Transfer Pricing in Italy and Singapore: What Regulatory Framework for a Blockchain Scenario?

The aim of this article is to assess the Italian and Singapore regulatory framework in the area of transfer pricing with reference to a possible use of the blockchain technology. For this purpose, it conducts a comparative analysis, focused on two fundamental issues in national legislation: the burden of proof and the penalty system. Based on the results of the analysis process, the conclusion is that in both countries some changes in legislation should be considered to ensure legal certainty and properly motivate multinational enterprises and tax administrations towards a blockchain scenario for transfer pricing.

1. Introduction

In the era of digitalization, the phenomenon of BEPS and the impressive volume of intra-group transactions make transfer pricing one of the most important issues on the international tax agenda.

Multinationals enterprises (MNEs) often use cross-border controlled transactions between associated entities as a fundamental tool for their tax planning strategies; in such cases, the tax burden of the group can be reduced by setting artificially high or low prices and shifting profits to the entities based in low-tax jurisdictions. Over the last decades, most countries across the world have introduced transfer pricing legislation to protect their domestic tax bases, focusing on the implementation of the arm’s length principle to allocate business income between associated enterprises.

Nonetheless, transfer pricing rules are still characterized by several challenges in the implementation process; MNEs and tax administrations face many difficulties, especially as far as the documentation requirements are concerned. In this sense, the development of strict documentation standards, including Country-by-Country (CbC) reports, leads to a high compliance burden for companies with an increase of the risks associated with tax audits and litigation. Furthermore, from the tax administration side, it is a matter of fact that the handling of high volumes of documentation requires substantial resources and effort for the process of analysis.

Therefore, effective methods of control and reasonable compliance costs have become primary goals to be pursued by tax administrations and MNEs. For this purpose, it is necessary to explore the opportunities of digitalization in the area of transfer pricing control and examine how tax administrations can take advantage of the new technologies in handling and analysing such a high volume of data. Today, the understanding of the potential impact of the digital environment on transfer pricing is a priority for administrators and policy makers.

In this context, the blockchain is regarded as a technology with the potential to cause a revolution in the area of taxation with new solutions for the related compliance and administration issues. The implementation of the new technology requires a careful assessment of the conditions of the regulatory framework of each jurisdiction: legislative differences across countries can significantly influence the success of the blockchain and the exploitation of any inherent advantage.

EU and Asian countries present different levels of adaptability to a future blockchain scenario for transfer pricing, especially when factors related to the distinguishing principles and rules applied in their legal systems are considered. Therefore, a comparative approach is required to identify the models that better suit the implementation of this new technology in the area of transfer pricing, focusing on the principles and rules potentially able to survive to the blockchain revolution. The idea is then to compare the EU and Asian perspective by looking into the experiences of Italy and Singapore; these jurisdictions, in fact, as they are characterized by different legal systems and different financial and economic realities, offer the opportunity to examine whether the rules and principles in transfer pricing provide the respective tax administrations with sufficient instruments to support a process of implementation of the blockchain technology.

Based on this, the aim of the present article is to make an assessment of the Italian and Singapore regulatory framework in the area of transfer pricing, with reference to a possible future scenario regarding the use of the blockchain technology. Accordingly, the following research question is formulated: As far as the use of the blockchain in the area of transfer pricing is considered, is there a need to make changes in the Italian and Singapore regulatory framework with sufficient instruments to support a process of implementation of the blockchain technology.

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1. In this regard, see S.K. Bilaney. From Value Chain to Blockchain: Transf er Pricing 2.0. 25 Intl. Transfer Pricing J. 4 (2018), Journal Articles & Papers IBFD.
framework in order to support the introduction of the new technology?

The research question is developed through a methodology involving (i) the identification and the understanding of the key components and features of the blockchain technology, (ii) the description of the different ideas for the use of the blockchain technology in the area of transfer pricing, (iii) the comparative analysis of the regulatory framework for transfer pricing in Singapore and Italy with a focus on the aspects relating to the burden of proof and the penalty system, and (iv) the definition of the necessary actions to prepare the Italian and Singapore legal framework for the use of blockchain in the context of transfer pricing. The expected results include lessons to be learnt from the experience of each jurisdiction in order to create the bases for promoting a new culture of compliance between tax authorities and MNEs based on the blockchain and focused on transparency and availability of real-time data.

Given the above, section 2 of this article describes the basic principles of the blockchain technology with a brief overview of the key components and features. Section 3 explores some ideas for the use of the blockchain in the area of transfer pricing with specific reference to transfer pricing documentation, functional analysis, and smart contracts. Section 4 is dedicated to the comparative analysis of the regulatory framework for transfer pricing in Italy and Singapore, focusing on the issues of the burden of proof and the penalty system. In section 5, following a summary of the results of the comparative analysis, the discussion is centred on identification of the possible actions in Italy and Singapore for adapting the respective regulatory frameworks with regard to the use of the new technology. Finally, in section 6, the conclusions are presented with the answer to the research question.

2. Blockchain Technology in Brief

In a nutshell, a blockchain is a ledger of information replicated across different devices connected by a Peer-to-Peer (P2P) network. The evaluation of the potential impact of the blockchain in the area of taxation and transfer pricing requires the understanding of the fundamentals of the new technology. The present section provides a brief overview of the key components and features of the blockchain technology, setting out the basic concepts needed to identify the opportunities available for transfer pricing issues both from the perspectives of tax administrations and MNEs.

2.1. Key components

The key components of the blockchain technology are the distributed ledger, P2P transmission, consensus and computation logic.²

2.1.1. Distributed ledger

In a blockchain, the distributed ledger is a record of data that is consensually shared and synchronized across different devices. Unlike traditional databases, distributed ledgers do not have a centralized server based in a fixed place. All the information is securely stored using cryptography and can be accessed by keys and cryptographic signatures. Access to the data recorded on the distributed ledger can be unrestricted or restricted.

