

VAT Treatment of Cryptocurrency Intermediation Services

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The bitcoin blockchain was construed as a self-regulating system that would eliminate financial institutions serving as trusted third parties. Instead however, various new intermediaries emerged carrying out economic activities related to the blockchain. The most common 'gateways' are cryptocurrency exchange platforms and wallet providers. Moreover, bitcoin's main purpose has shifted from means of payment to speculation. In this article, the authors assess how the mentioned gateways are to be treated for value added tax purposes and challenge the Hedqvist-decision of the European Court of Justice against the backdrop of how bitcoins are being used today.

Keywords: Bitcoin, Ethereum, blockchain, cryptocurrency, token, exchange platform, wallet provider, intermediation, agent, undisclosed agent

I INTRODUCTION

Bitcoin has missed the intentional goal initially established by Satoshi Nakamoto in the bitcoin whitepaper¹ Bitcoins have not become a common means of payment that would speed up the transfer of money across the world nor has it eliminated intermediaries. On the contrary, it can be observed that, in the cryptocurrency ecosystem, traditional intermediaries (of the banking sector) have simply been replaced by new intermediaries such as online exchange platforms and wallet providers.

Many business models have emerged using bitcoin, ether, and other so-called 'altcoins'² and offering services 'off chain' with the first being online exchange services and wallet services.³ The businesses offering such services are located at the intersection between the online blockchain ecosystem – in which every user must run the blockchain code on their computer – and the 'ordinary' world of the Internet. They are sometimes referred to as 'gateways' that

bridge both systems. Cryptocurrency exchange platforms and wallet providers facilitate access to the relevant cryptocurrency without requiring their users to become a part of the blockchain ecosystem. Users can simply register with an exchange platform and purchase cryptocurrencies for legal tender which will then be transferred to their wallet (s) that are sometimes provided by yet another company.⁴ These services are being widely used.

Furthermore, crypto marketplaces facilitate the trade of cryptocurrencies between individuals without requiring any of the traditional trusted third parties, such as banks, to intermediate. Some marketplaces enable the purchase of cryptocurrencies by providing automated teller machines (ATMs) that accept legal tender (cash) in exchange for cryptocurrencies.⁵ The transactions that are incurred where cryptocurrencies are obtained via an ATM are still purely electronic – the buyer is not provided with a tangible asset that could be used in the tangible world.

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¹ The bitcoin blockchain was first introduced in a white paper in 2008 by an unknown person or group of people referred to as 'Satoshi Nakamoto' (S. Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System* 1 et seq. (2008), <https://bitcoin.org/bitcoin.pdf> (accessed 6 Oct. 2019)).

² 'Altcoins' are 'alternatives to bitcoin', referring to all of the other tokens that have been created since bitcoin.

³ The first exchange platform for cryptocurrencies, Mt. Gox, began trading bitcoins in 2010 and declared bankruptcy in 2014 after having lost USD 502,750 worth of bitcoins in 2011 (see M. J. Casey & P. Vigna, *The Age of Cryptocurrency: How Bitcoin and the Blockchain Are Challenging the Global Economic Order* 81 et seq. (Picador 2015)). In this article, the authors use the 'online exchange platform' as an umbrella term for proprietary trading (on platforms such as Coinbase, <https://www.coinbase.com/or> Bitstamp, <https://www.bitstamp.net/> (accessed 6 Oct. 2019)) and trades on marketplaces (such as Kraken, <https://www.kraken.com/>, LocalBitcoin, <https://localbitcoin.com/or> Bitcoin.de, <https://www.bitcoin.de/> (accessed 6 Oct. 2019)). This distinction is borrowed from G. Hileman & M. Rauchs, *Global Cryptocurrency Benchmarking Study* 12 (2017), https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2017-global-cryptocurrency-benchmarking-study.pdf (accessed 6 Oct. 2019).

⁴ Such as Circle, <https://www.circle.com/en> or Blockchain, <https://blockchain.info/de/wallet/#/> (accessed 6 Oct. 2019).

⁵ See for a list of bitcoin ATM manufacturers Coin ATM Radar, <https://coinatmradar.com/manufacturers/> (accessed 6 Oct. 2019).

Although cryptocurrencies – unlike legal tender – are universal in their usability in the sense that they can be used wherever they will be accepted as a method of payment regardless of national borders, exchange platforms play an important role in the crypto world. At the time of writing of this article, it was estimated that approximately 260 cryptocurrency exchange platforms exist online and list almost 1,600 different cryptocurrencies.⁶ The important role that these platforms play with regard to the use of cryptocurrencies may indicate that, in many cases, the transaction underlying a transfer of cryptocurrency is a pure sale or purchase of the cryptocurrency itself and not the purchase of a specific good or service with the cryptocurrency being the remuneration.

The use of cryptocurrencies can raise questions of taxation and especially of Value Added Tax (VAT) when there is an association with an economic activity. In this article, the authors will focus on cryptocurrency exchange platforms and wallet providers, thus a group of ‘new’ crypto intermediaries. Since cryptocurrencies are not issued by a central (state) authority, treatment as legal tender cannot be taken for granted. Even if it is considered counter-intuitive, cryptocurrencies may not be comparable to legal tender, which would entail that crypto exchange platforms are to be treated differently than legal tender exchange businesses. The assessment of the respective VAT consequences thus needs to be done diligently.

Although this contribution discusses intermediation services, the understanding of their VAT treatment – especially the applicability of a VAT exemption – depends on the design of the underlying cryptocurrency that is generated via blockchain technology. Therefore, the authors begin with a brief description of the two most important blockchains. Subsequently, the VAT consequences of cryptocurrency trading and the provision of wallets will be determined.

The quality of the exchange operator and the wallet provider will first be specified followed by an assessment of the types of services provided in order to identify the place of supply and whether and under what circumstances a tax exemption may apply.

2 CHARACTERISTICS OF BLOCKCHAIN TECHNOLOGY

2.1 Blockchain Technology in General

Blockchain technology is often referred to as being ‘disruptive’ because it enables, for the first time, direct and verified exchange of value and data (generally referred to as tokens⁷) and ‘eliminates’ the need for intermediaries.⁸

The technology can be used in a variety of applications such as cryptocurrencies and financial transactions, verifiable voting systems, file storage, ridesharing, and any use requiring a ledger.⁹ The most well-known blockchains are the bitcoin blockchain¹⁰ and the ethereum blockchain.^{11,12} In this article, the authors will discuss typical ‘cryptocurrencies’ such as bitcoins and ether – which are built in the respective blockchains – and other ‘tokens’ – that are often based on the bitcoin and ethereum blockchains and also listed on exchange platforms.¹³

The blockchain consists of blocks that are irrevocably chained to one another in which each block contains a verified record of cryptocurrency transactions that are effectuated within a specific time. The information on the related transaction is encrypted with regard to the parties’ identities. The classical blockchain is not centrally stored on one server or other device but distributed among all of the users of the blockchain network (thus referred to as a distributed ledger). The users’ hardware devices

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⁶ Wikipedia, *List of Cryptocurrencies* https://en.wikipedia.org/wiki/List_of_cryptocurrencies; CoinMarket, *Top Cryptocurrency Exchanges List*, <https://coin.market/exchanges> (accessed 6 Oct. 2019).

⁷ In this article, the authors use ‘token’ as an umbrella term for coins that may be used as a means of payment (such as bitcoins) and coins that are being used for speculative purposes (such as coins from ICOs). See D. Dietsch, *Umsatzsteuerliche Einordnung von Initial Coin Offerings*, 13 *MwStR* 546, 548 (2018). For a comparison with casino chips see T. Ehrke-Rabel et al., *Kryptowährungen, Blockchain und Smart Contracts: Risiken und Chancen für den Staat (Teil 1)*, *jusIT* 87, 88 (2017).

⁸ For a clear and concise description of the technology, see P. Rodriguez, *La Révolution Blockchain – Algorithmes ou institutions, à qui donnerez-vous votre confiance?* 123 et seq. (Dunod 2017).

⁹ Government Office for Science, *Distributed Ledger Technology: Beyond Blockchain – A Report by the UK Government Chief Scientific Adviser* 1 et seq. (2015), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf (accessed 6 Oct. 2019). For an extensive list, see H. Diedrich, *Ethereum: Blockchains, Digital Assets, Smart Contracts, Decentralized Autonomous Organizations* 58 et seq. (CreateSpace Independent Publishing Platform 2015).

¹⁰ Bitcoin’s market capitalization was approximately 140 billion at the time of writing this article (CoinMarketCap, <https://coinmarketcap.com/> (accessed 6 Oct. 2019)). For early investigations of the VAT treatment of bitcoin transactions, see R. Wolf, *Bitcoin and EU VAT*, 25(5) *Int’l. VAT Monitor* 254 et seq. (2014); S. Capaccioli, *Forum VAT & Bitcoin*, 23 *EC Tax Rev.* 6, 361 et seq. (2014); A. Bal, *Taxing Virtual Currency: Challenges and Solutions*, 43(5) *Intertax* 380 et seq. (2015); J. Sankey, *VAT Treatment of Bitcoin – A Proxy for Other Cryptocurrencies*, *Eur. L. Rep.* 223 et seq. (2016); O. Henkow, *VAT and Virtual Reality: How Should Cryptocurrencies Be Treated for VAT Purposes?*, in *VAT/GST in a Global Digital Economy*, *Eucotax Series on European Taxation* 45, 55 et seq. (M. Lang & I. Lejeune eds, Kluwer Law International 2015) and O. Henkow, *VAT and Virtual Reality: How Should Cryptocurrencies Be Treated for VAT Purposes?*, in *Value Added Tax and The Digital Economy*, *Eucotax Series on European Taxation* 135, 145 et seq. (M. Lamensch, E. Traversa & S. van Thiel eds, Kluwer Law International 2016).

¹¹ Ethereum’s market capitalization was at almost twenty billion at the time of writing of this article (CoinMarketCap, *supra* n. 10).

¹² As well as the global financial transactions system Ripple (Ripple, <https://ripple.com/> (accessed 6 Oct. 2018)).

