



THE “BLOCKCHAIN” TECHNOLOGY AND TAX COMPLIANCE: POSSIBILITIES AND POTENTIALS FOR USE

A TECNOLOGIA “BLOCKCHAIN” E O COMPLIANCE TRIBUTÁRIO: POSSIBILIDADES E POTENCIAIS DE USO

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ABSTRACT

The present work is a study that intends to address the relationship between tax compliance and the distributed ledger technology “Blockchain”, without exhausting the theme. The problem faced is to clarify and demonstrate the potentials of using this technology in order to make corporate tax compliance feasible. The potential forecasts are as relevant as the possibilities of use for the purpose of inspecting tax collection by public entities, possibilities that will also be addressed. This work has the general objective of presenting the potentials of using “Blockchain” technology in tax compliance, as well as its disruptive potential and its applicability in real cases and problems. The specific objective is to present to the scholar or professional in the tax area how much this technology can impact and transform the routine in the coming years. The method adopted was the inductive one, made operational by research in bibliographic and jurisprudential sources from physical or digital media. The justification for the research is presented precisely in the great revolutionary potential of the “Blockchain” technology for the activity of tax Compliance. The hypothesis that guided the research was that the “Blockchain” technology could, in fact, be applied efficiently and with disruptive potential in the tax Compliance sector. The study concluded by the validity of the hypothesis, being that some of its main conclusions were obtained from the in-depth analysis of basic concepts related to the analyzed technology, as well as presented fiscal problems that could in fact benefit from the use of this technology, and, still, concrete cases in which it has already been applied in Brazil. This study also presents potential applications of this technology to the area of tax compliance based on research and publications produced by the largest accounting and tax auditing firms in the world, which reinforces the validity of the hypothesis. The topic addressed is extremely current, since one is just beginning to see these possibilities in concrete, and also due to the recent launches of systems in Blockchain by the Brazilian tax inspection.

KEY WORDS

Blockchain; Digital ledger technology; Tax compliance; Tax inspection.

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RESUMO

O presente trabalho se traduz em um estudo que pretende abordar a relação entre o Compliance tributário e a tecnologia de livro-razão distribuído “Blockchain”, sem esgotar a temática. O problema enfrentado é o de esclarecer e demonstrar os potenciais de uso desta tecnologia para o fim de viabilizar-se a conformidade fiscal empresarial. Os potenciais antevistos são tão relevantes quanto as possibilidades de uso para fins de fiscalização da arrecadação tributária por parte dos entes públicos, possibilidades estas que também serão abordadas. Este trabalho tem o objetivo geral de apresentar os potenciais de uso da tecnologia “Blockchain” no Compliance tributário, bem como seu potencial disruptivo e sua aplicabilidade em problemas e casos reais. O objetivo específico é o de apresentar ao estudioso ou profissional da área fiscal e tributária o quanto esta tecnologia poderá impactar e transformar a sua rotina dos próximos anos. O método adotado foi o indutivo, operacionalizado pela pesquisa em fontes bibliográficas e jurisprudenciais provenientes de meios físicos ou digitais. A justificativa para a pesquisa se apresenta justamente no grande potencial revolucionário da tecnologia “Blockchain” para a atividade do Compliance tributário. A hipótese que norteou a pesquisa foi a de que a tecnologia “Blockchain” poderia ser, de fato, aplicável com eficiência e com potencial disruptivo no setor do Compliance tributário. O estudo concluiu pela validade da hipótese, sendo que algumas de suas principais conclusões foram obtidas a partir da análise aprofundada de conceitos básicos relacionados à tecnologia analisada, bem como também apresentou problemáticas fiscais que poderiam de fato se beneficiar do uso desta tecnologia, e, ainda, casos concretos nos quais a mesma já vem sendo aplicada no Brasil. Este estudo também apresenta potenciais aplicações desta tecnologia para a área do Compliance tributário a partir de pesquisas e publicações produzidas pelas maiores firmas de auditoria contábil e fiscal do mundo, o que reforça a validade da hipótese. O tema abordado é extremamente atual, uma vez que se está apenas começando a ver tais possibilidades de maneira concreta, e também em razão dos recentes lançamentos de sistemas em Blockchain pela fiscalização tributária do Brasil.

