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ABSTRACT

As a part of BEPS Project, OECD published 15 Action plans to equip government with domestic and international instruments to address tax avoidance, ensuring that profits are taxed where economic activities generating the profits are performed and where value is created. As the anti-avoidance system should be made by the government, where each government introduces a reasonable legal system corresponding to the purport of BEPS Project, there would be no controversial issues between governments. However, it is thought from empirical perspective that the international community will have to get over many difficulties derived from unavoidable disputes ("tax war") between states.

Currently digital service tax is becoming a controversial issue all over the world. Especially European Commission ("EC") proposed a new rule for digital service business. EU's digital tax is going to be applied to the revenue derived from each state at a rate of 3%. In case where EU imposes 3% of digital service tax on digital service companies, they are subject to taxation and requirement which is more burdensome than EU companies. Thus, it is directly against the non-discrimination principle Paragraph 1, Article 24 of the OECD Model Tax Convention. Also EU's proposal wouldn't be reasonable from the standpoint of "principle of matching costs with revenues." EU's proposal can force even a deficit company to pay tax only to EU.

Digital service companies which EU is targeting are mostly the U.S. enterprises and thus the possibility of tax war between EU and the US is increasing. The international community should find out a reasonable solution which can be agreed upon by member states in order to avoid such an unnecessary tax war between states.

The reason why EU could not help making such a proposal is that the current OECD e-commerce rule has a limitation in preventing the tax avoidance activities of digital business MNEs. The e-commerce PE issue has been discussed since 1996. The OECD determined to treat servers as PEs, rather than web pages and inserted the related rules in the Commentary on Article 5 of the OECD Model Tax Convention. However, several authors have criticized this new category of PE since it is inaccurate in linking a geographical place with activities that produce income and it is easy to manipulate.

The OECD studied the "virtual PE" theory as an alternative nexus that would apply to electronic commerce operations. Then, the PE definition was extended to include concept such as "virtual fixed place of business", "virtual agency" and "on-site business presence." But the OECD concluded that it would not be appropriate to dramatically change the PE concept to include such notions and there did not seem to be actual evidence that the communications efficiencies of the Internet had caused any significant decrease to the tax revenues of capital importing countries.

The discussions of e-commerce virtual PE could not give OECD member states a satisfactory solution. In the meantime, Google UK triggered a controversial issue in relation to its business activities in UK and the e-commerce issue is now spreading all over the digital business. Therefore, the European Commission ("EC") proposed new rules to ensure that digital business activities are taxed in a fair and growth-friendly way in the EU on 21 March 2018.

Under the current e-commerce rule, *the place where that server is located could constitute a permanent establishment of the enterprise*. According to Commentaries 125 and 127, Article 5 of 2017 OECD Model Tax Convention, a server becomes a permanent establishment regardless of whether or not there is a person who manages the server.

A digital service company can shift its server easily from one place to another place. Also, as a server can be operated by remote control, it is possible not to have a server manager in the country where a server is located. Thus, it is not reasonable to determine a PE only based on the location of a server from the standpoint of business functions and risk burdens.

Commentary 127 treats a server in the same way as automatic pumping equipment in order to justify a server PE. But a server is quite different from automatic pumping equipment in terms of taxation approach. Thus, it is very inappropriate to justify a serve PE in such a way.

The business activities of a digital service company consist of "R&D activity" and "Sales activity" widely. A server is just a by-product of R&D activity. Thus, it would be appropriate that its whole business income should be allocated between R&D activity entities and sales activity entities on a reasonable basis considering their functions and risk burdens. A server is currently being used as a PE conduit for tax avoidance because the current OECD commentaries relating to electronic commerce acknowledge it. Accordingly the current Commentaries shall be revised. This thesis contains detailed case analyses on this matter.

Every tax treaty has a PE rule. Article 5 of OECD Model Tax Convention does not treat the activities of 'preparatory or auxiliary character' as a PE which is a taxable entity. The reason why a tax treaty has a PE rule is to ascertain whether or not foreign enterprises' certain activities in a specific state come under a PE activity within that state and thus can be a taxable entity. A liaison office is not a taxable entity. If a liaison office performs business activities which are not preparatory or auxiliary character, it becomes a taxable and the tax authority issues a business ID number by authority to collect a corporate tax, etc.

What if a sale supporting subsidiary 'X' exercises an authority to conclude a contract for a foreign parent company? Should we treat this subsidiary in the same way as a liaison office? The answer is probably not. In that case, it would be reasonable for the tax authority to make an additional TP adjustment against X using a TP approach since it has already a business ID number. Thus, additional issuance of a business ID number (for PE) to X's office would be redundant.

Likewise, in case where the business activities of a digital service company lead to a PE issue, transfer pricing approach is more reasonable rather than a PE approach because a digital business MNE already has a subsidiary (taxable entity) in a state in issue and to secure reasonable taxing rights is available under this approach. This thesis contains detailed case analyses on this matter.

A server can always be used as a "PE conduit" for tax avoidance by MNEs under the current OECD e-commerce rule. And such a PE issue can occur only when a digital MNE has a 100% subsidiary or a branch which provides sales support activity, etc. (a kind of disguised activity). If the activity of a subsidiary or a branch leads to a PE issue, it is reasonable to use the above transfer pricing approach and thus the current PE approach rule on a digital business MNE shall be substantially revised.

If a PE conduit were a joint venture, it would be possible to use a 50% ownership threshold because such a planning is not possible unless a parent company has a majority ownership.

R&D activities are very important to MNEs. MNEs which require a technology for their business cannot survive in the market without R&D activities. Thus, most of MNEs actively get involved in R&D activities. A patent is an output of R&D activities. MNEs often shift their patent into tax heaven areas in order to save related taxes. For that purpose, they conclude a contract between related parties for migration of a patent. Contracting activity is just a paper work.

Is this kind of IP immigration reasonable from the standpoint of international taxation and equity? The answer would be no. Thus, it would be desirable for the international community to prevent this kind of transaction between related parties. If a subsidiary in a tax heaven state were a joint venture, it would be possible to use a 50% ownership threshold because such a planning is not possible unless a parent company has a majority ownership. This thesis contains detailed case analyses on this matter.

In addition to the digital service tax, it is expected that transfer pricing ("TP") would become another controversial issue under the BEPS project. Since transfer pricing affects the taxing right of each government, there is a high possibility that each tax authority will try to unreasonably its taxing right based on unreasonable approaches as always.

A TP very often leads to a functional, legal and statistical analysis issue and the analysis process makes the TP issue more complex because transfer pricing is not an exact science.

As the functional analysis is performed by the pure business fact analysis against a tested party, it is less controversial. The legal issue is also less controversial. On the other hand, the statistical approach very often leads to a controversial issue.

The statistical analysis performed by MNEs is a non-standardized process. The OECD TP guidelines and domestic TP rules of each state do not have a detailed rule concerning the statistical analysis. Thus, it very often leads to a controversial issue between MNEs and tax authorities.

The statistical analysis should go through several steps. The problem is that it can be a controversial issue between MNEs and related tax authorities since there is no detailed rule concerning the statistical analysis. Thus, standardized rules concerning statistical al analysis are urgently required in order to eliminate an unnecessary tax dispute.

In the past, MNEs generally performed a statistical analysis using the local data base of a tested party since the local tax authority tended to request the use of local data base. One of principal reasons for such request is because it was not easy for tax auditors to verify the data base of another state. However, the situation has been changed with the introduction of BEPS Project. Under the BEPS Project system, MNEs should submit their BEPS reports to all related tax authorities.

MNEs are now filing their BEPS Project report in a various way. A certain MNE files its BEPS Project report using "local data base" and another MNE files its BES Project report using "global data base." Therefore, there could be a substantial difference between "local data" and "global data" in terms of analysis result (interquartile profit ratio).

MNEs (or their professional firms) generally perform a statistical analysis by manual work. In case where MNEs perform a statistical analysis by manual work, they should invest substantial time on their analysis work.

Analysis work consists of several steps as follows: 1) selection of SIC, 2) download of necessary data, 3) selection of proper data, 4) application of elimination criteria and selection of comparable companies, 5) capital adjustment on selected comparable companies, 6) review of capital adjustment result, 7) drawing up of appendix. Especially steps 3), 4), 5) and 7) require substantial time.

When it comes to 5) capital adjustment which especially requires a lot of time, MNEs use the excel sheet templet for it and the excel sheet work requires a lot of time. In addition, the accuracy of analysis is not guaranteed in case where there are many comparable companies which require a capital adjustment.

Where a MNE uses "global data base", the number of comparable companies naturally increases compared to "local data base" because the area of data base is broad. Thus, the number of a comparable company increases and capital adjustment work becomes more and more difficult and complex. Also, the accuracy of capital adjustment is not guaranteed because manual work on many comparable companies necessarily causes errors.

If a MNE should perform the statistical analysis whenever tax authorities tackle the statistical analysis result, it would be a big burden. Tax authorities should also spend a lot of time in order to review the appropriateness of analysis result.

The below table clearly shows a difference between automatic data analysis work and manual data analysis work in relation to the steps 3), 4), 5) and 7).

	Automatic	Manual
3) Selection of proper data	Time consuming	Time consuming
4) Application of elimination criteria & selection of comparable	Automatic	Time consuming
5) Capital adjustment	Automatic	Time consuming
7) Drawing up of appendix	Automatic	Time consuming

In case of automatic analysis, a MNE spends substantial time only on the selection of proper data (comparable companies). Once the proper data is selected, the steps 4), 5) and 7) are performed automatically. An analysis worker just clicks buttons or inserts figures on the screen in order to fulfill a necessary step. Once the analysis work is finished, the appendix which contains the details of analysis work is made automatically.

Let's assume that a MNE uses an automatic analysis tool above and submit its analysis result to related tax authorities by an electronic system and tax authorities have the same automatic analysis tool. Further assume that a MNE chose 50% ownership and 3% R&D expense/net sales. However, a certain tax authority argues that a MNE should have chosen 70% ownership and 5% R&D expense/net sales.

In that case, it is possible for a MNE and tax authority to efficiently review the submitted file. Both parties can discuss the issue by a conference call. Once tax authority changes elimination criteria chosen by a MNE using an automatic analysis tool, tax authority can immediately confirm an analysis result under the changed elimination criteria. Thus, both parties can discuss the issue efficiently within a very short time. Likewise, where disputes between tax authorities take place, they can discuss the issue efficiently.

In case where a MNE performs a TP analysis by using an automatic analysis tool, the analysis process is stored within an automatic analysis tool and can be easily confirmed anytime.

