Cryptocurrencies as (i)legal tender in North Macedonia and the EU

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CRYPTOCURRENCIES AS (I)LEGAL TENDER IN NORTH MACEDONIA AN THE EU[1]

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Abstract

In recent years, cryptocurrencies have increasingly entered the mainstream as instruments of payment and even to a larger extent as investments. While it was difficult and technically challenging to invest in cryptocurrencies in their early days, today it is as simple as or often even simpler than investing in regular stocks, bonds or any number of financial instruments. The promises of cryptocurrencies are that they will allow for simple, easy, cheap, fast, secure and mostly anonymous transactions. While still no cryptocurrency has reached those targets to such an extent that, it could present serious competition to regular means of payment, a vast number of experts across the world, work to solve those issues and improve the quality of cryptocurrencies.
However, the steep rise of cryptocurrency brought also a multitude of issues with it. Cryptocurrencies have been used for their quasi anonymity (pseudonymity) as means of payment of criminal organizations and for black market transactions. Furthermore, the international and decentralized nature of cryptocurrency enabled tax avoidance and evasion. An even worse occurrence was the use of cryptocurrency trading platforms for money laundering purposes. Most cryptocurrencies have proven to be unstable, some even up to the extent where their value was entirely artificially created through so called "pump and dump" schemes.
In conclusion, cryptocurrencies show a lot of potential, but also present a serious risk for national fiscal and monetary interests, as well as consumer rights. Some countries addressed those issues by outright banning cryptocurrencies, while other preferred to regulate, monitor and tax them. While North Macedonia chose the former approach, the EU took a strong regulatory approach

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towards cryptocurrency in the 5th Anti-money laundering Directive. The directive regulates providers engaged in exchange services between virtual currencies and fiat currencies as well as custodian wallet providers, which now must meet the same requirements as financial institutions. This paper compares the European approach with the stance of the Republic of North Macedonia. It attempts to highlights the advantages and risks of the respective approaches by addressing the regulatory impact of the existing legal frameworks on all stakeholders.

Keywords: *Anti money laundering directive, cryptocurrency, blockchain, terrorism financing, cybercrime, cryptocurrency exchange, wallet*

I. INTRODUCTION

In recent years, cryptocurrencies have increasingly entered the mainstream as instruments of payment and even to a larger extent as investments. Early investors in the most popular cryptocurrencies achieved returns of multiple thousand percent. Many businesses, financial service providers and investors have therefore entered this rapidly growing field. International cryptocurrency exchanges like Binance, Bitmex or Coinbase have established themselves as central hubs for the exchange of cryptocurrencies on which enormous volumes of cryptocurrencies are traded on a daily basis[2].

While it was difficult and technically challenging to invest in cryptocurrencies in their early days, today it is as simple as, or often even simpler than investing in regular stocks, bonds or any number of financial instruments. Cryptocurrencies have been advertised with promises that they will allow for simple, easy, cheap, fast, secure and virtually anonymous transactions. While still no cryptocurrency has reached those targets to such an extent that it could present serious competition to regular means of payment, a vast number of experts across the world, work to solve those issues and improve the technical qualities of cryptocurrencies[3].

However, the steep rise of cryptocurrency brought also a multitude of issues with it. Cryptocurrencies have been used for their quasi anonymity (pseudonymity) as means of payment of criminal organizations and for black market transactions[4]. Furthermore, the international and decentralized nature of cryptocurrency in combination with the lack of regulation, made it almost impossible for tax authorities to track transactions[5]. As a direct consequence, tax evasion regarding investment gains from cryptocurrency trading was a regular occurrence. An even worse occurrence was the use of cryptocurrency trading platforms for money laundering purposes[6].

Besides the effect of pseudonymity on user behavior, a further important factor is the volatility of cryptocurrency. The prices of cryptocurrencies like Bitcoin, Litecoin or Ether have shown significant volatility and comparably little correlation to traditional market trends. While some

[2] While existing sources cannot be fully validated, see for trading volume for example: https://www.bitcointradevolume.com/; https://www.coindesk.com/coinbase-broke-traffic-records-and-saw-massive-volume-during-market-collapse; https://coin.market/exchange/coinbase.

[3] See for example Eyal, Ittay: Blockchain Technology: Transforming Libertarian Cryptocurrency Dreams to Finance and Banking Realities. Computer, 2017, 50(9), 38–49.

[4] Sesha Kethineni, Ying Cao: The Rise in Popularity of Cryptocurrency and Associated Criminal Activity, International criminal justice review, I-20, p. 5.

[5] Svitlana Volosovych, Yurii Baraniuk: Tax control of cryptocurrency transactions in Ukraine, Banks and Bank Systems, Vol. 13, Issue 2, 2018, p. 90.

[6] Sesha Kethineni, Ying Cao: The Rise in Popularity of Cryptocurrency and Associated Criminal Activity, International criminal justice review, I-20, p. 6.

investors see this as an opportunity to hedge against more traditional investments and to trade on a vivid market, the risks of investment and lack of an understanding of the underlying value of the currencies, make investments in this field a risky endeavor. This is especially true if one considers the status of less known cryptocurrencies. Those cryptocurrencies have shown to be even more unstable up to the extent where their value was entirely artificially created through so called "pump and dump" schemes[7].

In conclusion, cryptocurrencies show a lot of potential, but also present a serious risk for national fiscal and monetary interests, as well as consumer rights. Under this light, national governments across the world have taken action, their approaches however differed vastly. While countries like Croatia have opted for the approach to legalize and tax cryptocurrency as investment[8], other countries like North Macedonia have taken action to declare cryptocurrencies to be practically illegal. Besides national governments however, the EU as unified entity took a strong regulatory approach towards cryptocurrency in the 5th Anti-money laundering Directive[9]. This directive creates an EU wide regulatory framework, similar to the framework introduced previously in the United States. The directive regulates providers engaged in exchange services between virtual currencies and fiat currencies as well as custodian wallet providers, which now must meet the same requirements as financial institutions. This paper compares the European approach with the stance of the Republic of North Macedonia and attempts to highlights the advantages and risks of the respective approaches.

II. THE TECHNICAL AND FINANCIAL BACKGROUND OF CRYPTOCURRENCY AND CRYPTOCURRENCY EXCHANGE

Blockchain technology is the name of a system that allows the digital storage of information in a sequence of interlinked information blocks that are validated by the network and build on each other in order to ensure the validity of the chain without relying on trust in any single participant in the network[10]. The invention of blockchain technology was closely related to the introduction of bitcoin - the first cryptocurrency.[11] Bitcoin does not exist in physical form, but can be mined, purchased, spent, invested, or kept in so called "wallets." All the transactions are recorded on the publicly accessible bitcoin blockchain. The blockchain infrastructure uses open source software to create a database of data entries. Those data entries are in fact transactions distributed across a large number of computer nodes.[12] Blockchain uses encryption and complex mathematical algorithms for irrevocable records and data synchronization protected from manipulation. The functional entity of blockchain can be described as a distributed ledger with supported identical

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[7] Jiahua Xu, Benjamin Livshits: The Anatomy of a Cryptocurrency Pump-and-Dump Scheme, Proceedings of the 28th USENIX Security Symposium,2019, Santa Clara, p. 1609 f.

