Analysis of Influencing Factors of China's Cotton Current Price Fluctuation

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Abstract: Domestic cotton spot prices are influenced by a complex set of factors. Based on monthly time series data from January 2015 to August 2024, this paper examines the relationships between China's cotton spot price and four key variables: futures price, international cotton price, import price, and yarn price. The analysis employs correlation analysis, ADF unit root testing, cointegration testing, and a distributed lag model to identify both short-term dynamics and long-term equilibrium effects. The results indicate a high degree of correlation among the five cotton-related price series, with evidence of a stable long-run equilibrium relationship. Among the variables studied, futures prices exert the strongest impact on spot prices. Yarn prices and the main contract price of Zhengzhou cotton futures are found to have a significant positive influence on the fluctuations of China's cotton spot price.

Keywords: Domestic High-Quality Cotton; Cotton Current Price; Futures; Exchange Rate

1. Introduction

As one of the world's important agricultural products, cotton occupies a core position in the textile industry. Its price fluctuations not only affect the business decisions of upstream and downstream enterprises in the industrial chain, but also have a far-reaching impact on the global trade pattern. As an important strategic material and economic crop in China, the price fluctuation of cotton directly affects the livelihood of cotton farmers, and is related to key areas of the national economy such as the textile industry and international trade. Vertically, the cotton industry supply chain is long, from cotton planting, lint sales, yarn spinning and dyeing, to ready-made clothes, trade and other links, involving employment, taxation and trade activities of agriculture, industry and commerce and other departments; Horizontally, the current price is related to futures, lint import price, futures price and so on. In recent years, affected by climate change, international market price transmission, industrial policy adjustment, the occurrence of COVID-19 and the trade policies of the United States and the West, the domestic cotton spot price has shown the characteristics of Sharp Fluctuation, and the main contract of Zheng cotton futures is also adjusting. The fluctuation of cotton current price is closely related to variables such as production cost and inventory cycle, but limited to the theme and length of the article, the article focuses on the factors related to the cotton current price and the market.

2. Literature Review

Scholars have carried out a lot of research on the relationship between the above research objects and the price of China's cotton market from different angles, and formed rich research results.

Impact of Exchange Rate on Current Cotton Price is Limited. From an international perspective, [1] analyzed the relationship between the US dollar index and the futures price of US agricultural products, and found that the exchange rate sensitivity of different export-oriented agricultural products was significantly different. For example, the U.S. wheat futures price has a one-way guiding effect on the U.S. dollar index, while the U.S. cotton futures price is less affected by the exchange rate. This phenomenon is related to the differences in the trade structure and demand elasticity of agricultural products: wheat, as a rigid demand product, is more susceptible to exchange rate fluctuations; while cotton, due to the high international dependence of the downstream of the industrial chain (such as the textile industry), its price is more dominated by global supply and demand. From the domestic perspective, the study on the Chinese market shows that the correlation between the RMB exchange rate and the domestic cotton futures price is weak [1]. [2,3] further pointed out that although the Sino-US trade war indirectly affects the cost of cotton imports through tariff policies, the domestic cotton price is still mainly driven by fundamental factors such as production scale, mechanization level and market supply and demand. This shows that the direct impact of the exchange rate on the domestic cotton price is limited, and policy intervention and industrial chain structure may weaken the exchange rate transmission effect. [3] studied the transmission effect of the real effective exchange rate of the RMB on the import price of cotton, and found that although the appreciation of the RMB reduced the cost of importing cotton, its transmission effect was low. The transmission effect of the real effective exchange rate of the RMB on the import price of cotton is incomplete, and the transmission coefficient is low. This shows that although exchange rate changes will affect import costs, their impact on domestic cotton market prices is relatively limited.