In case of unrestricted access, the technology involves the use of a “public blockchain”: everyone on the network has access to the data stored on the distributed ledger and has equal opportunities to operate as a node to validate transactions.³ In case of restricted access, there is a private blockchain where the access is limited to a group of selected users. Among these selected users it is also possible to make a distinction with regard to the assignment of the right to write/modify the distributed ledger. In this sense, in fact, in the so-called “permissionless” blockchain, anyone can modify the data; while in “permissioned” blockchain, only approved users can write on the distributed ledger, adding new blocks of data.⁴

2.1.2. P2P transmission

The blockchain technology is based on a P2P network where each connected device (peer) transmits information to all the other participants. All the connected devices work as nodes within the network and share all the volume of data recorded in the distributed ledger. In principle, no hierarchy or central administration exists in the network as each peer is on the same level as the others. Each node validates new blocks added to the blockchain by verifying their compliance with the blockchain rules and with previously recorded transactions. As a result, the communications in the blockchain directly run between peers without the use of a central node. Therefore, the downloading of files and the transmission of information are done by the other peers connected to the network that already possess the database stored on the distributed ledger. With this architecture, the database recorded is secure because the P2P transmission creates a situation where each node holds the records, making the system much more difficult to manipulate or attack.⁵

² For an introduction to the fundamentals of the blockchain technology, see D. Vujičić, D. Japodić & S. Randić, Blockchain technology, bitcoin, and Ethereum: A brief overview, 176th International Symposium INFOTEH-JAHORINA (INFOTEH), East Sarajevo, pp. 1-6 (2018); P. Trelaven, R. Gandol Brown & D. Yang, Blockchain Technology in Finance, 50 Computer9, pp. 14-17 (2017); S. Geissler, T. Prantl, S. Lange,


⁵ See Von Grambusch & Kosyan, supra n. 3.
2.1.3. Consensus

Transactions on both public and private blockchains are verified through a consensus mechanism involving the participants of the network.

In a public blockchain, consensus mechanisms are usually based on an incentive structure rewarding participants who contribute to the network. For example, one of the most common mechanisms is proof of work where the so-called miners (users validating and recording transactions to the ledger) participate on the network by using their computing power to solve complex mathematical problems to verify transactions. Other consensus mechanisms used in public blockchain include proof of stake, proof of capacity, and proof of elapsed time.

In a private blockchain, the consensus mechanism is usually based on a process called “selective endorsement”; in this case, the network participants are able to validate a transaction only when they have been selected as endorsers according to the governance and operating rules of that network. Therefore, private blockchains do not involve mathematical guarantees at the validation level, since new blocks are added by a set of pre-identified participants.

2.1.4. Computational logic

The distributed ledger works as a digital support where data can be recorded; consequently, blockchain transactions occur on the basis of computational logic by codifying instructions into programs. This way, the users of the network can elaborate algorithms representing a set of rules that automatically trigger transactions between nodes as long as specific predefined events occur.

Computational logic is the main ground for “smart contracts” that consist of the encoding of standardized contractual terms into a software. By a smart contract, the clauses of an agreement, such as those dealing with payment or delivery terms, are coded into computer language and become self-executing upon the fulfilment of certain conditions. Therefore, computational logic, as one of the key components of the blockchain technology, offers an incredible opportunity to drastically lower the costs of executing contractual transactions. As long as the encoded terms of the contract run on the distributed ledger, it is possible to ensure the automatic execution of a series of operations and payments.

2.2. Key features

The blockchain technology is characterized by a number of distinguishing features that assume a fundamental relevance for the scope of the present article. In this sense, transparency, immutability and the availability of real-time information represent the most revolutionary aspects, potentially able to impact the way through which taxes are administrated and external audits are performed.

2.2.1. Transparency

Blockchains can ensure transparency through the automatic replication of data among all the nodes connected to the network. Each participant having full access to the blockchain shares the same version of the distributed ledger representing the real-time truth for all the nodes connected to the network. This way, there is no need for data verification and reconciliation between different parties considering the absence of a centralized server.

In other words, blockchain technology allows participants of the network the possibility to share the same version of the truth and not merely exchange information originally recorded in a centralized server. This enables network participants to overcome any issue involving a lack of trust between parties since all the transactions recorded in the distributed ledger are visible to any device with access to the blockchain.

2.2.2. Immutability

The information recorded in the distributed ledger is immutable in the sense that it cannot be modified or altered once the data are entered. The participants of the network, in fact, verify any new block added to the blockchain through the consensus mechanism; this means that, as long the transaction is confirmed and a new block is added, a single node in the network cannot alter the distributed records because that block is linked to all the previous blocks of data. Complex computational algorithms ensure the link between blocks in chronological order and the irreversible character of recorded data; in the event that a node tries to alter a block, the attempt will be evident to all the other participants of the network and, consequently, no consensus will be achieved between the parties. This characteristic of blockchains is referred to as transaction immutability, constituting a key feature of the new technology potentially able to overcome any issues related to a lack of trust between network participants.

The immutability and the security of the transactions are also ensured by using multiple cryptographic techniques. Finally, it is worth to note that, in a public blockchain, the immutability is ensured by the potentially unlimited...

6. See Lucas, supra n. 4.


10. Id.
number of users that can operate as a node to validate transactions, while in private blockchains, this remains strictly dependent on the honesty of the entities allowed to validate the transactions.

2.2.3. Real-time data

Another feature of the blockchain technology is that the information recorded in the distributed ledger is available on a real-time basis to all the participants having access to the network. This concretely means that when a new block of data is added to the blockchain, the structure of the distributed ledger is updated in the same time for all the participants through the automatic transmission of the related information to the peers connected to the network.

