

# Financial Analysis of e-Commerce in the Development of Carbon Economy

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**Abstract:** Commercial low-carbon is the embodiment of low-carbon concept in concrete business, for example, logistics, service and other industries reduce energy consumption and improve energy efficiency in the process of service, so as to achieve the purpose of low carbon. E-finance innovation is the financial innovation under e-commerce, which is mainly reflected in the innovation of financial instruments such as e-money, e-banking, e-payment, online insurance and online securities, financial technology innovation, financial business innovation, financial institution innovation, financial market innovation and the resulting financial strategy innovation and financial system innovation, etc., and promotes the financialization development of e-commerce. As an electronic transaction activity based on information technology, e-commerce can give full play to its advantages as a tool to connect finance and enterprises outside finance under the background of Internet finance. Based on the analysis of the problems, this paper puts forward some suggestions to promote the healthy development of e-commerce financialization.

## 1. Introduction

Under the influence of Internet finance, the financial trend of e-commerce is significant. On the one hand, it enriches the business types of China's e-commerce industry. On the other hand, there are many hidden dangers in the development, which brings potential threats to the Internet financial industry [1]. High emission, high pollution and high energy consumption are still the current economic development mode in many parts of China, but people have realized that the economic development obtained through the destruction of the environment is not worth the loss. Sustainable development can be achieved only by developing low-carbon economy and reducing energy waste and loss rate [2]. Commercial low-carbon is the embodiment of low-carbon concept in specific business. For example, logistics, service and other industries reduce energy consumption and improve energy efficiency in the process of service, so as to achieve the purpose of low-carbon [3]. With the continuous growth of global population and economic scale, the environmental problems caused by energy use and their inducement have been recognized by people, not only the hazards of smog, photochemical smog and acid rain, but also the global climate change caused by the rising concentration of carbon dioxide in the atmosphere[4]. E-finance innovation is the financial innovation under e-commerce, which is mainly reflected in the innovation of financial instruments such as e-money, e-banking, e-payment, online insurance and online securities, financial technology innovation, financial business innovation, financial institution innovation, financial market innovation and the resulting financial strategy innovation and financial system innovation, etc., and promotes the financialization development of e-commerce [5]. However, due to the short development time of e-commerce financialization, there are still some problems affecting development. For these problems, the government, industry and enterprises should work together to eliminate them, so as to promote the healthy development of e-commerce financialization [6].

As carbon emission reduction has gradually become an important national and cross-regional issue, various regions have gradually realized the importance of cross-regional cooperation. Achieving cross-regional cooperation in carbon emission reduction can not only give full play to their respective advantages, but also maximize the optimal allocation of resources [7]. E-commerce has achieved the effect of zero emission and low pollution by optimizing and integrating various social resources, improved the efficiency of economic operation, realized the economic mode of high efficiency and low consumption, and became an effective way to promote the development of

low-carbon economy. As an electronic transaction activity based on information technology, e-commerce can give full play to its advantages as a tool to connect finance and enterprises outside finance under the background of Internet finance [8]. The financialization of e-commerce has realized the business expansion of e-commerce enterprises and made e-commerce enterprises better participate in the financial market, which is of great significance to realize the optimization of market capital. Therefore, the application and promotion of e-commerce can be regarded as a countermeasure to develop low-carbon economy. It can not only improve economic operation efficiency, but also reduce resource consumption and improve resource utilization.

## 2. An Analysis of the Promotion of e-Commerce to Low-Carbon Economy

### 2.1 On the Role of e-Commerce in Promoting Low-Carbon Economy

E-commerce is a trading form through the network. When conducting business activities, the seller does not need to set up physical stores and shopping malls, but only needs network cables, computers and network connection equipment to easily realize business activities, thus eliminating the consumption of social energy, especially electric energy, by physical stores in the course of operation, thus making a great contribution to reducing carbon emissions. Therefore, relatively speaking, the consumption of various resources, such as electric energy, is very small in the course of e-commerce, which plays a great role in low-carbon economy. Commercial low-carbon is the embodiment of the low-carbon concept in specific business. For example, logistics, service and other industries reduce energy consumption and improve energy efficiency in the process of service, so as to achieve the purpose of low-carbon. The industrial development trend of low-carbon and environmental protection coincides. By being close to consumer groups and creating a functional industrial spatial layout, the regional radiation effect of commercial circulation industry can be brought into full play. Overall, the main factors affecting the spatial layout of China's commercial circulation industry in a low-carbon environment are shown in Table 1.

