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Regulating Initial Coin Offerings and Cryptocurrencies: A Comparison of Different Approaches in Nine Jurisdictions Worldwide

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Abstract

Initial Coin Offerings (ICOs) and cryptocurrencies are applications of blockchain technology that offer many benefits. ICOs are increasingly used by companies for crowdfunding, allowing start-ups to find investors. Cryptocurrencies allow cheap, fast and straightforward international money transfers. However, along with such benefits also come risks, like volatility of cryptocurrency rates, abuse by (cyber)criminals, and other risks and uncertainties for investors. Governments across the globe are struggling with the question whether and how to regulate cryptocurrencies and ICOs. The technologies and applications are similar in different jurisdictions, but the responses of legislators, regulators and supervisory authorities widely differ. In this article, we investigate the regulatory responses to cryptocurrencies and ICOs in nine jurisdictions worldwide. The aim of investigating different approaches towards regulating cryptocurrencies and ICOs is to identify different approaches, to make a comparison between jurisdictions, and to identify potential good or best practices. The nine jurisdictions that are compared in this paper are Australia, Belgium, China, Estonia, Japan, Switzerland, The Netherlands, the United States, and the European Union.

It is concluded that all the jurisdictions investigated do have legislation that is applicable to ICOs and cryptocurrencies. However, big differences exist in the extent to which the legislation applies and is regulated by the national supervising authorities. Generally speaking, most legislation of the investigated jurisdictions consists of financial markets legislation (including that of securities), anti-money laundering legislation, and consumer law. The approaches of the countries investigated differ from a negative, forbidding approach (such as in China, which has launched an ICO-ban and is obstructing trade in cryptocurrencies) to a positive and facilitating approach (such as in Australia and Switzerland, where the aim is to promote innovation). Although this paper does not assess which method of regulation of ICOs and cryptocurrencies can ultimately be qualified as best strategy, we conclude that a positive and facilitating approach offers more opportunities for investors and innovative companies. However, this approach requires a clear and detailed legislative and regulatory framework for all parties involved in the establishment, issuing, storing or trading of cryptocurrencies and ICOs. Such a framework should at least provide boundaries with regard to money laundering and other common forms

of cybercrime. Moreover, it should provide some sort of consumer/investor protection and clarity when it comes to tax liability. A legislative and regulatory framework that provides all these aspects will prevent abuse and may enable governments to intervene when issues occur.

Keywords: ICOs, bitcoins, blockchain technology, cryptocurrencies

1. Introduction

The popularity of blockchain technology is rapidly rising, as many new applications for blockchain technology are being developed and deployed. These applications include new payment options, ways of asset and identity management, and the use of smart contracts. Perhaps the best-known application of blockchain technology is the cryptocurrency as it enables cheap, fast and straightforward international money transfers. Paying with cryptocurrencies for regular products and services is becoming more and more common, as they are easy to buy and sell on online exchange-platforms. Another well-known application of the blockchain technology is the so-called Initial Coin Offering (ICO). The ICO application is increasingly used by companies for crowdfunding, as it allows start-ups new ways to find investors. Along with the benefits of these technological developments also come several risks, like the volatility of cryptocurrency and ICO-token rates and the abuse of these blockchain applications by (cyber)criminals. Governments across the globe are struggling with the question whether and how to regulate the rapidly evolving applications of the blockchain technology, in particular the concepts of cryptocurrencies and ICOs. The technologies and applications are similar in different jurisdictions, but the responses of legislators, regulators and supervisory authorities widely differ. Given the fact that cryptocurrencies and ICOs are a new phenomenon, they often fall outside the scope of supervision by financial supervisory authorities in most countries. In this article, we investigate the regulatory responses to cryptocurrencies and ICOs in nine jurisdictions worldwide.

The aim of investigating different approaches towards regulating cryptocurrencies and ICOs is to identify different approaches, to make a comparison between jurisdictions, and to identify potential good or best practices. The nine jurisdictions that are compared in this paper are Australia, Belgium, China, Estonia, Japan, Switzerland, The Netherlands, the United States, and the European Union. The EU is included because it regulates the monetary union of the euro and has significant influence on the harmonization of financial issues. For each jurisdiction, we investigate how both ICOs and cryptocurrencies are regulated.

This paper is structured as follows. Section 2 describes the research approach, explaining how we selected the countries/jurisdictions, which sources we used, and how we analyzed our findings. Section 3 briefly explains blockchain technology and the key terminology used in this paper for those readers who are perhaps less familiar with technological developments. Section 4 investigates for each selected country the regulations regarding ICOs and trade in cryptocurrencies respectively. Section 5 presents an analysis of the research results. Section 6 provides conclusions.

2. Research approach

This contribution specifically addresses the regulation of Initial Coin Offerings and the regulation of cryptocurrencies in different jurisdictions. [3] Our comparative research covers the following eight countries: Australia, Belgium, China, Estonia, Japan, Switzerland, The

Netherlands and the United States. Additionally, the European Union is included in this research, as the monetary union has significant influence on the harmonization of financial issues such as ICOs and the trade in cryptocurrencies in its member states.

The countries/jurisdictions (for easy reference we will refer to countries) that we have studied were selected during the exploratory phase of our research. For all of these countries one or more of the following selection criteria apply: (1) governments or financial supervisors have released opinions or reports on the regulation of ICOs and / or cryptocurrencies, (2) there is new, recent or adapted legislation, and (3) there is regulation on these topics. In addition to the application of these selection criteria, sufficient material needed to be available and accessible per country to answer the questions that this study covers. We did not rank all countries according to these criteria, but followed cues in literature and online sources that mentioned particular countries in the context of regulating ICOs or cryptocurrencies. It cannot be excluded that there are other countries matching the selection criteria mentioned above, but we think that the countries selected represent the major regulatory developments in this area. The countries selected cover the whole range of strict versus lenient regulation and the most important economies of the world (US, China, Japan and the Eurozone) are included in this research.

After selecting the list of countries, the following list of questions was addressed per country:

1) Which institutions are the supervisory authorities?

2) Are ICOs and cryptocurrencies legally qualified and, if so, how?

3) What is the scope of the legislative and regulatory framework with regard to ICOs and cryptocurrencies?

4) What have governments and supervisors done so far to regulate ICOs and the trade in cryptocurrencies?

These questions were answered via desk research, including literature study and the use of online sources. Given the limited amount of academic literature available in this area and the nature of these (policy-oriented) questions, we particularly looked at existing and proposed legislation, policy documents, guidelines, press releases, and existing case law. With regard to legislation the focus was on financial legislation (such as financial supervision, property law, competition law, tax law, etc.), consumer legislation and, in case of prohibitions, criminal law. The soft law, such as policy documents and guidelines, that has been examined was mostly issued by the government or its financial supervisory authorities.