3. The Potential Impact for Transfer Pricing

The overview provided in section 2. outlines a number of characteristics of the blockchain technology that are of fundamental relevance as far as taxation is concerned. Transparency, immutability and the availability of real-time data are all factors that could have a tremendous impact on audit activities performed by tax authorities. In this regard, a blockchain network, given the absence of a centralized server, removes the need to reconcile data between the users having access to the distributed ledger, including the parties to a transaction and the tax administrations involved in external audits. Therefore, the blockchain can be thought of as a “trust machine”, able to overcome the traditional issues of mistrust between taxpayers and tax authorities.11

Starting from these basic assumptions, some scholars have already approached the idea of the blockchain technology in the area of transfer pricing, exploring new solutions for a more effective implementation of the arm’s length principle.12 In particular, as far as the future perspectives of transfer pricing are concerned, the still few studies on the topic have identified three different sub-fields where blockchain could play a fundamental role: transfer pricing documentation, functional analysis and real-time data.

To define the possible paths towards the use of blockchain in this area of transfer pricing, it is necessary to briefly introduce the various options explored in the literature.

3.1. Transfer pricing documentation

One of the most important problems of transfer pricing is the information asymmetry between MNEs and tax administrations; this problem can also occur between entities of the same multinational group when they are based in different countries, as well as between tax administrations of different jurisdictions.13 This asymmetry often leads to a lack of understanding about the value chain and, thus, raises difficulties for multinational groups in the process of implementation of their transfer pricing policies and the consequent risks of non-fulfilment of compliance requirements.

Blockchain technology could be used to improve the handling of transfer pricing documentation and might provide a definitive solution for both tax administrations and MNEs. The distributed ledger, as it includes data recorded in a transparent and immutable way, can solve the issue of asymmetry providing harmonization of the intra-group transactional and financial flows. At the same time, as long as tax authorities have access to the blockchain network of a given multinational group, tax audits will be performed on a real-time basis by ensuring transparent, immutable and updated records of transactions.14

The implementation of the new technology involves recording the intra-group transactions on the distributed ledger, as well as all the other information that is relevant for functional analysis purposes. This way, data recorded in the distributed ledger will substantially correspond, at least partially, with the content of the Master File, Local Files, and country-by-country (CbC) reports in accordance with the three-tiered approach under the OECD Guidelines on Transfer Pricing for Multinational Enterprises and Tax Administrations (OECD Guidelines).15

Each participant of the blockchain network, including tax administrations, could have access to an updated version of all the data recorded in the distributed ledger, thus overcoming any issue related to the risk of data loss or the need of data reconciliation. Tax administrations having access to the distributed ledger could lead to more efficiency in the tax audit process as immutable and transparent data relating to the intra-group transactions would be available to them.

This requires that access to the blockchain network is provided to all the tax authorities of the countries where the entities of a given multinational group are based; this way, the same version of the truth will be shared on a real-time basis between the tax administrations on the one hand, and the accounting and financial departments of the various companies involved on the other.16 From a technical point of view, a solution could be the creation of a private blockchain for each multinational group where access of the users is set on different levels of permission. For example, full access could be granted to the accounting and financial departments of the entities of the multinational group with permission not only to read, but also to write/modify data on the distributed ledger. On the other hand, access of local tax administrations should be limited to a read-only access mode in order to provide the possibility of external audits in a collaborative environment.

11. See Sim, Owens, Petruzzi, Tavares & Migai, supra n. 8.
12. See Neto, supra n. 7; Bilaney, supra n. 1; Von Grambush & Kosyan, supra n. 3; Webber, Owen & Koborsi, supra n. 9.
13. See Sim, Owens, Petruzzi, Tavares & Migai, supra n. 8.
14. See Bilaney, supra n. 1.
15. See OECD, Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, para. 5.1 to 5.62 (OECD 2017), Primary Sources IBFD.
16. See D. Tapscott & A. Tapscott, Blockchain Revolution. How the Technology behind Bitcoin and other Cryptocurrencies is Changing the World, p. 74 (Portfolio Penguin/Random House 2018); Neto, supra n. 7; Von Grambush & Kosyan, supra n. 3.
3.2. Functional analysis

In transfer pricing, the functional analysis provides an overview of the value creation within the supply chain taking into account assets used and risks assumed by associated enterprises in a transaction. The objective is to identify the relative contributions of the parties to the transaction and their roles in the process of value creation within a multinational group. The information obtained from the distributed ledgers, which are immutable and updated on a real-time basis, could serve as an adequate source of data for the functional analysis and the assessment of the pricing models used in a multinational group.

In this regard, blockchain technology could notably improve the tracking of movements across the supply and value chain collecting a more consistent amount of data. Consequently, the availability of trusted transaction-level data could offer more possibilities for an efficient functional analysis for the definition of the transfer pricing policies of multinationals. For example, as far as intangibles are concerned, the distributed ledger can precisely register when and where a specific file has been downloaded or uploaded; this feature can help in the identification of the place and time where the value is created, enabling a more precise allocation of intangibles among the entities based in different jurisdictions. This way, the analysis can benefit from a more consistent set of real-time data, facilitating a more precise implementation of the arm’s length principle when different transactions related to intangibles occur.

Hence, the adoption of the blockchain technology could contribute to identify the value-generating activities and impose taxes accordingly; access to the distributed ledger can provide a clear picture of transaction-level data and, consequently, a better understanding of the value creation process across the supply chain.

According to some studies, the best results can be achieved when the pricing policy of a given multinational group is based on the transactional profit split method. As it is, the functional analysis is a critical stage that always requires a substantial amount of trusted real-time data; the profit split method involves the evaluation of the relative contribution made by each related entity to the earning of the combined net profit of the group, in regard of the functions performed, assets employed and risks assumed by each entity.

