

Digitalization of the Economy & the International Taxation System



Author Satoshi Watanabe

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The international taxation system, which has been regarded as a quite robust system for a century, is faced with a serious challenge caused by the digitalization of the economy. This article discusses underlying problems and policy options from an economic point of view.

Background

The digitalization of the economy has become a focal point of discussions on international taxation. In 2015, one of the final reports of the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project addressed the tax challenges of digitalization, but the final report just surveyed the recent development of the digitalization of the economy and did not mention concrete proposals to resolve the issues. The analysis of the final report was also complicated because it discussed both BEPS issues and issues beyond the BEPS project together.

Since 2018, international discussions on the digitalization issues have been activated. On the one hand, several countries including European countries started to take unilateral measures to introduce a “digital services tax” (DST) on revenues of huge highly digitalized companies like Google, Amazon, Facebook and Apple. On the other hand, the tax reform in the United States at the end of 2017 introduced anti-tax avoidance measures against multinational companies shifting intangible assets and profits to low-tax countries. Thus, many countries recognized the need for coordinated reform of the international tax system.

Following the interim report on tax challenges arising from digitalization issued in 2018, the OECD has issued many reports in 2019, including a policy note in January, a public consultation paper in February, and a work program in May. In June 2019, the G20 Summit took place in Osaka. G20 leaders endorsed the ambitious work program proposed by the OECD and the G20 leaders’ declaration announced “we will redouble our efforts for a consensus-based solution with a final report by 2020.” Since then, energetic international consultations have been conducted and it is expected that an outline of the consensus-based solution will be reached by early 2021. It is not possible to predict the actual outcome of the international discussions. This article just tries to consider basic underlying problems and policy issues.

The Concept of Value Creation

In the context of the BEPS project, the notion of “taxation according to the value creation” has often been emphasized. For example, a BEPS final report on transfer pricing is titled as “Aligning Transfer Pricing Outcome with Value Creation”. On digitalization, the main concern has been that highly digitalized companies might not pay an appropriate amount of corporate income tax to the country where they have many users. In particular, it was argued that users of some highly digitalized companies provide useful information, which makes it possible for these companies to get huge profits, and that these companies should pay some tax in the country where these users reside because the source of value creation is provided by these users.

The concept of value creation is a new concept in international taxation, and what it means is not clear enough. Companies can get profits either because they produce good products using useful inputs including intangibles, or because the customers evaluate the products supplied by the companies. It is quite difficult to articulate how much value is created by various factors. Value creation is such a vague concept that some commentators have said it is just a mantra.

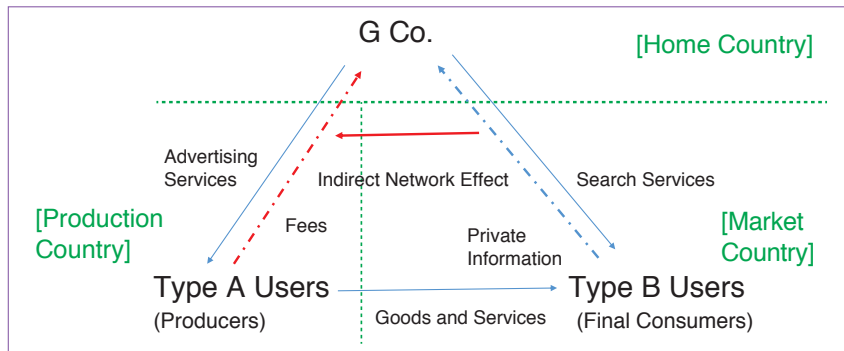
In spite of its vagueness, value creation is situated at the center of the BEPS project as a kind of ideology, and it is no longer possible to totally disregard the argument based on the value creation concept, which is based on some notion of the fairness of tax revenue distribution between countries. To think about the basic problem of highly digitalized companies in the context of international corporate taxation, it might be useful to take a closer look at the business model of highly digitalized companies. These companies often work as digital platforms and the business model of digital platforms is of particular characteristics as discussed below.