[8] See for example: Croatian ministry of finance, revenue service, opinion nr. 410-19/14-01/380, reg. Nr. 513-07-21-01/15-2, Zagreb, 07.05.2015; Broj klase:410-01/17-01/472; Croatian ministry of finance, revenue service, opinion nr. 410-01/17-01/472, reg. Nr. 513-07-21-01/17-3 Zagreb, 03.04.2017.

[9] Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU (Text with EEA relevance), PE/72/2017/REV/1, OJ L 156, 19.6.2018, p. 43–74

[10] See Marko Perkušić: Legal Issues of Electronic Payment, Doctoral Dissertation, University of Rijeka, Faculty of Law, 2019, pp. 376 – 393.

[11] S Nakamoto, ' Bitcoin: A Peer-to-Peer Electronic Cash System' [2008] White paper

[12] S Nakamoto , 'Bitcoin: A Peer-to-Peer Electronic Cash System' [2009] White paper

copies of multiple computers, controlled by various users. But the true potential of blockchain derives from its structure that allows movement of data through a secured hash structure. Regarding the conceptualization, blockchain technology is consisted of three major components. The first one is the ledger, which is a series of blocks that are the public record of the transactions and the order in which they were conducted. The second is the consensus protocol, which allows all of the members of the community to agree on the values stored in the ledger. Finally, there is the digital currency, which acts as a reward for those willing to do the work of advancing the ledger. These components work together to provide a system that has the properties of stability, irreversibility, and distribution of trust.[13]

Blockchains can be separated in two fundamentally different categories, depending on whether they are permission-less (public) or permissioned (private).[14] At its inception through the introduction of Bitcoin, blockchain technology was modelled as a technology, which would make central institutions obsolete, thus empowering all individuals that are part of the network and guaranteeing them anonymity. Especially supporters of cryptocurrencies as new means of payment consider those characteristics to be crucial.[15] In the permission-less blockchain anyone can be a user or run a node, anyone can "write" to the shared state through invoking transactions, and anyone can participate in the consensus process for determining the "valid state".[16] There is no need for a trusted central institution. The blockchain relies entirely on a computer program that guarantees the proper execution of the transaction. The ledger of transactions made on permission-less blockchains is usually public and accessible to anyone, but users operate anonymously. Many cryptocurrencies including Bitcoin, Ethereum, and Ripple are based on a permission-less type of blockchain.[17] Permissioned blockchain, in contrast, is operated by known entities, where members or stakeholders in a given business context operate a permissioned blockchain network. This type of blockchain is reintroducing the concept of the "trusted third party". The central institution administers the users' access rights and has "means to identify the nodes that can control and update the shared state, and often also controls who can initiate transactions".[18] In this context one also has to mention consortium blockchain, a blockchain that is built around the concept of a "basic trust consortium" in which selected entities act as peers[19]. Consortium blockchain systems including R3 Corda; Iroha; Kadena; Chain etc.

As of September, 18, 2020, Coinmarketcap lists 7.106 currencies, with a total market capitalization of $355.26 billion. Bitcoin is not the only cryptocurrency, but dominates the cryptocurrency market with a share of more than 58% in the market. The list of the biggest 10 cryptocurrencies including Bitcoin is as follows: Bitcoin ($200.53 billion); Ethereum ($41.09 billion); Tether (15.22 billion); XRP ($10.94 bn); Bitcoin Cash ($4.14 billion); Binance Coin ($3.63 billion); Polkadot ($3.59 billion); Chainlink ($3.24 billion); Crypto.com Coin ($3.19 billion), and Lite Coin ($3.04 billion).[20]

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[13] J Waldo, 'A Hitchhiker's Guide to the Blockchain Universe' [2019] Communications of the ACM Vol. 62 | No. 3 38, 39

[14] C Cachin and M Vukolić, 'Blockchain consensus protocols in the wild' [2017] arXiv preprint arXiv:1707.01873, 1

[15] D Massessi, 'Public vs private blockchain in a nutshell' [2018] Hentet 17, no. 2019

[16] C Cachin and M Vukolić, 'Blockchain consensus protocols in the wild' [2017] arXiv preprint arXiv:1707.01873, 1

[17] Coinmarketcap, accessed 21 September 2020 < https://coinmarketcap.com >

[18] C Cachin and M Vukolić, 'Blockchain consensus protocols in the wild' [2017] arXiv preprint arXiv:1707.01873, 2

[19] See Marko Perkušić, Šime Jozipović, Damir Piplica: "The Need for Legal Regulation of Blockchain and Smart Contracts in the Shipping Industry", (2020) Transactions on Maritime Science. Split, Croatia, 9(2). doi: 10.7225/toms.v09.n02.019.

[20] Coinmarketcap, accessed 21 September 2020 < https://coinmarketcap.com >

III. THE UNDERLYING VALUE OF FINANCIAL INSTRUMENTS AND CRYPTOCURRENCIES

Based on the above presented data on cryptocurrency market capitalization and general trading volume, it cannot be denied that cryptocurrencies have become an important investment vehicle. The presented values however do not give any insight into the real "tangible value" of cryptocurrencies. To highlight this issue we can use a comparison with more traditional financial instruments. For example we can look at U.S. stock options.

An options contract is an agreement between two parties in which one party agrees to buy or sell a certain security (for example a stock) at the present market price, referred to as the strike price, prior to an agreed upon expiration date[21]. Stock options have value because they oblige one party to exchange a certain share in a company for a predetermined monetary value within a limited timeframe. The exact monetary value is defined by the currency of a country and derives from confidence in the country's economy and stability. Furthermore, the right to acquire a certain share in a company has its value for multiple reasons. First, a company has a liquidation value in the form of the sum of the value of all assets minus all liabilities. Second, a company as such creates value to its consumers and through the distribution of that value generates profit, again expressed in a traditional currency. Third, shares in that company are valued by other market participants based on the current and potential future entrepreneurial success of the company. So, while there are various factors and methods to identify the intrinsic value of options contracts, it is clear that there are tangible metrics to evaluate their worth.

Coming back to the example, the entire U.S. Options Market Volume Summary on September 21st 2019 totals $19.21 billion.[22] In direct comparison, it would seem that US options as financial instrument with the above described inartistic value, have a volume that is about 1/5 of the volume of cryptocurrencies. According to a survey by the World Economic Forum many participants believe that by the year 2027, 10% of global gross domestic product (GDP) will be stored on blockchain technology.[23] Thus, authorities cannot be ignoring blockchain technology and cryptocurrencies. On one hand this suggests that the relevance of cryptocurrencies today is quite significant, and thus should be regulated.

It however also shows how large this market is – a market that is primarily based on the potential value of a technology that is still evolving. From a financial standpoint it is hard to pinpoint the exact basis for an underlying "tangible value" in cryptocurrency, and it is therefore also reasonable to argue that the risks of investing in cryptocurrency are too great for governments to allow consumers to invest in them. In order to resolve this dichotomy between regulation and prohibition, in the next chapter we will first look into the function of cryptocurrencies as investment and means of payment. Then we will present various key risks of cryptocurrencies in the following chapter and finally evaluate the approaches of Northern Macedonia and the EU in the final chapter.

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[21] See on the definition, categorization and functioning of options contracts for example Lawerence G. McMillan: McMillan on Options, 2nd ed., 2011, Wiley, p. 2 f.