Table 1 Influencing Factors Of Three-Dimensional Spatial Layout of China's Commercial Circulation under the Background of Low Carbon

	Specific composition
1. Infrastructure factors	The convenience of road, railway and inland river shipping; Development level of internet communication
2. Industrial agglomeration factors	There are large-scale and powerful related enterprises around; Good atmosphere of circulation and entrepreneurship
3. Trading market factors	Large trading markets are adjacent to or within key cities and economic circles
4. Technical influencing factors	Development level of circulation technology (whether there are research institutes, universities and training bases in the region, etc.)

It can be seen that e-commerce has an obvious effect on reducing carbon emissions and resource consumption. Through the online transaction form of e-commerce, enterprises can save the cumbersome face-to-face negotiation process and use real-time communication tools to conduct trade negotiations in the form of online negotiation and consultation, so as to save time, improve communication efficiency, reduce communication cost and save carbon emissions such as transportation necessary in the process of meeting and consultation. thus it can be seen. E-commerce is the practitioner of low-carbon business. E-commerce and commercial low-carbonization are the unity and embodiment of people's rational and optimized allocation of resources, environmental protection, low carbon, low cost and high efficiency.

### 2.2 Analysis on the Negative Impact of e-Commerce on Low-Carbon Economy

With the development of economic globalization, e-commerce has promoted the development of logistics industry, resulting in the increasing energy consumption of logistics industry. Excessive energy consumption has caused great pressure on the environment, so low-carbon logistics has become a research hotspot in the field of logistics. Under the background of low carbon, with the construction of low carbon pattern of industrial transfer and ecological co-construction, the

commercial circulation industry will approach the development of ecological environment protection in terms of circulation organization and circulation mode. In addition to online activities, offline logistics express activities are also very important in e-commerce. The problems of high consumables and low recycling rate in the packaging process affect the development of low-carbon economy. When analyzing the low-carbon form of e-commerce, we have deeply understood the low-carbon and environmental protection characteristics of e-commerce in the process of saving electric energy, reducing vehicle travel and reducing the use of paper in online banking. In the early research results, the model for calculating vehicle energy consumption is relatively single, and it is considered that only the running distance of the vehicle will affect the energy consumption of the vehicle. In recent years, studies at home and abroad have found that the measurement of vehicle energy consumption is very complex, and energy consumption seriously affects the amount of carbon emissions. Generally, the influencing factors are divided into three categories: vehicle factors, environmental factors and human factors. The specific influencing factors of each category are shown in Table 2.

Table 2 Influencing Factors Of Vehicle Energy Consumption

Factor classification	Specific factors
Vehicle factor	Engine power, vehicle mass, shape, tires, vehicle load, fuel type
Environmental factor	Road congestion, road type, pavement flatness, pavement gradient, temperature, rain, snow and wind conditions
Human factors	Rapid acceleration and deceleration, frequent lane change, blind shift and lack of maintenance

However, some details in the process of commodity logistics transmission may be ignored, that is, the problems of high packaging consumables and low recycling rate in the packaging process. Generally, logistics enterprises will avoid damage to goods during transportation by adding fillers such as plastic and foam and winding with multi-layer tape. Because these materials are non-degradable, there is no effective safe treatment method except landfill and incineration. Because of these reasons, the reusable cartons have not achieved a good recycling process, resulting in the secondary production of cartons, which does not play a low-carbon role. Optimizing the route of distribution vehicles is the key to optimizing the logistics system. Logistics enterprises can effectively reduce the logistics distribution cost, fuel consumption and carbon emission of vehicles by reasonably arranging distribution vehicles and planning driving routes, both from the perspective of enterprises and from the perspective of ecological environment, Vehicle routing problems considering carbon emissions are worth studying.

### 3. Optimization Strategy of e-Commerce Financialization Development in the Internet Financial Era

#### 3.1 Standardize Industry Standards and Expand Industry Influence

In the process of rapid development, the standard of e-commerce financialization mode is still not perfect, which has a great impact on the development of industry norms. Many e-commerce platforms only focus on online shopping and other services, which are in line with the online banking of banks and pursue the convenience of customers. However, e-commerce tends to be financialized, but it is not yet in the climate and is in the savings stage. To realize the sustainable development of e-commerce financialization, it is necessary to standardize industry standards and expand industry influence. The definition of e-commerce financialization is not difficult to see that e-commerce financialization is closely related to Internet finance, which is the basis of e-commerce financialization. First of all, we need to standardize the e-commerce financialization industry standards. At present, there are many kinds of financial service products launched by China's e-commerce platforms, and the financial models of each e-commerce platform are also different, which leads to greater risks in the process of e-commerce financialization. Because Internet Finance includes many development modes, such as P2P lending, crowdfunding financing, e-commerce small loan and virtual currency, the e-commerce financialization mode is included in Internet

finance, which is a specific business with Internet e-commerce platform operators as the main body. See Figure 1 for details.