In such a process, transfer pricing specialists face many difficulties in objectively determining the contribution made by each entity to the controlled transactions and subsequently splitting the combined net profit amongst the entities in the same proportion. The distributed ledger of the blockchain is a possible solution for the application of the profit split method, as it gives a comprehensive overview of the entire value chain of the intra-group transactions and provides evidence of the contribution made by each entity, by making a substantial amount of real-time data available.

Thus, there are sufficient reasons to consider the blockchain technology as a fundamental support for the functional analysis in the area of transfer pricing. The implementation of a network based on a distributed ledger can offer a more solid basis for the definition of the pricing policies in multinational groups reducing the risks related to tax audits and litigation.

3.3. Smart contracts

As mentioned in section 2.1.4., the computational logic of the blockchain is the basis for smart contracts with the possibility to encode the standards terms of an agreement into an algorithm for the self-execution of payments and other obligations as long as certain conditions are fulfilled. Smart contracts can be stored in the distributed ledger as files running across all the nodes in order to automate some important functionalities; in such cases, the terms agreed by the parties are encoded into a software and turn into a self-executing program.

In the area of transfer pricing, smart contracts could be used by MNEs to automate the implementation of their transfer pricing policies; this way, payments and transactions could be processed only as long as they fulfill pre-established arm’s length rules and conditions according to the pricing policy adopted by the multinational group. This approach is based on the idea of setting the arm’s length prices in a given multinational group in advance and refusing all the transactions that do not comply with the standards. In case of a private blockchain in which the participants are associated companies, smart contracts might execute the purchase of goods or services, provide a loan, grant rights or conduct any other transaction only if arm’s length conditions are perfectly fulfilled.

Therefore, smart contracts allow the encoding of arm’s length rules conditions according to the studies of MNEs or, in order to increase certainty, even on the basis of advance pricing agreements. While in the first case the rules and conditions for “green light” are all set in accordance to the internal pricing policy of a multinational group, in the second case, the tax administration assumes an active role from the beginning by agreeing in advance on the terms to be encoded into a smart contract.

4. Comparative Analysis of the Regulatory Framework in Italy and Singapore

4.1. Key premises

As seen, studies in this field have pointed out the innovative character of the blockchain technology and the potential application in the area of transfer pricing, identifying opportunities for a more effective implementation of...
the arm’s length principle. The handling of the required documentation and the functional analysis conducted on the supply chain could greatly be improved in the coming years if the new technology is adopted by MNEs. Moreover, the use of smart contracts could mean a revolution in the field with the automatic implementation of transfer pricing policies or advance pricing agreements signed with the tax authorities.

In such a scenario, the blockchain offers an essential instrument to establish where, when and under which terms an intra-group transaction occurred. The process of tax calculation and payment could be entirely automated, thereby reducing the compliance burden. As all parties involved in a transaction, including tax authorities for audit purposes, have access to real-time data, the risk of miscommunication or intentional data manipulation could be substantially reduced.

The overall outcome could also increase the trust between taxpayers and tax administrators within a more cooperative approach to the implementation of the arm’s length principle. In other words, the blockchain could operate as a “trust machine”, able to overcome the issues created by a lack of trust between tax authorities and MNEs in the area of transfer pricing. This could lead to a new culture of collaboration, where tax authorities are willing to help taxpayers to code arm’s length policies into smart contracts, while MNEs are available to immediately disclose information regarding their intra-group transactions.

However, the definition of a workable regulatory framework is crucial for the blockchain's success. It is necessary to consider the development of legal instruments to support MNEs in moving towards the adoption of the new technology; from a national point of view, this also means considering possible changes in legislation in order to prepare the legal environment of each country to a new blockchain scenario.

In light of this, the present section is dedicated to the comparative analysis of the regulatory framework for transfer pricing in Singapore and Italy; the objective is to assess the level of adaptability of national legislation to the new technology and identify whether changes are required to apply the possibilities of the blockchain for the implementation of the arm’s length principle.

For this purpose, the comparative analysis of the Singapore and Italian legislation focuses on two fundamental issues in the area of transfer pricing: the burden of proof and the penalty system. These aspects can influence the behaviours of MNEs, seeing how crucial they are for the definition of the risks associated with non-compliance. Consequently, developing incentivizing rules for the distribution of the burden of proof and the application of penalties becomes a key factor for establishing a regulatory framework able to support MNEs in the adoption of the new technology.

### 4.2. The burden of proof

Access to real-time data recorded on the distributed ledger can lead to a significant reduction of the compliance and audit defence burden. By use of the blockchain technology, the information regarding intra-group transactions is immediately shared between the accounting department of multinational entities and the tax administrations of the involved jurisdictions. Moreover, the transparency and immutability of the same data can influence the way in which tax authorities examine compliance with the arm’s length principle.

New instruments will be available for tax authorities as long as MNEs grant them the right to have access to the blockchain network and read the information recorded in the distributed ledger. In such a scenario, there is room to take into consideration the impact on national principles and rules governing the burden of proof and its distribution between tax administrations and taxpayers. The blockchain, in this way, provides the basics of a new, cooperative environment, where transfer pricing documentation is available for external audits on a real-time basis.

As far as national legislation for transfer pricing is concerned, the burden of proof provisions should be formulated taking into consideration the possible availability of intra-group transactions data for tax administrations. For example, the implementation of a private blockchain where a given multinational group allows tax authorities to have full access to the recorded data should lead to a different distribution of the burden of proof with respect to the compliance with the arm’s length principle. In particular, a more favourable treatment of the taxpayer becomes necessary to promote the adoption of the new technology and to establish a collaborative environment between tax authorities and multinational groups.