Business Model of a Digital Platform

Chart 1 illustrates an example of the business model of a digital platform. A highly digitized company called G Co. is a digital platform which provides its users (Type B Users, who are usually consumers) with sophisticated search services. G Co. can collect huge amounts of information on Type B Users through the searching activities of these users, and G Co. can use the information to make advertisements more effective. Also, effective advertisements can be

CHART 1

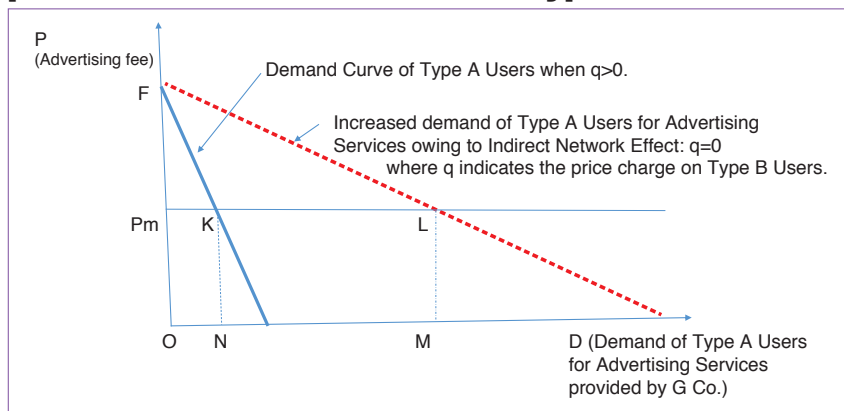
Example of a digital platform



Source: Compiled by the author

CHART 2

Increase in excess profits of G Co. caused by provision of information from Type B Users



Source: Compiled by the author

automatically conveyed to Type B Users when they use the search services. Type A Users, who are usually producers of goods and services for consumers, purchase advertisement services from G Co., which can generate huge profits from the advertising fees paid by Type A Users.

In this article, we happen to use the example of G Co., which provides search services. However, we can make essentially the same argument for other types of digital platforms. We can use the example of F Co., which provides SNS, or the example of Am Co., which provides market making services, or the example of Ali Co., which provides settlement services. We might be able to discuss digital platform issues in a simpler framework if we take the example of Ub Co., which facilitates the provision of taxi services, or the example of Abb Co., which facilitates the provision of lodging services.

Two points should be mentioned about the business model of G

Co. First, G Co. has two kinds of customers: Type A Users and Type B Users. Type B Users are potential customers of Type A Users, but we are not interested in the actual transactions conducted between them. We focus on the business conducted by G Co. because international taxation problems arise for the business profits of G Co. As a digital platform G Co. facilitates transactions between two types of customers, and it is sometimes called a multi-sided platform.

Second, although G Co. can generate huge profits, no money is paid to G Co. by Type B Users. By not charging Type B Users, G Co. can get more information from them because they engage in search activities more intensely when they can use search services for free. More information from Type B Users makes the advertisement services for Type A Users more effective and increases the demand for advertising, resulting in huge profits for G Co. Thus, G Co. can generate more profits by setting the price of search services (q=0) for Type B Users, rather than charging service fees from both types of customers. Demand for services provided by G Co. for Type A Users is interrelated to demand for services provided by G Co. for Type B Users. Thus, G Co. is faced with two-sided markets and its price strategy becomes complicated when there are indirect network effects between two-sided markets (a market for advertising services and a market for search services)

Indirect Network Effects

Chart 2 shows the demand curve of Type A Users (producers) for advertising services provided by G Co. Assume that G Co. first charged Type B Users (consumers) some fee for the search services (q>0), and the demand curve of Type A Users for the advertising services was like the steep blue line (FK). Then, G Co. sets the fee for the search as free (q=0), causing indirect network effects to increase the demand by Type A Users for the advertising services. When q=0, Type B Users use more search services and provide more information to G Co., which improves the quality of the advertising services. Thus, the demand curve for the advertising services is shifted to the red-dotted flatter line (FL), that is, Type A Users purchase larger amounts of advertising services from G Co.

