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George Tian

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Eva Huang and Xi Nan

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ABOUT THE JOURNAL

The importance of China on the global economic stage cannot be ignored, and its unique legal and tax systems are of great interest to international scholars and business people alike. China's tax system is acquiring western features while remaining entrenched in its rich cultural and historical roots. This makes for interesting study, analysis and comparison as its laws are becoming more accessible.

The Journal of Chinese Tax & Policy focuses on the policy, administrative and compliance aspects of the Chinese tax system. It also welcomes comparative studies between China and other countries. The Journal is an internationally peer-reviewed scholarly publication.

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Editorial

The 2017 vol 7 issue 1 of the Journal Chinese Tax and Policy features recent articles relating to the ever-changing climate of Chinese tax both reflectively and prospectively. Focusing on the areas of transfer pricing regulation, replacement business tax and individual income tax reform, these articles all postulate on the further implications of these reforms, drawing upon global and international practices in offering alternatives and adaptive solutions.

Dr George Tian's paper focuses on the technological globalisation of major companies, illustrating the potential impacts of increasing borderless cloud-based models and China's response. Developing first into cloud computing and its impact on China's Transfer Pricing, the article deals in detail with the implementation and impact of an OECD BEPS Action as well as major reforms from 2016-17. In response, the paper also suggests blockchain technology and considers its role in providing a supplementary solution.

Research on the Replacement Business Tax with Value-Added Tax of Chinese Banking Industry by Long, Cai and Zhang investigates the possible deficiencies of China's current financial tax system of business & income tax for banks, postulating on an alternative Value Added Tax (VAT) chain. Considering the core tax burdens on the financial industry and its manifesting inequality in income tax, the paper a thorough reasoning to the consequences of mismatch between capital expansion and rapid growth of banking services. Alongside rationalising the lack of international competitiveness dominating Chinese Banks, it proposes the selective levying of VAT by considering a variety of successful international models.

Dr Huang and Nan's article comprehensively considers how the far-reaching consequences of implementing a family based filing in supplementing the proposed Individual Income Tax Reform. Through their feasibility study, a "revenue neutrality" analysis compares projected revenue from existing policies and a proposed family based individual income tax filing to calculate and compare projected revenue. It emphasises the importance of careful legislative consideration in the proposed shift into a global tax structure.

Eva Huang

Sydney, September 2017

China's New Transfer Pricing Rules & Their Implications to Cloud-related Multinationals - Blockchain as a Supplementary Solution

Dr George TIAN¹

Abstract: Technology companies are at the forefront of multinationals operating in a developing new global tax environment. Their ever-evolving and increasingly borderless cloud-based business models have set off a scramble among companies and governments around the world to grasp cloud taxation issues and impacts.²

Key words: Cloud Computing, Transfer Pricing, Multinational, Blockchain, Smart Contract, BEPS, China

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² [http://www.ey.com/Publication/vwLUAssets/EY-cloud-taxation-issues-and-impacts/\\$FILE/EY-cloud-taxation-issues-and-impacts.pdf](http://www.ey.com/Publication/vwLUAssets/EY-cloud-taxation-issues-and-impacts/$FILE/EY-cloud-taxation-issues-and-impacts.pdf) at page 4.

I. Introduction

The booming digital economy has become a major engine for China's economic growth. According to a White Paper issued by the China Academy of Information and Communications Technology (CAICT) of the Ministry of Industry and Information Technology (MIIT) in July 2017, China's digital economy increased 18.9 per cent in 2016 to 22.6 trillion CNY (3.35 trillion USD), which was much faster than that of China's overall economy (with a growth rate of 6.7 per cent in 2016).³ Cloud computing, as one of the important components of the digital economy,⁴ grows rapidly in China also. A study conducted by the US Department of Commerce found that the cloud computing market is still 'relatively nascent' in China.⁵ Although China's cloud computing market was worth \$1.5 billion in 2013, that figure is expected to increase to \$20 billion by 2020, a compound annual growth rate of approximately 40 per cent.⁶ However, in relation to international tax, cloud computing, as a relatively new business model that is borderless in nature, creates both challenges for taxing authorities and uncertainties for businesses in different countries,⁷ particularly in cross-border transfer pricing areas.⁸

This article examines the major forms of cloud-transfer pricing activities conducted by multinational companies, China's implementation of the OECD BEPS Action Plan, as well as some unilateral actions adopted by China in order to address cross-border transfer pricing issues. Some of the most recent development of the Chinese transfer pricing rules, including the *Public Notice of the State Administration of Taxation Regarding the Release of the "Administrative Measures for Special Tax Investigation Adjustments and Mutual Agreement Procedures"* (SAT Public Notice [2017] No.6),⁹ and their implications to the cloud-related MNEs in China, are also examined. In addition to legal solutions, it attempts to explore the possibility and feasibilities of using new blockchain technology to address the transfer pricing problems in China. It contends that it is important to make law and technology work together to address the transfer-pricing problem.

II. Cloud Computing and Transfer Pricing in China

A. Definition, Service Models and Key Features of Cloud Computing

³ Digital economy accounted for 30.3 per cent of China's total gross domestic product (GDP) over the year, said the white paper. Taking its spillover effect into account, digital economy contributed 69.9 per cent to the GDP in 2016, it added. See [ref] http://www.chinadaily.com.cn/business/2017-07/20/content_30179729.htm See The Foreword session of the China Digital Economy Development Report (2017) [in Chinese] (中国数字经济发展白皮书(2017年)). See also 中国信息通信研究院, 中国互联网行业发展态势暨景气指数报告(2017年), 2017年8月

⁴ Digital economy, also known as the internet economy, is based on digital computing technologies, comprising new business models such as e-commerce, cloud computing and payment services. http://www.chinadaily.com.cn/business/2017-07/20/content_30179729.htm

⁵ http://trade.gov/topmarkets/pdf/Cloud_Computing_China.pdf

⁶ http://trade.gov/topmarkets/pdf/Cloud_Computing_China.pdf

⁷ [http://www.ey.com/Publication/vwLUAssets/EYWorking_in_the_cloud:_Tax_considerations_of_cloud_computing/\\$FILE/Tax_Consideration_Cloud_Computing.pdf](http://www.ey.com/Publication/vwLUAssets/EYWorking_in_the_cloud:_Tax_considerations_of_cloud_computing/$FILE/Tax_Consideration_Cloud_Computing.pdf) at page 2.

⁸ With the development of digital technology, an increased number of businesses (within or outside China) have moved to cloud computing solutions. Many items we view as 'tangible' products are now transformed into 'intangible' or 'digital' products. As a result, this brings significant challenges to the traditional tax system, which was established on the basis of physical transactions and trade. See David Shakow, 'The Taxation of Cloud Computing and Digital Content' (2013) Faculty Scholarship Paper 475, 2.

⁹ The STA Public Notice No.6 was issued by the State Administration of Taxation (SAT) in March 2017.

<https://www.pwc.com/gx/en/tax/newsletters/pricing-knowledge-network/assets/pwc-tp-china-sat-spec-tax-adj-map.pdf>

Before examining the in-depth problems of the implementation of Transfer Pricing rules to cloud-related transactions, it is necessary to understand the meaning of cloud computing, the different types of cloud service models that exist, as well as the key features of cloud computing technology.