Given these considerations, there are sufficient arguments to justify a shift of the burden of proof to the tax administration side any time adequate documentation is provided on the distributed ledger. Thus, a new approach to the burden of proof can be one of the main drivers for MNEs to adopt the blockchain technology for transfer pricing purposes.

To see how such changes can be made in practice, the Italian and Singapore regulatory framework will now be considered with respect to the principles and rules governing the burden of proof and its distribution in the area of transfer pricing. The objective is to examine how the respective legal frameworks approach the issue of the burden of proof and to determine whether there is sufficient room for a more favourable treatment of the taxpayer.

#### 4.2.1. Italy

The Italian regulatory framework for transfer pricing is based on article 110, paragraph 7 of the Italian Income Tax Act25 as amended by Law Decree 50 of 24 April 2017.26

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24. See Sim, Owens, Petrozzi, Tavares & Migai, supra n. 8.


According to this provision, income earned by a resident enterprise from transactions entered into with associated non-resident enterprises is determined on the basis of the conditions and the prices that independent enterprises would have agreed on dealing at arm’s length and in comparable circumstances. The provision applies when the use of the arm’s length principle results in an increase of the taxable income. However, it also applies where the use of the arm’s length principle results in a decrease of the income according to the conditions laid down by article 31-quater of Presidential Decree 600 of 29 September 1973. The guidelines for the application of this provision are contained in the decrees of the Ministry of Economy and Finance of 14 May 2018 in which the outcomes of the OECD BEPS Project are considered.

Under the Italian legal system, the distribution of the burden of proof is governed by article 2697 of the Civil Code, which provides that “those intending to enforce a right before a court shall provide evidence of the facts supporting their claim. A party challenging the validity of those facts or claiming that the right has changed or is exhausted, shall provide evidence of the facts supporting such objection”. These principles therefore require the applicant to prove the facts on which his or her claim is based, while the defendant must provide evidence of facts precluding liability, or showing that a right has been exhausted or changed in such a way that the applicant’s claim should be dismissed.

As far as transfer pricing is concerned, in a judgment of the Italian Supreme Court it is stated that the taxpayer bears the burden of proof to show that a transaction took place in accordance with normal market values, while the tax administration bears only the burden of proof to demonstrate the existence of economic transactions between associated companies at a price that is apparently lower or higher than the normal market price. The position held by the Italian Supreme Court evidently constitutes an exception to the general rule set under article 2697 of the Italian Civil Code; in this regard, in fact, the Court applies the so-called “proof proximity” criterion, concluding that the burden of proof lies with the taxpayer regardless of the fact that tax administration is the applicant.

Therefore, in transfer pricing cases, under the Court reasoning, it seems fair to disapply the general rule of article 2697, attributing the burden of proof to the party that is in the best position to deal with that burden. This is a flexible approach enabling the judge to take into consideration the circumstances of the case and the imbalance existing between the parties.

In practice, the proof proximity principle involves a shift of the burden of proof on the taxpayer, who is the party better placed to provide documentary evidence that a transaction took place in accordance with normal market values. The crucial point is that at the moment transfer pricing documentation is still under the full control and responsibility of MNEs while tax administrations are far away from direct and full access to the relevant data. Therefore, under the proof proximity criterion, it is fair to assume that the burden of proof lies with the taxpayer as MNEs are in the best position to succeed in discharging that burden.

Given all this, how could the Italian legal system react to a blockchain scenario? In particular, are the principles and rules sufficiently flexible to allow a different distribution of the burden of proof?

The main question concerns a possible future scenario where relevant transfer pricing documentation, such as the Master File, the Local File, and the CbC reports, could be available on a distributed ledger on a real-time basis with full access granted to tax authorities. In such case, it would become hard to argue that the taxpayer is still in the better position to succeed in discharging the burden of proof; the tax administration, in fact, could already have full access to all the information required to establish whether a given intra-group transaction was in compliance with the arm’s length principle.

In this scenario, it seems reasonable to go back to the general rule set under article 2697 of the Italian Civil Code, as the possibilities offered by the blockchain technology cannot justify exemptions based on the proof proximity criterion; in this regard, the tax administration, having full access to the database of the MNE on a real-time basis, would not be able to determine that the taxpayer is in the best position to succeed in discharging the burden of proof. As a consequence, the blockchain would lead to the shift of the burden of proof from the taxpayer to the tax administration, considering that the latter, being the substantial applicant, must prove the facts on which the tax assessment is based in accordance with the general rule of article 2697 of the Italian Civil Code.

Nonetheless, the same result could also be achieved by saving the application of the proof proximity criterion and keeping a regime of exception for transfer pricing with respect to the general rule of article 2697 of the Italian Civil Code. In a blockchain scenario, there is room to identify the tax administration as the party that is in the better position to provide evidence of the facts, given the permission to access to the database on the distributed ledger in real time. Therefore, even if the proof proximity principle would remain the guiding criterion in the distribution of the burden of proof, the implementation of the blockchain technology will necessitate a proper consideration of the new instruments available to tax authorities and, consequently, of proof proximity. As such, the expected outcome is a completely different interpretation of the proof proximity reasoning with a more favourable treatment of the taxpayer and the burden of proof finally shifted to the tax administration.

29. IT: Supreme Court (Corte di Cassazione) Tax Section, judgment No. 898 of 16 January 2019, CED Cassazione; IT: Supreme Court (Corte di Cassazione) Tax Section, judgment No. 9615 of 5 April 2019, CED Cassazione.
4.2.2. Singapore

The Singapore regulatory framework for transfer pricing shares many similarities with the Italian framework, reflecting a reality in which the common approach of the OECD Guidelines is widely adopted. As far as related-party transactions are concerned, section 34D of the Singapore Income Tax Act makes reference to the arm’s length principle, focusing on the conditions which would be made or imposed between unrelated parties dealing independently with one another in comparable circumstances. Guidance on determining the arm’s length price is provided by a soft law instrument, the Singapore Transfer Pricing Guidelines, which describes specific aspects such as transfer pricing methods and comparability adjustments.