For the analysis of our results and the comparison of countries, we mostly focused on a spectrum of strict versus lenient regulatory approaches and tried to highlight typical approaches or aspects thereof. These findings can be found in Section 5.

3. Blockchain technology

3.1 BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGY (DLT)

The blockchain is an online ledger that is managed by groups of computers that function as nodes in a network. In principle, everyone in possession of a computer is able to join the network. Each node within the blockchain receives a full copy of the ledger; the ledger is therefore distributed and decentralized, and thus based on the so-called Distributed Ledger

Technology (DLT). [4] The blockchain system ensures that it is not possible to manipulate data in the general ledger, as all data in the blockchain needs to be validated by all nodes participating in the blockchain, before it is recorded in the ledger. When the data is recorded in the distributed ledger, it is traceable and unchangeable. The public blockchain can be viewed by everyone (in principle also by outsiders) and is therefore verifiable. However, it is possible to set up a closed blockchain network. Participation in a closed blockchain requires permission from (one of) the affiliated parties.

The data contained in a blockchain can be different in nature. For example: the blockchain of Bitcoin, a virtual currency, or cryptocurrency to be more precise, is a ledger with information about bitcoin transactions. Cryptocurrencies are probably the most familiar application of blockchain technology. However, that is just one of the many applications blockchain technology can have. Other applications can be the execution of cadastral registrations, decentralized voting, notarial actions, and other property registrations and transfers, such as supply chain monitoring and peer-to-peer insurance.

3.2 CRYPTOCURRENCIES

Blockchains can enable trade in virtual money. An example of such virtual money is Bitcoin. Virtual money is a digital representation of money that has not been certified by a government. [5] Virtual money can be subdivided into a number of subcategories, depending on whether or not the virtual money is exchangeable (convertible) for fiat money (money issued by a national government, such as Euros, Dollars or Yens) and whether virtual money is managed in a centralized or decentralized way.

The cryptocurrency is a type of virtual money that is convertible and managed in a decentralized way. With bitcoins there is no central manager; the general ledger is kept decentralized via the nodes participating in the blockchain. The nodes that are part of the blockchain manage and control all transactions, so no 'third-party' is needed. In addition to the decentralized management of cryptocurrencies as virtual money, cryptocurrencies are in principle convertible to national currencies. Bitcoins qualify as cryptocurrency, but beside bitcoins, there are already over a thousand other virtual currencies (together referred to as 'altcoin' that qualify as cryptocurrencies. Some other commonly used cryptocurrencies are Ethereum, Litecoin, Ripple and Monero.

The cryptocurrency market took a flight in 2017 as the total market capitalization of global cryptocurrency markets reached the point of 800 billion USD in January 2018. [6] However cryptocurrency prices dropped significantly; February 2019 the total market cap is only around 110 billion USD. The bitcoin exchange rate was approximately 600 USD in mid-2016, which spiked to over 13,000 USD at the end of 2017. After that, the rates went down steadily. Early 2019, the bitcoin exchange rate was approximately 3,500 USD.

3.3 SMART CONTRACTS

A possible application of blockchain technology are the so-called smart contracts. A smart contract is a computer program that can be placed in a blockchain and programmed in such a way that it automatically provides a monetary service if the requirements of a certain agreement are met and validated by the nodes of the blockchain. [7] If the conditions are not met, the smart

contract ensures that the money goes back to the original owner. This makes a 'trusted third party' redundant, the smart contract takes on this task.

3.4 INITIAL COIN OFFERING (ICO)

Cryptocurrencies and smart contracts come together in the ICO. Companies and individuals can use ICOs for crowdfunding. To set up such a crowdfunding project, a smart contract is required. The smart contract must be programmed in such a way that a limited number of digital tokens can be issued by the provider. The tokens together form a cryptocurrency. The tokens can be purchased within a certain period by those who want to support the project in exchange for virtual money accepted by the promoter, in most cases Bitcoin or Ethereum. The tokens can give the buyers the right to services (commonly known as utility-tokens), to another virtual currency (a payment-token), or they can act as asset or security (the so-called asset-token). [8] In practice, however, no clear distinction between the token-categories can be made, as many hybrid varieties exist. The function and design of the tokens can differ per project and depends on the programming of the smart contract.

3.5 BENEFITS AND RISKS

Most national supervision authorities have released warnings with regard to ICOs and cryptocurrency trade (see Section 4). These warnings highlight risks that ICOs and cryptocurrencies may entail. The authorities point out that ICOs and cryptocurrencies are subject to extreme volatility and that many ICO and cryptocurrency projects fail or turn out to be scams. [9] Furthermore, due diligence by investors on the underlying technologies of the ICOs and cryptocurrencies is difficult. White papers may provide incorrect, incomplete or misleading information, making it hard for investors to become adequately informed about the investments they are about to make. [10] Moreover, it is hard for regulators and legislators to get a grip on the rapidly developing technology. Supervision of the cryptocurrency-trade and the selling of ICOs is therefore often limited and leaves investors vulnerable to fraud or other illegal activities. This could eventually lead to the undermining of investor trust in other genuine potential investments and the national regulatory system. [11]

Another big risk that comes with investing in cryptocurrencies or ICOs is that the programs and services that are used to store the ICO- and cryptocurrency-tokens can be sensitive to hacking. In 2018, according to news reports, nearly 1 billion USD has been stolen by hacking cryptocurrency exchange platforms. [12]

Despite the risks (and therefore the need for regulation) blockchain technology can offer a lot of benefits. For instance, the use of ICOs can offer (start-up) companies a way out for fast and cross-border crowdfunding as ICOs make it easy to reach a large number of investors. [13] As a result, investors can become easily acquainted with and invest in a great variety of start-up projects at an early stage. Another benefit is that cross-border payment traffic via the blockchain-technology is cheaper and faster, as expensive exchange rates no longer play a role and transaction costs are often lower. [14] Cryptocurrencies and ICOs can therefore provide a complementary form of capital market financing, and thus offer opportunities for innovative companies. Moreover, the blockchain technology offers a secure and nearly unmanipulable basis for ICO and other cryptocurrency transactions. [15] Fraud-related losses of money can thus be prevented.