It has not been an easy task to provide a strict and standardized definition of cloud computing since cloud computing itself is an evolving technology. Different countries, and even different stakeholders in the same country, may provide different definitions of cloud computing.¹⁰ For example, based on a study conducted by the Defense Group Inc, there are more than twenty competing definitions of cloud computing in the US.¹¹ However, the U.S. National Institute of Standards and Technology's (NIST) provides the most widely accepted definition, which defines cloud computing as:

*'a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.'*¹²

In 2012, the Ministry of Industry and Information Technology (MIIT)'s China Academy of Information and Communications Technology (CAICT) defined cloud computing in its *2012 Cloud Computing White Paper* as follows:¹³

*"Cloud computing is a method for achieving large-scale computing information processing, which unifies, organizes, and flexibly draws upon various Information and Communication Technology (ICT) information resources through the Internet. Cloud computing utilizes distributed computing and virtual resource management technologies, among others. Using the Internet, it takes spread-out ICT resources (including computing, storage, application platforms, and software, among others) and brings them together to form a shared resource pool. Furthermore, it uses dynamic, on-demand, and scalable methods to provide services to users. Users can use various types of terminals (such as personal computers (PCs), tablet computers, smart phones, even smart televisions, among others) to access ICT resource services through the Internet."*¹⁴

¹⁰ See Steven Rosenbush, 'The Morning Download: Cloud Computing Hazy Meaning Creates Confusion for CIO's' (8 October 2016) Wall Street Journal <<http://blogs.wsj.com/cio/2016/10/18/themorningdownloadcloudcomputingshazymeaningcreatesconfusionforcios/>>; New Zealand Law Society, Defining Cloud Computing (4 July 2014) <<https://www.lawsociety.org.nz/lawtalk/lawtalk-archives/issue-845/defining-cloud-computing>>; Lizhe Wang et al, 'Scientific Cloud Computing: Early Definition and Experience' HPCC '08 Proceedings of the 2008 10th IEEE International Conference on High Performance Computing and Communications, 825-830.

¹¹ Leigh Ann Ragland and et al, Red Cloud Rising: Cloud Computing in China, Research Report Prepared on Behalf of the U.S.-China Economic and Security Review Commission (September 5, 2013) at <https://www.uscc.gov/sites/default/files/Research/DGI_Red%20Cloud%20Rising_2014.pdf> at 6.

¹² See Peter Mell & Tim Grance, The NIST Definition of Cloud Computing - Recommendations of the National Institute of Standards and Technology (September 2011) National Institute of Standards and Technology, US Department of Commerce <<http://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-145.pdf>>, 2.

¹³ "The Ministry of Industry and Information Technology's Guidance Concerning Promoting the Informatization of Logistics Work," (工业和信息化部关于推进物流信息化工作的指导意见) Ministry of Industry and Information Technology (工业和信息化部), modified January 9, 2013, <http://www.miit.gov.cn/n11293472/n11295327/n11297127/15121041.html>. cited by

¹⁴ See China Academy of Information and Communications Technology, Cloud Computing White Paper (2012) [Chinese] at http://www.caict.ac.cn/kxyj/qwfb/bps/201512/t20151211_2146678.htm or <http://www.caict.ac.cn/kxyj/qwfb/bps/201512/P020151211378881360681.pdf>

As some commentators observed, it seems that China largely hews to the NIST definition of cloud computing, but excludes some key concepts of NIST's definition. Most notably, it appears not to embrace the idea of providing 'on-demand self service' – a core characteristic of cloud computing under the NIST definition.¹⁵ However, in 2016, the CAICT further developed its definition of cloud computing in its *Security Guide for Cloud Computing Services* (2016) as follows:¹⁶

“Cloud computing is a model that provides computing resource services through the network, through which customers, on a dynamic and self-service basis, receive and manage the computing resources provided by the cloud service providers according to their needs. Computing resources include servers, operating systems, networks, software, and storage devices.”

It is clear that by including the wordings of 'dynamic and self-service basis' and 'according to their needs', China's definition is now very similar to that of the NIST in the US.

Furthermore, based on the nature of services provided, cloud computing is generally categorized into three service modes: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS).¹⁷ Put simply, SaaS means the provision of software by the cloud service to the user, which allows users from different locations to use it without actually installing the software on their devices. Users can simply interact with the software through an Internet browser. Some typical examples of SaaS include Microsoft Office 365 and Google Mail. PaaS means the provision of a platform for software developers, including web servers, development tools and operating systems.¹⁸ For example, the new release of IBM Blockchain, which enables developers to quickly build and host security-rich production blockchain networks on the IBM Cloud, fits well in the definition of PaaS.¹⁹ IaaS means the provision of third-party server space for users to process or store files. This means that users do not need to buy or build their own data centre or server any more. For example, Dropbox provides its users with an online storage space hosted on Dropbox accessible anywhere via the Internet,²⁰ which enables its users to store files on remote cloud servers and have the ability to share files within a synchronized format. Different cloud computing service models may attract different legal risks and tax implications.²¹

Although the forms of cloud computing services can be different, CC technology does share common features. First, computational resources under CC technology are 'elastic'. They can be shared by many simultaneous remote users, and can be scaled up or down with demand.²² This may significantly reduce the operational costs and increase the ease of service providers and users. Second, CC technology is 'borderless' in nature. It permits data transmissions that

¹⁵ Leigh Ann Ragland and et al, 'Red Cloud Rising', above n 11, 9.

¹⁶ See CAICT, *Cloud Security Guide* (2016) (云计算安全指南 2016) cited by Samuel Yang, 'Regulation of cloud computing in China' in *Practical Law in China*, at < [https://uk.practicallaw.thomsonreuters.com/w-007-4744?originationContext=document&transitionType=DocumentItem&contextData=\(sc.Default\)&firstPage=true&bhcp=1](https://uk.practicallaw.thomsonreuters.com/w-007-4744?originationContext=document&transitionType=DocumentItem&contextData=(sc.Default)&firstPage=true&bhcp=1) > at

1.

¹⁷ Christian Solmecke, *The legal aspects of cloud computing under copyright law* (13 September 2013) Wilde Beuger Solmecke <<http://www.wbs-law.de/eng/the-legal-aspects-of-cloud-computing-under-copyright-law-45886/>> accessed 13 April 2014.

¹⁸ Yang, above n 16, 2.

¹⁹ See *IBM Launches Industry's Most Secure Enterprise-Ready Blockchain Services for Hyperledger Fabric v 1.0 on IBM Cloud* (20 Mar 2017) IBM <<https://www-03.ibm.com/press/us/en/pressrelease/51840.wss>>

²⁰ For more information, see Cory Janssen, *Dropbox*, *techopedia* <<http://www.techopedia.com/definition/26850/dropbox>>.

²¹ More details will be discussed in Part III and Part IV of this article.

²² NR Herbst et al, 'Elasticity in Cloud Computing: What It Is, and What It Is Not.' (2013) *ICAC*, 23-27.

span the globe. Data processing activities shift from country-to-country depending on load capacity, time of day, and a variety of other factors. These decisions are sometimes 'made in real time and by machines rather than humans'.²³ As a result, cloud users, and even cloud service providers, may not be able to tell the true location of physical infrastructure as well as the true location of the processed data.²⁴ These have arguably increased the 'unpredictability' of data control and the uncertainty of legal compliance, particularly the enforcement of transfer pricing laws.

B. Transfer Pricing and Arm's Length Principle

Transfer Pricing concerns 'the prices charged between associated enterprises established in different tax jurisdictions for their intercompany transactions'.²⁵ The mismatch of the rate of income tax in different countries is a key reason and driving force for multi-national enterprises (MNEs)²⁶ to pursue a planning strategy in order to allocate its resources and assets in the most tax efficient manner. Although tax planning itself is not illegal per se, artificially shifting profits from a high-tax country to a low-tax country may not only reduce a country's essential tax revenues, but also may undermine the legitimacy and credibility of the country's tax system, and discourage compliance among all taxpayers.²⁷

The tax laws in many countries, including the OECD Transfer Pricing Guidelines, explicitly provide that the "Arm's Length" principle (ALP) should be used to establish the price of transactions between associated enterprises,²⁸ that is, the price of the associated enterprises should be the same as the price for unrelated enterprises.²⁹ The rationale behind this is, when two unrelated enterprises trade with each other, a 'market' price (or 'arm's length' price) for their transactions will generally apply. Multi-national Enterprises, which have moved their operations to the cloud, arguably need to follow the arm's length principle also, when conducting any intra-group transactions. However, the traditional tax systems, including Transfer Pricing rules, were established on the basis of physical transactions and trade. As such, cloud computing has arguably brought challenges for both MNEs and tax authorities to comply and apply the existing tax laws against illegitimate transfer pricing activities.

²³ Paul M. Schwartz, 'EU Privacy and the Cloud: Consent and Jurisdiction Under the Proposed Regulation' (2013) 12 BNA Privacy and Security L. Rep. 718, 718

²⁴ Although traditional Internet technology already allows cross-border data transactions, in these transactions, data owners and processors at least know where the data is stored (location of data centre) and where the data will be sent to (destination of data).