¹³ In this article however, the authors will not distinguish between the two and use the term ‘cryptocurrency’ (often also referred to as ‘coin’ or ‘crypto coin’) and the term ‘token’ interchangeably. See *supra* n. 7.

running the blockchain's software are called 'nodes' on the network and can be located anywhere around the world. The blockchain can be referred to as a chronological database, a public¹⁴ record of transactions that proves the entire transaction history of each token and thus previous as well as current ownership.¹⁵

2.2 Bitcoin Blockchain

The bitcoin blockchain is used to automatically and securely transfer bitcoins (the bitcoin blockchain's 'native' token) from one public address¹⁶ to another public address without needing to rely on a third party (such as a bank).¹⁷ Instead, every transaction is recorded in the ledger (disclosed in the blocks) after being verified by the users of the system via a consensus mechanism (peer-to-peer).¹⁸ The bitcoin blockchain constitutes a periodically synchronizing record of transactions. It qualifies as a 'public blockchain' because its software is an 'open source'.¹⁹

For verification, the bitcoin blockchain uses a consensus mechanism that is referred to as 'proof of work'²⁰ requiring certain nodes to solve complex mathematical problems (a cryptographic hash function) based on trial and error by contributing processing power to the network (these users are called miners) while others verify the solution to the problem.²¹ When a miner solves a puzzle, a block is formed containing the solution to the mathematical

puzzle and a reference to the preceding block²² confirming 'the integrity of the previous one, all the way back to the first block' (this is the new hash²³).²⁴ The software continuously²⁵ adapts the difficulty of the mathematical puzzles according to the amount of computing power provided by all of the miners in the network to ensure that a block is created on an average of every ten minutes.²⁶ The more processing power that miners use, the greater their chance to solve the block. The miners, however, cannot influence their share of processing power proportional to the computing power of the entire network. As soon as the block is added to the blockchain, the transactions it contains become permanent, and the miners begin working on the next math problem for the next block. If a user attempts to spend more bitcoins than the amount that are allocated to them, all of the other users will reject the transaction.

Miners are incentivized to acquire specific mining equipment and contribute computing power to the network because 12.5 bitcoins (at a current value of approximately USD 100,000)²⁷ are newly created with every block and allocated to the miner who solves the math problem (block reward). Overall, the reward is randomly allocated to one of the miners in the network. Active miners contribute processing power to the network within the given time frame of approximately ten minutes without knowing who will be rewarded 12.5 bitcoins.²⁸ Miners thus sustain the system by creating blocks and by issuing new bitcoins.²⁹ Miners work to

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¹⁴ The blockchain is not necessarily public as it can also be run privately (Government Office for Science, *supra* n. 9, at 18). The two blockchains under scrutiny in this article, bitcoin and ethereum, are public.

¹⁵ J. Brito, H. Shadab & A. Castillo, *Bitcoin Financial Regulation: Securities, Derivatives, Prediction Markets, and Gambling*, 16 Colum. Sci. & Tech. L. Rev. 144, 149 (2014).

¹⁶ Public addresses are randomly generated numbers to which data is transmitted. They resemble a person's bank account number, however, are not linked to a person's name or home address.

¹⁷ This leads to a reduction of transaction time and costs (A. Wright & P. De Filippi, *Decentralized Blockchain Technology and the Rise of Lex Cryptographia* 9 (2015), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2580664 (accessed 6 Oct. 2019)).

¹⁸ For a precise analysis of VAT and peer-to-peer systems, see C. Trenta, *Rethinking EU VAT for P2P Distribution* 1 et seq. (Kluwer Law International 2015).

¹⁹ This means that bitcoin's software is publicly accessible and can be used and altered by third persons.

²⁰ There are, however, other types of consensus mechanisms, e.g. 'proof of stake', 'proof of stake/time', 'proof of minimum aged stake', or 'proof of importance' (O. Kharif, *Bitcoin's Top Rival Is Up 90% and Ready to Ditch Mining* (2017), <https://www.bloomberg.com/news/articles/2017-02-28/bitcoin-s-top-rival-is-up-90-and-readying-its-next-big-move> (accessed 6 Oct. 2019); L. Leloup, *Blockchain – La révolution de la confiance* 38, 43 (Eyrolles 2017); Rodriguez, *supra* n. 8, at 131 et seq.; A. Tapscott & D. Tapscott, *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money* 32 (Portfolio 2016)).

²¹ N. Devi Bhaskar & D. Lee Kuo Chuen, *Bitcoin Mining Technology*, in *Handbook of Digital Currency: Bitcoin Innovation, Financial Instruments and Big Data* 46 (D. Lee Kuo Chuen ed., Academic Press 2015); Wright & De Filippi, *supra* n. 17, at 7.

²² Wright & De Filippi, *supra* n. 17, at 6, 7.

²³ See D. Varro & B. Sturma, *Ertragsteuerliche Beurteilung von Kryptowährungen und ICOs*, in *Digitalisierung im Konzernsteuerrecht* 132 (S. Kirchmayr, G. Mayr et al. eds, Linde Verlag 2018).

²⁴ Bhaskar & Kuo Chuen, *supra* n. 21, at 51.

²⁵ Every fourteen days on average (Bhaskar & Kuo Chuen, *supra* n. 21, at 57).

²⁶ Bhaskar & Kuo Chuen, *supra* n. 21, at 50.

²⁷ The bitcoin block mining reward will decrease from 12.5 to 6.25 coins in May 2020.

²⁸ For a legal assessment of bitcoin mining, see T. Ehrke Rabel et al., *Bitcoin-Minerals Prosumer: eine Frage staatlicher Regulierung? Dargestellt am Beispiel des Glücksspielrechts*, 3 Austrian L.J. 188, 205 et seq. (2019); for a differing view see M. Tumpel & J. Köfler, *Tax Treatment of Digital Currencies*, in *Tax and The Digital Economy: Challenges and Proposals for Reform*, Series on International Taxation 177 et seq. (W. Haslechner eds, Kluwer Law International 2019).

²⁹ They 'create money from nothing' (Diedrich, *supra* n. 9, at 92). Bitcoin software includes a hard limit of twenty-one million bitcoins. As soon as that number is reached, transaction fees will incentivize miners. Transaction fees already exist and are currently paid by senders on a voluntary basis for faster confirmation of their transaction (Lam Pak Nian & David Lee Kuo Chuen, *Introduction to Bitcoin*, in *Handbook of Digital Currency: Bitcoin Innovation, Financial Instruments and Big Data* 23 (D. Lee Kuo Chuen ed.,

create a block individually or collectively (mining pool).³⁰

The blockchain is deemed secure because any manipulation of previous blocks requires a change in the code. A change in the code hinges on the consent of the majority of users and thus more than 50% of the network's processing power ('51% attack').³¹ A '51% attack' is very unlikely from an economic perspective; a manipulation of the ledger would presumably result in a loss of confidence in the system and, therefore, a decrease in the value of the bitcoins, harming the attacker more than anyone else with more than 50% computing power. Indeed, it would be more lucrative to use the 51% of the network's processing power to mine bitcoins.³² The system thus self-regulates to a certain degree.³³

To transfer bitcoins from one public address to another, each user needs a public address and a private key³⁴ to access the bitcoins that are assigned to their public address. The identities of the parties to a transaction are encrypted. The blockchain merely displays the public addresses of the parties and the number of bitcoins transferred. The public address and private key can be newly created for every transaction by using a so-called 'wallet'.³⁵

The bitcoin blockchain was meant to be non-hierarchical, purely peer-to-peer, and require every user to contribute to the functioning of the system in order to be entitled to take advantage of it. However, since the network experienced substantial growth and the number of transactions effectuated on the blockchain has increased considerably over the past years, this task now requires a significant amount of mining power and hardware. As a consequence, business models that

allow people – in exchange for remuneration – to take advantage of the bitcoin network without having to materially contribute to it have emerged. Ultimately, this is how exchange platforms and wallet providers formed.

2.3 Ethereum Blockchain

In 2015, Russian-Canadian programmer, Vitalik Buterin, founded a new blockchain project called 'ethereum'. Technically, the ethereum blockchain resembles the bitcoin blockchain. It is also a public ledger using an open source code. Blocks are created by means of proof of work³⁶ through miners, who are rewarded by – in this case – two ether (the ethereum blockchain's 'native' token).³⁷

Unlike the bitcoin blockchain, the ethereum blockchain was created to provide an infrastructure, upon which third persons may build and run applications in an efficient, secure, and transparent way.³⁸ Henning Diedrich refers to the ethereum blockchain as a 'programming platform'.³⁹ It consists not only of its base blockchain layer but also an entire second layer of hundreds of blockchain apps, protocols, and projects.⁴⁰

The ethereum blockchain features 'smart contracts'.⁴¹ While cryptocurrency payments themselves are conducted through smart contracts⁴² which hence are also a part of the bitcoin blockchain, the ethereum blockchain displays a greater variation of smart contracts. Use cases include escrow services, verifiable voting systems, ridesharing, and gambling.⁴³

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Academic Press 2015)). During the height of the boom, transaction fees reached over USD 50 (M. Rauchs et al., *2nd Global Cryptocurrency Benchmarking Study* 70 (2018), https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2018-12-ccaf-2nd-global-cryptoasset-benchmarking.pdf (accessed 6 Oct. 2019)).

³⁰ For more details, see e.g. Bhaskar & Kuo Chuen, *supra* n. 21, at 51.

³¹ Leloup, *supra* n. 20, at 38, 43; Tapscott & Tapscott, *supra* n. 20, at 39 et seq.

³² Bhaskar & Kuo Chuen, *supra* n. 21, at 63; Nakamoto, *supra* n. 1, at 4; D. Achenbach, I. Baumgart & J. Rill, *Die Blockchain im Rampenlicht – Technologie von der Stange – oder besser nach Maß?*, 41 *Datenschutz und Datensicherheit* 673, 676 (2017); P. Valente, *Bitcoin and Virtual Currencies Are Real: Are Regulators Still Virtual?*, 46(6/7) *Intertax* 541, 543 (2018). Centralized platforms can be hacked more easily, of course.

³³ The blockchain solves the Byzantine Generals' Problem referring to an agreement problem in which a group of generals encircling a city must agree on a common approach in attacking it while not trusting one another. In order for the individual general to be sure that the message they received was uncompromised, they need to know which piece of information the other generals got. The blockchain precisely displays this information for every user to see.

³⁴ Private keys are randomly generated numbers that resemble a user's password.

³⁵ These wallets are software that stores each user's public address and private key. See s. 4, *infra*.