4. Regulation of ICOs and trade in cryptocurrencies

4.1 AUSTRALIA

The Australian Securities and Investments Commission (ASIC) is the Australian regulator of financial markets, financial services, and consumer credit. [16] Most of ASICs work is carried out under the Australian Corporations Act 2001. [17] Next to ASIC, the Australian Transaction Reports and Analysis Center (AUSTRAC) is also responsible for the regulation of AustraliaÕs financial system. The AUSTRAC is a financial intelligence agency that enforces anti-money laundering and terrorist financing legislation. [18]

ICOs

The ASIC has released information on the regulation of ICOs under the Corporations Act 2001, the ASIC Act [19] and Australian Consumer Law. [20] The legal status of an ICO depends on the design and structure of the ICO and the rights attached to the issued tokens. Depending on the legal status specific legislation applies to the entities that raise funds via ICOs. [21]

In Australia an ICO can qualify as a managed investment scheme, non-cash payment facility, share or derivative. The ICOs that qualify as 'managed investment plan' and 'derivative' are subject to the Australian Corporations Act. In case the ICO qualifies as a share, the issuer of the tokens is obliged to create a prospectus, that is a document that contains all the information that is relevant to the buyer of the tokens. It should enable investors to make well-informed investment decisions. For the qualification of an ICO under Australian law, it is irrelevant where the ICO has been established, as long as the tokens are offered to Australian investors. The entities that issue and sell ICOs that fall under the scope of the Corporations Act are obliged not to engage in misleading conduct and they may not mislead consumers by making false or misleading statements. If ICOs do not fall under the scope of the Corporations Act, Consumer legislation applies. The Australian Consumer Law prohibits misinforming investors by promoting misleading ICOs. [22]

Not only the entities that issue and sell the ICOs but also the trading platforms may be regulated under Australian Law. Especially when a platform enables consumers to issue, buy, or sell tokens of ICOs that qualify as a managed investment scheme, a share or a derivative, it is mandatory to obtain an Australian market license, unless they are exempted from this obligation.

To guide individuals and entities in the use of ICOs for their companies, the ASIC has established an 'Innovation Hub'. [23] Companies can easily obtain information via the Innovation Hub, that will inform them about the legal obligations resulting from the establishment of an ICO. Furthermore, the ASIC has made a financial guidance page on the internet, that gives a simple and summarized insight into the regulation and dangers of (investing in) ICOs for the citizens of Australia. [24]

Cryptocurrencies

In Australia, new legislation has recently been adopted with regard to digital currency exchanging platforms that enable trade in cryptocurrencies. [25] The new legislation covers the prevention of money laundering and terrorist financing and AUSTRAC is responsible for enforcing it. Under the new legislation, trading platforms must be registered with AUSTRAC and comply with reporting obligations. Trading platforms located in Australia had until

14thMay 2018 to register. The introduction of the new legislation makes it easier for AUSTRAC to collect and share information about cryptocurrencies with other government partners. This will then contribute the fight against fraud and terrorism.

Anyone who manages an exchange platform in Australia for cryptocurrencies that qualify as a financial product (often a managed investment plan or a derivative) must be in possession of an Australian financial services license. [26] The ASIC handles these permit applications. [27]

When it comes to taxing cryptocurrencies the Australian Tax Office has made several categories. [28] If you sell, gift or trade your cryptocurrencies the profits are qualified as property and will be taxed as capital gain, unless the selling or trading is part of your business, then the gains will be qualified as ordinary income and taxed accordingly. When cryptocurrencies are used to pay for goods and services, the transactions will be subject to goods and services tax (GST). An exemption to the taxation of cryptocurrencies may apply if the cryptocurrencies are used for payments that have a personal use and acquisition of the cryptocurrencies costed less than 10,000 AUD. Cryptocurrencies acquired as investment, profit-making scheme, or as part of your business can never fall under this exemption.

4.2 BELGIUM

In Belgium, the Financial Services and Markets Authority (FSMA) and the National Bank of Belgium (NBB) supervise the financial markets. [29] The NBB, in its capacity as regulator of the Belgian financial markets, can supervise payment systems with virtual money. With regards to Belgium's role as member state of the European Union, the Belgian Senate has also referred to the competence of the European Central Bank (ECB) to supervise the conversion of virtual money into euros. [30]

ICOs

The FSMA has released a statement on the regulation of ICOs under both Belgian and European law. [31] The FSMA has noted in the statement that the following European law may be applicable to ICOs: the Prospectus Directive, [32] the Market in Financial Instruments Directive (MiFID), [33] the Alternative Investment Fund Managers Directive (AIFMD), [34] the Market Abuse Regulation (MAR) [35] and the Fourth Anti-Money Laundering Directive (AMLD4). [36] Furthermore, it is possible that Belgian law is applicable to an ICO. Applicability of both European law and Belgium law depends on how the ICO is designed and structured. If the ICO qualifies as an investment instrument, a prospectus approved by the FSMA is required, as well as an approval of the advertisements relating to the offering of ICO-tokens. The FSMA, together with the NBB, warn on their websites several times for the risks, including hacking and phishing, with regards to investing in startups that use an ICO. [37]

Cryptocurrencies

The Belgian anti-money laundering system applies to the trade in bitcoins: as a result, financial institutions must report suspicious transactions with bitcoins to the Financial Information Processing Unit (CFI). The CFI is a Belgian government body that deals with the fight against money laundering and terrorism financing. [38] The CFI has already identified several cases of money laundering through the use of cryptocurrencies. On the basis of these findings, Belgian control authorities may, after referral by the CFI, impose administrative sanctions. [39]

The FSMA receives complaints about cryptocurrency trading platforms with some regularity. To protect the investors, the FSMA has decided to draw up a list of fraudulent platforms on which complaints have been received. This list already consists of 99 suspicious websites [40] and is publicly available online. [41]

In Belgium, profit from professional or speculative trade in bitcoins is considered income and taxed with income tax. The rate depends on whether or not the trade bitcoins is considered as professional or speculative. [42] Value Added Tax (VAT) should not be levied on the trade of bitcoins (that serve as payment method) for 'traditional currencies' according to the Court of Justice of the European Union. [43] This applies to Belgium as EU member state.

4.3 CHINA

The People's Bank of China (PBC) is China's central bank and regulates the financial markets and the foreign exchange market. [44] The PBC, together with 7 Chinese ministries, has established the National Internet Finance Association of China (NIFA). The NIFA aims to regulate market behavior while protecting the rights and interests of the industry.

ICOs

In September 2017 the PBC banned the acquisition of funds through all ICOs in China. [45] This applies to ICOs established in China, but also to foreign ICOs that try to raise funds in China. ICOs are, according to the PBC, too often related to financial fraud and other illegal activities. [46] The reason for issuing a ban is protecting the interests of Chinese investors against the risks associated with investing in ICOs.

As a result of the ban on ICOs, those who have fundraised in China through an ICO are obliged to return the collected money to the investors. In order to further restrict the sale of ICOs, the exchange platforms that enable the sale of ICO tokens, act as information intermediary for the ICO tokens or provide pricing services, have received the order to cease their activities. Exchange platforms that violate this prohibition will have their websites shut down, their app removed from app-stores, and their business license revoked. The ban on ICOs and its trading platforms has had its consequences for both non-Chinese and Chinese platforms. For instance, Allcoin, based in Canada, had to make ICO refunds after the Chinese government enforced the ban. [47]

At the start of 2018, the NIFA issued a warning to consumers and investors to be well informed about the risks associated with the ICO hype and does not seem hesitant to name and shame the suspicious ICOs and its issuing companies. [48] NIFA states that illegal ICO activities and exchange services must be reported to the NIFA or the police.

