The Diversity of Relationship between Logistics and Agricultural Economy in the East China

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***Abstract*—This paper aims at displaying the diversity between modern logistics of different districts and agricultural economy, and uses the Granger Causality Test to analyze the relationship between modern logistics and the local agricultural economy in four provinces in the east of China. The result shows that the agricultural economy of Jiangsu and Zhejiang province is more developed than AnHui and JiangXi province, but the logistics' promotion to the local agricultural economy of the former is not obvious as the later. For further study, finding this phenomenon is related to the economic structure of Jiangsu and Zhejiang, and these two also have large room to improve the mutual promotion between the logistics and the agricultural economy. The purpose of the essay is to draw lessons for China government to make policies about accelerating logistics and the areas' economy.**

***Index Terms*—logistics, agricultural economy, granger causality test, diversity, Eviews software**

I. INTRODUCTION

As the 30 years' reforming and opening, especially in these recently 10 years, the infrastructure construction has gotten great development particularly in those big and middle cities. However, the infrastructure construction in vast rural areas lags behind so much. But, as a big agricultural country and with half population of farmers, the farmer's living decides whether the moderately high standard of society can be achieved. Among these aspects, the standard of the logistics plays an important role in the development of agricultural economy. Theoretically, building of highly effective and perfect logistics will help to drive the agricultural building of information, improve all-round services in the agricultural society and increase the level of the agricultural circulation of commodity. The development of economy in the east of China, which sets a future sample, goes ahead over the other parts. Hence, studying the causality relationship between the modern logistics and the agricultural economy in this part will provide some new perspectives and references for the further developing of China's economy. These four provinces lie in the Yangtze Delta, and also as the back-land for Shanghai, the capital of finance in China.

Presently, many researchers focus on the study of agricultural logistics. Hu Yu and Xu Honglian use Grey relational analysis method and find that foundation construction, the level of rural urbanization, natural disaster, the rural people`s income and the rural educational development have an important role [1]. Wu Ting and Fang Wei use econometrics and system dynamics to find that logistics' foundation construction, permanent assets investment and the talented logistics people are the key factors [2]. Liu Nan and Li Yan discover that rapid rise of economy can obviously influence the request of the logistics [3]. Xiao Fangdu, Stephen C.H. Leung, Jin Longzhang and K.K. Lai apply the CPFR approach in the procurement of agricultural products, and the case results show that the service is increased and inventory variance is reduced, even the proposed model can thus improve the accuracy of forecasting and reduce inventory losses [4]. Rian Ilberya, Damian Mayea, Moya Kneafseya, Tim Jenkinsb and Catherine Walkleyb use the Delphi Method to find that while most experts willingly accept the socio-economic values that can be gained by localising, shortening and synergising the food chain in lagging rural regions, important barriers question the emergence of such an agrarian based rural development dynamic [5]. John Byrom, Dominic Medway, and Gary Warnaby find that the future research should concentrate on combining consumer- and provider-led perspectives, and investigate the role of effective management in small rural retail business [6]. Kenneth B. Ackerman gives reasons why a logistics partnership may be doomed to fail and by so doing, shows ways in which to prevent the failure [7]. Jo Banks and Terry Marsden thank that conservation policies can, if appropriately designed and regionally embedded, go some way to mitigating both the 'farm problem' and the 'rural problem', and are therefore

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capable of a sustainable and desirable rural development impact commensurate with the new rural development paradigm [8]. Shangguan Xu-ming studies the meanings and features of logistics system in new rural areas in China, and proposes the relevant countermeasures to improve logistics system in new countryside [9]. Lijuan Huang, Jie Yu and Xingwang Huang study the location model of agricultural logistics distribution center based on ISM [10]. Zhibin Liu, Ling Zhang and Xiangsong Meng evaluate the network marketing performance of China's agricultural products applying Rough Set Theory [11]. Z. L. Suo and D. Wang study the model of agricultural logistics center location and its application [12]. L. J. Huang studies the strategies on the Chinese agricultural supply chains management based on the SCOR-model in the ecommerce environment [13].

