Crypto Assets:
Evolution and Revolution in International Financial Markets

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ABSTRACT:

The rapid development of the crypto ecosystem has posed new challenges and opportunities in the international financial markets. This study addresses some international issues regarding the crypto assets market, in particular if a Crypto Asset be classified as property, the legal status of the Distributed Ledger/Blockchain, and the legal formalities of the transfer of Crypto Assets. The investigation concludes that explicit legislation on crypto-assets in both private and public regulatory law would have cutting edge in the competition of financial centres in a future where tokenisation might revolutionise the financial markets.

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1. Introduction

There is broad consensus among international regulators and practitioners that Crypto Assets as an emerging new asset class and related Distributed Ledger/Blockchain Technology (DLT) will have an immense potential for innovation end efficiency gains in the financial sector. Crypto Assets and tokenisation might revolutionise the financial markets in similar ways as securitisation in the past (Follak, 2021).

The overarching question is whether the national and international legal systems – private and public law – are prepared to ensure legal certainty and appropriate protection of market participants as well as of the public good without hindering innovation. The key questions to be answered are as follows:

- Can a Crypto Asset be classified as property?

- What is the legal status of the Distributed Ledger/Blockchain: is it a register or at least a means of documentary evidence?
- Which are the legal formalities for the transfer of Crypto Assets? Are they backed by legal recognition?

Until to-date, the results differ between individual jurisdictions. This is why individual national legislators have taken up the subject with Liechtenstein and Switzerland leading the way. Further, the EU has launched a draft legislative package with the aim to harmonise the regulation on crypto assets of its Member States (Houben & Snyers, 2020).

2. Method and Design

The method employed to answer the above questions is a qualitative method. It also deployed a descriptive design to accurately and systematically describe and argue the legal status of Bitcoins and Crypto Assets, its documentary support, transfer and legislation.

3. Description and Economic Relevance

Among international regulators, the "Crypto" Asset category is still slightly opaque in that a clear definition in the sense of a legal term does not (yet) exists. Nevertheless, there is broad consensus on widely-defined characteristics as a type of private asset that

- depends on cryptography and Distributed Ledger Technology (DLT) as part of its perceived or inherent value (digital representation of assets in a decentralised register);
- can be used as a means of exchange and/or for investment purposes and/or to access a good or service.

To identify DLT apart from in the technological financial market, it can be referred to the Swiss Federal Council (2018:31):

> "The main difference between DLT and traditional technologies for financial market transactions is that DLT conceptually makes a direct electronic transfer of value possible between the participants in the network without having to involve an entity that manages the accounts."

Basically, DLT technology allows direct ("peer-to-peer") transfer of value between parties without a clearing entity which manages their accounts.

Crypto asset volumes still represent a relatively small market share of the global financial system with a total market capitalisation at around US $ 2.5tn (International Monetary Fund [IMF] Global Stability Report, October 2021[)] compared with US$ 22tn for the S&P 500 alone (end-December 2018) and daily trading volumes up to US$ 175bn. Nevertheless, crypto markets are very dynamic.

In practice, Crypto Assets are further correlated with tokenisation, a method that converts rights into a digital token as opposed to a traditional deed on paper. Another overarching phenomenon is the activity of Initial Coin Offerings (ICOs) (Comprehensive Overview FMA Österreich – [Financial Market Authority Austria]). In contrast to the wording, ICOs are not restricted to "coins". Rather, this is a form of raising capital where an identifiable issuer is offering crypto-assets to the public in exchange for fiat money or other Crypto-Assets[1]

Categories[2]

A broad distinction has to be made between crypto-currencies and tokens, to be broken down into a couple of sub-categories.

Crypto-currencies

This category can be defined as a digital representation of value which is accepted by natural or legal persons as a means of exchange and which can be transferred, stored and traded electronically.

