

Key words: international taxation, digital economy, digital services and products, global income, multinationals, tax policy.

Abstract:

In the Action Plan on Base Erosion and Profit Shifting (BEPS) the OECD set out to answer two fundamental questions related to the digital economy: “How enterprises in the digital economy add value and make their profits?” and “How the digital economy relates to the concepts of source and residence or the characterisation of income for tax purposes?”

In the Final Report on the BEPS Project, the OECD did not directly answer either of these questions but raised a new one: “How taxing rights on income generated from cross-border activities in the digital age should be allocated among countries?” The question remained unanswered, mainly because the problem goes far beyond the issues related to BEPS as defined by the OECD.

The paper seeks to the further discussion about the allocation of the rights to tax income earned from production and distribution of global digital services. Under the current model that guides states in relation to taxation of income from cross-border activities, it is impossible to allocate income from global digital services to only one state or to provide a basis for the taxation of this income in a market state. The allocation of income from global digital services, it is argued, requires global tax policy that would co-ordinate states in the digital era.

**(Not) Addressing the Tax Challenges of the Digital Economy: A Response to Action 1 of the 2015
Final Report of the OECD/G20 Base Erosion and Profit Shifting Project¹**

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[The] ability to maintain some level of business connection within a country without being subject to tax on business profits earned from sources within that country is the result of particular policy choices reflected in domestic laws and relevant double tax treaties, *and is not in and of itself a BEPS issue.*³

1 Introduction

The “digital economy” is an umbrella term used to describe markets that focus on digital technologies and typically involve the trading of information goods or services through electronic commerce.⁴ The digital economy is the part of the global economy that is the most integrated.

The Action Plan on Base Erosion and Profit Shifting (BEPS) has set out to answer two fundamental questions related to the digital economy: “how enterprises in the digital economy add value and make their profits” and “how the digital economy relates to the concepts of source and residence or the characterisation of income for tax purposes.”⁵

However, the final outcome in terms of answering the above two questions in relation to direct taxation in the digital economy was quite modest considering the time spent and resources involved. The “out of the box” thinking promised did not occur.⁶

In its Final Report, the Task Force on the Digital Economy (TFDE), a subsidiary body of the OECD Committee on Fiscal Affairs, in which non-OECD G20 countries participate as Associates on an equal footing with OECD countries, agreed to propose modifications to the definition of and the list of exceptions to the definition of permanent establishment (PE), revised the guidance on transfer

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³ OECD, “Addressing the Tax Challenges of the Digital Economy”, *Action 1: 2015 Final Report, OECD/G20 Base Erosion and Profit Shifting Project* (5 October 2015) 79 (hereinafter the “TFDE Final Report”).

⁴ OECD, “The Digital Economy”, *Report of Hearings on the Digital Economy* (7 February 2013) 5.

⁵ OECD, “Action Plan on Base Erosion and Profit Shifting (BEPS)”, *BEPS Report* (19 July 2013) 10.

⁶ “The OECD is committed to delivering a global and comprehensive action plan based on in-depth analysis of the identified pressure areas with a view to provide concrete solutions to realign international standards with the current global business environment. This will require some “out of the box” thinking as well as ambition and pragmatism to overcome implementation difficulties, such as the existence of current tax treaties.” See OECD, “Addressing Base Erosion and Profit Shifting”, *BEPS Report* (12 February 2013) 9.

pricing, and made some recommendations on the design of controlled foreign company (CFC) rules.⁷

The recommendations of the BEPS project contained in the TFDE Final Report create (or confirm) the possibility for states to tax income from activities that include the production and sales of tangible products in their territories. However, the related issue of the taxation of income from digital services and products through access to web platforms remains unresolved.

In other words, following the TFDE's proposals a market state may get the opportunity to tax the income of Amazon and Apple from sales of tangible products to consumers located within its territory under the modified definition of a PE. On the other hand, income from sales of digital products, like digital books and apps, and digital services to the same consumers will escape the allocation to a PE in a market state.

The impact of the TFDE's proposals on Google and Facebook – major suppliers of Internet advertising and collectors of personal data – is likely to be insignificant from the perspective of many market states. Some states may try to use the modified PE concept. However, it is unlikely that these states can get significant additional tax revenues without applying significant economic or political pressure to multinational suppliers of digital services and products and, therefore, force them to create a local PE and allocate a portion of global income earned on a local market this PE.⁸ States can introduce a new direct tax,⁹ re-place¹⁰ or re-shape a corporate income tax¹¹ to avoid the

⁷ TFDE Final Report at 12.

⁸ For instance, under the Budget Law for 2014 Italian taxpayers can buy online advertising services and sponsored links only from suppliers registered for VAT purposes in Italy. See Luigi Quarantino, "New provisions regarding the taxation of the digital economy" (2014) 54 (5) *European Taxation* 211, 211-217.

In China e-commerce platforms need to be registered and licensed to get access to the Chinese Internet space and for the processing of payments. See Sophie Ashley, "The digital economy is creating a PE conundrum, tax review" (2013) 24 (6) *International Tax Review* 34, 34.

⁹ For instance, the UK has introduced the Diverted Profits Tax (DPT) on a company's "taxable diverted profits" which would otherwise not be subject to tax in the UK at all, at least in the case of business profits that could not be attributed to a permanent establishment. Australia also supported the idea of the diverted profits tax. See Craig Elliffe, "The lesser of two evils: double tax treaty override or treaty abuse?" [2016] 1 *the British Tax Review* (forthcoming).

See also proposals for a tax on online advertising and a tax on electronic commerce in Ministry of Finance of France, *Rapport sur la fiscalité du secteur numérique* (the Colin and Collin Report) (18 January 2013) 67, 121-128 <http://www.redressement-productif.gouv.fr/files/rapport-fiscalite-du-numerique_2013.pdf> accessed 15 July 2013.

¹⁰ For instance, a corporate tax can be replaced by an indirect tax. See Reuven Avi-Yonah, "From income to consumption tax: some international implications" (1996) 33 *San Diego Law Review* 1329, 1332-1339; Alan Auerbach, "The Future of Capital Income Taxation" *Fiscal Studies* (2006) 27 *Institute for Fiscal Studies* 399, 414; Alan Auerbach, Michael Devereux and Helen Simpson, "Taxing Corporate Income" (2008) NBER Working Paper 14494, 47-50 and 54; Martin Sullivan, *Corporate Tax Reform: Taxing Profits in the 21st Century* (S.I. Apress 2011) 135, 139.

limitations on the right to tax imposed by double tax treaties. States also can “play” with some limitations to stretch a national tax base.¹²

The TFDE Final Report supports opportunistic behaviour of states. By introducing any of these new options some states could bring within their tax jurisdiction some of the income of multinationals operating in the digital economy.¹³ These options can be pursued under national law where they are compatible with the existing international legal commitments of the states concerned.¹⁴ With the trend towards double tax treaty override already evident,¹⁵ the proposals of the TFDE will surely contribute to the growth of this trend.

It appears that for those states who are not “on trend”, the total impact of the BEPS project on multinationals that supply digital services and products to customers in market states over the Internet, if the recommendations are implemented, would be an obligation to annually report their income earned in each state after 2016. Reports should be filed in local tax administrations and also in the jurisdiction of tax residence of the ultimate parent entity of a multinational firm.¹⁶ The reporting will leave most states merely with knowledge that increases sorrow,¹⁷ but without real opportunities to impose a corporate tax on income generated from the remote supply of digital services and products and/or to collect tax revenues from the imposed tax.

The taxation of income earned by Google in New Zealand illustrates both the problem that the TFDE failed to deal with and the negative impact of this problem for individuals. Google does not have data centres in New Zealand and does not report on its income from Internet advertising in New Zealand. The total Internet advertising spend in New Zealand in 2014 was estimated at NZD 589.32

¹¹ In particular, a state can transform a standard corporate income tax from traditional source-based tax into the destination-based tax. See Alan Auerbach, Michael Devereux and Helen Simpson, “Taxing Corporate Income” (2008) NBER Working Paper 14494, 52-53. In this case the supply approach of the current model of the allocation of rights to tax will be implicitly replaced by the demand approach that sees a place of sales as a key value creating factor.

¹² For instance, Brazil usually classifies services of non-residents either as technical or administrative assistance that are subject to a withholding tax in Brazil. See Sergio Andre Rocha, “Brazil report” in *Enterprise Services*, 97A IFA Cahiers (International Bureau of Fiscal Documentation 2012) 158.

¹³ TFDE Final Report at 13 and Chapter 9 of the TFDE Final Report.

¹⁴ TFDE Final Report at 13.

¹⁵ For more detail see Craig Elliffe, “The Lesser of Two Evils: Double Tax Treaty Override or Treaty Abuse?” [2016] 1 the British Tax Review (forthcoming).

¹⁶ OECD, “Transfer Pricing Documentation and Country-by-Country Reporting”, *Action 13: 2015 Final Report, OECD/G20 Base Erosion and Profit Shifting Project* (5 October 2015) 9-10.

¹⁷ “For in much wisdom is much vexation, and he who increases knowledge increases sorrow”: Ecclesiastes 1:18.

million,¹⁸ at least a half of which was probably spent on Google advertising services. With the assumption that net income of Google in 2014 was about 22.5 % of its gross income,¹⁹ Google earned at least NZD 60 million from Internet advertising in New Zealand in 2014. However, Google does not pay any tax on this income in New Zealand. In 2014 Google declared NZD 522,641 as its net income in New Zealand,²⁰ and paid a total of NZD 361,665 in income tax.²¹

Google is incorporated in the US.²² On 5 October 2015 New Zealand finalised the negotiation of the Trans-Pacific Partnership (TPP) with the US and other eleven states. When this mega-regional agreement comes into force, the right of New Zealand, as well as other participants of the TPP, to require Google to use or locate computing facilities in its territory as a condition for conducting business in New Zealand will be limited.²³ Moreover, the TPP imposes on its participants an obligation to develop and maintain national legislation governing electronic transactions and to promote electronic commerce.²⁴

Between 2013-2014 the tax ratio increase in New Zealand was 1.0 percentage point. "About 80% of the increase in revenue [of OECD countries] between 2013 and 2014 is the result of rising revenues from a combination of consumption taxes and taxes on personal income and profits".²⁵ By contrast, corporate tax revenues have been falling across OECD countries since the global economic crisis, shifting the tax burden onto individual taxpayers. "Average revenues from corporate incomes and gains fell from 3.6% to 2.8% of gross domestic product (GDP) over the 2007-14 period. Revenues from individual income tax grew from 8.8% to 8.9% and VAT revenues grew from 6.5% to 6.8% over

¹⁸ IAB NZ and PwC Online Ad Spend Reports <http://www.iab.org.nz/resources/online_ad_spend/> accessed 19 August 2015.

¹⁹ Based on the information in Google, *The Annual Report Pursuant to Section 13 or 15 (d) of the Securities Exchange Act of 1934 (form 10-K) for the fiscal year ended 31 December 2014*, 33 <<http://investor.google.com/earnings.html>> accessed 19 August 2015.

²⁰ Google earned NZD 521,735 from sales, marketing and R&D services, and NZD 1,151 from services as a payment collection agent.

²¹ Google New Zealand Ltd., *Financial Statements for the year ended 31 December 2014* <<https://www.business.govt.nz/companies/app/service/services/documents/23411216F0B792CE4D05DD4225577957>> accessed 16 August 2015; Google Payment New Zealand Ltd., *Financial Statements for the year ended 31 December 2014* <<https://www.business.govt.nz/companies/app/service/services/documents/B18889364E802EA16AE2547C0BD08296>> accessed 16 August 2015.

²² Fourth Amended and Restated Certificate of Incorporation of Google Inc. Retrieved 25 March 2013 from <<http://investor.google.com/corporate/certificate-of-incorporation.html>> 25 March 2013; see also <www.google.com/about/company/history/> and <www.google.com/about/company/facts/locations/> accessed 11 April 2013.

²³ Article 14.13 (2) of the Trans-Pacific Partnership (Atlanta, 5 October 2015) (hereinafter "the TPP").

²⁴ See Articles 14.5 and 14.15 of the TPP.

²⁵ OECD, *Revenue Statistics 2015* (3 December 2015) 14.

the same period”.²⁶ The difficulty of market states being able to tax multinationals operating in the digital economy has substantially contributed to this shift in the tax burden.

However, the analysis of the tax problems associated with the digital economy made by the TFDE in a framework of the BEPS project was artificially limited by the definition of the base erosion and profit shifting problem. Therefore, when it comes to the taxation of multinationals operating in the digital economy, the outcome of the BEPS project is rather tricky, especially for states providing access to their markets for remotely supplied digital services and products.

First, if a state has a corporate income tax and provides access to its markets for digital services and products of foreign suppliers, but cannot impose income tax on this income because of the limitations on its tax jurisdiction imposed by international law and treaties, the base erosion problem in this state does not exist. In this case the state providing access to its market has no ‘right’ to consider the activity of the foreign supplier as creating corporate income tax base within the state’s borders.