Futures Market Price has an Important Impact on Cotton Market Price. After the implementation of the Law of the People's Republic of China on Futures and Derivatives, the leading role of China's cotton futures market in price discovery has been enhanced, and the one-way guiding effect of futures prices on spot prices is significant. Both domestic and foreign studies support the universal price discovery function of the futures market. [4] studied the changes in cotton spot and futures prices before and after the implementation of the Law of the People's Republic of China on Futures and Derivatives through methods such as VECM model, statistical causality analysis and impulse response function. The results show that the long-term stable relationship between cotton spot and futures prices has not changed before and after the implementation of the law, but the transmission direction between spot and futures prices has changed. Before the implementation, the cotton spot and futures prices were mutually causal; after the implementation, the futures price has a one-way statistical causal relationship with the spot price. This shows that the role of the futures market in price discovery and risk management has been further strengthened. [5] further verified the price discovery function of China's cotton futures market through in-depth research on price discovery and volatility spillover effects. The study found that there is a significant two-way volatility spillover effect between cotton futures and spot markets, but the spillover effect from the futures market to the spot market is stronger, which further confirms the dominant position of the futures market in price information transmission. In addition, the research also pointed out that the volatility spillover effect between the two markets will be enhanced under extreme market conditions, which provides a reference for market participants to formulate risk avoidance strategies. From the interaction between futures and spot, [6] found based on the VAR model that China's cotton futures price has a significant guiding effect on the spot price, and the futures market plays a dominant role in price discovery. The impulse response analysis shows that the response of the cotton spot price to the shock of the futures market is as high as 64.5%, while the reverse transmission effect is weak. This conclusion is consistent with [1] research on US soybean futures, indicating that the price discovery function of the futures market is universal in both domestic and foreign markets.

Import Price has a Significant Impact on Domestic Cotton Market Price. [3] research shows that although the appreciation of the RMB reduces the cost of importing cotton, its impact on the domestic cotton market price is limited. This shows that although the change of import price will affect the domestic market, its impact degree is restricted by many factors. As an important cotton exporting country in the world, the cotton price of the United States has a significant impact on the cotton price of China. [6] found through empirical analysis that there is a long-term equilibrium relationship between China's cotton price and the United States' cotton price, and the United States' cotton price has a significant transmission effect on China's cotton price. [7] research also shows that the U.S. cotton futures price has a significant impact on China's cotton futures price, and this impact is more obvious in the short term. [8] conducted an in-depth study on the price transmission effect between China's cotton imports and domestic and foreign markets, and found that since China's accession to the WTO, the transformation from a net exporter to a net importer of cotton has made import volume an important link connecting domestic and foreign prices. Through empirical tests such as cointegration analysis and Granger causality test, it is confirmed that there is a long-term stable equilibrium relationship between China's cotton import volume and both international and domestic market prices. Specifically, China's cotton import volume has a significant impact on the international cotton price, while the price transmission between the international and domestic cotton markets presents a one-way characteristic.

The Transmission Mechanism of the Industrial Chain has an Important Impact on the Cotton Market Price. [6] found through empirical analysis that the fluctuation of cotton price will be transmitted to the price of cotton yarn through the industrial chain, and this transmission effect is more obvious in the short term. [7] research also shows that there is an asymmetric price transmission relationship in the cotton industry chain, and the impact of cotton price on cotton yarn price is more significant in the short term. As a downstream product of the cotton industry chain, the price change of cotton yarn has an important impact on the cotton market price. [6] research shows that there is a significant transmission relationship between the price of cotton yarn and the price of cotton, and the price of cotton yarn has a one-way guiding effect on the price of cotton. [7] research also shows that the fluctuation of cotton yarn price will be transmitted to cotton price through the industrial chain, and this transmission effect is more obvious in the short term. [9] focused on the analysis of influencing factors of China's cotton price fluctuations, and pointed out that the industrial chain transmission mechanism is affected by the concentration of upstream and downstream industries. The higher the concentration of cotton processing enterprises and textile enterprises, the stronger their pricing power, which will weaken the completeness of price transmission along the industrial chain. At the same time, the research also found that the inventory level of each link in the industrial chain is an important intermediary variable in the price transmission process. The excessive inventory of cotton or cotton yarn will block the transmission of price fluctuations, making the impact of upstream price changes on downstream markets lag behind. At the same time, [6] also pointed out that cotton futures play the role of a "price bridge" in the industrial chain, and their fluctuations can indirectly affect the downstream textile industry through cotton yarn prices. However, the feedback of cotton yarn prices to the futures market is weak, reflecting the limited ability of downstream enterprises to digest price risks. [6] Logit model analysis also emphasizes that the improvement of information services in the futures market is an important counter measure to alleviate price fluctuations.