³⁶ Ethereum's version of proof of work is called 'GHOST' (Diedrich, *supra* n. 9, at 144). Plans have been laid out to modify ethereum's system to a less wasteful proof of stake (V. Zamfir, *Introducing Casper 'the Friendly Ghost'* (2015), <https://blog.ethereum.org/2015/08/01/introducing-casper-friendly-ghost/> (accessed 6 Oct. 2019); see also Diedrich, *supra* n. 9, at 152 et seq.). At this time however, it is unclear when this transition might be implemented (R. Rose O'Leary, *A Multi-Million Dollar Bet Ethereum's Proof-of-Stake Isn't Coming Soon* (2018), <https://www.coindesk.com/a-multi-million-dollar-bet-ethereums-proof-of-stake-isnt-coming-soon> (accessed 6 Oct. 2019)).

³⁷ BitInfoCharts, *Ethereum (ETH) Statistiken und Informationen*, <https://bitinfocharts.com/de/ethereum/> (accessed 6 Oct. 2019).

³⁸ V. Buterin, *Visions, Part 1: The Value of Blockchain Technology* (2015), <https://blog.ethereum.org/2015/04/13/visions-part-1-the-value-of-blockchain-technology/> (accessed 6 Oct. 2019).

³⁹ Diedrich, *supra* n. 9, at 74.

⁴⁰ Henning Diedrich refers to it as a 'bona fide platform to create automated commerce' (Diedrich, *supra* n. 9, at 72).

⁴¹ Diedrich, *supra* n. 9, at 37.

⁴² Diedrich, *supra* n. 9, at 115.

⁴³ Diedrich, *supra* n. 9, at 58 et seq.

A smart contract is (distributed) computer code that self-executes electronic instructions ('if – then – else').⁴⁴ Smart contracts can thus automatically (and irrevocably) move tokens from A to B upon the fulfilment of a condition. They may be triggered by external conditions but cannot reach information outside the blockchain.⁴⁵ Smart contracts will typically use the blockchains' 'native' cryptocurrencies bitcoin or ether to remit a payment.⁴⁶

What has been stated about the bitcoin blockchain and the requirement for its users to contribute to and maintain the blockchain is also valid for the ethereum blockchain. Exchange platforms and wallet providers thus also provide their services to users who want to use ether without the burden of contributing to the network. Moreover, one (thrilling) aspect of ethereum is that it allows anyone to create their own token on top of the ethereum blockchain and to easily raise money by means of so-called Initial Coin Offerings (ICOs) that are based on smart contracts. Especially since 2017, all types of business ideas are being roughly outlined in white papers and made accessible to the (Internet) public for effortless funding. The offerer typically asks the investor to pay ether towards the offerer's project (via a smart contract) and, in return, gives the investor an equivalent number of tokens specifically created for this project. The ether raised in this way can then be exchanged for legal tender through an exchange platform that can be used to finance the project presented in the white paper.

Since ethereum enables anyone with basic web skills to create their own token,⁴⁷ the number of newly developed tokens has surged – particularly in 2017, during the height of the cryptocurrency boom.⁴⁸ In many cases, these so-called altcoins are based on the open source code of bitcoins and, therefore, may resemble bitcoins from a technological perspective. Today's various altcoins differ from one another depending on their technical design, mode of issuance and distribution, as well as intended and real-life use. Thus, not every token referred

to as 'cryptocurrency' may, in fact, resemble currency or even be used as a means of payment.⁴⁹

Regardless of whether the investors acquire any rights regarding the project from the project-specific tokens transferred to them in return for their ether investment,⁵⁰ the newly issued tokens are usually listed on exchange platforms. Once the tokens are listed, other users can purchase them for legal tender. Many offerers have economically benefitted from this system⁵¹ and the exchange platforms received fees.

In reality, despite their self-organizing set-up, cryptocurrencies based on the bitcoin or the ethereum blockchains are typically exchanged through platforms that constitute a new type of intermediary. As the authors will elaborate in the following, these platforms fit easily into the well-known categories of agency.

3 VAT TREATMENT OF CRYPTOCURRENCY TRADING

3.1 Trade of Cryptocurrencies: Electronically Supplied Services

As outlined above, cryptocurrencies may differ from one another with regard to their technical design, mode of issuance and distribution, as well as their intended and factual use. What they have in common is their intangible nature and their dependency on the Internet.

With regard to bitcoins, the European Court of Justice (hereinafter 'CJEU') found that 'the "bitcoin" virtual currency with bidirectional flow, which will be exchanged for traditional currencies in the context of exchange transactions, cannot be characterized as "tangible property" within the meaning of Article 14 of the VAT Directive, given that [...] the virtual currency has no purpose other than to be a means of payment'.⁵² 'Consequently, the transactions [...], which consist of the exchange of different means of payment, do not fall within the concept of the "supply of goods", laid down in Article 14 of the directive'.⁵³ Rather, they 'constitute the supply of services for

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⁴⁴ For an overview, see Reggie O'Shields, *Smart Contracts: Legal Agreements for the Blockchain*, 21 N. C. Banking Inst. 177, 179, 180 (2017).

⁴⁵ Diedrich, *supra* n. 9, at 170, 174.

⁴⁶ Diedrich, *supra* n. 9, at 43, 166 et seq. See M. Merckx, *VAT and Blockchain: Challenges and Opportunities Ahead*, 28(2) EC Tax Rev. 83 et seq. (2019) for an analysis of how smart contracts could impact VAT legislation in the future.

⁴⁷ Diedrich, *supra* n. 9, at 70.

⁴⁸ For a list of different types of tokens, see CryptoCurrency Market Capitalizations, <http://coinmarketcap.com> (accessed 6 Oct. 2019). The most common are bitcoin, ether, litecoin, and bitcoin cash (Rauchs et al., *supra* n. 29, at 57).

⁴⁹ L. Zechner, *Kryptowährungen: Sind Wechselstuben, Handelsplätze und Walletanbieter umsatzsteuerpflichtig?*, 12 taxlex 388, 392 (2017).

⁵⁰ For an overview of the different functions of tokens issued via ICOs, see T. Ehrke-Rabel, *Kryptowährungen und Umsatzsteuer*, in *Digitalisierung im Konzernsteuerrecht* 145, 152 (S. Kirchmayr et al. eds, Linde Verlag 2018); Dietsch, *supra* n. 7, at 546, 547; for a legal analysis of using big data in tax enforcement see T. Ehrke-Rabel, *Profiling im Steuervollzug*, 2 FinanzRundschau 45 et seq. (2019).

⁵¹ For a humorous and yet insightful approach, see D. Gerard, *Attack of the 50 Foot Blockchain* 97 et seq. (CreateSpace Independent Publishing Platform 2017), who terms ICOs as 'magic beans and bubble machines'.

⁵² CJEU 22 Oct. 2015, *Hedqvist*, Case C-264/14, EU:C:2015:718, para. 24.

⁵³ *Hedqvist*, (C-264/14), *supra* n. 52, para. 26.

consideration that has a direct link with the service provided, that is to say, within the meaning of Article 2(1)(c) of the VAT Directive'.⁵⁴

Considering that all cryptocurrencies are issued and distributed over the Internet, it follows from the decision of the CJEU that tokens (cryptocurrencies) do not constitute goods within the meaning of Article 14 of the VAT Directive.⁵⁵ Rather, their exchange is to be classified as an electronically supplied service according to Article 58(1)(c) of the VAT Directive and Article 7(1) of the Council Implementing Regulation.⁵⁶ These include services 'which are delivered over the Internet or an electronic network and, the nature of which renders their supply essentially automated and involving minimal human intervention, and impossible to ensure in the absence of information technology'.

In general, the concept of an 'electronically supplied service' deviates from the common understanding that legislation must be construed in a way that its application does not depend on the form or technical implementation of a transaction but on the substance of the facts of the case (technology neutrality of law).⁵⁷ Article 58 of the VAT Directive and Article 7 of the Council Implementing Regulation indiscriminately combine all 'electronically supplied services' based on their form without considering their substance.⁵⁸ As a result, the rule on electronically supplied services is given priority over other place of supply rules. This can be justified by the need for clear and uniform rules regarding services supplied online as well as legal certainty and simplification of enforcement.⁵⁹ In the authors' opinion, however, this approach does not always ensure simplification of enforcement and, in some cases, there is no ambiguity.⁶⁰ Especially when the place of supply rules for services in the B2C-sector already deviate from the general rule, it becomes evident that the concept of the 'electronically supplied service' may be misguided (e.g. services related to immovable property [Article 47 of the VAT Directive and Articles 13b, 31a and 31b of the Council Implementing Regulation]).

It follows that the same rules apply to all types of cryptocurrencies concerning the nature of their supply provided by a cryptocurrency exchange platform and the

respective place of supply. With regard to tax exemptions, however, the evaluation is more nuanced.

Thus far, in its *Hedqvist*-decision, the CJEU has only decided on the VAT treatment of proprietary trading of bitcoins and no other cryptocurrency. Based on its decision at the time, it seems that trading bitcoins constitutes an exempt service – a conclusion that the authors will challenge hereinafter. Furthermore, it is uncertain whether the *Hedqvist*-decision can and should be transposed to trading cryptocurrencies other than bitcoin.

Before considering the application of a VAT exemption, it is necessary to elaborate on the actors involved in the trade. As outlined above, most of the exchanges of cryptocurrencies into legal tender or into other cryptocurrencies and vice versa are conducted by platforms or marketplaces on the Internet. Although the underlying distributed ledger technology theoretically allows for trading without an intermediary, empirical evidence shows that platforms are largely involved.⁶¹

3.2 Independent Traders and Traders as Agents

3.2.1 Platforms as Taxable Persons

Exchange platforms facilitate the exchange of cryptocurrencies into legal tender or the exchange of legal tender into cryptocurrencies.

Under the assumption that the platform receives some consideration for its activity, it provides a service that, depending on its involvement in the exchange transaction between the ultimate seller and the ultimate buyer of the cryptocurrency, is to be considered either proprietary trading or an 'intermediation' service. Since the authors assume that the exchange is performed for consideration, there is no doubt that the platforms are performing economic activities within the meaning of Article 9 of the European Council Directive 2006/112/EC on the Common System of VAT.⁶² Moreover, both types of trading via platforms constitute supplies of services and not of goods. These services are supplied automatically over the Internet. Differences

Notes

⁵⁴ *Hedqvist*, (C-264/14), *supra* n. 52, para. 30.

⁵⁵ See J. Kollmann, *Taxable Supplies and Their Consideration in European VAT*, IBFD Doctoral Series 46, at 145 et seq. (IBFD, 2018).