[22] U.S. Option market Volume September 21, 2019, accessed 22 September 2020, https://markets.cboe.com/us/options/market_statistics/

[23] World Economic Forum Survey Report, September 2015

IV. THE LEGAL FRAMEWORK OF CRYPTOCURRENCY LAW

Cryptocurrencies were introduced with the launch of Bitcoin in 2008/2009. Their growth in popularity in recent years[24] triggered a new wave of developments in the fin-tech space. Digital transactions, investments and even smart contracts have become increasingly relevant topics, not just amongst technical and financial experts, but ordinary consumers. Many new technologies like cryptocurrency based smart contracts and automated decentralized transaction still require further development before they are ready for large scale use. The two aspects of cryptocurrencies that have however already reached a larger audience, namely cryptocurrencies as payment and cryptocurrencies as investment, will be discussed in the following text.

a) Cryptocurrencies as means of payment

Cryptocurrencies are often being presented as a new and modern means of payment with the goal to replace what is currently considered to be legal tender - monetary units (currencies). However, in practice most transactions with cryptocurrencies still involve transfers between speculative investors and generally do not serve as a means of payment (e.g. when buying goods and procuring services). As main reasons we can point out legal uncertainty, complexity of using cryptocurrencies as a means of payment and an insufficiently widespread network of users[25]. Although we can conclude that cryptocurrencies primarily do not function as means of payments, from a legal point it is still important to establish if they should be treated and regulated as means of payments when they are being used for this purpose.

In order to answer this question, one has to look at the evolution of cryptocurrency within the legal framework of the EU. The ECB gave its first description of virtual currency in 2012. Here, virtual currency was explained to be a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community.[26] Later, in its further analysis, the ECB described it as a digital representation of value, not issued by a central bank, credit institution or e-money institution, which, in some circumstances, can be used as an alternative to money.[27] This is also in line with the definition chosen by the ECJ, who concluded that the 'bitcoin' virtual currency is neither a security conferring a property right nor a security of a comparable nature[28].

While the reports of the ECB have no binding effect, we can today look at mandatory European law like the Directive (EU) 2018/843. This directive defines virtual currencies as "a digital representation of value that is not issued or guaranteed by a central bank or a 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 can be transferred, stored and traded electronically"[29]. Although the Directive defines virtual currencies and not cryptocurrencies, we deem that said definition applies also to cryptocurrencies

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[24] Niels Vandezande, Virtual currencies under EU anti-money laundering law, Computer Law & Security Review: The International Journalof Technology Law and Practice (2017), p. 1 f.

[25] Marko Perkušić: Legal Issues of Electronic Payment, op. cit. pp. 405.

[26] European Central Bank, Virtual currency schemes, October 2012, p. 13., available at: https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf

[27] European Central Bank, Virtual currency schemes – a further analysis, February 2015, p. 25., available at: https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemesen.pdf

[28] Nr. 55.

[29] Article 1 (2) (d) of Directive (EU) 2018/843.

because cryptocurrencies (together with platform currencies) are categories of virtual currencies and due to that cryptocurrencies fall under said definition.
Based on that definition cryptocurrencies are means of exchange and not means of payment, but in the Preface to Directive 2018/843 it is pointed out that "virtual currencies can frequently be used as a means of payment, they could also be used for other purposes and find broader applications such as means of exchange, investment, store-of-value products or use in online casinos"[30]. As we can see, the Preface to Directive 2018/843 considers virtual currencies primarily as a means of payment and only after that (in a broader applications) as a means of exchange, investment, etc. Although Directive 2018/843 (with its definition and Preface) did not give us a clear and unequivocal answer, we deem that cryptocurrencies should be viewed as a means of payment because most of them are represented as such and replacing current legal tender is their ultimate purpose. Due to that, a contract between a person that is selling some goods and a person that is buying those goods and paying for them with cryptocurrencies in most cases (depending on the type of the cryptocurrency)[31] should be considered a contract of sale and not a contract of exchange[32].

b) Cryptocurrencies as (taxable) investment

If a country does not decide to ban cryptocurrencies altogether, taxation of cryptocurrencies in many ways defines the way in which cryptocurrencies will be regulated in that country. Since virtual currencies often have been advertised as an investment that offered very high returns, both state institutions (who wanted to protect traditional markets from unfair competition) and investors in cryptocurrencies (who did not want to break the law) looked at the taxation of cryptocurrencies as the main legal problem that needed to be solved. Therefore, the tax treatment of cryptocurrencies was the first topic that was addressed and regulated in most countries. Out of the tax regulation, one could however already make first predictions regarding the direction in which said countries decide to go with the regulation of cryptocurrencies. This is not surprising as it is necessary to define something, before it can be taxed. Having that fact in mind, we have to point out tax regulation of cryptocurrencies in the United States of America and the European Union, who were amongst the first to address this issue and who often serve as an example for the rest of the world in said regulation.
In the USA, the Internal Revenue Service (IRS) pointed out that virtual currencies may be used to pay for goods or services, or held for investment and that they are not treated as currency that could generate foreign currency gain or loss for U.S. federal tax purposes[33]. For federal tax purposes the IRS treats cryptocurrencies as property – capital asset to be exact[34], which means that tax regulations for property transactions also apply on transactions with cryptocurrencies[35].

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[30] Point 10 of the Preface to Directive 2018/843.
[31] There is a subset of cryptocurrencies, the so-called tokens which represent a particular economic value such as gold or oil. For example, one token represent one ounce of gold that the issuer of that token is ready to replace with one ounce of gold and in that case token do not represent means of payment but means of exchange.
[32] For more details about virtual currencies: a means of exchange or a means of payment see Marko Perkušić: Legal Issues of Electronic Payment, op. cit. pp. 346-349.
[33] Internal Revenue Service, Notice 2014-21, 2014-16 I.R.B. 938, available at: http://www.irs.gov/pub/irs-drop/n-14-21.pdf, accessed: 19. October 2020.
[34] Nevia Čičin-Šain: Taxing bitcoin, Zbornik PFZ. 67, (3-4) 655-693, 2017, pp. 661.
[35] Internal Revenue Service, Notice 2014-21, 2014-16 I.R.B. 938, available at: http://www.irs.gov/pub/irs-drop/n-14-21.pdf, accessed: 19 October 2020.

In the EU, the European Court of Justice in the case Skatteverket vs David Hedqvist[36] rendered a judgment in which it determined that (for the purposes of VAT payment) in the event that the parties decide to use alternative means of payment (cryptocurrencies) instead of traditional means of payment (legal tender), said transactions will still be deemed to be financial transactions and as such those transactions will be exempt from VAT[37]. Said judgment of the Court on tax treatment of virtual currencies was a great indicator of the direction in which the general regulation of virtual currencies is going to go, and it gave assurance to the investors in cryptocurrencies that cryptocurrencies will not be declared illegal or taxed in an unreasonable matter. It can be generally stated that taxation and the treatment of cryptocurrencies as investment is closely intertwined. Countries that accept cryptocurrencies as investment will regularly tax gains in those investments and at least attempt to track transactions to the extent that tax evasion can be reduced.