Generally speaking, the rules governing the burden of proof in the Singapore legal system are contained in section 103 to 116A of the Evidence Act. In a way similar to the provision under article 2697 of the Italian Civil Code, the basic principle in Singapore is that, in civil cases, the person who asserts the existence of certain facts must prove that those facts exist; thus, the burden of proof lies with that person.

In principle, this would lead to the conclusion that the applicant, also when that party is the tax administration, has to prove the facts supporting the credit claim. However, in practice, in tax litigation proceedings in Singapore, the burden of proof usually lies with the taxpayer, who is the party that must provide evidence of the facts revealing the unfounded character of the tax assessment.

The difference between section 103-116A and the court practice in tax cases finds justification in the provision under section 108 of the Evidence Act according to which the burden of proof of a certain fact lies with the person who in particular has knowledge of that fact. There is a certain similarity here with the proof proximity criterion developed by Italian case law, since in both situations the proximity of a party to the facts becomes the key factor to establish the distribution of the burden of proof.

As for transfer pricing, no specific cases relating to the burden of proof have been brought before a Singapore court; nevertheless, the analysis of the Singapore Transfer Pricing Guidelines essentially confirms the adoption of an approach by the Inland Revenue Authority (IRAS) founded on the provision under section 108 of the Evidence Act. In fact, the burden of proof always seems to lie with the taxpayer, who is considered as the party having the best knowledge of the relevant facts and, thus, is assumed to be in the best position to succeed in discharging that burden.

For example, the Singapore Transfer Pricing Guidelines stress the duty of taxpayers to demonstrate that their transfer prices are determined in accordance with the arm’s length principle; in this regard, it is pointed out that the “taxpayers should prepare and keep records to show that the pricing of their transactions with their related parties is arm’s length” and that they “may determine and demonstrate arm’s length pricing using a different approach from those suggested in this e-Tax guide”. Moreover, it is underlined that “tax authorities may audit the prices of transactions between related parties to verify if they are reflective of market prices. Such audit can lead to transfer pricing adjustments bringing about double taxation.”

The tax administration’s practice in Singapore is generally in line with the idea of the burden of proof lying with taxpayers as far as transfer pricing is concerned; it is common for the IRAS to query the basis of intra-group transactions by asking taxpayers to prove that a certain related-party transaction was conducted in an arm’s length manner. Thus, Singapore tax authorities always expect that taxpayers exert reasonable efforts to undertake a sound transfer pricing analysis and demonstrate that the related-party transactions were in accordance with the arm’s length principle.

To conclude, the approach of the Singapore tax authorities is essentially based on the widely held idea that, in the area of transfer pricing, the burden of proof lies with the taxpayer any time the question is whether or not a given transaction was in line with the arm’s length principle. That said, the analysis should now focus on the potential impact of the blockchain technology on the Singapore regulatory framework, considering a new scenario in which the IRAS could have full access to a comprehensive set of data on a real-time basis for transfer pricing purposes. In such a situation, the Singapore tax authorities should profoundly change the approach to tax audits, as the large amount of data available to them would justify a shift of the burden of proof from the taxpayer to the tax administration.

For such purpose, section 108 of the Evidence Act already offers the legal basis for a change of route; in fact, by the use of the blockchain technology, the facts that are relevant for transfer pricing purposes, including the CbC reports, will be “especially within the knowledge” of IRAS assuming the existence of a network where the MNE and the tax authorities share the same data on an equal level.

31. OECD, supra n. 15, at sec. 1.13.
35. Id., at sec. 103.
37. Id.
4.3. The penalty system

A workable regulatory environment for the use of the blockchain for transfer pricing includes the development of a penalty system that by means of exemptions can provide incentives to MNEs in the adoption of the new technology. In other words, some safe harbours and benefits seem to be necessary to support the blockchain revolution and its positive impact in the area of transfer pricing.

Among the various options available, the introduction of a penalty protection regime could be an effective way to support the shift to a new system with the development of a culture of collaboration between tax administrations and taxpayers. The incentive could consist of an exclusion of penalties for non-compliance with the arm’s length principle in situations where MNEs make all the relevant information available on a real-time basis through the implementation of a private blockchain with full access granted to the tax authorities.

For examining the possibilities in Italy and Singapore, analysis is made of the penalty system for transfer pricing within the framework of these countries. Can the respective rules provide the proper incentive effects to support the use of the blockchain technology?

4.3.1. Italy

Under Italian transfer pricing legislation, article 26 of Law Decree 78 of 31 May 2010, as amended by Law 122 of 30 July 2010, provides for a penalty protection regime for companies filing the proper transfer pricing documentation, even when adjustments are made by the tax administration. In such cases, when the tax administration confirms the suitability of the transfer pricing documentation, the taxpayer is allowed to apply the exemption regime provided under article 1, paragraph 6, of Legislative Decree 471 of 18 December 1997, avoiding, in case of transfer pricing adjustments, the application of penalties for tax returns containing false information. Consequently, when adjustments are made by the tax authorities, the taxpayer is required to pay only the corresponding higher tax due and the related interest, without the application of penalties.

In this case, the penalty law of the Italian tax courts specifies that the required documentation must ensure the accuracy of the transfer pricing analysis, this basically means that the taxpayer can benefit from the penalty protection regime when the Master File and the Local File are submitted, regardless of the appropriateness of the comparable used or the correctness of the normal value applied by the taxpayer.

