Structure-Conduct-Performance Study of China's Jewelry Industry

Miao Zhang, Qian Yang, Lei Yao[*]
Email: zhangmiao.666@163.com; yangbift@163.com, Corresponding author Email: sxyyl@bift.edu.cn

Beijing Institute of Fashion Technology

Abstract. This paper firstly defines the scope of the Chinese jewelry industry, based on the research vein of the structure-conduct-performance paradigm, by measuring the market concentration and advertising cost of the Chinese jewelry industry, it is concluded that China's jewelry industry has gradually transformed into a monopolistic competition market structure in the past five years. Secondly, this paper analyzes and discusses the market behavior of jewelry firms' pricing behavior and merger behavior. Finally, it analyzes the market performance of China's jewelry industry and draws conclusions.

Keywords: Jewelry industry; SCP Paradigm; Market Structure; Market Conduct; Market Performance

1 Introduction

China's jewelry industry initially engaged in low value-added labor-intensive industries, but in recent years, with the intensification of competition among jewelry companies, the jewelry industry has gradually developed and matured.

There are relatively few academic studies on the market of China's jewelry industry today. Sha Nali et al. [1][3], on the market performance of jewelry industry development in China in 2020, concluded that the development trend of jewelry industry "branding" is significant; Sha Nali [2] found that China's jewelry industry has been transformed into high-quality intensive development, which is driven by factors such as resources and labor to innovation. Based on this, this paper hopes to analyze the market of China's jewelry industry through the classic SCP analysis method, to clarify the market characteristics and changes of China's jewelry market in recent years.

The jewelry industry referred to in this article refers to the collection of precious metal jewelry and jewelry jade jewelry design, manufacturing, and marketing activities. This article calculates the share of related companies in the jewelry retail market by calculating the retail sales of listed jewelry companies in 2021 and the retail sales of jewelry products above the designated size in China in 2021 announced by the National Bureau of Statistics.
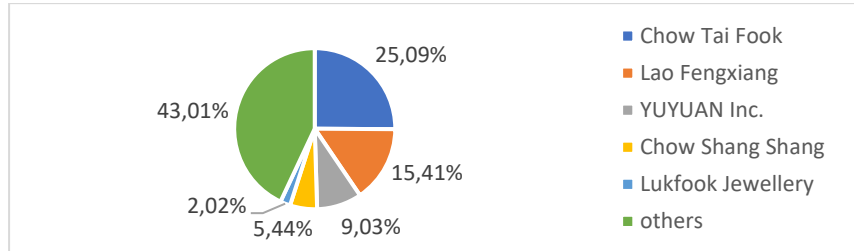
Fig. 1. Market share of jewelry retail companies (Photo credit: Original)

Data source: Calculated from the National Bureau of Statistics and annual reports of enterprises.

2 Market Structure of China's Jewelry Industry

2.1 Industry Market Concentration

In this paper, the absolute method is used to measure market concentration. The commonly used absolute method is the concentration coefficient, which is calculated by the formula:

$$CR_n = \sum_{i=1}^{n} X_i / \sum_{i=1}^{N} X_i \tag{1}$$

CR_n is the market concentration of the top n largest firms in the industry; X_i represents the sales of the i-th firm; n is the number of firms in the industry; N is the total number of firms in the industry.

Bain classifies market structure according to the top four market concentration indicators within the industry. According to formula (1), the estimation result of the market concentration of the jewelry industry is obtained, and the market structure type of China's jewelry industry from 2017 to 2021 is determined, as shown in Table 1.

Table 1. The market concentration of China's jewelry industry from 2017 to 2021(Table credit: Original)

Year	CR_4	Type of market structure
2017	28.53%	Competition type
2018	34.59%	Oligometastatic type V
2019	41.35%	Oligometastatic type IV
2020	53.49%	Oligometastatic type III
2021	54.96%	Oligometastatic type III

Data source: The author calculated

In the past five years, the concentration of China's jewelry industry has been increasing year by year, and the market structure has changed rapidly. The trend of monopoly has strengthened and the degree of monopoly has deepened. The development trend of "branding" in the jewelry industry is remarkable, and the "Matthew effect" is gradually becoming prominent.