V. CHALLENGES AND RISKS OF THE USE OF CRYPTOCURRENCIES

Based on the above described challenges that cryptocurrencies present for national and supranational legislators, as well as their potential as foundation for new financial technologies, it is important to highlight the ways in which cryptocurrency could be harmful, in order to answer if cryptocurrencies should be outlawed or regulated. Common criticism of cryptocurrencies focuses on their potential to be used as vehicle for criminal activities like money laundering, illegal transactions or tax evasion[38]. However, cryptocurrency related scams, market manipulations and the infringement of consumer rights are an equally relevant issue. In the following text, we will give a comprehensive overview over those problems.

a) The role of cryptocurrency in money laundering, financing of terrorism and cybercrime

Many illegal activities that can be conducted digitally, can take advantage of cryptocurrencies due to some of their key characteristics. As prime example, one can point out money laundering or the financing of terrorism. Money laundering is the process of hiding and disguising the origin and ownership of funds acquired by illegal activities, all in order to avoid prosecution and/or confiscation of those funds.[39] In practice, money laundering represents a serious issue for governments across the world, as affects a country's economy on multiple levels, by increasing shadow economy and illegal activities, as well as fiscal revenue[40]. There are numerous methods of money laundering that are being used on a regular basis. In fact, as new methods for the identification of money laundering are developed, criminals are forced to innovate and find alternative ways to clear illicit funds.

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[36] JUDGMENT OF THE COURT (Fifth Chamber) 22 October 2015, C-264/14, available at: http://curia.europa.eu/juris/document/document.jsf;jsessionid=8C71334358D88F7A82AD4D5076D92106?text=&docid=170305&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=9520538, accessed: 19 October 2020.

[37] See Marko Perkušić: Legal Issues of Electronic Payment, op. cit. pp. 353-355.

[38] Sesha Kethineni, Ying Cao: The Rise in Popularity of Cryptocurrency and Associated Criminal Activity, International criminal justice review, I-20, p. 11.

[39] Commonwealth Secretariat: Combating Money Laundering and Terrorist Financing: A Model of Best Practice for the Financial Sector, the Professions and Other Designated Businesses, 2006, p. 6.

[40] Nella Hendriyetty, Bhajan S. Grewal: Macroeconomics of money laundering: effects and measurements, Journal of Financial Crime, 2017, Vol. 24 No. 1, pp. 65-81.

Some more common methods of cross border money laundering include the employing of consulting firms that charge for fictitious services, the use of fabricated lawsuits or simple money transfers through intermediaries[41]. All of the mentioned methods have one thing in common, the involved parties attempt to create transactions that either go unnoticed or at least don't seem suspicious. The mentioned methods however either require trusted intermediaries or they heavily rely on the existing financial infrastructure of a country. By using banks and other financial institutions, criminals become vulnerable to various internal auditing processes and reviews. Alternatives to the mentioned methods include cash related businesses, especially the investment in real estate, art or other high value commodities[42]. However those methods are time intensive, often related to potential additional scrutiny by tax authorities and regularly require the cooperation of multiple parties[43]. It is therefore not surprising that criminals embraced new technologies in the fin-tech space that allow for decentralized and pseudonymous transactions.

As has in detail been explained above, cryptocurrency transactions like those made with bitcoin do not require a centralized institution like a bank. Through the decentralization of control and supervision, it is virtually impossible to identify any individual or group of individuals that could be made responsible for the processing of transactions on the network. Therefore, cryptocurrency transactions allow cross-border monetary exchanges without the involvement of, what would be considered "third parties" in a traditional sense[44]. This makes illegal transactions easier, starting from the acquiring of illegal proceeds, their distribution and even their laundering. Due to this diverse applicability, some authors call cryptocurrency like bitcoin an enabler for various cybercrimes[45].

In order to better understand the mechanisms of using cryptocurrency in relation to illegal activities, one can consider the following potential steps of illegal use of cryptocurrencies. First of all, criminals can use cryptocurrencies as "cash out" tool due to their pseudonymity which makes them much harder to track than ordinary financial transactions.[46] For example, the sale of illegal substances would usually require that the seller and buyer meet in person, or that a certain level of trust exists with regard of the shipping and exchange. Furthermore, the buyer would have to transfer the sales price to the seller, again either in person or via traditional financial service providers who would register and potentially examine the transaction. Cryptocurrencies allow for

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[41] Teichmann, F.M. (2019), "Recent trends in money laundering and terrorism financing", Journal of Financial Regulation and Compliance, Vol. 27 No. 1, pp. 2-12, p 7 f.

[42] Teichmann, F.M.J. (2017), "Twelve methods of money laundering", Journal of Money Laundering Control, Vol. 20 No. 2, pp. 130-137, p. 133 f.

[43] Teichmann, F.M.J. (2017), "Twelve methods of money laundering", *Journal of Money Laundering Control*, Vol. 20 No. 2, pp. 130-137, p. 136 f.

[44] Campbell-Verduyn, M. Bitcoin, crypto-coins, and global anti-money laundering governance. *Crime Law Soc Change* **69,** 283–305 (2018), p. 286.

[45] Rolf van Wegberg, Jan-Jaap Oerlemans, Oskar van Deventer (2018), "Bitcoin money laundering: mixed results? An explorative study on money laundering of cybercrime proceeds using bitcoin", Journal of Financial Crime, Vol. 25 No. 2, pp. 419-435, p. 420; Mark Weber, Giacomo Domeniconi, Jie Chen, Daniel Karl I. Weidele, Claudio Bellei, Tom Robinson, Charles E. Leiserson: Anti-Money Laundering in Bitcoin: Experimenting with Graph Convolutional Networks for Financial Forensics, Workshop on Anomaly Detection in Finance, August 2019, Anchorage, AK, Association for Computing Machinery, available online: arXiv:1908.02591 (accessed: 17.10.2020), p. 2 f.

[46] See on this for example the analysis in: Levi, M. (2015),"Money for crime and money from crime:financing crime and laundering crimeproceeds",European Journal on Criminal Policy and Research, Vol. 21 No. 2, pp. 275-297.

digital payment so that in numerous cases the entire process of selling illegal substances can be conducted without the buyer and seller ever meeting[47].

As cryptocurrencies are only a pseudonymous means of payment, public authorities could still track down the actual seller by following the trail of transactions that are publicly recorded on the blockchain. While a wallet is not directly linked to an individual in the same manner a bank account would be, it is still possible to track further transactions and link individuals to certain wallets if they conduct transactions with other (known) parties[48]. In order to anonymize transactions, criminals use so called cryptocurrency (bitcoin-) mixers. By transferring their cryptocurrency through a large number of automatized transactions together with cryptocurrency from other participants in the process, it becomes difficult for any third party to track the actual transfer[49]. Once the transfer is completed, one has to transform cryptocurrency into regular currency. This is possible through various financial service providers that in part allow for anonymous exchanges that do not require identification in order for the transaction to be processed[50].