All above authors analyze the development of the logistics from their points of view, and their research makes greatly contribution to the modern logistics. Relying on the others' research, this paper applies the Granger Causality Test to analyze four provinces in the east of China, and hopes to provide some strategies for modern logistics and economy in China.

In this paper, section 2 introduces the methodology and steps of Granger Causality Test; section 3 analyzes the relationship between Granger Causality and the variables; section 4 discusses on the results.

II. The Methodology and Steps of Granger Causality Test

The Granger Causality Test is invented by Clive W.J. Granger, a Nobel Prize winner in Economics. This method is used to analyze the Causality relationship among the economic variables. Now, we suppose two economic variables which called variable X and Y separately, and these two contain their past information. The effect of predict Y through X is better than just rely on the past information, so we can think variable X "Granger-causes" Y.

The Granger Causality Test has a promise that the time series must be smooth or they have the same steps if they are not smooth, otherwise fictitious regression will appear. Consequently, the unit root test is the essential prerequisite.

The Granger Causality Test demands to evaluate the following regression:

$$y_i = \sum_{i\text{-}1}^{q} \alpha_i x_{t\text{-}i} + \sum_{j\text{-}1}^{q} \beta_j y_{t\text{-}j} + u_{1t} \quad (1)$$

$$x_i = \sum_{i\text{-}1}^{s} \lambda i x_{t\text{-}i} + \sum_{j\text{-}1}^{s} \delta_j y_{t\text{-}j} + u_{2t} \quad (2)$$

The white noise u_{1t} and u_{2t} are assumed have no correlation.

Equation (1) is assumed variable Y has relationship with Y itself past information and X, and variable X also has the same assumption.

For the equation (1): this null hypothesis is H0: $\alpha 1=\alpha 2=\ldots=\alpha q=0$.

For the equation (2): this null hypothesis is H0: $\delta 1=\delta 2=\ldots=\delta s=0$.

The Granger Causality Test is sensitive to the length of lag phase. The reason could be the smoothness' impact, or the length of the samples` volume. Different lag phase could lead to different test results. So, in common condition, that through different lag phase test could choose the suitable lag phase so as to assure the model`s random interferences have no related series.

To the Granger Causality Test, this test occurs between modern logistics and agricultural economy. This paper chooses two variables as the logistics' index, and five variables as the economic index. The two logistics' indexes make Granger Causality Test with the five economic indexes separately, that is to say, the author analyzes the causality relationship through two variables to several variables pattern.

This paper applies Eviews 6 statistical analysis software which is devised by the "object-oriented" thought. All the data store in the objects which contain series, group, and equation and so on. All researches can achieve the test targets through checking the quality and the operation methods. So, this software is convenient and simple.

III. Empirical Analysis on Causality Relationship between Modern Logistics and Agricultural Economy in 4 Provinces of the East China

A. The System of the Indexes

In consideration of the data's availability and comparability, the author chooses the following indexes to reflect the modern logistics and the economy.

The indexes of the logistics are: the freight transport to reflect the condition of the request and the development of the logistics, which is called "HYL" for short (Ton kilometer); the logistics investment to reflect the condition of the foundation construction, including the investment of post, road and traffic, which is called "JTZ" for short (Million Yuan).

The indexes of the economic development are: the agricultural output value of the framing, forestry, animal husbandry and fishery as the level of the agricultural economic development, which is called "NLC" for short (unit: Million Yuan); the Gross National Products to reflect the whole economic condition, which is called "GDP" (Million Yuan); the agricultural average income to reflect farms' net income, which is called "NRS" for short (Yuan); the imports and exports, which is called "JCK" for short (Million Yuan); the agricultural average consumption in the rural areas, which is called "NAX" for short (Yuan).

In these four provinces, the agricultural economic percentages of Jiangsu, Zhejiang, Anhui and Jiangxi are 14%, 10%, 29% and 26% separately. Obviously, the percentage of JiangSu and ZheJiang is between 10% and 15%, which author combines these two provinces as a group because their economy stay at the same level; AnHui and JiangXi's percentage is between 25% and 30%, therefor these two is another group.

