one hand, the appropriateness of applying traditional regulatory standards to non-SF cryptoassets depends on the validity of the view that Fintech only upgrades the delivery channels of traditional financial products but does not alter their nature and content.[119] On the other hand, the current lack of industry standards and inadequate infrastructure in the cryptoasset industry mean that it may be significantly more difficult for intermediaries to ensure compliance. Indeed, the SFC has acknowledged that cryptoasset funds face a unique challenge due to the limited availability of qualified custodian solutions.[120] A further illustration is the obligation placed on fund distributors in conducting due diligence on funds, their managers and counterparties.[121] In view of the lack of developed standards in the cryptoasset industry, the rather onerous obligations to examine the fund's constitutive documents, procure due diligence questionnaires, make enquiries concerning fund managers, and examine counterparties may pose significant difficulties and costs on less well-resourced distributors.

These scenarios seem to cast doubt on the applicability of the regulatory standards of traditional securities products to their cryptoasset equivalents. Consider the case of portfolio managers holding non-SF cryptoassets for clients, who must now maintain a minimum liquid capital of HKD 3 million pursuant to the liquid capital requirements under the new regime.[122] This will most likely dissuade portfolio managers who were previously relying on the lowest liquid capital requirement of HKD 100,000 without holding client assets.[123] In sum, the likely result of this regulatory move is that less well-resourced intermediaries may be forced out of the cryptoasset fund market, eventually leading to an overall concentration of the market.

5.3 Issues with the SFC Sandbox

[116] Bank for International Settlements (2018), p 107.
[117] Ibid.
[118] Hong Kong Securities and Futures Commission (2018), Appendix 1, pp 3-5.
[119] HKEX (2018), p 21.
[120] Hong Kong Securities and Futures Commission (2018), p 2.
[121] Hong Kong Securities and Futures Commission (2018), Appendix 1, pp 3-4.
[122] Hong Kong Securities and Futures Commission (2018), Appendix 1, p 6.
[123] Hong Kong Securities and Futures Commission (2018), Appendix 1, p 6. Portfolio managers are generally required to maintain increased liquid capital where they hold 'client assets'. Under the new regime, the holding of non-SF cryptoassets will also trigger this requirement.

While the SFC regulatory sandbox represents a bold move by the SFC to develop a sustainable regulatory model for cryptoasset trading platforms, it is not without its concerns. Several features critical to the successful operation of a sandbox can be distilled from the UK experience, and are worth being considered by the SFC.

First, an effective two-way communication and close liaison are the key to a smooth sandbox process. It is highly desirable for the SFC to assign case officers to participating platform operators, particularly in the initial authorisation stage where many participants have experienced difficulties with navigating the regulatory framework.[124] Second, the difficulty with pre-assessing the ability of sandbox applicants in meeting authorisation conditions may be particularly relevant to the SFC sandbox. This difficulty is associated with the differently structured operations of fintech innovations, as compared to traditional business models. Indeed, cryptoasset exchanges operate substantially differently from traditional stock exchanges, with which the SFC possesses ample experience. Third, the UK experience has revealed the usefulness of the sharing of lessons learned in the sandbox journey with the wider industry, as a means of providing general guidance and levelling the playing field for non-participants.[125]

Having said that, participating platform operators are able to enjoy the usual benefits felt by sandbox participants, such as a better understanding of the regulatory environment, enhanced client confidence, and a quicker, smoother licensing process. As the next step, the SFC should consider introducing more favourable features to its sandbox exercise, such as to enhance support for participants and facilitate better experience sharing.

5.4 Balancing Investor Protection and Market Development

A common challenge in financial regulation lies in determining the appropriate regulatory strength, and this is no different in the context of cryptoassets. An effective regulatory framework is one which can protect consumers, maintain financial stability and combat illicit usage, while being able to preserve long-term incentives for innovation. Although the new SFC regime undoubtedly represents a positive step from the previous framework, a better balance between investor protection and the promotion of innovation could be achieved.

While the new regime provides for enhanced investor protection, it lacks attractive features that stand out from regional rivals such as Singapore, which is highly supportive of innovation. For instance, Singapore provides for carveouts under its securities laws which furnish reduced regulatory scrutiny for ICOs so long as investor protection is not jeopardised, and takes significant moves to incorporate cryptoassets into day-to-day financial services.[126] The Hong Kong regime, on the other hand, remains confined to safeguarding investor protection and is rather weak in attracting business opportunities. To fulfil its ambition in becoming a leading cryptoasset hub, Hong Kong must learn from its rivals and strengthen its support for market development.

