

# The impact of e-commerce on international tax law

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**Abstract:** Economic globalization has led to the rapid development of e-commerce, and international e-commerce transactions are different from traditional commercial transactions in terms of borderlessness, transaction virtualization, and uncertainty of transaction partners, which have greatly impacted the current traditional tax legal systems of various countries. Therefore, it is extremely important to carefully analyze the impact of the development of international e-commerce on international tax law and continuously improve the international tax legal system. This paper analyzes the main problems faced by the current international tax collection and management laws and regulations applicable to cross-border trade in the context of cross-border e-commerce, and puts forward some countermeasures. In terms of style, the text is divided into four chapters. Chapter 1 puts forward the main problems faced by the current legal rules of international tax collection and administration in the context of cross-border e-commerce, Chapters 2 and 3 analyze the problems raised in Chapter 1, and Chapter 4 proposes strategies to deal with the legal issues of international tax collection and administration of cross-border e-commerce from the international level. On the basis of introducing and explaining the concept, classification, development and current situation of e-commerce and cross-border e-commerce, this paper analyzes the reasonableness, necessity and appropriateness of taxation of cross-border e-commerce from the perspective of history, national governance and jurisprudence. Finally, the conclusion briefly summarizes the countermeasures of developed countries with relatively rapid development of e-commerce under the impact of e-commerce on international taxation, and points out the strategies that China should adopt as a country with a slight lag in the development of e-commerce.

**Keywords:** e-commerce; international tax law; Information Technology

## 1. Introduction

Since the 1990s, with the rapid development of science and technology, a new business model based on customer data and the Internet has emerged with the Internet as the main body, buyers and sellers as the main objects, and banks for electronic payment and settlement as the main means. E-commerce first appeared in the United States in 1994 with 34 and more than 10,000 three years later. In 1995, its total online transactions amounted to \$200 million, reaching \$1 billion in 1996 and \$50 billion in 1998. Since then, its sales have risen exponentially. Although China is still in its infancy, in the first half of 2008 alone, online retail sales have exceeded 2 trillion yuan<sup>[1]</sup>. Through the above analysis, we can clearly see that an efficient, convenient, and borderless global virtual network market has gradually taken shape. E-commerce has become the dominant form of global trade in the 21st century and has become the center of gravity of global economic activity.

But with the development of electronic commerce, the present tax theory, law system and the practice of tax administration have suffered a great impact. As a symbol of a country's sovereignty, taxation is a special distribution relationship led by the state through the allocation of social resources through a country's own political power and through the allocation of social resources. This inevitably leads to a conflict with the borderless Internet. This is particularly the case in the international tax system. Since the mid-90s of the last century, cross-border taxation issues arising from e-commerce have attracted widespread attention from governments and academia.

Relevant departments of various countries and relevant international organizations are actively carrying out policies and research, and have issued a number of reports on tax issues brought about by e-commerce, aiming to promote and ensure the benign and orderly development of e-commerce, protect national tax interests, and maintain a good tax legal order. Since e-commerce is different from traditional trade methods, there are certain limitations in the theory and practice of the existing tax system. With the acceleration of economic globalization and the wide application of e-commerce around the world, it has brought new problems to the tax theory and practice of different countries, and also made the existing international tax legal system face severe challenges.

In this newly emerging virtual realm, each nation holds its unique perspective on the types of taxes to impose and the tax policies and rates to adopt. In addition, due to the loss of the concept of national borders on the Internet, the original principle of taxation in kind, which was no longer feasible, will face unprecedented difficulties in international tax coordination<sup>[2]</sup>. Firstly, this article gives a brief introduction to the tax features of electronic commerce, and then discusses its influence on international tax law.

## **2. The basic theory of e-commerce**

### ***2.1 Meaning of e-commerce***

E-commerce is a business activity that combines a microcomputer with the Internet. Government, scholars and businessmen have different definitions of electronic commerce depending on their positions, ways of participating and participating. However, e-commerce is not exactly the same as digitizing commerce. Although the definition of e-commerce varies in various countries or industries, the business model that relies on electronic products and Internet technology is still its core, and with the rapid development of e-commerce, it is no longer limited to goods with shopping as the main body, but includes additional services such as logistics and distribution.