PALAVRAS-CHAVE

Blockchain; Livro razão distribuído; Compliance tributário; Fiscalização tributária.

1) BLOCKCHAIN TECHNOLOGY – GENERALITIES AND CONCEPTS:

Essential to understanding the potential of Blockchain technology in the tax area is to understand what this technology actually consists of. In simple terms, Blockchain is a networked system made up of securely chained blocks that always carry content in them that have a similar nature to a “fingerprint” (called in the language of the coding as “hash”). In the case of the Bitcoin cryptocurrency, for example, the most famous application of Blockchain technology, this content is a financial transaction. The great genius here lies in the fact that the subsequent block of the chain will always contain the “fingerprint” of the previous block, added to their own content, and with these two pieces of information will generate its own “fingerprint”, following so forth, successively, in a kind of “chain”. That’s Blockchain!²²⁴

²²⁴ **O que é blockchain:** indo além do Bitcoin. Available in: <<https://tecnoblog.net/227293/como-funciona-blockchain-bitcoin>>. Access in: 09 oct. 2020.



Blockchain technology creates a safe, robust and transparent ledger. It is a cryptography-based protocol whose application technique is profoundly revolutionary. Conceived and launched in conjunction with its Bitcoin application in 2008, the technology does not depend on mutual trust between its users to be effective. Thus, it does not require an intermediary to the verification of transactions made within the system and brings the same reliability. Blockchain, for these reasons, has the potential to replace trusted intermediaries by placing powerful network consensus mechanisms in place, with incentives for interconnected machines to verify the authenticity of transactions carried out on the content base (this incentive may vary depending on the application technology).²²⁵

In a paper entitled “Blockchain (Distributed Ledger Technology) solves VAT fraud” published by Boston University, the researchers made the following reflection: imagine a data transfer between users located in Poland and Russian users, investigating an international fraud. Could it be assumed that both sides would have unwavering mutual trust? Would they be willing to give access to the other country on their tax databases, protected by fiscal secrecy, of their own taxpaying citizens? If access was given, would it be possible to be absolutely sure about the reliability of the data? However, with Value Added taxation, for example, recorded in a “shared ledger”, Russia could participate in the registrations as easily as any country in the jurisdiction of the European Union. Trade between countries would be treated in the same way as trade between member countries of the European Union. If consensus were reached on the validity of a block of transactions, the information contained therein would be fully reliable. Blockchain technology extinguishes the need for a centralized repository of information, as it is totally stripped of any basis related to trust between the components of the network. In short, Blockchain allows individuals without any special trust relationship to work together without having to go through the scrutiny of a “neutral” central authority. In simple terms: it is a “*machine for generating confidence*”²²⁶.

An example of its application would be to sign a lease for a property by integrating a smart contract (“smart contract”) in Blockchain with a smart lock. “*In the blockchain world, Airbnb was born dead, because it needs an intermediary.*” These were the words of Ronan Damascus, who is Microsoft’s chief technology officer. With this new technology, it is enough for the person to unlock the lock, which automatically part of the amount related to the rent can be immediately transferred to the account of the property owner!²²⁷

It is also worth noting that the storage of the information contained in the blocks components of the “current” serves both to confirm the transactions recorded there as well for the ratification of all the information contained in all the blocks previously generated - all from the “fingerprint” quoted at the beginning of this topic. In block no. 100, for example, the confirmation (“hash”) of block no. 99 will be inserted, and in this, that of block no. 98, and soon, until block no. 0 (block-genesis) is reached.²²⁸

²²⁵ AINSWORTH, Richard T. SHACT, Andrew. **Blockchain (Distributed Ledger Technology) solves VAT fraud.** Boston University School of Law. Law & Economics Working Paper No. 16-41. Available in: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2853428>. Access in: 09 oct. 2020.

