

# Research on the Industry Strategy of Cashmere Products in Mongolia

A.SHIJIR ERDENE

School of management science and engineering, Chongqing University of Posts and telecommunications, Chongqing 400065, China

shijiree\_8030@yahoo.com

## Abstract

Firstly, this paper analyzes the advantages, disadvantages, opportunities and threats of Mongolian cashmere industry by SWOT and SLEPT analysis. Based on the SWOT analysis, the main advantages of the cashmere industry in Mongolia are reflected in its natural organic nature and policy support of the cashmere, the established brand image at home and abroad, the supply of cheap raw cashmere, etc.; the main disadvantages are the high cost of capital raising, the devaluation of the home currency of revenue; for the opportunities of cashmere industry, the global consumer concept is shifting towards the demand for natural products and Europe and the huge market space for high-end cashmere products in North America. At the same time, the biggest challenge to the cashmere industry lies in the fact that the global competitors of cashmere products from Inner Mongolia, China, make the cashmere industry of Mongolia exit from the world cashmere product market, while the uncontrollable factors such as natural disasters will lead to the shortage and loss of raw materials, to a great extent, threaten the Mongolian cashmere industry's sustainable development. Secondly, this paper establishes a multiple linear regression model to explore ways to expand the industry revenue. The mathematical model takes the export data of cashmere products as the dependent variable. The model determines three significant independent variables: number of goats, cashmere price and real effective exchange rate. The results of regression model show adjusted  $R^2 = 0.926$  that there is a positive relationship between the 3 explanatory variables and export revenue. Finally, the paper analyzes the explanatory variables in order to put forward suggestions on how to improve and expand the cashmere industry income. Based on the above analysis results, this paper puts forward countermeasures and suggestions for the challenges faced by the cashmere industry in Mongolia.

## Keywords

Mongolia, Cashmere product industry, Multiple linear regression.

## 1. Introduction

Cashmere industry is one of the most important products to Mongolian social economy. Cashmere industry is an important cash income provided by herdsman engaged in animal husbandry, and accounts for about 18% of the total agricultural production value. Processing enterprises in cashmere supply chain process cashmere, manufacture clothing and textiles and export them to luxury clothing market. Cashmere, cashmere production, cashmere processing and cashmere garment manufacturing account for about 15% of Mongolia's GDP. China is the largest cashmere producer in the world, with an annual output of about 10000 tons, accounting for 67% of the world market. Mongolia is the second largest cashmere

producer after China, with an annual output of about 3000 tons, accounting for 21% of the world cashmere market.

## 2. Current Situation of Cashmere Products Industry in Mongolia

As of 2018, Mongolia is the world's second largest producer of raw velvet after Inner Mongolia, China. At present, the number of Mongolian goats is 27.1 billion, with an average annual output of about 9500 tons of raw cashmere, accounting for 28% of the world's total output of raw cashmere, while the reserves of total raw cashmere account for 40%, China accounts for 48%, Iran and Afghanistan account for 12%. The output value of cashmere industry is about 368.2 million US dollars.

There are 15 deep processing factories, 23 primary processing factories, 59 small and medium-sized knitting factories and 150-200 small workshops in cashmere industry. At present, Mongolian cashmere industry mainly exports washed cashmere to China, brushed cashmere to Italy and Britain, textiles and knitwear to more than 20 countries, such as the United States, Germany, South Korea, Japan, Belgium and France. As of 2018, the cashmere industry has an annual capacity of 13000 tons of cashmere, 6220 tons of cashmere separated from washed cashmere, 4350 tons of combed cashmere, 1680 tons of short cashmere, and 2.8 million knitwear and 2000 meters of textiles. However, at present, the cashmere industry only uses 82% of the washing capacity, 33% of the combing capacity, 40% of the spinning capacity, 60% of the knitting capacity and 65% of the knitting capacity, which shows that the cashmere industry can expand its space. According to the statistics of 2018, the cashmere industry directly creates 5500 jobs. In addition, cashmere export is the third largest export product after Mongolian copper, gold, coal and other mineral products, with an export volume of 390 million US dollars in 2018.

### 2.1. SWOT Analysis of Cashmere Industry in Mongolia

**Table 1: SWOT matrix**

advantage	inferiority
100% natural cashmere products; Policy support; Some enterprises have established brand image in some parts of the world; The price of raw cashmere is lower than that of the world; Mongolian wool and cashmere are durable and easy to refresh;	As the supply of raw cashmere is available within a certain period of time, the cost of working capital needed to purchase the raw cashmere inventory is relatively high. The manufacturer must purchase the whole year's inventory in spring; Because of the decline of fiber quality due to the age of goats, the quality of raw materials is inconsistent and uneven. This is reflected in the price; Price competition of traders; Strong seasonality, only in a certain period of time to provide the original cashmere; The devaluation of currency makes the price of products low; The quality is declining as a result of large government subsidies, such as no taxes on herdsmen, free medical care, no pension, health or disability contributions. If cashmere quality (measured by fiber diameter) increases, the average yield of each goat will decrease; Most cashmere exports only low added value;
opportunity	threaten
Increasing demand for natural products of consumers European and North American markets	Mongolian cashmere industry may face huge competition from China's largest cashmere raw material producer. As the Chinese government subsidizes its cashmere industry with very low interest rates and other projects, China may become the dominant position; About half of Mongolia's cashmere is illegally shipped to China for processing; Price dumping; Threat of exiting cashmere product market; Uncontrollable natural disasters; Due to the rapid development of the industry, the quality of cashmere has declined;