Let's assume that a MNE performed a TP analysis by an automatic analysis tool and submitted it to tax authority in December 2018, and then tax authority performs a tax audit on this MNE 5 years later, that is, in the year 2023. In that case, tax authority can easily confirm the analysis process (and its result) which was done in December 2018 5 years later. The analysis result made in the year 2018 is stored in the computer (automatic analysis tool) and is not changed.

On the other hand, the manual analysis work by an excel sheet is very complex and thus it is very difficult for tax authority to confirm its details and errors. Thus, there is a high possibility of dispute between taxpayers and tax authorities and both parties must consume a lot time to resolve the dispute.

What is more, in case where tax authorities receive a unified electronic data from all MNEs, it is possible to efficiently manage cross-border transactions by comparing and analyzing the submitted data.

Thus, the international community needs to actively discuss the introduction of automatic analysis system in order to increase the transparency and reasonableness of cross-border transactions and eliminate the unnecessary tax disputes.

Contents

I. Introduction

OECD/G20 introduced BEPS Project in 2016 in order to prevent "base erosion and profit shifting ("BEPS"). Since then, the international community is making a great effort to adjust to this new system. However, it is thought from empirical perspective that the international community will have to get over many difficulties derived from unavoidable disputes ("tax war") between states.

OECD published 15 Action plans to equip government with domestic and international instruments to address tax avoidance, ensuring that profits are taxed where economic activities generating the profits are performed and where value is created and the 15 Action plans are classified as follows:[1]

Action 1(Digital Economy), Action 2(Hybrids), Action 3(CFC Rules), Action 4(Interest Deductions), Action 5(Harmful Tax Practices), Action 6(Treaty Abuse), Action 7(Permanent Establishment Status), Action 8-10(Transfer Pricing; Intangibles, Risks & Capital, High-Risk Transactions), Action 11(BEPS Data Analysis), Action 12(Disclosure of Aggressive Tax Planning), Action 13(Transfer Pricing Documentation), Action 14 (Dispute Resolution), Action 15(Multilateral Instrument).

The above Action plans are intended to make a necessary anti-avoidance system from the standpoint of the global community. As the anti-avoidance system should be made by the government, where each government introduces a reasonable legal system corresponding to the purport of BEPS Project, there would be no controversial issues between governments.

However, although the global community could eliminate problems such as tax avoidance, double taxation and double non-taxation through a well-prepared system, it cannot still help facing a difficult issue in allocating taxing right between related states.

Currently digital service tax is becoming a controversial issue all over the world. Especially European Commission ("EC") proposed a new rule for digital service business. EC stated it is to ensure that digital business activities are taxed in a fair and growth-friendly way in the EU.

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[1] Refer to http://www.oecd.org/tax/beps/beps-actions.htm (Last visit on 3 January 2019)

It thinks that an estimated €5 billion in revenues a year could be generated for Member States if the tax is applied at a rate of 3%. Digital service companies which EU is targeting are mostly the U.S. enterprises. Thus, it wouldn't be easy that the United States agrees with EU on this matter. From the standpoint of "principle of matching costs with revenues", EU's proposal wouldn't be reasonable. EU's proposal can force even a deficit company to pay tax only to EU.

If that is the case, the international community should find out a reasonable solution which can be agreed upon by member states in order to avoid an unnecessary tax war. But it is likely that making out such a solution under the current electronic commerce rule is not easy. Thus this thesis focuses on seeking out such a solution.

In addition to the digital service tax, transfer pricing would become another controversial issue. Once the BEPS project system is put into an active operation, it is expected that each state would try to maximize its taxing right. Since transfer pricing affects the taxing right of each government, there is a high possibility that each tax authority will try to unreasonably its taxing right based on unreasonable approaches as always.

As problems such as treaty shopping, double taxation and double non-taxation are a purely legal issue, related tax authorities could handle these issues with comparative ease through a legal and fact analysis. However, when it comes to transfer pricing, tax authorities tend to be more aggressive since a TP issue directly determines the taxing rights of each tax authority. What is more, a TP very often leads to a *functional, legal and statistical analysis* issue and the analysis process makes the TP issue more complex because transfer pricing is not an exact science. The reason why transfer pricing lacks exactness is that the comparable analysis is normally performed through an inexact and non-standardized statistical approach.

As the functional analysis is performed by the pure business fact analysis against a tested party[2], it is less controversial. On the other hand, the statistical approach very often leads to a controversial issue because Multinational Enterprises ("MNEs") perform the comparable analysis through a *non-standardized process* such as "selection of data base"[3], "determination

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[2] An entity which should prepares a TP document. The entity normally becomes a subsidiary or a branch.

[3] MNEs use Thomson Reuter data base, Bureau Van Dijk data or each local data base for their BEPS reporting.

of comparable data selection area"[4], "selection of SIC type"[5] and "set-up of elimination criteria".[6] That is why disputes between tax authorities and taxpayers are unavoidable. Thus, the global community should prepare for a systematic mechanism in order to minimize the tax war between tax authorities (including taxpayers). This thesis focuses on how the global community should manage this important issue.

II. International Disputes which are on the Rise

1. My Way Approach of the United States and the European Union

Just as every nation has a domestic legal system for its national administration, the international community needs a legal system for its international administration. Since every nation has a different cultural and historical background, it is not easy to create a unified legal system that satisfies each country's needs. Nevertheless, the international community has made an effort to create a legal system that harmonizes the cultural and historical differences between nations, and as a result of these efforts, international organizations like the United Nations, the World Trade Organization, and the Organization for Economic Co-operation and Development have been created. These international organizations are currently performing the global community's most important functions.[7]

During that time, the international community has operated these organizations and made necessary rules in an amicable way. But recently the international community is heading toward an undesirable direction overriding the existing rules which have been cherished by member states.

For example, the United States often exercises its power unreasonably in the international community and it makes UN member states uncomfortable. One example is that President Trump acknowledged Jerusalem as a capital of Israel in spite of the strong objection of UN member states. In addition, in spite of strong resistance from trade partner states, the United

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4 Comparable companies can be selected from several places such as Africa, America, Asia or Europe.
5 MNEs use US SIC, NAICS or local SIC.
6 Various criteria such as ownership, advertising expense, R&D expense and operating income loss are being used for elimination of non-comparable companies.
7 Han, Sung-Soo, *A Study on the Development of a Global Community from a Legal Perspective*, International Law & Management Review, at 74, (Winter 2010)

States is causing a trade war without hesitation by using customs duty bomb on steel and aluminum.[8]

What about EU? European Commission proposed a new rule for digital service business. It thinks that an estimated €5 billion in revenues a year could be generated for Member States if the tax is applied at a rate of 3%. However, from the standpoint of "principle of matching costs with revenues", EU's proposal wouldn't be reasonable. EU's proposal can force even a deficit company to pay tax only to EU.

If the international community does not resolve these kinds of matters efficiently, it is expected that disputes between member states continue to increase and as a result the international community could face an unhappy situation in the near future because there is no system to control wrongdoings.

2. Undesirable Trade War

With the appearance of Trump administration of the United States in January 2017, the international community is facing a new difficult situation because President Trump pushes forward "America First" policy.

As a part of his policy, Trump administration agreed to amend and modify the U.S.-Korea Free Trade Agreement (KORUS) with the Korean government on September 3, 2018. Since the KORUS went into effect in 2012, the U.S. trade deficit in goods with Korea increased by over 73 percent from $13.2 billion to $22.9 billion (2017), while the overall deficit increased by 70 percent from $6.3 billion to $10.7 billion (2017). Through negotiations to improve KORUS, the U.S. Trade Representative has secured changes that will reduce the trade deficit and ensure that KORUS is a good deal for U.S. workers and businesses.[9]

And then, President Trump got his wish for a significantly revised North American trade deal. After more than a year of intense negotiations, the United States, Canada and Mexico reached

[8] Han, Sung-Soo, *A Solution to North Korea Nuke & Korean Peninsula Unification Issue, and Reform of the UN Operation System*, 14 March 2018, http://www.sungsoohan.com/?p=3308 (Last visit on 12 January 2019)

[9] Office of the United States Trade Representative, https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2018/march/new-us-trade-policy-and-national (Last visit on 9 January 2019)

an agreement to update the North American Free Trade Agreement, the 1994 pact that governs more than $1.2 trillion worth of trade among the three nations. The new deal won't go into effect right away. Most of the key provisions don't start until 2020 because leaders from the three countries have to sign it and then Congress and the legislatures in Canada and Mexico have to approve it, a process that is expected to take months. The goal of the new deal is to have more cars and truck parts made in North America. Starting in 2020, to qualify for zero tariffs, a car or truck must have 75 percent of its components manufactured in Canada, Mexico or the United States, a substantial boost from the current 62.5 percent requirement. Canada also gave a greater market share to U.S. dairy farmers. Big drug companies gained more footing in Canada.[10]

In addition to the above amendment of FTAs, Trump administration is now waging a huge trade war with China. China and the US have embarked upon a full-scale trade war as both sides lob threats of new trade tariffs. On Tuesday July 10, 2018, President Trump's administration released a list of proposed tariffs on $200bn worth of goods, ranging from auto parts to food ingredients to construction material. On August 1, he asked his trade tsar to consider increasing the tariff on these goods to 25 percent. China has responded by wooing European businesses and politicians with improved market access and investment terms. That follows the imposition by the White House on July 6 of a 25 percent tariff on $34bn of imports from China, especially manufacturing components, which Beijing promptly matched with tariffs of its own, including U.S. soybeans. China and the US have both already imposed tariffs on steel, aluminum and some agricultural goods.[11]

Since then, the trade war is still in progress and nobody knows when the trade war between two states will end. The global community needs the WTO to assist in creating an open trading system. What is the value of an open trading system, and why should the global community strive to achieve it? The WTO posits the following argument:

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[10] See The Washington Post (1 October 1 2018) https://www.washingtonpost.com/business/2018/10/01/us-canada-mexico-just-reached-sweeping-new-nafta-deal-heres-whats-it/?noredirect=on&utm_term=.4a40d7f2e6ca (Last visit on 9 January 2019)

[11] Financial Times, *What's at stake in US-China trade war*, https://ig.ft.com/us-china-tariffs/ (Last visit on 9 January 2019)

> The economic case for an open trading system based on internationally accepted rules rests largely on commercial common sense and the experience of world trade and economic growth since World War II. Tariffs on industrial products have fallen steeply and now average less than five percent in industrial countries. During the first twenty-five years after World War II, world economic growth averaged about five percent per year, and this high rate was at least partly the result of lowering trade barriers. World trade grew even faster during this period, averaging about eight percent per year. The data show an unmistakable statistical al link between lower trade barriers and economic growth, and this link is supported by economic theory. All countries have assets — human, industrial, natural, and financial — that they can employ to produce goods and services for their domestic markets or for export. Economic theory predicts that nations "can benefit when these goods and services are traded."[12]

Thus, the WTO should continue to play an important role in the global economy and the development of a global legal system, especially since the WTO is already established in so many nations.

