E-RETAIL MARKET CHARACTERISTICS OF CHINA

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ABSTRACT. The well development of e-retail market directly constraint and affect the efficiency of the national policy to expand domestic demand. This article researches the main characteristics of Chinese e-retail market with five representative indicators as the size, product category, purchase frequency and monetary, concentration ratio, regional characteristics, concluding that the size of Chinese e-retail market is large and developing rapidly, middle and small cities, even the central and western regions and rural areas will be the potential areas for the development of e-retail. However, the purchase frequency and monetary are low, the structure of consumption is imbalanced, and the concentration ratio will slow down.

Keywords: E-retail, E-retail market, Chinese e-retail market, International comparison

1. Introduction. Stepping into the 21st century, with the high-speed development of computer technology and network technology, e-retail has become a black horse. E-retail is selling goods or providing services for personal or family needs through the Internet or other electronic channels, which is belonging to the e-commerce activities for the end customer (Hongbin Shen, 2010). In the United States, Amazon online bookstore is the successful example of e-retail. A good model of e-retail operation in domestic is Taobao.com. E-retail has changed the traditional retail trade channels and trading patterns, with advantages of time-saving and multi-effect. In-depth understanding of the characteristics of the e-retail market is an important factor to improve the e-retail companies’ innovation capability and international competitiveness. Therefore, how to recognize Chinese e-retail market is a serious challenge faced by e-retail industry, as well as the theory field. Compared with USA, UK and India, this paper summarizes the main characteristics of China e-retail market with five representative indicators as the size, product category, purchase frequency and monetary, concentration ratio and regional characteristics.

2. Literature Review. E-retail was carried out by more and more scholars. On May 21, 2011, there are 63 journal articles searched by the title “e-retail” in CNKI database. In Scopus database, there are nearly 100 articles searched by the title “e-retail, “online shop-ping” and “e-commerce market”. However, there are little papers associated with e-retail market characteristics. In addition, a number of advisory bodies analyzed the e-retail market, such as AT Kearney, McKinsey, eMarketer, ComScore, iResearch.
E-retail market characteristic is the abstraction and generalization of current situations of market, which is took into account when the governments and companies make decisions. How to grasp the characteristics of e-retail markets, scholars carried out a number of studies. As a new retail model, E-retail has its own specialty. Traditional retail business competitiveness evaluation method obviously cannot be fully applicable to e-retail model (Li Jun Yang and Zhao Xiaobei, 2011). Therefore, summarizing the characteristics of the e-retail market is a major task in this study. The authors found that the e-retail market is characterized by both quantitative characteristics (size, efficiency, market share) and qualitative features (e-retail mergers and acquisitions, government policies), which are summarized in Table 1.

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Indicators of e-retail market characteristic</th>
<th>Research Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hua Chen</td>
<td>2003</td>
<td>Netizen population, online consumer population, characteristics of customers, product category</td>
<td>America e-retail market</td>
</tr>
<tr>
<td>Ge Liu</td>
<td>2006</td>
<td>B2C sales, product category operation of the market, customer behaviors</td>
<td>Russia e-retail market</td>
</tr>
<tr>
<td>Hoe-Kyun Shin, Si Wang</td>
<td>2008</td>
<td>sales, internet user penetration rate, retail formats, trust</td>
<td>Korea e-retail market</td>
</tr>
<tr>
<td>Chun Xiao, Minyi Dong</td>
<td>2011</td>
<td>sales, characteristics of customers, scales of the internet users, trust, government policy, monetary</td>
<td>Britain e-retail market</td>
</tr>
<tr>
<td>Feishang He</td>
<td>2011</td>
<td>scales of the internet users, sales, share of the market</td>
<td>China e-retail market</td>
</tr>
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</table>

3. The Characteristics of China E-retail Market. E-retail market includes the retailer, consumer, government and other e-retail stake-holders. Parts of the e-retail market in different behavior and interaction form different market characteristics. Scholars study the development, characteristics of e-retail market form the market size (Hui Luan, 2009), product category (Yu Zhuang, Lizhen Chan, 2006). SCP theory shows that the primary factor in determining market structure is market concentration (Xiuqiu Li, 2011), so the degree of market concentration is one of the key indicators to examine the status of industrial development. Market structure is different because of geographical and economic differences, the different regions of the online retail market presents different characteristics. According to the literatures, the paper selects size, product category, purchase frequency and monetary, concentration ratio and regional characteristics as five indicators to depict Chinese e-retail characteristics.