Cryptocurrencies

The PBC stated that financial organizations, including banks, are not allowed to trade in bitcoins. [49] Trading in cryptocurrencies is being hampered in China by closing exchange platforms for the trade in cryptocurrencies. [50] A virtual currency, such as a cryptocurrency, does not have a legal status equivalent to money in China and may therefore not be circulated or used as currency in the Chinese market.

While dealing in cryptocurrencies is made difficult for citizens in China, the PBC does examine whether it is possible to set up their own virtual currency with its Digital Currency Payment System. [51] It has established a research institute, the Digital Currency Research Lab, to achieve

this goal. [52] The creation of China's own digital currency should reduce the risks of money laundering, because a currency supported by the government and the central bank should make transactions more transparent. [53] Tests are done to find out whether the blockchain system meets the needs of the PBOC and its digital currency. Time will tell whether a blockchain based, by the government supported, digital currency will actually be introduced in China. [54]

4.4 ESTONIA

The Financial Supervisory Authority (EFSA) is the financial regulator in Estonia and responsible for the regulation of ICOs and the trade in cryptocurrencies. [55]

ICOs

According to the EFSA ICOs should be assessed according to their own characteristics, as each ICO is unique. [56] An ICO, depending on its substance and form (although substance should be considered over form according to EFSA), is regulated in Estonia under securities legislation, namely the Securities Market Act [57] and the Law of Obligations Act. [58] If the rights attached to tokens are similar to those of securities, they can be considered as securities for Estonian law. This means that a prospectus registered by the EFSA is required to legally issue an ICO. The Investment Funds Act [59] may also apply to an ICO, if the capital raised through an ICO is invested 'in accordance with a determined investment policy' and with the intention to benefit the investors. This Act requires the ICO-issuing company to have a fund manager authorized by the EFSA to manage the capital raised via the ICO.

Furthermore, the Credit Institutions Act [60] could apply to companies that have issued an ICO, depending on the condition that the company repeatedly has to grant loans under its own name and should finance these loans with money raised by the sale of ICO-tokens. As a result, authorization of the EFSA is needed for granting the loans. [61] Moreover, the Estonian Money Laundering and Terrorist Financing Prevention Act [62] applies to the so-called 'payment-tokens'. Payment tokens are ICO-tokens that are solely used for buying goods and services or that can function as means of money. For the issuance of these tokens, taking due diligence measures is mandatory. Lastly, the Advertising Act is applicable to the promotion and advertisement of an ICO. This means that misleading advertisements are not allowed and that the advertisement of investment services require prior authorization.

Non-compliance with the Estonian law may lead to the qualification of ICO-related actions as fraud and can be sanctioned accordingly.

In August 2017, Estonia made a proposal for issuing its own tokens through an ICO. These tokens were called 'estcoins'. However, the European Central Bank was less enthusiastic about this plan. It could not be the case that a Member State would introduce another currency within the euro zone than the euro itself. [63]

Cryptocurrencies

The Estonian Supreme Court has ruled that the exchange of cryptocurrencies is a legal activity regulated by the Estonian Act preventing money laundering and combating terrorism. [64] As a result, the founder of a trading platform that facilitates cryptocurrency trading should have a permit from EFSA on the basis of the Money Laundering and Terrorist Financing Prevention Act. [65]

Cryptocurrencies are qualified as property in Estonia and the gains raised from the sale or exchange of the cryptocurrencies are therefore taxed with income tax. [66]

4.5 JAPAN

The Financial Services Agency (FSA) is responsible for the stability of the financial market in Japan, offers protection to investors and is the regulator of private financial institutions and securities transactions. [67] The FSA has released a statement regarding the regulation of ICOs and cryptocurrencies.

ICOs

The FSA clarified in a statement how crowdfunding through ICOs is regulated in Japan. [68] The FSA has indicated that the regulation depends on the structure of the ICO and the nature of the token. [69] ICOs may be regulated under the Japanese Payment Services Act [70] and/or the Financial Instruments and Exchange Act. [71]

Regulation of ICOs can take place on the basis of the Payment Services Act, also known as the virtual currency law, if the ICO-token can be qualified as a 'virtual currency'. The token qualifies as a virtual currency, when it is 'mutually exchangeable with virtual currencies', or if it can serve as payment for goods and services and can be exchanged for fiat currency.On the basis of this Act, the exchange services of virtual currencies (including those of cryptocurrencies) are regulated. Trading platforms that enable exchange of these ICO tokens must register with the FSA. [72]

Regulation of ICOs can also take place on the basis of the Japanese Financial Instruments and Exchange Act if the token is purchased with a fiat currency, or virtual currency (such as cryptocurrencies), and can be categorized as dividend. In that case, the founder of an ICO and the publisher of the tokens must be registered.

Cryptocurrencies

Under the Payment Services Act, exchange services of virtual currencies (including those of cryptocurrencies) are regulated. These exchange services include the purchase and sale of cryptocurrencies, the mediation of these services and the management of cryptocurrencies. For the provision of these services, registration with the FSA is mandatory. [73] This applies to both Japanese and foreign providers. If there is no registration, it is prohibited to provide these services to Japanese residents. [74]

One of the conditions for registering with the FSA is that a service provider (in most cases a trading platform) has an office in Japan. Furthermore, under the Japanese Law on prevention of transfer of criminal proceeds [75] , the trading venues for virtual currencies have the obligation to verify their customers. This customer registration aims to combat money laundering.

If you earn more than 200,000 Japanese Yen with trading in cryptocurrencies, you will be taxed by Japan's National Tax Authority with income tax as the trading profits will qualify as miscellaneous income or capital gains. [76]

4.6 SWITZERLAND

The Swiss Financial Market Supervisory Authority (FINMA) is the regulator of the Swiss financial markets and has published guidelines regarding the regulation of ICOs and cryptocurrencies. [77]

ICOs

FINMA has published guidelines stating how ICO founders will most likely be regulated in Switzerland. [78] The regulations that apply to ICOs depend on the design and structure of the ICO. In order to be able to determine the type of ICO, the economic function and the purpose of the issued tokens are mainly examined.

The FINMA guidelines show that at least three categories of tokens are recognized. These are the tokens that serve as payment means ('payment tokens'), the tokens that provide digital access to an application or service ('utility tokens') and the tokens that represent assets ('asset tokens'). The latter category includes securities and participating interests.