²²⁶ AINSWORTH, Richard T. SHACT, Andrew. **Blockchain (Distributed Ledger Technology) solves VAT fraud.** Op. Cit.

²²⁷ **O que é blockchain:** indo além do Bitcoin. Available in: <<https://tecnoblog.net/227293/como-funciona-blockchain-bitcoin>>. Access in: 09 oct. 2020.

²²⁸ ARAUJO, Guilherme Dourado Aragão Sá. **Perspectivas do Direito Tributário na 4ª Revolução Industrial:** Análise econômica da destruição criativa da economia disruptiva. Available in: <<https://portalrevistas.ucb.br/index.php/EALR/article/view/8363>>. Access in: 09 oct. 2020.



According to Ronaldo Lemos, one reason to be enthusiastic about technologies based on the Blockchain protocol is that they are inexpensive, and therefore offer an opportunity for real innovation, not only in the private sector, but also in the public sector.²²⁹

Due to its characteristics, the technologies that are becoming known by the term “Distributed Ledger Technologies” (of which Blockchain is the greatest exponent), have the potential, for example, to help governments collect taxes, distribute benefits social security, register real estate deeds and basically guarantee the integrity of government records and services, according to a report by the UK’s Chief Scientific Adviser (GCSA).²³⁰

In conclusion of this topic, see two analogies that portray well what Blockchain technology is: it is like a big ledger (where all the accounting movements of a company are registered) that is shared by all those who participate in the system, and in which all transactions are recorded irreversibly. It is the immutable and organized record in chronological order of all compiled and validated transactions that occurred on the network. It is generally public, unique and shared in a synchronized way by the participants. In a second analogy, in the words of Michael Merz, it can be said that a blockchain network is like a *“coral reef in which only the last millimeters represent active biomass, the rest is just a dead image from the past, accessed only on rare occasions to check historical data”*²³¹

This perception is already becoming common. At the 2017 World Economic Forum, more than 800 executives and technology experts were asked when they believed that a particular “turning point” would happen: when would a government be seen to collect taxes with Blockchain? The date that seemed most correct for the average would be in the year 2023. However, 73% of the interviewees stated that this would only happen in 2025. All these expectations were out of date, since the world saw China launch a system for this purpose in 2018!

2) TAX CHALLENGES THAT DEMONSTRATE SOME POSSIBILITIES OF BLOCKCHAIN TECHNOLOGY

2.1 Difficulties in tax classification of goods

One of the biggest difficulties in the world’s tax system is the correct classification of the goods with which business operations are carried out. The complexity is so great that some have even defined this science as “merceology”. The correct classification of the tax classification guarantees the correct tax burden for the asset in question, and as a consequence, any error that occurs in it will result in overpayment or underpayment of any consequent tax.²³²

²²⁹ **Tendências para sistemas microgrids em cidades inteligentes:** uma visão sobre a blockchain. Available in: <<http://www.sbp02017.iltc.br/pdf/169695.pdf>>. Access in: 09 oct. 2020.

²³⁰ STANLEY-SMITH, Joe. **Blockchain and tax:** What businesses need to know. International Tax Review. 9/12/2016, p33-33. 1p. Available in: <<http://www.internationaltaxreview.com/Article/3573467/Blockchain-and-tax-What-businesses-need-to-know.html>>. Access in: 09 oct. 2020.

²³¹ **Tendências para sistemas microgrids em cidades inteligentes:** uma visão sobre a blockchain. Available in: <<http://www.sbp02017.iltc.br/pdf/169695.pdf>>. Access in: 09 oct. 2020.

²³² **A complexa ciência da Classificação Fiscal de Mercadorias e o clássico exemplo do parafuso.** Available in: <http://www.fiscosoft.com.br/main_online_frame.php?page=/index.php?PID=221745&key=4508828>. Access in: 10 jan. 2021.