3. 1. 1. The size of China e-retail market e-retail sales. The e-retail sale is the total value of the Internet channel trading commodities. The emerging markets gradually prospered, such as China and India, however, Europe and North America remains the regions of highest proportion and frequency in global e-retail market. U.S. e-retail sales are in the first
place in the global market of e-retail, the UK is Europe’s largest online retail market. From 2009-2011, the average annual growth rate of China’s e-retail transaction volume is 78.6%. Despite the rapid growth of online retail transaction volume in China and India, their proportions in total social retail sales are still far below the developed countries. In 2011, China e-retail sale’s contribution to total social retail is 4.3%, compared to 17% in the U.S. 12% in the U.K (See Tab.1).

Supply and demand are thriving in Chinese e-retail market. On the one hand, the number of people shopping online keeps fast growth, which shows the huge market demand; on the other hand, the traditional retailers begin to accelerate into the online retail market, which shows the rich market supply. India is the country with the highest-growing number of Internet users. Compared with America and United Kingdom, the e-retail market scales of China and India lagged behind, which also shows the great potential for development of their markets.

3. 1. 2. User scale of the e-retail market. Internet user penetration rate refers to the number of internet users divided by number of the number of people in one country. E-retail penetration rate refers to the number of online customers divided by number of internet users. IResearch Research Center released data showing that, as of the end of June 2011, the number of Chinese Internet users reached 485 million, representing an increase of 27.7 million over the end of 2010. In addition, the number of online shoppers will reach about 350 million in 2014. The shopping online penetration rate will approach 50%. However, this ratio is not high, we considered that e-retail penetration rate of 70% is a relatively mature structure.

### TABLE 2. E-retail sales of China, USA, UK and India (millions dollars)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>417.5</td>
<td>790.5</td>
<td>89.4%</td>
<td>1227.9</td>
<td>67.8%</td>
<td>4.3%</td>
<td>94.2%</td>
</tr>
<tr>
<td>USA</td>
<td>1279</td>
<td>1468</td>
<td>14.8%</td>
<td>1598</td>
<td>8.9%</td>
<td>17%</td>
<td>10.9%</td>
</tr>
<tr>
<td>UK</td>
<td>1298.0</td>
<td>1424.9</td>
<td>9.8%</td>
<td>1615.1</td>
<td>13.3%</td>
<td>12%</td>
<td>6.5%</td>
</tr>
<tr>
<td>India</td>
<td>-</td>
<td>12</td>
<td>-</td>
<td>24.1</td>
<td>104.1%</td>
<td>0.69%</td>
<td>34.2%</td>
</tr>
</tbody>
</table>


### TABLE 3. User scale of four countries’ e-retail market

<table>
<thead>
<tr>
<th>year</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>country</td>
<td>Internet users penetration rate</td>
<td>Shopping online penetration rate</td>
</tr>
<tr>
<td>China</td>
<td>33.9</td>
<td>30.8</td>
</tr>
<tr>
<td>India</td>
<td>6.9</td>
<td>-</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>82.5</td>
<td>67.7</td>
</tr>
<tr>
<td>America</td>
<td>76.3</td>
<td>71.2</td>
</tr>
</tbody>
</table>

By virtue of the high penetration of the network and highly developed industrial background, the United Kingdom and the United States are in the leading position in the e-retail market. Their shopping online penetration rate and Internet user penetration rate are far greater than India and China’s (See Table 2.). With the economic rise of China, the Internet population continues to increase. Owing to a large base of Internet users and the gradually mature e-retail services, the scale of China’s e-retail market users is booming.