The Korea-U.S. FTA came into effect on March 15, 2012. Then the renegotiation of FTA between two countries started on October 4, 2017. That is, the initial FTA lasted only for five years and six months. On the contrary, the Korea-U.S. Tax Treaty was concluded in 1976 and remains in force for approximately 40 years. Is Trump administration's unilateral request for renegotiation (or termination) of FTA reasonable from the standpoint of the Vienna Convention on the Law of Treaties?[13]

The fundamental change of economic circumstances can affect both the FTA and the Tax Treaty between Korea and the United States. But Trump administration requested only the

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[12] Supra note 7, at pp.75~76

[13] Article 62 of the Vienna Convention (FUNDAMENTAL CHANGE OF CIRCUMSTANCES): 1. A fundamental change of circumstances which has occurred with regard to those existing at the time of the conclusion of a treaty, and which was not foreseen by the parties, may not be invoked as a ground for terminating or withdrawing from the treaty unless: (a) The existence of those circumstances constituted an essential basis of the consent of the parties to be bound by the treaty; and (b) The effect of the change is radically to transform the extent of obligations still to be performed under the treaty.

renegotiation of FTA. So it is not logical and reasonable. If the Korea government objected to the renegotiation, Trump administration might have terminated the Korea-U.S. FTA.

Does the US government have an intention to renegotiate FTA with Korea when Korea suffers a trade deficit with the U.S. in the future? The international community develops only when member states act based on trust. The same principle also applies to the alliance relationship between Korea and the United States.

Accordingly, it is never desirable for the US government to suddenly change its foreign policy and pursues the abolishment or re-negotiation of FTAs causing many problems to the international community including the United States. This is because the abolishment or re-negotiation of FTAs cannot resolve the structural problems of the US economy. The United States should seek a more reasonable and feasible approach to this problem in order to harmonize with the global community.[14]

Anyway, Trump administration's current goal is to decrease trade deficit. Thus, it is likely that in case where Trump administration accomplishes its goal to some extent, it would not wage an unreasonable trade war against the whole global community. The reason is because a further unreasonable approach could make America be left alone in the international community and drive America in a more difficult situation.

3. Undesirable Digital Service Tax Dispute

1) OECD Discussions of Electronic Commerce

a. Definition of Electronic Commerce

The Working Party on Indicators for the Information Society of the OECD has defined electronic commerce as the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or service do not have to be conducted online. An e-commerce

[14] Han, Sung-Soo, *"Trap of Trump Foreign Policy"*, http://www.sungsoohan.com/?p=2853 (Last visit on 17 January 2019)

transaction can be between enterprises, households, individuals, governments, and other public or private organizations.[15]

b. Permanent Establishment of Electronic Commerce

The government of the United States initiated the discussion in 1996 when the Treasury Department issued a report with the purpose of framing the policy challenges proposed by the electronic commerce. In 1998 the Canadian government issued two reports suggesting that a server might constitute a PE taking into account certain circumstances. As far as the OECD is concerned, the steps in reinterpreting the PE notion started in 1998 at the Ottawa Ministerial Conference on Electronic Commerce, where the member countries reached to an agreement regarding the principles that should guide the development of rules in international tax matters for the electronic commerce.[16] Taking into account these principles and the rapidly expansion of the electronic commerce, in 2003 the OECD included in the Commentary on Article 5 of the OECD Model Tax Convention the possibility to treat servers as PEs, rather than web pages, as long as substantial activities are perform through them. Several authors have criticized this new category of PE since it is inaccurate in linking a geographical place with activities that produce income and it is easy to manipulate.[17]

c. Virtual PE

Multinational Enterprises have exploited their digital presence to obtain significant income from different countries with low taxes, and in most of the cases without paying taxes. Thus,

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[15] OECD, Addressing the Tax Challenges of the Digital Economy (2014)

[16] Such principles are as follows: *Neutrality:* According to this principle, tax rules applicable to electronic commerce and conventional commerce should be neutral and the taxpayers in alike situations performing comparable transactions should be taxed in similar ways. *Efficiency:* Costs for both the taxpayers and the tax authorities should be diminished as far as possible. *Certainty and Simplicity:* The tax rules should be clear and simple to understand in order for the taxpayers to anticipate the tax consequences in advance of a transaction. *Effectiveness and Fairness:* The tax liability should be fair and accrued in the proper time and the potential tax avoidance should be reduced while keeping neutralizing measures proportionate to the risks involved. *Flexibility:* The tax rules should be flexible and dynamic to follow technological and commercial developments. Taking into account these principles and the rapidly expansion of the electronic commerce, in 2003 the OECD included in the Commentary on Article 5 of the OECD Model Tax Convention the possibility to treat servers as PEs, rather than web pages, as long as substantial activities are perform through them. (Arthur Cockfield, *"Reforming the Permanent Establishment Principle through a Quantitative Economic Presence Test",* 38 Can. Bus. L.J., 2003)

[17] Angela Carolina Vaca Bohorquez, *Virtual Permanent Establishment: An Approach to the Taxation of Electronic Commerce Transactions*, 2016, at p.89

it has led to proposals to redefine the PE concept. One proposal is the creation of the "virtual permanent establishment" to the current understanding (definition) of PE. Luc Hinnekens, author of this theory[18], proposed that the taxing nexus for electronic commerce should be "the continuous commercially significant conduit of business activity", rather than the fixed place of business. The virtual PE approach applies to the jurisdictional criterion for source-based taxation of profits. Furthermore, Hinnekens states that the modern PE definition should be "re-invented" in order to apply to electronic commerce the original idea of taxation on basis of economic allegiance and equivalence and establish common thresholds for differentiating commercial mainstream from auxiliary business activity. For such purpose, Hinnekens suggested (i) to extend the PE definition of Art. 5 of the OECD Model Tax Convention and (ii) to introduce a special article in the existing treaties allocating the right to tax profits from business over the Internet to their source state even in the absence of PE, much in the same manner as Art. 17 now provides for the taxation of artistes and sportsmen who may not maintain a permanent establishment anywhere in the state as long as they exercise their activity on its territory. Additionally, in order to determine if the taxing nexus is met, Hinnekes proposes the development of a qualitative and quantitative facts and circumstances test, taking into account issues like the turnover or number of transactions.[19]

d. Extension of PE Concept

In 2005, the OECD released the report titled "Are the Current Treaty Rules for Taxing Business Profits Appropriate for E-Commerce?", based on the work of the business profit Technical Advisory Group ("BP TAG"). In such report, the OECD studied the "virtual PE" theory as an alternative nexus that would apply to electronic commerce operations.

According to such report, the PE definition requires to be extended in three ways in order to extend the PE definition, as follows (OECD, 2005, 67): (i) A so-called "virtual fixed place of business" through which the enterprise carries on business (i.e. an electronic equivalent of the traditional permanent establishment). In other words, when the enterprise maintains a web

[18] Luc Hinneckens, *Looking for an Appropriate Jurisdictional Framework for Source-State Taxation of International Electronic Commerce in the Twenty-first Century* (1998), Intertax 192.
[19] Supra note 17, at p.94

site on a server of another enterprise located in a jurisdiction and carries on business through that web site, a PE is configured and the place of business is the web site, which is virtual. (ii) A so-called "virtual agency" (i.e. an electronic equivalent of the dependent agent permanent establishment). This concept would be an electronic equivalent of a dependent agent and, therefore, will cover situations where contracts are habitually concluded on behalf of the enterprise with persons located in the jurisdiction through technological means rather than through a person. (iii) A so-called "on-site business presence", which would be defined to include "virtual" presence. An enterprise providing on-site services or other business interface (which could be a computer or phone interaction) to users located in certain Country may be deemed as "on-site business presence".

Under this alternative, it would be necessary to specify a minimum threshold to ensure that source country taxation would only be applied where there is a significant level of economic activity. Possible thresholds might include a minimum time during which the enterprise regularly operates within the jurisdiction, or monetary thresholds, or limitations on the types of activities covered (e.g. exclusions for preparatory or auxiliary activities, or intermittent and occasional activities).

In the report, the OECD indicates that the adoption of this approach would imply the reconsideration of the current rules regarding the attribution of profits and a significant reinterpretation of the arm's length principle "in order to introduce the notion of virtual functions, use of virtual as sets and virtual risk assumption, beyond the possible recasting suggested for the virtual agent alternative". The OECD concluded that it would not be appropriate to dramatically change the PE concept to include such notions, since electronic commerce and other business models resulting from new communication technologies were not perceived by the BP TAG to justify, by themselves, a dramatic departure from the current rules. There did not seem to be actual evidence that the communications efficiencies of the Internet had caused any significant decrease to the tax revenues of capital importing countries (OECD, 2005, 168).[20]

[20] Supra note 17, at pp.96~97

e. Criticism on Virtual PE

The "virtual permanent establishment" theory is to reconsider the "physical presences" as unique nexus of an enterprise with the source country by providing as an additional nexus "the continuous commercially significant conduit of business activity". However, this proposal has been strongly criticized, since its adoption might require (i) a complete redefinition of the current PE and attribution of profit rules, besides the (ii) compliance of formal obligations by the multinational enterprises in every country where they have costumers which might be difficult to satisfy and enforce.[21]

2) European Commission's Proposal

The discussions of e-commerce virtual PE could not give OECD member states a satisfactory solution. In the meantime, Google UK triggered a controversial issue in relation to its business activities in UK and the e-commerce issue is now spreading all over the digital business.