The described method allows for an anonymous transfer/payout, but while the cryptocurrency is no longer "tainted", the receiving party still has no reasonable explanation for the existence of the funds in the first place. In order to solve this problem, criminals create more complex structures like the establishing of business fronts or conducting of a series of fake transactions on cryptocurrency exchanges. For example, a criminal creates multiple accounts at a cryptocurrency exchange and trades cryptocurrency between his main account and the other (anonymous) accounts until his main account makes a trading profit. Then the criminal declares a taxable profit, pays the required taxes and can claim that he or she made the profit from trading activities instead of illegal activities.

b) Artificial market capitalization and fraud

Cryptocurrency transactions for themselves are generally safe if conducted properly. Blockchain technology guarantees that in a decentralized network where cryptocurrencies (and the connected decision-making rights) are not concentrated with a limited number of individuals, transactions are conducted in accordance with the programming of the network. Cryptocurrencies can however still be used for fraudulent activities, and an entire cryptocurrency network can be established in order to conduct large scale fraud, including so called Ponzi schemes.

Fraudulent activities include actions like (1) the establishment of fraudulent or non-genuine exchanges, (2) wallet or exchange theft or hacking, or (3) identity theft. While all those mentioned activities target the illegal acquisition of cryptocurrency, none of them targets the actual blockchain transfer. They rather either attempt to trick the owners of cryptocurrency into willingly transferring funds, or they use various methods to acquire passwords and other data necessary to

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[47] On this issue in detail Valcke, P., Vandezande, N., & van de Velde, N. (2015).The evolution of third party payment providersand cryptocurrencies under the EU's upcoming PSD2 and AMLD4. [Working paper number 2015-001].London: The SWIFT Institute.

[48] Rolf van Wegberg, Jan-Jaap Oerlemans, Oskar van Deventer (2018), "Bitcoin money laundering: mixed results? An explorative study on money laundering of cybercrime proceeds using bitcoin", Journal of Financial Crime, Vol. 25 No. 2, pp. 419-435, p. 422.

[49] On the effectiveness of such mechanisms see for example: Möser, M., Böhme, R. and Breuker, D. (2013),"An inquiry into money laundering tools in the bitcoinecosystem",Procedings of the 2013 e-Crime Researches Summit, pp. 1-14, doi:10.1109/eCRS.2013.680578

[50] Rolf van Wegberg, Jan-Jaap Oerlemans, Oskar van Deventer (2018), "Bitcoin money laundering: mixed results? An explorative study on money laundering of cybercrime proceeds using bitcoin", Journal of Financial Crime, Vol. 25 No. 2, pp. 419-435, p. 430 f.

access accounts.[51] Besides the mentioned issues, there are various others considered by the European Central Bank in its 2014 position paper on the issue.[52] However, all of them focus either on social or financial weak spots, rather than technical issues of cryptocurrencies. One has therefore to look at those aspects to identify the key risks of cryptocurrency investing.

A key reason why cryptocurrencies, despite their popularity in recent years, were not able to become widely used alternatives to regular money is, that they still do not poses the necessary qualities that are required for them to fulfil their role as means of payment, accounting or storage of value. A central issue in this regard is the fact that fluctuations in the price of cryptocurrencies represent an important issue that makes it difficult for them to be accepted as means of payment or stable investment[53]. As already explained above in detail, it is difficult, if not impossible to establish what the practical value of a cryptocurrency is. Cryptocurrencies are different from traditional financial instruments, as their value is not based on an underlying asset. Their value is determined by the value that investors attribute to the technology on which they are based, and the scarcity of the supply of the currency. Therefore some authors point out how the limited supply of cryptocurrency like bitcoin (or other cryptocurrencies) allows for extremely speculative behavior, which in turn has strong implications on the stability of its market price[54].

This issue becomes even more significant when less circulated cryptocurrencies are concerned. While there certainly are several large investors in Bitcoin and other well-known cryptocurrencies, it is not in the best interest of those investors to hold majority shares in any cryptocurrency, as this would allow them to control the blockchain and thus render the cryptocurrency worthless for transactions and investment for any other party which in turn would decrease the resale value of the currency virtually to zero. When it comes however to smaller cryptocurrencies, there have been instances where majority positions or oligopoly positions have been used for fraudulent activities. While the European Central Bank identified various serious risks related to the use of cryptocurrencies as substitute for regular money, with regard to the treatment of cryptocurrencies as investments, the risk of market manipulation stands out noticeably.[55] The risk of investing in cryptocurrencies that are traded at an artificially created price is a fundamental problem for the cryptocurrency market. As explained above, it is almost impossible to define any tangible value of cryptocurrencies. Furthermore, due to the limited supply and potential concentrations of the currency with a limited number of investors, it becomes easy to "fraudulently" adjust the market price to one's advantage. Due to the pseudonymity of the system and the ability to create multiple trading accounts, this issue becomes even more prevalent. The ECB describes this risk as following:[56]

The risk arises because of the low depth of VC markets; the ability of concerted action, by a small number of large VC holders, to undermine price formation; the general opaqueness of VC markets; and the absence of any central authority that could intervene to stabilise price formation. The priority of the risk is high.

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[51] Niels Vandezande, Virtual currencies under EU anti-money laundering law, Computer Law & Security Review: The International Journalof Technology Law and Practice (2017), p. 2.

[52] EBA OPINION ON 'VIRTUAL CURRENCIES'EBA/Op/2014/084 July 2014, p. 23.

[53] Campbell-Verduyn, M. Bitcoin, crypto-coins, and global anti-money laundering governance. *Crime Law Soc Change* **69,** 283–305 (2018), p. 285.

[54] Campbell-Verduyn, M. Bitcoin, crypto-coins, and global anti-money laundering governance. *Crime Law Soc Change* **69,** 283–305 (2018), p. 285 f.

[55] EBA OPINION ON 'VIRTUAL CURRENCIES'EBA/Op/2014/084 July 2014, p. 22

[56] EBA OPINION ON 'VIRTUAL CURRENCIES'EBA/Op/2014/084 July 2014, p. 28.

In this context one has to mention classical pump and dump schemes that have easily been transferred to the space of cryptocurrencies[57]. In practice, entire networks of participants in pump and dump schemes exist. However, due to the fact that pump and dump schemes on this level are conducted extremely quickly, often not exceeding a few minutes, their negative effects are primarily limited to the participants in those schemes, themselves. Organizers of the schemes will usually have already pre-bought their share of coins in advance and will sell them off during the phase of the "pump" for inflated prices. Participants in the scheme will thus buy the coins at an already inflated price, with the intent to sell it to other participants in the scheme for a profit[58]. While studies regarding pump and dump schemes have focused on the rather regular occurring schemes based on a very short pump period, artificial price manipulations can exist with regard to longer periods as well[59]. This becomes especially dangerous when the artificial price inflation is conducted by individuals that are either related with a cryptocurrency directly or hold large shares in it. Here the line between Ponzi schemes and pump and dump schemes becomes blurry[60]. However, the risk of artificial market alterations of cryptocurrencies beyond the simple fraudulent sale of an artificially appreciated cryptocurrency has to be considered. Many large holders of cryptocurrency have a strong interest in the preservation of the market price of the particular cryptocurrency that they are invested in. This fact, in combination with the rather limited volume traded on exchanges, creates the opportunity and motive to significantly influence prices.