The Business Environment has a Significant Impact on the Cotton Market Price. [10] found through empirical analysis that the transmission effect of Sino-US trade friction on cotton futures prices at different stages is different. In the white-hot stage of trade friction, the impact of U.S. cotton futures prices on China's cotton futures prices increased significantly; after the trade friction eased, the independent pricing ability of China's cotton futures and cotton yarn futures increased, and the impact on U.S. cotton futures increased. This shows that the business environment not only affects the price transmission mechanism of the cotton market, but also changes the pricing power of the market to a certain extent. [11] studied the volatility and prediction of cotton futures prices, and found that macroeconomic environment factors such as monetary policy and industrial support policies have a significant regulatory effect on cotton price fluctuations. Specifically, the loose monetary policy will increase the liquidity of the futures market, amplify the price volatility; while the targeted industrial policies (such as cotton reserve adjustment policies) can effectively stabilize the market price expectations and reduce the amplitude of price fluctuations. In addition, the research also constructed a price prediction model including policy factors, which improved the accuracy of short-term cotton price prediction compared with the traditional model.

In summary, the price of China's cotton market is affected by many factors, including exchange rate, futures price, international cotton price, import price, industrial chain and cotton yarn price. These factors affect the cotton market price through different transmission mechanisms, and their influence degrees and directions vary in different stages and market conditions. Future research can further explore the specific influence mechanisms of these factors in different economic environments, so as to provide more accurate reference for policy makers and market participants.

3. Data and Descriptive Analysis

3.1 Data Source

The data used in this paper include: China's domestic cotton sales price, international cotton price, cotton yarn price, imported cotton price and Zhengzhou cotton futures price, as well as the monthly exchange rate of RMB against US dollar. Among them, China's cotton price (Ccindex, yuan/ton), international cotton price (Cotlook A index (cents/pound)), cotton yarn sales price (32-count pure cotton carded yarn (yuan/ton)), imported cotton price (FC Index M grade (cents/pound)) and other data come from China Cotton Information Network and National Cotton Data Center, the main contract price of Zhengzhou cotton futures (yuan/ton) comes from Zhengzhou Commodity Exchange; The US dollar exchange rate comes from the China Foreign Exchange Trade System.

In order to facilitate comparison and analysis, during the process of drawing and model calculation, all price units are converted into yuan/ton.

3.2 Description of Data Meaning

Description of China Cotton Price Index (CC Index): The China Cotton Price Index is the earliest comprehensive index representing the level of cotton spot price in China. It is calculated based on the actual factory prices of cotton of nearly 200 large and medium-sized textile enterprises and cotton enterprises across the country, and mainly reflects the comprehensive average price level of the main grades of cotton in China to textile enterprises as of the previous day of release. The index is weighted and calibrated by the proportion of spinning output of each province in the national spinning output and the spinning capacity of each quoted textile enterprise, and finally generated.

International Cotton Price Index (Cotlook Index): It is an important indicator to measure the spot price in the international cotton market, and is divided into Cotlook A index and Cotlook B index, with cents/pound as the quotation unit. The A index is derived from the average quotation of the five cheapest main upland cotton varieties (such as Memphis, Uzbekistan, Mexico, etc.) in 15 countries. The quality standard of these varieties is medium grade, and the length is 1-1/32 inches. The quotation is based on Northern Europe and adopts the C.I.F. price, that is, it reflects the average lowest price of these 15 varieties converted into M grade 1-1/32 inches and transported to Northern Europe.

Imported Cotton Price Index (Foreign Cotton Index, FC Index): It is a supplement and improvement to the China Cotton Price Index (CC Index) system, and reflects the comprehensive quotation level of imported cotton to China's main ports.

32-count Pure Cotton Carded Yarn Index (Line 32 Index): The 32-count pure cotton carded yarn refers to the yarn processed from pure cotton fibers through the ordinary carding process, and its count is 32 counts. The count is a unit to measure the thickness of the yarn. The higher the count, the thinner the yarn. Specifically, 32-count yarn means that each gram of cotton can be spun into 32 meters of yarn.

Zhengzhou Cotton Futures Main Contract Index (CF Index): The main contract of Zhengzhou cotton futures refers to the contract with the largest trading volume and open interest among the cotton futures listed and traded on the Zhengzhou Commodity Exchange. The trading code of the main contract of Zhengzhou cotton is CF.