Source: self made by the author

### 3. Multiple Regression Model and Demonstration of Mongolian Cashmere Industry

#### 3.1. Model Design Ideas

Based on the idea of influencing factors of the multiple regression model on the export income of Mongolian cashmere industry, the regression model designed in this paper finally requires the positive and negative correlation of the factors that mainly determine the export of Mongolian cashmere industry, so the design idea of the model is to establish the multiple regression equation of the export income of Mongolian cashmere industry.

The multivariate linear regression model of I independent variables is designed as follows:

$$Y = \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i + \varepsilon$$

Where: Y (dependent variable) is the linear function of X (independent variable) plus the error term, and the linear partial function reflects the change of Y caused by the change of X. Beta 1,  $\beta_2, \dots, \beta_i$  is the parameter of the model,  $\beta_i$  means that if other variables are assumed to be constant, when  $x_i$  When I change one unit, the average change value of Y;  $\varepsilon$  is the error term, which is the constant term obtained by regression analysis. The regression coefficient test (t test) method was used, When the corresponding p value of each variable is less than  $\alpha$  (0.05), it can be considered that there is significance, and finally the multiple regression equation used to calculate the export income of cashmere industry is determined.

#### 3.2. Select Model Variables

On the premise of time series data, the government subsidies and cashmere production capacity are eliminated, and the factors of slight significance are eliminated through stepwise regression analysis. Finally, the number of goats, the actual effective exchange rate and the original cashmere price are selected as the main factors to explain the cashmere export revenue. The following is a preliminary analysis of the number of goats, the real effective exchange rate and the price of raw cashmere. The design and empirical process of the model need 19 data samples, including the number of goats between 2000 and 2018, the real effective exchange rate and the original cashmere price. Although the real effective exchange rate and the price of raw cashmere are the data published every month, the number of goats is only the annual data due to the most important factor affecting export income. In addition, the Central Bank of Mongolia began to calculate the real effective exchange rate data in 2000, so this paper can only use the data from 2000.

#### 3.3. Multiple Regression Analysis

The regression equation and regression coefficient are analyzed and the results are as follows:

#### 3.4. Multicollinearity Test

As shown in the table, the strongest correlation between dependent variables and independent variables is that the number of goats is 0.88, the price of raw cashmere is 0.84, and the real effective exchange rate is 0.79 lower. For the correlation between independent variables, except the correlation between the price of cashmere and the number of goats is 0.75, they are all below 0.6

**Table 2:** correlation between variables

Cashmere export quantity of goats price of raw cashmere				
Pearson correlation cashmere exports 1.000.886.848.786				
Number of goats: 8861.000.751.600				
The price of raw velvet is 848.751 1.000.537				
REER .786 .600 .537 1.000				
SIG. (1-tailed) cashmere export				
Number of goats. 000.000.003				
Original velvet price. 000.009				
REER .000 .003 .009 .				
N. cashmere export 19 19 19				
Number of goats 19 19 19				
Original pile price 19 19 19 19				
REER 19 19 19 19				

**3.5. Significance Test of Regression Coefficient**

**Table 3:** regression coefficient table

Model	Unstandardized coefficient		Standard coefficient	t	Sig.	
	B	Standard error	Beta			
1	(constant)	-170.817	33.414		-5.112	.000
	Number of goats	5.975	1.492	.415	4.006	.001
	Raw wool price	1.491	.423	.347	3.529	.003
	REER	1.173	.272	.351	4.319	.001

From the regression results, it can be seen that the p value of goat number, cashmere price and real effective exchange rate are all less than 0.05, and the linear relationship between dependent variables and independent variables is significant, so the multiple regression model established is appropriate.

According to the above analysis results, the linear relationship equation between the number of goats, the price of raw cashmere, the real effective exchange rate and the export income of cashmere industry is established

$$"Y =" - 170.817 + 5.975 * \text{number of goats} + 1.491 * \text{price of raw cashmere} + 1.173 * \text{REER}$$

According to the equation, the following economic meanings can be explained:

The quantity of goats, the price of cashmere and the real effective exchange rate affect the export income of cashmere industry.