On 21 March 2018, the European Commission ("EC") proposed new rules to ensure that digital business activities are taxed in a fair and growth-friendly way in the EU. EC explains the necessity of new rules for the taxation of the digital economy as follows:

> Today's international corporate tax rules are not fit for the realities of the modern global economy and do not capture business models that can make profit from digital services in a country without being physically present. Current tax rules also fail to recognise the new ways in which profits are created in the digital world, in particular the role that users play in generating value for digital companies. As a result, there is a disconnect – or 'mismatch' - between where value is created and where taxes are paid. In the digital economy, value is often created from a combination of algorithms, user data, sales functions and knowledge. For example, a user contributes to value creation by sharing his/her preferences (e.g. liking a page) on a social media forum. This data will later be

[21] Supra note 17, at p.100

used and monetised for targeted advertising. The profits are not necessarily taxed in the country of the user (and viewer of the advert), but rather in the country where the advertising algorithms has been developed, for example. This means that the user contribution to the profits is not taken into account when the company is taxed. *** Tax revenues would be collected by the Member States where the users are located, and will only apply to companies with total annual worldwide revenues of €750 million and EU revenues of €50 million. This will help to ensure that smaller start-ups and scale-up businesses remain unburdened. An estimated €5 billion in revenues a year could be generated for Member States if the tax is applied at a rate of 3%.[22]

3) U.S. Chamber of Commerce's Position

In response to EC's proposal, U.S. Chamber of Commerce sent a letter to Treasury Secretary Steven Mnuchin on the potential for a European Digital Services Tax (DST) as follows:

> The U.S. Chamber is concerned about reports that the European Union (EU) and individual EU member states may be moving towards adoption of a Digital Services Tax (DST). *** We understand there is disagreement at the EU level about the best way to proceed, and that in the absence of action in Brussels, individual European countries are actively contemplating adoption of their own measures. In particular, Spain has included a provision in a budget package under consideration, and the United Kingdom has announced its intent to introduce such a measure in 2020.
>
> Our concerns about these measures are straightforward. First, proposing to tax revenues ignores the costs associated with sales. Such a turnover tax dissuades investment and discourages innovation and entrepreneurship. Second, these measures improperly target large American technology companies. Proponents

[22] European Commission, https://ec.europa.eu/taxation_customs/business/company-tax/fair-taxation-digital-economy_en (Last visit on 10 January 2019)

> have not been shy about their intentions in this regard. Targeting specific companies or sectors would set a dangerous precedent. In addition, "digitally enabled services" is not clearly defined in such measures and risks encompassing an even larger pool of companies. Finally, proponents have billed such measures as temporary solutions until an international consensus is achieved. To the extent European countries are seeking to generate revenues under the guise of promoting "fair taxation," it is hard to imagine these taxes being lifted once such an agreement is reached. Moreover, adoption of a DST by one or more member states could prompt similar measures in others. The American business community supports international dialogue on ways to modernize the international taxation system to adapt to changes in the global economy. However, unilateral European actions will erode trust and lessen the prospects for international agreement; indeed, we now see governments outside of Europe considering similar actions.[23]

4) Fact Analysis

Google UK's tax issue is a typical case of digital service tax. London Reuters reported the related facts on May 1, 2013 as follows:

> In November 2012, Google's Vice President, Matt Brittin, for Northern and Central Europe was called to an oak-panelled conference room overlooking the Thames to testify to a parliamentary committee about how firms like his reap billions in revenue in Britain but pay very little corporate income tax.
>
> He explained to the Public Accounts Committee (PAC) that Google Inc. wasn't liable for taxation on UK sales because these were all handled from its European headquarters in Dublin, Ireland. "Nobody (in the UK) is selling." For tax purposes, Google, which is headquartered in Mountain View, Calif., says it does not have a British presence. From 2006 to 2011, Google generated $18 billion (11.5 billion pounds) in revenues from the UK, according to statutory filings, and paid just $16

[23] U.S. Chamber of Commerce, https://www.uschamber.com/letter/us-chamber-letter-treasury-secretary-steven-mnuchin-european-digital-services-tax (Last visit on 10 January 2019)

> million in taxes. If the UK tax authority were to decide that UK-based employees do sell to British clients, UK law could consider Google to have a tax residence, lawyers and academics say.
>
> Google UK Ltd. employed 1,300 people at the end of 2011, of whom 720 were engaged in "the *provision of marketing services*" to Google Ireland, according to its accounts.
>
> A Reuter's examination of Google's activities in Britain shows many roles that actually *target, negotiate and close sales of Google's advertising products* to its customers. On its corporate website, Google UK says London is home base to "a number of EMEA sales & marketing leaders", adding, "Most offices outside Mountain View focus on engineering or sales; we do both." In late March and early April, the website advertised dozens of London-based sales jobs, whose responsibilities included *"negotiating deals", closing "strategic and revenue deals" and achieving "quarterly sales quotas."* ***
>
> Lawyers and academics say that if Google's UK staff did agree sales with UK customers, that could open the possibility of much bigger tax bills. The tax authority in France has already challenged a similar structure that the company used in relation to its French subsidiary. But questions of tax often sit in a legal grey area, where a country's tax authority and the courts ultimately decide.
>
> Google's Director for External Relations Peter Barron said if UK customers want to buy advertising from Google, the company's UK marketing staff would encourage them to do so; but only staff in Ireland sold to UK clients. "We comply with all the tax rules in the UK," he said.[24]

In order to determine how much tax Google UK should pay to Britain's tax authority, it is important to make clear related facts from the standpoint of tax treaty. Almost all tax treaties

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[24] London Reuters, *Special Report - How Google UK clouds its tax liabilities*, https://uk.reuters.com/article/uk-tax-uk-google-specialreport-idUKBRE94005R20130501 (Last visit on 11 January 2019)

have rules to handle this issue and have focused on an "*authority to conclude a contract"* and *"dependent agent"* in determining the existence of a permanent establishment ("PE") which is a taxable entity. However, the term "authority to conclude a contract" is an abstract concept. Thus, it can always trigger a controversial issue depending upon the related facts. Contracting activity consist of various factors such as negotiation of various contract terms including a price, drafting of a contract, signing of a contract. Thus, because Google UK's activities such as "negotiation of deals", "closing of strategic and revenue deals" can be related to contracting activity depending upon detailed facts, it could trigger a PE issue.

5) Legal Analysis

Paragraph 5, Article 5 of 2014 OECD Model Tax Convention provides "Notwithstanding the provisions of paragraphs 1 and 2, where a person — other than an agent of an independent status to whom paragraph 6 applies — is acting on behalf of an enterprise and has, and habitually exercises, in a Contracting State *an authority to conclude contracts in the name of the enterprise*, that enterprise shall be deemed to have a permanent establishment in that State in respect of any activities which that person undertakes for the enterprise, unless the activities of such person are limited to those mentioned in paragraph 4 ***"

Commentary 33 of Paragraph 5, Article 5 provides "*** Moreover the authority has to be habitually exercised in the other State; whether or not this is the case should be determined on the basis of the commercial realities of the situation. *A person who is authorised to negotiate all elements and details of a contract in a way binding on the enterprise can be said to exercise this authority "in that State", even if the contract is signed by another person in the State in which the enterprise is situated or if the first person has not formally been given a power of representation*. The mere fact, however, that a person has attended or even participated in negotiations in a State between an enterprise and a client will not be sufficient, by itself, to conclude that the person has exercised in that State an authority to conclude contracts in the name of the enterprise. *The fact that a person has attended or even participated in such negotiations could, however, be a relevant factor in determining the exact functions performed by that person on behalf of the enterprise*. ***"

Thus, in case where Google UK's employees are authorized to negotiate all elements and details of a contract, it can trigger a PE issue even if the contract is finally signed by the employees of Google Ireland. In fact, it wouldn't be easy that Google UK customers directly negotiate a contract with Google Ireland employees since they cannot have a face-to-face meeting. What is more, to explain the contents of a contract in detail by telephone is not easy. Thus, it would be necessary that Google UK employees support the contracting activity between Google UK customers and Google Ireland employees. Generally marketing support activities can include "explaining the contents of a contract in detail to Google UK customers", "negotiating a price between customers and Google Ireland", and "transferring customers' opinion to Google Ireland employees."

Accordingly in case where Google UK's marketing support activities come under these kinds of activities, it leads to a PE issue. If that is the case, even if Google UK uses the term "marketing support activities" instead of "contracting activities" in a contract, it cannot change the substance itself from the standpoint of "substance over form principle."

Digital service companies understand this kind of risk well. Thus, they can change their business structure by utilizing an independent agent. That is, they can entrust sales supporting activities to an independent agent in order to avoid a PE issue.

Commentary 32 of Paragraph 5, Article 5 provides "Persons whose activities may create a permanent establishment for the enterprise are so-called dependent agents *i.e.* persons, whether or not employees of the enterprise, who are *not independent agents* falling under paragraph 6."

Thus, if digital service companies entrust the sales support activities to an independent agent, they can avoid a PE issue.

Then, what if digital service companies entrust sales support activities to an overseas independent agent but their overseas subsidiaries still maintain many sales support employees? What kinds of activities do the employees of overseas subsidiaries perform for digital service companies? Can they avoid a PE issue? It would be controversial depending upon facts.

OECD revised paragraph 5 of Article 5 in the 2017 OECD Model Tax Convention in order to complement its loophole but it cannot cover this problem because the "commissionaire arrangement" of Commentary 92 is not relevant to this issue.[25]

Unlike a goods manufacturing company which needs manufacturing facilities, a digital service company can shift its business function with comparative ease and as a result tends to actively get involved in a tax avoidance planning through the shift of function.

6) Problem of Current System and its Solution

Electronic commerce is regulated by the Commentaries 122 to 131 of Article 5 of the OECD Model Tax Convention. Commentary 124 provides "If the enterprise carrying on business through a web site has the server at its own disposal, for example it owns (or leases) and operates the server on which the web site is stored and used, *the place where that server is located could constitute a permanent establishment of the enterprise* if the other requirements of the Article are met.

And commentary 127 provides "Where an enterprise operates computer equipment at a particular location, *a permanent establishment may exist even though no personnel of that enterprise is required at that location for the operation of the equipment*. The presence of personnel is not necessary to consider that an enterprise wholly or partly carries on its business at a location when no personnel are in fact required to carry on business activities at

[25] 5. Notwithstanding the provisions of paragraphs 1 and 2 *but subject to the provisions of paragraph 6*, where a person is acting *in a Contracting State* on behalf of an enterprise and, *in doing so, habitually concludes contacts, or habitually plays the principal role leading to the conclusion of contracts that are routinely concluded without material modification by the enterprise, and these contracts are*

a) in the name of the enterprise, or

b) for the transfer of the ownership of, or for the granting of the right to use, property owned by that enterprise or that the enterprise has the right to us, or

c) for the provision of services by that enterprise,

that enterprise shall be deemed to have a permanent establishment in that State in respect of any activities which that person undertakes for the enterprise, unless the activities of such person are limited to those mentioned in paragraph 4 which, if exercised through a fixed place of business (*other than a fixed place of business to which paragraph 4.1 would apply)*, would not make this fixed place of business a permanent establishment under the provisions of that paragraph.

that location. This conclusion applies to electronic commerce to the same extent that it applies with respect to other activities in which equipment operates automatically, e.g. *automatic pumping equipment* used in the exploitation of natural resources."

In short, when it comes to electronic commerce, a permanent establishment exists at the place where the server is located according to the above rule. If Google had its server for its advertising activity only in the UK, Google UK can become a permanent establishment and all income relating to advertising activity is subject to taxation.