3.3 Descriptive Analysis of Data

From these data, it is not difficult to see that:

On the whole, these five cotton prices have the same trend; For example, at the end of the third quarter of 2021, the above prices showed a significant upward trend, and reached the highest in May 2022, especially the international price was as high as 50,000 yuan per ton, and then the price significantly fell back to below 33,000 yuan; By August 2024, the cotton price hovered at 16,000 yuan/ton. The price of 32-count pure cotton carded yarn maintains a relatively stable relationship with China's cotton price. At the same time, the main contract price of Zhengzhou cotton futures guides China's cotton price, and the guiding trend was more obvious from August 2021 to January 2022. The price trends of international cotton price and import price have the same trend (Figure 1).

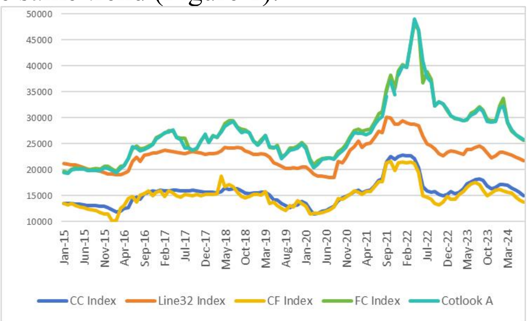

Figure 1. Monthly Price from Jan. 2015 to Aug. 2024

In Figures 2.a and b, it is not difficult to see that the international market price and import price have the same trend as China's cotton market price, but China's cotton market price has more price advantages. The Zhengzhou futures price and the price of 32-count pure cotton carded yarn are closer to the current price of China's cotton; The futures price has a guiding effect on China's cotton market price, which can be seen in Figure 2.c; In Figure 2.d, the price of 32-count pure cotton carded yarn reflects the market prosperity of the downstream of the industrial chain, and has a certain guiding role for China's cotton market price.

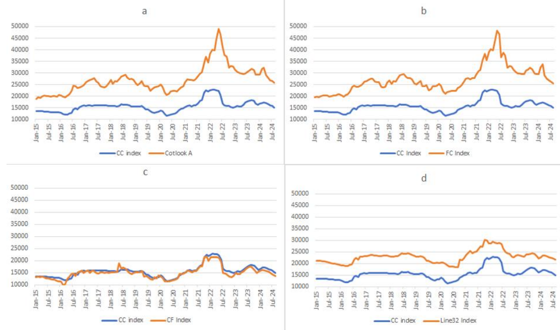

Figure 2. Cotton Price Diagram (2015-2024)

4. Modeling and Analysis

4.1 Correlation Analysis of Prices

Table 1 shows the results of the correlation test among the five price series, involving China's cotton price, international cotton market price, 32-count pure cotton carded yarn price, imported cotton price and the main contract price of Zhengzhou cotton futures. Through correlation analysis, the internal relationship between these price series can be revealed, providing a basis for further research.

Table 1. Correlation Analysis

Variable	Note	P_cn	P_in	P_32	P_im	P_fut
P_cn	Description of China Cotton Price Index (CC Index)	1				
P_in	International Cotton Price Index (Cotlook Index)	0.857	1			
P_32	32-count Pure Cotton Carded Yarn Index (Line32 Index)	0.9482	0.845	1		
P_im	Imported Cotton Price Index (FC Index)M level	0.8724	0.9953	0.8592	1	
P_fut	Zhengzhou Cotton Futures Main Contract Index (CF Index)	0.9504	0.7891	0.9182	0.8082	1

The five cotton price series show a high correlation, and the correlation coefficients are generally higher than 0.8, indicating that there may be a close internal connection between these price series. This high correlation may be due to market supply and demand relations, international trade, supply chain correlation and the mutual influence of financial markets.

4.2 ADF Unit Root Test

Before detecting whether there is a cointegration relationship between China's cotton price and other prices, it is necessary to carry out ADF test on each series. The purpose is to test the stationarity of the series; If the series have the characteristics of same-order stationarity, cointegration analysis can be carried out on them.

The basic principles of ADF test include the following steps: (i) establish the null hypothesis: the series has a unit root, that is, the series has the characteristics of random walk of the residual error after first-order difference; (ii) establish the alternative hypothesis: the series has no unit root, that is, the series has the characteristics of stationarity; (iii) select the ADF test statistic. If the P value of the test result is less than the confidence level, the null hypothesis is rejected, otherwise the null hypothesis cannot be rejected.