The screw example is widely used to demonstrate the complexity of the tax classification system. See it in the words of Fábio Rodrigues de Oliveira²³³:

Using some search engine at TIPI or TEC with the word “screw”, we will have 9 codes that mention this term as return. Of these, the code 7318.14.00 is cited as an example, whose description is “Perforating screws”. Could we just use that code? What if we chose the code 7318.12.00, which has the position “Other wood screws”?

Bearing in mind that our screw is not perforating and will not be used on wood, it does not seem that these classifications are the most appropriate. Therefore, we need to know a little more about our product, and in this sense, we will verify that it is a screw to be used in aircraft. We could then use a more generic code, 3926.90.90, whose description is “Bolts and nuts”.

But if this screw will be used in aircraft, wouldn't it be the case to analyze chapter 88, which deals with aircraft, space devices and their parts? After all, won't the screw be a part of the aircraft? In this chapter we will not find the screw specifically, but we have the code 8803.30.00, the description of which is “Other parts of airplanes or helicopters”.

Apparently, nothing would prohibit using this classification, however, analyzing NESH, we will find that this chapter comprises the parts and accessories recognizable as exclusively or mainly intended for the vehicles it encompasses. This is not the case with our screw, which also serves other purposes.

Perhaps it is better to return then to the screw of code 3926.90.90, which is more generic. However, we would be wrong, as this product is not composed of the same material as our screw, which is made of aluminum. Thus, in view of its composition, we will verify that aluminum and its works are listed in chapter 76 and our screw, more precisely, in code 7616.10.00, which covers “tacks, nails, scapulas, screws, pins or threaded bolts, nuts, threaded hooks, rivets, keys, dowels, cotter pin washers and similar devices”.

(translated from the original Portuguese)

Here is a situation in which a system built on a network using Blockchain technology, in a transparent reliable way, with synchronized content between all the actors involved in international trade, would be able to bring enormous benefits. Such a system would allow traders, for example, to keep their businesses constantly updated with the tax and commercial rules issued by the competent entities without the great compliance costs that such care demands today, and with almost absolute precision!

²³³ **A complexidade da Classificação Fiscal de Mercadorias e o clássico exemplo do parafuso.**

Available in: <http://www.fiscosoft.com.br/main_online_frame.php?page=/index.php?PID=221745&key=4508828>. Access in: 10 jan. 2021.

Each product manufacturers could register them and grading them for tax purposes in Blockchain network once, linking it to its proper numbering, and no part of the production chain could apply to it a different rating for absolute technical impossibility, thus zeroing the error count in tax classifications, among countless other benefits that would not be possible to exhaust within the limits proposed to this text.

2.2 Difficulties in combating tax evasion

Tax evasion is a social reality in Brazil, and it has been so for decades. Surveys show that tax evasion generates losses to public coffers that result in a value seven times greater than the estimated loss from corruption. Among the most evaded taxes in Brazil is the so called “ICMS” (a kind of VAT tax), and the discussions around this tax tend to be of very slow evolution due to its tax competence having been granted to the States by the 1988 Constitution of the Federative Republic of Brazil. Professor Lena Lavinias, from the Federal University of Rio de Janeiro, summarizes the structure of the Brazilian tax system:

[...] it is a tragedy, regressive, stung, taxes do not go to the hands that should go. Why can't we rethink VAT, the ICMS? Because they are from the states. Taxes and measures that could favor progressivity are not possible, due to our federative nature.²³⁴

(translated from the original Portuguese)

By registering in a safe, immutable, transparent and detailed manner all the circulation of goods that occurred in the national territory, a Blockchain system would make tax evasion impossible, at least with regard to the loopholes left today by the deficient stock control system, for example. Sales without invoices would be easily identified, since the goods sold could be tracked even at the individual level. On the other hand, with the use of smart contracts and payment systems built on Blockchain, when the seller makes a sale via Invoice and receives the payment related to such product, the State will automatically receive the share of values referring to the taxation of circulation without the money ever being under the control of the merchant company. Thus, this type of fiscal default would tend to zero.²³⁵

3) POTENTIAL USES OF BLOCKCHAIN IN THE PUBLIC SECTOR AND IN TAX COMPLIANCE

As already stated above, Blockchain is a substitute for traditional archiving and control reports and also a facilitator for data matching work.²³⁶

With regards specifically to the benefits of Blockchain for accounting, Compliance and auditing activities, one can list, for example²³⁷:

²³⁴ **Sonegação de impostos é sete vezes maior que a corrupção.** Available in: <<https://www.cartacapital.com.br/economia/sonegacao-de-impostos-e-sete-vezes-maior-que-a-corrupcao-9109.html>>. Access in: 05 jul. 2018.