Furthermore, as far as the other penalties under criminal law are concerned, Italian legislation provides an exemption from the related sanctions where the taxpayer includes in the financial statements or in other tax documentation the description of the criteria used to define the pricing policies of the intra-group transactions. In this regard, article 4, paragraph 1-bis, of Legislative Decree 74 of 10 March 2000 excludes the application of criminal sanctions for the incorrect assessment of objectively existing positive or negative items when the evaluation criteria concretely applied have been specified in the financial statements or in other documentation relevant for tax purposes.

With these rules, it is evident that the Italian regulatory framework already provides a penalty protection regime for all the cases where the taxpayer draws up a specific set of documentation outlining the policies adopted in the area of transfer pricing. This approach means a safe harbour for the taxpayers that decide to comply with the documentation requirements and provides a suitable legal environment for the implementation of the blockchain technology for handling transfer pricing documentation.

Therefore, in a blockchain scenario, the penalty protection regime under Italian law should properly operate as long as MNEs record all the relevant data on the distributed ledger allowing tax authorities to get full access to the blockchain network for tax audit purposes.

4.3.2. Singapore

In Singapore legislation, there is no evidence of a penalty protection regime operating in case of transfer pricing adjustments made by the tax authorities. For transfer pricing, the penalty system in Singapore provides the application of a surcharge when the intra-group transaction was not in accordance with the arm’s length principle; the surcharge is applied irrespective of the behaviour of the taxpayer in preparing and submitting the required transfer pricing documentation. Under section 34E, 1st, paragraph 1, of the Singapore Income Tax Act, in relation to the year of assessment 2019 or any subsequent year of assessment, if taxpayers are unable to show that their transfer prices are at arm’s length, the tax administration will in any case impose a surcharge equal to 5% of the amount of the corresponding increase or reduction. However, tax authorities in Singapore enjoy a certain degree of discretion in applying such a penalty, according to paragraph 5 of the same section: “[T]he Controller may, for any good cause, remit wholly or in part any surcharge payable under this section”.

43. IT: Law Decree 78 of 31 May 2010, OJ of Italy 125 (2010).
44. IT: Law Decree 122 of 30 July 2010, OJ of Italy 176 (2010).
47. IT: Decision of the Commissioner of the Italian Revenue Agency of 29 September 2010, available at https://www.agenziaentrate.gov.it/por
tale/documents/20143/346119/29092010+Transfer+pricing+_Provv+
29092010+e-allegato+A.pdf?i74a5daf-474a-5b01-71c0-cd8136501399
(visited 5 Aug. 2020).
tale/documents/20143/300985/Circolare-58-e-15122010_cir58e-del-
15.12.10.pdf/60e8888b-fb47-3ede-849b-81346b6ec6c6 (accessed 5 Aug.
2020).
50. See supra n. 32.
In spite of paragraph 5, the current penalty system in Singapore does not provide any concrete safe harbour for taxpayers acting in good faith and submitting all the required transfer pricing documentation. With regard to the blockchain, the lack of a penalty protection regime could seriously affect the development of a new collaborative environment focused on the adoption of the new technology. According to the existing rules, penalties will anyhow be applied in case of transfer pricing adjustments, regardless of the technical efforts made by MNEs to ensure real-time tax audits by tax authorities.

Therefore, the current regulatory framework in Singapore does not provide any incentive for taxpayers to optimize the way through which transfer pricing documentation is handled and made available to tax authorities.

5. What Regulatory Framework for a Blockchain Scenario?

5.1. Lessons learnt from the comparative analysis

The results of the comparative analysis carried out in section 4. demonstrate the basic elements for the definition of a regulatory framework able to support the introduction of the blockchain technology in the transfer pricing area. The comparison between the Italian and Singapore legislation makes clear how the approach to the burden of proof and the penalty system can play a fundamental role in the implementation of the new technology.

As far as the burden of the proof is concerned, the Italian legal system contains a general rule under article 2697 of the Italian Civil Code according to which the applicant must prove the facts on which his or her claim is based, while the defendant must provide evidence of facts precluding liability. An exception applies, however, in the area of transfer pricing, where the burden of proof only lies with the taxpayer due to the proof proximity criterion developed by the case law of the Italian Supreme Court.

As seen, the implementation of the blockchain technology requires the availability of real-time information for the tax authorities and consequently shift the burden for proof to the tax administration side. Two different options have been considered for an adequate distribution of the burden of proof within the Italian regulatory framework: a return to the general rule set under article 2697 of the Italian Civil Code or, as an alternative, the application of the proof proximity principle, taking into account that, in a private blockchain network, the tax administration would be in the best position to succeed in discharging the burden of proof. In Singapore, the burden of proof generally lies on the taxpayer when the question is whether or not a given transaction was in line with the arm’s length principle. However, for a situation where taxpayers and tax authorities would use the blockchain, section 108 of the Evidence Act offers sufficient legal support to allow the shift of the burden of proof to the tax administration, even in the absence of relevant decisions in Singapore case law.

Based on these results, the first lesson learnt from the comparative analysis of the Italian and Singapore framework is that both national legal systems already contain sufficient elements to ensure the proper flexibility for the implementation of the new technology. In this regard, the proof proximity criterion developed by the Italian Supreme Court on the one hand, and the rule set under section 108 of the Singapore Evidence Act on the other, leave room for the shift of the burden of proof to the tax administration in the area of transfer pricing. This way, the regulatory framework of both countries can well support the implementation of the blockchain technology, seeing that in the future, access to the distributed ledger will allow tax administrations to carry out a real-time analysis of the relevant data referring to intra-group transactions.

The comparative analysis also covered the penalty system in these jurisdictions. Here, the second lesson learnt deals with the importance of a penalty protection regime in the area of transfer pricing; in fact, the exemption from penalties may well be a key factor in establishing a collaborative environment where taxpayers provide real-time information to tax administrations by allowing them full access to the data recorded on the distributed ledger.