Table 2 lists the statistical values of the original series and the first-order difference after ADF test. The original series levels of the five prices from 2015 to 2024 are not stationary, and the series are stationary after first-order difference. It can be seen that the time series data of China's cotton price, international cotton market price, 32-count pure cotton carded yarn price, imported cotton price and the main contract price of Zhengzhou cotton futures are all I(1) series, so the cointegration theory of modern econometrics needs to be used to analyze the long-term equilibrium relationship among the series in the price system.

Table 2. Augmented Dickey-Fuller (ADF) Unit Root Test

		Original sequence			First-order difference	
Variable	Inspection type	ADF statistics	P-value		ADF statistics	P-value
p_cn	(c,t,o)	-1.905	0.6552		-6.521	0.01
p_in	(c,t,o)	-2.22	0.4785		-7.925	0.01
p_32	(c,t,o)	-1.867	0.6717		-8.712	0.01
p_im	(c,t,o)	-2.328	0.4187		-9.628	0.01
p_fut	(c,t,o)	-2.592	0.2836		-10.201	0.01

Note: Critical values at 1%, 5%, and 10% significance levels are -3.505, -2.889, and -2.579, respectively.

4.3 Cointegration Test

Since it involves five different cotton market prices, this study uses Johansen cointegration test method to verify whether there is a cointegration relationship among China's cotton price, international cotton market price, 32-count pure cotton carded yarn price, imported cotton price and the main contract price of Zhengzhou cotton futures. If it exists, it indicates that there is a long-term equilibrium relationship among the five cotton market prices.

In Table 3, ei represents the residual between China's cotton price and other prices. The Johansen cointegration test results show that the T-statistic is greater than the 1% critical value of -3.506, which leads to the rejection of the null hypothesis. This indicates that there is a cointegration relationship (i.e., a long-term stable equilibrium relationship) among the five cotton market prices.

Table 3. Unit Root Test Results for Residual Series of Cointegration Equation

		Constant term		Coefficient		R^2	Residual ADF Unit Root Test	Result
NO	Formula	Value	T	Value	T			
1	lnp_cn =α1 + β1lnp_in+e1	2.9318	8.17	0.6590	18.70	0.7519	-5.337	Smooth
2	lnp_cn =α2 + β2lnp_32+e2	-3.3140	-8.57	1.2910	33.52	0.9071	-6.098	Smooth
3	lnp_cn =α3 + β3lnp_im+e3	2.7570	7.84	0.6755	19.57	0.7685	-5.826	Smooth
4	lnp_cn =α4+ β4lnp_fut+e4	0.7619	2.57	0.9247	29.91	0.8860	-6.583	Smooth

Note: The critical value for the ADF test of the equation residual *e* at the 1% level is -3.506.

4.4 Granger Test

The existence of cointegration relationship among the five price series means that there is at least one Granger causal relationship among them. Therefore, the study further uses the Granger causality test method to verify whether there is a two-way causal relationship among the five cotton prices. Table 4 shows the specific results of the Granger causality test:

Table 4. Granger Causality Test

Dependent variable	Independent variable	chi2	df	prob>chi2	Result
d1p_cn	d1np_in	16.261	3	0.001	Reject the null hypothesis
d1np_in	d1p_cn	16.851	3	0.001	Reject the null hypothesis
d1p_cn	d1p_32	0.01836	1	0.892	Accept the null hypothesis
d1p_32	d1p_cn	2.9181	1	0.088	Accept the null hypothesis
d1p_cn	d1np_im	0.68226	3	0.024	Reject the null hypothesis
d1np_im	d1p_cn	5.9386	3	0.001	Reject the null hypothesis
d1p_cn	d1p_fut	5.9829	1	0.014	Reject the null hypothesis
d1p_fut	d1p_cn	97.627	1	0.000	Reject the null hypothesis

It can be seen that:

There is a two-way Granger causality relationship between China's cotton market price and international cotton price.

The price of 32-count pure cotton carded yarn has no significant Granger causality relationship with other variables.

There is a two-way Granger causality relationship between China's cotton price and imported cotton price.

There is a two-way Granger causality relationship between China's cotton price and the main contract price of Zhengzhou cotton futures, and the causality is very significant (with a p-value approaching 0).