²³⁵ **Tecnologia blockchain pode mudar a forma como pagamos tributos.** Available in: <<https://www.conjur.com.br/2018-abr-16/maria-ticianara-araujo-blockchain-mudar-forma-pagar-tributos>>. Access in: 10 jan. 2021.

²³⁶ **Blockchain and the future of accountancy.** Available in: <<https://www.icaew.com/en/technical/technology/blockchain/blockchain-articles/blockchain-and-the-accounting-perspective>>. Access in: 10 jan. 2021.

²³⁷ **Blockchain, contabilidade e auditoria: o que os contadores precisam saber?** Available in: <<https://www.thomsonreuters.com.br/pt/corporacoes/blog/blockchain-contabilidade-e-auditoria-o-que-os-contadores-precisam-saber.html>>. Access in: 09 oct. 2020.



- The archiving of traceable audit evidence;
- The facilitation of automated audit processes;
- Secure authentication of transactions;
- Real-time monitoring of asset ownership;
- Historical record and inventory system for any asset, from raw materials to intellectual property.

(translated from the original Portuguese)

In simple terms, with regard to public agencies Blockchain could be used, according to SERPRO report²³⁸ (Brazilian company that offers technological solutions to the Federal Revenue), for example, to:

- Develop digital voting platforms that would enable voting in transit for all positions or even voting via a smartphone;
- Reduce bureaucracy in public registration services (birth certificate, patent, vehicle registration, etc.) and in the Brazilian notary system;
- Provide transparency and traceability to bidding processes;
- Automate the customs operation, giving more flexibility to Brazilian ports;
- Allow medical data such as medical records, prescriptions, vaccination cards, among others, to be digitalized and available to the entire network, but with access controlled by the patient.

(translated from the original Portuguese)

In the work “Blockchain (Distributed Ledger Technology) solves VAT fraud” published by Boston University, researchers even point out that the European Union (EU) would be the first to adopt Blockchain technology for value added taxes, and this is explained by several reasons. Blockchain can bring a substantial increase in efficiency for charging VAT’s. It will reduce costs and at the same time build relationships of inter-governmental trust. Even more important: Blockchain can result in immediate revenue gains of around \$ 50 to \$ 60 billion euros per year in estimated losses due to fraud linked to transactions between member states of the group (MTIC - Missing Trader Intra-community Fraud).²³⁹

It is also possible to locate institutional manifestations and impact studies of Blockchain in the tax area published by the four largest accounting and tax auditing and consulting firms in the world, the so-called “Big Four” (Deloitte²⁴⁰, PWC²⁴¹, KPMG²⁴² and EY²⁴³).

²³⁹ AINSWORTH, Richard T. SHACT, Andrew. **Blockchain (Distributed Ledger Technology) solves VAT fraud**. Boston University School of Law. Law & Economics Working Paper No. 16-41. Available in: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2853428>. Access in: 10 jan. 2021.

²⁴⁰ **Deloitte** Touche Tohmatsu Limited, also known only as Deloitte, is headquartered in London, United Kingdom.

²⁴¹ PricewaterhouseCoopers, also called **PwC**, is one of the largest professional service providers in the world in the areas of auditing, consulting and other complementary services.

²⁴² **KPMG** was formed in 1987 with the merger of Peat Marwick International (PMI) and Klynveld Main Goerdeler (KMG) and its individual member companies.

²⁴³ **EY** (formerly Ernst & Young) is one of the ten largest professional services companies in the world, present in 150 countries, in 728 offices, and with more than 231 thousand employees. The firm bases in London.



