Blockchain in Startup Financing: ICOs and STOs in Switzerland

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This paper provides a comparative analysis of the new blockchain-based start-up and small companies funding methods, namely, initial coin offerings (ICOs) and security token offerings (STOs) against the backdrop of traditional fundraising methods like venture capital and private equity building on the experience of Switzerland. In particular, the comparative analysis is based on a theoretical overview of the nature of these blockchain applications, the relevant legislative framework as well as recent market developments with a focus on Switzerland. The paper concludes that both ICOs and STOs are characterized by lower entry barriers for investors and higher cost efficiency as compared to traditional start-up fundraising methods. However, STOs provide more security to investors than ICOs due to their wider regulation.

Keywords: Blockchain, Initial Coin Offerings (ICOs), Security Token Offerings (STOs), Startup Financing

INTRODUCTION

The introduction of the first blockchain-based payment method, the Bitcoin, by the Nakamoto (2008) paper, triggered a number of disruptive developments in the financial sector. In particular, the strategic business value of the blockchain technology associated with savings in record-keeping and transaction costs (McKinsey, 2018) spurred interest in the development of new funding methods like the initial coin offerings (ICOs) and the security token offerings (STOs). Most of these innovative start-up funding forms in the last years were launched in Switzerland, the USA, and Singapore.

In 2017, for example, the number of ICOs issued in Switzerland accounted for about 15% of total ICOs worldwide (Coindesk, 2019). The Swiss Crypto Valley is the home of four start-ups valued at over USD 1billion (unicorns), namely Bitmain, Cardano, Dfinity, and Ethereum. Swiss authorities also expressed their political support for blockchain technology implementation in the country (Kondova, 2018).

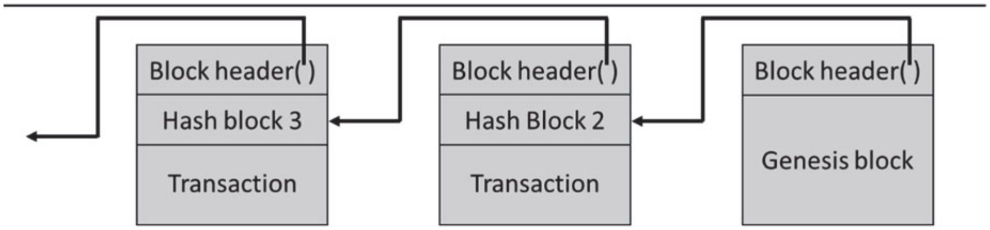
These pioneering experience of Switzerland in the area of blockchain-based start-up fundraising provides a solid background for the comparative analysis among ICOs, STOs, and traditional fundraising methods pursued by this work.

INITIAL COIN OFFERINGS (ICOS) AND SECURITY TOKEN OFFERINGS (STOS)

Blockchain

Blockchain is a technology that provides the possibility to store data based on cryptography. As shown in Figure 1, the data is stored in blocks building a chain. The chain starts with the genesis block, which is the very first block of the chain. The information of its header is in the second block which is generated as a hash. Each block of the chain confirms the integrity of the previous one, all the way back to the first black, the so-called genesis block. No party can overwrite previous records, this ensuring immutability of the data (Yermack et al., 2015).

FIGURE 1
BLOCKCHAIN SIMPLIFIED



Source: Yermack et al. (2015)

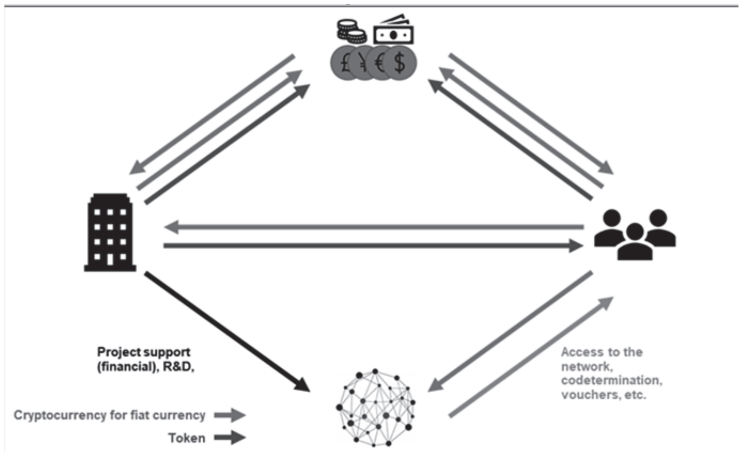
Unlike a common centralized database, however, this ledger relies on a decentralized and distributed network. The network is operated by a multitude of servers, referred to as nodes. Since this network is decentralized, a special consensus mechanism is required to ensure the authenticity of the data (He et al., 2016).