Central Bank Digital Currencies (CBDCs) or "sovereign coins" as a complement to banknotes are "monetary value stored electronically that represents a liability of the central bank and can be used to make payments".[3)] They are frequently not included in the definition of Crypto-Assets[4)] because they are assets under public law and do not necessarily rely on DLT and cryptography. Several central banks such as the People's Bank of China have already established projects to implement CBDCs (Arner, Buckley, Zetzsche & Didenko, 2020). Mid-2021, the ECB Governing Council decided to launch a digital euro project, starting with a 24 months' investigation phase aiming "…to address key issues regarding design and distribution."

Virtual Currencies as defined by Art 3 (18) of Directive (EU) 2018/843 are a "… digital representation of value that is not guaranteed by a central bank or public authority, is not necessarily attached to a legally established currency and does not possess a legal status of currency or money, but is accepted by natural or legal persons as a means of exchange and which

[1]. Houben & Snyers (FN 3), 23; Swiss Federal Council (FN 4), 41.
[2]. Overview Houben & Snyers (FN 3), 23.
[3]. Houben & Snyers (FN 3), 27.
[4]. ibid

can be transferred, stored and traded electronically". In short, they do not fulfil the functions of a currency (fiat currency).

A typical example of the traditional non-backed type primarily representing a value within the blockchain context[1] is **Bitcoin**. According to the prevailing view, they are purely factual intangible assets[2], the legal classification of which will be discussed below. As their market value depends solely on the process of supply and demand related to the "currency" unit itself, they have proved to be extremely volatile.

In order to mitigate such volatilities, so-called **stable coins** have been developed. They may be pegged or linked to another asset, and/or backed by a claim on a specific issuer or on an underlying asset. Typically, there is an identifiable issuer and/or another accountable institution such as a custodian which can be held responsible by regulators and users[3]. Nevertheless, the market capitalisation of this type is still moderate as compared with Bitcoin, with € 4.3 bn and an average transaction volume of € 13.5 bn per month during the first six months of 2019 (Bullmann, Klemm & Pinna, 2019). The most remarkable example is the Libra project designed as a global collateralised "coin" using blockchain technology, fully backed by a reserve of real assets comprised of a basket of bank deposits and short-term government securities (Zetzsche, Buckley & Arner, 2019). Users would be required to have a Libra account or wallet at a Libra custodian or an authorised exchange, and would have an unsecured claim to exchange Libra for fiat local currency. However, a direct claim on the Libra collateral would not be included. For the time being, it is more or less put on hold, due to ongoing regulatory discussions.[4]

4. Tokens

"In summary, a token issue is intended to link values or rights with an entry in a digital register."[5)]

A token is not a deed laid down in a written document. Rather, it is effectively a means to represent ownership of assets via DLT by saving information through a distributed ledger, i.e. a repeated digital copy of data available at multiple locations, such as Blockchain. They represent a right existing outside the blockchain. Virtually anything can be tokenised, ranging from physical goods to traditional financial instruments. rules It can be expected that tokenisation will be a global development similar to securitisation. Commonly, regulators[6)] and academic researchers subdivide

1. Swiss Federal Council (FN 4), 8.
2. ibid.
3. G 7 Working Group on Stable Coins, Investigating the Impact of Global Stable Coins, (2019), 1 (https://www.bis.org/cpmi/publ/d187.pdf).
4. As for the G 7/G 20 approach, see G 7 Working Group on stable coins, Investigating the impact of global stablecoins, October 2019 (available at https://www.bis.org/cpmi/publ/d187.pdf), ii.
5. Swiss Federal Council (FN 4), 46.
6. See, e.g. FINMA (Swiss Financial Markets Authority) ICO guidelines (updated 2018), available at www.finma.ch.

tokens into 'utility tokens' providing digital access to an application or service developed by the issuer and 'asset/investment tokens' which represent assets such as shares in real values, companies, earnings, or debt securities, such as dividends or interest payments.[1)] Investment tokens are normally issued for capital raising through ICOs and show similarities to traditional debt and equity instruments, or refer to traditional securities or other assets that have been registered on a blockchain ("tokenisation").[2]