From the viewpoint of the TFDE Final Report the base erosion problem also does not occur in a case where a state cannot effectively exercise its sovereign right to tax income of foreign suppliers and collect taxes imposed on income of these suppliers. This situation is common where income is earned from the supply of digital services and products to a market state over the Internet. However, this situation differs from the previous one when the right of a state to impose a tax is limited. A tax base in relation to a particular tax originates with an introduction of the tax by national tax law. If the tax imposed is not paid and tax revenues cannot be collected by a state through enforcement of tax claims, a tax base related to the tax is eroded.

Second, the TFDE Final Report suggests measures to put an end to the phenomenon of “stateless income” but does not clarify the concept of stateless income.²⁷ In general, income earned in the digital economy can be described as “stateless” because the right to tax this income is limited, has not been exercised or does not exist. The right to tax can be limited under national law or the international law obligations of a particular state. The PE concept is an example of this limitation. The TFDE Final Report deals only with stateless income that is the result of the artificial use of the limitations imposed by double tax treaties.

²⁶ OECD, “Corporate Tax Revenues Falling, Putting Higher Burdens on Individuals” www.oecd.org/tax/corporate-tax-revenues-falling-putting-higher-burdens-on-individuals.htm accessed 7 December 2015.

²⁷ TFDE Final Report at 12, 82, 84, 146.

However, the other two cases of stateless income (when the right to tax is not exercised or does not exist) fall within the scope of the BEPS project. In particular, the fact that some states do not tax income and, therefore, provide shelter for the foreign capital of multinational firms that are thereby able to avoid taxation if the state of their ultimate parent company (in other words, the home state of a multinational firm) does not tax corporate income on a worldwide basis. The third case is rather futuristic, but not beyond the realms of possibility:

The U.S. Patent and Trademark Office granted Google's patent on a water-based data center on April 28, 2009. The data center would be made up of servers inside containers like those normally used for the carriage of goods by sea or rail. Cranes would place these containers on ships or barges. The containers would be linked together to form large data centers that would be located at sea wherever necessary. Ocean waves, tides, or currents would supply power to these floating data centers, and pumping the surrounding water through an onboard system would cool them.²⁸

This type of technological development may have a direct impact on the taxation of corporate income if the current model of the allocation of taxing rights is applied to suppliers of digital services and products. The right choice of the home state for the parent company of a multinational group, with the source of income located in a place that is not subject to sovereign rights of any particular state, might be the ultimate tax minimisation strategy.²⁹ The CFC rules as a tool for an extension of a tax jurisdiction might not be helpful or fair when the extension covers a "sovereign free zone".

Third, the TFDE Final Report and other documents developed in the framework of the BEPS project refer to the BEPS problem. However, there is not a single BEPS problem faced by all states. States not only face different BEPS problems, but also evaluate them from their individual state-centred perspectives. For example, tax planning made by the same firm can erode the corporate income tax base of one state, but contribute to increasing of the tax bases of another state. Tax bases of the second state might be related to other types of taxes. In the case of Google³⁰ and other multinationals that have chosen Bermuda as a shelter for their capital, Bermuda does not impose tax on income and primarily relies on payroll taxes and taxes on consumption.³¹ The fact that Bermuda

²⁸ Steven R. Swanson, "Google Sets Sail: Ocean-Based Server Farms and International Law" (2011) 43 Connecticut Law Review 709 at 716-717.

²⁹ For instance, *res communis* are not subject of jurisdiction of a particular state. The *res communis* include high seas, together with exclusive economic zones, and outer space. See Malcolm N. Shaw, *International Law* (6th edn, Cambridge University Press 2008) 492; Ian Brownlie, *Principles of Public International Law* (5th edn, Clarendon Press 1998) 105, 173-175.

³⁰ For an overview of the tax planning scheme of Google see TFDE Final Report at 171-175.

³¹ Government of Bermuda, Ministry of Finance, *Budget Statement in Support of the Estimates of Revenue and Expenditure 2015-2016*, 11-12, 32 <https://oba.bm/256381811_Bermuda_2015_2016_Budget.pdf> accessed 24 August 2015.

has no tax on income attracts foreign capital and maintains its key national export industry – the provision of services for international business. Therefore, the income tax-free environment becomes a national resource that stimulates national economic growth of Bermuda and increases its tax base related to payroll and consumption taxes. The BEPS problems of other states that occur because of foreign capital is sheltered in Bermuda are in a “blind spot” for Bermuda, because it does not have a corporate income tax base that can be eroded because of the activities of Google.

The BEPS focused analysis of the TFDE Final Report, with its very narrow definition of a base erosion and profit shifting problem and a state-centered view of the problem, has left tax policy makers with the intuitive feeling that something is not right in the digital economy, where the “something” is described by the vague phrase “broader tax challenges”.³²

The TFDE Final Report, as noted above, distinguishes two general groups of tax challenges in the digital economy: the base erosion and profit shifting problem and the question of the allocation of taxing rights in the digital economy.

While the Report makes some proposals related to the BEPS problems in general,³³ with respect to the allocation of taxing rights in the digital economy the Report offers no real assistance:

The digital economy triggers systemic questions about the ability of the current domestic and international tax systems to deal with the changes brought about by advances in information and communication technology (ICT). These tax policy issues have implications for the overall design of tax systems. These challenges may therefore have broader implications than BEPS and the countermeasures developed in the course of the Project. These include issues related to the allocation of taxing rights among countries as well as to the tax policy considerations that should be taken into account when weighing the relative costs and benefits of the various tax solutions. With respect to direct taxes, the broader tax challenges raised by the digital economy go beyond the question of how to put an end to double non-taxation, and chiefly relate to the question of how taxing rights on income generated from cross-border activities in the digital age should be allocated among countries.³⁴

The TFDE, therefore, admits that the current problem with tax policy for the digital economy is structural. However, what is missed is that the problem cannot be understood from an individual state-centred perspective and, therefore, cannot be resolved by unilateral changes in national or international tax policy. A bilateral co-operation of states under double tax treaties is also not very

³² TFDE Final Report at 13.

³³ See footnote 13.

³⁴ TFDE Final Report at 132, para 340.

helpful because it does not consider interests of all states that can be potentially affected by a decision between two states.

When viewed from a global perspective the problem is self-evidently the lack of fair, efficient and effective global tax environment that is coherent with the global economic and technical environment known as the digital economy. The problem affects not only states but also multinational firms that use the Internet as a mean of production and distribution of global digital services and products.

In an unfair, inefficient and ineffective global tax environment, opportunism by both states and multinationals seems a relatively predictable, if not reasonable, response to the circumstances.

The Paper aims to start a discussion related to creation of fair, efficient and effective global tax environment that would benefit all states and multinationals.

Part 2 of the paper provides an example of a business model that includes advertising web platforms as a part of the process of production of global digital services. Digital services and products are global when they are produced on *and* supplied over the global electronic network to many market states.

The value created by these platforms is analysed under the traditional value chain analysis applied to the digital economy. It is suggested that the value chain in the process of production of digital services has an additional layer not present in other goods and services, namely: the *global* economic and technical infrastructure: an integrated global economic system made of open national economies and technical infrastructure interconnected into a global electronic network. The analysis also explains the multisided market structure of those business models in the digital economy that include advertising web platforms.

Part 3 explains how the contemporary model for the allocation of rights to tax income from cross-border activities found in Tax Treaty Model Conventions³⁵ is not compatible with the global process of production of web platform operators. The analysis of three general assumptions that underpin this allocation model demonstrates its non-applicability to economic activities that involve

³⁵ OECD Model Tax Convention on Income and on Capital: Condensed Version (9 th edn, Paris, 15 July 2014); the UN Model Double Taxation Convention between Developed and Developing Countries (2011 update, New York, 9-10 June 2011); the US Model Income Tax Convention (Washington, 15 November 2006); the Model Tax Treaty with Russian Federation for prevention of Double Taxation and Tax Avoidance with Respect to Taxes on Income and Property (Moscow, 24 February 2010); the Intra-ASEAN Model Double Taxation Convention (Manila, 15 December 1987). The paper primarily focuses on the OECD Model Tax Convention on Income and on Capital.

interaction with a web platform as an element of a process of production. A business model that includes an advertising web platform is used as the example.

Part 4 describes the global distributional conflict arising from the use of the aforementioned business model. This part discusses the interdependence of states and also of states and multinationals, which is a key circumstance surrounding the conflict along with the current level of globalisation and technological development.

The right to tax a person or entity is traditionally linked with public services provided to that person or entity. This is almost seen as axiomatic and is applied at both national and international levels. With the aim of identifying the providers of public services in the digital economy, Part 5 deploys systems theory. Analysing the origin of the digital economy and the structure of interactions in this economy between states and also between the world community of states and multinationals, Part 5 concludes that states acting as the world community create global public services: global economic and technical infrastructure. While this infrastructure is a part of the value creation chain of multinationals that produce global digital services and products on and supply them over the Internet worldwide, the input of each of the members of the world community of states into production of these services and products is not presently adequately paid for by state taxes.

Part 6 discusses the basis of potential multilateral co-operation that would resolve the distributional conflict described in Part 4 in a manner that would satisfy both states and multinationals.

Part 7 suggests principles for multilateral co-operation that would guarantee that all income is taxed, but taxed only once; the total tax burden for multinationals is reasonable; and global income apportioned in a manner that corresponds to public services (national and global) provided by each state.

Part 8 discusses institutional arrangements necessary for the implementation of principles suggested in Part 7.

2 Global Process of Production in the Digital Economy

a. Value Chain

From the traditional perspective, at least in the tax world, based on the traditional value creation analysis, a production process might be viewed as global when a firm creates or acquires inputs for production of a final product in territories of many states.

The value creation can be presented as the linear process of transforming inputs into outputs where the difference between income from selling of the final output and costs for acquiring and creation

of inputs constitutes profit of the firm.³⁶

The generic value chain consists of value creating activities (“building blocks” that are used for the creation a product) and margins (the difference between the total value and the collective cost of performing value creating activities).³⁷ Value creating activities are divided into two groups: primary activities and support activities. Primary activities are those that directly result in a creation of the product and its sale, whereas support activities improve the performance of primary activities.³⁸

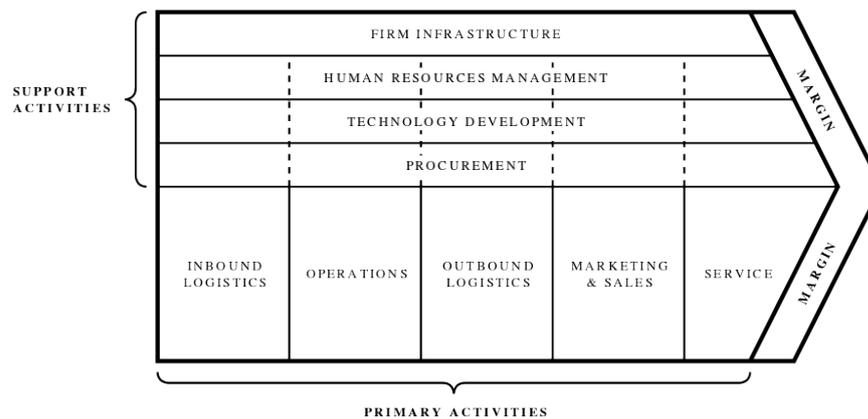


Diagram 1. Generic Value Chain³⁹

Traditional value creation analysis considers all inputs that the firm uses as a part of its value creating activities.

The generic value chain model was developed by Michael E. Porter before the commercialisation of the Internet and significant integration of the global economy. This model does not include the global economic and technical infrastructure as a value creation activity. However, this activity is an input that the world community of states makes in the process of production of global digital services and products. Digital services and products are global when the produced on *and* supplied over the Internet to many market states.

“The microeconomic theory of the firm uses a “production function” to formally describe the relationship between inputs and output. In its simplest form, a production function treats inputs as if

³⁶ Geoffrey Alexander Jehle and Philip J. Reny, *Advanced Microeconomic Theory* (3rd edn, Financial Times/Prentice Hall 2011) 125-126, 135, 146.

³⁷ Michael E. Porter, *Competitive Advantage: Creating and Sustaining Superior Performance* (Free Press; Collier Macmillan 1985) 38.

³⁸ Ibid 39-40.

³⁹ Ibid 37.

they are consumed in the production of outputs. Capital is, of course, one type of input. However, capital goods do not neatly conform with the simple production model. Among other things, they are not consumed in production. Nonetheless, capital goods must specifically be deployed in production for a period of time in order to render services. A measure of capital input which would be consistent with theory is therefore the quantity of the flow of services provided by capital goods.”⁴⁰

In general, a process of production is a transformation of inputs into the final output. From the perspective of international trade, the place of goods origin is a territory of a state where a substantial transformation of inputs made in a production of these goods occurs. The same approach applied to a production of digital services and products means that the place of origin of these services and products is always a market state. For digital services and products, the final and the most substantial transformation of inputs takes place when information that constitutes “the body” of the service or product is downloaded by an electronic device of an Internet user.

In international trade the origin of services is usually determined by a location of a service supplier. The digital economy, by its nature, significantly relies on automatic processes performed by web servers and electronic devices. Therefore, a supplier of digital services, its personnel and web servers, as well as electronic devices involved in the process of production of services, can be located in different states. When web servers and electronic devices located in different states, the electronic network of more than a single state is involved. Therefore, following the traditional international trade approach to the origin of services, in some circumstances the single digital service may be seen as originating from territories of many states.