Deloitte, for example, in material entitled “Blockchain and its potential in taxes”²⁴⁴, listed the following benefits for the application of this technology in transactions involving Value Added Taxes (VAT’s), among which the Brazilian ICMS can be included, exposing that, among other benefits, it could be seen:

- The workload for complying with ancillary obligations would be significantly reduced;
- Visualization of a company’s finances immediately;
- Greater precision in the calculation of taxes due and reduction of the amount to be refunded due to undue taxation;
- The scope for fraud in value added taxes would be drastically reduced, since the same system that would enable the processing of the tax would also allow the transaction to be checked in a wide range of aspects, including with regard to the parties involved, legal and commercial context;

In PWC material entitled “How Blockchain technology could improve the tax system”²⁴⁵ the firm presents some more in-depth reflections related to the verification of the Transfer Price. According to the company, Blockchain records transactions and could be applied to “transactional” taxes, such as “VAT’s”, for example. With regard to “transfer pricing”, in turn, technology could immutably record the decision-making process carried out when defining how the amounts would be distributed to the parties involved in the negotiation.

4) SPECIFIC CASES OF BLOCKCHAIN APPLICATION IN BRAZIL: “BCONNECT” SYSTEM AND THE “CBDC’S” – CENTRAL BANK DIGITAL CURRENCIES

Specifically, for Brazil, SERPRO (previously mentioned) created the first Blockchain platform aimed at the federal government, which is a cloud infrastructure for instantiating Blockchain networks and nodes in these networks.²⁴⁶ According to the company, the platform offers the government agility to create and expand Blockchain networks to support numerous types of public services, reducing transaction costs and providing extra security and privacy guarantees²⁴⁷.

It is also worth mentioning that in the current tax system in Brazil any sale of goods must be informed in numerous components obligations of the so called “SPED” system by the seller and also the buyer, while the transport of goods from one establishment to the other has to be informed in the bill of lading (CT-e), and the ICMS currently levied (both debit and credit) must be stated in the books and statements of the State(s) involved in the operation. In this example one can envisage that if the tax system were integrated in the form of intelligent contracts in Blockchain, the condition (sale of goods) could be able, for example, to auto run the filling accessory obligations,

²⁴⁵ SCHOFIELD, Mark. **How blockchain technology could improve the tax system**. Available in: <https://info.pwc.se/hubfs/Tax_matters/Pdf-filer_Tax_matters/How-blockchain-could-improve-the-tax-system.pdf?t=1520933878531>. Access in 10 jan. 2021.

²⁴⁶ **Blockchain traz economia e segurança para serviços governamentais**. Available in: <<http://www.serpro.gov.br/menu/noticias/noticias-2017/blockchain-traz-economia-e-seguranca-para-servicos-governamentais>>. Access in: 09 oct. 2020.

²⁴⁷ **Serpro lança plataforma Blockchain**. Available in: <<http://www.serpro.gov.br/menu/noticias/noticias-2017/serpro-lanca-plataforma-blockchain-2>>. Access in: 09 oct. 2020.

thus avoiding that identical data having to be entered manually into the system by both the seller and the acquirer.²⁴⁸ The gain in terms of facilitating the storage and collection of Compliance tax and also the reduction of costs of assets and controlling business management, for example, would be immense.

Salutary at this time is to also mention the brand-new system “bConnect”, a blockchain network developed also by the SERPRO to the IRS of Brazil, which began to be used in October 2020 to connect the customs of Brazil, Argentina, Paraguay and Uruguay. The platform guarantees the authenticity and security of customs data shared between Mercosur countries.²⁴⁹ The network in question begins by allowing the sharing of information from Authorized Economic Operators (OAS’s), however there is already a forecast for an increase in the network to meet the sharing of information from Customs Declarations.