5. Private Law Aspects

Key issues and problems

The overarching question is "whether our legal systems, and in particular that of private law, are prepared to deal with crypto-assets in a way that ensures legal protection for the rights and obligations of citizens and private firms, without hindering innovation" (Zilioli, 2020: 251,252). The key questions to be answered are as follows:

- Can a Crypto Asset be classified as property? Has any party exclusive power of disposal over the Crypto Asset? Are they included in the service provider's bankruptcy estate and distributed pro rata among all creditors or can they be segregated and transferred in whole to the customer? Can they be included in heritage or trust estates, and can they be pledged as collateral? As far as wallet providers are concerned: can Crypto Assets be segregated i.e. transferred to the beneficial owner? If the access key is known exclusively to the client, then only the client can directly dispose of it and initiate a transaction on that on the blockchain. This means there is no third-party custody as is normally the case with traditional securities clearing systems.

- What is the legal status of the ledger itself: is it a register or at least a means of documentary evidence? Whereas so far Blockchain "registers" have not been generally approved as formal registers establishing public faith by Civil and Common Law jurisdictions, documentary evidence has been accepted as binding by the Supreme People's Court of China (ibid. 265). Further, acquisition of tokens in good faith is possible within a Blockchain transaction system under the TVTG Act of Liechtenstein (TVTG: German acronym of the Token and TT Service Provider Act).

- Which are the legal formalities for transfer: in case of asset tokens representing a right to an asset outside the blockchain, entry into the digital ledger might not be enough. When is the transaction final and irrevocable? Is it backed by legal recognition?

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1. Swiss Federal Council (FN 4), 46; Houben & Snyers (FN 3) pp 20.
2. Houben & Snyers (FN 3), 21.

Conclusions for practitioners: Jurisdiction matters

The answers to the above questions depend on the nature of the specific Crypto Asset category under the relevant national jurisdiction. In particular, the following aspects and criteria are relevant (Zilioli, 2020: 254):

- does the Crypto Asset give rise to a right against a legal entity?
- does the Crypto Asset represent a financial claim or liability?
- Can the Crypto Asset be considered an asset with intrinsic value?

Due to fundamental differences in the outcome under the individual national jurisdictions, a thorough analysis is necessary which jurisdiction is applicable to each framework of Crypto Assets including the terms and conditions of related platforms, and whether enforcement is supported and confirmed by court practice. As long as this situation persists, clear and careful choice of law and court clauses is strongly advised to be used in all related frameworks. At the current state, Common Law jurisdictions might be more uniform in respect of rights in rem (principles-based), whereas Civil Law jurisdictions normally include an exhaustive numerous clauses for absolute rights. Further, even where Crypto Assets are recognised as property under Civil Law, it might be doubtful whether underlying assets of a token would be treated separately, following their own rules. The only way out providing for legal certainty under Civil Law jurisdictions seems to be explicit legislation on Crypto Assets, where currently Liechtenstein and Switzerland are leading the way.

Further, as far as blockchain is not recognised as a public register, clearing and safe custody agencies might try to accommodate Crypto Assets and/or establish dedicated platforms.

6.Supervisory Regime

Global standard setters have been dealing with the subject matter since a few years.[1] According to their joint opinion, Crypto Assets are currently not threatening global financial stability (although they have related potential due to the high degree of risk of crypto assets)[2]; nevertheless related AML issues are updated on a regular basis.