On the other hand, if Google Ireland put its server in Ireland and provided advertising service to the UK customers, Google Ireland becomes a permanent establishment but its income derived from the UK is allocated between UK and Ireland according to their function and risk burden.

[Case 1] For example, let's assume that Google UK has a server in the UK and realizes the advertising revenue of US$0.1billion from only the UK customers in 2018. It also incurs a total US$ 0.05 billion of operating expense (including royalty payment) for its business in the UK in 2018. In that case, its P/L is as follows:

Unit: US$

	UK	Ireland
Revenue (Advertising)	100,000,000	-
Operating expense	50,000,000	-
Taxable income	50,000,000	-

Thus, if there is no additional expense, Google UK can realize US$0.05 billion of taxable income in the fiscal year 2018.

[Case 2] What if Google UK shifts its server to Ireland? Let's assume that Google Ireland has a server in Ireland and earns US$0.1billion from Ireland customers and US$0.1billion from the UK customers in 2018. Google Ireland incurs a total US$0.105billion of operating expense for its business in both the UK and Ireland in 2018. Then, Google Ireland compensates “cost[26] plus 10% mark-up” to Google UK in a consideration of sales supporting activities for Google Ireland. In that case, P/Ls of Google UK and Google Ireland are as follows:

Unit: US$

	UK	Ireland
Revenue (Sales support)	55,000,000[27]	200,000,000
Operating expense	50,000,000[28]	50,000,000[29]+55,000,000[30]
Taxable income	5,000,000	95,000,000

Thus, if there is no additional expense, Google UK can realize US$0.005 billion of taxable income and Google Ireland US$0.095billion of taxable income in the fiscal year 2018.

In case where Google shifts its server from the UK to Ireland, Google UK’s revenue decreases from US$0.1billion to US$0.055billion because Google UK is compensated by “cost plus 10% mark-up” method from Google Ireland. As a result, its taxable income decreases from US$0.05billion to US$0.005billion. Google UK does not recognize its advertising revenue because it is not a permanent establishment from the standpoint of OECD electronic commerce rule.

On the other hand, Google Ireland can realize a substantial taxable income and save a lot of taxes since Ireland’s tax rate is very low compared to the UK’s tax rate. Through the above example, we can understand why MNEs would try to shift their server to a tax heaven state.

Is it reasonable that the mere shift of a server has a significant effect on taxing right of each state from the standpoint of international tax principle?

Although digital service business needs a server, the number of employees operating the

[26] Operating expense
[27] 50,000,000 x 1.1
[28] We assume that server management expense is minimal compared to other expenses. Thus, we don’t consider it in our P/L.
[29] Google Ireland’s operating expense in Ireland
[30] Compensation expense for Google UK

server is generally very small compared to that of employees performing sales activities. Thus, even if Google UK shifts its server from the UK to Ireland, Google UK still needs many employees performing sales support activities in the UK. That is, the shift of a server does not have a significant effect on Google UK's function from the standpoint of transfer pricing analysis between Google UK and Google Ireland.

If that is the case, we need to seriously consider whether or not the current OECD electronic commerce rule is reasonable from the standpoint of character of digital service business.

a. Server vs. Automatic Pumping Equipment

Commentary 125 of Article 5 of 2017 OECD Model Tax Convention provides "Computer equipment at a given location may only constitute a permanent establishment if it meets the requirement of being fixed. In the case of a server, what is relevant is not the possibility of the server being moved, but whether it is in fact moved. *In order to constitute a fixed place of business, a server will need to be located at a certain place for a sufficient period of time so as to become fixed within the meaning of paragraph 1*."

Also Commentary 127 provides "Where an enterprise operates computer equipment at a particular location, a permanent establishment may exist even though no personnel of that enterprise is required at that location for the operation of the equipment. The presence of personnel is not necessary to consider that an enterprise wholly or partly carries on its business at a location when no personnel are in fact required to carry on business activities at that location. *This conclusion applies to electronic commerce to the same extent that it applies with respect to other activities in which equipment operates automatically, e.g. automatic pumping equipment used in the exploitation of natural resources*."

Thus, according to Commentaries 125 and 127, a server becomes a permanent establishment regardless of whether or not there is a person who manages the server.

As set forth above, a digital service company can shift its server easily from one place to another place. Also, as a server can be operated by remote control, it is possible not to have a server manager in the country where a server is located. Thus, it is not reasonable to determine a PE only based on the location of a server from the standpoint of business functions and risk burdens.

A server is a kind of by-product of R&D activities. Once a digital technology is completed by R&D activities, a digital service company can install a completed server anywhere all over the world. R&D expenses can be allocated between related parties by cost sharing. A server of itself cannot do business but certainly needs persons who operate it for the business. That is, business activities are performed all over the world in case where a digital service company has world-wide customers. If that is the case, it would be reasonable to allocate taxing rights between related states according to business functions and risk burdens within each state.

The business activities of a digital service company consist of “R&D activity” and “Sales activity” widely. A server is just a by-product of R&D activity. Thus, it is appropriate that its whole business income should be allocated between R&D activity entities and sales activity entities on a reasonable basis considering their functions and risk burdens. A server is currently being used as a conduit for tax avoidance because the current OECD commentaries relating to electronic commerce acknowledge it. Accordingly the current Commentaries shall be revised.

Also, these rules treat a server (computer equipment) in the same way as automatic pumping equipment. Is it reasonable from a substantive perspective?

A server can be installed in a place where business activities are not performed because it can be operated by remote control. Thus, it is possible that a digital service company avoids a PE issue by installing a server in a state where active business activities are not performed. That is, a digital service company which does business in the UK can avoid a PE issue by installing a server in a tax heaven country.

What about a company using automatic pumping equipment in the exploitation of natural resources? A company using automatic pumping equipment should install its equipment in a location where there are natural resources. That is, in case where a company exploits natural resources in the UK, it wouldn't be feasible that the company installs the automatic pumping equipment in Germany for exploiting natural resources in the UK.

So there is a big difference between server and automatic pumping equipment in terms of tax avoidance. That is, a server can be used as a conduit but the automatic pumping equipment cannot. Therefore, it is not proper to treat a server and automatic pumping equipment in the same way in terms of international taxation.

b. Taxation based on Function and Risk Burden of Digital Service Entities but Not Server

As set forth above, the business activities of a digital service company consist of "R&D activity" and "Sales activity" widely. A server is just a by-product of R&D activity. Thus, in order to prevent tax avoidance activities through a server, the business income should be allocated to each entity based on its function and risk burden, and a state where each entity is located should exercise its taxing rights on the reasonably allocated income by the principle of transfer pricing.

[Case 1] For example, let's assume that Google has just a server in Ireland but no personnel to manage the server. That is, the server is being operated by remote control outside of Ireland (i.e., the United States). Google's R&D activity is performed in the US. Google has sales personnel within both the US and the UK. If that is the case, it would be reasonable that the whole business income derived from the UK should be allocated between the US and the UK based on the function and risk burden of each Google entity.

[Case 2] The same fact except that Google has a server and a sales organization in Ireland and Google Ireland works together with Google UK for business within the UK. If that is the case, it would be reasonable that the whole business income derived from the UK should be allocated between the US, the UK and Ireland based on the function and risk burden of each Google entity.

c. Role of PE Rule and 50% Ownership Threshold

Every tax treaty has a PE rule. Article 5 of OECD Model Tax Convention does not treat activities of 'preparatory or auxiliary character' as a PE which is a taxable entity. The reason why a tax treaty has a PE rule is to ascertain whether or not foreign enterprise's certain activities in a specific state come under a PE activity in that state and thus can be a taxable entity.

[Case 1] Lets' assume that a foreign enterprise "X" has a liaison office in Korea. X acquired its registration number (not business ID number) from the Korean tax authority and submits only a withholding tax report to the Korean tax authority because X is not a taxable entity under the related tax treaty and the Korean tax law. One day the Korean tax authority performs an audit on X and confirms that X performs business activities which are not preparatory or auxiliary character. In that case, the Korean tax authorities will cancel X's registration number and issue a new business ID number to X. Then, X becomes a taxable entity. Thus, it is necessary to have a PE rule in a tax treaty in order to prevent a disguised activity by a foreign enterprise.

[Case 2] Lets' assume that a foreign enterprise "X" has a 100% subsidiary "Y" in Korea. Y performs 'sales support activities' (not 'buy/sell activities') for its parent company X. X compensates Y 10% commission of the sales revenue in Korea in a consideration of Y's activities. One day, the Korean tax authorities performs a tax audit on Y and determines that there is Y's PE within X's office because it judged that Y's employees get involved in the price negotiation process between X and Korean customers. Then, the Korean tax authority issues a new business ID number to Y's office by authority and send a tax assessment notice to X's office (not Y's office). As a result, X comes to have both a subsidiary and a PE in Korea.

Is it a proper approach from the standpoint of reasonable tax administration? X already has a subsidiary Y in Korea and files a tax return to the Korean tax authority. The main purpose why the Korean tax authority uses a PE approach is to collect more taxes from X and Y. Thus, if Y exercised an authority to conclude a contract for X in addition to the sales support activities, it would be reasonable for the Korean tax authority to make an additional TP adjustment against X by using a TP method (e.g., RPM or TNMM) based on the Korean sales revenue rather than issuing an additional business ID number to Y's office. Issuing an additional business ID number to Y's office is not an efficient tax administration.

Likewise, in case where the business activities of a digital service company lead to a PE issue, transfer pricing approach is more reasonable rather than a PE approach because a digital business MNE already has a subsidiary (taxable entity) in a state in issue and securing reasonable taxing rights is available under this approach.

As set forth above, a server can always be used as a "PE conduit" for tax avoidance by MNEs under the current OECD e-commerce rule. And such a PE issue can occur only when a digital MNE has a 100% subsidiary or a branch which provides sales support activity, etc. (a kind of disguised activity). If the activity of a subsidiary or a branch leads to a PE issue, it is reasonable to use the above transfer pricing approach. Thus, the current PE approach rule on a digital business MNE must be substantially revised.[31]

If a PE conduit were a joint venture, it would be possible to use a 50% ownership threshold because such a planning is not possible unless a parent company has a majority ownership.