VI. PROHIBITION OR REGULATION

Based on the presented issues, it is clear that the creation of cryptocurrencies introduced numerous new challenges for legislators across the world. While some countries still choose to entirely disregard the regulatory challenges of cryptocurrencies, this approach seems obsolete in today's environment. Disregarding the impact of cryptocurrencies in effect creates higher risks for consumers, it can cause potential tax revenue loss and creates a blind spot when it comes to illegal activities related to cryptocurrency. Therefore it is no wonder that an increasing number of countries is reacting to cryptocurrencies. If we exclude the option to not regulate cryptocurrencies at all, there are basically two potential approaches towards cryptocurrencies, namely prohibition and regulation. By regulating cryptocurrencies, many current issues can be addressed and multiple hazards, both for consumers and the state can be mitigated. However, regulation can hardly address all open issues or potential future developments[61]. Therefore other countries choose to entirely ban cryptocurrencies. Banning Cryptocurrencies, as a mechanism to protect the national currency and counteract the numerous issues described above, is not a new concept[62]. It clearly makes a strong

[57] See for an overview of the development of this issue, Jiahua Xu École, Benjamin Livshits: The Anatomy of a CryptocurrencyPump-and-Dump Scheme, Proceedings of the 28th USENIX Security Symposium, 2019, (978-1-939133-06-9) p. 1609.

[58] Jiahua Xu École, Benjamin Livshits: The Anatomy of a CryptocurrencyPump-and-Dump Scheme, Proceedings of the 28th USENIX Security Symposium, 2019, (978-1-939133-06-9) p. 1610.

[59] Jiahua Xu École, Benjamin Livshits: The Anatomy of a CryptocurrencyPump-and-Dump Scheme, Proceedings of the 28th USENIX Security Symposium, 2019, (978-1-939133-06-9) p. 1622 f.

[60] See the descriptions in EBA OPINION ON 'VIRTUAL CURRENCIES'EBA/Op/2014/084 July 2014, p. 28 f. nr. 98, 100 and 101.

[61] See for example the Japanese approach: Yasutake Okano, 'Virtual currencies: issues remain after PaymentServices Act amended' [2016] 243 Iakyara 1, p. 2 f.

[62] Sesha Kethineni, Ying Cao: The Rise in Popularity of Cryptocurrency and Associated Criminal Activity, International criminal justice review, I-20, p. 10; Smart, E. (2015). Top 10 countries in which Bitcoin is banned.CryptoCoinNews.

statement towards the dangers of cryptocurrencies and in fact lessens the obligation of the state to protect citizens when they enter transactions as consumers in this field. However, by banning cryptocurrencies, countries forego potential tax revenue and exclude themselves from the overall discourse. They furthermore push cryptocurrency supporters into illegality and give up the opportunity to cooperate with financial service providers in the space, with respect to anti-money laundering and crime prevention. In the following text, both approaches are scrutinized based on the examples of North Macedonia and the EU. We discuss both benefits and shortcomings in order to identify the more beneficial approach for state and consumer.

a) The prohibition of cryptocurrencies in North Macedonia

North Macedonia falls amongst the countries that took a strict stance on cryptocurrencies. On September 28, 2016, the National Bank of North Macedonia issued a warning against cryptocurrencies.[63] The National Bank reminded Macedonian residents that according to the Law on Foreign Exchange Operations except in specific circumstances, residents are not allowed to have bank accounts or securities abroad, and therefore, investments by residents in cryptocurrencies are also to be considered illegal. Namely, Article 23 of the Law on Foreign Exchange Operations[64] and the Decision on the manner and the terms under which residents that are not authorized banks may open and hold accounts abroad ("Decision")[65] defined the conditions for Macedonian residents to open and hold bank account abroad. While the Decision has been amended in 2019, so that it allows for certain bank transactions related to investments in securities, cryptocurrencies as investments have not been explicitly mentioned[66].

Furthermore, according to Article 14 of Law on Foreign Exchange Operations, Macedonian residents, other than authorized banks were not able to invest in securities abroad[67] until the entry into force of the Decision on the transition to the second phase of the association between the RM and the EC and its member states [68]. This rule as a consequence created the requirement for residents to subscribe, pay and trade in securities abroad through authorized participant in the securities market or through authorized participant on foreign stock exchange or organized securities market[69]. While the convergence towards the EU obviously is leading to liberalization in this area, cryptocurrencies have not been explicitly covered by those developments. Furthermore, even though the *acquis communautaire* partially regulates cryptocurrencies, European law is, except in cases of special agreements, only binding for EU member states. Therefore it is necessary to look into the status of cryptocurrencies as potential securities or means to acquire securities.

As we have shown above, cryptocurrencies can be considered means of payment even though they lack some of the traits of regular currency. Despite the fact that it is difficult, if not impossible to identify their tangible value they could also be considered investments in a general sense. They

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[63] National Bank of the Republic of North Macedonia http://www.nbrm.mk/ns-newsarticle-soopshtieniie_na_nbrm_28_9_2016.nspx

[64] Law on foreign exchange operations (Official Gazette of the Republic of Macedonia No. 34/01, 49/01, 103/01, 51/03, 81/08, 24/11, 135/11, 188/13, 97/15, 153/15 and 23/16)

[65] Decision on the manner and the terms under which residents that are not authorized banks may open and hold accounts abroad (Official Gazette of the Republic of Macedonia No. 42/16)

[66] See: Decision for amendment of Decision on the manner and the terms under which residents that are not authorized banks may open and hold accounts abroad Official Gazette of the Republic of Macedonia No. 50/19).

[67] Law on foreign exchange operations 14 para 4.

[68] Law on foreign exchange operations (Official Gazette of the Republic of Macedonia No. 34/01, 49/01, 103/01, 51/03, 81/08, 24/11, 135/11, 188/13, 97/15, 153/15 and 23/16)

[69] Law on foreign exchange operations, art. 14 para. 1.

could however not be considered securities, as they lack any underlying claim[70]. As explained above, cryptocurrencies are decentralized and different from securities and money, are not guaranteed by a central body (a central bank or an issuer).

Therefore, buying and investing in cryptocurrencies for Macedonian residents in accordance with Macedonian regulative is illegal as they either represent "foreign" currency in the broadest sense, or an investment that is different from securities. Article 56 of the Law on Foreign Exchange Operations defines penalties to the amount of 10,000 euro for various misdemeanors, including executing payment or collecting payment in foreign currency, holding means of payments or foreign currency deposits with institutions which are not authorized according to the Banking Law. It is further highlighted in the analysis of the National Bank of the Republic of North Macedonia that it is illegal for Macedonian residents to initiate money transfers for buying (investing) in cryptocurrencies (especially ONECOIN), by transferring money from natural person to legal entities with false specified reason of payment such as scholarship, traineeship, buying literature and similar. Moreover, the National Bank of the Republic of North Macedonia is requiring Macedonian banks that have information that Macedonian resident are investing in cryptocurrencies to refuse to perform such transactions.[71] Finally, the National Bank of the Republic of North Macedonia also emphasizes the possibility of losing money on cryptocurrency investments due to the high volatility of cryptocurrency prices, theft caused by numerous cyber-attacks directed towards cryptocurrencies exchange platforms, the poor functioning of cryptocurrency exchanges, and possible links to criminal activities including money laundering.

Additionally, the National Bank of North Macedonia on May 31, 2017 issued a new warning against cryptocurrencies.[72] The National Bank of North Macedonia reiterated that buying and investing in cryptocurrencies for Macedonian residents is forbidden in accordance with Macedonian law. The National Bank however focused in this warning more on explaining how cryptocurrencies work and what the risks related to them are.