- The **FSB** (Financial Stability Board), in collaboration with the CPMI (Committee on Payments and Market Infrastructures hosted by the BIS), has developed a framework to monitor the financial stability implications of Crypto Asset markets.[3]

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1. Brief overview: Swiss Federal Council (FN 4), pp 41; see, eg G 7 Working Group on stablecoins, Investigating the impact of global stablecoins, October 2019 (available at https://www.bis.org/cpmi/publ/d187.pdf).
2. Basel Committee on Banking Supervision, Discussion Paper Designing a prudential treatment for crypto assets, December 2019 (available at: www.bis.org), 1.
3. Financial Stability Board: FSB, Decentralised financial technologies, Report on financial stability, regulatory and governance implications, 6 June 2019; FSB, Crypto-assets, Work underway, regulatory approaches and potential gaps, 31 May 2019; FSB,

- The **CPMI** (Committee on Payment and Market Infrastructures at the BIS) has conducted significant work on applications of distributed ledger technology.[1]

- The **IOSCO** (International Organisation of Securities Commissions) has established an initial coin offering (ICO) consultation network to discuss experiences and concerns regarding ICOs, and is developing a support framework to assist members in considering how to address domestic and cross-border issues stemming from ICOs that could impact investor protection. Further, the IOSCO is discussing other issues around Crypto Assets, including regulatory issues around crypto asset platforms. In particular, a recent report "sets out key considerations that may be relevant for regulatory authorities that are considering the potentially novel and unique issues related to the regulation of CTPs. The Final Report also provides a corresponding toolkit of possible measures that may be considered or used to address the underlying risks. These key considerations relate to:

- Access and on-boarding;
- Safekeeping of participant assets, including custody arrangements;
- Identification and management of conflicts of interest;
- Transparency of operations;
- Market integrity, including the rules governing trading on the CTP, and how those rules are monitored and enforced;
- Price discovery mechanisms;
- Technology, including resiliency and cyber security."[2)]

- The **BCBS** (Basel Committee on Banking Supervision) is quantifying the materiality of banks' direct and indirect exposures to Crypto Assets, clarifying the prudential treatment of such exposures, and monitoring developments related to Crypto Assets and FinTech for banks and supervisors. "The Committee is of the view that such assets do not reliably provide the standard functions of money and are unsafe to rely on as a medium of exchange or store of value … They present a number of risks for banks, including liquidity risk; credit risk; market risk; operational risk (including fraud and cyber risks); money laundering and terrorist financing risk; and legal and

Crypto-assets regulatory directory, 5 April 2019; FSB, Crypto-asset markets: Potential channels for future financial stability implications, Oct. 2018; FSB, Crypto-assets, Report to the G20 on work by the FSB and standard-setting bodies, 6 July 2018; all available at www.fasb.org.

[1.] Committee on Payment and Market Infrastructures, Report on Distributed ledger technology in payment, clearing and settlement – an analytical framework (CPMI Paper No 157, 2017); CPMI, Wholesale digital tokens (December 2019), both available at www.bis.org.

[2.] OICU-IOSCO, Issues, Risks and Regulatory Considerations Relating to Crypto-Asset Trading Platforms, February 2020 (FR02/2020), 28 (available at www.iosco.org).

reputation risks".[1)] Hence, in a statement published on 13 March 2019[2)], the Committee stipulated broad minimum requirements for banks with Crypto Asset related activities:

- Due diligence – comprehensive analysis of the risks;
- Governance and risk management – implementing risk management processes consistent with the high degree of risk of Crypto Assets, involving senior management and incorporating related exposures into the internal capital and liquidity adequacy assessment;
- Public disclosure of material Crypto Asset exposures;
- Including actual or planned activities in the bank's supervisory dialogue.

A recent discussion paper published for comment[3] outlines related proposals in more detail. In general, supervisory principles should be applied neutrally vis-à-vis to innovative technologies, but they "should account for any additional risks resulting from the unique features and other factors of crypto-assets relative to traditional assets…complex internally-modelled approaches should not be used to calculate regulatory requirements."[4] Supervisory requirements will not be limited to holding Crypto Assets in bank portfolios; rather, a wide range of activities will be affected such as custody/ wallet services, underwriting ICOs and trading Crypto Assets on behalf of clients.[5)] It crystallises that in most cases Crypto Asset exposures would be treated as high risk. A recent consultative document published for comment[6] outlines related proposals in more detail.