This fundamentally different regulatory philosophy is evident upon a comparison of the diverging regulatory development between Hong Kong and Singapore. The new Hong Kong regime extends existing regulation to non-SF cryptoassets with the primary aims being investor protection and risk containment. The Singaporean framework, on the other hand, attempts to universalise the use of cryptoassets through incorporation into everyday financial activities, such as the application of cryptoassets to payment services under the new Singaporean Payment

[124] In the UK sandbox, multiple participants have emphasised the importance of having dedicated case officers to maintain a close dialogue, facilitate engagement with FCA subject-matter experts, and obtain feedback. This is particularly the case for less regulatory savvy start-ups. Deloitte (2018), p 4.
[125] Ibid., p 9.
[126] Monetary Authority of Singapore (2016), p 3.

Services Act (S-PSA) which upgrades the financial system as a whole.[127] According to the Monetary Authority of Singapore (MAS), '[t]hrough the introduction of the S-PSA, [it] aims to consolidate payment services regulations under one piece of legislation, elevate the standards of AML and CFT requirements, and improve the application of cryptoassets beyond a store of value, through extension to cross-border payment and remittance applications.'[128] Thus, the MAS seems to represent a more forward-looking and embracive stance towards cryptoassets.

This divergence is also apparent from a comparison of the sandbox objectives. Rather than to shield investors from risks, the MAS introduced the sandbox with the primary motivation to prevent the potential stifling of innovation, in situations where financial institutions are uncertain if new fintech will comply with regulatory requirements, and tend to 'err on the side of caution and choose not to implement' innovations.[129] This is rather different to the Hong Kong regime which has been introduced primarily to guarantee investor protection. While Hong Kong has always been ahead of Singapore in the regulatory development of traditional securities, this does not seem to be the case for cryptoassets.

6 Conclusion

Owing to their unique characteristics, cryptoassets are often widely accessible worldwide and pose significant challenges to regulators in adopting a comprehensive strategy to ensure both existing and emerging species of cryptoassets are captured within their regulatory net. In particular, it is crucial to apply an appropriate regulatory strength which achieves the optimal balance between investor protection, on the one hand, and allowing for innovation and development on the other. Cryptoasset regulation is effectively a global exercise which requires international jurisdictions to develop compatible regulatory regimes, and overseas experiences are consequently of great value in the assessment of regulatory effectiveness.

In Hong Kong, cryptoassets have been regulated by the SFC under existing securities laws, effectively leaving behind a large lacuna with non-SF cryptoassets being largely unregulated. The SFC effectively responded to this issue through the introduction of the new regime on 1 November 2018, which extended its regulatory net to cover non-SF cryptoasset funds and enhanced the regulation of platform operators. To assess the new regime, four major overseas jurisdictions with cryptoasset experience have been selected for comparison, including Mainland China, the US, the UK and Singapore.

As a starting point, it is not in Hong Kong's interest to follow Mainland China's footsteps in imposing an outright ban on cryptoassets. Through extending regulation to non-SF cryptoassets, the new regime has generated a significant enhancement in investor protection, and placed Hong Kong in advance of the US and the UK. Further, AML and CFT obligations have also been elevated in line with heightening international standards. On the other hand, a number of potential limitations of the new regime are revealed. The restriction on the type of investors in cryptoassets will need to be reconsidered as the market grows. The capability of the SFC, in regulating all aspects of cryptoassets outside its areas of expertise, is called to question. While the features of the sandbox are largely appropriate in achieving its aim of exploring cryptoasset platform regulation, reference can be made to international experiences to maximise its benefits and function.

[127] Payment Services Act 2019 (No. 2 of 2019). The new S-PSA was passed by the Singaporean Parliament on 14 January 2019, and will come into force when supporting subsidiary legislation is ready. As of the end of 2019, the S-PSA was not yet operational.
[128] Monetary Authority of Singapore (2017), p 3.
[129] Official website of the Money Authority of Singapore for the sandbox, http://www.mas.gov.sg/Singapore-Financial-Centre/Smart-Financial-Centre/FinTech-Regulatory-Sandbox.aspx.

Overall, the new regime is a positive development for Hong Kong, addressing the issues of regulatory gaps and regulatory arbitrage that existed under the previous framework as well as introducing enhanced regulatory standards. This has the effect of improving investor protection, but as a matter of regulatory philosophy there is a need for striking a delicate balance between investor protection and market development.