In Chart 2, it is supposed, for convenience, that the marginal cost

for providing the advertising services is zero. G Co. has invested a large amount in developing the system (and so it has incurred a substantial fixed cost), but the running cost for providing the advertising services is supposed to be zero. When the fee for the search services was positive ($q > 0$), the size of the excess profit of G Co. is indicated as the area of the rectangle PmKNO plus some profit earned from the fee for the search services. (Strictly speaking, the amount of the fixed cost has to be subtracted when the excess profit of G Co. is calculated, but it is not the point in the current context.) If G Co. sets $q = 0$, it loses some profit from the search services, but the excess profit from the advertising services increases by the size of rectangle KLMN.

We should add another point implied by *Chart 2*. The demand curve of Type A Users indicates the marginal revenue that they can enjoy by purchasing advertising services from G Co. Note that Type A Users purchase advertising services as long as the revenue arising from the additional one unit of advertising services (marginal revenue) exceeds the cost of purchasing one unit of advertising services (marginal cost), which is the price of the service Pm. Thus, the area of the triangle FKL indicates the increase of excess profits of Type A Users. Because the value of the advertising services was increased by the indirect network effect, not only the profit of G Co., but also the profits of Type A Users increases.

Implications for International Taxation

See *Chart 1* again. G Co., Type A Users, and Type B Users are located in Home Country, Production Country, and Market Country, respectively. Although Type A Users are customers of G Co., they produce goods and services for Type B Users; therefore, Type A Users' country is called Production Country. Production Country can be the same country as Market Country, but they can be different. Type A Users and Type B Users can be located in many Production Countries and in many Market Countries, but we are going to discuss on the assumption indicated in the chart for simplicity.

Corporate income tax is basically imposed in a source country where the corporation or the permanent establishment of the corporation is engaged in business activities. From an economic point of view, the concept of a source country might be as vague as the place of value creation, but there is an accumulation of detailed analysis on the source country concept from a legal point of view. Following the traditional source country concept, the excess profit of G Co. should be taxed by Home Country because G Co. does not have a permanent establishment either in Production Country or in Market Country.

See *Chart 2* again. For the excess profit of G Co. (corresponding to the area of the rectangle PmLMO), traditional source-based corporate income tax should be collected by Home Country. However, we might wonder if Home Country should be able to tax all

of the increased excess profit due to the indirect network effect (corresponding to the area of the rectangle KLMN). The increased excess profit of G Co. is due to the indirect network effect caused by the input of information from Type B Users in Market Country. If Market Country is to be able to impose corporate income tax on the profit of G Co., the rationale cannot be the existence of the permanent establishment in the traditional sense. Market Country has to refer to some other rationale such as "user participation".

Note that Market Country in *Chart 2* might not be the same as the destination country in the context of taxing the profits of G Co. Type A Users in Production Country might be able to provide more goods and services thanks to the effective advertising services provided by G Co., and if we focus on the transactions between Type A Users and Type B Users, Market Country is clearly the destination country. However, G Co. provides search services to Type B Users without charging a service fee. If the information provided by Type B Users to G Co. is not regarded as a consideration for the search services of G Co., Market Country cannot claim the tax right as a destination country. Even if the information is regarded as a consideration, the value of the provided search services might be evaluated to be quite low, compared with the huge excess profit of G Co. Therefore, the adoption of destination-based corporate income tax might not be of help for Market Country.

By contrast, Production Country gets a large benefit if the destination country-based system is introduced. Because the huge profit of G Co. arises from the payment by Type A Users for advertising services, Production Country can probably claim a considerable amount of corporate income tax on the profit of G Co. if the destination-based corporate income tax system is introduced. Practically, it is often the case that Market Country and Production Country are the same country; therefore, the adoption of a destination-based system might be considered as beneficial for Market Country, too. However, it is still important to recognize the conceptual difference between Market Country and Production Country.

Note also that under the current corporate tax system, Production Country can collect corporate income tax from Type A Users because they get excess profit (corresponding to the triangle FLpm) by getting the advertising services of G Co., while Market Country cannot get any corporate income tax revenue under the current system. Under the current VAT system, Production Country can collect VAT using a reverse charge system applied to the transactions between G Co. and Type A Users, while Market Country cannot get any VAT revenue because Type B Users use the search services of G Co. for free.