Using cryptocurrencies for money laundering and financing terrorism is subject to law and can be penalized according to the Macedonian Law.[73] But, if transaction with cryptocurrencies are performed outside the legal financial channels defined as "subjects" in The Law on Prevention of Money Laundering and Financing of Terrorism (financial institutions, real estate agencies, notaries, solicitors, investment advisors, etc.), it is more difficult to identify such criminal activities. This raises the logical question if legalization of cryptocurrencies in the Republic of North Macedonia can bring benefits by choosing a more cooperative approach that would support additional reporting and control mechanisms. Although buying and investing in cryptocurrencies in North Macedonia is forbidden, according to the Article 3 of Personal Income Tax Law, income

[70] In this regard, it is important to make a clear distinction between cryptocurrencies and virtual tokens. Virtual tokens usually represent a direct claim against a third party, while cryptocurrencies do not and cannot therefore be considered securities. For example a „gold token" could be technically designed to function like a cryptocurrency, but a third party might guarantee to exchange a certain number of gold tokens for a certain amount of gold. Even in this case, tokens would most likely lack the formal requirements to be considered securities. As this paper however focuses on cryptocurrencies, it is clear that they might be considered an investment but not a security both from a formal as well as from an intrinsic viewpoint.

[71] National Bank of the Republic of North Macedonia http://www.nbrm.mk/ns-newsarticle-soopshtieniie_na_nbrm_28_9_2016.nspx

[72] National Bank of the Republic of North Macedonia http://www.nbrm.mk/ns-newsarticle-soopstenie-na-nbrm-31052017.nspx

[73] The Law on Prevention of Money Laundering and Financing of Terrorism ("Official Gazette of the Republic of Macedonia" No. 120 from 29.6.2018)

from capital gains is subject to taxation.[74] This would mean that the basic legal framework for the taxation of cryptocurrencies in North Macedonia already exists.

b) The regulation of cryptocurrencies in the EU

Since their inception, cryptocurrencies had a large impact on financial institutions, investors and even governments. Many of the positive aspects of cryptocurrency have been pointed out in numerous whitepapers, expert opinions and academic papers. However, as has also been pointed out in this paper and academic literature in general, there are various ways in which cryptocurrencies can be used for harmful activities. It is therefore no surprise that cryptocurrencies have attracted the attention of numerous regulatory bodies, as well as various government agencies responsible for the prevention of money laundering, tax evasion, fraud or the financing of terrorism.[75]

In contrast to the Macedonian approach, the European Union acknowledged the relevance of cryptocurrencies and chose to regulate this field. The central source of regulation of cryptocurrencies is the EU Anti-money laundering directive. This directive is a key instrument for the prevention of illegal financial flows, especially in cross-border situations. Due to the EUs reassessment of the directive in regular intervals, it has evolved over the years to have a more focused, risk based framework.

Cryptocurrencies as such have however only been recognized as relevant vehicles for money laundering, tax evasion and the financing of terrorism in recent years.[76] The European Commission addressed the potential dangers of cryptocurrencies in the context of money laundering and terrorism financing in a Communication in 2016[77]. This new attention to the use of cryptocurrencies for illegal activities resulted in the implementation of specific rules and regulations regarding cryptocurrency (as type of virtual currency) into the new version of the Anti-money laundering directive – AMLD5[78]. In this context we also have to mention the current proposal of the Crypto-markets directive[79]. This directive uses the term "crypto-assets"[80] and has the purpose of regulating cryptocurrencies in the best interest of consumers and the general public. A further step in the regulation of digital means of payment could also be related to the possibility to implement "Digital Euro"[81]. As the regulation of crypto-markets through a directive is still only proposed and the implementation of a "Digital Euro" is only beginning to be discussed, the current legislative level is primarily defined by the AMLD5.

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[74] Personal Income tax Law ("Official Gazette of the Republic of Macedonia" No. 241/18 and 275/19)

[75] Campbell-Verduyn, M. Bitcoin, crypto-coins, and global anti-money laundering governance. *Crime Law Soc Change* **69,** 283–305 (2018), p. 285 f.

[76] Niels Vandezande, Virtual currencies under EU anti-money laundering law, Computer Law & Security Review: The International Journalof Technology Law and Practice (2017), p. 7 f.

[77] Commission 'Communication from the Commission to the Eu-ropean Parliament and the Council on an Action Plan forstrengthening the fight against terrorist financing' (COM(2016) 50final) 5.

[78] DIRECTIVE (EU) 2018/843 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU in the following text AMLD5.

[79] Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Markets in Crypto-assets, and amending Directive (EU) 2019/1937, COM/2020/593 final

[80] Art. 3 para 1 nr. 2 Cryptomarkets directive proposal.

[81] The European Central Bank and the Eurosystem High-Level Task Force on Central Bank Digital Currency: Report on a Digital Euro, october 2020, available online: https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf (last accessed 1/11/2020).

The AMLD5 uses the term "virtual currency" because it is broader than the term "cryptocurrency". Virtual currencies are defined as a digital representation of value that is not issued or guaranteed by a central bank or a 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 can be transferred, stored and traded electronically[82]. This definition allows for the AMLD5 to cover not just cryptocurrencies but platform based currencies and other digital representations of value, all in order to guarantee a broad application of anti-money laundering instruments. This is important as it would otherwise be easily possible to avoid certain preventive mechanisms by moving from cryptocurrencies to other similar instruments.
The AMLD5 significantly widened the scope of the term "financial service providers", by including numerous subjects in the cryptocurrency space[83]. The directive for the first time proscribes obligations for virtual currency exchanges and providers of virtual currency wallets[84]. Those two categories of service providers are crucial in the space of virtual currencies. Virtual currency exchanges have the role to exchange money for virtual currency or virtual currency for money. Custodian wallet providers are entities that provide services to safeguard private cryptographic keys on behalf of its customers, to hold, store and transfer virtual currencies[85].
An important aspect of anti-money laundering is the collection of data on account holders and other parties involved in financial transactions. Normally financial institutions have the responsibility to collect the necessary data, however due to the pseudonymous nature of cryptocurrencies, this task becomes difficult in practice[86]. In order to mitigate this problems, the AMLD5 introduced reporting obligations to providers of custodian wallet services and virtual currency exchange services. Member States must ensure that providers of exchange services between virtual currencies and fiat currencies, and custodian wallet providers are registered and regulated.[87]
Up until the AMLD5 providers engaged in exchange services between virtual currencies and fiat currencies as well as custodian wallet providers were under no Union obligation to identify suspicious activity. This in turn made it possible that criminal organizations used this space to launder money and terrorist groups to transfer money into the financial system of the EU or within virtual currency networks. The AMLD5 therefore makes it possible for the competent authorities to monitor the use of virtual currencies.[88] Through this new set of regulations, cryptocurrency exchanges now have similar reporting obligations to other financial service providers.[89]
A key aspect of the controlling process is the requirement of registration and identification of users. The obligation for cryptocurrency exchanges and custodian wallet providers to request identification from potential clients before granting them access to services, is not a new concept[90].