The practical application of blockchain was introduced by a self-published paper of an author called Satoshi Nakamoto in October 2008. Nakamoto (2008) published a protocol for a purely peer-to-peer electronic cash system called Bitcoin.

ICOs

An initial coin offering (ICO), also known as token launch or token generation, is defined as a sale of a predefined number of digital tokens (coins) based on a "white paper" (document similar to a business plan) on a blockchain to the public in exchange of cryptocurrencies or fiat currencies within a limited period of time (Swiss Federal Council Report, 2018, PwC, 2019). Investors in ICOs could usually expect to use the tokens to get involved in the ecosystem of the financed project or to sell or exchange the tokens on a crypto trading platform, especially in the case of an increased price of the token. In the case of ICOs, the issuer and buyer of the token interact directly, i.e. they perform a peer-to-peer transaction without a financial intermediary. The issuers of ICOs are usually smaller companies or start-ups. Figure 2 presents the design of an ICO.

FIGURE 2
DESIGN OF AN ICO



Source: Swiss Federal Council Report (2018)

Legal Framework in Switzerland

On February 16, 2018, FINMA, the Swiss financial sector regulator, published guidelines on ICOs. FINMA's guidelines distinguish between three categories of ICOs, namely, "payment ICOs" (functioning as means of payment), "utility ICOs" (conferring digital access rights to an application or service), and "asset ICOs" (giving rights to earnings).

Furthermore, in December 2018 the Swiss Federal Council adopted a report on the legal framework for blockchain and distributed ledger technology (DLT) with a special focus on the financial sector. The report suggests amendments to several legal acts. It is not envisaged that a new law on blockchain is being adopted. The report of the Federal Council of Switzerland (2018) outlines in particular the following areas where legal adjustments are deemed necessary, namely: in civil law, in insolvency law, in financial market law, in banking law, and in anti-money laundering law.

ICOs Developments in Switzerland

Currently there is no official statistical data available on the ICO launches in Switzerland. Based on Coindesk data (Coindesk, 2019), in 2017 there were 728 ICOs in Switzerland representing about 15% of the global total of 4,754 ICOs. In 2018 the amount declined to 234 Swiss ICOs compared to 14,062 ICOs worldwide.

STOs

Security Token Offerings (STOs) is classified as a "sale of tokens with features comparable to classic securities that are fully regulated and accepted within at least one jurisdiction" (PwC, 2019). In terms of the FINMA's token classification, STOs are a type of an ICO offering an asset token. Since STOs are selling security tokens, they fall under the respective financial market regulation. The security token could provide different legal rights such as rights to dividends, ownership stakes, or a share of future company earnings or future capital flows. Similar to ICOs, STOs are based on a direct peer-to-peer mechanism. Thus, the entry costs are considered to be low. Moreover, they are considered to provide a higher investor protection because of the higher degree of regulation.

Legal Framework in Switzerland

Considering the STOs' characteristics, they fall under the "asset token" classification of FINMA. Moreover, considering the fact that STOs sell securities, the security tokens also fall under respective securities regulations. In contrast to payment tokens, asset tokens are linked to real assets, "outside" the blockchain. Thus, asset tokens could entitle the investor to a claim on the real assets backing the security token. Depending on its economic function, an asset token can thus represent a share, a bond or a derivative financial instrument. Thus, additional legal acts such as the Federal Financial Services Act and the Financial Market Infrastructure Act are applicable (The Swiss Federal Council Report, 2018).

STOs Developments

In contrast to ICOs, there were only 28 STOs worldwide in 2018 raising USD 442mn in volume. However, compared to 2017, when there were only two STOs globally raising around USD 22mn, STOs have increased substantially (PwC, 2019). There is a positive expectation about a continuing growth of STOs due to the associated higher regulation, thus providing more legal protection to STO investors.