²⁵ See Asia Briefing Publications, *Transfer Pricing in China*, 2nd Edition, (Springer, 2011) at 3.

²⁶ A multinational enterprise (MNE) is a company that is part of a "MNE Group." An MNE Group consists of related corporations or similar entities operating in more than one country. Organisation for Economic Co-operation & Development *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (2001) [hereinafter OECD Guidelines] cited by Manish Jain, 'Transfer Pricing Issues in Intangibles (Intellectual Property): An Analysis of Problems and Possible Solutions' (2014) 1 RGNUL Student Law Review 10, 12.

²⁷ See, OECD, *Developing Capacity in BEPS and Transfer Pricing* at <https://www.oecd.org/tax/tax-global/developing-capacity-in-beps-and-transfer-pricing.pdf>, at 2 (Stated: 'When transfer pricing is used by multinational enterprises to artificially shift profit out of a country, it, first and foremost, denies the country of essential tax revenues. But it can also have much wider implications: tax avoidance by high profile corporate taxpayers will be perceived as "unfair" by citizens, and may undermine the legitimacy and credibility of the tax system, thus discouraging compliance among all taxpayers.')

²⁸ See OECD *Transfer Pricing Guidelines* 2010 and 2016.

²⁹ Arm's-Length Principle (17 August 2017) USTransferPricing.com <http://www.ustransferpricing.com/arms_length_principle.html> (stated: 'The "arm's-length principle" of Transfer Pricing states that the amount charged by one related party to another for a given product must be the same as if the parties were not related'). See also IRS, LB&I International Practice Service Transaction Unit, *Other Transfer Pricing Issues – Section 482 Fundamentals* (9 March 2014) Internal Revenue Service, Department of Treasury <https://www.irs.gov/pub/int_practice_units/ISI9422_09_06.PDF>.

III. Impacts of Cloud Computing on Transfer Pricing

A. Major Forms of Cloud-related Transfer Pricing Strategies

The alleged tax evasion, or according to accountants of MNEs, the efficient tax management and planning, may be undertaken by the MNEs in various ways in the new cloud environment. First, Cloud Service Provider Relocation is a typical transfer pricing strategy for MNEs. In the current cloud-computing environment, traditional IP ownership transfer business model has been replaced by a new cloud service business model. As Professor Mazure pointed out, a ‘plausible, and arguably more likely, characterization’ is that ‘cloud-based transactions are classified as the provision of services rather the provision of IP’. As introduced above, SaaS, IaaS and PaaS are all provided to clients as cloud computing ‘services’. Instead of focusing on IP ownership transfer, the key transfer pricing strategy now focuses more on how to relocate affiliated Cloud Service Providers from a high tax jurisdiction to a low tax jurisdiction. The application of cloud computing technology enables a MNE group to relocate the CSP to a low-tax jurisdiction more easily.³⁰ With current CC technology, the MNE’s IT infrastructure, such as servers, data centers, and other facilities, can be located almost anywhere without affecting the quality of their business operations.³¹ In relation to a potential breach of Transfer Pricing rules, a key concern could be the fee of the subject cloud service. Tax authorities may raise dispute in relation to the ‘reasonable’ service fee in line with the Arm’s Length principle.

Second, cloud service agreements are another important transfer pricing strategy for MNEs. Due to the implications of the Arm's Length Principle, the pricing of cloud service fees between related enterprises cannot be too high.³² As introduced above, the tax laws in many countries require that the transfer pricing arrangements between related enterprises comply with the Arm's Length principle, that is, the price of the associated parties should be the same as the price for the non-related party.³³ One way for MNEs to justify their low pricing for cloud services is to sign a cloud service agreement between affiliated enterprises, which not only covers the basic cloud service (rights to use online software), but also covers other related technical services (such as software maintenance and management). Using Adobe Photoshop as an example, Adobe has successfully transitioned from the traditional ‘Licensed Software Model’ to the current ‘SaaS Subscription Model’. In addition to using its main website to provide cloud-based Photoshop software services to its subscribers (basic cloud service), it provides registered Adobe members with access to all of Adobe’s photography, design, video, and web apps on all their desktop and mobile devices (other related technical services).³⁴

Third, Cost Sharing Arrangement/Agreement (CSA) is also an important strategy for cloud-related Transfer Pricing by MNEs. In a CSA, related enterprises agree upon how the research and development costs for creating intangible assets (such as cloud-based software or cloud service platform) are to be allocated between them.³⁵ For example, although a high-tax affiliate (e.g. affiliated research and development center in Australia) may have economically contributed to generate such an income by developing or funding the development of the subject

³⁰ Ibid 670.

³¹ Mazur, above n **Error! Bookmark not defined.**, 671.

³² Artificially high cloud service fee from a high tax affiliate to a low tax affiliate could arguably reduce the tax burden of the high tax affiliate, and increase the global revenue of the MNE as a whole.

³³ Arm's-Length Principle, above n 29; IRS, LB&I International Practice Service Transaction Unit, above n 29.

³⁴ Ibid

³⁵ Jain, above n 26, 12.

intangible (e.g. cloud-based software), the low-tax affiliate (e.g. affiliated CSP company, which is in charge of cloud-related infrastructure maintenance and updates as well as cloud client management) may be treated as the affiliate that generates the majority of the income. The overall global tax liability of the MNE group will be decreased accordingly.³⁶

B. Challenges for Applying Transfer Pricing Rules to Cloud-Related Transactions

As introduced above, the key for the transfer pricing rule enforcement is the application of the Arm's Length Principle (ALP). The key for the application of the ALP is to 'accurately value' the relevant cloud-related transactions.³⁷ However, it has not been an easy job for tax authorities to assess the true value of any intangible-related transactions, including cloud-transactions.³⁸

First, there is a lack of comparables for transfer pricing analysis.³⁹ As Herve and Ham observed, given the *uniqueness* of intellectual property, the potentially comparable uncontrolled transactions are 'in fact effectively not comparable.'⁴⁰ It is same in the cloud environment. Each cloud computing related product and/or service often has its own unique feature, and it is hard to find appropriate comparables. This is particular true for developing countries. In the *United Nations Practical Manual on Transfer Pricing for Developing Countries Pricing for Developing Countries (the Manual)*, which was first issued in 2013, the State Administration Of Taxation (SAT) of China highlighted the challenges for identification and valuation of intangibles that developing countries have to face.⁴¹ It pointed out that unlike developed countries, which usually have a much larger number of public companies (e.g. Google, Amazon and IBM are all MNEs founded in the US), developing countries usually only have a small number of public companies, and information on domestic private companies is lacking or inadequate. This directly limits the availability of public information on 'domestic companies' (potential 'domestic comparables'), which can be used for transfer pricing analysis.⁴²

Second, there is a lack of a good understanding of the operation of MNE's business structure and global value chain as a whole. In practice, intangibles are often transferred in combination with tangible assets or associate services.⁴³ Buyers may want to acquire a product (product package) that relies on a combination of intangibles and other associated services, such as a combination of software patent, IT infrastructure and technical support services.⁴⁴ For example, when buyers purchase Adobe's cloud-based Photoshop software, the product package they acquire not only includes a license to use the Photoshop software online, but also includes

³⁶ Ibid.

³⁷ See Part II of this article.

³⁸ Jain, above n 26, 14-15. IP valuation represents an important reason for various disputes between the MNEs and tax authorities.

³⁹ See also OECD, The Platform for Collaboration on Tax delivers a toolkit to help developing countries address the lack of comparables for transfer pricing analyses and better understand mineral product pricing practices, (June 22, 2017) at <http://www.oecd.org/tax/pct-delivers-toolkit-to-help-developing-countries-address-lack-of-comparables-for-transfer-pricing-analyses.htm>

⁴⁰ See Herve & Ham, 'Germany: Hypothetical arm's-length testing and intellectual property' in *International Tax Review* (27 June 2012) (see the 'Application of the hypothetical arm's-tenth test' session]

⁴¹ Department of Economic & Social Affairs, *United Nations Practical Manual on Transfer Pricing for Developing Countries* (2013) UN Doc ST/ESA/347 <http://www.un.org/esa/ffd/documents/UN_Manual_TransferPricing.pdf>, 374-87 [10.3].