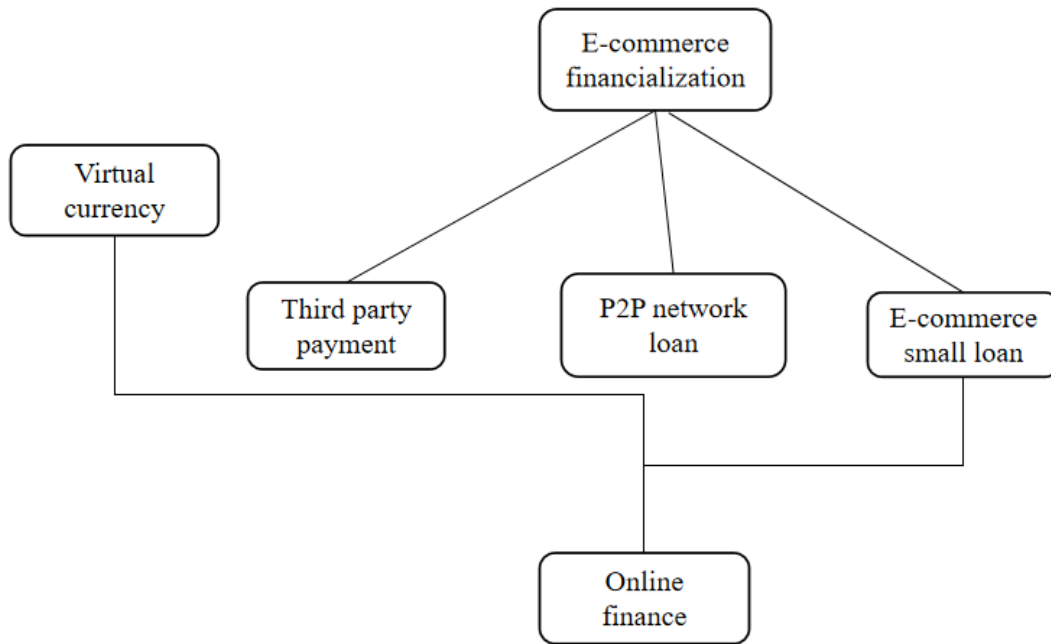


Fig.1 Schematic Diagram of the Relationship between Internet Finance and e-Commerce Financialization

### 3.2 Strengthen System Construction and Improve Supervision Mechanism

E-commerce financialization is quite different from the financial industry. Neither regulatory mechanism nor risk prevention can be compared with professional financial institutions. In the process of promoting the development of e-commerce financialization, we must start from the system level and provide guarantee for the development of the industry through system improvement. The development of e-commerce financialization requires enterprises to have certain financial innovation ability, so as to ensure that enterprises have strong competitive strength. The risk of e-commerce financialization in the process of development is very high, and once the risk occurs, it will have a serious impact. China's financial industry should learn from the useful experience of forerunners, firmly grasp the essence and core of informatization, insist on using informatization to drive electronization, and use electronization to promote informatization, and directly connect with the latest technology, so as to realize leap-forward development of China's financial modernization. We should carefully and strictly examine and manage the innovative activities under Internet finance, so as to not only restrain the development of Internet finance, but also play a guiding role in the healthy development of Internet finance. In order to better develop e-commerce financialization, enterprises need to establish a perfect talent training system on the basis of clarifying talent standards, so as to cultivate high-quality e-commerce financialization talents. In the long-term continuous process of financial innovation, we recognize that Internet finance is the essence of innovation products, take this as the starting point, encourage financial innovation and actively promote the development of Internet finance. On the premise of meeting China's industry development plan, the problems and conflicts in existing laws and regulations should be corrected, so as to avoid legal loopholes, so that the development of e-commerce financialization can be in a stable and legal environment and effectively promote the sustainable development of e-commerce financialization.

## 4. Conclusions

On the whole, the impact of e-commerce on low-carbon economy is mainly promotion, and the

direct impact is energy saving, cost reduction and efficiency improvement. While meeting the normal distribution activities of enterprises, reduce carbon emissions to the environment, meet customer service time to the greatest extent, and improve customer satisfaction. The financial development of e-commerce in the Internet financial era conforms to the development needs of the times, can provide diversified financial services for the market and meet the financial needs of consumers. In order to better promote the development of e-commerce financialization, enterprises, e-commerce industry and e-commerce enterprises make joint efforts to create a good environment for its development. To promote the healthy development of e-commerce financialization and solve the problems in the development of e-commerce financialization in time, we should deeply analyze the development of e-commerce financialization, standardize industry standards and establish industry associations in time. E-commerce is the inevitable trend of social development in the future. We can make e-commerce contribute more to low-carbon economy by establishing corresponding mechanisms, so as to achieve the goal of sustainable development of the whole society.

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