⁵⁶ T. Ehrke-Rabel, *Aspekte grenzüberschreitenden digitalen Wirtschaftens in der Umsatzsteuer*, in *Digitalisierung im Steuerrecht* 379, 380 (J. Hey ed., DStJG [42], 2019).

⁵⁷ For insights on technology neutrality of VAT law, see Ehrke-Rabel, *supra* n. 56, at 371 et seq and L. Zechner, *Internetplattformen und umsatzsteuerrechtliche Leistungszurechnung am Beispiel Airbnb*, forthcoming.

⁵⁸ See, for instance, the discussion on reduced VAT rates and e-books (e.g.: F. Cannas, *Reduced Rates and the Digital Economy: The Treatment of (E-)Books Highlights Some Possible Inconsistencies of the EU VAT System*, 26(2) EC Tax Rev. 96 et seq. (2017); S. Siller et al., *EuGH-Rechtsprechungsbüchlein: Neues zur Umsatzsteuer*, 7 Ecolex 706 et seq. (2017)). See also P. Rendahl, *Imposing EU VAT on Unlawful Digital Supplies?*, 20(4) EC Tax Rev. 192, 201 (2011).

⁵⁹ See the CJEU's argument in CJEU 7 Mar. 2017, *RPO*, Case C-390/15, EU:C:2017:174, paras 57–59.

⁶⁰ See Ehrke-Rabel, *supra* n. 56, at 374; Zechner, *supra* n. 57.

⁶¹ In 2019, the number of user accounts with exchange platforms and wallet providers exceeded 139 million (Rauchs et al., *supra* n. 29, at 10).

⁶² Council Directive 2006/112/EC of 28 Nov. 2006 on the common system of value added tax, OJ L347/1 (11 Dec. 2006), 1 (hereinafter 'VAT Directive').

between proprietary trading and ‘marketplace’ intermediation lie in the basis for taxation (the consideration), the number of business operators involved, and the tax exemption. As for the application of tax exemptions, due regard must be given to the nature of the specific cryptocurrency at stake. As pointed out above, cryptocurrencies may differ from one another with regard to their technical design, their type of issuance and distribution, as well as the intended and factual purpose. These factors can be relevant for the application of a tax exemption. Given the general technological neutrality of VAT legislation, the way in which cryptocurrencies are being generated seems less decisive for their legal assessment. However, this does not mean that the way that a type of cryptocurrency is being generated does not have any impact on its legal assessment. As a consequence, each token’s legal nature must be assessed based on the way it is being generated, intended to be used and, in fact, is actually being used.⁶³ The mere fact that a type of token is being traded online with an exchange rate is not of significant relevance for its legal classification.⁶⁴

3.2.2 Independent Traders: Proprietary Traders

Online exchange platforms provide services to purchase and sell cryptocurrencies for legal tender in a bidirectional flow. Some of them buy and resell the tokens themselves. In that case, the exchange platform engages in ‘proprietary trading’, as the authors refer to it.

3.2.3 Marketplaces: Agents

3.2.3.1 Disclosed and Undisclosed Agents

Other exchange platforms simply offer an online infrastructure (website, app, etc.) to match buyers and sellers of cryptocurrencies instead of becoming the owners of the tokens themselves.⁶⁵ The authors define such online exchange platforms as ‘marketplaces’. The service provided by such businesses is the matching of users in order to enable an exchange of tokens for legal tender directly between them. When a taxable person creates a legal relationship between a provider and a recipient of a service, pursuant to which there is reciprocal performance, he qualifies as an intermediary. Consequently, such marketplaces function as intermediaries between buyers and

sellers of tokens.⁶⁶ For instance, the marketplace receives cryptocurrency (transferred to its wallet) from the seller and legal tender (transferred to its bank account) from the buyer and reciprocally forwards the respective amounts to both parties (after deducting its commission).⁶⁷

From a VAT perspective, such marketplaces act as agents. Cases of agency regularly involve at least three parties: In the first case, a person (principal) wants to sell a specific good or provide a distinctive service by mandating another (independent) person (agent) to fulfil this task on behalf of the seller either in his own name or in the name of the seller. The third person is the buyer who concludes the transaction either with the agent or directly with the seller. In the other case, a person (principal) wants to purchase a specific good or service by mandating another (independent) person (agent) to fulfil this task on behalf of the buyer either in his own name or in the buyer’s name. If the agent is remunerated for this service, there are two transactions to be taken into consideration for VAT purposes: the transaction between the principal and the agent, on the one hand, and the transaction between either the agent and the buyer or the buyer and the principal, on the other hand.

As a consequence, two types of agency can be distinguished. The first is an agency in which the agent does not participate in the supply of the underlying service by acting on behalf *and in the name of the principal* (Article 46 of the VAT Directive, ‘disclosed agent’). The second is an agency in which the agent takes part in the supply of the underlying service by acting on behalf of the principal *but in his own name* (Article 28 of the VAT Directive, ‘undisclosed agent’).

3.2.3.2 Undisclosed Agents

Article 28 of the VAT Directive provides that, when a taxable person takes part in a supply of services while acting in his own name but on behalf of another person, he is deemed to have received and supplied those services himself. The CJEU puts it as follows:

Under that fiction, the operator, who takes part in the supply of services and who constitutes the commission agent, is considered to have, firstly, received the services in question from the operator on behalf of whom it acts, who constitutes the principal, before providing, secondly, those services to the client himself.⁶⁸

Notes

⁶³ Ehrke-Rabel, *Kryptowährungen und Umsatzsteuer*, in *Digitalisierung im Konzernsteuerrecht*, *supra* n. 50, at 145, 152; Dietsch, *supra* n. 7, at 546, 547.

⁶⁴ Zechner, *supra* n. 49, at 390.

⁶⁵ Such as Kraken, LocalBitcoin or Bitcoin.de.

⁶⁶ European Central Bank, *Virtual Currency Schemes – A Further Analysis* 14 (2015), <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes.pdf> (accessed 6 Oct. 2019).

⁶⁷ The marketplace (such as LocalBitcoin or Bitcoin.de) acts as an escrow agent. Technically, an escrow function may be implemented by a multi-signature feature (as it is the case with Bitstamp) (Hileman & Rauchs, *supra* n. 3, at 59).

⁶⁸ CJEU 14 July 2011, *Honfing and Others*, Case C-464/10, EU:C:2011:489, para. 35; CJEU 4 May 2017, *European Commission v. Grand Duchy of Luxembourg*, Case C-274/15, EU:C:2017:333, para. 86.

According to the CJEU, involvement in the supply of services in his own name means that a legal relationship is not created directly between the buyer and the undertaking on behalf of which the operator involved acts. Instead, a relationship is formed between that operator and the buyer, on the one hand, and between that operator and that undertaking, on the other.⁶⁹ Consequently, in addition to the presumption in Article 9a(1) of the Council Implementing Regulation,⁷⁰ a marketplace could be acting in its own name but on behalf of its users if its users were to 'effect an exchange without knowing who their counterparty was' because, in that case, the marketplace 'takes responsibility for the coordination'.⁷¹ This will often be the case when tokens are supplied via a 'crypto ATM'.⁷²

3.2.3.3 Disclosed Agents

A marketplace is acting on behalf and in the name of another person if it is merely putting two of its users in contact with one another for the purpose of facilitating their contractual agreement on the exchange of cryptocurrencies for legal tender and vice versa.⁷³ In this case, it is acting as a mere agent and does not take part in the transaction between the seller and the buyer of the cryptocurrency. Whether or not a person is acting in his own name depends on the particular facts of the case.

A disclosed agent may intermediate between two non-taxable persons.⁷⁴

3.2.3.4 Legal Presumption: Undisclosed Agents

Since, in practice, it is not easy to correctly assess whether an agent is acting in an 'undisclosed' way, Article 9a(1) of the Council Implementing Regulation establishes a legal presumption of undisclosed agency. Accordingly, a taxable person taking part in an electronically supplied service, which is 'supplied through a telecommunications network, an interface or a portal such as a marketplace for application', 'shall be presumed to be acting in his own name but on behalf of the provider of those services unless

that provider is explicitly indicated as the supplier by that taxable person and that is reflected in the contractual arrangements between the parties'.

In order to regard the provider of electronically supplied services as being 'explicitly indicated as the supplier' of those services, the following conditions specified in Article 9a (1) of the Council Implementing Regulation must be satisfied: The invoice issued or made available by each taxable person taking part in the supply of the electronically supplied services must identify the services and the supplier thereof, and the invoice or receipt that is issued or made available to the customer must identify the electronically supplied services and the supplier thereof.⁷⁵ However, a taxable person who authorizes the charge of a supply of electronically supplied services to the customer or the delivery of the services or establishes the general terms and conditions of the supply is not permitted to explicitly indicate another person as the supplier of those services.⁷⁶ Considering that most marketplaces perform exactly those types of activity, most of them will be presumed to be acting in their own name but on behalf of their users.

3.3 Type of Service

3.3.1 Proprietary Traders and Undisclosed Agents

When the platform is to be considered a proprietary trader or an undisclosed agent, the exchange of cryptocurrencies for legal tender with bidirectional flow is the underlying transaction, and the service provided by the platform is an 'electronically supplied service' according to Article 58(1)(c) of the VAT Directive and Article 7 (1) of the Council Implementing Regulation.⁷⁷

3.3.2 Disclosed Agents

When the platform acts as a disclosed agent, it does not take part in the underlying transaction that is concluded between the seller and the buyer. In this case, the platform only receives a fee for its intermediation service and

Notes

⁶⁹ *Henfling and Others* (C-464/10), para. 33.

⁷⁰ Council Implementing Regulation (EU) No 282/2011 of 15 Mar. 2011 Laying down Implementing Measures for Directive 2006/112/EC on the Common System of Value Added Tax (recast), OJ L 77/1 (23 Mar. 2011) (hereinafter 'Council Implementing Regulation').

⁷¹ Opinion Advocate General Trstenjak (2 Apr. 2009), *RCI Europe*, Case C-37/08, EU:C:2009:226, para. 102.

⁷² For example, LocalBitcoin used to sell bitcoin ATMs that were linked to the LocalBitcoin website (LocalBitcoin, *supra* n. 3). See S. Pfeiffer, *Zur umsatzsteuerrechtlichen Behandlung von Bitcoin*, 12 ÖStZ 434, 435 (2014).