- The **FATF** (Financial Action Task Force) adopted in October 2018 new definitions of 'virtual assets' and 'virtual asset service providers': jurisdictions are recommended to have within the scope of AML/CFT obligations any natural or legal person (not covered elsewhere under the FATF recommendations) who conducts one or more of the following activities or operations for or on behalf of another natural or legal person:

- Exchange between virtual assets and fiat currencies;
- Exchange between one or more other forms of virtual assets;
- Transfer of virtual assets;
- Safekeeping or administration of virtual assets or instruments enabling control over virtual assets;

1. Basel Committee on Banking Supervision, Discussion Paper Designing a prudential treatment for crypto assets, December 2019 (available at: www.bis.org), 4.
2. Full wording ibid, Box 1.
3. Ibid.
4. Ibid, 8.
5. ibid, 10.
6. Basel Committee on Banking Supervision, Consultative Document, Prudential treatment of crypto asset exposures, June 2021.

- Participation in and provision of financial services related to an issuer's offer and/or sale of a virtual asset.[1]

The annual volume of Bitcoin alone used in criminal activities is estimated at USD 76bn or nearly 50%, which is practically equal to the US and EU markets for illegal drugs.[2)] This is why related FATF recommendations are updated on a regular basis.

7. EU Regulatory Outlook3

On 24th September 2020, the EU Commission has published a package of legislative proposals with the aim to create an EU framework on markets in crypto assets, tokenisation of traditional financial assets and the use of Distributed Ledger Technology (DLT) in financial services[4]as part of the EU digital finance strategy. It includes

- an addendum to the "MiFID II" Directive 2014/65/EU clarifying that the existing definition of "financial instruments" includes "instruments issued by means of distributed ledger technology";
- a proposal for a Regulation on Markets in Crypto-Assets to cover crypto-assets falling outside existing EU financial services regulation, including "stablecoins" as well as e-money tokens;
- a proposal for a Regulation on a Pilot Regime for Market Infrastructures based on Distributed Ledger Technology
- an "EU passport" for crypto-assets .

Related legislative procedures are already on track It can be expected that the final outcome will be a comprehensive MiFID-type framework on markets in crypto assets.

[1]. FATF (2019) Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers, available at: www.fatf-gafi.org.
[2]. *Houben/Snyers* (FN 3), 25; see also *Houben/Snyers*, Cryptocurrencies and blockchain: legal context and implications for financial crime, money laundering and tax evasion, European Parliament study, July 2018.
[3]. *Follak* (FN 2).
[4]. See Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets (COM(2020) 593/3, = 2020/0265(CO), Explanatory Memorandum, 2.

8. Conclusions

Developments in the Crypto Assets industry will have an immense potential for innovation and efficiency gains in the financial sector. Nevertheless, significant risks and legal uncertainties are involved in both private and regulatory law. International financial centers will have to take up these challenges to position themselves as an attractive location through legal certainty, efficient regulation and good reputation in the field.[1] Clearly, explicit legislation on crypto-assets in both private and supervisory law would be a cutting edge in the competition of financial centres in a future where "tokenisation" might revolutionise the financial markets in similar ways as securitisation in the past. Currently, the principality of Liechtenstein and Switzerland are leading the way in Europe, demonstrating that amendments of securities and supervisory law might do the job, avoiding to touch the system of property and ownership in its entirety.

Basically, specific and comprehensive national legislation may be an impediment to capital markets integration. This is why global agreements on uniform rules have been requested (Lehmann, 2021)[2], but it seems more than high level principles similar to the FSB approach in respect of stable coins cannot be expected in the near future. As long as this situation persists, sound and comprehensive national or EU legislation may offer satisfactory solutions in an environment allowing for choice of law and court.

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