In the words of Sergio Alencar, tax auditor of Brazil’s Federal Revenue and one of the project managers on the integration of customs Mercosur, the system will facilitate the exchange of information and help overcome classic challenges of all Customs, reshaping the culture of information exchange that still happens today through emails.²⁵⁰

Therefore, in the last quarter of 2020, we may have lived a moment that was historic, with the start of the use of a system in blockchain developed by Brazil for purposes of facilitating exchanges of information on foreign trade between countries of Mercosur. It is not difficult to foresee the immense potential of such a tool if it is in fact widely implemented also to the Customs Declarations. Reflections for the purpose of facilitating tax audit (interest of the States) as well as the activities of Compliance Tax (interest of the taxpayers) would be significant.

In a complementary way to these tax audit systems using blockchain we can also see rising initiatives in several countries regarding institutionalized cryptocurrency emission. Glimpsed in a frame, the digital blockchain asset would be recognized as legal currency and greatly facilitate the activities of the national central banks, as well as they would bring major efficiency gains to them.

At the beginning of the year 2020, financial analysts already saw that governments and central banks were no longer managing to make their “quantitative easing” measures - that is, creating currency in order to stimulate the economy - reach those who need it. The theory (of providing liquidity to banks via quantitative easing, so that they could lend to individuals and companies) has not proved to be effective, as a good part of such values ends up being retained in the banking system itself, due to a number of reasons. This phenomenon, which started after the 2008 financial crisis, became much more intense during the coronavirus pandemic in 2020.

Since then, several central banks are considering “transforming” their national currencies into cryptocurrencies, with characteristics similar to the well-known “Bitcoin”.

The Central Bank of England (“Bank of England”) was one of the first to address the issue, in a speech by its President in August 2019, especially motivated by the debates existing at the time about “Libra” (a private cryptocurrency project led by the

²⁴⁸ BICHARA, Luiz Gustavo A. S. MONTENEGRO, Rafaela Monteiro. **A relação entre blockchain e obrigações acessórias os desafios da simplificação tributária no Brasil**. Revista dos Tribunais, vol. 994/2018. Available in: <<http://www.bicharalaw.com.br/uploads/biblioteca/ee73756a6e3f9f7438af-ca7252d145cd.pdf>>. Access in: 05 jul. 2018.

²⁴⁹ **Aduanas do Mercosul já estão conectadas pelo blockchain**. Available in: <<https://www.serpro.gov.br/menu/noticias/noticias-2020/aduanas-mercossul-conectadas-blockchain#:~:text=O%20bConnect%2C%20rede%20blockchain%20desenvolvida,%2C%20Argentina%2C%20Paraguai%20e%20Uruguai.>>. Access in 02 nov. 2020.

²⁵⁰ **bConnect entra em uso no início de 2020**. Available in: <<https://www.serpro.gov.br/menu/noticias/noticias-2019/bconnect-uso-inicio-2020-blockchain-serpro>>. Access in: 02 nov. 2020.



company Facebook²⁵²). In its statement, the “Bank of England” recalled the importance of regulatory standards being developed as soon as possible, to avoid having to be built after any systemic change in the sector arises.²⁵³ The International Monetary Fund (IMF) has also been addressing the issue in an open way, having even held conferences on the subject.²⁵⁴

The European Central Bank has gone even further, and has said that it is stepping up efforts to develop a digital euro²⁵⁵.

In order not to become too extensive or repetitive, it is worth mentioning here briefly the existence of pronouncements by the Central Bank of Sweden²⁵⁶, by the Central Bank of China²⁵⁷ and the Federal Reserve²⁵⁸, from the USA, all of whom are already carrying out experiments and/or studying or implementing some form of cryptocurrency to be issued. A similar scenario can also be seen in Brazil, with Economy Minister Paulo Guedes even speaking recently about it and stating that Brazil will also have a digital currency, and that the project is being studied by the Central Bank of Brazil since August 2020.²⁵⁹

The implementation of a digital state currency via Blockchain, with absolute and real-time tracking, would have disruptive impacts (to say the least) on the National Tax System and on Tax Compliance activities, which will not be addressed in this opportunity due to the necessary brevity of this text.