2.2 Product Differences

This paper uses the advertising density index to measure the degree of product differentiation. The calculation formula is:

$$\text{Advertising Density} = \frac{AD}{SL} \tag{2}$$

In the formula, AD is the absolute amount of advertising expenses; SL is the sales amount. Due to the availability and validity of the data, this paper estimates the advertising density of Chow Tai Fook and Lao Fengxiang.

Table 2. Estimated Advertising Density (Table credit: Original)

	2017	2018	2019	2020	2021
Chow Tai Fook	0.90%	1.00%	1.20%	0.80%	0.80%
Lao Fengxiang	0.14%	0.19%	0.14%	0.11%	0.14%

Data source: Calculated based on the annual report data of relevant companies

Using the classification method of Masu Uekusa to classify the product differences in the industry, combined with the estimation results in Table 1, it can be shown that the jewelry industry is a medium product difference industry.

3 China's jewelry industry market conduct

3.1 Pricing Behavior

According to the data of the China Jewelry and Jade Jewelry Industry Association, in 2021, the sales of gold products in the jewelry market will account for the largest proportion, accounting for 58.3%. Jewelry companies adjust and determine the daily gold price of jewelry based on the gold price of the Shanghai Gold Exchange, and add manual fees to set the price of gold jewelry. Table 3 shows the comparison of the daily gold price of gold jewelry of jewelry enterprises with the closing price of Au99.99 on the Shanghai Gold Exchange.

Table 3. Gold Jewelry Pricing (Unit: YUAN/g, Table credit: Original)

Time	The closing price of Au99.99	Chow Tai Fook	Lao Fengxiang	LAOMIAO[1]	Chow Shang Shang
2022.7.25	377.08	488	489	486	485
2022.7.26	377.18	486	489	485	485
2022.7.27	376.07	486	489	485	485
2022.7.28	379.50	492	491	491	490
2022.7.29	383.96	496	499	493	494

1 LAOMIAO is an important gold jewelry brand of YUYUAN Inc.

In the jewelry industry, consumers are mainly for personal use, and the number of products purchased is relatively small, so consumers' bargaining power is low. The "today's gold price" of gold jewelry of jewelry companies is not based on the gold price of the Shanghai Gold Exchange on that day, which means that the raw material cost of gold jewelry of jewelry companies has less fluctuation pressure, and the price space in the industry is relatively large, and the bargaining power is strong.

3.2 Mergers and Acquisitions

The mergers and acquisitions are mainly concentrated in the two companies of Chow Tai Fook and YUYUAN Inc., most of which involve the jewelry field.

Table 4. Major M&A Behaviors of Head Jewelry Companies (Table credit: Original)

Time	Company	Event
2018.09	YUYUAN Inc.	Invested US$108.8 million to acquire 80% of the International Gemological Institute in Belgium
2019.02	YUYUAN Inc.	Co-investment with Fosun International Limited to acquire Tom Tailor Holding SE (German fast fashion brand)
2020.01	Chow Tai Fook	Acquisition of ENZO, a jewelry brand of LORENZO GROUP
2020.03	YUYUAN Inc.	Completed the acquisition of French luxury designer brand DJULA with a capital of RMB 210 million

Compared with gold jewelry, jewelry has a larger profit margin, and most jewelry companies tend to merge jewelry companies horizontally. Through mergers and acquisitions to expand the scale of enterprises, achieve economies of scale, reduce costs, increase market share, and then increase the market share of enterprises. At present, the jewelry industry is becoming more and more oligopolistic, which will make the jewelry retail market controlled by a few companies to obtain excess profits, which is not conducive to free market competition and social welfare.

4 Market performance of China's jewelry industry

4.1 Resource Allocation Efficiency of Industry

In this paper, the profit margin is used to measure market performance, and the calculation method is as follows:

$$R = (\pi - T)/E \tag{3}$$

In the formula, R is the return on capital after tax, π s the profit before tax, T is the total tax, and E is the self-owned capital. The calculation result is shown in Figure 2:
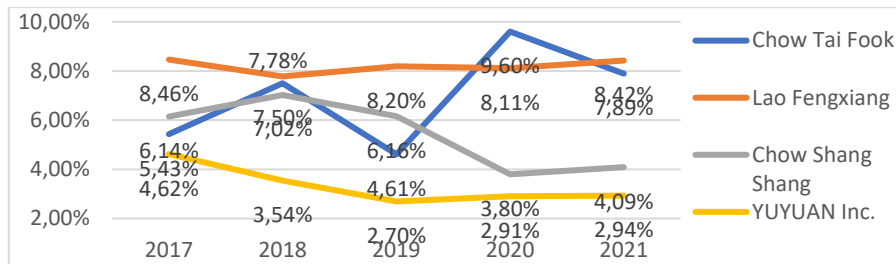
Fig. 2. Corporate Profit Margin (Photo credit: Original)