The issue of origin or multi-territorial origin of digital services is usually not addressed in international tax policy. For the purpose of tax policy, the paper suggests considering digital services and products as local only when information inputs arrive from local web servers interconnected through the local electronic network on the electronic device located within a territory of the state.

When the process of production of digital services or products involves the infrastructure of the Internet that wholly or partly belongs to more than a single state, the service or product cannot be considered as local.

⁴⁰ Michael J. Harper, “Estimating Capital Inputs for Productivity Measurement: An Overview of Concepts and Methods”, Conference on Measuring Capital Stock (Canberra, 10-14 March 1997) 2 < <http://www.oecd.org/std/na/2666894.pdf>> accessed 30 December 2016.

When web servers used for a production of digital services and products are located in different states, and the entire business model structured around a global web platform or centrally coordinated web platforms located in different states, the digital services and products are global.

When digital services and products are global, in addition to inputs made or acquired worldwide by the firm itself, the production process necessarily includes the global input made of the world community of states in a form of global public services. The production process also may include contributions of Internet users from all over the world made in a form of group and personal inputs.⁴¹

In the digital economy, in addition to inputs acquired from third suppliers, firms producing global digital services and products always use a global input produced by the world community of states.

The input of states worldwide into the production of some digital services and products is made up of coordinated contributions of individual states to the creation and maintenance of the global economic and technical infrastructure by entering in multilateral and international agreements and development of national laws in support of these agreements. At the international level these contributions are made by participation of states in multilateral treaties related to electronic commerce⁴² and the creation of international institutions.⁴³ By its very nature, this input can be viewed as a global public service provided by the world community of state to multinationals operating in the digital layer of the global economy.

The input of the world community of states has a form of the global public service: global economic and technical infrastructure that allows free movements of digital flows of capital, services, products and information. This global public service is essential to the creation of a unique effect: spatial freedom. As a result, multinationals operating in the digital economy potentially have much more freedom in the allocation of their resources, factors of production and choice of a market for their products.

The idea of global public services is consistent with the acknowledged view that in some

⁴¹ Article 14.2 (4) of the Trans-Pacific Partnership (Atlanta, 5 October 2015) also distinguishes a service *delivered* electronically from a service *performed* electronically.

⁴² For instance, the UNCITRAL Model Law on Electronic Commerce (12 June 1996) with additional article 5 bis as adopted in 1998 (New York, 1999); the United Nations Convention on the Use of Electronic Communications in International Contracts (New York, 2005); the Trans-Pacific Partnership (Atlanta, 5 October 2015).

⁴³ In particular, the World Trade Organization (WTO); the Internet Assigned Numbers Authority (IANA); the Internet Corporation for Assigned Names and Numbers (ICANN); the World Wide Web Consortium (W3C); The Institute of Electrical and Electronics Engineers (IEEE) and the International Telecommunication Union (ITU); the Internet Engineering Task Force (IETF).

circumstances, states provide public services (also known as public goods) as a group.⁴⁴ When public goods are available for all to consume they are global.⁴⁵ Therefore, from the perspective of the value creation analysis, the use of the global economic and technical infrastructure for production of services and products on these infrastructure (on the Internet), is an input in the form of a supporting activity for value creation by a multinational supplier of digital services and products. This is represented on Diagram 2.⁴⁶

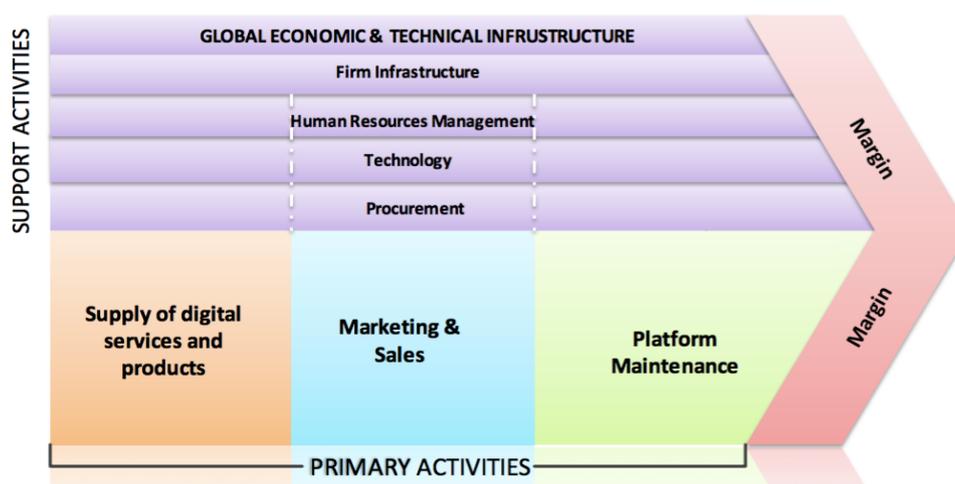


Diagram 2. Value chain in the digital economy

Therefore, when a multinational firm is operating in the digital economy and uses the Internet as a means of production and transmission of the final product to final customers around the world, the firm creates a global product. In this case the value chain of the firm is truly global because it involves the global public service.⁴⁷

b. Interactivity

Originally, the Web, or what is known now as the Web 1.0, was an analogue of the traditional media. The only key difference was the form in which the information was present and the method of access to it. The Web, or World Wide Web (WWW), is a part of the Internet arising out of the

⁴⁴ Jha Raghendra, *Modern Public Economics* (2nd edn, Routledge 2010) 480-489.

⁴⁵ Inge Kaul, *Providing Global Public Goods: Managing Globalization* (Oxford University Press 2003) 5.

⁴⁶ Primary activities of those firms that use web platforms in their business models for production and supply of digital services and products identified as suggested by Charles B. Stabell and Øystein D. Fjeldstad in "Configuring Value for Competitive Advantage: on Chains, Shops, and Networks" (1998) 19 (5) *Strategic Management Journal* 413, 429.

⁴⁷ The OECD defines the global value chain as "the full range of activities that firms engage in to bring a product to the market, from conception to final use." See OECD, "Interconnected Economies: Benefiting from Global Value Chains", *Synthesis Report* (OECD 2013) 8.

collection of technologies⁴⁸ that allows digital information to be transferred from one Internet Protocol (IP) address to another. Every device for the Internet communications has its own IP address. Digital information can “travel” between devices connected to a network of interconnected web servers⁴⁹ around the world. From the economic perspective, the Web is a distributed hypermedia environment within the Internet that allows multimedia information to be located on a network of interconnected servers and be transferred to a particular device by clicking on hyperlinks (texts, icons or images) on a web page.⁵⁰

The idea of interaction, the cornerstone of the Web 2.0 philosophy, transformed the commercial use of the Internet and boosted the development of the digital economy. According to one of the authors of the new philosophy, Tim O’Reilly:

Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an “architecture of participation”, and going beyond the page metaphor of Web 1.0 to deliver rich user experiences.⁵¹

The Web 2.0 philosophy advocates for the creation of open web platforms and development of tools for interaction with Internet users. The idea of interaction suggested by the Web 2.0 philosophy evolved into “the Internet of things” – the idea that different electronic devices could interact with each other over the Internet.⁵² The Web now is a network that links all devices that can access the Internet (computers, laptops, smartphones, and so forth).

⁴⁸ Requirements for String Identity Matching and String Indexing, *World Wide Web Consortium Working Draft* (W3, 10 July 1998) <<http://www.w3.org/TR/WD-charreq#Glossary>> accessed 10 March 2013.

⁴⁹ Web servers are computers that deliver (serves up) web pages. Every web server has an IP address and possibly a domain name. For example, if you enter the URL <http://www.webopedia.com/index.html> in your browser, this sends a request to the Web server whose domain name is webopedia.com. The server then fetches the page named index.html and sends it to your browser.

Any computer can be turned into a web server by installing server software and connecting the machine to the Internet <http://www.webopedia.com/TERM/W/Web_server.html> accessed 10 December 2015.

⁵⁰ Donna L. Hoffman, Tomas P. Novak and Patrali Chatterjee, “Commercial Scenarios for the Web: Opportunities and Challenges” (1995) 1(3) *Journal of Computer-Mediated Communication* <<http://onlinelibrary.wiley.com/doi/10.1111/j.1083-6101.1995.tb00165.x/full>> accessed 13 June 2013.

⁵¹ Tim O’Reilly, “Web 2.0: Compact Definition?” <<http://radar.oreilly.com/2005/10/web-20-compact-definition.html>> accessed 17 June 2013; see also Tim O’Reilly, “What Is Web 2.0. Design Patterns and Business Models for the Next Generation of Software” (30 September 2005) <<http://oreilly.com/web2/archive/what-is-web-20.html>> accessed 17 June 2013.

⁵² TFDE Final Report at 42-43.

Nowadays the Web is not only a market place itself where digital services and products are offered for sale. The Web, as well as the Internet in whole, is the means by which Internet users are involved in the process of production through the interaction either with web platforms, or and among themselves through web platforms. Some firms operating in the digital economy have business models that rely on the inputs of individuals (Internet users) in the primary value creating activities: supply of digital services and products or marketing and sales. The involvement of individuals into the process of production of digital services and products is a feature of the Web 2.0 philosophy, which was the second Internet revolution after the commercialisation of the Internet.

The interaction with a web platform or through it, as well as other Web-based activities creates a “digital trace” on the Web – in other words, data. Millions of gigabytes of digital information are produced every second by Internet users, servers and electronic devices and transferred through the Web commonly referred to as “big data”.⁵³ In the digital economy, data is a core asset and commodity for many digital services and products.

c. Multisided Business Models

When the supply of digital products and services, as a primary value creating activity presented on Diagram 2, includes advertising web platforms, the business model often has a structure of a multisided market because it includes web platforms that provide free services for Internet users and advertising web platforms (also known as “ad networks”⁵⁴). The more sophisticated models also include an ad exchange platform⁵⁵ - a virtual market where unreserved ad places (ad slots)⁵⁶ can be offered by an agency or an ad network that represents a website owner to other ad networks or advertising agencies.

As presented on Diagram 3, the business model that includes web platforms that produce advertising and free services has triangular structure where each side is a set of bilateral exchanges: between a platform operator and Internet users; Internet users and advertisers; advertisers and the platform operator. The platform operator in this model is an entity that supplies both Internet advertising and free services.

⁵³ OECD, “Exploring Data-Driven Innovation as a New Source of Growth: Mapping the Policy Issues Raised by ‘Big Data’” (2013) OECD Digital Economy Papers 222, 4.

⁵⁴ <http://www.iab.net/wiki/index.php/Ad_network> accessed 1 May 2014.

⁵⁵ <http://www.iab.net/wiki/index.php/Ad_exchange> accessed 13 November 2013.

⁵⁶ <http://www.iab.net/wiki/index.php/Ad_space> accessed 1 May 2014; see also Lim Hongkiat, “How To Setup Google Ad Manager On Your Blog/Website” <<http://www.hongkiat.com/blog/how-to-setup-google-ad-manager-on-your-blogwebsite/>> accessed 1 May 2014.

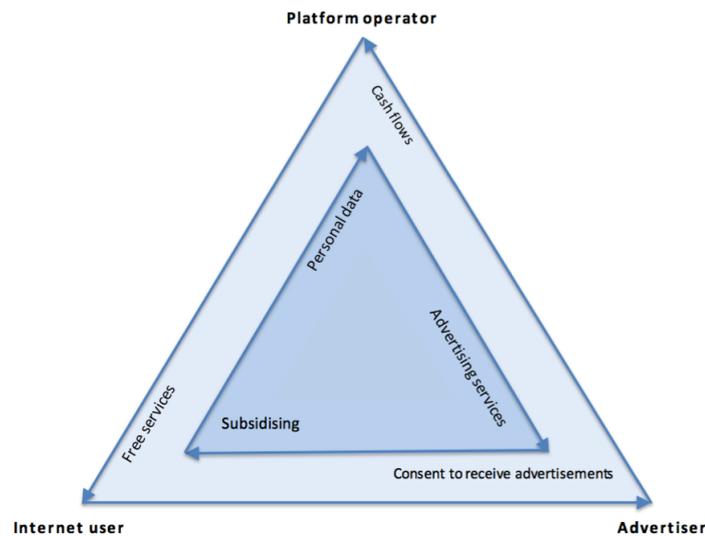


Diagram 3. *Advertising web platform as a three-sided market*

3 Incompatibility of the Current Model of the International Allocation of Taxing Rights with the Global Process of Production in the Digital Economy

The multisided structure of the business models commonly found in the digital economy was not anticipated by the current tax treaty system.

The current model for the allocation of taxing rights in relation to multinationals is shaped by the Tax Treaty Model Conventions that are based on three general assumptions. First, individuals and entities within states are involved in the cross-border commercial activities and, therefore, participate in the economic exchange. States stimulate this exchange by their national and international trade, investment and tax policies. Therefore, the goal of tax policy is to stimulate the international exchange of goods, services and capital.

The second assumption is that income from cross-border economic activity creates economic allegiance with more than one state. Therefore, to reduce a risk of double taxation states should decide “where a person ought to be taxed or how the division ought to be made as between the various sovereignties that impose the tax.”⁵⁷

The coordinated decision that is re-introduced by states through their double tax treaties is based on two accepted criteria of economic allegiance: the origin of income and the domicile of a taxpayer.⁵⁸ Accordingly, the rights to tax items of income are allocated between a source and residence states.