First of all, e-commerce is distinguished in a broad sense and in a narrow sense. Broadly speaking, e-commerce refers to the use of various electronic means to conduct business activities; "E-commerce" in a narrow sense refers to commercial activities with the Internet as the main body. In both broad and narrow contexts, e-commerce encompasses two fundamental aspects: firstly, the absence of the internet negates its classification as e-commerce<sup>[3]</sup>. Second, conducting through the Internet is a commercial activity. Within the UNCITRAL Working Group, e-commerce is meticulously delineated as the conduct of commercial undertakings utilizing electronic methodologies, encompassing the full spectrum of electronic interactions spanning suppliers, customers, governmental bodies, and all other pertinent entities. For example, EDI, web technology, e-mail, etc., sharing unstructured business information, managing and executing various business activities, managing activities and consumption activities<sup>[4]</sup>.

### ***2.2 Features of e-commerce***

#### ***2.2.1 Universality***

E-commerce is a new trade model that introduces producers, distributors, consumers, governments, etc. into the era of the network economy.

#### ***2.2.2 Convenience***

In the environment of e-commerce, people will not be limited by geography, and consumers can carry out more complex business activities in a very convenient way, for example, through online banking, they can access account funds and query information 24 hours a day, thus greatly improving the service level of enterprises to customers.

#### ***2.2.3 Integrity***

E-commerce has the capacity to revolutionize transactional workflows by seamlessly amalgamating manual labor with electronic information processing into an indivisible whole, significantly enhancing both the efficiency in the deployment of human and material resources and the rigorosity of the system's operations<sup>[5]</sup>.

#### ***2.2.4 Security***

In the field of e-commerce, a very important core issue is security, which requires a completely different security mechanism from traditional business activities, such as encryption mechanism, signature mechanism, security management, access control, firewall, anti-virus protection, etc.

#### ***2.2.5 Coordination***

Business activities themselves are a process of coordination, which involves the mutual cooperation between customers and enterprises, manufacturers, wholesalers, and retailers, and in the context of e-commerce, it is more necessary to cooperate with various departments such as banks, logistics centers, communication departments, and technical services, and the entire e-commerce process is often completed at one time<sup>[6]</sup>.

### **2.2.6 Integration**

E-commerce is based on computer networks, highly integrated with various functions of business activities, and highly integrated with all aspects of business activities. The high level of integration has further improved the efficiency of e-commerce.

### **2.3 Features of e-commerce taxation**

As an Internet-based trade activity, e-commerce is fundamentally different from traditional direct physical transactions in terms of transaction methods, ways and means. Therefore, it also has its own characteristics in the tax system.

#### **2.3.1 Virtualization**

##### **(1) Transaction virtualization**

E-commerce makes use of the internet as a means of trading through virtual shops, virtual companies, virtual supermarkets and so on<sup>[7]</sup>. For example, in the modern e-shopping process, customers can communicate product transaction signals through the browser to consult information, purchase, order delivery, electronic payment, etc.

##### **(2) Virtualization of the concept of taxation**

Historically, every sovereign nation across the globe has established its unique set of tax regulations, defined its tax scope, enumerated taxable items, formulated tax exemption policies, and devised tax management methodologies. However, due to the development of e-commerce, there are no geographical boundaries between trades, in other words, the virtual world built using the Internet can no longer be divided by national borders, nor can it be regulated by the tax laws and regulations of various countries<sup>[8]</sup>.

##### **(3) Virtualization of transaction objects**

The qualitative and quantitative identification of transactional objects in e-commerce, which are transmitted exclusively as "digital information" across networks, presents a formidable obstacle for tax authorities. For example, enterprises can release their own patents, non-patented technologies, software products, etc. to users<sup>[9]</sup>. When the user wants to use it, they simply enter a password or copy it from the network. At this time, the physical carrier and sales volume of the commodity no longer existed, breaking the previous concept of sales. On the one hand, it is difficult for the tax authorities to verify their sales revenue; On the other hand, there is no clear provision in the current tax law as to whether it is taxed on the basis of sales of goods or intangible assets, which has caused great confusion to the tax authorities<sup>[10]</sup>.

##### **(4) Virtualization of tax principles**

The rapid development of e-commerce poses a serious challenge to the traditional concept of taxation. In the traditional trade mode, the government may levy taxes on the residence, the institution, and the income source. Traditionally, the place of residence has been established by reference to the factual situation, the location of the establishment or the place where the effective control is actually exercised. However, online transactions and services are often difficult to control, and even a simple transaction can be divided into different jurisdictions, namely the seller base, the server base, and the buyer base, but the buyer can move and therefore can acquire the goods in a fourth area. Because consumers are anonymous and producers can hide where they live, their electronic consumption behavior can be easily masked<sup>[11]</sup>. Modern communication technology makes it possible for people to collaborate without having a fixed location in any one country. As a result, anonymous e-commerce makes tax authorities helpless, difficult to carry out audits, and therefore ineffective.