References

Adler A (2018) Fintech: meeting the regulatory challenges, keynote speech at Hong Kong FinTech Week 2018. https://www.sfc.hk/web/EN/files/ER/PDF/Speeches/Ashley%20HK%20FinTech%20Week.pdf. Accessed 24 Sept 2019

Ametrano F (2016) Hayek money: the cryptocurrency price stability solution. https://ssrn.com/abstract=2425270. Accessed 24 Sept 2019

Anderson B (2018) Regulating the future of finance and money: a rational U.S. regulatory approach to maximizing the value of crypto-assets and blockchain systems. Bocconi Legal Papers 11:1-71

Arnold L et al (2018) Blockchain and initial coin offerings: blockchain's implications for crowdfunding, research center finance & information management. https://www.fim-rc.de/Paperbibliothek/Veroeffentlicht/843/wi-843.pdf. Accessed 24 Sept 2019

Azgad-Tromer S (2018) Crypto securities: on the risks of investments in blockchain-based assets and the dilemmas of securities regulation. Am Univ Law Rev 68(1):69-137

Bailey A (2018) Letter on the FCA powers and perimeter. https://www.parliament.uk/documents/commons-committees/treasury/Correspondence/2017-19/FCA-powers-perimeter-300118.pdf Accessed 24 Sept 2019

Bank for International Settlements (2018) BIS annual economic report. https://www.bis.org/publ/arpdf/ar2018e.pdf. Accessed 24 Sept 2019

Barsan I (2017) Legal challenges of initial coin offerings (ICO). Revue Trimestrielle de Droit Financier 3:54-65

Bitcoin.com (2018) Bitcoin price. https://charts.bitcoin.com/chart/price. Accessed 20 March 2018

Brookes A (2018) U.S. regulation of blockchain currencies: a policy overview. Am Univ Intell Prop Brief 9(2):75-104

Carlson J, Selin A (2018) Initial coin offerings: recent regulatory and litigation developments. Invest Lawyer 25(3):18-30

Chan LT (2018) Crypto-assets and money, keynote speech at Treasury Markets Summit 2018. https://www.hkma.gov.hk/eng/news-and-media/speeches/2018/09/20180921-1/. Accessed 24 Sept 2019

Corbet S et al (2019) Cryptocurrencies as a financial asset: a systematic analysis. Int Rev Fin Anal 62:182-199

Das S (2018) Licensed crypto exchange Zaif plans compensation after 6,000 bitcoins, $60 million crypto theft. CCN, 20 September 2018. https://www.ccn.com/licensed-crypto-exchange-zaif-plans-compensation-after-6000-bitcoins-60-million-crypto-theft. Accessed 24 Sept 2019

Deloitte (2018) A journey through the FCA regulatory sandbox: the benefits, challenges, and next steps. https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/financial-services/deloitte-uk-fca-regulatory-sandbox-project-innovate-finance-journey.pdf. Accessed 24 Sept 2019

Demertzis M, Wolff G (2018) The economic potential and risks of crypto assets: is a regulatory framework needed? http://bruegel.org/wp-content/uploads/2018/09/PC-14_2018.pdf. Accessed 24 Sept 2019

Deng H et al. (2018) The regulation of initial coin offerings in China: problems, prognoses and prospects. Eur Bus Org Law Rev 19(3):465-502

European Banking Authority (2019) Report with advice for the European Commission on crypto-assets.

https://eba.europa.eu/documents/10180/2545547/EBA+Report+on+crypto+assets.pdf. Accessed 24 Sept 2019

European Securities and Markets Authority (2016) Discussion paper: the distributed ledger technology applied to securities markets. ESMA/2016/773. https://www.esma.europa.eu/sites/default/files/library/2016-773_dp_dlt.pdf. Accessed 24 Sept 2019

European Securities and Markets Authority (2018) Advice to ESMA: own initiative report on initial coin offerings and crypto-assets. ESMA22-106-1338. https://www.esma.europa.eu/sites/default/files/library/esma22-106-1338_smsg_advice_-_report_on_icos_and_crypto-assets.pdf. Accessed 24 Sept 2019

Financial Action Task Force (2018) International standards on combating money laundering and the financing of terrorism & proliferation: the FATF recommendations. http://www.fatf-gafi.org/media/fatf/documents/recommendations/pdfs/FATF%20Recommendations%202012.pdf. Accessed 24 Sept 2019

Financial Conduct Authority (2017) Discussion paper on distributed ledger technology. DP17/3. https://www.fca.org.uk/publication/discussion/dp17-03.pdf. Accessed 24 Sept 2019

Financial Stability Board (2018a) Crypto-assets: report to the G20 on work by the FSB and standard-setting bodies. http://www.fsb.org/wp-content/uploads/P160718-1.pdf. Accessed 26 Sept 2019