3. 2. **Product Category.** Product category refers to the retail business industry type. Usually, business is divided into several categories according to the business goods (Chunyu Xia, 2009). Chinese government divided into 16 retail product categories, for instance, food, daily necessities and cosmetics. The e-retail product category people consumed differs to the traditional retail market.

In China e-retail market on the year of 2011, clothing ranked first in the percentage of users reached 26.5%; Second are Consumer Electronics and appliance; Cosmetics, books and video classes in fourth and fifth (IResearch Consulting Group, 2010-2011) (See Table 3.). The proportion of Consumer Electronics, books and cosmetics have increased, reflecting China’s retail consumption structure changes from good consumption-based to the combination of goods and services.

<table>
<thead>
<tr>
<th>Country</th>
<th>China 2011</th>
<th>America 2011</th>
<th>United Kingdom 2011</th>
<th>India 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clothes</td>
<td>Clothes Electronic product</td>
<td>Clothes sport goods</td>
<td>Mobile Phones Accessories</td>
</tr>
<tr>
<td>2</td>
<td>Consumer Electronics appliance</td>
<td>Travel</td>
<td>Films Music</td>
<td>Computer Hardware</td>
</tr>
<tr>
<td></td>
<td>Cosmetics</td>
<td>Household goods</td>
<td>Household goods</td>
<td>Consumer Electronics</td>
</tr>
</tbody>
</table>


Compared with developed countries, Chinese goods merchandise proportion is significantly higher than the developed countries. Money mainly is used to meet basic living needs. Movie travel and other services in consumer spending in developed countries is significantly more than China’s spending. On the one hand, product category data reflects the gradual maturity of the behavior which customer shopping online. On the other hand, it reflects the changes in characteristics of the product category which retail vendors provided.

3. 3. **The Purchase Frequency and Monetary.** To identify customer behavior, the well known method called recency, frequency and monetary (RFM) model is used to represent customer behavior characteristics (B. Sohrabi and A.Khanlari, 2007). The model is an important tool to measure the customer value and customer profitability.

This study proposes using the following RFM variables:
1. Recency (R): the latest purchase amount.
2. Frequency (F): the total number of purchases during a specific period.
3. Monetary (M): monetary value spent during one specific period.

The e-retail market is maturing, and user acceptance of e-retail is gradually deepened, the overall level of consumption upgrade quickly, mainly in two aspects: First, monetary gradually increases; Secondly, frequency mounts up. With the Internet user penetration rate rising, e-retail transaction amount is of snowballing growth. In 2010, China’s online customer per capita annual consumption expenditure is 3259 RMB, with a growth rate over 50%. The sudden emergence of e-retail has also become a bright spot of the UK retail sector. In 2010, each online Japanese customer spent the equivalent to 10,722 RMB [14]. Forrester Research expects U.S. customers spent per person 1,207 dollars from 2011 to 1,738 dollars in 2016. In terms of frequency, Chinese online customers’ frequency grows strongly. The users who purchased 3-10 times is in the highest proportion of 28.9%. The number of people who purchases 11-2021-30 31-40 times grows, which the largest increase in total net purchase more than 40 times.

Although with the rapid growth rate of recency and frequency, China e-retail market still has some gaps compared with developed countries. With the continued increase of Internet users in China, there will be more new Internet users. They are a new force of the e-retail group.

3. 4. Concentration Ratio. The CRn (Concentration Ratio) is defined as the market share of the n largest un-dertakings competing on the market.

\[
CR_n = \frac{\sum(X_i)_n}{\sum(X_i)_N}
\]

$X_i$: market shares of the undertakings
$N$: total number of undertakings competing on a certain market
$n$: the number of n largest undertakings competing on a certain market.

According Bain’s market structure classification, if $CR_4 > 30\%$ or of $CR_8 > 40\%$, then belongs competitive industry. If ($CR_4 > 30\%$ $CR_8 > 40\%$) , then belongs oligopolistic industry. $CR_4 > 65\%$ belongs highly oligopolistic industry.