#### **2.3.2 Multinationality**

E-commerce leverages the Internet to transform transactions that were previously confined to a single country into those that can span multiple nations. In essence, the advancement of e-commerce has profoundly facilitated the functional integration within multinational corporate groups, enabling the rational distribution of product research and development, design, production, and sales on a worldwide scale.

The taxation of electronic commerce is transnational, providing a legal means for pharmaceutical taxpayers to reduce, or even waive, their tax obligations to the government by means of cross-border movements of persons, money and goods, thus facilitating cross-border tax evasion. All you need is a computer, a modem, a mobile phone and a website in a tax haven. The proliferation of banking networks

and the ubiquitous utilization of electronic money and cryptocurrency have significantly enhanced taxpayers' flexibility in both pricing strategies and tax jurisdiction selection<sup>[12]</sup>.

### ***2.3.3 Concealment***

The U.S. Department of the Treasury's White Paper on Internet Transactions published in November 1996 summarized the impact of e-commerce on taxation as follows: customers may be anonymous, manufacturers can easily hide their addresses, and tax authorities cannot judge the situation of e-commerce. Electronic consumer behavior is easy to hide.

## **3. The impact and challenges of cross-border e-commerce on international tax law**

### ***3.1 The nature of the proceeds is difficult to define***

Most tax treaties and related domestic tax laws provide for different types of taxation. However, the definition of the nature of income in current international tax law no longer applies to electronic commerce. For example, if there is a tax agreement, then in the country of origin of its income (i.e. income from the sale of goods), the home State shall be entitled to tax such commercial income if it is obtained via a PE in the home State. However, the country of origin can only tax royalties, remuneration for services, etc., obtained from the country of origin, on the basis of withholding tax. However, in the electronic commerce age, because of the change of transport, the difference of the above sales income is not apparent. For example, the sale of software. In theory, selling software is the same thing as selling books. The buyer buys the product for their own use, but cannot copy or sell it to others<sup>[13]</sup>. So, its income is a kind of income from the sale of goods. However, the sale of software is considered a licensed use under both intellectual property and copyright law. So, is it a merchandise, or is it a franchise? In the first case, the tax is levied on the country in which the software is sold, that is, on the country in which the software is sold, that is, in the country in which it is located; In the latter case, it is levied by the tax authority of the buyer's location. Obviously, these are two completely different taxing rights, and there is also a big difference in tax benefits.

### ***3.2 The concept of permanent establishment has been challenged***

According to the OECD model tax treaty, if a company establishes a permanent establishment in another contracting country, the company's operational income becomes subject to income tax in that particular nation. "Permanent establishment" refers to all or part of the business premises owned by an enterprise in its business field, including offices, administrative premises, branches, factories, etc. It is a very important concept in international tax law. That is, the business income derived by the resident organization in the country of origin of income can be taxed by the resident organization in the country of source of income<sup>[14]</sup>. Income that is not derived from a permanent establishment located in the country of origin is exempt from taxation in the country where the income is generated. This concept is an important basis for the collection and administration of income tax in China, and it is also related to the distribution of tax benefits between the income country and the place of residence. However, in online trade, companies are free to register in any country or use a server to create a commercial site, which brings new challenges to the concept of "permanent organization". Can this site be considered a permanent organization? This is not explicitly provided for in the current legislation, and it is difficult to operate in practice. Since, when a web page is viewed as a fixed entity, it can easily move from one country to another, so that a company can move a web site to a low-tax country or to a non-tax-evading country with no impact on the effectiveness of the website. At the moment, this issue has become a hot topic.

### ***3.3 Tax compliance issues***

1) Electronic Money (EM). EM, as a convertible currency, has been digitized and electronic, able to circulate quickly, and has low transaction fees. Electronic Monetary (EM) systems are bifurcated into two primary categories, with one being the account-based system, usually administered by a third-party institution like a bank. This system offers a robust auditing mechanism, enabling a comprehensive tracking of all cash flows within an economic enterprise, much like the meticulous scrutiny conducted by an auditor. The second is a non-account system, which, like cash, cannot be traced. EM can quickly transfer funds overseas at a very low price. From a tax point of view, such transfers of money are difficult to regulate. Along with the long-distance payment of electronic currency in the internet environment, it

will bring great influence to the execution of Chinese tax law. Since the volume of cash transactions will not be large, traditional cash tax evasion is limited. However, in an EM environment, the potential for tax evasion increases dramatically because of their large transaction volumes, which are hidden, swift, and difficult to trace<sup>[15]</sup>.