⁷³ *RCI Europe* (Opinion Trstenjak in C-37/08), *supra* n. 71, para. 102.

⁷⁴ CJEU 27 May 2004, *Lippjes*, Case C-68/03, EU:C:2004:325, para. 12.

⁷⁵ See European Commission, *Explanatory Notes on the EU VAT Changes to the Place of Supply of Telecommunications, Broadcasting and Electronic Services that Enter into Force in 2015*, 32 et seq. (3 Apr. 2014).

⁷⁶ The European Commission lists indicators suggesting that a taxable person takes part in the supply here: European Commission, *supra* n. 75, at 28 and 34 et seq.

⁷⁷ See s. 3.1, *infra*.

is not deemed to have carried out the underlying transaction itself.

It appears that the sale and purchase of cryptocurrencies via exchange platforms is fully automated and does not require any human intervention on the part of the platform. When marketplaces enable users to 'put goods or services up for sale' on their site 'on which potential buyers make their bids by an automated procedure and on which the parties are notified of a sale by electronic mail automatically generated from a computer', they electronically supply services subject to Article 58 of the VAT Directive (Article 7(2)(d) of the Council Implementing Regulation). 'Bids' pursuant to Article 7(2)(d) of the Council Implementing Regulation must not only be understood within the context of an auction but may, in the authors' view, also cover the acceptance of a purchase offer. It seems that the European legislator is alluding to businesses such as eBay auctioning off its user's goods. Nonetheless, the authors contend that Article 7(2)(d) of the Council Implementing Regulation indicates that the European legislator wanted to ensure that online marketplaces that put buyers and sellers in contact with each other without strongly influencing their terms of contract are treated as providing electronically supplied services, irrespective of whether the goods or services are auctioned off or sold for fixed prices. Consequently, also the service provided by the platform acting as a disclosed agent falls within the scope of Article 7 of the Implementing Regulation and thus Article 58(1) of the VAT Directive.

3.4 Place of Supply

3.4.1 Proprietary Traders and Undisclosed Agents

Since taxable persons acting in their own name but on behalf of another person are treated as if they had received and provided the services themselves (Article 28 of the VAT Directive), the place of supply of their services is determined according to the same rules as the place of the underlying supply. As a consequence, the place of supply of the services provided by an undisclosed agent will often be the same location as the place of supply of the services provided by a proprietary trader.

Constituting an electronically supplied service pursuant to Article 7(1) of the Council Implementing Regulation and Article 58(1)(c) of the VAT Directive (just as above), the exchange of tokens for legal tender (B2C) occurs where the recipient is established, has his permanent address, or usually resides. When such services are supplied to a

taxable person, the general rule pursuant to Article 44 of the VAT Directive applies: the place of supply is the place where that person has established his business or has a fixed establishment for which the service is supplied or, in the absence of such a place, the location where that person has his permanent address or usually resides.

It should be noted that pursuant to Article 18(2) of the Council Implementing Regulation, suppliers of electronically supplied services may regard customers established within the European Union (EU) as non-taxable persons as long as they have not communicated their individual VAT identification number. This applies irrespective of information to the contrary.

When electronically supplied services are supplied to a non-taxable person, it is presumed that the customer is established, has his permanent address, or usually resides 'at the place identified as such by the supplier on the basis of two items of non-contradictory evidence'.⁷⁸ Evidence within the meaning of that provision are, e.g. the billing address of the customer, the Internet Protocol (IP) address of the device used by the customer or any method of geolocation; bank details such as the location of the bank account used for payment or the billing address of the customer held by that bank; or the Mobile Country Code (MCC) of the International Mobile Subscriber Identity (IMSI) stored on the Subscriber Identity Module (SIM) card used by the customer.⁷⁹ Where the total value of electronically supplied services does not exceed EUR 10,000 annually, the place of supply may be identified on the basis of one item of evidence.⁸⁰

Pursuant to Article 24a(1) of the Council Implementing Regulation, it is presumed that the customer is established, has his permanent address or usually resides at the place where the physical presence of the recipient of the service is needed for the service to be provided to them by that supplier, and that the service is effectively used and enjoyed there. Certainly, in order to exchange cryptocurrencies via an ATM, the physical presence of the customer is required. Thus, where the services are supplied via a crypto ATM, the place of supply is the place where the ATM is physically located. This presumption applies when the recipients of the service are non-taxable persons or taxable persons.⁸¹

3.4.2 Disclosed Agents

The service provided by a disclosed agent falls within the scope of Article 58 of the VAT Directive. Therefore, the special rule for disclosed agents according to which (mere)

Notes

⁷⁸ Article 24b(1)(d) of the Council Implementing Regulation.

⁷⁹ Article 24f(a–d) of the Council Implementing Regulation.

⁸⁰ Article 24b(2) of the Council Implementing Regulation.

⁸¹ See S. Pfeiffer, *Änderungen der Leistungsordnungen und Einführung des EU-Umsatzsteuer-One-Stop-Shops – Rechtslage ab 1. 1. 2015*, 15–16 ÖStZ 388, 389 (2014).

intermediation services to non-taxable persons are performed at the place where the underlying transaction is supplied (Article 46 of the VAT Directive) is disregarded.

Since the proprietary exchange of cryptocurrencies constitutes an electronically supplied service, the service underlying the intermediation service is performed where the buyer is established. Thus, for the intermediation service, it is of no concern whether the service falls under Article 58(1) or Article 46 of the VAT Directive. In both cases, the service is supplied where the contractual partner of the exchange platform is established. Moreover, when the service is supplied to a taxable person, the place of supply is where that person is established pursuant to Article 44 of the VAT Directive in both cases.

When the intermediation occurs through an ATM, the supply of tokens is taxable at the place where the ATM is located⁸² – irrespective of the recipient’s status as a taxable or a non-taxable person.⁸³ The same is valid for the supply by the intermediary.

3.5 Tax Exemption

3.5.1 Preliminary Remarks

As outlined above, the exchange of tokens is to be classified as an electronically supplied service.⁸⁴ It follows that the same rules apply to all types of cryptocurrencies concerning the nature of their supply provided by a cryptocurrency exchange platform and the respective place of supply. With regard to tax exemptions, however, the evaluation is more nuanced.

3.5.2 Exchange of Cryptocurrencies for Legal Tender

3.5.2.1 The CJEU in C-264/14 Hedqvist

In *Hedqvist*, the CJEU had to determine whether proprietary trading (bitcoins for legal tender) was exempt from VAT under Article 135(1) of the VAT Directive. Article 135(1)(e) of the VAT Directive exempts ‘transactions, including negotiation, concerning currency, bank notes and coins used as legal tender, with the exception of

collectors’ items, that is to say, gold, silver or other metal coins or bank notes which are not normally used as legal tender or coins of numismatic interest’ from VAT. The conclusions reached by the CJEU in *Hedqvist* with regard to the application of Article 135(1)(e) of the VAT Directive were as follows:

- (1) It is established case law that the terms used to specify VAT exemptions that are established in Article 135(1) of the VAT Directive are to be interpreted strictly ‘since they constitute exceptions to the general principle that VAT is to be levied on all services supplied for consideration by a taxable person’.⁸⁵ ‘Nevertheless, the interpretation of those terms must be consistent with the objectives pursued by the exemptions and comply with the requirements of the principle of fiscal neutrality inherent in the common system of VAT’. The requirement of strict interpretation thus does not mean that those terms ‘must be construed in such a way as to deprive the exemptions of their effect’.⁸⁶ According to the CJEU, financial transactions exempt from VAT ‘do not necessarily have to be carried out by banks or financial institutions’.⁸⁷
- (2) ‘Where there are linguistic differences [in the various language versions of Article 135(1)(e) of the VAT Directive], the scope of the expression in question cannot be determined on the basis of an interpretation which is exclusively textual. That expression must therefore be interpreted in the light of the context in which it is used and of the aims and scheme of the VAT Directive’.⁸⁸ The CJEU reiterated that ‘the exemptions laid down by Article 135(1)(e) of the VAT Directive are intended to alleviate the difficulties connected with determining the taxable amount and the amount of VAT deductible which arise in the context of the taxation of financial transactions’.⁸⁹ ‘Transactions involving [...] currencies other than those that are legal tender in one or more countries, in so far as those currencies have been accepted by the parties to a transaction as an alternative to legal tender and have no purpose

Notes

⁸² Article 24a(1) of the Council Implementing Regulation.

⁸³ European Commission, *supra* n. 75, at 55.

⁸⁴ See s. 3.1, *infra*.

⁸⁵ *Hedqvist*, (C-264/14), *supra* n. 52, para. 34 referring to judgments CJEU 21 June 2007, *Ludwig*, Case C-453/05, EU:C:2007:369, para. 21; CJEU 5 July 2012, *DTZ Zadelhoff*, Case C-259/11, EU:C:2012:423, para. 20.

⁸⁶ *Hedqvist*, (C-264/14), *supra* n. 52, para. 35 referring to judgments CJEU 19 Nov. 2009, *Don Bosco Onroerend Goed*, Case C-461/08, EU:C:2009:722, para. 25; *DTZ Zadelhoff* (C-259/11), *supra* n. 84, para. 21; and CJEU 12 July 2012, *J.J. Komen en Zonen Bebeer Heerbugowaard*, Case C-326/11, EU:C:2012:461, para. 20.

⁸⁷ *Hedqvist*, (C-264/14), *supra* n. 52, para. 37 referring to judgments CJEU 19 Apr. 2007, *Velvet & Steel Immobilien*, C-455/05, EU:C:2007:232, paras 21 and 22 and the case-law cited, and CJEU 12 June 2014, *Granton Advertising*, Case C-461/12, EU:C:2014:1745, para. 29.

⁸⁸ *Hedqvist*, (C-264/14), *supra* n. 52, para. 47 referring to judgments *Velvet & Steel Immobilien*, (C-455/05), *supra* n. 86, para. 20 and the case-law cited and CJEU 26 Sept. 2013 *Commission v. Spain*, Case C-189/11, EU:C:2013:587, para. 56.