The third assumption suggests that entities of every multinational firm are separate taxpayers.

⁵⁷ League of Nations, *Report on Double Taxation: Submitted to the Financial Committee by Professors Bruins, Einaudi, Seligman and Sir Josiah Stamp* (Geneva, 15 April 1923) 20.

⁵⁸ *Ibid* at 23-25.

These three assumptions do not fit the reality of the production of global digital services and goods and are discussed further through counterarguments.

a. Co-production vs Exchange

Many of the business models of firms operating in the digital economy rely on network effects and aggregation of personal data.

The concept of a network effect has been known since the creation of the first telephone networks. The effect arises where the value of a product to its users increases with the number of other users of the product.⁵⁹ The Web 2.0 philosophy made the network effects of the Web more powerful by combining it with open platforms. The network effect in the Web 2.0 era means “far more than just offering old applications via the network (“software as a service”); it means building applications that literally get better the more people use them, harnessing network effects not only to acquire users, but also to learn from them and build on their contributions.”⁶⁰ Tim O’Reilly and John Battelle argue: “[m]any people now understand this idea in the sense of “crowdsourcing”, namely that a large group of people can create a collective work whose value far exceeds that provided by any of the individual participants.”⁶¹ From the perspective of value creation analysis the network effect is a group input made by individuals, from the group, in a primary value creating activity of a supplier of global digital services and products. By making this “group input” individuals participate in the process of production. The network effects can add value to both the supply of services and marketing and sales activities. Space constraints, however, mean this paper cannot address the issue in further detail.

Aggregation of data, including personal data, is another feature of many business models that are used in the digital economy. Like the network effects, collecting of information about customers is not a new marketing tool. However, never in the history of the world has a single firm had the possibility to collect, store, analyse and operate with such an enormous volume of data coming from all over the world.

Data collection is not limited to social networking sites. “Nearly everything manufactured today exists simultaneously in the physical world and in the world of data. A digital representation is the object's information shadow. Information shadow can be examined and manipulated without having

⁵⁹ OECD, “The Digital Economy”, *Report of Hearings on the Digital Economy* (7 February 2013) 8.

⁶⁰ Tim O’Reilly and John Battelle, “Web Squared: Web 2.0 Five Years On” (*Web2summit*, October 2009) 7-8 <<http://www.web2summit.com/web2009/public/schedule/detail/10194>> accessed 17 June 2013.

⁶¹ Tim O’Reilly and John Battelle, “Web Squared: Web 2.0 Five Years On” (*Web2summit*, October 2009) 7-8 <<http://www.web2summit.com/web2009/public/schedule/detail/10194>> accessed 17 June 2013.

to touch the physical object.”⁶² More and more information shadows are linked with their real world analogues by unique identifiers.⁶³ Whether you are playing web games, searching for holiday accommodation or posting photos on a social network, all this information is collected for further monetisation.⁶⁴ This “shadow world” generates real revenues.

Network effects, data collection and other activities on the Internet like registration on a website, searching for information or web surfing⁶⁵ makes Internet users unwitting “workers” in the global process of production of digital services and products.

When a web site is designed as an open source platform, users can create “content” and place it on the platform. The more interesting the content that is placed on the web platform, the more popular the web platform becomes. Web platforms that are popular attract more advertisers. Therefore, these personal inputs add the value to the economic product produced by the firm and also affects the market value of the firm. Feedback in a form of “Likes” on open web platforms has the same effect. This type of interaction creates the “self-reinforcing virtuous feedback loop” that keeps old users engaged while also attracting new users.⁶⁶

Some web platforms are not open but designed for certain types of interaction with Internet users that also can add value to the digital product or to the business of a platform owner. For instance, every time when Internet users make search queries on the Google search platform they add value to the search service – and to Google. A greater quantity of search queries enhances the search platform and makes the search results more precise. In its turn, the increase in the quality of the search results attracts more Internet users to the search platform.

The current model of the international allocation of taxing does not capture the global, group and personal inputs, made by states and individuals in the process of production digital services and products. In the case of individuals, the exchange of personal input for free services could be seen payment for the “free work” and agreement to receive Internet advertisements. However, the issue

⁶² Mike Kuniavsky, “Smart Things: an outline” (*Orangecone*, 8 February 2009) <http://www.orangecone.com/archives/2009/02/smart_things_an.html> accessed 10 November 2013.

⁶³ Tim O’Reilly and John Battelle, “Web Squared: Web 2.0 Five Years On” (*Web2summit*, October 2009) 7-8 <<http://www.web2summit.com/web2009/public/schedule/detail/10194>> accessed 17 June 2013.

⁶⁴ Kenneth C. Laudon and Carol Guercio Traver, *E-commerce: Business, Technology, Society* (Prentice Hall 2011) 451-453.

⁶⁵ The term surfing is generally used to describe a rather undirected type of web browsing in which the user jumps from page to page rather whimsically, as opposed to specifically searching for specific information <<http://www.webopedia.com/TERM/S/surf.html>> accessed 10 December 2015.

⁶⁶ Alag Satnam, “Understanding Collective Intelligence” in Jörn Altmann, Ulrike Baumöl, and Bernd J. Krämer (eds) *Advances in Collective Intelligence* (Springer 2012) 7.

of compensation of the inputs made by states from around the world into the production process would remain. A few states (and their securities services) may get compensation in a form of access to data as a result of interaction of Internet users with a web platform. However, this fact makes the entire situation more complex. The access of one state to the information related to foreign nationals located outside the territory of that state creates security risks for other states and their nationals. From the pragmatic viewpoint, if the risk cannot be eliminated it at least should be compensated for. The best form of this compensation, it is suggested, would be a tax payment.

Consequently, in the digital economy individuals and entities, as well as states themselves can be involved in co-production of digital services and products.

b. Global vs Cross-Border

In general, multinationals can be involved in business and investment activities. This part of the paper discusses only business activities such as production of digital services and products. The issue of investment activities of multinationals addressed briefly in Part 6 (Section b. "Principle of integrated income").

Digital services and products are performed on the Internet, or more precisely on the World Wide Web. These activities and their outcome have a digital form. In the case of digital services and products the activity and its outcome are inseparable; they are two sides of the same coin. The activity always results in a particular outcome that has a digital form and thereby is available for human's perception. Consequently, the creation of a digital service and product and its supply to a consumer cannot be split into separate stages. Technically the creation and supply are elements of a single process of production of digital services and products.

When digital services and products are global, the concept of "cross-border activity" is non-sensible for three general reasons. First, the process of production of these services and products does not take place on a territory of any particular state. Second, production of global digital services and products involves not only nationals of many states (including Internet users that make personal and group inputs, the multinational firm itself and third party suppliers), but also the world community of states that provides the global public service that is an essential input. Third, an outcome of the digital services and products does not cross the geographical border of a market state as a single object arriving from a territory of a particular foreign state. This outcome also does not "pass through customs"⁶⁷ as do traditional goods.

⁶⁷ Jinyan Li, "Consumption Taxation of Electronic Commerce: Problems, Policy Implications and Proposals for Reform" (2003) 38 Canadian Business Law Journal 425, 442.

Every process of production of digital services and products finishes at the moment when information in a digital form is downloaded by an electronic device of an Internet user. However, the information does not “travel” on the Internet as a single message uni-directionally between sender and receiver.

Any activity on an electronic network, like the Internet, is a set of technical transactions based on the request-response communication between the sender and receiver. Digital information transferred into signals can be successfully delivered only when all requests were responded correctly.⁶⁸

For the purpose of transmission, data is split into chunks (“packets”) that are assembled into a single piece and reconverted from electronic signals into original data (a “message”) at the final stage of the data transmission process.⁶⁹ Packets of data can be stored or generated on servers that are not necessarily located in a single place.⁷⁰

As a result, an outcome of the digital service or product downloaded on the electronic device is often a “patchwork” crafted with the participation of servers, electronic devices and the electronic network. When servers and electronic devices are located in different states and the entire technical infrastructure of the Internet is used, the digital service or product cannot be seen as produced within a territory of a particular state.

Therefore, the “origin of income”, as a basis of the allocation of taxing rights becomes a very complex criteria of economic allegiance. In principle, this criterion remains relevant because income generated in the digital economy can be linked with physical points located within a particular geographic territory. However, there are at least two general problems that the current model of the allocation cannot resolve. First, income from global digital services and products has “points of connection” located in many states. However, the current model does not allocate taxing rights between source states. Second, the geographic territory where the point of connection is located may not belong to any state.

⁶⁸ More sophisticated process of data transmission can include additional stages like digitizing and compression for audio and video signals. See A. Forouzan Behrouz and Fegan Sophia Chung, *Data Communications and Networking* (4th edn, McGraw-Hill 2007) chapter 29.

⁶⁹ Rus Shuler, “How Does the Internet Work?” (2002, 2005) <http://www.theshulers.com/whitepapers/internet_whitepaper/index.html> accessed 2 June 2015; see also Philip A. Bernstein and Eric Newcomer Bernstein, *Principles of Transaction Processing* (Morgan Kaufmann Publishers 2009) 4.

⁷⁰ For more detail see Philip A. Bernstein and Eric Newcomer Bernstein, *Principles of Transaction Processing* (Morgan Kaufmann Publishers 2009) 4-6.

c. Single Economic and Tax Entity vs Set of Separate Taxpayers

National laws of some states considers a local corporate group as a single subject of tax liability.⁷¹ However, under the separate entity approach introduced through double tax treaties or national tax laws, entities of a multinational firm located in different states are seen as separate taxpayers.

The separate entity approach as a basis for the international allocation of income and losses of a multinational firm for the purposes of taxation was first suggested by the League of Nations in 1933 in the "Carroll Report".⁷² The report was issued after investigation of tax systems of 35 countries.

In addition to the separate entity approach, the Carroll Report described an alternative approach: consolidation of the corporate income tax base and formula apportionment. The alternative was declined mainly because of tax sovereignty concerns,⁷³ rather than any particular economic reason. However, originally the League of Nations discussed the apportionment as a method to deal with income earned by multinationals. In 1927 the League of Nations suggested to "draw up model rules for the apportionment of taxation applicable to the profits or capital of undertakings working in several countries" as one of the measures "in order to eliminate double taxation and to secure a more equitable distribution of fiscal burdens."⁷⁴

The choice made in a favour of the separate entity approach is incoherent with the view on a multinational firm as a single economic unit. Corporate law of many states applies the single economic entity (or unit) concept that suggests that entities associated with each other in a virtue of common control operate as a single economic unit. From an economic perspective, a multinational firm acts as a single economic unit when its entities jointly contribute to a single economic enterprise.⁷⁵

⁷¹ Peter Harris and J. David B. Oliver, *International Commercial Tax* (Cambridge University Press 2010) 57.

⁷² Mitchel B. Carrol, "Methods of Allocating Taxable Income" Vol. IV in the League of Nations, *Taxation of Foreign and National Enterprises* (Geneva, 30 September 1933); see also Raffaele Russo, Report on the Historical Development of Article 7 of the OECD Model" in *The Attribution of Profits to Permanent Establishments*, IFA Cahiers 91B (International Bureau of Fiscal Documentation 2006) 90; Thomas Rixen, *The Political Economy of International Tax Governance* (Palgrave Macmillan 2008) 93.

⁷³ Thomas Rixen, *The Political Economy of International Tax Governance* (Palgrave Macmillan 2008) 95; see also Raffaele Russo, "Report on the Historical Development of Article 7 of the OECD Model" in *The Attribution of Profits to Permanent Establishments* IFA Cahiers Vol. 91B (International Bureau of Fiscal Documentation 2006) 89.

⁷⁴ League of Nations, *Double Taxation and Tax Evasion*, Report of the Committee of Technical Experts (Geneva, April 1927).

⁷⁵ Pieter Van Cleynenbreugel, "Single Entity Tests in US Antitrust and EU Competition Law" (June 21, 2011) <<http://ssrn.com/abstract=1889232>> accessed 10 December 2015.

The model concept of a “group of associated enterprises”⁷⁶ suggested for the purpose of international tax policy and applied to multinationals, combines both elements: common control and joint contributions. However, the acknowledgement that entities of a group are under common control and “share economic life within a single economic unit” does not affect the entire model of the allocation - that is the allocation of taxing rights but not the allocation of portions of global tax base.

In addition to the general problems that the separate entity approach creates in practice,⁷⁷ the allocation of taxing rights instead of an apportionment of the global tax base, is unfair because it cannot consider the global input made by the world community of states.

Any income or loss that originates through the production of global digital services and products should create a single income tax base, because the income or loss cannot realistically be allocated in any one territory. The global income tax base, it will be argued below, should be assessed at the global level. For this purpose, a multinational firm should be seen as a single taxpayer.

4 Conflict

The contemporary system for the international allocation of taxing rights is described as a “delicate consensus among nations”.⁷⁸ In practice, this consensus could be described as the “war of all against all”⁷⁹ when it comes to taxation of income earned by multinationals.

States are “fighting” each other for the opportunity to be the first, and, with a sufficient luck, the only state that can tax income of a particular multinational firm. The fight is played according to a set of rules and may take the form of direct or indirect tax treaty overrides, as discussed in the Introduction, or a form of avoidance of entering into double tax treaties and/or treaties for tax assistance.⁸⁰

⁷⁶ Paragraph 1 (a) of Article 9 of OECD Model Tax Convention on Income and on Capital: Condensed Version (9 th edn, Paris, 15 July 2014).