2) Confirmation of Identity. It is difficult for people who do business on the Internet to identify themselves, which has an impact on the amount of tax levied on them by the local tax administration. In addition, how to identify consumers is also a problem.

3) The disappearance of the middleman. In the e-commerce environment, suppliers of goods or services can provide goods directly to consumers without intermediaries (agents, wholesalers, retailers, etc.). From a tax point of view, this has three consequences: First, the tax base that was originally allocated to intermediaries may disappear. Previously, significant tax revenue could be generated from a limited number of intermediaries; however, in the current scenario, taxation is now individually imposed on consumers, rather than consolidated through a few intermediaries. The third is to reduce the tax rate and compliance rate of enterprises. At the same time, with the "disappearance" of middlemen, a large number of inexperienced taxpayers have also joined e-commerce, putting more pressure on the tax authorities.

#### **4. Tax policies and international harmonization of countries related to e-commerce**

As the birthplace of e-commerce and the world's largest net exporter of e-commerce, the United States has always taken a relatively conservative attitude towards e-commerce, advocating "tariff-free". However, some scholars have advocated fundamental reform when discussing how to deal with the taxation of cross-border e-commerce<sup>[16]</sup>. Given that numerous traditional concepts, regulations, and principles within the existing international tax legal framework are incompatible with the unique attributes of e-commerce, it is suggested to introduce a novel tax category alongside income tax and value-added tax, and to address the issue of domestic versus international tax allocation on this newfound basis. The EU as a whole is neutral and in favor of taxation, but the introduction of VAT should not contradict the development of e-commerce, from the perspective of tax neutrality, new taxes can not be imposed, but the taxation of e-commerce cannot be exempted, otherwise it will cause unfair competition.

In addition, there are differences in tax laws from country to country. The United States and other developed countries advocate expanding domestic tax jurisdiction and restricting the scope of application of the tax jurisdiction of other countries' source jurisdiction, because developed countries generally have positive net assets abroad, and the principle of "resident jurisdiction" can maximize their tax burden. Developing countries, which are importers of capital and technology, have put forward higher requirements for the taxation authority of their source countries in order to protect their own economic interest.

#### **5. Suggestions for improving the legal system for international e-commerce taxation**

Tax is the material foundation of a nation to achieve its political, economical, and cultural functions. It is also an important revenue source. Globally, the taxation of e-commerce is a fact. First, it is the embodiment of national economic sovereignty; second, it is conducive to increasing national fiscal revenue; Thirdly, the taxation of cross-border electronic commerce is a business activity, which contributes to the establishment of a fair competitive environment in the domestic and foreign countries. But how do the tax system and state support complement each other<sup>[17]</sup>? The appropriateness and effectiveness of the tax policy is a great test of the wisdom of legislators. The following aspects are available for reference:

First, the basic principle of establishing international e-commerce tax legislation based on the fairness of the tax law is established, that is, under the condition of ensuring that the tax burden of traditional trade remains unchanged, it will not cause unequal distribution of tax burdens, thereby affecting the rational allocation of resources in the market; In addition, it is the principle of tax neutrality, which cannot discriminate against different business models; Ultimately, a dual legislative framework encompassing both "territoriality" and "personalism" should be established to effectively tax cross-border e-commerce transactions<sup>[18]</sup>.

Second, we can establish a special international e-commerce tax registration system, strictly implement the financial filing system, promote cross-border taxpayers to establish a sound financial

accounting system, retain relevant information, conduct tax registration in accordance with legal procedures in tax matters, use special invoices for e-commerce transactions, formulate electronic tax declaration methods, improve management procedures, and lay a solid foundation for future collection work.

Thirdly, the taxation scope for value-added tax, business tax, and income tax will undergo a redefinition, with digital products sold online being classified and taxed under the category of labor services as technology transfers. In the existing tax system, provisions for electronic records, preservation and encryption have been added to make online transactions taxable.

Fourth, in order to solve the problem of international tax avoidance by affiliated enterprises in cross-border e-commerce through transfer prices, it is necessary to actively cooperate with relevant countries and conduct bilateral information exchanges, which will help accurately identify all information related to income, especially information on the transfer of profits by affiliated enterprises and transactions in third countries for tax evasion.

## 6. Conclusion

With the advent of the information age, the explosive development of e-commerce on people's lifestyles is far beyond our imagination. Due to the existing regulatory loopholes in national laws, international conventions, and treaties, trading powers have actively engaged in the discussion and formulation of pertinent laws and regulations to secure benefits for their respective countries. As the largest developing nation globally, China must swiftly embark on enhancing this system and bolster exchanges with other nations to mitigate the adverse effects of e-commerce on the tax system.

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