The formulas applied in the analysis are as follows:

$$Y_t=\alpha_0+\alpha_1 Y_{t-1}+\alpha_2 Y_{t-2}+\beta_1 X_{t-1}+\epsilon_t$$

$$Yt=\gamma_0+\gamma_1 Y_{t-1}+\gamma_2 Y_{t-2}+\eta_t$$

To calculate the residual sum of squares (SSR_0 and SSR_1) for two models and the F-statistic, follow these steps and formulas:

$$F=SSR_1/(T-2-1-1)/(SSR_0-SSR_1)/1$$

4.5 Distributed Lag Model

On the basis of the above analysis, the study further establishes a (1,1)-order distributed lag model to test the impact of the four cotton market prices on China's cotton market price (see Models 1-4 for details). Table 5 shows the specific results of the (1,1)-order distributed lag model. It can be seen from the table that the adjusted R-square values are all very high, close to 1, indicating that the model has a good fit to the data. The t-values of all coefficients are greater than 2 or less than -2, indicating that these variables have a significant impact on the model.

The formulas applied in the analysis are as follows:

Model 1: $lnp\_cn(t)=\beta_0+\beta_1 lnp\_32(t)+\beta_2 lnp\_32(t-1)$

Model 2: $lnp\_cn(t)=\beta_0+\beta_1 lnnp\_in(t)+\beta_2 lnnp\_in(t-1)$

Model 3: $lnp\_cn(t)=\beta_0+\beta_1 lnnp\_im(t)+\beta_2 lnnp\_im(t-1)$

Model 4: $lnp\_cn(t)=\beta_0+\beta_1 lnp\_fut(t)+\beta_2 lnp\_fut(t-1)$

Table 5. Distributed Lag Model 1

Model 1	Variable	lnp_32	l.np_32	l.linp_cn	adj.r*2
	Coefficient	1.0695	-0.8785	0.8544	0.97
	T-value	13.7	-9.06	17.24	
Model 2	Variable	lnnp_in	l.lnnp_in	l.lnp_cn	adj.r*2
	Coefficient	0.4721	-0.3745	0.884	0.96
	T-value	7.46	4.99	22.36	
Model 3	Variable	lnnp_im	l.lnnp_im	l.lnp_cn	adj.r*2
	Coefficient	0.4582	-0.3582	0.8785	0.96
	T-value	8.1	-5.37	22.17	
	Variable	lnp_fut	l.lnp_fut	l.linp_cn	adj.r*2
Model 4	Coefficient	0.3435	-0.3872	1.0067	0.954
	T-value	5.21	-6.4	12.93	

4.6 Market Reactions before and after the Double-Cycle Policy

In 2020, China implemented the double-cycle policy, which had a great impact on the cotton market price. Therefore, a model was established to study the changes in the cotton market before and after the implementation of the policy, so as to observe the market reaction.

$$Lnp\_cn_t=\sum_{i=1}^{i=3}\boldsymbol{\alpha_i} lnp\_cn_{t-i}+\sum_{i=0}^{i=3}\beta_i lnnp\_in_{t-i}+\sum_{i=0}^{i=3}\gamma_i lnnp\_im_{t-I}+\sum_{i=0}^{i=3}\delta_i lnp\_lin32_{t-i}+\sum_{i=0}^{i=3}\varepsilon_i lnnp\_fut_{t-i}$$

In the long run, the current price of cotton is influenced by its own price (lagged 1 period), import price (lagged 1 period), and the prices of yarn downstream in the supply chain (current and lagged 1 period).

The detailed estimation results of this model across different periods are presented in Table 6 (Distributed Lag Model 2), which divides the sample into three stages: the full stage (2015-2024), the early stage (2015-2021), and the post-production stage (2021-2024).

Before the false narrative fabricated by the U.S. and Western countries (2015-2021), in addition to the above factors, China's domestic current cotton price was also affected by the current international price and the current price of Zhengzhou cotton futures — as reflected in the significant coefficients of these variables in the early stage column of Table 6.

From April 2021 to August 2024, besides being influenced by the lagged 1-period domestic current price, China's domestic current cotton price was affected by the prices of yarn downstream in the cotton supply chain (current and lagged 1 period); notably, the impact of international and futures prices weakened sharply in this stage, which can be seen from their insignificant coefficients in the post-production stage section of Table 6.