FINAL CONSIDERATIONS

As seen, blockchain technology has a clear disruptive character and wide application in several sectors, and should therefore be thoroughly studied in all its aspects.

This work had the general objective of presenting the potentials for using “Blockchain” technology in tax compliance, as well as its disruptive potential and its applicability in real cases and problems. The specific objective was to present to the scholar or professional in the tax area how much this technology can impact and transform his routine in the coming years. The method adopted was the inductive one, operationalized by research in bibliographic and jurisprudential sources from physical or digital media.

²⁵¹ **A grande mudança monetária e bancária que está por vir – está preparado?** Available in: <<https://www.mises.org.br/article/3303/a-grande-mudanca-monetaria-e-bancaria-que-esta-por-vir--esta-preparado?fbclid=IwAR0GILmltxDIVGAHq3RUJXcfbXfC3G5TcC3-oUzMtWA36lgunnUXic52uM4>>. Access in: 02 nov. 2020.

²⁵² **Libra: a criptomoeda que o Facebook quer implementar.** Available in: <<https://exame.com/future-of-money/dinheiro-tendencias/libra-a-criptomoeda-que-o-facebook-quer-implementar/>>. Access in: 02 nov. 2020.

²⁵³ **The growing challenges for monetary policy in the current international monetary and financial system.** Available in: <<https://www.bankofengland.co.uk/-/media/boe/files/speech/2019/the-growing-challenges-for-monetary-policy-speech-by-mark-carney.pdf>>. Access in 02 nov. 2020.

²⁵⁴ **Cross-Border Payments – A vision for the future.** Available in: <<https://meetings.imf.org/en/2020/Annual/Schedule/2020/10/19/imf-cross-border-payments-a-vision-for-the-future>> Access in 02 nov. 2020.

²⁵⁵ **ECB intensifies its work on a digital euro.** Available in: <<https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr201002~f90bfc94a8.en.html>>. Access in: 02 nov. 2020.

²⁵⁶ **Sweden starts testing world's first central bank digital currency.** Available in: <<https://www.reuters.com/article/us-cenbank-digital-sweden/sweden-starts-testing-worlds-first-central-bank-digital-currency-idUSKBN20E26G>>. Access in 02 nov. 2020.

²⁵⁷ **People's Bank of China kicks off digital currency trials.** Available in: <<https://www.zdnet.com/article/peoples-bank-of-china-kicks-off-digital-currency-trials/>>. Access in: 02 nov. 2020.

²⁵⁸ **Payments and the Pandemic.** Available in: <<https://www.clevelandfed.org/en/newsroom-and-events/speeches/sp-20200923-payments-and-the-pandemic.aspx>>. Access in: 02 nov. 2020.

²⁵⁹ **Brasil terá moeda digital, diz Guedes.** Available in: <<https://www.correiobraziliense.com.br/economia/2020/11/4886713-brasil-tera-moeda-digital-diz-guedes.html>>. Access in 02 dec. 2020.



As seen, blockchain technology has a clear disruptive character and wide application in several sectors, and should therefore be thoroughly studied in all its aspects.

This work had the general objective of presenting the potentials for using “Blockchain” technology in tax compliance, as well as its disruptive potential and its applicability in real cases and problems. The specific objective was to present to the scholar or professional in the tax area how much this technology can impact and transform his routine in the coming years. The method adopted was the inductive one, operationalized by research in bibliographic and jurisprudential sources from physical or digital media.

Research has shown that blockchain technology can, in fact, be applied efficiently and with disruptive potential in the tax compliance sector. The work proved and concluded that this technology has the potential to exponentially increase the level of fiscal and tax control by companies and governments and may even make it impossible tax evasion to occur or even the non-payment of taxes.

It is worth noting that blockchain as a “machine for generating confidence” is not a substitute for the state itself, but for the way in which intermediaries and the current state model have operated. Thus, some say that will be possible, through it, to reconstruct the idea of jurisdiction and the dependence of it to the state itself, as well as the notion that we currently have for territoriality.²⁶⁰

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