⁸⁹ *Hedqvist*, (C-264/14), *supra* n. 52, paras 36 ff., 48.

other than to be a means of payment, are financial transactions'.⁹⁰ 'The difficulties connected with determining the taxable amount and the amount of VAT deductible may be the same, whether it is a case of the exchange of traditional currencies, normally entirely exempt under Article 135(1)(e) of the VAT Directive, or the exchange of such currencies for virtual currencies with bi-directional flow'.⁹¹ 'It therefore follows from the context and the aims of Article 135(1)(e) that to interpret that provision as including only transactions involving traditional currencies would deprive it of part of its effect'.⁹² The CJEU, therefore, held that Article 135(1)(e) of the VAT Directive also covers transactions with bitcoin.

3.5.2.2 Conclusions from Hedqvist

Bitcoin: Proprietary Traders

It follows from the judgment *Hedqvist* that the services supplied by proprietary trading businesses are exempt from VAT under Article 135(1)(e) of the VAT Directive provided that:

- (1) the services supplied involve the exchange of bitcoins for legal tender with a 'bidirectional flow' and
- (2) the proprietary trading business purchases and sells the respective units of bitcoin.

The CJEU classified bitcoin trades by a proprietary exchange as financial transactions within the meaning of this provision by relying on their supposed function. The court considered them to be financial transactions 'in so far as those currencies have been accepted by the parties to a transaction as an alternative to legal tender and have no purpose other than to be used as a means of payment'.⁹³ This acceptance by the parties to the transaction and the purpose of using the cryptocurrency as a means of payment set the grounds for equating the exchange of cryptocurrency with the exchange of legal tender.⁹⁴ This point is essential for determining the correct VAT treatment of trading cryptocurrencies other than bitcoins, on the one hand, and the appropriateness of the CJEU's conclusions against the backdrop of present-day bitcoins' use on the other hand. Hereinafter, the authors will depart from the assumption that the CJEU was correct in stating that bitcoins are

only being exchanged for the purpose of being used as a means of payment. In s. 3.5.2.4., the authors will challenge the CJEU's view against the backdrop of today's reality.

Bitcoin: Disclosed Agents

When services that are generally exempt from VAT are provided by an intermediary, the exemption does not categorically apply. As mentioned above, Article 135(1)(e) of the VAT Directive exempts transactions, including negotiation, concerning currency, bank notes, and coins used as legal tender from VAT.

The VAT Committee of the European Commission does not consider the activity of a marketplace matching bitcoin buyers and sellers as transactions concerning currency or financial services exempt from VAT under Article 135(1)(e) of the VAT Directive. In its Working Paper No 892,⁹⁵ it argues that an exchange platform acting as an intermediary is not supplying an exchange service and that the use of an exchange platform 'does not entail any right or duty for the platform with regard to the transfer of bitcoin themselves'. While acknowledging that the exemption in question not only applies to the supply of currency but 'more broadly to transactions concerning currency', it is doubtful – without further specification – that the 'provision of an online marketplace allowing the peer-to-peer trade of bitcoin holds a sufficient degree of connection with the supply of a means of payment'.

To someone who is used to working with the German version of Article 135(1)(e) of the VAT Directive, this result is striking. Instead of 'negotiation', the German version of Article 135(1)(e) of the VAT Directive uses the term 'vermittlung' which translates into 'intermediation' and would thus explicitly include intermediary activities such as those of a cryptocurrency marketplace. The European Commission's stance appears to take into account the English and perhaps French versions of Article 135(1)(e) of the VAT Directive that employ the terms 'negotiation' and 'négociation', respectively. This wording implies that the marketplace must have carried out some act of negotiation in order to fall within the scope of Article 135(1)(e) of the VAT Directive. In denying a sufficient degree of connection, the European Commission seems to be of the opinion that such 'negotiation' is generally not provided by online

Notes

⁹⁰ *Hedqvist*, (C-264/14), *supra* n. 52, para. 49.

⁹¹ *Hedqvist*, (C-264/14), *supra* n. 52, para. 50.

⁹² *Hedqvist*, (C-264/14), *supra* n. 52, para. 51.

⁹³ *Hedqvist*, (C-264/14), *supra* n. 52, para. 49.

⁹⁴ Zechner, *supra* n. 49, at 391.

⁹⁵ European Commission, VAT Committee, *Issues Arising from Recent Judgments of the Court of Justice of the European Union*, Working Paper No 892, taxud.c.1(2016)689595 (2016) 21 (4 Feb. 2016).

marketplaces (maybe because contracts are concluded automatically online⁹⁶).

The authors contend that this view is misguided. Even if, in the past, the intermediation of contracts included their negotiation (often excluding the price) and, if Article 135(1)(e) of the VAT Directive continues to be interpreted in that way, it cannot be overlooked that today's online marketplaces' methods of matching users does, in fact, constitute a type of 'negotiation'. Contracts are concluded between buyers and sellers of bitcoins under the precondition that both sides have agreed to the marketplace's general terms and conditions.⁹⁷ Additionally, the contract concluded between these parties may be governed by the seller's individually advertised terms to which the buyer agrees.⁹⁸ In these cases, however, the seller's terms seem to be valid only when they do not contradict or violate the terms of the marketplace.⁹⁹ This may afford little opportunity to individually design the contracts (except, possibly, the price). The authors thus argue that the automated matching of buyers and sellers under pre-formulated terms and conditions constitutes a modern form of negotiation and should thus receive the same treatment as the services provided by a proprietary trader.¹⁰⁰

Consequently, if the activity of a proprietary trader of exchanging bitcoins for legal tender is exempt from VAT under Article 135(1)(e) of the VAT Directive, then the activity of a marketplace matching bitcoin buyers and sellers must also qualify as 'transactions, including negotiation, concerning currency' within the meaning of Article 135(1)(e) of the VAT Directive.

3.5.2.3 Altcoins

According to the CJEU, the exchange of currencies other than the exchange of legal tender for legal tender with 'bidirectional flow' leads to financial transactions within the meaning of Article 135(1)(e) of the VAT Directive

provided those currencies have been accepted by the parties to the transaction as an alternative to legal tender and have no purpose other than to be a means of payment ('contractual means of payment'¹⁰¹). If these conditions are met, the VAT exemption under Article 135(1)(e) of the VAT Directive applies. Thus, when one type of cryptocurrency is exchanged for another type of cryptocurrency, and both types satisfy these conditions, the transaction is exempt from VAT. Whether a cryptocurrency meets these conditions must be assessed on a case-by-case basis.

For cryptocurrencies other than bitcoins, it is difficult to establish whether they are commonly being used as a means of payment¹⁰² – especially when businesses 'accepting' cryptocurrencies by using specific payment processors are not considered. The authors believe that these processors should not be taken into account for the following reasons. The 'crypto payment processors' in question accept payments from customers in the form of various different cryptocurrencies on behalf of businesses and subsequently transfer the equivalent amount in legal tender to those businesses.¹⁰³ Technically, this indicates that the customer has the opportunity to pay using a token, however, the business actually receives legal tender. The transaction is being intermediated by a payment processing company.¹⁰⁴ It is questionable, in this case, whether the token can qualify as a contractual means of payment with regard to the legal relationship between the customer and the business considering that it is being used by the customer but is not technically accepted by the business. In some cases, the business receiving payment from a customer using a payment processor might not even notice its customer paying with cryptocurrency. As a consequence, only a small number cryptocurrencies will fulfil the criterion of being accepted by both parties as an 'alternative to legal tender'.¹⁰⁵

In the authors' opinion, the principles established by the CJEU in *Hedqvist* can only be transposed to tokens that have been created to exclusively serve as a method of payment and which factually exclusively serve as such.¹⁰⁶

Notes

⁹⁶ See s. 3.3, *infra*.

⁹⁷ Kraken, *Terms of Service*, <https://www.kraken.com/en-us/legal> (accessed 6 Oct. 2019); Bitcoin.de, *Geschäftsbedingungen*, <https://www.bitcoin.de/de/agb> (accessed 6 Oct. 2019).

⁹⁸ As is the case with LocalBitcoin, *supra* n. 3.

⁹⁹ LocalBitcoin excludes the validity of the seller's terms in cases when they 'are unreasonable or otherwise difficult to comply with' (LocalBitcoin, *supra* n. 3).

¹⁰⁰ While not being actively involved in the contractual relationships amongst its users, the marketplace has a significant amount of power and insight. It knows enough about their contractual relationships to be able to reduce information asymmetries between the government and the taxpayer. It is thus justified and necessary for authorities to take recourse to the marketplace as a third-party intermediary.

¹⁰¹ *Hedqvist*, (C-264/14), *supra* n. 52, para. 42.

¹⁰² For example, Overstock.com and Jonathan LeVine Gallery seem to accept tokens other than bitcoins (P. Rizzo, *Ether, Litecoin and More: Overstock Now Accepts Cryptocurrencies as Payment* (8 Aug. 2017), <https://www.coindesk.com/ether-litecoin-overstock-now-accepts-cryptocurrencies-payment/> (accessed 6 Oct. 2019)); L. Coleman, *Manhattan Fine Art Gallery Accepts Bitcoin and Dash to Gain Access to New Markets* (17 July 2015), <https://www.ccn.com/manhattan-fine-art-gallery-accepts-bitcoin-dash-gain-access-new-markets/> (accessed 6 Oct. 2019); see also Jonathan LeVine Projects, <http://jonathanlevineprojects.com/how-to-purchase/> (accessed 6 Oct. 2019).

¹⁰³ For example, CoinPayments processes payments with over 1,500 different tokens (CoinPayments, *Supported Coins*, <https://www.coinpayments.net/index.php?cmd=home> (accessed 6 Oct. 2019)). Along the same lines, TenX connects the customers' tokens with their credit cards (TenX, <https://www.tenx.tech/> (accessed 6 Oct. 2019)).

¹⁰⁴ For a list of businesses using CoinPayments as a payment processor, see CoinPayments, *Cryptocurrency Payments for Businesses*, [https://cryptwerk.com/companies/?f\[27\]=99](https://cryptwerk.com/companies/?f[27]=99) (accessed 6 Oct. 2019).

¹⁰⁵ Zechner, *supra* n. 49, at 392, 393.

¹⁰⁶ See also A. Bal, *VAT Treatment of Initial Coin Offerings*, 29(3) Int'l. VAT Monitor 118, 122 et seq. (2018).

In contrast, the trading of tokens, which cannot be considered a contractual means of payment, are subject to VAT.