Further, in case where a MNE of business type other than digital business has a foreign subsidiary or a foreign branch which provides sales support service in a foreign state, the taxation practice of a deemed PE on such a foreign entity must be abolished because transfer pricing approach is enough to resolve such a PE issue and the additional registration of a

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[31] See Han, Sung-Soo, *BEPS Project Lecture*, National Tax Newspaper of Korea, 2016, pp.158~162

deemed PE is not necessary. The important thing is to exercise a reasonable taxing right based on function and risk burden but not to register a deemed PE by authority.

d. Patent & IP Immigration

R&D activities are very important to MNEs. MNEs which require a technology for their business cannot survive in the market without R&D activities. Thus, most of MNEs actively get involved in R&D activities. A patent is an output of R&D activities. MNEs often shift their patent into tax heaven areas in order to save related taxes. For that purpose, they conclude a contract between related parties for migration of a patent.[32]

For example, let's assume that a US MNE 'X' invested US$1billion on R&D activities and acquired a patent (output of R&D activity). X wants to migrate its patent into a tax heaven area for tax saving and sets up a 100% subsidiary 'Y' in a tax heaven state. X invests US$1billion as a paid-in capital on Y and again Y buys a patent from X at US$1billion. The patent is necessary for business activities. Then Y sells its products within Europe region. Thus, European customers should pay a price which contains a consideration of R&D to Y. Y is in a tax heaven state and as a result can save taxes.

If X didn't sell its patent to Y, Y should pay royalties to X since Y has no patent necessary to its business activity. Thus, X should report its royalty income to the US tax authority. However, X sold its patent to Y and thus Y reports the royalty income in a tax heaven state. The intellectual property transaction between X and Y does not affect X's taxable income because X's investment amount is not expense to X. Both related parties shifted IP to a tax heaven area with ease by just a paper work.

Is this kind of IP immigration reasonable from the standpoint of international taxation principle and equity? The answer would be no. Thus, it would be desirable for the international community to prevent this kind of transaction between related parties.

[32] Contracting activity is just a paper work.

If a subsidiary in a tax heaven state were a joint venture, it would be possible to use a 50% ownership threshold because such a planning is not possible unless X has a majority ownership.

e. Unreasonable 3% of Digital Service Tax

EC states "The tax will apply to revenues created from activities where users play a major role in value creation and which are the hardest to capture with current tax rules, such as those revenues:

- created from selling online advertising space
- created from digital intermediary activities which allow users to interact with other users and which can facilitate the sale of goods and services between them
- created from the sale of data generated from user-provided information.

An estimated €5 billion in revenues a year could be generated for Member States if the tax is applied at a rate of 3%. This system will apply only as an interim measure, until the comprehensive reform has been implemented and has inbuilt mechanisms to alleviate the possibility of double taxation.[33]

As long as OECD maintains the current electronic commerce rule, it would be difficult to prevent the tax avoidance activity of a digital service company using a server. Thus, many states could agree to EC's strong measure to prevent tax avoidance activity. However, anti-avoidance system should be operated on a reasonable and logical basis. Otherwise the international community can suffer from endless tax war.

In case where EU member states apply 3% of tax on digital service revenues within each state but a digital service company realizes a deficit (not profit) within each state, it can lead to a

[33] European Commission, https://ec.europa.eu/taxation_customs/business/company-tax/fair-taxation-digital-economy_en (Last visit on 10 January 2019)

ridiculous result of taxing a deficit. It is against a generally acknowledged principle of matching cost with revenue. What is more, such approach does not reflect function and risk burden properly.

For example, let's assume that Google has a server and sales personnel only in US and does business all over the world only through the server. German customers purchase goods through the Google server but there are no Google sales personnel in Germany. In that case, is it reasonable for Germany to tax the revenue derived from German customers from the standpoint of function and risk burden? The answer would be no because any sales activities are not performed in Germany. Accordingly, the digital service income should be allocated to the US based on function and risk burden performed within each state by a digital service company. That is, the principle of transfer pricing should be applied.

f. Violation of Non-discrimination Principle

Paragraph 1 of Article 24 of the OECD Model Tax Convention provides "Nationals of a Contracting State shall not be subjected in the other Contracting State to any taxation or any requirement connected therewith, which is other or more burdensome than the taxation and connected requirements to which nationals of that other State in the same circumstances, in particular with respect to residence, are or may be subjected. This provision shall, notwithstanding the provisions of Article 1, also apply to persons who are not residents of one or both of the Contracting States."

Thus, EU's digital service tax is directly against this international rule. Digital service companies such as Google and Facebook doing business within EU states are in the same circumstances with respect to residence as EU companies.

In case where EU imposes 3% of digital service tax on these digital service companies, these digital companies are subject to taxation and requirement which is more burdensome than EU companies. Accordingly, EU should resolve the current problems in a more reasonable and logical way by the principle of transfer pricing as emphasized above.

III. Current Practice of Transfer Pricing

1. Controversial Statistical Analysis

OECD published 15 Action plans to equip government with domestic and international instruments to address tax avoidance, ensuring that profits are taxed where economic activities generating the profits are performed and where value is created. These Action plans are intended to prepare for a necessary anti-avoidance system from the standpoint of the global community. In case where each government introduces a reasonable legal system corresponding to the purport of BEPS Project, it is expected that there would be no controversial issues between governments.

However, although the global community could eliminate problems such as tax avoidance, double taxation and double non-taxation through a well-prepared system, it cannot still help facing a difficult issue in allocating taxing right between related states.

As set forth above, in case where the international community applies the principle of transfer pricing in order to prevent the tax avoidance activities of a digital service company, transfer pricing would still become a controversial issue unless there is an objective mechanism to determine TP.

Once the BEPS project system is put into an active operation, each state would try to maximize its taxing right. Since transfer pricing has a direct effect on the taxing right of each government, there is a high possibility that each tax authority will try to unreasonably its taxing right based on unreasonable approaches as always.

A TP very often leads to a functional, legal and statistical analysis issue and the analysis process makes the TP issue more complex because transfer pricing is not an exact science. The reason why transfer pricing lacks exactness is that the comparable analysis is normally performed through an inexact statistical approach.

The functional and legal analysis is performed based on the pure business fact analysis against a tested party and thus it is less controversial. On the other hand, the statistical approach very often leads to a controversial issue because MNEs perform the comparable analysis through a non-standardized process such as "selection of data base company"[34], "determination of comparable data selection area"[35], "selection of SIC type"[36] and "set-up of elimination criteria".[37] That is why disputes between tax authorities and taxpayers are unavoidable.

2. Fact Analysis Process

When MNEs prepare a transfer pricing document for BEPS Project reporting, they should first perform a functional analysis. A functional analysis is performed through the analysis of business activity and accounting data.

The functional analysis part of TP document includes facts analysis such as “synopsis of Group activity”, “manufacturing & sales activity”, “purchasing of raw material”, “marketing activity”, “R&D activity”, and “sales support activity”. The functional analysis also includes “risk burden” analysis such as inventory risk, credit risk, product risk, foreign currency risk, and R&D risk.[38] Where necessary, tables are inserted as follows:

[Table 1: Synopsis of Functions of Principal Overseas Related Parties]

Nation	Name of Company	Function
Swiss	A, B	Sales / manufacturing / R&D
Germany	C	Sales / manufacturing / R&D
France	D	Sales / manufacturing / R&D
Japan	E	Sales / manufacturing / R&D
Hong Kong	F	Sales / manufacturing
China	G, H, I, J	Sales / manufacturing
Singapore	K	Sales / manufacturing

34 MNEs use Thomson Reuter data base, Bureau Van Dijk data or each local data base for their BEPS reporting.
35 Comparable companies can be selected from several places such as Africa, America, Asia or Europe.
36 MNEs use US SIC, NAICS or local SIC.
37 Various criteria such as ownership, advertising expense, R&D expense and operating income loss are being used for elimination of non-comparable companies.
38 Han, Sung-Soo, *BEPS Project Lecture*, National Tax Newspaper of Korea, 2016, pp.265~275

[Table 2: Synopsis of Related Party Transactions]

	Synopsis
Purchase of raw material	Purchase of raw material & parts for manufacturing from overseas related parties
Sale of semi-product & finished product	Sale of semi-product and finished product to overseas related parties
Sale of parts	Sale of parts of finished product to overseas related parties

[Table 3: Trend of Raw Material Purchasing]

Raw Material Purchasing (1996~2000)					
	1996	1997	1998	1999	2000
Related Party	14.99%	3.57%	5.26%	3.45%	4.38%
Third Party	74.85%	83.44%	81.09%	80.97%	79.44%
Domestic	10.16%	13.00%	13.65%	15.58%	16.18%
Total	100%	100%	100%	100%	100%

Then, why is the functional analysis necessary? The principle of transfer pricing is that a company which performs more functions and bear more risks should enjoy more profit in order to cover the expenses which are necessary for functions and risk burdens.

For example, let's assume that X Co (Korean manufacturing company) and Y Co (US distributor company) are in special relationship in terms of transfer pricing. X Co manufactures an automobile in Korea and sells it in the United States market through Y Co. X Co and Y Co realized US$1 billion of "mixed profit" in the US market in 2018. The mixed profit is derived from both manufacturing and selling activity. In that case, how should we allocate the mixed profit between X Co and Y Co?

Under the principle of transfer pricing, it would be reasonable to allocate between X and Y based on their function and risk burden. The manufacturing or operating expenses of X and Y reflects their function and risk burden. That is why MNEs have to analyze their financial statements. The functional analysis is not a difficult process to a person who has a basic knowledge of transfer pricing and the possibility that there is an opinion gap between tax authorities and taxpayers is not high.

3. Legal Analysis Process

Once the functional analysis is completed, MNEs should perform a legal analysis in order to determine an appropriate TP method which is to be applied to their overseas related transactions. MNEs can select a most appropriate TP method according to OECD Transfer Pricing guidelines.

General TP methods are as follows: 1) Comparable Uncontrolled Price Method, 2) Resale Price Method, 3) Cost Plus Method, 4) Other Reasonable Methods. Other reasonable methods include "Transactional Net Margin Method", "Profit Split Method" and "Berry Ratio", etc.

In case where MNEs use "Comparable Uncontrolled Price Method" or "Resale Price Method", overseas related parties can often realize a deficit and it can trigger a harsh tax audit. Thus, recent trend is to use the Transactional Net Margin Method ("TNMM") because this method always guarantees a fixed profit to a tested party. The selection of a TP method is a purely legal issue because TP rules require taxpayers to select the best method according to the legal requirements. Of course, the selection of a TP method can also be an issue at the time of tax audit. However, it is much less controversial than statistical analysis.