Table 6. Distributed Lag Model 2

	Full stage(2015-2024)			Early stage(2015-2021)			Post-production stage (2021-2024)		
	Coefficient	T-value		Coefficient	T-value		Coefficient	T-value	
lnp_cn									
L1.	1.0504	8.42	***	0.9365	5.62	***	0.9293	3.19	***
L2.	-0.1398	-0.80		-0.2411	-1.07		-0.4524	-1.40	

L3.	-0.1387	-1.13		-0.0190	-0.12		0.2577	0.91	
lnnp_in									
--.	0.1015	0.75		0.3340	1.81	*	-0.1377	-0.59	
L1.	0.1391	0.91		-0.0633	-0.33		0.3914	1.49	
L2.	0.0795	0.52		0.1761	0.95		0.1802	0.59	
L3.	-0.0445	-0.30		0.0161	0.08		-0.0952	-0.35	
lnnp_im									
--.	0.0511	0.38		-0.1006	-0.56		0.0579	0.27	
L1.	-0.3376	-2.47	**	-0.2254	-1.13		-0.2846	-1.27	
L2.	-0.0188	-0.13		-0.0729	-0.37		-0.2052	-0.76	
L3.	0.0616	0.42		-0.0266	-0.13		0.1241	0.50	
lnp_lin32									
--.	0.8028	9.41	***	0.6754	7.76	***	0.7880	3.46	***
L1.	-0.6323	-4.53	***	-0.2569	-1.8	*	-0.7144	-2.08	*
L2.	-0.0601	-0.40		0.0685	0.47		-0.1931	-0.52	
L3.	0.0738	0.65		0.0907	0.72		0.1386	0.48	
lnp_fut									
--.	0.0292	0.51		-0.1374	-2.23	**	0.3799	3.02	***
L1.	-0.0234	-0.36		0.0098	0.14		-0.2436	-1.07	
L2.	0.0361	0.58		-0.0328	-0.54		0.3383	1.81	*
L3.	-0.0002	0.00		-0.0243	-0.51		-0.3054	-1.71	
_cons	-0.3732	-1.43		-1.2810	-3.65	***	0.4344	0.68	
	N=113	Adj-R^2=0.978		N=75	Adj-R^2=0.974		N=38	Adj-R^2=0.981	

5. Conclusions and Discussions

Since this study focuses on the relationship between China's cotton market price and the other four cotton market prices from 2015 to 2024, the incident that had a profound impact on cotton market prices during this period, the incident that had a profound impact on cotton market prices during this period cannot be ignored. In March 2020, the United States passed the Uyghur Forced Labor Prevention Act on the pretext of "forced labor", banning the import of certain cotton and related products from China. Subsequently, some Western brands, such as H&M, Nike, Adidas, etc., also issued statements adjusting their cotton procurement strategies for domestic high-quality cotton. The government expressed strong opposition to this and took a series of countermeasures. A spokesperson for the Chinese Foreign Ministry said that the labor force in the domestic cotton industry is voluntarily employed, and there is no so-called "forced labor" problem. At the same time, Chinese consumers have also supported domestic brands such as Li Ning and Anta. On April 10, 2020, China first proposed the new development pattern of "taking the domestic big cycle as the main body and promoting the mutual promotion of domestic and international double cycles" at the seventh meeting of the Central Financial and Economic Commission.

5.1 Conclusions

Short-term Impact: After the incident broke out, international cotton prices fluctuated, and cotton futures prices fell. Due to Western brands' refusal to use the domestic cotton, the international market demand for the domestic cotton decreased, and prices were under certain pressure.

Long-term Impact: With the increase in Chinese consumers' support for domestic brands, the domestic cotton market demand gradually recovered. At the same time, the government has taken a series of measures to support the development of the domestic cotton industry, including strengthening policy preferences and increasing cotton planting subsidies, which help stabilize domestic cotton market prices.

Changes in the International Market: Due to the decline in the share of the domestic cotton in the international market, the cotton exports of other cotton-producing countries such as the United States, India, and Brazil increased, which to a certain extent made up for the market share of the domestic cotton.

5.2 Discussions

According to the comprehensive model, futures prices had an impact on cotton current prices in both the early and later periods, but the impact on cotton current prices was not significant in the full period. The possible reason is that the import price and futures price are highly correlated, resulting in a collinear relationship. This issue will be specially studied and solved in subsequent research.

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