⁷⁷ For some examples see Prem Sikka and Hugh Willmott, “The Dark Side of Transfer Pricing: Its Role in Tax Avoidance and Wealth Retentiveness” (2010) 21 (4) *Critical Perspectives on Accounting* 342, 344-352.

⁷⁸ Reuven Avi-Yonah, “From Income to Consumption Tax: Some International Implications” (1996) 33 *San Diego Law Review* 1329, 1329.

⁷⁹ This is a paraphrase of Thomas Hobbes’s notion that “during the time men live without a common power to keep them all in awe, they are in that condition which is called war; and such a war, as is of every man against every man.” Thomas Hobbes, *Leviathan or The Matter, Forme and Power of a Commonwealth, Ecclesiastical and Civil* (George Routledge and Sons 1651/1886) 64.

⁸⁰ For instance, the Multilateral Convention on Mutual Administrative Assistance in Tax Matters developed jointly by the OECD and Council of Europe in 1988 and amended by Protocol in 2010 (1 June 2011).

The fight for rights among states is supplemented by the fight by states for tax revenue from multinationals. The multinationals are fighting back through tax planning that legitimately avoids taxable presence in a market state⁸¹ or significantly reduces the size of a tax liability.⁸²

States commonly refer to their “sovereignty” to justify their actions against other states or multinationals. However, this justification is merely empty rhetoric that does not resolve the global distributional conflict, especially when the place of the conflict is the digital economy.

While each state has two groups of “enemies” – multinationals and other states – the distributional conflict is twofold.

The first part is purely economic: states want to get revenues from the taxation of income earned by multinationals while multinationals do not want to pay a tax more than once or to have an excessive tax burden. Therefore, states are trying to stretch their national tax bases through national tax laws, while multinationals try to minimise their tax burden. This part of the conflict could be lessened, or may be even resolved, or at least reduced, if the states that levy a tax on income would be sure that the tax levied would be paid, while multinationals would be certain that the tax is be paid only once.

The second part of the conflict is political: each state, as a sovereign political body, believes either in the exclusivity or in the priority of its own right to tax items of income earned by multinationals.

States need tax revenues. This need can be satisfied if the right of a state to levy a tax on an item of income is not limited and can be effectively exercised. The later means that the state will not only be able to levy a tax, but also will collect tax revenues in full and on time.

For a state, in principle, it should not matter whether it is allocated a right to tax or a share of a global tax base with respect to which the right to tax can be exercised. What matters is the fact that a state can get tax revenues from the taxation of income of multinationals. This could be possible if income and losses relating to production of global digital services and products, are assessed at the global level under the global consensus that defines rules for apportionment.

The political part of the conflict triggers its economic part and *vice versa*. If states disagree with the model of the allocation of the global tax base, they will not guarantee the single taxation of global income. If multinationals would find that the model of the allocation is unable guarantee only single taxation and prevent excessive tax burdens, they will seek opportunities to avoid taxation, which will impact on the tax revenues of states. Therefore, the global tax base should be allocated under a

⁸¹ OECD, “Addressing the Tax Challenges of the Digital Economy”, *Action 1: 2014 Deliverable, Report, OECD/G20 Base Erosion and Profit Shifting Project* (16 September 2014) 102.

⁸² For typical tax planning structures used in the digital economy see the TFDE Final Report, 168-180.

global consensus that considers interests not only states, but also multinationals and has a form of global tax policy.

To be fair, efficient and effective, global tax policy must correspond with the political-economic reality. That reality is determined by the current level of globalisation, including the interdependency between states, and also between states and multinationals.

The interdependence of states in the global economy is a well-known phenomenon. Cross-border investments and borrowing money from foreign governments and international institutions, have led to the situation where “every country is to at large extent owned by other countries, which not only distorts perceptions of the global distribution of wealth but also represents an important vulnerability for smaller countries as well as a source of instability in the global distribution of net positions.”⁸³ In addition to financial interdependence, states are dependent on each other as co-creators of the global economic and technical environment. Without inputs of almost all members of the world community of states, the global freedom of digital flows of capital, services/products and information, as well as the very existence of multinational giants like Google, would not be possible.

Another side of the phenomenon is the interdependency between states and some major firms operating in the digital economy. In particular, the vast majority of states are not in a position to close their markets to the digital services and products of Google supplied directly over the Internet. The outcome that the “localisation” of the market for these services and products would have for many states may be worse than the impact of Google’s tax avoidance/planning on those states.⁸⁴ For instance, if the state would close its market for Internet advertising services of Google, it would be difficult for local firms to advertise their products in foreign markets over the Internet. Besides, the local firms and individuals that were involved in production or marketing of Internet advertising services of Google would lose their income. As a result, the national tax base of the state that localised its market of Internet advertising services would shrink.

Furthermore, if some markets were closed, it might affect the profitability of the global Internet advertising industry, and also firms that are dependent on that industry. It would also reshape business models used in the industry. In particular, if Google would not get sufficient revenues from Internet advertising, it would not provide free services for Internet users. In the business model of Google production and consumption of free services and Internet advertising are interrelated. Consequently, if Internet users would be forced to pay for digital services that Google provides free

⁸³ Thomas Piketty, *Capital in the Twenty-First Century* (The Belknap Press of Harvard University Press 2014) 193.

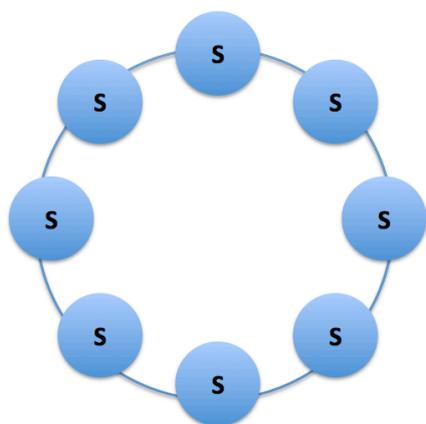
⁸⁴ Article 14.15 of the Trans-Pacific Partnership (Atlanta, 5 October 2015) emphasises the global nature of electronic commerce and suggests multiple forms of cooperation to promote its development.

of charge, it would reduce the consumption of both free services and Internet advertising. The replacement of the business model that is “driven by advertising revenues” by the classical model “product vs. money”, could even affect the entire profitability if not the viability of Google.

5 Free Consumption of Global Public Services in the Digital Economy

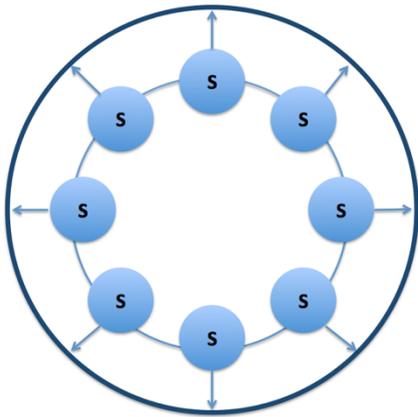
The systems approach⁸⁵ applied in this Part helps us to understand the origin of the digital economy and the general structural problem of tax policy related to this economy – the impossibility to monetise global public services at the national or international level. The systems approach, in general, investigates a formal relationship between observed features or attributes that constitute a system. Systems are seen as existing within an environment (a mega system) and interacting with each other and also with the environment. The result of each interaction (an output) may affect the environment and/or systems existing within it.

Diagram 4 demonstrates how a single idea (the freedom of digital flows of capital, goods, services and information) has determined the birth of a new mega-system - the “digital economy”, drives it and keeps its elements (states, international institutions, multinationals) together.

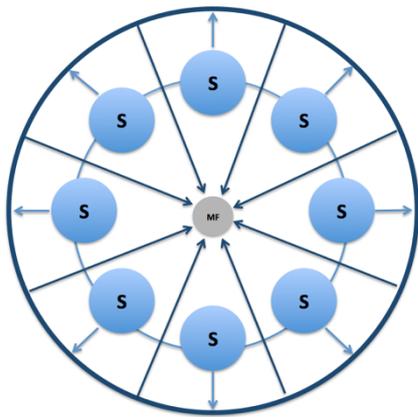


(a) Commitment of states to the idea of freedom of digital flows of capital, goods, services and information

⁸⁵ Systems approach is a heuristic method that is applied in many discipline for analysis of complex problems, see M.D. Mesarovic and Yasuhiko Takahara (eds), *General Systems Theory: Mathematical Foundations* (Academic Press 1975) 1.



(b) Creation of the global “digital economy” – the economic and technical environment where capital, services, products and information in digital form can move between states without significant limitations



(c) Origin of multinational suppliers of digital services and products as a result of the general output produced by the global digital economy

Diagram 4. *Origin of the global digital economy and multinational firms operating in it*

The diagram demonstrates that states through their commitment to the idea of freedom of digital flows of capital, services/products and information co-participate in a single process that leads to the creation of the global digital economy, which is the habitat for new types of multinational firms - inherently global.

The creation of the Internet goes back to 1962 when J.C.R. Licklider and Welden Clark presented their “Galactic Network” concept that would allow globally interconnected computers quickly access digital information from any site.⁸⁶ Originally developed for a non-commercial purpose, the Internet grew into a global information infrastructure that links electronic devices all over the world⁸⁷ and provides the technical side of the digital economy. The Internet was commercialised with immense

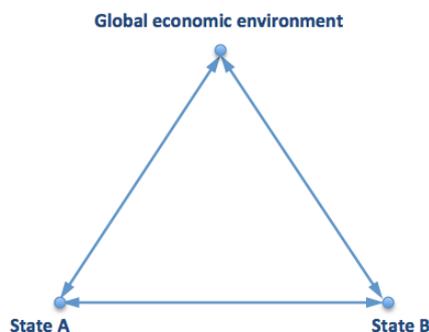
⁸⁶ J. C. R. Licklider and Welden E. Clark, "On-Line Man-Computer Communication" The American Federation of Information Processing Societies (AFIPS), International Workshop on Managing Requirements Knowledge (Philadelphia, December 1962) 113-128.

⁸⁷ For more details about the history of the Internet see Barry M. Leiner; Vinton G. Cerf; David D. Clark; Robert E. Kahn; Leonard Kleinrock; Daniel C. Lynch; Jon Postel; Larry G. Roberts and Stephen Wolff, “Brief History of the Internet” <<http://www.internetsociety.org/internet/what-internet/history-internet/brief-history-internet#JCRL62>> accessed 1 July 2015.

support from the US Government and the efforts of the EU, international institutions, in particular the WTO, as well as private investors.⁸⁸ In the past 15 years the Internet has generated as much economic growth as the Industrial Revolution did in 50 years.⁸⁹

Since the commercialisation of the Internet, states, in general, has been promoting global freedom of movement for digital flows of capital, services/products and information. Through multiple interactions, states have created the global economic and technical environment where a new industry – the digital economy – was established. In the new environment, the production process for digital services and products can often be global. The business opportunities for the providers of such services and products would not exist without the current level of integration of national economies into the global economy, as well as the integration of local electronic networks into the global electronic network.

From the perspective of the systems theory, within the global economic environment (a mega system), states and multinationals (systems of lower level) interact not only with each other but also with the global economic environment. These interactions have a triangular structure.⁹⁰ For instance, contributions of states to the maintenance of the global economic and technical environment and the general outcome of these contributions is an interaction with environment. While a cooperation that creates a basis of these contributions is an interaction between states.



⁸⁸ For more detail see Dan Schiller, *Digital Capitalism: Networking the Global Market System* (MIT Press 1999) 13-88.

⁸⁹ McKinsey Global Institute, "Internet Matters: The Net's Sweeping Impact on Growth, Jobs, and Prosperity", Executive Summary (McKinsey, May 2011) 3 <http://www.mckinsey.com/insights/high_tech_telecoms_internet/internet_matters> accessed 12 June 2015.

⁹⁰ It is an adaptation of the idea of Lorenz von Stein about the triangular relationship between a state, economy and society. The idea discussed in Klaus Vogel, "The Justification for Taxation: a Forgotten Question" (1988) 33 (1) *American Journal of Jurisprudence* 19, 49.

Diagram 5. *Interaction of states in and with the global economic environment*

The interactions that involves multinationals looks different. From the perspective of a state, interactions could be between a state either an entity of a multinational firm, or the entire multinational firm as a single economic unit that includes all entities.

When interactions within the global economic environment are seen from the global perspective, states may act as a single group (the world community of states). If the global digital economy is seen from the global perspective, the world community of state make an inputs to maintain the global economic environment. This input is a sum of contributions of each member state that together create of a single output - global public services that are consumed by a multinational firm.

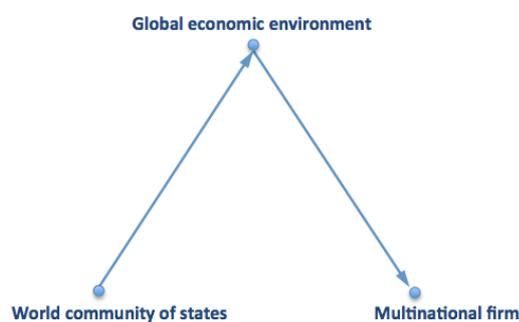


Diagram 6. *Interaction of multinationals with the global economic environment*

The paper suggests that the consumption of global public services should be compensated by tax payments (the dashed line in Diagram 7). In this case, it will be a triangular exchange of inputs and outputs: an input created by the first object is consumed by the second object with the purpose of producing an output that will be consumed by the third object that, in its turn, will produce an output that will be consumed by the first object.