From the year of 2001 to 2011, the basic condition of JiangSu and ZheJiang province is shown on the Table IX

and Table X at the appendix A, in which the price index is relied on the 1986 year; from year of 2002 to 2011, the basic condition of AnHui and JiangXi province is shown on Table XI and Table XII at the appendix A, in which the price index is relied on the previous year. All above data are chosen from every province's statistical yearbook.

B. Granger Causality Test

The Granger Causality Test has a promise that the time series must be smooth or they have the same steps if they are not smooth, and they also must have long-time steady relationship. Otherwise, it will get wrong conclusion if we make test directly [14-16].

Smoothness test: This paper uses extensional Augmented Dicky-Fuller unit test (ADF) to examine whether the time series is smooth, and judge the series' smoothness or the non-stationary single integer series. The results are shown as Table I, Table II.

Table I shows that every variable's value of ADF test is greater than 5% which is at the significance level, so every variable is non-stationary. The result is also non-stationary when the test uses first difference of the variable, then the author goes on to testing second difference of the variable. In this condition, every variable becomes smooth at the significance level. Subsequently, we can consider these seven variables as single integer series of second order.

Table II shows that every variable's value of ADF test is greater than 5%. So every variable is non-stationary. After making first difference test, we can find HYL, JTZ, NLC, NRS and JCK are first order smooth, but GDP and NAX are still non-stationary. Through second difference testing, the result reflects these two variables are single integer series of second order.

Co-integration test: The result of Table I shows these variables are all single integer series of second order, we should test two variables' co-integration relationship before testing their causality relationship; the variable GDP and NAX of Table II should be converted to the first difference before dealing with. This paper uses Johansen co-integration test method to deal with. Table III and Table IV show the result.

Table III shows that the two logistics' indexes have long-time steady relationship with the five economic indexes of JiangSu and ZheJiang provinces.

Table IV shows that the two logistics' indexes have long-time steady relationship with the five economic indexes of AnHui and JiangXi provinces except JTZ and NAX.

TABLE I.
THE SMOOTH TEST OF JIANGSU AND ZHEJIANG PROVINCE

Variable	Value of ADF	Test critical values			Test result
		1%	5%	10%	
HYL	-3.1251	-5.5219	-4.1078	-3.5150	Non-stationary
D(HYL)	-0.2232	-2.8473	-1.9882	-1.6001	Non-stationary
D(HYL,2)	-2.9127	-2.8861	-1.9959	-1.5991	Stationary
JTZ	-3.3059	-5.5219	-4.1078	-3.5150	Non-stationary
D(JTZ)	-1.7155	-2.8473	-1.9882	-1.6001	Non-stationary
D(JTZ,2)	-3.4804	-2.9372	-2.0063	-1.5981	Stationary
NLC	4.7296	-2.8167	-1.9823	-1.6011	Non-stationary
D(NLC)	-2.7296	-4.4206	-3.2598	-2.7711	Non-stationary
D(NLC,2)	-6.7179	-2.9372	-2.0063	-1.5981	Stationary
GDP	-1.9657	-4.2971	-3.2127	-2.7477	Non-stationary
D(GDP)	-0.5298	-2.8473	-1.9882	-1.6001	Non-stationary
D(GDP,2)	-4.2299	-2.8861	-1.9959	-1.5991	Stationary
NRS	20.0972	-2.8167	-1.9823	-1.6011	Non-stationary
D(NRS)	1.0952	-2.8861	-1.9959	-1.5991	Non-stationary
D(NRS,2)	-3.8965	-2.8861	-1.9959	-1.5991	Stationary
JCK	-3.0290	-4.2971	-3.2127	-2.7477	Non-stationary
D(JCK)	-1.3141	-2.8473	-1.9882	-1.6001	Non-stationary
D(JCK,2)	-4.5295	-2.8861	-1.9959	-1.5991	Stationary
NAX	8.6151	-2.8167	-1.9823	-1.6011	Non-stationary
D(NAX)	-0.7780	-2.8473	-1.9882	-1.6001	Non-stationary
D(NAX,2)	-3.9535	-2.8861	-1.9959	-1.5991	Stationary