In Switzerland ICOs are most likely to be regulated under securities legislation and the Anti-Money Laundering Act. [79] Trade in asset tokens is co-regulated by securities legislation and civil law under the Swiss Code of Obligations [80] and goes with the obligation that investors must be able to make a well-informed investor choice. Especially for the payment tokens, compliance with the Anti-Money Laundering Act is obliged. Under this Act mediators of the trade in ICO tokens are required to identify in advance who the beneficial owner will be, a sort of Know-Your-Customer (KYC) obligation. [81] If an ICO or its issuer does not comply with the Swiss regulations, enforcement by the Swiss authorities is possible. [82] FINMA seems to take its guidelines very seriously, as it has already started enforcement proceedings against an issuer of an ICO that possibly breached banking laws, by accepting public deposits without authorization. [83]

It is still unknown to what extent civil law can offer protection for Swiss investors in ICOs. It is not yet clear whether the purchase of tokens leads to a civil-law binding contract. Investing in ICOs may therefore entail risks for investors, according to FINMA.

Cryptocurrencies

FINMA has provided information on the Swiss regulation of trade in virtual currencies, such as bitcoin. [84] According to FINMA the trading platforms that enable the purchasing and selling of virtual currencies are regulated by the Anti-Money Laundering Act. These platforms are therefore obliged to register with FINMA or join a 'self-regulatory organization'. Organizations that provide the so-called online 'wallets' for customers to store their cryptocurrencies, may need a banking-license from FINMA.

The Swiss tax authorities have confirmed that the bitcoin will be taxed the same as the Swiss Franc. [85] Therefore, transactions in bitcoin are exempted from VAT tax. Cryptocurrencies can be taxed as assets of private individuals. Profits earned through cryptocurrencies are only taxed in case the trader is a professional.

4.7 THE NETHERLANDS

The Authority of Financial Markets (AFM) is the Dutch regulator of financial markets. Furthermore, the Dutch Authority for Consumers and Markets (ACM) and The Dutch Central

Bank (DNB) regulate the financial sector in the Netherlands. The ACM monitors competition and parts of consumer law. [86] The DNB is committed to financial stability. [87] All three supervisors have released statements on the regulation of ICOs and cryptocurrencies.

ICOs

The AFM has released statements concerning the regulation of ICOs. [88] The AFM supervises compliance with the Financial Supervision Act [89] and this law applies to an ICO if the tokens can be qualified as security. If it concerns a token that qualifies as a security, then a prospectus approved by the AFM is required. Moreover, investment firms that enable trading in ICO-tokens must comply with the requirements of theAnti-Money Laundering and Anti-Terrorist Financing Act. [90] However, the AFM has noted that in practice ICOs often will not be supervised, as they are often structured with the intent to fall outside the supervision of the AFM. [91]

The AFM regularly points out the dangers that come with investing in ICOs and has also ascertained that Dutch citizens seem to become less interested in investing in ICOs and cryptocurrencies. [92] However the AFM sees potential in the use of ICOs despite the dangers and risks. In order to promote innovation in the financial market, it has established the InnovationHub together with the DNB. People can contact the AFM and DNB via the InnovationHub with questions about the interpretation of legislative rules with regard to innovative financial developments. [93]

Cryptocurrencies

In principle the AFM does not supervise cryptocurrencies, but when it comes to investments it may be different as the AFM seems to be particularly alert to investors in cryptocurrencies. [94] When a cryptocurrency is not supervised by the AFM, there is still the possibility of supervision by the ACM if a cryptocurrency falls under the scope of the Law on consumer protection. [95] The ACM may only enforce this law when it comes to the protection of consumers. [96] The DNB does not supervise cryptocurrencies because they are not (yet) within the scope of the Financial Supervision Act. However, the DNB monitors the trade in cryptocurrencies by the institutions it was already supervising. [97]

The AFM has set itself as a goal for 2019 to develop a new approach for the supervision of cryptocurrencies and ICOs. [98] In January 2019, it has published, together with the DNB, specific recommendations for a new (European) regulatory framework, with regards to both cryptocurrencies and ICOs. [99] The key points that can be found in the advice are important for both the Dutch and European approach, and can be summarized as follows. Firstly, they advise to introduce a licensing-system for the fiat-cryptocurrency exchange platforms and providers of the so-called 'wallets'. This licensing-system should be implemented in the Anti-Money Laundering and Counter-Terrorist Financing Act, so that the revised European anti-money laundering Directive can be effectively enforced in the Netherlands. Secondly, they advocate for a broader definition of the concept of securities in the Dutch national legislation, so that the AFM can extend its scope of supervision to more cryptocurrencies and ICOs. Thirdly, they advise to allow offering and trading in cryptocurrencies equivalent to shares or bonds. To effectuate this, European regulations need to be adjusted. Fourthly, they advise to take a technology-neutral approach with regard to formulating European legislation on corporate finance, so that new forms of cryptocurrencies and ICOs will fall within the regulatory framework. This recently published advice will probably soon have consequences for the supervision policies of the AFM on ICOs and cryptocurrencies.

Regulation of ICOs with regard to money laundering and terrorist financing in the Netherlands is likely to take place on the basis of the fifth European Anti-Money Laundering Directive [100] (AMLD5). [101] This AMLD5 has yet to be implemented in the Dutch national legislation.

The possession of cryptocurrencies is subject to income tax in the Netherlands and is considered to be property. [102] A legal person trading in cryptocurrencies as part of its business will be taxed on the trading-profits. In case of cryptocurrency payments for services of goods, VAT tax is required. However, Value Added Tax (VAT) should not be levied on the trade of bitcoins (that serve as payment method) for 'traditional currencies' according to the Court of Justice of the European Union. [103] This applies also to the Netherlands as a member state of the EU.

4.8 UNITED STATES

The Securities and Exchange Commission (SEC) oversees compliance with federal securities laws in the United States. [104] The Securities and Exchange Commission (SEC) and the Financial Crimes Enforcement Network (FinCEN) regulate the financial markets in the United States. [105] The FinCEN supervises compliance with, among other things, the Bank Secrecy Act. [106]

ICOs

The SEC states that ICOs and its tokens may fall under the regulation of the federal securities legislation. This federal securities legislation primarily provides protection for investors, as they should be able to make an informed decision when buying and selling tokens. [107] The exchanges that enable trade in ICO-tokens that qualify as securities, will need to be registered by the SEC. [108] Entities that facilitate the issuance of ICOs and secondary trading in digital asset securities may be required to become a member of a self-regulatory organization or to register with the SEC, as they are acting as 'broker' or 'dealer'. [109]

The SEC actively enforces its federal securities legislation with regards to ICOs and has set up a page on its website that lists which 'Cyber Enforcement Actions' have been taken against which ICO companies and exchange platforms. [110] A few dozen company names are listed and the reasons for enforcement actions are mainly unregistered offering of securities and alleged fraud. The sanctions are quite heavy. To give an example, two executives that were suspected of fraud with their ICO have been ordered by the SEC in court to pay a fine of nearly 2.7 million dollars. [111] This might however not be their only sanction, as they were also prohibited from participating in digital securities and serving as officer or director of public companies.