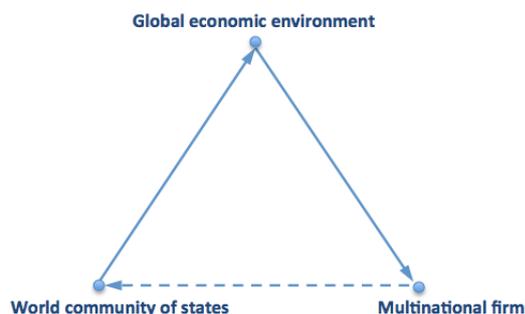


Diagram 7. *Triangular interaction of states and multinationals in and with the global economic environment*

States make unilateral contributions to the creation and maintenance of the global economic and technical environment. Altogether these contributions produce a single output: an open global economic environment. These benefits take the form of global public services. Multinationals

operating in the digital economy are the major consumers of these public services. The consumption of these global public services takes place during the interaction of a multinational firm with the global environment.

The consumption of global public services is not the result of the direct interaction between a particular state and a multinational firm. This consumption activity cannot be “captured” and “monetised” by national or international tax policy of a state. Therefore, multinationals operating in the digital economy enjoy global public services without making any sacrifices.

A tax is an instrument that can be seen as monetising public services. This instrument is traditionally applied at a national level where a state and a taxpayer are seen as participating in a bilateral exchange of public services into taxes. However, in the case of global services and products, the monetisation of global public services cannot take place at the national level because states co-produce global public services. Consequently, the monetisation of global public services is possible only under some form of global tax policy.

6 Basis for Multinational Co-operation in the Digital Economy

This global tax policy requires global political co-operation. States cooperate when it is in their interests to do so. Those interests, as well as the opportunity to protect them, differ from state to state. Multinationals, at least giants like Google, can affect the process of multinational co-operation by lobbying for their own interests in different states. Therefore, an assessment of the likelihood of political co-operation on matters that affect multinationals should consider interests of multinationals as well. As commercial enterprises, multinationals would like to pay no tax or at least pay no more tax than their competitors. The paper proposes a new model of cooperation that potentially can reconcile interests of both states and multinationals, mitigate the opportunism of both groups and create a fair, efficient and effective global tax environment for the digital economy.

Political co-operation assumes an adjustment of behaviour by one actor to actual or expected preferences of others through a process of national policy coordination.⁹¹ The co-operation can take many forms, including a commitment to a common goal or a set of principles or rules.

This paper suggests that in the digital economy states have already agreed a common goal, namely: the freedom of digital flows of capital, services/products and information. This goal, and the international commitments designed to advance this goal, promotes the interests of multinationals operating in the digital economy. However, for the better coordination of national tax policies,

⁹¹ For more detail see Christopher Noonan, *The Emerging Principles of International Competition Law* (Oxford University Press 2008) 13-14.

states should begin by agreeing on general principles of taxation of global income generated in the digital economy. The lack of agreement on principles guiding international tax policies has been discussed by academics.⁹²

The motivation to develop these principles would be the recognition that uncoordinated national tax policies can undermine the commitment of states to an integrated global digital economy made in the TPP and that will probably be made in the Transatlantic Trade and Investment Partnership (T-TIP) – the trade and investment agreement being negotiated between the United States and the European Union.

It is acknowledged that data-driven innovations can boost productivity growth in traditional economy, contribute to well-being of people and address the urgent needs of developing economies.⁹³ While a fast and open Internet is defined as “the most fundamental condition for Data-driven innovations.”⁹⁴ The OECD members have agreed on fifteen principles for Internet policy making,⁹⁵ including the principle of promotion and enabling the cross-border delivery of services and promotion of creativity and innovation. Therefore, from the tax perspective, it is necessary to coordinate tax policy with the agreement that have been made in relation to the further development of the digital economy.

In the largely integrated global digital economy, states cannot hope to coordinate tax policies by relying exclusively on a state-centred approach and focus on short-term or direct national interests only. The taxation of global income is one of those situations where it is in the interests of major states to take a global approach and priority to the common interest based on the common goal that have been agreed.

The global approach requires reconciling sovereignty with economic reality. This could be done through the concept of integration: integrated sovereignties in the integrated economy.

The idea of integrated sovereignties for the purpose of global tax policy would involve the integration of some elements of the sovereign rights to tax and the allocation of these elements of rights to a supranational body that would assess global tax base and apportion it between states.

The integration could be based on a new form of political co-operation, namely: co-participation. It would be a tectonic shift in the national approaches to tax policy. Co-participation means that every

⁹² For more detail see Arthur J. Cockfield, “The Rise of the OCED as Informal “World Tax Organization” through National Responses to E-commerce Tax Challenges” (2006) 8 (5) Yale Journal of Law and Technology 136, 175 footnotes 151-152.

⁹³ OECD, *Data-Driven Innovation: Big Data for Growth and Well-Being* (6 October 2015) 27-31.

⁹⁴ OECD, *Data-Driven Innovation: Big Data for Growth and Well-Being* (6 October 2015) 159.

⁹⁵ OECD, *Principles for Internet Policy Making* (2014) 5-15.

state sees itself as a member of a group that pursues a common goal: promotion and maintenance of the global freedom of digital flows of capital, goods/services and information.

Co-participation relies on “collective intelligence of states” where every state sees itself as a member of the same group and acts for the benefit of all participants of the group. To re-phrase what has been said in relation to an advantage of the networks effect in relation to new business model that are applied in the digital economy, a large group of states “can create a collective work whose value far exceeds that provided by any of the individual participants.”⁹⁶

In its essence the suggested idea of co-participation is based on the ideas of a diffuse reciprocity and the networks effect.

In contrast to traditional reciprocity that underlies double tax treaties, the diffuse reciprocity concept suggests conforming to generally accepted standards of behaviour and assumes less precise definition of equivalence, a possibility one's partners be viewed as a group and a less narrowly bounded the sequence of events.⁹⁷

The idea of the networks effect adopted to the multilateral co-operation means that the effectiveness of a multilateral instrument increases with the number of its participants.⁹⁸ In practice, this effect is presented by the growing number of states joined to the Multilateral Convention on Mutual Administrative Assistance in Tax Matters⁹⁹ in past years.

As the basis of global political co-operation for a creation of global tax policy, co-participation would be possible only if the equitable treatment of all states was guaranteed. The contemporary model of the allocation of taxing rights was developed for the traditional, rather than digital, economy. As explained in Part 2 of this paper, this model does not and cannot adequately deal with the global public services the world community of states provides as an input in the production of global digital services and products. Moreover, as the example of Google demonstrates, under the contemporary model of the allocation of taxing rights, only a few states have the right to tax income from the main

⁹⁶ “Many people now understand [the networks effect idea] in the sense of “crowdsourcing”, namely that a large group of people can create a collective work whose value far exceeds that provided by any of the individual participants”. See Tim O’Reilly and John Battelle, “Web Squared: Web 2.0 Five Years On” (*Web2summit*, October 2009) 7-8 <<http://www.web2summit.com/web2009/public/schedule/detail/10194>> accessed 17 June 2013, footnote 30.

⁹⁷ Robert O. Keohane, “Reciprocity in International Relations” (1986) 40 (1) *International Organisation* 1, 6-7.

⁹⁸ For the economic definition of the networks effect see OECD, “The Digital Economy”, *Report of Hearings on the Digital Economy* (7 February 2013) 8.

⁹⁹ 92 tax jurisdictions already participate in the Multilateral Convention on Mutual Administrative Assistance in Tax Matters of 1988 <<http://www.oecd.org/ctp/exchange-of-tax-information/conventiononmutualadministrativeassistanceintaxmatters.htm>> accessed 14 December 2015.

activities (namely Internet advertising, cloud computing and production of apps) of the firm producing global digital services and products.¹⁰⁰

Equitable treatment of states should be evaluated from the perspective of diffused reciprocity that assumes an overall balance within a group,¹⁰¹ rather a balanced bilateral deal that takes place when states enter double tax treaties. Acting as a group states “may reduce the chances of unnecessary conflict where interests are compatible but exposes its practitioners to the danger of exploitation”.¹⁰²

Multi-national equitable treatment requires the centralised tax assessment of global income; the apportionment of the tax base in accordance with global and national public services provided by states; the equal access to the information for the centralised tax assessment; and the real possibility to enforce tax claims of states related to the allocated portion of global income.

In general, states and multinationals operating in the digital economy, agree with the global freedom of digital flows of capital, goods/services and information. For states this freedom creates the possibility to increase national welfare through an increase in global commerce; for owners of multinational firms, it is a way to increase firm welfare.

This paper suggests an “exchange of guarantees” model of global tax policy to reconcile the complex distributional conflict in relation to taxation of global income. The conflict is two-fold and involves states, and also the world community of states and multinationals.

The proposed model would be an exchange of similar guarantees between states as formally equal political-economic bodies. It could resolve the distributional conflict between states as co-producers of global public services and co-participants of the production of global digital services and products. To resolve this conflict, states would need to find a global consensus on sharing the global tax pie. Such a consensus might be possible if states would guarantee to each other that portions of the global tax pie would be allocated in a fair, efficient and effective manner. Therefore, national economic interests of all states would be satisfied.

The “exchange of guarantees” between the world community of states and multinationals would involve, *inter alia*, the world community of states guaranteeing to multinationals the global freedom of digital flows of capital, goods/services and information. In exchange for this guarantee, the world community of states would expect that the tax imposed on global income would be paid by

¹⁰⁰ TFDE Final Report at 171-175.

¹⁰¹ Robert O. Keohane, “Reciprocity in International Relations” (1986) 40 (1) *International Organisation* 1, 17.

¹⁰² *Ibid* 27.

multinationals. The guarantee of the global freedom of digital flows would be exchanged into the guarantee of sufficient tax payment.

The exchange of guarantees, between states and also been states as a group and multinationals, can be achieved through the development of widely acknowledged principles of international taxation, namely: the benefit principle, the single tax principle, the single tax personality principle, the principle of integrated income.¹⁰³

a. Benefit Principle

The benefit principle is a principle of both national and international tax policies. At the national level the principle implies that there should be symmetry between benefits received and taxes levied.¹⁰⁴

At the international level the symmetry requirement is supported by the economic allegiance theory that is applied to the allocation of rights to tax.¹⁰⁵ In this context, the symmetry requirement, in general, means there should be a correlation between the right to tax that is allocated to a state and benefits that are provided by this state to satisfy economic interests.¹⁰⁶ In this sense, the benefit principle underlies the economic allegiance doctrine applied for the international allocation of rights to tax items of income.¹⁰⁷

¹⁰³ Reuven S. Avi-Yonah defines the benefit and the single tax principles as main normative principles guiding international tax policy of states. See Reuven S. Avi-Yonah, "International Taxation of Electronic Commerce" (1997) 52 (3) *Tax Law Review* 507, 509, 517-520.

¹⁰⁴ The principle, in general, is based on the benefit theory. For explanation of the benefit theory see League of Nations, *Report on Double Taxation: Submitted to the Financial Committee by Professors Bruins, Einaudi, Seligman and Sir Josiah Stamp* (Geneva, 15 April 1923) 18; see also Klaus Vogel, "The Justification for Taxation: a Forgotten Question" (1988) 33 (1) *American Journal of Jurisprudence* 19, 24.

¹⁰⁵ "The ideal solution is that the individual's whole faculty is taxed, but that it should be taxed only once, and that the liability should be divided among the tax districts according to his relative interests in each," see the League of Nations, *Report on Double Taxation: Submitted to the Financial Committee by Professors Bruins, Einaudi, Seligman and Sir Josiah Stamp* (Geneva, 15 April 1923) 20; see also Peter Harris *Corporate/Shareholder Income Taxation and Allocating Taxing Rights Between Countries: a Comparison of Imputation Systems* (International Bureau of Fiscal Documentation 1996) 276-277; Sunita Jogarajan, "Prelude to the International Tax Treaty Network: 1815-1914 Early Tax Treaties and the Conditions for Action" (2011) 31 (4) *Oxford Journal of Legal Studies* 679, 702.

¹⁰⁶ League of Nations, *Report on Double Taxation: Submitted to the Financial Committee by Professors Bruins, Einaudi, Seligman and Sir Josiah Stamp* (Geneva, 15 April 1923) 20; see also Peter Harris, *Corporate/Shareholder Income Taxation and Allocating Taxing Rights Between Countries: a Comparison of Imputation Systems* (International Bureau of Fiscal Documentation 1996) 446.

¹⁰⁷ For some explanations see Eric C.C.M. Kemmeren, "Source of income in Globalizing economies: Overview of the Issues and a Plea for an Origin-Based Approach" (2006) 60 (11) *Bulletin for International Taxation* 430, 431-432.

When income is global, the benefit principle should be applied from the global perspective, because global public services as global benefits created by the world community of states cannot be seen from the state-centred perspective and cannot be adequately addressed in national tax policy.