4. Statistical Analysis Process

Once the functional analysis and the selection of a TP method are completed, MNEs should perform statistical analysis in order to the appropriate profit ratio of a tested party. The statistical analysis goes through the routine process as follows: 1) selection of a data base[39], 2) determination of comparable data selection area[40], 3) selection of SIC type[41], 4) set-up of elimination criteria[42], 5) selection of comparable companies, 6) capital adjustment[43] and 7) determination of interquartile range[44], etc.[45]

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39 MNEs use Thomson Reuter data base, Bureau Van Dijk data or each local data base for their BEPS reporting.
40 Comparable companies can be selected from several places such as Africa, America, Asia or Europe.
41 MNEs use US SIC, NAICS or local SIC.
42 Various criteria such as ownership, advertising expense, R&D expense and operating income loss are being used for elimination of non-comparable companies.
43 Generally Payables, Receivables, Inventory are adjusted in order to reflect carrying cost.
44 lower quartile, median, upper quartile.
45 Supra note 38, at pp.286~308

1) Non-standardized Process

The statistical analysis performed by MNEs is a non-standardized process.[46] OECD TP guidelines and domestic TP rules of each state do not have a detailed rule concerning the statistical analysis. Thus, it very often leads to a controversial issue between MNEs and tax authorities.

As set forth above, statistical al analysis should go through several steps. The problem is that it can be a controversial issue between MNEs and related tax authorities since there is no detailed rule concerning the statistical analysis. Thus, standardized rules concerning statistical analysis are urgently required in order to eliminate an unnecessary tax dispute.

2) Local Data Base vs. Global Data Base

In the statistical analysis process above, one of important factors which can affect the results of analysis is the selection of data base.

In the past, MNEs generally performed a statistical analysis using the local data base of a tested party since the local tax authority tended to request the use of local data base. One of principal reasons for such request is because it was not easy for tax auditors to verify the data base of another state.[47]

However, the situation has been changed with the introduction of BEPS Project. Under the BEPS Project system, MNEs should submit their BEPS reports to all related tax authorities.

Thus, the selection of local data base of a tested party can be an issue between related tax authorities. That is why the use of neutral data base which all related tax authorities can verify and agree with is necessary.

For example, let's assume that Korean company 'X' prepares a BEPS report. X has subsidiaries in China, Vietnam and Japan. X can use the local data base of each state[48] or global data base (e.g., Asia) for BEPS reporting. In that case, which data base is more

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[46] Professional firms such as law firms and accounting firms generally perform this work on behalf of MNEs.

[47] In case where tax auditors use local data base, they can get a segmented P/L from comparable companies and utilize it for the purpose of taxation. Of course, it is a secret comparable since that information is not open to the public and a taxpayer cannot verify it. But such case often occurred.

[48] China, Vietnam, Japan

reasonable from the standpoint of TP? Asia data base would be more reasonable rather than local data base. Because MNEs of China, Vietnam, Japan and Korea also have subsidiaries in Asia, the equity of taxation between states can be maintained only when all related states use the same data base.[49] The use of global data base makes possible the neutrality between states in terms of transfer pricing. On the other hand, the use of local data base could be biased toward a specific state. Accordingly, it is essential for OECD to clarify this matter.

IV. Necessity of Automatic Data Base

The statistical analysis consists of various procedures as explained above. That there are various procedures means that there are so many variables which must be controlled for reliable transfer pricing analysis.

Among these various procedures, the selection of 'data base', 'data area', 'SIC type' and 'elimination criteria' affects the results of statistical analysis. Thus, there is a necessity that this process should be managed in a convenient and verifiable way.

For example, let's assume that a Korean multinational enterprise 'X' performed a statistical analysis for its China subsidiary (sales supporting entity) as follows: 1) use of local data base, 2) use of SIC, 3) elimination criteria[50]: ownership (50%), advertising expense (5%), R&D expense (3%) and operating income loss (3 years).

Further assume that the Korean tax authority argues as follows: 1) use of global data base (Asia), 2) use of NAICS, 3) elimination criteria: ownership (30%), advertising expense (10%),

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[49] The role of a state's tax authority must change as globalization increases. Although tax authorities traditionally focus on maintaining fairness among individual taxpayers, as globalization increases, tax authorities should also strive to maintain fairness among taxing rights of the states. To aid states with this additional burden, the global community must promote the research and development of a system designed to maintain equity, not only between individual taxpayers, but between states as well. This system will require tax authorities to shift their approach to tax issues, primarily from a micro-perspective to a macro-perspective. (Supra note 7, at p.85)

[50] Elimination criteria are used to exclude un-comparable companies from companies selected by SIC type. The financial data of a company which is in the ownership relationship with a tested party lacks reliability due to the possibility of price manipulation and thus such company is excluded by a standard such as 50%, 30%, and 20%, etc. A sales supporting entity do not generally perform active advertising activities and thus a company whose advertising expense exceeds a certain percentage (e.g., 3%, 5%, 10%, etc.) is excluded because it is not treated as a comparable of a tested party. Also, a sales supporting entity does not generally perform R&D activity and thus a company whose R&D expense exceeds a certain percentage (e.g., 1%, 3%, 5%, etc.) is excluded. A company which has operating income deficit can be also excluded from the conservative perspective.

R&D expense (1%) and operating income loss (2 years).

Also, assume that the China tax authority argues as follows: 1) use of global data base (Asia Pacific), 2) use of both SIC and NAICS, 3) elimination criteria: ownership (20%), advertising expense (3%), R&D expense (5%) and operating income loss (1 year).

In that case, it would be very difficult to draw a satisfactory result with which 3 parties can agree. If X's cross-border transactions are interconnected between Korea, China and Vietnam, it would be much more difficult for 4 parties to agree.

1. Burden of MNEs

If a taxpayer should perform another statistical analysis whenever tax authorities make a different argumentation, it would become a big burden to the taxpayer. Since MNEs normally perform a transfer pricing analysis through professional firms, their economic burden is substantial where tax authorities tackle the analysis result.

Thus, it is necessary to for the international community to seek out a transparent and reasonable method in order to minimize tax disputes and taxpayer's compliance expense.

2. Effective Management of BEPS Project Reports

The principal purpose of BEPS Project is to ensure that profits are taxed where economic activities generating the profits are performed and where value is created. Accordingly, MNEs are obligated to submit a BEPS Project report which fully reflects economic activities and their value.

However, as transfer pricing work is performed largely by a professional such as a lawyer and a CPA and each professional can have a different opinion on the statistical analysis approach, it is very difficult to maintain the objectivity of analysis result.

MNEs are now filing their BEPS Project report in a various way. A certain MNE files its BEPS Project report using "local data base" and another MNE files its BES Project report using "global data base." Therefore, there could be a substantial difference between "local data" and "global data" in terms of analysis result (arm's length profit ratio).

What is more, in case where all MNEs use the elimination criteria different from each other, it would be very difficult for tax authorities to efficiently manage the submitted BEPS Project reports. That efficient management is difficult means that there is always a high possibility of controversial disputes between taxpayers and tax authorities.

Thus, the international community needs to establish an objective standard for MNEs to abide by in preparing their transfer pricing document.

3. Problems of Manual Analysis

MNEs (or their professional firms) generally perform a statistical analysis by manual work. In case where MNEs perform a statistical analysis by manual work, they should invest a substantial time on their analysis work. Analysis work consists of several steps as follows: 1) selection of SIC, 2) download of necessary data, 3) selection of proper data[51], 4) application of elimination criteria and selection of comparable companies, 5) capital adjustment on selected comparable companies, 6) review of capital adjustment result, 7) drawing up of appendix. *Especially steps 3), 4), 5) and 7) require a substantial time*.

When it comes to 5) capital adjustment which especially requires a lot of time, MNEs use the excel sheet templet for it and the excel sheet work requires a lot of time. In addition, the accuracy of analysis is not guaranteed in case where there are many comparable companies which require a capital adjustment.

[Case 1] Let's assume that a MNE used "local data base" and finally chose 10 comparable companies (by applying the elimination criteria) out of a total 180 companies (population). It should make a capital adjustment such as receivables, payables and inventory. Thus, assume that an analysis worker spends 1 hour per one comparable company for input of financial data into the excel sheet templet and spends a total of 10 hours for 10 comparable companies for a capital adjustment. Then, a reviewer also spends another 10 hours in order to confirm the accuracy of data input and capital adjustment result. So, a total of 20 hours is required for capital adjustment.

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[51] This step is to review whether or not downloaded data can be used as a comparable data. Thus, financial statements and business description, etc. are reviewed.

[Case 2] Let's assume that a MNE used "global data base" and finally chose 40 comparable companies (by applying the elimination criteria) out of a total 300 companies (population). In that case, an analysis worker should spend 40 hours for capital adjustment and a reviewer should spend another 40 hours. So, a total of 80 hours is required for capital adjustment.

Where a MNE uses "global data base", the number of comparable companies naturally increases compared to "local data base" because the area of data base is broad.[52] Thus, the number of a comparable company increases and capital adjustment work becomes more and more difficult and complex. Also, the accuracy of capital adjustment is not guaranteed because manual work on many comparable companies necessarily causes errors.

If a MNE should perform the statistical analysis whenever tax authorities tackle the statistical analysis result, it would be a big burden. Tax authorities should also spend a lot of time in order to review the appropriateness of analysis result.

4. Merits of Automatic Analysis

1) Automatic vs. Manual

The below table clearly shows a difference between automatic data analysis work and manual data analysis work in relation to the steps 3), 4), 5) and 7).

	Automatic	Manual
3) Selection of proper data	Time consuming	Time consuming
4) Application of elimination criteria & selection of comparable	Automatic	Time consuming
5) Capital adjustment	Automatic	Time consuming
7) Drawing up of appendix	Automatic	Time consuming

52 It is practically impossible to seek out a perfect comparable company since the business and transaction type of every enterprise is different from each other even though they are in the same industry. Thus, to determine an appropriate profit level using only a few comparable companies is not reasonable from the standpoint of reliability. Where the number of comparable companies increases, it is much easier to draw a reasonable profit level by reflecting functional differences between comparable companies than when using a few comparable companies. In the past, tax authorities used to again select a few comparable companies whose profit level is high out of comparable companies chosen by a taxpayer in order to increase taxable income. It is a kind of cherry picking approach. Now such approach is not appropriate any longer under BEPS Project system since all related tax authorities will pay attention to such a unilateral unreasonable approach.

In case of automatic analysis, a MNE spends substantial time only on the selection of proper data (comparable companies). Once the proper data is selected, the steps 4), 5) and 7) are performed automatically. An analysis worker just clicks buttons or inserts figures on the screen in order to fulfill a necessary step. Once the analysis work is finished, the appendix which contains the details of analysis work is made automatically.