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[82]AMLD5 art. 3 d nr. 18.
[83] Niels Vandezande, Virtual currencies under EU anti-money laundering law, Computer Law & Security Review: The International Journalof Tec hnology Law and Practice (2017), p. 10
[84] AMLD5 art. 2, para. 1, nr. 3 g.
[85] AMLD5 art. 3 d nr. 19.
2[86] Campbell-Verduyn, M. Bitcoin, crypto-coins, and global anti-money laundering governance. *Crime Law Soc Change* **69,** 283–305 (2018), p. 287.
[87] AMLD5 art. 47 para. 1.
[88] AMLD5 nr. 8.
[89] Niels Vandezande, Virtual currencies under EU anti-money laundering law, Computer Law & Security Review: The International Journalof Technology Law and Practice (2017), p. 10.
[90] See for example Choo, K.-K. R. (2015). Cryptocurrency and virtual currency: Corruption and money laundering/terrorism financing risks? In D. L. K. Chuen (Ed.),Handbook of digital currency: Bitcoin, innovation,financial instruments, and big data(pp. 283–307). London: Academic Press., p. 283 f.

The monitoring process addresses the issue of anonymity attached to virtual currency transactions. It can however solve the problem of anonymous transfers only to an extent, as the controlling mechanisms are limited to users of such platforms. It does not prevent users to conduct transactions by using private wallets or privately exchanging cryptocurrency for money. Therefore, a large part of the virtual currency environment will remain anonymous as users still can conduct transactions without such providers[91]. While therefore blind spots still exist, some consider the AMLD5 to be a large scale intrusion on privacy as one of the key aspects of cryptocurrencies. This view is based on the fact that the concept of pseudonymity is undermined through the reporting requirements of numerous cryptocurrency service providers[92]. Under the new regime, wallets and trading accounts are linked to individuals in a similar manner to investment- or bank accounts. It therefore becomes much easier to collect data on individuals in this space.

While there still are limits regarding the effective tracking of potentially illegal activities, the result of the AMLD5 is also that financial service providers in the cryptocurrency space are increasingly more regulated and under more pressure to collect data and counteract fraud and money laundering[93]. This in turn means that fin-tech companies and innovative providers of financial services are under more strict regulation and face additional compliance costs. Cryptocurrencies are often praised for their ability to be transferred almost instantaneously across borders with little to no cost for the involved parties. However, one has to consider that a significant part of the transaction cost of traditional transactions is comprised of compliance cost related to anti-money laundering regulations[94]. Therefore, by regulating this space and increasing the administrative burden on providers, it can be expected that at least to an extent the cost and/or quality of services may be affected.

All mentioned issues, reporting requirements, privacy issues, and the additional administrative burden are however not specific to the cryptocurrency service providers. It is much more so, that service providers in this space are now just put on equal ground with other financial service providers. It is only so, that loopholes have been decreased but due to the technical structure of blockchain cannot be simply closed in total. Due to the AMLD5 it will be much harder to launder money, finance terrorism and grant the appearance of legality to illegal funds. As there are still multiple open questions, the application of the EMLD5 is set to be evaluated across the EU through a report and, if necessary, appropriate legislative proposals, including, where appropriate, with respect to virtual currencies, empowerments to set-up and maintain a central database registering users' identities and wallet addresses accessible to FIUs, as well as self-declaration forms for the use of virtual currency users.[95] In connection with the new cryptocurrency related initiatives, it is laudable that this new field receives serious legislative attention that will contribute to user safety and legal predictability.

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[91] AMLD5 nr. 9.

[92] Niels Vandezande, Virtual currencies under EU anti-money laundering law, Computer Law & Security Review: The International Journalof Technology Law and Practice (2017), p. 12.

[93] See for example regarding financial service providers Mark Weber, Giacomo Domeniconi, Jie Chen, Daniel Karl I. Weidele, Claudio Bellei, Tom Robinson, Charles E. Leiserson: Anti-Money Laundering in Bitcoin: Experimenting with Graph Convolutional Networks for Financial Forensics, Workshop on Anomaly Detection in Finance, August 2019, Anchorage, AK, Association for Computing Machinery, available online: arXiv:1908.02591 (accessed: 17.10.2020), p. 2.

[94] Mark Weber, Giacomo Domeniconi, Jie Chen, Daniel Karl I. Weidele, Claudio Bellei, Tom Robinson, Charles E. Leiserson: Anti-Money Laundering in Bitcoin: Experimenting with Graph Convolutional Networks for Financial Forensics, Workshop on Anomaly Detection in Finance, August 2019, Anchorage, AK, Association for Computing Machinery, available online: arXiv:1908.02591 (accessed: 17.10.2020), p. 1.

[95] AMLD art. 65.

VII. CONCLUSIONS FOR THE FUTURE OF CRYPTOCURRENCY REGULATION AND LIMITATION

As has been presented above, cryptocurrencies have become increasingly popular, both with regard to their purpose as currency, as well as their use as investment. However, due to existing technical limitations that have not yet been overcome, their reach at the moment is still narrow. Direct financial transactions are still limited to a number of technically versed users. A substantial number of direct transactions could furthermore have links to illegal activities. Criminals involved in money laundering, terrorism financing, digital fraud schemes and extortions, or the trade of illegal substances and services, take advantage of the pseudonymity of cryptocurrencies. Legislators across the world are therefore faced with the question, how to react to the challenges of cryptocurrencies.

Inaction certainly is the worst possible approach to the issue, as it equally endangers consumers and entrepreneurs, while at the same time disregarding criminal activities and threatening the fiscal interests of the state. However, both remaining approaches – regulation and prohibition – equally have benefits and drawbacks. The prohibition of cryptocurrencies allows for a simple and clean cut solution as it is a clear statement towards cryptocurrencies. It however forfeits the opportunity to collaborate with all stakeholders in order to create a safer environment and support developments in the fin-tech space.

The solution of legalization and regulation on the other hand is more inclusive. It allows for fin-tech companies and cryptocurrency service providers to conduct their business, while at the same time introducing rules that mitigate illegal activities. Legalization furthermore creates the opportunity for comprehensive taxation. While many tax systems including that of North Macedonia, contain general rules that do not exclude gains related to illegal transactions from taxation, large scale taxation requires cooperation between tax authorities, taxpayers and parties that hold the necessary information for taxation. This will obviously only be given if tax authorities collaborate with cryptocurrency service providers. Drawbacks however also exist with regard to this approach. They include the additional administrative burden, both for cryptocurrency service providers affected by the regulation and the government which has to devote significant resources in order to ensure compliance. Furthermore, regardless of the invested resources, the technical structure of cryptocurrencies makes it hard to close all existing loopholes and opportunities for criminal activities.

Different from prohibition however, the benefits of regulation clearly outweigh the drawbacks. Regulation of cryptocurrencies makes cryptocurrencies safer to use and allows for at least partial monitoring of this space. While the still remaining blind spots are an issue, it is certainly beneficial to at least partially be able to observe market developments and prevent a number of illegal activities. The new initiatives on an EU level show that there is room for comprehensive regulation that increases consumer protection and market stabilization. Furthermore, the regulatory cost for states is compensated by the potential fiscal revenue, while the cost for corporations is compensated with a higher level of legal certainty, which is important for them to plan and develop. Finally, as both the EU and the USA choose a regulatory approach, it seems beneficial for individual states to build on their existing regulations and face the challenges related to cryptocurrencies through an international, collaborative and regulatory approach.

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