The production of global digital services and goods involves the consumption of both global public services (non-territorial benefits) and national public services (benefits originating from a territory of a particular state). The general idea of the traditional benefit principle requires that both global public services and national public services should be compensated for by the payment of taxes.

When income is global, the tax on this income is not just a “price for civilized society”¹⁰⁸ and for public services consumed within geographical borders of a particular state. In this case, the tax is also a price for the freedom to operate in the global integrated economy and enjoy the freedom of digital flows of capital, services/products and information. This freedom is a public service because it is based on legal infrastructure developed by states in a form of international law and national laws that support and defend the freedom of free trade, investment and the Internet.

The normative criterion of fairness expressed by the benefit principle requires a separate allocation for a portion of the global income that is linked with the global public services only, and also for a portion of the global income that is linked with the national public services.

Therefore, when the benefit principle is applied in the context of the taxation of global income, it justifies both the centralised tax assessment of global income and a size of the share of the global tax pie that should be allocated to each state as a provider of two types of benefits: global public services and national public services. In this case, the benefit principle guarantees a fair allocation of gains from the global process of production between states.

b. Single Tax Principle

The traditional single tax principle suggests that income should be taxed, but only once.¹⁰⁹ In general, this means the elimination of both double taxation and double non-taxation of income from cross-border activities. The single tax principle is twofold. On one side, it guarantees to states that global income will be taxed. On the other side, this principle protects multinationals from double taxation.

¹⁰⁸ Charles E. McLure, “Alternatives to the Concept of Permanent Establishment” (2000) 1 (3) CESifo Forum 10, 12.

¹⁰⁹ “The Single Tax Principle states that income from cross-border transactions should be subject to tax once (not more and not less), at the rate determined under the Benefits Principle.” See Reuven S. Avi-Yonah, “International Taxation of Electronic Commerce” (1997) 52 (3) Tax Law Review 507, 509, 517-520.

The single tax principle can be achieved only in a framework of global tax policy, which is not provide current network of tax treaties. Only in this case can the principle effectively promote static and dynamic economic efficiency at both national and global level, and also, create a fair global tax environment. Otherwise tax burdens of multinationals will be either “excessive” or “unduly light” while corporate income tax bases of some states where these multinationals are operating will remain eroded.

At present there is a double non-taxation of global income earned by suppliers of global digital services and products. However, the current “catch me if you can” situation can soon be transformed into “run if you can” situation. With support of the OECD,¹¹⁰ the trend to unilaterally deal with the problem of the lack of a taxable presence of supplies of global digital services and products in a market state may continue to acquire new adherents.¹¹¹ As a result, the problem of double non-taxation in the digital economy will be soon replaced by the problem of double or multiple taxation.

The effective application of the single tax principle from the global perspective would require the development of auxiliary principles: the single tax personality principle, the principle of integrated income, and the principle of cross-jurisdictional enforcement. These principles support both sides of the single tax principle. The single tax personality principle and the principle of integrated income eliminate gaps and overlaps of tax jurisdictions. Under these principles, a nexus with all items of income earned by a multinational firm can be developed, and the very possibility of the stateless income will disappear. The principle of cross-jurisdictional enforcement increases the effectiveness of taxation as a process that allows collection a due sum of tax revenue in a due time.

c. Single Tax Personality Principle

The single tax personality principle suggests: if a multinational firm acts as a single economic unit that creates global services or products on the Internet and supplies them over the Internet worldwide, this firm should be treated as a single tax entity for the purposes of the assessment of global income tax base. This principle supports the assessment of global income tax base at a single level.

The general question of the international personality of multinational firms as subjects of international law remains an open one.¹¹² The national tax law of some states treats a local

¹¹⁰ TFDE Final Report at 12, 82, 84, 146.

¹¹¹ See footnotes 9-12.

¹¹² Malcolm N. Shaw, *International Law* (6th edn, Cambridge University Press 2008) 250.

corporate group as a single subject for the purposes of tax liability.¹¹³ International tax policies, however, usually follow the separate entity approach that considers the constituent legal entities and permanent establishments of a multinational firm as separate taxpayers. This approach can be applied under double tax treaties and/or national tax laws of a state.

As a result of the separate entity approach, income earned by a multinational firm and related losses are split between between *tax entities* of the firm located into states but not directly between states. Therefore, the tax entity becomes a connecting link between a state and income of a multinational firm. Therefore, if a tax entity does not exist in a state, the link with the income cannot be established and, therefore, the income (its portion) cannot be taxed by the state. This is a key problem of taxation of income by a state that provides access to its market of digital services and products.

In principle, for development of the nexus for tax purposes the link through a tax entity is unnecessary. Moreover, even under the separate entity approach the allocation of income and losses within a multinational firm, in its essence, is linked with functions, assets and risks, but not with tax entities *per se*. The problem, therefore, is not the separate entity approach itself but the un-coordinated allocation of income and losses of a multinational firm. This co-ordination is difficult when each tax entity of a firm applies double tax treaties and national tax rules of a state of its location. As a result, a multinational firm has income tax bases in many states and also is able to avoid a taxable presence in some states under hybrid mismatch arrangements.¹¹⁴

Multiple assessment of income in relation to a single activity creates a high risk of double taxation that cannot always be reduced under double tax treaties. For instance, source-source double taxation is not subject to double tax treaties under the contemporary model of the allocation of rights to tax.¹¹⁵ While transfer-pricing rules that guide the allocation of functions, assets and risks between entities of a multinational firm are not very effective and justifiable in the digital economy because of complexity of business models applied. Moreover, double tax treaties usually do not

¹¹³ Peter Harris and J. David B. Oliver, *International Commercial Tax* (Cambridge University Press 2010) 57; see also Peter Harris, *Corporate Tax Law: Structure, Policy and Practice* (Cambridge University Press 2013) 20.

¹¹⁴ Hybrid mismatch arrangements are tax planning schemes that exploit differences in the tax treatment of instruments, entities or transfers between two or more countries. For more detail see the OECD "Neutralising the Effects of Hybrid Mismatch Arrangements", *Action 2: 2015 Final Report, OECD/G20 Base Erosion and Profit Shifting Project* (5 October 2015).

¹¹⁵ The model allocates the taxing rights only between residence and a source states, but not between source states; see paragraph 3 (subparagraphs 3 and 11) of the Commentary on Articles 23 A and 23 B of the OECD Model Tax Convention on Income and on Capital: Condensed Version (9th edn, Paris, 15 July 2014).

address other problems that may lead to double taxation, in particular: conflicts of qualification,¹¹⁶ timing mismatches,¹¹⁷ or mismatches in calculation of a tax or income.¹¹⁸

When income and losses or net income of a multinational firm are defined and apportioned at a single place under the single set of rules the single taxation of income of the firm can be quarantined. Apportionment of the single tax base, in principle, depends on functions, assets and risks. Therefore, the effective transfer-pricing methods can be implemented for the apportionment. For the purpose of assessment an income tax base of a multinational firm in a single place, the multinational firm should be seen as a single tax entity under the single tax personality principle.

A multinational firm as a single tax entity is subject to both the global tax policy and national tax policies co-ordinated with the global tax policy. Global tax policy defines rules for tax assessment and apportionment of global income, while national tax policy determines how the right to tax should be exercised with respect to the portion allocated to a state.

From an economic perspective, multinationals are profit-maximising enterprises with no particular national allegiance.¹¹⁹ Therefore, granting to a multinational firm producing global digital services and products an international status of a single tax entity that assigned to the world community of states for tax purposes, but not to a single state, seems fair.

The single tax personality principle allows effective application of the benefit principle in relation to global income earned in the digital economy. When a multinational firm operating in the digital economy is seen as a single tax entity, global public services consumed by this firm can be effectively captured by tax policy.

Similar to the separate entity approach, under the single tax personality principle a multinational firm is a subject to multiple tax liabilities because many states claim their rights with respect to items of global income. However, double taxation, as well as double non taxation will not arise for two reasons. First, every state exercises its right to tax only with respect to the portion of net income (or gross income and expenses) allocated to the state. Second, entire net income (or gross income and expenses) is apportioned.

¹¹⁶ See example in paragraphs 32.4 and 32.5 of the Commentary on Articles 23 A and 23 B of the OECD Model Tax Convention on Income and on Capital: Condensed Version (9th edn, Paris, 15 July 2014).

¹¹⁷ Paragraph 32.8 of the Commentary on the OECD Model Tax Convention on Income and on Capital: Condensed Version (9th edn, Paris, 15 July 2014).

¹¹⁸ Paragraph 61 of the Commentary of OECD *Model Tax Convention on Income and on Capital: Condensed Version* (9th edn, Paris, 15 July 2014).

¹¹⁹ Reuven S. Avi – Yonah “National Regulation of Multinational Enterprises: an Essay on Comity, Extraterritoriality, and Harmonization. (The Regulation of Foreign Direct Investment)” (2003) 42 (1) *Columbia Journal of Transnational Law* 5, 9.

d. Principle of Integrated Corporate Income

The principle of integrated income suggests that the entire corporate income of a multinational firm should be assessed at a single level. The level should be the global level.

The principle of integrated income is twofold. First, the business and investment portions of corporate income should be integrated. Second, the corporate income integrated within a corporate income tax base of a multinational firm should be consolidated.

The general theory of public services divides public services into those that are production-related and those that are consumption-related.¹²⁰ Production-related services assist persons in producing wealth. Consumption related services are those that either can be consumed, or have a form of wealth that is transferred to persons.

In general, this theory may justify a split of corporate income into business and investment portions.

However, the split makes no sense when a consumer of public services is a multinational operating in the digital economy. It has been argued that the classic distinction between business and investment income, which underlies the current double tax treaty rules has become increasingly blurred, particularly in an electronic commerce environment.¹²¹ First, every multinational firm producing global digital services and products consumes global public services in a form of global economic and technical infrastructure. These services cannot be effectively divided into production-related services and consumption-related services. Second, multinationals are entities that exist in the global economic environment. Multinationals produce business income and consume investment income in the global economic environment but not in a single state. Therefore, it is difficult to justify the split of entire income of a multinational firm into production-related or consumption-related for the allocation of these portions of income to different states for taxation.

The consolidation of corporate income at a single level is a second step in the application of the principle of integrated income. It reconciles tax policy with a real economic nature of a multinational firm acting as a single economic unit. The consolidation assumes an abandonment of the separate entity approach and an acceptance of the single tax personality principle.

Without the integration of business and investment portions of corporate income and consolidation of global income at a global level, the symmetry of taxation of income from global digital services and products is not possible.

¹²⁰ Peter Harris, *Corporate/Shareholder Income Taxation and Allocating Taxing Rights Between Countries: a Comparison of Imputation Systems* (International Bureau of Fiscal Documentation 1996) 446.

¹²¹ OECD, "E-commerce: Transfer Pricing and Business Profits No 10", *Tax Policy Studies* (12 May 2005) 90 para 59.

e. Conclusion

The suggested principles would allow the creation of the “exchange of guarantees” model of global tax policy for global income. Where the benefit principle is applied from the global perspective, this guarantees the symmetry of the allocation of portions of global income between states and, therefore, resolves the political-economic part of the distributional conflict that exists in the digital economy.

The single tax principle, applied from the global perspective and supported by the principle of single tax personality and the principle of integrated income, resolves the economic part of the conflict that involves states and multinationals. Altogether these principles guarantee that global income will not escape the allocation under the benefit principle while multinationals will be protected from excessive tax burden as a result of double taxation.

7 Institutional Implementation of Global Tax Policy

a. Centralised Tax Assessment

A corollary of the principles that form the basis of the “exchange of guarantees” model for global tax policy is the requirement for the centralised tax assessment of global income. This means that a supranational body would need to assess the global income earned by a multinational firm and losses related to this income. The supranational body would act as a central tax administrator and a central co-ordinator of national tax policies in accordance with the global tax policy.

The idea of centralised tax assessment is reminiscent of the Consolidated Corporate Tax Base (CCCTB) proposal made by the European Commission for the EU.¹²² However, unlike the CCCTB, centralised tax assessment requires global (or at least G20) consensus. The suggested model for centralised tax assessment also assumes a split of global income into two portions that are subject to different formulas for the apportionment.

The model of the centralised tax assessment of global income is presented in Diagram 8 as a two-layered circle where the big circle is a portion of global income subject to the global allocation, while the small circle is a portion subject to the non-global distribution.

¹²² European Commission, *Proposal for a Council Directive on a Common Consolidated Corporate Tax Base (CCCTB)* COM (2011) 121/4 (Brussels, 2011).