⁴² Ibid 375 [10.3.2.2]

⁴³ Such a combination is also known as 'embedded intangibles'. See Richard L. Doernberg, 'Taxation Silos: Embedded Intangibles and Embedded Services Under U.S. Law' (2006) 41 *Tax Notes International* 561 cited by Jain, above n 26, 15.

⁴⁴ See above Part III.B.3 of the article.

associated services on software updates and cloud platform maintenance.⁴⁵ Thus, it is not always easy to identify an accurate ‘separate’ value for the subject intangible asset (e.g. the value of the cloud-based Photoshop software in the subject transaction). The situation becomes even more complicated when a cloud-related ‘product package’ is provided by related enterprises located in different tax jurisdictions. Because the parent companies or service centres of most of MNEs are located overseas, the local taxpayers (domestic enterprises) can often only provide information in relation to their own operations rather than provide ‘an overall understanding of the entire intra-group services structure’.⁴⁶ In the other words, even if a local taxpayer intends to fully cooperate with the tax authority, it may not be able to provide all the information that the tax authority needs.

Third, there is a lack of information on intangible transactions in financial statements. Generally speaking, the traditional model of financial reporting is not able to provide relevant information about a company's intangible assets.⁴⁷ Intangibles other than patents are particularly difficult to detect because they are not usually reported in MNEs’ financial statements.⁴⁸ More specifically, most royalties, licenses, and management fees in relation to intangibles (including IP and cloud-related services introduced above) are intra-group payments flowing from foreign affiliate(s) of a MNE group to the parent company of the MNE group.⁴⁹ Therefore, they are generally not recorded or disclosed in a MNE Group’s financial statements or its footnotes.⁵⁰ It is therefore very hard for tax authorities to find the pricing information in relation to comparables of relevant intangibles.⁵¹ In order to explore possible solutions for these challenges, this article next follows up with the recent development of transfer pricing rules in China, particularly the implementation of the recommendations of the OECD’s *BEPS Action Plan* in China.

III. Legal Solutions: Implementation of the OECD BEPS Action Plan & Its Implications to Cloud-related Enterprises in China

A. Recent Development of Transfer Pricing Rules in China – Overview

In China, the fundamental rules in relation to transfer pricing can be found under the *Enterprise Income Tax Law* and its *Implementation Rules* (EIT Law) promulgated by the National People’s Congress and the State Council in 2007. Moreover, the SAT issued the *SAT Circular on Implementation Measures for Special Tax Adjustments (Trial Implementation)*, Guoshuifa

⁴⁵ See Adobe Creative Cloud website, above n **Error! Bookmark not defined.**; In addition to basic software service, a registered Adobe member also has full access to all of Adobe’s photography, design, video, and web apps.

⁴⁶ See State Administration of Taxation, above n **Error! Bookmark not defined.**, 5.

⁴⁷ See also Jovan Krstić and Milica Đorđević, ‘Financial Reporting on Intangible Assets – Scope and Limitations’ (2010) 7(3) Series: Economics and Organization 335, 336 (stated: ‘Lack of relevant information on intangible assets (intellectual capital and the like) in the financial statements disables the possibility for external users to perceive real value of the company and adequate decision making.’)

⁴⁸ Jain, above n 26, 15 See also Lorraine Eden et al., ‘The Production, Transfer, and Spillover of Technology: Comparing Large and Small Multinationals as Technology Producers’ in (1999) Zoltan J. Acs & Bernard Yeung (eds), *Small and Medium Sized Enterprises in the Global Economy* 121, 122 (stated: ‘More than seventy-five percent of all private R&D expenditures worldwide are accounted for by MNEs. Most royalties, licenses, and management fees are intra-firm payments flowing from foreign affiliate MNEs to the parent corporation MNE’).

⁴⁹ Eden et al., above n 48.

⁵⁰ See Jain, above n 26, 16. (stated: ‘IP generally does not appear on an MNE Group’s balance sheet unless acquired through a purchase, in which case the IP appears only as “goodwill because the accounting standards in most countries allow internally-generated IP to be expensed rather than capitalized as investments. IP is generally not recorded or disclosed in an MNE Group’s financial statements or its footnotes.’)

⁵¹ See also Krstić & Đorđević, above n 47, 335. (stated: ‘Lack of relevant information on intangible assets (intellectual capital and the like) in the financial statements disables the possibility for external users to perceive real value of the company and adequate decision making.’)

[2009] No. 2 (*Circular 2*) on 8 January 2009, which sets out more detailed transfer pricing rules.⁵² The *Circular 2* has marked ‘a significant step up’ in China’s transfer pricing enforcement regime.⁵³ Although China is not an OECD member, the transfer pricing regime in China is generally consistent with the *Organisation for Economic Co-operation and Development (OECD) Transfer Pricing Guidelines*. It was also found that the Chinese tax authorities have made reference to certain principles under the *OECD Transfer Pricing Guidelines* in an increasing number of TP investigations in recent years.⁵⁴

China certainly is one of the early movers for implementing the recommendations in the *OECD BEPS Action Plan* into its domestic tax laws. Building on its existing anti-avoidance rules, China has been aggressively introducing new laws to implement the recommendations of the OECD and G20 *BEPS Action Plan*.⁵⁵ Following the G20 Hangzhou Submit in 2016, China’s SAT has released three new regulations (Public Notice 42 and 64 in 2016 and Public Notice 6 in 2017) on special tax adjustments, and made the regulatory framework for transfer pricing in China ‘spread across a number of regulations’.⁵⁶ By adopting the recommendations of the OECD’s BEPS Action Plans, these regulations arguably have significant impacts on the landscape of the Chinese transfer pricing laws as well significant implications for cloud-related transfer pricing arrangements by MNEs.

B. Major Changes and Implications

1. Public Notice 42 [2016]- Three-Tier Transfer Pricing Documentations Scheme

*The Public Notice Regarding Refining the Reporting of Related-Party Transactions and Administration of Transfer Pricing Documentation (SAT Public Notice [2016] No. 42, hereinafter referred to as “Public Notice 42”)*⁵⁷ was enacted in 2016 to replace and modernize the current documentation regulations as prescribed under *Circular 2* (2009) and *Annual Reporting Forms for Related-Party Dealings of Enterprises of the People’s Republic of China* (Guo Shui Fa [2008] No. 114).⁵⁸ *Public Notice 42* has been considered as ‘the first of a series of regulations to localize OECD/G20 BEPS Project recommendations in China’.⁵⁹ Unlike *Circular 2* (2009), which covered various aspects of special tax adjustments comprehensively,

⁵² See Li, J. *Tax Transplants and Local Culture: A Comparative Study of the Chinese and Canadian GAAR*. Theoretical Inquiries in Law, (2010). 11(2)

⁵³ See PWC, *International Transfer Pricing* (2013) <http://www.pwc.com/gx/en/international-transfer-pricing/assets/china.pdf> at 329

⁵⁴ Raymond Wong and Tony Dong, ‘Overview of Transfer Pricing in Hong Kong and China, (KWM.com, November 26, 2015)’ at <http://www.kwm.com/en/knowledge/insights/overview-of-transfer-pricing-in-hk-and-china-20151126> at 6.

⁵⁵ PWC, ‘Roundup of Australia’s BEPS developments’ in *TaxTalk—Insights Global Tax* (12 April 2017) PWC <<https://www.pwc.com.au/tax/taxtalk/assets/alerts/taxtalk-roundup-of-australia-beps-developments-april-2017.pdf>>, 1.