Destination-Based Corporate Income Tax & VAT

Some commentators propose changing the current source-based

corporate income tax to the destination-based corporate income tax. One variation of this proposal is to introduce a Destination-Based Cash Flow Tax (DBCFT). This proposal implies quite a drastic shift in tax revenue allocation when it is applied to digital platforms. See [Chart 1](#) again. If all the corporate income tax revenue belongs to the destination country, the profit of G Co. is only taxable in Production Country. Even if Production Country is very happy about the situation, that outcome is probably unfair from the viewpoint of Home Country, where business activities of G Co. take place.

It is more likely that some factor of the destination country would be taken into account in allocating the tax revenue, rather than replacing the current corporate income tax system with the destination-based corporate income tax. In that case, some kind of a formula apportionment system for the international allocation of tax revenue might be considered. In that case, however, some attention should be paid to the point that Market Country in the business model of digital platforms is not necessarily the destination country, as long as we have to make a distinction between Production Country where Type A Users are located and Market Country where Type B Users are located.

Instead of a radical shift of the corporate income tax system to the destination-based system, it might be more practical to gradually replace the current corporate income tax with VAT. Actually, in many countries, the weight of VAT is increasing and the weight of corporate income tax is decreasing, partly due to intensified tax competition. VAT is also relatively robust against tax planning. However, VAT might not be a direct answer to cope with the digitalization of the economy. In the digitalization context, the focal point is the excess profit of some multilateral companies. VAT is a general tax on final consumption and final consumption covers not only the excess profits of the companies but also wages and salaries paid to employees of these companies.

Thus, shifting the weight of tax revenue from corporate income tax to VAT implies not only strengthened tax powers of the destination country, but also a shift of the tax base from business income to consumption, which might have adverse distributional consequences. Also, as discussed above, because VAT is usually imposed on the basis of transactions with considerations, to apply VAT to the transactions between G Co. and Type B Users might be difficult. In that case, replacing corporate income tax with VAT might not be satisfactory from the viewpoint of Market Country.

Marketing Intangibles & DST

By recognizing marketing intangibles in the country where customers are located, some reallocation of corporate tax revenue between countries can be achieved, and this approach has been attracting support from many commentators. This approach probably has the merit of relatively high acceptability by practitioners

and policy makers because they are accustomed to the concept of marketing intangibles. The approach also has the merit of wide applicability including but not restricted to highly digitalized businesses.

However, it is not certain whether the concept applied to the business model of digital platforms works well. For example, how does the concept of the marketing intangibles of G Co. make a difference when applied to Production Country and to Market Country? More generally, how is the value of marketing intangibles evaluated and how is it reflected in the tax revenue allocation? There is some concern that the new concept would be generally applied to traditional international businesses as well, and increase compliance costs of a wide range of taxpayers.

Digital Services Tax (DST) might be considered as a practical response to the need to shift some tax revenue to Production Country, or to Market Country when the tax base can be related to the intensity of searching activities by final consumers. It should be noted, however, that DST can produce distortions because the excess profit of digital platforms is not pure rent but quasi rent arising from R&D activities, and if DST is introduced as a unilateral measure taken by specific countries, it could make international cooperation for reforming the international taxation system more difficult.

Conclusion

Digital platforms pose serious problems for the current international taxation system and active discussions about reforming the system are ongoing. The international taxation system is inevitably related to the allocation of tax revenue among countries, and therefore it is inevitably of some political nature. The actual policies taken to reform the current system is likely to be a result of political compromise among countries with different interests. However, it is also of some use to investigate the underlying theoretical issues. As discussed in this article, the business model of digital platforms might cause special taxation issues, which are somewhat different from general problems concerning the digitalization of the economy. It is expected that the actual policies chosen for reform will not produce too many distortions in international economic activities or too many compliance costs for international businesses.

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Satoshi Watanabe is a professor at the School of International and Public Policy, Hitotsubashi University. He is a former Ministry of Finance official, and specializes in taxation and public finance.