In this regard, Italian legislation already provides a penalty protection regime for taxpayers that comply with the documentation requirements, thus offering the possibility of a workable legal environment for the implementation of the blockchain technology for handling transfer pricing documentation. Differently, in Singapore legislation, there is no evidence of a penalty protection regime to exclude the application of penalties in case of transfer pricing adjustments. This lack of safe harbours in Singapore leaves the penalty protection regime applied in Italy to be considered as the proper standard for supporting the implementation of the blockchain technology in the area of transfer pricing. Only the exclusion of penalties can generate the incentive effects to motivate MNEs towards the adoption of a new system based on the use of the blockchain.31

5.2. Possible actions in Italy

In Italy, the proof proximity criterion already allows sufficient room for a shift of the burden of proof from the taxpayer to the tax administration once the blockchain technology is implemented. Recent decisions of the Supreme Court reflect the use of this criterion to determine the burden of proof issue; accordingly, a flexible approach would enable the distribution of the burden of proof by laying it on the party who is in the best condition to provide evidence of a material fact (i.e. the tax administration in case of a new blockchain scenario). However, it

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31. In this regard, see OECD, supra n. 15, at sec. 4.28: “First, imposition of a sizable ‘no-fault’ penalty based on the mere existence of an understatement of a certain amount would be unduly harsh when it is attributable to good faith error rather than negligence or an actual intent to avoid tax. Second, it would be unfair to impose sizable penalties on taxpayers that made a reasonable effort in good faith to set the terms of their transactions with associated enterprises in a manner consistent with the arm’s length principle. In particular, it would be inappropriate to impose a transfer pricing penalty on a taxpayer for failing to consider data to which it did not have access, or for failure to apply a transfer pricing method that would have required data that was not available to the taxpayer. Tax administrations are encouraged to take these observations into account in the implementation of their penalty provisions.”
should be noted that proof proximity is a criterion developed by national case law and, therefore, can be subject to different interpretations which can change over time.

For this reason, proper changes in legislation should be considered, including an amendment to article 110, paragraph 7 of the Italian Income Tax Act with the introduction of a new provision dealing with the distribution of the burden of proof in case of transfer pricing documentation available through a private blockchain network. This way, the shift of the burden of proof will be established in legislation, ensuring a suitable regulatory framework for the implementation of the new technology.

As for the penalty system, the Italian legislation already provides a penalty protection regime for all the cases where taxpayers submit the required transfer pricing documentation. Therefore, no further actions are needed for the improvement of the Italian penalty system even with respect to any future blockchain scenario.

5.3. Possible actions in Singapore

In Singapore, substantial action is needed to prepare the regulatory framework for supporting the process of implementation of the blockchain technology in the area of transfer pricing.

First, it is necessary to update the current version of the Singapore Transfer Pricing Guidelines. As seen, this soft law instrument includes many provisions based on the general idea that it is up to the taxpayer to demonstrate the compliance of a given intra-group transaction with the arm’s length principle. But the future blockchain scenario requires proper amendments to the Singapore Transfer Pricing Guidelines, with the introduction of clear provisions for shifting the burden of proof to the tax administration when the blockchain system will have been implemented by MNEs for handling transfer pricing documentation. The legal basis for the required amendments to the Guidelines may well be found in section 108 of the Evidence Act according to which the burden of proof of a fact lies with the person who in particular has knowledge of that fact.

Furthermore, as far as the penalty system is concerned, the Singapore regulatory framework requires the introduction of a penalty protection regime in line with that in Italy. That way, Singapore can better support the development of a new culture of collaboration, providing a safe harbour for taxpayers that decide to disclose the relevant information regarding their transfer pricing policies by granting tax authorities real-time access to the data recorded on the distributed ledger. For that purpose, a possible option is the introduction of a new paragraph under section 34E of the Singapore Income Tax Act, providing an exemption from penalties for companies filing proper transfer pricing documentation, even when adjustments occur from the tax administration. Thus, the penalty system for transfer pricing in Singapore would be aligned to the Italian regime, ensuring the establishment of the proper legal environment for the implementation of the new technology.

6. Conclusions

Based on the comparative analysis and the subsequent discussion, it is possible to provide an answer to the research question formulated in section 1.

In a blockchain scenario, the issues of the burden of proof and the penalty system assume a fundamental relevance in the area of transfer pricing legislation. In order to support the efforts of MNEs in the implementation of the new technology, it is necessary to create some incentives mechanisms, by shifting the burden of proof to the tax administration side and establishing a penalty protection regime in favour of taxpayers that grant tax authorities full access to the relevant data recorded on the distributed ledger. This objective can be achieved through the definition of a workable legal environment at the national level with the introduction of the required changes in legislation.

As for the burden of proof, the comparative analysis identified the proof proximity principle as the guiding criterion within the Italian and Singapore legal system. In Italy, this criterion has been elaborated in the case law of the Supreme Court, whereas in Singapore, national legislation expressly codifies proof proximity as a tool to distribute the burden of proof. In both cases, some changes in legislation should be considered to ensure legal certainty and shift the burden of proof to the tax administration within a new blockchain scenario, by amendments to the Italian Income Tax Act and the Singapore Transfer Pricing Guidelines.

As far as the penalty system is concerned, the Italian legal framework already provides a penalty protection regime able to support the blockchain revolution. While no changes are needed in the Italian legislation therefore, the comparative analysis demonstrated the absence of a similar protection treatment within Singapore; in this regard, the introduction of a new paragraph under section 34E of the Singapore Income Tax Act should be considered, providing a penalty protection regime for companies that are willing to make transfer pricing documentation available to tax authorities by recording data on the distributed ledger.