3.5.2.4 Has the Hedqvist Reasoning Become Obsolete?

While considering the exemption of Article 135(1)(e) of the VAT Directive relevant for the exchange of bitcoins for legal tender, the CJEU did not exclusively rely on the wording of the provision – which was ambiguous regarding the different language versions – but built its argument around bitcoins' purpose. This approach allowed the court to apply the existing VAT rules to a new phenomenon by taking a 'substance-over-form' approach that appears to preserve technology neutrality of the legal framework. In doing so, the court demonstrates that VAT law is flexible enough to adapt to business models and technologies that could not be foreseen by the legislator at the time of adoption of the law.¹⁰⁷

This approach seems welcome from the perspective of technology neutrality of law, however, the case of bitcoin demonstrates that such an approach can entail serious uncertainty: The primary argument of the CJEU for applying the exemption to the exchange of bitcoins was that they were comparable to legal tender because they were accepted as a means of payment by those who used them. Furthermore, bitcoin trades were treated as financial transactions under the presumption that they did not serve any other purpose than their use as a method of payment. There is no doubt that this use was what Satoshi Nakamoto had originally envisioned. When the first pizza was purchased in exchange for one bitcoin, this vision became real, and bitcoins became known to the general public. It is also a current reality that bitcoins are being accepted as a means of payment in some places.¹⁰⁸

The fact that bitcoins are being accepted as an alternative to legal tender is relatively easy to establish.¹⁰⁹

However, there appears to be no clear evidence that they are commonly being used as legal tender. From the current perspective – over four years after *Hedqvist* – it seems evident that bitcoins are being mined and traded primarily for speculative purposes. According to some academics, this was true already in 2015.¹¹⁰ Given the explicit wording in *Hedqvist* ('[...] and have no purpose other than to be used as a means of payment'¹¹¹), the authors doubt that the CJEU was aware of the fact that bitcoins were being exploited for these speculative purposes at the time of the decision. In fact, the authors believe that, facing bitcoins' reality of today, the CJEU would have decided differently.¹¹²

Against this backdrop, the authors contend that the equal treatment of the exchange of bitcoins and the exchange of legal tender as put forward by the CJEU in the *Hedqvist* case corresponds to equal treatment of two differing activities. In the authors' view and given today's reality, knowing how bitcoins are factually being currently used, the CJEU's reasoning and decision in *Hedqvist* are no longer valid.

As a consequence, the CJEU's decision would no longer apply to today's bitcoin exchanges. Can this position be taken without representing a neglect of the role of the CJEU as the ultimate interpreter of EU law? In the authors' opinion, the answer is yes. In *Hedqvist*, the CJEU did not explicitly state that bitcoins *are* legal tender. Instead, the court argued that they are to be treated *like* legal tender because – at the time of the decision – they were being accepted and used as such and were thus subject to financial transactions. As it turns out, presently, bitcoins are not primarily being used as a means of payment, or at least not within the realm of lawful activities. Their treatment equal to that of legal tender, therefore, is to be dismissed.

For these reasons, the exchange of bitcoins for legal tender is no longer exempt from VAT, in the authors' view, but subject to VAT.

Notes

¹⁰⁷ Ehrke-Rabel, *supra* n. 56, at 378.

¹⁰⁸ They seem to serve as a means of payment particularly in the so-called 'darknet', which is an encrypted part of the Internet where illicit trading tends to occur. For an analysis of how cryptocurrencies and VAT fraud interact, see F. Borselli, *VAT Fraud, Cryptocurrencies and a Future for the VAT System*, 30(5) Int'l. VAT Monitor 179 et seq. (2019). Providers engaged in exchange services between virtual currencies and fiat currencies as well as custodian wallet providers have been included in the fifth Anti Money Laundering Directive (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, OJ L 156/43 (19 June 2018), 43); see for instance W. Hoke, *EU Plan to Monitor Bitcoin Trading Could Deter Tax Evasion*, 84 Tax Notes Int'l. 188 (2016).

¹⁰⁹ E. Moreau, *The 13 Best Major Retailers and Services that Accept Bitcoin in 2020*, <https://www.lifewire.com/big-sites-that-accept-bitcoin-payments-3485965> (accessed 25 Feb. 2020); for a list of companies accepting bitcoins see *Handel*, <https://de.bitcoin.it/wiki/Handel> (accessed 6 Oct. 2019) and BTC-NAVIGATOR, <https://www.btc-echo.de/tutorial/bitcoin-akzeptanzstellen/#oesterreich> (accessed 6 Oct. 2019); S. Schlaefli, *Die Ökonomie der 'Bitcoin'*, <https://ethz.ch/de/news-und-veranstaltungen/eth-news/news/2014/08/die-oekonomie-der-bitcoins-.html> (accessed 6 Oct. 2019). Moreover, authorities in the Swiss town of Zug accept bitcoins as a means of payment for administrative fees up to an amount of EUR 200. (E. Aschwanden, *Stadt Zug wird weltweit zum Bitcoin-Pionier* (10 May 2016), <https://www.nzz.ch/schweiz/crypto-valley-zukunftsmodell-oder-marketing-gag-ld.22911> (accessed 6 Oct. 2019)).

¹¹⁰ J. Kollmann et al., *EuGH-Rechtsprechungsübersicht: Neues zur Umsatzsteuer*, 3 ecolex 250, 254 (2016). The authors do not want to assess the past but believe that, at least since 2017, bitcoins' main use has been for speculative purposes.

¹¹¹ *Hedqvist*, (C-264/14), *supra* n. 52, para. 49.

¹¹² See s. 3.5.2.4 *infra*.

4 VAT TREATMENT OF WALLET PROVIDERS

4.1 Definition

Wallets are software that stores the private keys of a blockchain user. The private keys are a digital set of data that enables users to transact via the blockchain¹¹³ and grant users access to their token holdings (balance on the blockchain).¹¹⁴ The software determines the balance based on the information of all of the previous transactions in the blockchain. Wallets generally provide for a user-friendly interface.¹¹⁵ Additionally, they offer automated services such as calculating which amount in transaction fees¹¹⁶ would need to be paid in order for the transfer to be made within a certain time frame as well as mixing or insurance services.¹¹⁷

In bitcoins' early days, there was merely the bitcoin-QT desktop client.¹¹⁸ Currently, a variety of wallets, including web¹¹⁹ and mobile wallets,¹²⁰ are being offered. These are the different types of wallets: desktop wallets,¹²¹ web wallets, mobile wallets, hardware wallets¹²² and paper wallets.¹²³ Most of the time, exchange platforms offer wallets as a part of their trading or marketplace service.¹²⁴ Many individuals use wallets for convenience because they are easy to use.¹²⁵

In general, 'custodial wallets' and 'self-hosted wallets' can be distinguished from each other.¹²⁶ While the

private keys are stored in a paper wallet or directly on hardware (such as a computer or smartphone), the wallet is self-hosted. If, however, the private keys are stored on the server of a wallet provider (usually the case for web and mobile wallets), it is a custodial wallet – the wallet provider (theoretically) has access to the user's funds.¹²⁷ A wallet provider's service is thus either the sale of hardware or software that enable the users to store the private keys on their own device or the storage of the users' private keys on the service provider's servers.¹²⁸

4.2 Taxable Event

As stated above, some online exchange platforms simultaneously act as wallet providers without charging an extra fee. In this case, the provision of a wallet is to be considered an ancillary service that shares the tax treatment of the principal service (the exchange service).¹²⁹ The storage of private keys 'does not constitute for customers an end in itself, but a means of better enjoying the principal service supplied'.¹³⁰

When a wallet's interface is linked to an online exchange platform of a third party,¹³¹ the question of whether a fee is being charged separately must be answered in order to establish whether this constitutes a separate supply of services within the meaning of Article 2 (1)(c) of the VAT Directive.

Notes

¹¹³ See *supra* s. 2.2.

¹¹⁴ European Central Bank, *supra* n. 66, at 8, 14.

¹¹⁵ European Central Bank, *supra* n. 66, at 8; Rauchs et al., *supra* n. 29, at 21.

¹¹⁶ Rauchs et al., *supra* n. 29.

¹¹⁷ Hileman & Rauchs, *supra* n. 3, at 50, 58.

¹¹⁸ *Download Bitcoin Core*, <https://bitcoin.org/de/download> (accessed 6 Oct. 2019).

¹¹⁹ For example, of Coinbase or Blockchain.

¹²⁰ Also of Blockchain. This is the most common type (62%) according to Rauchs et al., *supra* n. 29, at 52.

¹²¹ For example, of Bitcoin Core or DarkWallet.

¹²² These are USB-like storage devices such as TREZOR, <https://trezor.io/> (accessed 6 Oct. 2019) or KeepKey, <https://www.keepkey.com/?source=hasoffers> (accessed 6 Oct. 2019).

¹²³ For example, of Coinfinity, <https://coinfinity.co/bitcoin-kaufen/> (accessed 6 Oct. 2019).

¹²⁴ In 2017, 52% of online exchange platforms additionally provided wallets (Hileman & Rauchs, *supra* n. 3, at 58 et seq.). European Commission, VAT Committee, *supra* n. 94, at 18; such as Coinbase, LocalBitcoin (About, <https://localbitcoin.com/about> (accessed 6 Oct. 2019)) and Bitcoin.de (FAQ, <https://www.bitcoin.de/de/faq/wie-kann-ich-bitcoin-an-bitcoin-de-transferieren/151.html> (accessed 6 Oct. 2019)).

¹²⁵ For a detailed description of how wallets are being used, see Hileman & Rauchs, *supra* n. 3, at 52; D. Cawrey, *Should Bitcoin Users Trust Hosted Wallets?* <https://www.coindesk.com/bitcoin-users-trust-hosted-wallets/> (accessed 6 Oct. 2019).

¹²⁶ Hileman & Rauchs, *supra* n. 3, at 12; see also Rauchs et al., *supra* n. 29, at 49 et seq.

¹²⁷ Usually, the keys are additionally secured by a PIN code. When a user is asked to sign into their account (email address and password), the private keys are most likely stored on the server of the wallet provider. In 2017, 73% of all wallets not offering exchange services were self-hosted wallets, 15% were custodial wallets, and 12% of wallet providers asked their users to choose one of the two options (Hileman & Rauchs, *supra* n. 3, at 55). Currently, the overall share of self-hosted wallets is over 80% (Rauchs et al., *supra* n. 29, at 12).

¹²⁸ Zechner, *supra* n. 49, at 397.

¹²⁹ For example, when a bitcoin ATM exchanging EUR for bitcoins prints a paper wallet depicting the transaction, the provision of the paper wallet is an ancillary service.

