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# Price Linkages between China's Sugar Market and World Sugar Market

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## Outline

- **Introduction**
- **Sugar Market and Price**
- **Approaches**
- **Data and Empirical Study**
- **Conclusions and Implication**

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## **Introduction**

- China is one of the world important sugar production countries
- World sugar price has evidently influence on China's domestic sugar economy
- Different researchers have varies opinions about the possible shock from world sugar market
- No special empirical study on the issue

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## **Objectives**

- Evaluates the degree of integration of China's domestic sugar market
- Examine the degree of integration between the Chinese and world sugar market

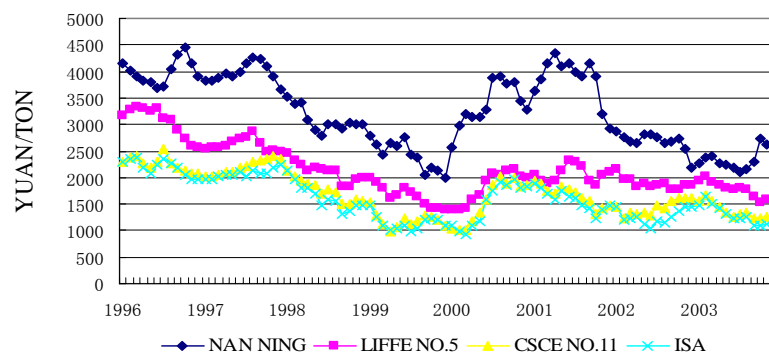
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## Sugar Market and Prices

- World sugar market is a distorted market
- World sugar commerce is a surplus trade
- China's sugar market has been happening significant evolution
- China is always a focus of world sugar dynamics
- they are co-movement

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World and China(NAN Ning) Sugar Price Dynamics



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## **Approaches**

- **Johansen Co integration Test**
- **Error Correction Model**

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## **Johansen Co integration Test**

- Time series variables stability test
- Test whether co integration exist

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## Error Correction Model

- How about do the pair-wise time series causality
- Re-test co integration existence or not
- The model builds a bridge between long-term (static state) and short-run (dynamic)
- The model shows the adjusting speed to a new equilibrium if a impact happened

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## Data

- Raw sugar and refined sugar
- CSCE (New York Board of Trade, Coffee, Sugar and Cocoa Exchange) , LIFFE(London International Financial Futures and Options Exchange) and ISA Price
- Website resources

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## **Empirical Study Results**

### **Results of Johansen Co integration Test**

- Pair-wise price series are stable
- Pair-wise markets are co integrated

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## **Results Error Correction Model**

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### Results of Pair-Wise China Major Sugar Markets and ISA Market

	Zhan J	Nan N	Dian W	Chong q	Zheng Z	Lang F	Chang C	Wu lmq
$c$	-0.0033	-0.0034	-0.0023	-0.003	-0.0026	-0.0017	-0.0008	-0.0022
	(-1.37)	(-1.44)	(-1.26)	(-1.17)	(-0.99)	(-0.71)	(-0.34)	(-1.23)
	-0.138***	-0.147***	-0.078***	-0.088***	-0.119***	-0.105***	-0.087**	-0.146***
$\gamma$	(-4.26)	(-4.38)	(-3.11)	(-2.86)	(-3.06)	(-3.20)	(-2.11)	(-3.56)
	0.394***	0.320***	0.452***	0.122	0.127	0.161*	0.069	0.232***
$\beta_1$	(4.34)	(3.57)	(4.93)	(1.33)	(1.43)	(1.78)	(0.71)	(2.58)
	0.044	0.088	-0.012	0.202***	0.154	0.312***	0.217***	0.185***
$\beta_2$	(0.48)	(0.99)	(-0.13)	(2.23)	(1.76)	(3.74)	(2.66)	(2.07)
	-0.014	-0.047	-0.085*	-0.066	-0.041	-0.005	-0.057	-0.002
$\psi_1$	(-0.27)	(-0.93)	(-1.75)	(-1.23)	(-0.73)	(-0.11)	(-1.07)	(0.06)
	0.026	0.042	0.091*	0.049	0.018	0.027	0.049	-0.018
$\psi_2$	(0.49)	(0.82)	(1.85)	(0.89)	(0.31)	(0.54)	(0.9)	(-0.45)
$R^2$	0.284	0.279	0.294	0.144	0.135	0.204	0.108	0.201

Note: \*\*\*/\*\*/\*show 99%、95%and 90%statistic significant. Number in bracket is t statistics.

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### Results of Pair-Wise China Major Sugar Markets and CSCE Market

	Zhan J	Nan N	Dian W	Chong q	Zheng Z	Lang F	Chang c	Wu Lmq
$C$	-0.0032	-0.0030	-0.0026	-0.0027	-0.0024	-0.0016	-0.0008	-0.0022
	(-1.33)	(-1.31)	(-1.17)	(-1.09)	(-0.91)	(-0.68)	(-0.33)	(-1.17)
	-0.137***	-0.128***	-0.069***	-0.080***	-0.108***	-0.095***	-0.086***	-0.153***
$\gamma$	(-4.43)	(-4.19)	(-2.91)	(-2.76)	(-3.01)	(3.11)	(-2.52)	(-4.10)
	0.404***	0.364***	0.481***	0.157*	0.139*	0.172*	0.084	0.259***
$\beta_1$	(4.64)	(4.18)	(5.47)	(1.78)	(1.61)	(1.93)	(0.90)	(2.97)
	0.044	0.085	-0.027	0.195**	0.166**	0.302***	0.192***	0.189**
$\beta_2$	(0.50)	(0.97)	(-0.3)	(2.18)	(1.91)	(3.63)	(2.41)	(2.17)
	-0.006	-0.049	-0.102*	-0.098	-0.036	-0.019	-0.018	-0.001
$\psi_1$	(-0.1)	(-0.85)	(-1.74)	(-1.60)	(-0.56)	(-0.33)	(-0.3)	(0.01)
	0.132**	0.164***	0.174***	0.148***	0.137**	0.085	0.113	0.111***
$\psi_2$	(2.32)	(2.92)	(3.25)	(2.46)	(2.02)	(1.49)	(1.91)	(2.54)
$R^2$	0.316	0.306	0.328	0.182	0.154	0.207	0.120	0.246

Note: \*\*\*/\*\*/\*show 99%、95%and 90%statistic significant. Number in bracket is t statistics.

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- China's sugar market and world sugar market do have integration relationship
- prices fluctuation in word market is one of the causes of China sugar price change
- there are no short-run co integrations existence between world and domestic sugar markets
- Some differences between CSCE and ISA
- China main sugar producing areas have closer linkage than distribution region
- In short-term ,Lag price change in CSCE NO.11 raw sugar market could bring positive influence to China's market, but this is not always true to ISA

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## Conclusions and Implication

- China sugar markets are co integration.
- World sugar market and Chinese sugar market are co integration
- World sugar price fluctuation leads China's sugar price change
- World sugar price fluctuation won't immediately transit to domestic market
- Chinese market price fluctuation has little influence on world sugar price
- World sugar market's impact is not so serious

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Thank you for your attention

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