Financial Stability Board (2018b) Crypto-asset markets: potential channels for future financial stability implications. http://www.fsb.org/wp-content/uploads/P101018.pdf. Accessed 26 Sept 2019

Gilson R, Kraakman R (1984) The mechanisms of market efficiency. Va Law Rev 70(4):549-644

Girasa R (2018) Regulation of cryptocurrencies and blockchain technologies: national and international perspectives. Palgrave Macmillan US, Cham

HKEX (2018) Research report: financial technology applications and related regulatory framework. https://www.hkex.com.hk/-/media/HKEX-Market/News/Research-Reports/HKEx-Research-Papers/2018/CCEO_Fintech_201810_e.pdf. Accessed 26 Sept 2019

HM Treasury (2017) National risk assessment of money laundering and terrorist financing. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/655198/National_risk_assessment_of_money_laundering_and_terrorist_financing_2017_pdf_web.pdf. Accessed 26 Sept 2019

HM Treasury (2018) Cryptoassets taskforce: final report. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752070/cryptoassets_taskforce_final_report_final_web.pdf. Accessed 26 Sept 2019

Hong Kong Securities and Futures Commission (2018) Statement on regulatory framework for virtual asset portfolio managers, fund distributors and trading platform operators. https://www.sfc.hk/web/EN/news-and-announcements/policy-statements-and-announcements/reg-framework-virtual-asset-portfolios-managers-fund-distributors-trading-platform-operators.html. Accessed 26 Sept 2019

Hong Kong Securities and Futures Commission (2019) Position paper: Regulation of virtual asset trading platforms. https://www.sfc.hk/web/EN/files/ER/PDF/20191106%20Position%20Paper%20and%20Appendix%201%20to%20Position%20Paper%20(Eng).pdf. Accessed 13 December 2019

Huang H, Schoenmaker D (eds) (2015) Institutional structure of financial regulation: fundamental theories and international experiences. Routledge, London

Hughes S, Middlebrook S (2015) Advancing a framework for regulating cryptocurrency payments intermediaries. Yale J Reg 32(2):495-559

International Monetary Fund (2016) Virtual currencies and beyond: initial considerations. https://www.imf.org/external/pubs/ft/sdn/2016/sdn1603.pdf. Accessed 22 Febr 2018

International Monetary Fund (2018) What are cryptocurrencies, finance & development. https://www.imf.org/external/pubs/ft/fandd/2018/06/pdf/fd0618.pdf. Accessed 26 Sept 2019

Kakavand H et al. (2017) The blockchain revolution: an analysis of regulation and technology related to distributed ledger technologies. https://ssrn.com/abstract=2849251. Accessed 26 Sept 2019

Liu C (2018) Forget China: Hong Kong, Singapore are new kids on the blockchain. South China Morning Post, 23 April 2018. https://www.scmp.com/week-asia/business/article/2142682/forget-china-hong-kong-singapore-are-new-kids-blockchain. Accessed 18 Sept 2019

Marian O (2015) A conceptual framework for the regulation of cryptocurrencies. Univ Chi Law Rev 82:53-68

Michael B (2015) Does objectives-based financial regulation imply a rethink of legislatively mandated economic regulation? The case of Hong Kong and twin peaks financial sector regulation. https://www.econstor.eu/bitstream/10419/107579/1/Rethinking%20Economic%20and%20Financial%20Regulation%20-%20Hong%20Kong%20and%20Twin%20Peaks.pdf. Accessed 18 Sept 2019

Monetary Authority of Singapore (2016) Fintech regulatory sandbox guidelines. https://www.mas.gov.sg/-/media/MAS/Smart-Financial-Centre/Sandbox/FinTech-Regulatory-Sandbox-Guidelines-19Feb2018.pdf?la=en&hash=1F4AA49087F9689249FB8816A11AEAA6CB3DE833. Accessed 18 Sept 2019

Monetary Authority of Singapore (2017) Consultation paper on proposed Payment Services Bill. P021-2017. https://www.mas.gov.sg/-/media/MAS/resource/publications/consult_papers/2017/Consultation-on-Proposed-Payment-Services-Bill-MAS-P0212017.pdf. Accessed 18 Sept 2019

Nakamoto S (2008) Bitcoin: a peer-to-peer electronic cash system. https://bitcoin.org/bitcoin.pdf. Accessed 18 Sept 2019

National Cyber Security Centre (2018) The cyber threat to UK business. https://www.sbrcentre.co.uk/media/3055/cyber-threat-to-uk-business-2018.pdf. Accessed 18 Sept 2019