¹³⁰ CJEU 18 Jan. 2018, *Stadion Amsterdam*, Case C-463/16, EU:C:2018:22, para. 23; CJEU 10 Nov. 2016, *Bařtová*, Case C-432/15, EU:C:2016:855, para. 71; CJEU 10 Mar. 2011, *Bog and Others*, Joined Cases C-497/09, C-499/09, C-501/09 and C-502/09, EU:C:2011:135, para. 54; CJEU 21 Feb. 2008, *Part Service* Case C-425/06, EU:C:2008:108, para. 52; CJEU, 25 Feb. 1999, *Card Protection Plan*, Case C-349/96, EU:C:1999:93, para. 30; CJEU, 22 Oct. 1998, *The Howden Court Hotel*, Joined Cases C-308/96 and C-94/97, EU:C:1998:496, para. 24.

¹³¹ Which is the case in almost 50% of all wallets with integrated currency exchange (Hileman & Rauchs, *supra* n. 3, at 58).

Many wallet providers offer their services free of charge. In that case, the (wallet) services that are supplied are not subject to VAT. Wallets not offering exchange services, but solely wallet services for consideration, are subject to VAT.¹³²

4.3 Place of Supply

The storage of private keys on the servers of a wallet provider and the provision of software to save the private keys on a private device are electronically supplied services within the meaning of Article 7(1) of the Council Implementing Regulation and Article 58(1)(c) of the VAT Directive. Irrespective of whether such services are supplied to a non-taxable or a taxable person (Article 44 of the VAT Directive), the place of supply is where that person is established, has their permanent address, or usually resides.

The sale of hardware wallets is a supply of goods within the meaning of Article 14(1) of the VAT Directive.¹³³ According to Article 40 of the VAT Directive, the place of an intra-community acquisition of goods is the location where the transport of the goods to the person acquiring them ends. The place of an acquisition of goods by a non-taxable person is generally the place where the goods are located at the time when dispatch or transport of the goods to the customer begins (Articles 32 et seq. of the VAT Directive).¹³⁴

4.4 Tax Exemption

In its Working Paper No 892 following the CJEU decision in *Hedqvist*, the VAT Committee considered wallet services for consideration exempt from VAT under Article 135(1)(e) of the VAT Directive. It argues that wallet providers grant users access to their respective token holdings and thus enable using them as a means of payment – comparable to banks for which services are exempt from VAT under Article 135(1)(e) of the VAT Directive.¹³⁵

In the authors' view, it is questionable whether wallet services are comparable to services provided by banks. Providers of 'self-hosted wallets' merely supply software or hardware and are thus certainly outside the scope of Article 135(1)(e) of the VAT Directive. This exemption,

however, could be relevant for providers of 'custodial wallets' because they store the private keys of a user on their servers. Cryptocurrency transactions are made directly in the blockchain. The wallet merely generates and stores private keys; it does not transfer payments or manage an 'account'. In the authors' view, (custodial) wallet services are thus not transactions concerning currency within the meaning of Article 135(1)(e) of the VAT Directive and, therefore, not exempt under that provision.

Furthermore, Article 135(1)(d) of the VAT Directive regarding 'transactions, including negotiation, concerning deposit and current accounts, payments, transfers, debts, cheques and other negotiable instruments, but excluding debt collection' could apply. The exemption requires that the service provided 'viewed broadly, form a distinct whole, fulfils in effect the specific, essential functions of a transaction concerning deposit and current accounts'.¹³⁶ In order to assess this criterion, the CJEU examines 'first, whether the provision of those services is capable of giving rise to changes of a legal and financial character similar to those resulting from interbank payments or transactions in securities themselves and, second, whether [the companies'] responsibility towards its clients is limited to technical aspects or whether it extends to specific, essential aspects of those financial transactions'.¹³⁷ According to the CJEU, such changes are effectuated by the transfer of funds between accounts irrespective of their cause. Thus, functional aspects are decisive.¹³⁸

In two CJEU cases, the respective companies. (*Sparekassernes Datacenter (SDC)* and *Nordea*) had been involved in the technical processing of payments. *SDC* provided a data-handling network that connected banks and payment service providers and thus allowed payment operations to occur. *Nordea* supplied a technical and legal framework for banks and financial institutions enabling the transmission of messages concerning interbank payments. Likewise, wallets technically connect the users in a blockchain by granting them access to private keys that are essential for making cryptocurrency payments. Wallet providers are therefore involved in the technical implementation of a transaction – like *SDC* and *Nordea*. However, they do not give rise to 'changes of a legal and financial character' within the meaning of Article 135(1)(d) of the VAT Directive.

Notes

¹³² Zechner, *supra* n. 49, at 398.

¹³³ A TREZOR hardware wallet can currently be purchased for USD 99, a KeepKey for currently USD 120 (Sudhir Khatwani, *The Top 12 Best Ethereum Wallets* (16 Nov. 2019), <https://coinsutra.com/best-ethereum-wallets/> (accessed 6 Oct. 2019)).

¹³⁴ Zechner, *supra* n. 49, at 399.

¹³⁵ European Commission, VAT Committee, *supra* n. 94, at 12.

¹³⁶ CJEU 5 June 1997, *SDC*, Case C-2/95, EU:C:1997:278, para. 66; CJEU 28 July 2011, *Nordea*, Case C-350/10, EU:C:2011:532, para. 27; CJEU 26 May 2016, *Bookit*, Case C-607/14, EU:C:2016:355, para. 39.

¹³⁷ *Nordea* (C-350/10), *supra* n. 136, para. 28; *SDC* (C-2/95), *supra* n. 136, para. 66.

¹³⁸ *Bookit*, (C-607/14), *supra* n. 136, para. 38.

When transacting in the blockchain, ‘self-hosted wallets’ are not indispensable. As noted above, private keys may also be stored directly on the user’s hardware device.¹³⁹ Nevertheless, if wallet services were ‘essential and the only services available, the mere fact that a constituent element is essential for completing an exempt transaction still does not warrant the conclusion that the service which that element represents is exempt’.¹⁴⁰

The CJEU held in both cases that the responsibility of *SDC* and *Nordea*, respectively, was limited to technical aspects and, therefore, found that the exemption under Article 135(1)(d) of the VAT Directive did not apply. In the authors’ view, this implies that providers of ‘self-hosted wallets’ do not fall within this exemption.¹⁴¹ Moreover, the wallets do not perform the transfer of funds between the wallets – rather, they are performed by the miners within the blockchain ecosystem. Thus, wallet services supplied for consideration are subject to VAT.

5 CONCLUSION

The bitcoin blockchain’s initial goal of enabling direct transfer of value without the need for an intermediary is not reflected in today’s economic reality. Various intermediaries have emerged economically benefitting from users who want to own and use cryptocurrency in a user-friendly way. The most well-known ‘gateways’ are cryptocurrency exchange platforms and wallet providers. Even though the use of such centralized platforms ‘off chain’ seems to contradict the crypto-anarchic rationale behind the bitcoin invention, it has led to significant numbers of cryptocurrency ‘users’.

In this article, the authors assessed the economic activities carried out by exchange platforms and wallet providers. Regarding the exchange platforms, the authors distinguished between two types of exchange platforms, proprietary traders, and marketplaces.

Given that bitcoins are of an intangible nature, they cannot be classified as goods within the meaning of Article 14(1) of the VAT Directive. Moreover, they are no longer to be considered as a method of payment. Bitcoins certainly have a market price because users are willing to pay by means of legal tender in order to acquire them. From a VAT perspective, the provision of an intangible is a service. Therefore, when bitcoins are exchanged for legal tender, services are supplied. Since this supply is delivered automatically over the Internet and impossible to ensure in the absence of information technology, the exchange of bitcoins for legal tender constitutes an electronically supplied service (pursuant to Article 58(1)(c) of

the VAT Directive and Article 7(1) of the Council Implementing Regulation). As a consequence, VAT is due at destination.

The VAT treatment of the marketplaces’ economic activities depends on whether they are acting as ‘disclosed’ or ‘undisclosed’ agents. Given that the legislator’s intent was to apply uniform rules to all electronically supplied services, their place of supply rule takes precedence over the place of supply rule for (disclosed) agents. While (disclosed) agents do not take part in the underlying service and provide electronically supplied (‘intermediation’) services, undisclosed agents are presumed to have supplied the underlying electronically supplied services themselves. For both types of services, the place of the exchange platforms’ supply is where the customer is established irrespective of the status of the recipient as a taxable person or a non-taxable person. In its 2015 decision *Hedqvist*, the CJEU held that the VAT exemption in Article 135(1)(e) of the VAT Directive applies in the context of a proprietary trading company exchanging bitcoins for legal tender and vice versa. Its main arguments for this result were that bitcoins were being accepted by the parties to the transaction as an alternative to legal tender and had no other purpose than to be used as a means of payment. In the meantime, their main purpose has shifted to speculation. Given the functional analysis carried out by the CJEU in *Hedqvist* and bitcoins’ current function as an object of speculation, the authors argue that the court’s conclusion in *Hedqvist* can no longer be transposed to bitcoin trading today. Rather, the exchange of cryptocurrency, which is not intended to and does not factually exclusively serve as a means of payment, is not exempt from VAT.

Regarding wallet providers, the authors distinguished between ‘custodial’ wallets and ‘self-hosted’ wallets. Their supplies are taxable when they are made for consideration. Depending on whether the wallet providers supply hardware or software, they are supplying either goods or (electronically supplied) services. Wallets store the private keys of blockchain users; they do not transfer cryptocurrency funds. Therefore, neither the VAT exemption for transactions concerning currency nor the VAT exemption for transactions concerning deposit and current accounts, payments and transfers apply to any of the wallets provided. In our view, the wallet providers’ services are thus subject to VAT.

This article has shown that the law is reactionary – not only in its making but naturally even more so in its application. While the CJEU’s decision in *Hedqvist*

Notes

¹³⁹ European Central Bank, *supra* n. 66, at 8.

¹⁴⁰ *SDC* (C-2/95), *supra* n. 136, para. 65; *Nordea* (C-350/10), *supra* n. 136, para. 31.

¹⁴¹ *Zechner*, *supra* n. 49, at 398.

(four years ago) is coherent, its legal analysis is based on a different economic reality than the reality being faced today. The authors thus reiterate that the particular context in which a court decision was previously made

can provide information on how relevant its respective statements are in interpreting present and future law – all the more so in times of rapid technological advancements.