⁵⁶ Deloitte, ‘China’s SAT issues new rules to improve administration of special tax investigations and Mutual Agreement Procedures’, *Global Transfer Pricing Alert 2017-012* at <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-global-transfer-pricing-alert-17-012-6-april-2017.pdf>

⁵⁷ For the full text in Chinese, see 《国家税务总局关于完善关联申报和同期资料管理有关事项的公告》 http://www.tax.sh.gov.cn/pub/xxgk/zcfg/ssxd/201607/t20160713_425681.html

⁵⁸ Public Notice will take into effect from 2016, and the applicable sections in the old regulations (Chapters 2 and 3, and Articles 74 and 89 of *Circular 2* (2009); and *Circular Guoshuifa* [2008] No. 114) will be repealed. See also PWC, ‘SAT issues new China transfer pricing compliance requirements’ *Tax Insights from Transfer Pricing* (July 27, 2016) at <http://www.pwc.com/gx/en/tax/newsletters/pricing-knowledge-network/assets/pwc-TP-China-SAT-issues-TP-compliance-requirements.pdf> at 1. The Public Notice 42 provides new transfer pricing compliance requirements in China, including annual reporting forms for related-party transactions (RPT Forms), Country-by-Country (CbC) Reporting, and Transfer Pricing Documentation (TPD), all of which are substantial changes to the existing rules.

⁵⁹ See *China Transfer Pricing Developments: Announcement 42 and New Circular 2 (Discussion Draft)* at <https://www.kpmg-institutes.com/institutes/taxwatch/events/2016/08/us-china-transfer-pricing-announcement-42.html>

Public Notice 42 only focuses on the reporting of related-party transactions and contemporaneous documentation.⁶⁰ It formally adopts the ‘three-tiered’ transfer pricing documentation approach under the BEPS Action 13.⁶¹ MNEs meeting specific reporting criteria must prepare (1) the master file, (2) the local file, and/or (3) the country-by-country (CbC) report under the new ‘three-tiered’ documentation regime in China now.⁶²

Moreover, the *Public Notice 42* obligates MNEs to disclose more information in relation to intangible-related transactions and transfer pricing arrangements. Article 12 explicitly requires that any enterprise that meets the criteria⁶³ for preparing a ‘Master File’ needs to provide ‘an overview of the global business operations of the MNE group to which the ultimate holding company belongs’.⁶⁴ The *Public Notice 42* even has a specific session particularly focusing on intangibles. Art 12.3 explicitly requires MNE disclosure of the following intangible-related information in Master File, including (1) a general description of the MNE’s overall strategy for the development, ownership and exploitation of intangibles; (2) a list of intangibles or groups of intangibles of the MNE group that are important for transfer pricing purposes and which entities own them; (3) a list of important agreements entered between constituent entities and their related parties related to intangibles; (4) a description of the groups’ transfer pricing policies related to research and development and intangibles; and a description of any important transfers of interests in intangibles among related parties during the fiscal year concerned.

It is clear that through these provisions, the *Public Notice 42* not only requires MNEs to disclose their overall strategies for commercializing intangibles and transfer pricing policies, but also obligate them to provide specific intragroup agreements in relation to intangible-related transactions, as well as disclose their business intention of each major transaction in relation to intangibles. These detailed information requirements would arguably significantly facilitate the transfer pricing analysis of tax authorities both within and outside the cloud environment. Furthermore, given the borderless nature of cloud computing service, incorporating the OECD’s country-by-country reporting (CBCR) requirement into domestic laws would arguably contribute to international enforcement of transfer pricing rules also.

2. Public Notice 64 [2016] – Advance Pricing Arrangements & Value Chain Analysis

Right after the *Public Notice 42* on reporting related party transactions and contemporaneous documentation on 11 October 2016, the SAT issued new regulations *Public Notice 64 [2016]* to improve the administration of *Advance Pricing Arrangements* (APAs) in line with OECD’s Action 14 of the BEPS Project.⁶⁵ It has been released as the second significant revision to the

⁶⁰ A discussion draft revision to Circular 2 (Draft Circular 2) was published on September 17, 2015, for public consultation. For the full text of the draft in Chinese, see <http://hd.chinatax.gov.cn/hudong/noticedetail.do?noticeid=577376>; see also <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-global-transfer-pricing-alert-16-026-14-july-2016.pdf> (Many observers believed that a series of additional regulations will be issued to complete the revision of Circular 2)

⁶¹ OECD, Action 13.

⁶² The latter report must be submitted as a part of the related party transaction forms filed with the annual corporate tax return.

⁶³ Article 12 of *Public Notice 42*. (i) The enterprise that has conducted cross-border related party transactions during the tax year concerned, and the MNE group to which the ultimate holding company that consolidates the enterprise belongs, has prepared a master file. (ii) The annual total amount of the enterprise’s related party transactions exceeds 1 billion RMB.

⁶⁴ Article 12 of *Public Notice 42*.

⁶⁵ Eunice Kuo and et al, ‘SAT Issued New Rules to Improve Administration of Advance Pricing Arrangements’ in Tax Analysis Issue P248/2016 (18 October 2016) Deloitte at <https://www2.deloitte.com/content/dam/Deloitte/cn/Documents/tax/ta-2016/deloitte-cn-tax-tap2482016-en-161018.pdf>

relevant chapters of Circular 2 [2009].⁶⁶ The *Public Notice 64* has taken effect since 1 December 2016 to replace the applicable sections concerning APAs in old regulations, such as Chapter 6 of *Circular 2*.

APA is an effective method to resolve tax disputes in advance and improve taxation certainty. Bilateral or multilateral APAs can resolve in advance tax disputes amongst different tax jurisdictions, and effectively avoid double taxation or no taxation.⁶⁷ Public Notice 64 provides the process and requirements for an enterprise to apply for an APA⁶⁸ as well as specific criteria for an APA application to be prioritised or declined. Put simply, it made two important changes.

First, an enterprise intending to apply for an APA must clear the pre-filing, analysis, and evaluation stages, and obtain approvals from tax authorities before it can submit the letter of intent and formal application, respectively.⁶⁹ In other words, the new rules have moved the analysis and evaluation stage before the formal application stage. Moreover, the new rules require enterprises to agree to negotiate with the SAT and adjust their proposed transfer pricing methods (to the most appropriate method) when it is necessary during the analysis and evaluation stage, or their APA applications may be declined.⁷⁰ As some commentators observed, these arguably strengthen the tax authorities' control over the APA process, and 'set higher standards on the enterprise's compliance, cooperation, and information disclosure during the APA application process'.⁷¹

Second, Public Notice 64 has updated the requirements on analysis to be included in an APA application package,⁷² notably to include analysis on *location-specific advantages* (LSAs), such as location savings, market premiums, and the value chain analysis⁷³ or supply chain analysis. This revision arguably has significant implications on MNEs, particularly cloud-related MNEs. As introduced above, the cloud computing services are borderless in nature. On the one hand, an affiliated enterprise (CSP) can provide cloud service to related enterprises (cloud users) across different tax jurisdictions. On the other hand, the establishment of cloud-service platform or the research and development (R&D) of a specific cloud-related products/services may involve the effects of the developers from affiliated companies in different countries. Many IT giants, such as Microsoft, have R&D centres in various countries (such as the US, China and India), and these centres may work together on the same project in turn, and contribute to the value of the final intelligible products created together. Moreover, the specific location where

Full Text of Public Notice 64 [in Chinese] 国家税务总局公告 2016 年第 64 号《关于完善预约定价安排管理有关事项的公告》(以下简称“64 号公告”) <http://www.chinatax.gov.cn/n810341/n810755/c2292979/content.html>

⁶⁶ Eunice Kuo and et al, 'SAT Issued New Rules to Improve Administration of Advance Pricing Arrangements' in Tax Analysis Issue P248/2016 (18 October 2016) Deloitte at

<https://www2.deloitte.com/content/dam/Deloitte/cn/Documents/tax/ta-2016/deloitte-cn-tax-tap2482016-en-161018.pdf>

⁶⁷ Eunice Kuo and et al, 'SAT Issued New Rules to Improve Administration of Advance Pricing Arrangements' in Tax Analysis Issue P248/2016 (18 October 2016) Deloitte at

<https://www2.deloitte.com/content/dam/Deloitte/cn/Documents/tax/ta-2016/deloitte-cn-tax-tap2482016-en-161018.pdf>

⁶⁸ According to Public Notice 64, the negotiation, signing and implementation process of an APA involve six stages: 1) the pre-filing meeting, 2) letter of intent, 3) analysis and evaluation, 4) formal application, 5) negotiation and signing, and 6) execution and monitoring. See <https://www.pwccn.com/en/china-tax-news/chinatax-news-oct2016-29.pdf>

⁶⁹ See Article of the Public Notice 64; see also [Another] <http://www.pwc.com/gx/en/tax/newsletters/international-tax-services/assets/pwc-international-tax-news-december-2016.pdf> ;

⁷⁰ Article 6 (3) and Article 8(2) of the Public Notice 64 provide the specific circumstances in which an APA may be declined.