Ong YK (2019) 'Payment Services Bill' second reading speech. Monetary Authority of Singarpore, 14 January 2019. https://www.mas.gov.sg/news/speeches/2019/payment-services-bill. Accessed 8 April 2019

Ponsford M (2015) A comparative analysis of bitcoin and other decentralised virtual currencies: legal regulation in China, Canada and the United States. Hong Kong J Leg Stud 9:29-50

Robinson R (2018) The new digital wild west: regulating the explosion of initial coin offerings. Tenn Law Rev 85(4):897–960

Securities and Exchange Commission (2018) Digital asset transactions: when Howey met Gary (plastic). https://www.sec.gov/news/speech/speech-hinman-061418. Accessed 18 Sept 2019

Securities and Futures Commission (2008) Issues raised by the Lehmans Minibonds crisis, report to the Financial Secretary. https://www.sfc.hk/web/doc/EN/general/general/lehman/Review%20Report/Review%20Report.pdf. Accessed 18 Sept 2019

Securities and Futures Commission (2017a) Circular to announce the SFC regulatory sandbox. https://www.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=17EC63. Accessed 18 Sept 2019

Securities and Futures Commission (2017b) Circular to licensed corporations and registered institutions on bitcoin futures contracts and cryptocurrency-related investment products. https://www.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=17EC79. Accessed 18 Sept 2019

Securities and Futures Commission (2017c) Statement on initial coin offerings. https://www.sfc.hk/web/EN/news-and-announcements/policy-statements-and-announcements/statement-on-initial-coin-offerings.html. Accessed 18 Sept 2019

Securities and Futures Commission (2018a) Circular to intermediaries: distribution of virtual asset funds. https://www.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=18EC77. Accessed 18 Sept 2019

Securities and Futures Commission (2018b) Circular to intermediaries on compliance with notification requirement. https://www.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=18EC67. Accessed 18 Sept 2019

Securities and Futures Commission (2018c) SFC's regulatory action halts ICO to Hong Kong public. https://www.sfc.hk/edistributionWeb/gateway/EN/news-and-announcements/news/doc?refNo=18PR29. Accessed 18 Sept 2019

Securities and Futures Commission (2018d) SFC warns of cryptocurrency risks. https://www.sfc.hk/edistributionWeb/gateway/EN/news-and-announcements/news/doc?refNo=18PR13. Accessed 18 Sept 2019

Singapore Business Review (2018) Why Singapore ranks as the third most favourable country in the world of ICOs. https://sbr.com.sg/sites/default/files/singaporebusinessreview/print/SBR_2018_AugSept-26-28.pdf. Accessed 18 Sept 2019

Sonderegger D (2015) A regulatory and economic perplexity: bitcoin needs just a bit of regulation. Wash Univ J Law Policy 47:175-216

The Clearing House and Independent Community Bankers of America (2014) Virtual currency: risks and regulation. https://www.theclearinghouse.org/~/media/Files/Research/20140623%20Virtual%20Currency%20White%20Paper.pdf. Accessed 15 February 2018

Tritten T (2018) The dark side of bitcoin: terror financing and sanctions evasion. Washington Examiner, 16 January 2018. https://www.washingtonexaminer.com/the-dark-side-of-bitcoin-terror-financing-and-sanctions-evasion. Accessed 4 July 2018

Twomey P (2013) Halting a shift in the paradigm: the need for bitcoin regulation. Trinity Coll Law Rev 16:67-90

UK Parliament (2018) The Treasury Committee, digital currencies inquiry on 22 February 2018. https://publications.parliament.uk/pa/cm201719/cmselect/cmtreasy/910/91002.htm. Accessed 18 Sept 2019

Wieczner J (2018) The surprising redemption of bitcoin's biggest villain. Fortune 177(5):68-75

Yiu E, Lee G (2018) Cryptocurrency rules unveiled by SFC as Hong Kong aims to become major trading hub. South China Morning Post, 1 November 2018 https://www.scmp.com/business/banking-finance/article/2171157/cryptocurrency-rules-be-unveiled-sfc-hong-kong-aims-become. Accessed 18 Sept 2019

Zetzsche D et al. (2017) The ICO gold rush: it's a scam, it's a bubble, it's a super challenge for regulators. University of Luxembourg Law Working Paper No 11/2017; UNSW Law

Research Paper No 17-83; University of Hong Kong Faculty of Law Research Paper No 2017/035. https://ssrn.com/abstract=3072298. Accessed 18 Sept 2019