In China, due to M&A mergers and acquisitions and expansion strategy, the leading online retailers’ e-retail market concentration is very high. Compared with the United States, United Kingdom and other global e-retail developed countries, Chinese CRn is relatively in concentrated levels, that is, the vast majority of market share occupied by several online shopping platforms. Through collecting relevant data, we calculate the $CR_4$, $CR_8$ and $CR_{100}$ of China and the United States from 2007 in 2009. We find that the $CR_4$ and $CR_8$ of the online retail market in China are more than 89%. The number is much larger than the United States over the same period of $CR_{100} = 76\%$. The e-retail industry is a highly oligopolistic industry in China. The $CR_4$ and $CR_8$ from 2007 to 2009 of the U.S. e-retail are below 40%, which means it is a competitive industry. In China C2C (customer to customer) e-retail market, Taobao.com accounted for the largest market share, followed by a paipai.com and eBay.

However, to some extent, Chinese oligopolistic market structure shows the advantages
of several major pioneering e-retail platforms firstly entering the market. It is not the result of perfect competition. The e-retail is an emerging industry, there still are potential in its market structure (Hong Xie, Yuliang Shi, 2010). According to the industry characteristics and policy support factors, we can estimate that e-retail market concentration will be flat, but the market structure will continue to maintain a high concentration of an oligopoly.

3.5. Regional Characteristics. With the rapidly growing popularity of Internet technology, e-retail in rural areas meets development opportunities. The growth rate of Internet users in rural areas is far higher than that of urban Internet users. At the same time, significant regional differences have took place in China’s online retail market. The data released by Taobao.com data shows that: ranking by order volume, the top five provinces of China’s online shopping market in May 2011 were as follows: Guangdong, Zhejiang, Jiangsu, Shandong, Fujian. From a national perspective, the higher online shopping penetration areas concentrated on the eastern coast of the Yangtze River Delta Economic Zone, the Pearl River Delta Economic Zone and parts of central and western economically developed central city, the overall online retail environment is better in these regions; Followed by the Bohai Sea region and Central regional, possibly in the future, they are areas of high-growth; West is another potential area for the development of the e-shopping market, including Shaanxi and Sichuan; Speed of e-retail market development in Northeast old industrial area gently.

In 2013, the transaction volume of Chinese e-retail industry is expected to more than 1 trillion RMB. The coastal province alone is unable to meet the high demands. Therefore, the second and third tier cities, and even the central and western regions and rural areas are large potential areas for e-retail development.

4. Research Findings. For the systematically grasp and summarize the characteristics of the e-retail market, this paper constructs radar chart of a comprehensive comparison of four indicators (See Figure 1):

![Radar Chart]

**FIGURE 1.** Comparison of four indicators in four countries

Note: all values of China 1, the values of other countries are compared with the relative ratio of China.
The main conclusions of this study are as follows:
1. The growth rate of Chinese e-retail industry market size is much faster than the United Kingdom and America. However, The Internet user penetration was much lower than developed countries. The Chinese e-retail has become a powerful complement to the retail market. There are ample spaces for development in China.
2. Proportion of Chinese online shopping consumer spending in clothing goods is higher than developed countries. Money mainly is used to meet basic living needs. Service consumption is dominated in developed countries’ e-retail market. Good consumption is dominated in Chinese e-retail market.
3. Online shopping customers’ monetary and frequency are of rapid growth rate. It still lags far behind developed countries. The increasing monetary and frequency indicates that a habitual consumption-based era of online shopping is already visible.
4. Compared with the United States and the United Kingdom, Chinese e-retail industry concentration is high, that is, the vast majority of market is shared by several online shopping platform. However, it is not the result of perfect competition. E-retail market concentration will be flat, but the market structure will continue to maintain a high concentration of an oligopoly.
5. By the combined effects of the policy, natural conditions, the economic base and quality of labor, our e-retail industry regional development imbalances. The second and third tier cities, and even the e-retail market in central and western regions and rural areas increased faster. In the future they will become potential areas for e-retail development.

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