⁷¹ <https://www.pwccn.com/en/china-tax-news/chinatax-news-oct2016-29.pdf> (further states: 'This change may have limited impact on unilateral APA applications. For bilateral or multilateral APA applications, however, the impact may be more significant, as changes to an enterprise's applications in China will affect its related parties' application in other countries.')

⁷² See Article 6 of the Public Notice 64.

⁷³ Article 6(2) (vii) of the Public Notice 64. See Article 6(2)(vii) 价值链或者供应链分析, 以及对成本节约、市场溢价等地域特殊优势的考虑;

the exploitation of the intangibles takes place is not easily identified either. For example, the locations for manufacturing, marketing, and distributing iPhone are not same. Although the R&D of a new iPhone may happen in the US, most iPhones are manufactured in China, but they are marketed and distributed globally. It is not fair to simply credit tax benefits to any single tax jurisdiction. Therefore, the inclusion of location-specific advantages and value chain analysis would arguably place more obligations for MNEs to provide accurate global value chain information, and would facilitate transfer-pricing assessment by SAT.

In fact, the *Public Notice 42* (introduced above) has also affirmed a value chain analysis approach. Article 14.3.2 of the Public Notice 42 explicitly requires taxpayers to include ‘value chain analysis’ into the transfer pricing documentation. It requires the taxpayers who meet the criteria for ‘Master File’ to disclose information in relation to ‘value chain analysis’, including: (1) Flows of business, goods and materials, and capitals within the group; (2) Annual financial statements of each of the aforementioned parties for the immediately preceding fiscal year; (3) Measurement and attribution of value creation contributed by location specific factors; (4) Allocation policies and actual allocation results of the group’s profits in the *global value chain*. However, Public Notice 42 has not provided a clear explanation on the basic procedures for implementing this approach to transfer pricing analysis. Public Notice 64 has now arguably fit in the procedure gap in a timely manner.

3. Public Notice 6 [2017] – Profit Split Method

On 17 March 2017, the SAT issued new regulations *Public Notice 6 [2017]* to improve the administration of “*Special Tax Investigation Adjustments and Mutual Agreement Procedures*.”⁷⁴ The *Public Notice 6* largely completes the revision of the transfer pricing-specific clauses under the *Circular 2*, and adds to the transfer pricing framework set out in the previously issued Public Notice 42 and Public Notice 64 (introduced above). The *Public Notice 6* clarified some key transfer pricing issues, as well as the methodology and procedures for special tax audits and adjustments by incorporating some important recommendations arising from the *OECD’s BEPS Actions 8-10 and Action 14*. It put more emphasis on a risk-oriented tax administration system, and more diverse transfer pricing methods. More importantly, in addition to five traditional transfer pricing method under the *Circular 2*⁷⁵ and the OECD transfer pricing guidelines,⁷⁶ *Public Notice 6 [2017]* permits ‘other’ asset valuation methods that comply with the Arm’s Length principle (such as cost method, such as the cost, market),⁷⁷ and

⁷⁴ The Public Notice of the State Administration of Taxation Regarding the Release of the “Administrative Measures for Special Tax Investigation Adjustments and Mutual Agreement Procedures” (SAT Public Notice [2017] No.6, hereinafter referred to as the “Public Notice 6”). The STA Public Notice No.6 was issued by the State Administration of Taxation (SAT) in March 2017. <https://www.pwc.com/gx/en/tax/newsletters/pricing-knowledge-network/assets/pwc-tp-china-sat-spec-tax-adj-map.pdf>; see full text in Chinese <http://www.chinatax.gov.cn/n810341/n810755/c2538695/content.html>

⁷⁵ Generally speaking, there are five world recognized pricing methods to calculate the arm’s length price: Comparable Controlled Price (CUP), Resale Price Method (RPM), Cost Plus (C+, CP) and Profit Based Methods, including Profit comparison methods (TTNMM/CPM), and Profit-split methods (PSM). See Elizabeth Shi, China’s New Transfer Pricing Regulations, (ECOVIS Beijing, 15 November 2016) at <http://www.ecovis-beijing.com/en/blog-en/articles/762-china-s-new-transfer-pricing-regulations>.

⁷⁶ In this regards, the OECD Transfer Pricing Guidelines set forth five specific methods to be used to determine whether the conditions of controlled transactions are in line with the arm’s length principle: (1) the comparable uncontrolled price method (CUP method), (2) the resale price method, and (3) the cost-plus method; (4) the transactional net margin method (TNMM) and (5) the transactional profit split method. These five methods represent the ‘international consensus’ on the manner of applying the arm’s length principle. Centre for Tax and Policy Administration, Transfer Pricing Method (July 2010) OECD <<http://www.oecd.org/ctp/transfer-pricing/45765701.pdf>>, 2.

⁷⁷ See Article 22 of 第二十二条 其他符合独立交易原则的方法包括成本法、市场法和收益法等资产评估方法，以及其他能够反映利润与经济活动发生地和价值创造地相匹配原则的方法。

allows the tax authorities to apply any other methods that could ‘align profit with economic activity and the creation of value’.⁷⁸

This is clearly in line with the OECD’s recent position on transfer pricing. The *OECD BEPS Action Plan* obligates member countries to adopt ‘a coordinated and compressive manner’ to address aggressive international tax planning, and to provide countries with ‘instruments that will better align rights to tax with economic activities’.⁷⁹ In other words, through the *Public Notice 6* [2017], China has reaffirmed the adoption of a very important OECD principle for international tax jurisdiction justification, that is, ‘*profits are taxed where the economic activities generating the profits*’.⁸⁰ This principle arguably sets up a foundation for the SAT to conduct Transfer Pricing analyses within and outside the cloud environment.

Moreover, in line with the recent position of the OECD,⁸¹ the Public Notice 6 also reaffirmed the importance of the ‘*profit split method*’ (by introducing detailed provisions on the implementation of the profit split method— Article 21), and asserts that it is feasible to use the ‘value chain analysis’ and ‘*transactional profit split method*’ to determine the arm’s length price,⁸² particularly in situations where both parties make unique and valuable contributions to the transaction.⁸³ It contends that the profit split methods may be viewed as a means of achieving “*a closer alignment between profits and value creation.*”⁸⁴ Article 21 further provides some profit-splitting factors, which show a strong correlation with value creation (such as value contribution related incomes, cost, expense, capital, and employee number), to facilitate the implementation of the profits split method to determine the arm’s length price.⁸⁵

In the cloud-computing context, the adoption of the profit split method would arguably increase the SAT’s ability to prevent a MNE from engaging in tax planning that results in BEPS. When a *profit split method* is used, a taxpayer is obliged to prove that its ‘allocation of residual profits’ is in line with the ‘substantive functions’ that created the MNE’s residual profits. This means that the taxpayer cannot allocate a significant portion of its profits to a low-tax affiliate if the affiliate provides non-routine services and owns the non-routine intangibles. For example, if a

⁷⁸ <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-global-transfer-pricing-alert-17-012-6-april-2017.pdf>

⁷⁹ Organization for Economic Cooperation & Development, Action Plan on Base Erosion and Profit Shifting (hereinafter OECD BEPS Action Plan) (2013) 10, 11 <<http://www.oecd.org/ctp/BEPSActionPlan.pdf>>; See also Mazur, above, 646.

⁸⁰ Mazur, above n **Error! Bookmark not defined.**, 679. See also OECD, Aligning Transfer Pricing Outcomes with Value Creation, , 20-21 (‘Functional Analysis’ section).