2) Flow Chart of Automatic Analysis[53]

The process of automatic data analysis is as follows:

1	Entry of fiscal year (e.g., 2018.12.31) and analysis years (3~5)
2	Selection of SIC (US SIC, NACE Rev 1.1, NACE Rev 2, NAICS 2012)
3	Selection of Country or Region (e.g., Africa, Asia Pacific, Asia, Europe, Northern Europe)
4	Entry of Ownership standard (e.g., 50%, 70%)[54]
5	Selection of rejection criteria (e.g., advertising expense or R&D expense / net sales) / Entry of rejection ratio (e.g., 1%, 3%, 5%) / Entry of business description (e.g., design, develop, marketing)[55]
6	Review of selected companies[56]
7	Entry of balance sheet and income statement of a tested party[57]
8	Entry of interest such as US prime for calculation of carrying cost
9	Click of adjustment account button (e.g., payables, receivables, inventory)
10	Completion of analysis: Interquartile range after capital adjustment

The provided below are the captured screens of automatic data analysis system. Step 6 is to review the selected companies and Step 10 is to review the interquartile range per each TP method.

[53] Currently both Thomson Reuter and Bureau Van Dijk provide the global data base service to MNEs. For the purpose of easy explanation, the flow chart of Thomson Reuter automatic tool ("Onesource") is used.

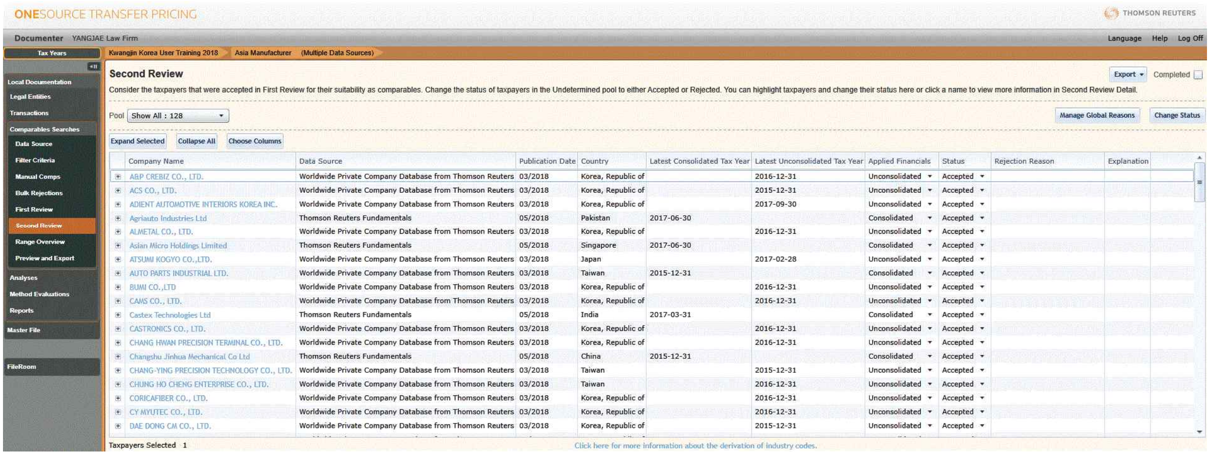
[54] Step 4 is to exclude companies which are substantially owned by any single entity or individual shareholder in order to increase the reliability of analysis.

[55] Step 5 is to exclude companies lacking in comparability by establishing various elimination criteria.

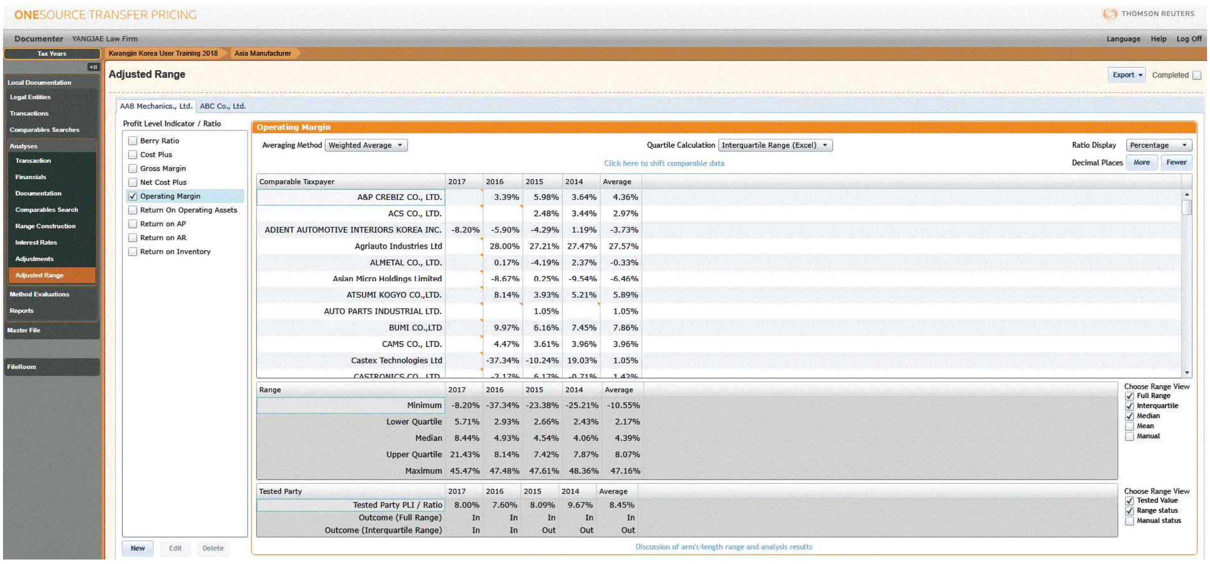
[56] Once Steps 2), 3), 4) and Step 5 is completed, companies which went through filter criteria (2, 3 and 4) & rejection criteria (5) are automatically selected and appear on the screen. Then, an analysis worker can review their information such financial statements and business description, etc. and eliminate companies lacking in reliability. Step 6 requires a lot of time for review like a manual (not automatic) analysis. An analysis worker classifies each company as 'undetermined', 'accepted', 'questionable', 'rejected'. Once accepted companies are chosen and Step 6 is completed, an analysis worker can get the interquartile range before capital adjustment of each TP method.

[57] For capital adjustment, an analysis worker enters a few accounts of balance sheet and income statement on the screen.

[Screen of Step 6]



[Screen of Step 10]



3) Efficient Management and Discussion

Currently MNEs perform a transfer pricing analysis by using local data base or global data base. Further some MNEs perform automatic analysis and the others manual analysis. Thus there is no consistency between MNEs in terms of TP analysis. The reason why tax authorities receives a BEPS report from MNEs is to confirm whether or not they perform cross-border transaction between related parties in a reasonable or proper way. Thus, in case where MNEs perform a TP analysis in an arbitrary way and reports it to the related tax authorities, it wouldn't be easy for tax authorities to efficiently manage the submitted reports.

Generally MNEs submit their BEPS report by using an electronic system. If all MNEs perform a TP analysis in a similar way and submit it by an electronic system, it would be much easier for tax authorities to efficiently manage the submitted data.

For example, let's assume that a MNE uses an automatic analysis tool above and submit its analysis result to the related tax authorities by an electronic system and tax authorities have the same automatic analysis tool. Further assume that a MNE chose 50% ownership in Step 4, 3% R&D expense/net sales in Step 5. However, a certain tax authority argues that a MNE should have chosen 70% ownership in Step 4 and 5% R&D expense/net sales in Step 5.

In that case, it is possible for a MNE and tax authority to efficiently review the submitted file. Both parties can discuss the issue by a conference call. Once tax authority changes elimination criteria chosen by a MNE using an automatic analysis tool, tax authority can immediately confirm an analysis result under the changed elimination criteria. Thus, both parties can discuss the issue efficiently within a very short time. Likewise, where disputes between tax authorities take place, they can discuss the issue efficiently.

In case where a MNE performs a TP analysis by using an automatic analysis tool, the analysis process is stored within an automatic analysis tool and can be easily confirmed anytime.

For example, let's assume that a MNE performed a TP analysis by an automatic analysis tool and submitted it to tax authority in December 2018, and then tax authority performs a tax audit on this MNE 5 years later, that is, in the year 2023. In that case, tax authority can easily confirm the analysis process (and its result) which was done in December 2018 5 years later. The analysis result made in the year 2018 is stored in the computer (automatic analysis tool) and is not changed.

On the other hand, the manual analysis work by an excel sheet is very complex and thus it is very difficult for tax authority to confirm its details and errors. Thus, there is a high possibility of dispute between taxpayers and tax authorities and both parties must consume a lot time to resolve the dispute.

What is more, in case where tax authorities receive a unified electronic datum from all MNEs, it is possible to efficiently manage cross-border transactions by comparing and analyzing it.

V. Conclusion

In the past, only the equity of taxation between taxpayers was emphasized. But we are now in a stage where we should actively discuss the equity of taxation between states as the global community is being changed into the one-day life zone and the active cross-border transactions by multinational enterprises significantly affect the taxing rights of related states. Along with the introduction of BEPS Project whose purpose is to pursue the transparency and reasonableness of cross-border transactions, multinational enterprises should make much more efforts to maintain the appropriateness of cross-border transactions and the tax authorities should make the circumstance where MNEs can do so.[58]

Accordingly, as a part of BEPS Project, OECD published 15 Action plans to equip government with domestic and international instruments to address tax avoidance, ensuring that profits are taxed where economic activities generating the profits are performed and where value is created.

Where each government introduces a reasonable legal system corresponding to the purport of BEPS Project, there would be no controversial issues between governments. However, it is thought from empirical perspective that the international community will have to get over many difficulties derived from unavoidable disputes ("tax war") between states.

The digital service tax has already become a very controversial issue. In case where EU imposes 3% of digital service tax on digital service companies, they are subject to taxation and requirement which is more burdensome than EU companies. Thus, it is directly against the non-discrimination principle Paragraph 1, Article 24 of the OECD Model Tax Convention.

Also EU's proposal wouldn't be reasonable from the standpoint of "principle of matching costs with revenues." EU's proposal can force even a deficit company to pay tax only to EU.

The reason why EU could not help making such a proposal is that the current OECD e-commerce rule has a limitation in preventing the tax avoidance activities of digital business

[58] Han, Sung-Soo, "Who will win the historic international tax war, US(Apple) or EU?" *Korean National Tax Newspaper* (2016), at p.8, http://works.bepress.com/sung_soo_han/71/ (Last visit on 19 January 2019)

MNEs. Thus, as set forth in detail above, a reasonable approach on this matter should be made in order to eliminate the unnecessary disputes between states.

In addition, it is expected that transfer pricing ("TP") would become another controversial issue under the BEPS project. Since transfer pricing affects the taxing right of each government, there is a high possibility that each tax authority will try to unreasonably its taxing right based on unreasonable approaches as always.

Therefore, the international community needs to actively discuss the introduction of automatic analysis system in order to increase the transparency and reasonableness of cross-border transactions and eliminate the unnecessary tax disputes. [THE END]