To guide investors, fintech developers and entrepreneurs, the SEC has launched a strategic Hub for Innovation and Financial Technology. [112] Via this Hub American citizens can directly connect with SEC staff to ask questions relating to FinTech matters, and easily get informed about the SECs view on the regulation of ICOs and other matters relating to blockchain technology. [113] This Hub serves the purpose of keeping innovators and investors informed about FinTech-regulations in an accessible manner.

Cryptocurrencies

The SEC has indicated that cryptocurrencies may qualify as securities. It is up to the publisher/seller of cryptocurrencies to prove that they do not fall under the scope of the securities legislation. If he fails to do so, he must comply with the requirements of US securities

legislation and thus falls under the supervision of the SEC. Trade exchanges that mediate securities trading are subject to supervision by the SEC and must be registered there. [114]

The FinCEN has declared the Bank Secrecy Act applicable to those who create, acquire, exchange, accept and send virtual currencies. [115] The Bank Secrecy Act is the most extensive US anti-money laundering and terrorist financing law. If you are involved in the exchange of virtual currencies as part of your company, you may qualify as 'exchanger' and are therefore subject to reporting, recordkeeping and registration regulations. Additionally, market participants who accept payments in cryptocurrencies have to comply with the anti-money laundering and know-your-customer obligations. [116]

In the United States virtual money qualifies as property and gains realized by the exchange or sale of cryptocurrencies are taxed accordingly. [117]

4.9 EUROPEAN UNION

The European Securities and Markets Authority (ESMA) is an independent EU authority that deals with the stabilization of financial markets and investor protection. [118] ESMA is part of the European System of Financial Supervision (ESFS). Next to ESMA, the European Central Bank (ECB) is responsible for the price stability within the monetary union. [119]

ICOs

Both EBA and ESMA have recently published advices that focus on the regulation of cryptocurrencies and ICOs within the European Union. [120] With regards to the regulation of ICOs, ESMA makes a distinction between the ICOs that qualify as a financial instrument (such as a transferable security [121]) for the Market in Financial Instruments Directive (MiFID II) [122] and ICOs that do not qualify as financial instrument. It is to a certain extent up to member states to interpret and qualify ICOs as financial instruments. The application of the MiFID II, such as the qualification of a certain ICO as financial instrument, may therefore slightly differ per state.

ICOs that qualify as a financial instrument, will fall within the scope of the European Union financial rules and may therefore be regulated under the Prospectus Directive, [123] the Transparency Directive, [124] the Market Abuse Directive, [125] the Short Selling Regulation, [126] the MiFID II, the Settlement Finality Directive [127] and the Central Securities Depositories. It depends on the design of the ICO, whether it falls within the scope of the EU financial rules and also, which of them it has to be in compliance with. If an ICO-tokens qualifies as a transferable security, the Prospectus Directive requires a publication of a prospectus by the issuer of the ICO, although exceptions do exist. [128] Issuers of transferable securities must also comply with the Transparency Directive, resulting in periodic and ongoing disclosure requirements. [129]

The ICOs that do not qualify as financial instrument will not be regulated by these financial rules and this increases the risks for ICO investors. The ICO may however qualify as an 'alternative investment fund' or as 'electronic money'. The qualification as alternative investment fund results in regulation under the Alternative Investment Fund Managers Directive (AIFMD). [130] The AIFMD provides regulations for capital, organization and transparency. The qualification as electronic money will lead to regulation under the second Electronic Money Directive (EMD2). [131]

Both advices were published as a result of the FinTech Action plan 2018 of the European Commission. Before the advices were published, ESMA had already published two statements relating to ICOs. The first statement concerns a warning with regard to the risks involved for investors investing in ICOs. [132] Not all ICOs will fall under the European laws and regulations and it is therefore possible that investors do not enjoy protection. In addition, ESMA points to the risk that flaws may occur in the technology of ICOs. As a result, investors run the risk of losing their tokens. The second statement serves as a reminder for companies involved in ICOs to act in compliance with the European laws and meet the regulatory requirements. [133]

Cryptocurrencies

According to the European regulators, including ESMA, the trade in cryptocurrencies may be regulated under the same (financial) EU law as mentioned for the regulation of ICOs. [134]

Additionally, Anti-money laundering and terrorist financing rules may apply to the trade in cryptocurrencies. In 2016, a proposal for a directive was made by the European Commission to take additional measures to prevent terrorist financing and money laundering. [135] As a result,the European Parliament has recently adopted and the new anti-money laundering directive, namely the Fifth Anti-Money Laundering Directive (AMLD5). [136] This Directive concerns the prevention of money laundering and terrorism financing and has been extended so that it is now applicable to providers that enable the exchanging of cryptocurrencies and fiat currencies, and to wallet providers. [137] As a result, these providers must identify customers and will have to report suspicious activities to the competent authority: the Financial Intelligence Units. [138] The new Directive has to be implemented in the national laws of member states by the 10thof January 2020.

The levying of VAT is harmonized within the European Union by the VAT Directive. [139] The Court of Justice of the European Union has ruled on the levying of VAT on the exchange of bitcoins for on 'traditional currencies' and vice versa. In this judgment it has decided that bitcoins are exempt from VAT. [140]

5. Analysis

After considering the regulatory framework in each jurisdiction, we can now compare the different approaches. In this section, we first compare several general aspects (Section 5.1) and then focus more on the specifics of ICOs (Section 5.2) and cryptocurrencies (Section 5.3) respectively.

5.1 GENERAL COMPARISON

When looking at the regulators/supervisory authorities, it is clear that in each jurisdiction there is at least one financial supervisory authority that focuses on ICOs and cryptocurrencies. In some countries, like Estonia, Japan and Switzerland, this is the task of one financial authority. In most jurisdictions (Australia, Belgium China, the Netherlands, the United States and the EU), there are actually several supervisory authorities involved, usually a combination of financial supervisory authorities (including central banks), but sometimes also including consumer protection authorities (like in the Netherlands, where there is a strong focus on consumer protection).

All authorities are experienced in supervising traditional financial markets, but are to some extent struggling with the new developments regarding ICOs and cryptocurrencies. When comparing how actively they address regulation in this area, considerable differences can be observed. Some countries take a very active approach towards regulating ICOs and cryptocurrencies, such as Australia, Switzerland and China, creating new regulation and/or providing information and guidance, Other jurisdictions (such as Belgium and the Netherlands) take a more passive approach, doing nothing or waiting, explicitly excluding ICOs and cryptocurrencies from their scope of supervision, or (sometimes halfheartedly) trying to apply existing legislation to these new developments.