Data source: Calculated from the company's annual report. Photo credit: Original

Figure 2 shows that after 2020, when the jewelry industry has entered oligopoly type III, the profit margin of Chow Tai Fook and Lao Fengxiang, which together occupy more than 40% of the market share, is stable at about 8%, which is much higher than that of Chow Sang Sang and YUYUAN Inc. Rate. This phenomenon shows that the jewelry market is gradually approaching the trend of duopoly, and the resource allocation efficiency of the industry is gradually decreasing.

4.2   Product development and innovation

Industrial technological progress is an important indicator to measure market performance, and jewelry product innovation can be reflected in the number of patents.
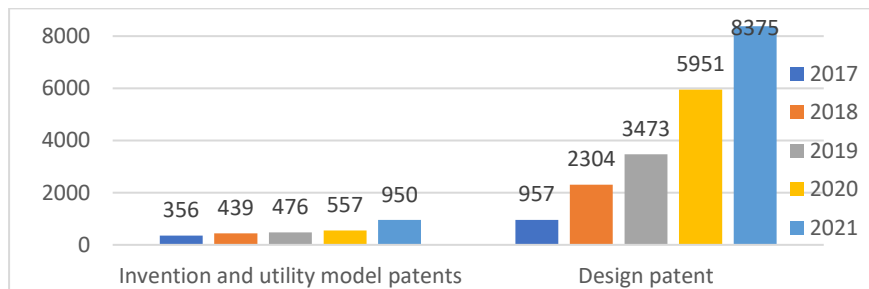

Fig. 3. Number of Jewelry Patents in 2017-2021(Photo credit: Original)

Data source: State Intellectual Property Office. Photo credit: Original

In 2021, the number of jewelry design patents with a legal status of "valid" will be 8,375, a year-on-year increase of 40.73%. While the design is innovative, the craftsmanship is also innovative. From 2017 to 2021, the number of valid patents for jewelry inventions and utility models in my country increased year by year, with an average annual increase of 27.81%. From the perspective of the country of jewelry patent application, data analysis on the international patent database shows that since 2010, the number of patent applications in China has surpassed that of the United States and has become the first in the world and has remained so until now.

The competitive ecology of the jewelry industry is changing to a model in which innovation leads the market. Leading enterprises rely on faster and better process innovation to help more

distinctive cultural designs, increase product differentiation, consolidate brand power, and intensify the monopoly trend of the jewelry industry.

5   Conclusions

Through the research of the SCP paradigm, this paper concludes that China's jewelry industry has shifted from competition to oligopoly, and this trend of oligopolistic competition is gradually deepening. Increased product differentiation and different R&D intensity have led to a continuous increase in market concentration. At the same time, most leading jewelry companies have merged with jewelry companies of the same type, while small and medium-sized enterprises in the industry do not have the advantage of scale, resulting in their profits. Less space is even squeezed out of the market. This kind of industrial development will cause consumers to suffer losses and ultimately lead to lower social welfare levels. Therefore, although the development of China's jewelry industry is relatively complete, the industry still needs to be optimized and transformed.

References

[1]   Nali Sha, Yi Liu, Rao Fu, Xiaomin Zhang, Yifei Wang. 2020 China Jewelry Industry Development Report (Part 2) [J]. Chinese gemstones,2021(05):44-51.

[2]   Nali Sha. Current Situation and Future Development Direction of Jewelry Industry [J]. Chinese gemstones, 2021(04):7-13.

[3]   Nali Sha, Yi Liu, Rao Fu, Xiaomin Zhang, Yifei Wang. 2020 China Jewelry Industry Development Report (Part 1) [J]. Chinese gemstones,2021(04):47-57.

[4]   Priskila, Selvy, and Gede Sri Darma. "Employee Perception of Brand Value in the Jewelry Industry." Journal of Economics, Business, & Accountancy Ventura 23.2 (2020): 267-278.

[5]   Wei Du. Research on Influencing Factors and Evolution Mechanism of China's Jewelry Industry Cluster Formation [D]. China University of Geosciences,2016.