⁸¹ In relation to the proper Transfer Pricing methods for determining Arm’s Length price, the OECD’s Report Action 1 on Tax Challenges of the Digital Economy asserts that the ‘profit split method’ may be more reliable than traditional one-sided methods in certain circumstances, particularly where the features of the transaction makes the application of other Transfer Pricing methodologies problematic. See OECD, Action 1 on Tax Challenges of the Digital Economy -2015 Final Report (2015), 92. See also OECD, Aligning Transfer Pricing Outcomes with Value Creation, above n 55 (‘Scope of Work for Guideline on the Transactional Profit Split Method’ session stated: ‘... the consultation process confirmed the transactional profit splits can offer a useful method which has the potential when properly applied, to align profits with value creation in accordance with the arm’s length principle and the most appropriate method, particularly in situations where the features of the transaction makes the application of other transfer pricing methodologies problematic’). See also Ibid 57-8

⁸² Article 21 of the Public Notice 6.

⁸³ See Article 21 of the Public Notice 6. See also OECD, Aligning Transfer Pricing Outcomes with Value Creation, above n **Error! Bookmark not defined.**, 57.

⁸⁴ Ibid 55 (stated ‘Action 10 of the BEPS Action Plan invites clarification of the application of Transfer Pricing methods, in particular the transactional profit split method, in the context of global value chain’); See also Christiana HJI Panayi, Advanced Issues in International and European Tax Law (Hart Publishing, 2015) 121-9 (stated ‘It was conceded in the Profit Split Discussion Draft that transactional Profit split methods may be viewed as a mean of achieving closer alignment between profits and value creation’)

⁸⁵ Article 21 --当难以获取可比交易信息但能合理确定合并利润时，可以结合实际情况考虑与价值贡献相关的收入、成本、费用、资产、雇员人数等因素，分析关联交易各方对价值做出的贡献，将利润在各方之间进行分配。

cloud service provider (CSP) cannot explain how its tax haven's activity has functionally contributed to the creation of residual profits (e.g. the CSP company registered in the tax haven did not have any substantive business functions there), it would receive a zero allocation.⁸⁶ The Public Notice 6 has arguably increased the burden of proof of MNEs in justifying its cloud-related transfer pricing arrangements.

C. Remarks and Limits

In summary, Public Notice 42, Public Notice 64 and Public Notice 6 clearly show that the SAT is paying attention to technical positions regarding intangible assets, related-party services, and value chain analyses. They also show that the SAT is paying more attention to related-party transactions and transfer pricing policies of Chinese-headquartered MNEs.⁸⁷ As some commentators observed, China has 'a clear focus on identifying transactions where the Chinese company has not been adequately remunerated for its contribution to value creation, intangible development, or service provisions'.⁸⁸

Under the current cloud environment, it is not an easy task for tax authority to understand the operation of a multi-national group's global valuation chain, and to accurately locate the value drivers. A successful application of the 'profit split method' for the arm's length pricing assessment arguably requires full cooperation of a MNE group (as a whole) rather than a cooperation of a taxpayer (the MNE's affiliated company) within a single tax jurisdiction. It is clear that the SAT has made remarkable progresses in implementing the recommendations under the *OECD BEPS Action Plan* to reform the existing Chinese tax standards to address BEPS, including cloud-related BEPS, and contributing to restore the balance and fairness of an international taxation regime. Through detailed provisions, three Public Notices have arguably strengthened the investigation and enforcement power of the SAT combating against BEPS, and have helped to at least minimize some of the current transfer pricing strategies for artificially shifting profits related to intangibles. Nevertheless, instead of offering a complete alternative solution, to a large extent, the SAT continues to rely on the long-standing Arm's Length principle. As a result, some inherent problems/challenges for tax authorities to implement the Arm's Length principle remain unchanged, such as (1) the difficulty of identifying appropriate comparables, (3) the difficulty in understanding the operation of MNE's business structure and global value chain, and (2) the lack of information on MNE's transactions on intangibles. These arguably limit the effects of the Chinese new transfer pricing rules in minimizing BEPS both within and outside of the cloud context. In addition to legal solutions, this article next examines the recent developments in blockchain technology and explores the possible technical solutions for addressing transfer pricing challenges in and outside cloud environment.

IV. Technical Solutions – Blockchain as a Supplementary Solution

A. Blockchain or Distributed Ledger Technology: Key Features

⁸⁶ See Wells & Lowell, above note **Error! Bookmark not defined.**

⁸⁷ See <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-global-transfer-pricing-alert-17-012-6-april-2017.pdf>

⁸⁸ See <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-global-transfer-pricing-alert-17-012-6-april-2017.pdf>

Blockchain is not bitcoin, but is a platform on which the bitcoin (or other cryptocurrencies) network and other applications run. Blockchain is a 'decentralised ledger, or list, of all transactions across a peer-to-peer network'.⁸⁹ A ledger is a book in which transactions are recorded by the company. However, blockchain is not just a financial ledger but a multipurpose ledger which may record operational, financial, qualitative or quantitative aspects of particular transactions or arrangements.⁹⁰ In plain language, Blockchain or Distributed Ledger Technology (DLT) is 'a ledger distributed or shared over computers of several parties who might be participants of particular transactions or arrangements'.⁹¹ These parties may become blockchain participants, which share a common ledger. Each participant in blockchain may be able to broadcast and record the attributes of a particular transaction on the ledger.

When a transaction is recorded, the transaction is recorded with a timestamp in the distributed ledger simultaneously across several computers which may belong to blockchain participants. Once the transaction is recorded on a blockchain, it is not reversible. In other words, a transaction on a blockchain is permanent in nature. It is technically impossible to change a recorded transaction on blockchains. As blockchains are spread over several computers of blockchain or DLT participants on the Internet, a single system crash or failure will not result in a loss of transaction records. Baş and Gündüz made a fine summary of Blockchain's core attributes, which gives it significant potential for use in tax, as follows: (1) *Transparency*: blockchain provides provenance, traceability and transparency of transactions; (2) *Control*: access to permissioned networks is restricted to identified users; (3) *Security*: the digital ledger cannot be altered or tampered with once the data has been entered. Fraud is less likely and easier to spot; (4) *Real-time information*: when information is updated, it's updated for everyone in the network at the same time.⁹² It is clear that the application of blockchain may significantly improve the transparency of supply chains and ensure robust internal controls of MNEs.

Further, blockchains can be programmed with business logic to validate only certain types of transactions and automate such transactions, when conditions are met (that is, 'smart contracts'). Similarly, the payments for transactions can be automated under the same business logic (in the case that the programmed conditions are satisfied, which is also known as 'smart payments'). The ability of blockchains to execute smart contracts and automate smart payments could be a major application for MNE groups in their cross-border transfer pricing activities.

B. Application of Blockchain Technology to Multinational Transfer Pricing

In a recent study, Wagh provides some fine suggestions in relation to how blockchains may contribute in combatting Multinational Transfer Pricing.⁹³ Put simply, it mainly includes two aspects: (1) facilitating MNE's compliance with transfer pricing rules; and (2) facilitating tax authorities' enforcement of transfer pricing rules. This article next examines how these may affect transfer pricing on the cloud-related transactions.