When looking at the drivers for regulating ICOs and cryptocurrencies, different motives can clearly be distinguished in different jurisdictions. Some jurisdictions focus specifically on investor protection, whereas other focus specifically on consumer protection. Australia, China, the EU, and the United States are typical examples of a strong focus on investor protection. Japan and the Netherlands are typical examples of a strong focus on consumer protection.

Another strong driver, to some extent related to investor protection, is protection of the financial system by addressing fraud, money laundering and terrorism financing. These are considerations in all jurisdictions. One important aspect in addressing fraud, money laundering and terrorism financing is a Know Your Customer (KYC) policy, in which customers need to provide proof of their identification and further details to assess whether they constitute a risk. This may be an important tool in risk assessments and addressing these types of crime. [141] However, it is important to realize that a KYC policy is to some extent at odds with the characteristics and benefits of ICOs and cryptocurrencies: a KYC policy is intended to crack down anonymity, whereas the anonymity of ICOs and cryptocurrencies can be a beneficial aspect, for instance, for those investors who want to remain anonymous. Therefore, having a KYC policy or not may be an important decision, as it may address crime but also hinder some investment schemes and business innovation plans. Of the jurisdictions investigated, Japan and Switzerland have explicit KYC regulation. Several other jurisdictions, including the United States and all EU member states, also have KYC regulation, but this does not always (explicitly) apply to ICOs and cryptocurrencies. For instance, in the Netherlands, cryptocurrencies are not considered real money and are therefore beyond the scope of banking licenses and supervision - hence the KYC regulation does not apply.

Most of the jurisdictions try to apply existing legislation to the new developments regarding ICOs and cryptocurrencies. Only a few jurisdictions (China and Switzerland) have legislation that more specifically and explicitly addresses ICOs and cryptocurrencies. The other countries simply try to make interpretations that allow them to regulate to some extent ICOs and cryptocurrencies. When looking at this legislation, it is clear that some jurisdictions have more concentrated legislation (i.e. all relevant articles compiled in one or a few acts), whereas others have more scattered legislation (i.e. all relevant articles scattered over many different acts). Australia, China, Switzerland and the United States are examples of more concentrated legislative frameworks, whereas Belgium, Estonia, and the EU are examples of more scattered legislative frameworks. The Netherlands is somewhat in between, having concentrated legal frameworks in two areas, i.e., financial legislation and consumer protection law.

When comparing the tools of regulation for ICOs and cryptocurrencies, a plethora of methods can be identified. Apart from the already mentioned legislation for addressing fraud, money laundering and terrorism financing, such as KYS tools, some countries choose to regulate platforms (e.g. Australia), to use blacklists (e.g. Belgium), to do naming and shaming (e.g. China,

the United States), to require offices within their jurisdiction (e.g. Japan), to create a mandatory prospectus of the financial products or services offered (e.g. Estonia), to require licenses (e.g. Australia, Switzerland), to require registration (e.g. Australia, Japan, Switzerland, United States) and of course sanctions for non-compliance (all jurisdictions).

Another important tool is to provide information and guidance. There are clear differences here in the jurisdictions examined. Some jurisdictions actively pick up the role of providing information and guidance. Innovation hubs and information helpdesks are available in several countries, such as Australia, Switzerland, the Netherlands. However, there are differences in the audience to which information and guidance is provided. For instance, in Australia and Switzerland, the information and guidance are intended for companies and investors, whereas in the Netherlands, the focus is on citizens and consumers. Other jurisdictions, like the EU and China, do not (or only in a very limited way) offer such information and guidance.

In their struggle to deal with ICOs and cryptocurrencies, some countries are even considering introducing their own cryptocurrency. This is the case in China and Estonia, but both countries have, thus far, not managed to make significant progress with such plans. Also, other countries, [142] beyond the scope of our research are considering this, such as Iceland (Auroracoin), Venezuela (Petro), the United Arab Emirates (Emcash) and Russia (Crypto Ruble), but none of these countries nor any other country currently has a national cryptocurrency. It remains to be seen whether this is really a viable option.

A final observation in this comparison is that virtually all jurisdictions have taxation legislation in place for taxing cryptocurrencies, mostly as assets, usually not as actual money. Only the EU is, to some extent, an exception to this rule, because of a recent ruling from the Court of Justice of the EU exempting bitcoins from VAT. The quick ways in which tax authorities found means to tax cryptocurrencies is in remarkable contrast with the hesitant ways in which financial authorities are trying to regulate these cryptocurrencies.

5.2 ANALYSIS ON THE REGULATION OF ICOS

The approaches of the countries with regard to regulating ICOs differ, varying from a negative, prohibitive approach to a positive, facilitating approach. Of the investigated countries, China has the most negative approach, as it has completely forbidden fundraising through ICOs. Violating China's ICO-ban may lead to the obligation of refunding of the funds raised through ICO-token sales and revoking business licenses. With this negative approach the Chinese government chooses for a risk-averse strategy, as it tries to protect Chinese investors. The advantages of this risk-averse strategy include the focus to money laundering, fraud and terrorist financing and the (paternalistic) protection of investors for high risks. The major disadvantage of a negative approach such as China's is of course that opportunities and possibilities for businesses in the field of financial and technological innovation can be hardly explored.

The most facilitating approaches are the approaches of Australia and Switzerland. These governments seem to be more positive about the new technological developments and are willing to manage the use of ICOs through advanced and detailed regulations. Choosing a positive, facilitating approach offers opportunities for the FinTech sector, where financial and technological innovations can lead to new developments. At the same time, this is not a risk-free approach, as there is room for abuse, such as money laundering, fraud and terrorist financing. And, at volatile rates, high risks (large profits, but also large losses) can arise for investors. On a

larger scale, when many companies switch to blockchain technology, the financial-economic system can be destabilized. If that happens, central governments and financial supervisors (due to the decentralized and privatized nature of blockchain technology) have considerably less control over developments than when a financial crisis takes place with fiat currencies that central banks can control and interfere with.

Different categories exist in between the apparently positive and negative approaches of the abovementioned governments. The jurisdictions that fall within these categories only regulate ICOs insofar the designing of ICOs or ICO-tokens fits within the (national) regulatory framework. For most countries, regulation applies to the qualification of the issued tokens as 'securities'. With regard to the 'in-between' categories: there are countries that take a more wait-and-see-approach in supervising and enforcing laws and countries that have adjusted the interpretation of existing legislation, so that they can supervise and enforce the laws actively insofar the ICOs fall within the regulatory framework. A country that takes this wait-and-see-approach is The Netherlands, as its supervisory authorities seem very reticent in supervising the establishment and selling of ICOs and mostly release warnings. However, The Netherlands is actively seeking for a new, more positive approach. A country that falls in the latter category and seems to actively enforce existing laws on the fundraising through ICOs is the United States.