**4. Suggestions on Improving the Development of Mongolian Cashmere Industry**

1) The effect of the number of goats, the price of raw cashmere and the real effective exchange rate on the export income of cashmere industry is positive. The increase of the number of goats will increase the export volume of cashmere industry. In the case of the export of cashmere industry in Mongolia, the real effective exchange rate, contrary to the theoretical assumption, does not reduce the export of cashmere industry, but there is a positive

correlation between the real effective exchange rate and the export volume of cashmere industry. The rise in the price of raw cashmere is conducive to the export of Mongolian cashmere industry;

2) According to the absolute value of each variable coefficient, the order of influence degree is: the number of goats is greater than the price of raw cashmere, while the price of raw cashmere is greater than the actual effective exchange rate.

#### **4.1. Goat Quantity and Quality Challenges**

Pressure to reduce the number of goats

Today, Mongolia has an estimated 27 million goats, with an annual cashmere output of 5970 tons. From this data, it can be estimated that the cashmere yield of each goat is about 219 grams. But the output of each goat is much lower than that of China. Therefore, we should increase the output of each goat, reduce the number of goats and maintain the annual output, or even increase the output. In this regard, the relevant authorities should provide a legal framework to encourage herdsmen to adopt modern goat breeding and guide them to start using the world's best practices of cashmere extraction from goats.

Cashmere quality problems

The relevant authorities should improve the requirements and methods of publicity standards and norms among herdsmen. In order to meet the international standards of cashmere quality, the relevant authorities should gradually levy taxes on cashmere that does not meet the international standards, and guide Mongolian cashmere to turn to the international standards through policies such as cashmere tax exemption that meet the requirements of international standards. In this regard, some authorities should carry out feasibility study on the quality standards and technical feasibility of Mongolian cashmere industry.

Traceability issues

Traceability is the foundation of future sustainable development plan of cashmere industry. Most of today's cashmere companies have set the goal of ensuring this traceability in their supply chain. Consumers around the world are increasingly asking about the source of the goods they buy. Therefore, most enterprises give priority to specific materials such as leather, wool and cotton and adopt a step-by-step approach to ensure traceability and solve sustainability problems. However, the scattered nomadic herdsmen in Mongolia and the procurement through traders and middlemen make it difficult to trace, evaluate and monitor the social environment, leading cashmere buyers to question whether the sustainable procurement of Mongolian cashmere is possible. Therefore, the government of Mongolia should solve this problem through preferential financing channels or fiscal policies.

#### **4.2. Raw Pile Price**

It is necessary to establish cashmere Market

Because the price of cashmere is highly seasonal, it is difficult for domestic cashmere processors to stock or purchase raw materials for the whole year. Through the establishment of a unified cashmere commodity trading market, the cashmere industry's forward contracts and price hedging and other financial instruments will become possible. To restrict and regulate the cashmere market of Mongolia with appropriate laws and regulations and industry rules

Reflect the price that cashmere should have, rather than the price far away from the value, so that the price of cashmere will gradually transition from chaos and disorder to a reasonable price range, ensure the quality of sheep products, have real strength, have the right to price and discourse, and maximize the income of enterprises, farmers and herdsmen. The establishment of a unified cashmere market in Mongolia is conducive to maintaining a unified

market order, reducing the trade cost of the whole market, safeguarding the vital interests of Mongolian herdsmen, helping the sound development of the cashmere market in Mongolia, helping Mongolian cashmere products enterprises to accumulate funds, and then having enough research and development funds for the cultivation of independent international brands. In addition, give full play to the effect of cashmere trading market, let the law of value play a role naturally, let the price change around the value normally, let the cashmere price return to a reasonable price range, let the cashmere enterprise obtain the reasonable and normal profits, and make it more willing to build its own knowledge brand; the returned cashmere price will certainly greatly stimulate farmers and herdsmen to feed goats. With the enthusiasm of raising, the number of goats will be greatly increased, and farmers and herdsmen will get more income in raising. These positive effects will promote the gradual improvement of cashmere quality. While the interests of farmers and herdsmen are protected, they are also conducive to the protection of the ecological environment of grassland and pasture. In the international cashmere market, Mongolia has the right to speak, which also protects the healthy development of the cashmere industry in Mongolia Exhibition.

#### Effective exchange rate

Mongolia is an import country of consumer goods, most of which are imported from China, Russia, the United States and the European Union, starting from daily necessities and mining machinery and equipment. This is why the level of domestic production is much lower, which leads to the citizens of Mongolia tend to have stronger domestic currency, and in Mongolia, dollarization is relatively high. This is one of the reasons why the growth of real effective exchange rate promotes the export of cashmere industry.

From the results of multiple regression, we can see that the export elasticity of cashmere industry is relatively low. Therefore, it is necessary to conduct regression analysis on other major export industries of Mongolia, such as mining industry, to find out whether maintaining a high economic growth rate will have a positive / negative impact on exports. By doing so, the Central Bank of Mongolia can take monetary policy action on the exchange rate.

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