First, blockchain or DLT technology may facilitate the MNEs' compliance of transfer pricing rules, particularly, the Arm's Length principle. More specifically, for transfer pricing purposes,

⁸⁹ <https://www.pwccn.com/en/industries/financial-services/publications/qa-what-is-blockchain.html>

⁹⁰ [Wagh, 2017]

⁹¹ [Wagh, 2017]

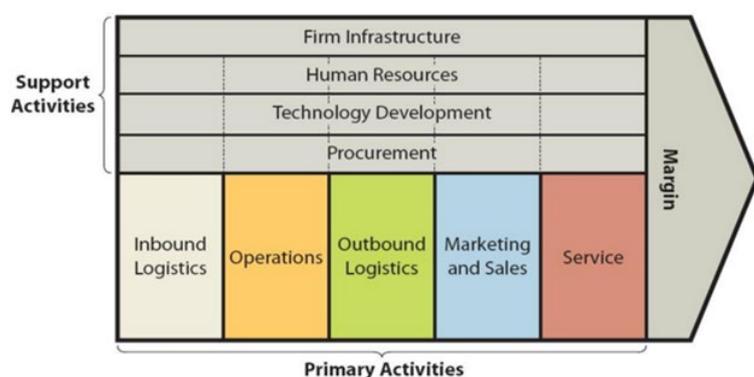
⁹² Baş and Gündüz, 'How blockchain technology could improve the tax system', PWC at

<https://www.pwc.com.tr/en/sectorler/teknoloji/yayinlar/blockchain-teknolojisi-vergi-sistemini-nasil-gelistirebilir.html>

⁹³ [Wagh]

all subject transactions happen between associated enterprises in a MNE group. Therefore, the DLT can be used to facilitate relevant transactions will be private DLT or Blockchain. The ledger will be a closed shared ledger, which may only be shared with the DLT participants who are the parties of relevant intra-group arrangements or transactions (security feature of blockchain).⁹⁴ Blockchain or DLT can be used as a sound platform when the supply chain participants in respect of a particular end product or service consist only of associated enterprises (no external enterprises involved). For example, where an entire supply/value chain of a product or service consists of associated enterprises, all such associated enterprises⁹⁵ would be the participants or nodes of a private blockchain.

Supply/value-chain analysis is ‘an analytical framework that assists in identifying business activities that can create value and competitive advantage to the business’.⁹⁶ Porter and Millar provide a ‘framework for analysing the strategic significance of the new information technology on how the companies operate internally as well as the relationship among companies and their suppliers, customers and rivals’.⁹⁷



Using a cloud-based software as an example, in line with the Porter’s framework, the associated enterprises on the value chain may include: infrastructure service providers (IaaS), procurement service providers, technology developers (e.g. programmer and software developers), logistics support service providers, marketing service providers, and distributor and post-sale service providers in relation to the end cloud-based software product or service. The application of blockchains will ensure that each movement of products or services across the entire supply chain is tracked, and the entire journey of the product or service through the supply chain life cycle is broadcasted and recorded on the ‘distributed ledger’, which is accessible to all blockchain/DLT parties (associated enterprises) in the cloud-base software supply chain of the MNE group.⁹⁸ Such a ‘distributed ledger’ will be highly effective for a MNE group to control inter-company transfer pricing because the MNE group is in position to program certain ‘business logic’ in the blockchain in advance, and can ensure that transfer pricing policy and

⁹⁴ For business confidentiality purpose, a MNE group will normally adopt a private blockchain rather than an open public Blockchain network (in which the common ledger can be accessible to general public, including the parties not related to the subject transactions or arrangement)

⁹⁵ (i.e. entities of group across the world are raw material procurement service provider, logistics support service provider, contract manufacturer, distributor etc. in relation to single product/service),

⁹⁶ See also John Dudovskiy, Microsoft Value-Chain Analysis (11 May 2017) Research Methodology at <http://research-methodology.net/microsoft-value-chain-analysis-2-2/>

⁹⁷ See Pasi Tyrväinen, A Reference Model for Software Business Activities, at <http://users.jyu.fi/~pttyrvai/papers/RMSBA.pdf>, 4.

⁹⁸ In addition to improving operational efficiency and supply/value chain transparency

⁹⁹ Sagar Wagh

terms and conditions of the intragroup transactions is properly programmed for the blockchain.⁹⁹

More specifically, the 'smart contract' function of blockchains (as introduced above) allows the blockchain to operate on a 'if – then' condition, that is, a contract between related enterprises will be executed only if the 'if - then' condition is satisfied. Further, 'smart payment' application of blockchains (as introduced above) ensures that the payments will be processed automatically on the blockchain 'only if' the transaction is recorded as per the pre-determined transfer pricing policy.

For example, when developing a cloud-based software, Company A (a software developer) may require the use of a software development platform (PaaS) and network infrastructure services (IaaS), which enable 1 million online software users to use Company A's software, from Company B (the cloud service provider). The smart contract function of blockchains will ensure that the contract will be executed 'only if' Company B is able to broadcast that Company B has the capacity to provide the PaaS and IaaS which can support 1 million online software users. Further, assuming that the MNE group's transfer pricing policy requires that Company B has to charge its users 'cost plus 15 per cent' on the service it provided, Company B will have to raise the invoice for its user (i.e. Company A) providing details of its costs and associated mark-up which is consistent with the requirements of the transfer pricing policy. The smart payment function of blockchains will ensure that the payment can be automatically released from Company A to Company B, only if the invoice and relevant details broadcasted on the distributed ledger meet the MNE's transfer pricing policy.

In summary, the blockchain technology, particularly the applications of smart contracts and smart payments, may help the MNE group to directly monitor and control their inter-company transactions in the entire value chain worldwide.

Second, blockchains can facilitate tax authorities' enforcement of the transfer pricing rule. This can be achieved when the DLT would have reached maturity stage, and tax authorities have been given access to distributed ledger records to audit the transactions. As introduced above, so long as tax authorities can obtain the access to the distributed ledger in the MNE's blockchain, they can certainly take advantages of the core features of blockchain technology, such as Transparency, Control, Security and Real-time information (as introduced above). The improved transparency of the supply chain (through the application of blockchain) would arguably significantly improve the capability of tax authorities in conduction transfer pricing analysis, particularly in the applications of the value chain analysis, and the Profit Split Method (introduced above).

C. Comments and Remarks

It is clear that the application of blockchain technology may help both tax authorities and headquarters (HQ) of MNEs to centrally have a complete picture and control of all the intra-group transactions, and to implement the transfer pricing rules. However, as Wagh pointed out, most of these suggestions are based on the assumption of the 'maturity' of blockchains, and the

recommendations on the involvement of tax authorities in the MNE Group's blockchain DLT is even turning more towards 'super futurism'.¹⁰⁰ For example, in order to add tax authorities as one of DLT participants of the distributed ledger of a MNE group to conduct real time transfer pricing audit of inter-company transactions, the revision of relevant transfer pricing regulations as well as creation of necessary governmental infrastructure of blockchain may be required.

Nevertheless, blockchain, as one of most promising technologies, is developing at a rapid pace. Some blockchain related transfer pricing solutions may become reality in the near future, particularly in China. As many commentators observed, China is emerging as 'a key nation for blockchain technology and has the potential to become its largest market'.¹⁰¹ Based on the data provided by the Australian Trade and Investment Commission, in 2016, the total amount of digital payments in China has reached \$5.5 trillion, which is 50 times that of the USA.¹⁰² Chinese technology companies, financial institutions, government and companies across a wide spectrum of industries are exploring blockchain solutions as part of the Internet of Things (IoT) and as a driver of innovative economy. China is 'setting the pace in global blockchain development' with blockchain technology emerging as a potential disruptive force'.¹⁰³ Therefore, the new technical solutions, such as blockchain solutions, are very possible to succeed in China first.

V. Conclusion

This article examined the major forms of cloud-transfer pricing activities by MNEs, and the main challenges for implementing transfer pricing rules in the cloud environment. It then explored the progress in the implementations of the *OECD BEPS Action Plan* in China, in particular, the recent development of the Chinese transfer pricing regulations, such as Public Notice 42, Public Notice 64, and Public Notice 6. It also examined the implications of these new transfer pricing rules to the cloud-related MNEs operating in China. Both advantages and limits were examined. In addition to legal solutions, it explored the possibility to apply the new blockchain technology to address the cloud-related transfer pricing problems by MNEs.

The author contends that the blockchain may serve as an important supplementary solution for current legal solutions to combat against increased complicated transfer pricing activities by MNEs in and outside of the cloud environment. Given the rapid progress of blockchain and cloud technology in China, these new blockchain solutions for transfer pricing may first succeed in China. It contends that it is imperative to make legal solutions and technical solutions work collectively to address the transfer-pricing problem in the ever-changing cloud computing and digital economy environment.

¹⁰⁰ Sagar Wagh

¹⁰¹ <http://www.steptoe.com/blockchain>

¹⁰² See https://www.austrade.gov.au/EventViewBookingDetails.aspx?Bck=Y&EventID=25047&m=0|0#/event?_k=lrbuf2

¹⁰³ *Ibid.*