5.3 ANALYSIS ON THE TRADE IN CRYPTOCURRENCIES

The trade in cryptocurrencies is regulated fairly similarly across the investigated jurisdictions, compared to the differences in the regulation of ICOs. New legislation has been adopted by Japan, Australia and the European Union to regulate cryptocurrencies. In the other countries studied, the existing legislation has been considered sufficient. With regard to supervising and enforcing the national laws, some of the researched countries seem more active than others. Especially the United States, Belgium and Japan are very actively supervising and enforcing the field of cryptocurrency trade, as the United States and Belgium apply the harsh naming and shaming method, and Japan applies a strict registration system for cryptocurrency service providers.

For the trade in cryptocurrencies anti-money laundering legislation applies in all countries studied. The only exception to this seems to be the Netherlands, whose regulation is depending on the implementation of the new EU Anti Money Laundering Directive, resulting in a wait-and-see attitude.

The advantages and disadvantages of the different strategies for the regulation of cryptocurrencies are comparable with those for ICOs. The prohibition strategy as applied in China is a risk-averse strategy with the advantages of a solid approach to money laundering, fraud and terrorist financing and the (paternalistic) protection of investors for high risks. The major disadvantage of a negative, prohibitive approach is of course that opportunities in the field of financial and technical innovation are not or hardly explored. With a positive, facilitating approach, there are opportunities for financial and technical innovations that can lead to new developments. At the same time, this approach goes hand in hand with risks of misuse (money laundering, fraud and terrorist financing), risks for investors as a result of volatile prices and (in the case of economies of scale) destabilization of the financial-economic system on which governments and regulators subsequently have little control.

6 Conclusions

Governments and financial regulators around the world are challenged by the question as to what extent applications of crowdfunding through ICOs and trading in cryptocurrencies should be regulated. Even though the development of blockchain technology, on which these applications are based, is something most (if not all) countries have to deal with, they all seem to differ greatly in their approach of regulating these applications. In this article we provided further insight in the variety of views and approaches of countries worldwide in regulating ICOs and cryptocurrencies.

Overall, it can be concluded that all the countries and jurisdictions investigated do have legislation that is applicable to ICOs and cryptocurrencies. However, big differences exist in the extent to which the legislation applies and is regulated by the national supervising authorities. Generally speaking, most legislation of the investigated jurisdictions consists of financial markets legislation (including that of securities), anti-money laundering legislation, and consumer law. The approaches of the countries investigated differ from a negative, forbidding approach to a positive and facilitating approach. An example of the forbidding approach can clearly be seen in China, which has launched an ICO-ban and is also obstructing the trade in cryptocurrencies for its own citizens. However, most of the countries investigated frequently have chosen for a more facilitating approach, as they often try to clarify the legal frameworks regarding the new developments in order to promote innovation. This can be seen in, among others, Australia and Switzerland.

With regard to the identification ofpotential good or even best practices:in this paper no framework has been outlined that could be used to assess which method of regulation of ICOs and cryptocurrencies can ultimately be qualified as best strategy. However, the advantages and disadvantages of the various approaches are clear. Whilst a general prohibition is risk-averse with regard to abuse, investment risks and financial-economic stability, it is at the same time reluctant for financial and technical innovations that may benefit companies and citizens. For this reason, a more facilitating approach seems more favourable. However, in such a positive, facilitating approach the advantages and disadvantages are virtually mirrored to the restrictive approach, as it creates leeway for abuse and possibly (great) financial losses. A positive and facilitating approach therefore requires a clear and detailed legislative and regulatory framework for all parties that are involved in the establishment, issuing, storing or trading of cryptocurrencies and ICOs. Such a framework should at least provide boundaries with regard to money laundering and other common forms of cybercrime. Moreover, it should provide some sort of consumer/investor protection and clarity when it comes to tax liability. A legislative and regulatory framework that provides all these aspects will prevent abuse and may give government bodies the ability to intervene when issues occur. As can be deducted from our research results, most countries that have a more facilitating approach seem to have such legislation in one way or another, although it is not always very extensive.

The different approaches towards ICOs and cryptocurrencies that can be observed in the jurisdictions examined is to some extent understandable from the perspective of the different cultural and economic characteristics of each country. Also, the novelty of these developments accounts to some extent for the different approaches, as countries are still looking for best practices and trying to find out the more effective regulatory frameworks. Despite such explanations, however, the different and non-harmonized regulatory frameworks do cause an undeniable issue regarding international economic ties. When one country prohibits

cryptocurrencies altogether, whereas another country allows and facilitates this, no economic interaction can take place on the basis of such cryptocurrencies. From an economic perspective, a more harmonised framework (that does not too prohibitive and restrictive) would probably be preferable. But even when a more prohibitive or restrictive regulatory framework is the goals that is strived for, a further harmonisation may be beneficial: when one jurisdiction is more prohibitive or restrictive, it is very likely that platforms for ICOs and cryptocurrencies more their activities to other, more lenient jurisdictions.

Last but not least, it is useful to note that this research has shown several means that countries use when it comes to ensuring compliance of crowdfunding through ICOs and trading in cryptocurrencies with the laws. It shows that ensuring compliance with the laws is especially important when it comes to new technological developments, because it provides legal certainty for investors and innovative companies with regard to the legal boundaries within which they must operate. The countries investigated show different ways to ensure legal compliance that are worth to identify and put into practice. The first way is by enforcing the laws actively and thus creating precedent. To achieve this, national (financial) supervisory authorities should be equipped with a number of tools, powers, and resources to keep a close watch on developments within the financial field. A very deterrent and informative form of enforcing the law is by publishing the names of violators of the laws, within the categories of ICOs and cryptocurrencies. Countries that have applied this naming-and-shaming method are Belgium and the United States. A second effective way to ensure legal compliance is by setting up an easily accessible service provided by government bodies for innovators and investors to inquire about the rules concerning the establishment, issuing, selling and storing of ICOs and cryptocurrencies. This can be done, for example, by creating an innovation hub, as has been done in Australia and the Netherlands, or an accessible and informative website through which people can easily get in touch with the government, as has been done by the United States. A third and very important way to ensure legal compliance on cross-border technological developments such as the ICOs and cryptocurrencies is to set up an international strategy for the regulation. Such an international strategy has been set up within the European Union and is necessary to keep investors and innovators from escaping and abusing national laws and protect national economies as much as possible. Ideally, this international strategy should be expanded even further to strengthen the position of national governments in a rapidly changing technological world.

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