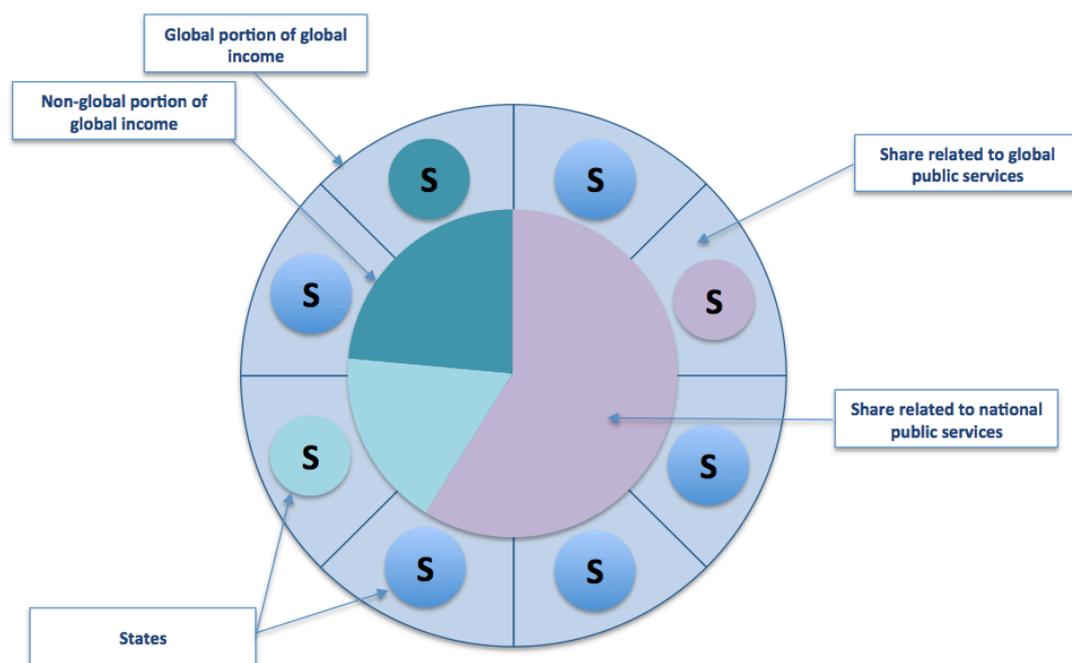


Diagram 8. Model of the centralised tax assessment of net global income

The centralised tax assessment of global income would be a multi-stage process.

The first stage is the definition of a subject of a tax liability. Following the principle of the single tax personality, a multinational firm producing global income is a single taxpayer. Therefore, the single set rules accepted by all states and defining what constitutes a multinational firm as a single tax entity is required. For effective application of the separate tax personality principle in practice, a single register for multinationals, at least of those operating in the digital economy, may also be needed.

The second stage is the definition of a global tax base as an object of a tax liability. This stage requires a single set of rules that determine items of global income and losses related to this income. The centralised tax assessment is not a consolidation of separate tax bases of entities of a multinational firm, but an integration of income and losses of a multinational firm under the single set rules at global level under the principle of integrated income. The rules should be defined under the global consensus rather by the reference to the national law of a particular state.¹²³

The third stage is a decision on what should be shared between states. In other words, it is a definition of a “tax pie”. In principle, states could share gross global income and losses related to it, net global income, or tax revenues.

¹²³ For a proposal to consolidate a corporate income tax base of a multinational firm under laws of a state of incorporation of a parent company see Anne Schäfer, *International Company Taxation in the Era of Information and Communication Technologies: Issues and Options for Reform* (Deutscher Universitätsverlag 2006) 41- 42.

The first variant, the allocation of gross global income and losses, seems inefficient from the perspective of static economic efficiency. In this case, the allocation of value-creating factors that are determined by the formula for apportionment can be artificial and tax driven. When states have different tax rates while both income and losses are subject to the international allocation, multinationals can leave losses in high tax jurisdictions and allocate income to low-tax jurisdictions. The second variant, the allocation of net income (profit) does not prevent the artificial allocation of value-creating factors but makes impossible a split between the allocation of gross income and losses related to it.

The third variant, the supranational taxation, seems the best option from multiple perspectives. When a tax is imposed at a single level, the tax-driven allocation of value-creating factors is impossible. Therefore, static economic efficiency is not affected. If a tax is levied at a single level, the real tax liability of a multinational firm can be measured. Consequently, it becomes practically possible to tax income only once and avoid its excessive taxation. Therefore, the supranational taxation of global income promotes dynamic efficiency.

The supranational taxation is the most effective way to adjudicate tax disputes and enforce tax claims related to global income because the entire right to tax is allocated to a supranational body. When the single body applies a single set of rules for taxation, something that would not occur in the first and second variants, the tax administration tends to be more efficient than the first.

However, states could see the development of supranational taxation of global income as a serious threat to their very existence. Since the start of the Westphalian political system states, as political bodies, exist because of taxes.¹²⁴ The very opportunity to decide whether to levy a tax on particular items or not makes a state powerful. While the view that the right to tax is an essential attribute of a state dominates, the ideas of supranational taxation will sink in political debates, supported by the equivocal concept of sovereignty. For this reason the allocation of global net income, as the second best solution, seems the more realistic idea at the moment.

The fourth stage is the split of the global net income into two portions: one for global distribution, the other for the non-global distribution. The stage is based on the benefit principle and the fact that a multinational firm consumes both global and national public services. A proportion of the split should be a subject of the global consensus.

¹²⁴ Klaus Vogel, "The Justification for Taxation: a Forgotten Question" (1988) 33 (1) American Journal of Jurisprudence 19, 37-38, footnotes 106, 109-112.

The fifth and six stages deal with the allocation of portions of global net income between states. At these stages, the benefit principle justifies the size of a share of a particular state as a provider of public services.

At the fifth stage, the global portion of global net income should be divided between all states. Sizes of shares can be defined in proportion to sizes of national economies, the population of states or number of active Internet users located in particular states within a particular period. A formula that allocates shares of the global portion of net global should also be established by global consensus.

At the sixth stage, the non-global portion of global net income should be distributed between states that had provided national public services consumed by a multinational firm while creating the global income. Like the fifth stage, this stage also requires a formula for apportionment.

The formula could be similar to the traditional formula that is used by some states with a sub-federal political structure,¹²⁵ or the formula suggested by the CCCTB proposal.¹²⁶

The traditional formula for apportionment includes several factors: the location of property, payroll and/or sales.¹²⁷ The weight given for tax purposes to each factor can differ. In practice, four types of the formula are applied: property and payroll; payroll and sales; equally weighted property, payroll and sales; and double-weighted sales with payroll and property are weighted by one-fourth each.¹²⁸

Different types of formulas for the apportionment have different advantages,¹²⁹ and disadvantages.¹³⁰ At the same time, it appears that there is a general consensus among academics: consolidation of income and related losses is more consistent with the economic nature of

¹²⁵ For instance, the US and Canada.

¹²⁶ European Commission *Proposal for a Council Directive on a Common Consolidated Corporate Tax Base (CCCTB)* COM (2011) 121/4 (Brussels, 2011).

¹²⁷ Anne Schäfer, *International Company Taxation in the Era of Information and Communication Technologies: Issues and Options for Reform* (Deutscher Universitätsverlag 2006) 38.

The majority of US states use a three-factor formula that includes property, payroll and sales. While all Canadian provinces apply a two-factor formula based on payroll and sales. See Joann Martens-Weiner, *Company Tax Reform in the European Union: Guidance from the United States and Canada on Implementing Formulary Apportionment in the EU* (Springer 2005) 34.

¹²⁸ Ibid 38-39.

¹²⁹ Reuven S. Avi-Yonah and Kimberly A. Clausing, "A Proposal to Adopt Formulary Apportionment for Corporate Income Taxation: The Hamilton Project" (2007) University of Michigan Law and Economics, Olin Working Paper 07-009, 12-22,35.

¹³⁰ Reuven S. Avi-Yonah and Kimberly A. Clausing, "A Proposal to Adopt Formulary Apportionment for Corporate Income Taxation: The Hamilton Project" (2007) University of Michigan Law and Economics, Olin Working Paper 07-009, 22-26; see also Joann Martens-Weiner *Company Tax Reform in the European Union: Guidance from the United States and Canada on Implementing Formulary Apportionment in the EU* (Springer 2005) 41-44.

multinationals and their abilities to earn extra income as a result of integration of business, functional and cost effectiveness.

The structure of formulas suggested for both portions of global income, as well as functions and choice of a supranational body require further detailed analysis.

b. Cross-Jurisdictional Enforcement of Tax Claims

The international law principle of non-intervention prevents the direct enforcement of claims that were issued by tax authorities in the territories of foreign states. The principle also limits the enforcement power of a state to the territory of that state.¹³¹ This limitation is one of the key difficulties in designing of tax policy related to multinationals, especially those operating in the digital economy.

To overcome this limitation, states have traditionally had to rely on co-operation of other states to provide assistance in tax matters. The level of assistance has significantly improved over the past decades but essentially only takes place in relation to the information exchange. The enforcement of tax claims in the territory of foreign state remains administratively inefficient and ineffective. The multilateral acceptance of the cross-jurisdictional enforcement of tax claims, at least related to global income, could improve the situation with tax enforcement. In principle, states can agree on the cross-jurisdictional enforcement of tax claims by entering into a separate multilateral agreement or by amendment of the Multilateral Convention on Mutual Administrative Assistance in Tax Matters.¹³²

The cross-jurisdictional enforcement of tax claims would mean that states participating in the proposed multinational agreement would have a right to enforce their tax claims related to a portion of the allocated global income¹³³ through courts of any state where a multinational firm subject to these claims has assets. The idea is based on international jurisdictional arrangements that give state parties the right to exercise their own jurisdiction within the national territory of any state party.¹³⁴

¹³¹ Article 2 (7) and (4) of the United Nations Charter (San Francisco, 26 June 1945).

¹³² Multilateral Convention on Mutual Administrative Assistance in Tax Matters developed jointly by the OECD and Council of Europe in 1988 and amended by Protocol in 2010 (1 June 2011).

¹³³ Tax claims subject to cross-jurisdictional enforcement can include only claims for payment of a tax debt or a tax fine, but should exclude claims related to criminal prosecutions.

¹³⁴ For instance, cross-state jurisdictional arrangements are with respect to international channels the Channel Tunnel and the Panama Channel Zone, see Malcolm N. Shaw, *International Law* (6th edn, Cambridge University Press 2008) 657-658.

The cross-jurisdictional enforcement of tax claims relating to global income seems more realistic if shares of global income are allocated under the global consensus and assessed at the global level. When states agree on the basis and apportionment of the allocation of global tax base, they are more likely to be cooperative in the matters of administrative assistance and enforcement of tax claims.

However, the cross-jurisdictional enforcement of tax claims should be a second level remedy that can be applied only when a state cannot enforce its claim within its own borders because the multinational firm has insufficient assets in that jurisdiction to cover the claim.

Conclusion

The digital economy is very dynamic. As Google states: “[i]f we do not continue to innovate and provide products and services that are useful to users, we may not remain competitive, and our revenues and operating results could be adversely affected.”¹³⁵

The approach to taxation of income from cross-border activities (the international allocation of rights to tax) has remained the same for almost a century. In a case of the taxation of income from global digital services and products, continuing to follow this approach negatively affects economic efficiency. First, a state cannot provide tax security and guarantee that multinationals operating in the digital economy will have their income taxed only once. Second, states cannot effectively monetise the global opportunity to trade and invest, as well as the global freedom of digital flows of capital, services/products and information that states, as a group, provide to multinationals operating in the digital economy.

Cross-border flows of capital, goods, services, people and information have been a subject of national and international tax policies for a long time. However, the advent of globally integrated processes of production, which occur everywhere and nowhere at the same time, is a new phenomenon.

The processes take place everywhere because inputs from around the globe are simultaneously deployed. The production processes occur nowhere because the location of some factors of production can be changed easily and arbitrarily. Technically production of digital services and products is a set of multiple technical transactions. Every transaction can be allocated to a separate web server, but not necessarily the same server will be later involved in a production of a similar digital service or product.

¹³⁵ Google, The Annual Report Pursuant to Section 13 or 15 (d) of the Securities Exchange Act of 1934 (form 10-K) for the fiscal year ended December 31 (2014) 13 <<http://investor.google.com/earnings.html>> accessed 19 August 2015.

This new form of production became possible due to intensive international cooperation that hardly ever existed in the world history.

In these circumstances, the creation of a global tax environment under global tax policy seems a logical and necessary response to the contemporary “tax challenges” in the digital economy.

The message coming from the Final BEPS Report in relation to the digital economy is strategically wrong. From the perspective of economic efficiency, the fiscal bilateralism does not work well in the highly integrated global digital economy. It is obsolete technology. While Google continues to innovate, the OECD steadfastly clings to the old ways. The fiscal unilateralism may not work at all, at least in the medium or long-run term. Neither bilateral nor unilateral approaches to taxation of income earned from digital services and products in the global economic and technical environment seem appropriate when all states make a contribution to the development of this environment, but not all states are compensated for their contributions.

From the perspective of both, efficiency and fairness the best way to extend tax security to the global level, monetise the global trade and investment opportunity, and secure the global freedom of digital flows, is the development of global tax policy for taxation of global income earned in the digital economy.

The global tax policy requires multiple commitments not only to the common goal (the freedom of digital flows of capital, services/products and information) but also to general principles (the benefit principle, the single tax principle, the single tax personality principle and the principle of integrated income). For effective application of these principles, the world community of states (or, at least, by a majority of its members) should not only acknowledge the principles but also accept the necessity of an institution that acts as a supranational coordinator and tax assessor. States should also agree on cross-jurisdictional enforcement of tax claims related to global income. Ideally, global tax policy for taxation of global income should be coordinated with multilateral trade and investment policies, and also with policy for global production if those are developed.