COMPARATIVE ANALYSIS OF ICOs AND STOs

Types of Tokens

Based on the Swiss FINMA classification as outlined in Figure 3, it is to be noted that ICOs are associated with the sale of utility or payment tokens, while STOs are associated with the sale of asset tokens. Asset tokens are equivalent to securities such as shares and bonds and provide claims on the underlining real assets as well as rights such as voting rights, dividends, or interest income. Thus, STOs fall under the provisions of the security law and are considered to be regulated financial instruments. ICOs, on the other hand side, sell utility or payment tokens that do not fall under the security law. Moreover, in the case of ICOs the enforcement of investors' rights is not regulated. This could also explain the high percentage of ICO scams reported to be about 80% of all launched ICOs as of mid-2018 (Satis Group, 2018).

FIGURE 3
DIFFERENT TOKENS FOR ICO

Source: FINMA Guidelines (2018)

Overall Comparison with Traditional Fundraising Instruments

The new fundraising instruments ICOs and STOs promise low entry barriers, public tradability and high cost efficiency as compared to IPOs or venture capital and private equity fundraising. OECD (2019) reports that ICOs cost about 3% of total funds raised as compared to up to 5% equivalent rate for traditional initial public offerings. In the case of IPOs, there are also additional management fees of about 7% of total funds raised (OECD, 2019). Fundraising instruments like venture capital and private equity are also costlier than ICOs and STOs since they face complex security regulation and thus higher regulatory compliance costs. Thus, it could be stated that ICOs and STOs are characterized by higher cost efficiency in the process of capital formation as compared to IPOs, venture capital and private equity funding. Moreover, ICOs and STOs are open to global investors' participation, while venture capital and private equity financing is accessible by qualified investors.

At the same time, it should be noted that the current lower regulatory compliance costs in the case of ICOs and STOs are at the cost investor rights' enforcement. Regulation of ICOs and STOs in many jurisdictions is unclear, thus providing incentives for fraudulent behavior.

From the point of view of the start-up companies, ICOs provide them with independence in the long-term strategy and development of the company. Investors in ICOs have no direct involvement in the decision-making process and the strategy development of the company. From the point of view of the investors though, there are transparency risks associated with the use of the raised funds, the proceeds distribution and the future product development.

Differences Between ICOs and STOs

Figure 4 provides a summary of the main characteristics along which ICOs and STOs differ, namely, investors' rights, regulation, and token application.

As already outlined, ICO is the broad term of issuing tokens (payment, utility, and security) on a blockchain. STO stands only for ICO in which security tokens are issued. These security tokens could be bonds, stocks or derivatives. In the case of payment or utility tokens, these could be cryptocurrencies or various services or spending opportunities.

The security tokens fall under the security legislation respectively. In this case know-your-customer (KYC) and anti-money laundering (AML) regulations are also applicable. Moreover, investor rights like voting rights, dividend rights, and ownership rights are enforceable with the STOs. In the case of ICOs, regulation is still unclear, and no investors' rights are legally binding.

TABLE 1
COMPARISON BETWEEN ICOs AND STOs

	ICO (with utility or payment token)	STO
Regulation	Regulation still unclear	Regulation based on local internaltion security laws
Investor rights	No associated investor rights	Legally binding investor rights
Token application	Various services and spending opportunities	Proof of ownership via established custodians

CONCLUSION

ICOs and STOs are new blockchain-based financing instruments that promise low entry costs for investors and low funding costs for start-ups. Especially young innovative businesses in the information technology sector are exploring the opportunity to raise start-up capital for their ecosystems or products by offering utility and payment tokens in the case of ICOs and security tokens in the case of STOs to the broad public in a cost-efficient way.

The payment tokens, also known as cryptocurrencies, are also tradable on secondary markets like crypto exchanges. However, these cryptocurrency secondary markets are extremely volatile and also vulnerable to cyber-attacks. Another risk is associated with the regulatory uncertainties related to ICOs, which do not ensure investor rights enforcement and thus provide stimulus for fraudulence. In the case of STOs, however, there are legally binding investors' rights as well as KYC and AML regulations since the offered security tokens fall under securities laws.

Thus, it could be concluded that both ICOs and STOs are characterized by lower entry barriers for investors and higher cost efficiency as compared to traditional start-up fundraising methods. However, STOs provide more security to investors than ICOs due to their wider regulation. This higher regulatory certainty provides reasons to believe that STOs will gain more popularity in the future.

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