TABLE II.
THE SMOOTH TEST OF ANHUI AND JIANGXI PROVINCE

Variable	Value of ADF	Test critical values			Test result
		1%	5%	10%	
HYL	1.9435	-2.8473	-1.9882	-1.6001	Non-stationary
D(HYL)	-2.0689	-2.8861	-1.9959	-1.5991	Stationary
JTZ	-4.2104	-5.8352	-4.2465	-3.5905	Non-stationary
D(JTZ)	-6.0159	-4.8035	-3.4033	-2.8418	Stationary
NLC	-3.6210	-5.8352	-4.2465	-3.5905	Non-stationary
D(NLC)	-4.5164	-4.8035	-3.4033	-2.8418	Stationary
GDP	18.4524	-2.8473	-1.9882	-1.6001	Non-stationary
D(GDP)	0.6056	-2.9372	-2.0063	-1.5981	Non-stationary
D(GDP,2)	-4.7612	-2.9372	-2.0063	-1.5981	Stationary
NRS	-2.8507	-5.5219	-4.1078	-3.5150	Non-stationary
D(NRS)	-3.5411	-4.5826	-3.3210	-2.8014	Stationary
JCK	-2.7859	-5.5219	-4.1078	-3.5150	Non-stationary
D(JCK)	-3.6074	-4.5826	-3.3210	-2.8014	Stationary
NAX	-2.5571	-5.5219	-4.1078	-3.5150	Non-stationary
D(NAX)	-2.9346	-4.5826	-3.3210	-2.8014	Non-stationary
D(NAX,2)	-3.5598	-2.9372	-2.0063	-1.5981	Stationary

TABLE III.
THE CO-INTEGRATION TEST OF JIANGSU AND ZHEJIANG PROVINCE

Variable	Max-Eigen Statistic	5% Critical Value	P value	Hypothesized No .of CE(s)
(HYL,NLC)	27.4136	17.1477	0.0011	None *
	7.7532	3.8415	0.0054	At most 1 *
(HYL,GDP)	18.7034	14.2646	0.0093	None *
	7.0177	3.8415	0.0081	At most 1 *
(HYL,NRS)	23.5219	15.4947	0.0025	None *
	8.9835	3.8415	0.0027	At most 1 *
(HYL,JCK)	21.7321	19.3870	0.0224	None *
	11.7473	12.5180	0.0670	At most 1
(HYL,NAX)	27.0636	19.3870	0.0032	None *
	14.5113	12.5180	0.0229	At most 1 *
(JTZ,NLC)	11.5941	15.8921	0.2108	None
	8.6210	9.1645	0.0633	At most 1
(JTZ,GDP)	29.1487	19.3870	0.0014	None *
	16.2721	12.5180	0.0112	At most 1 *
(JTZ,NRS)	20.6801	15.8921	0.0082	None *
	11.1349	9.1645	0.0209	At most 1 *
(JTZ,JCK)	22.8303	19.3870	0.0152	None *
	14.7939	12.5180	0.0205	At most 1 *
(JTZ,NAX)	23.5406	14.2646	0.0013	None *
	7.7133	3.8415	0.0055	At most 1 *

Note: the level of 5% means refusing null hypothesis.

TABLE IV.
THE CO-INTEGRATION TEST OF AnHui and JiangXi PROVINCE

Variable	Max-Eigen Statistic	5% Critical Value	P value	Hypothesized No. of CE(s)
(HYL,NLC)	19.4157	15.8921	0.0134	None *
	4.8655	9.1645	0.2985	At most 1
(HYL,GDP)	39.2118	15.8921	0.0000	None *
	2.9651	9.1645	0.5872	At most 1
(HYL,NRS)	16.3355	14.2646	0.0232	None *
	4.4518	3.8415	0.0349	At most 1 *
(HYL,JCK)	24.8401	19.3870	0.0073	None *
	11.7226	12.5180	0.0676	At most 1
(HYL,NAX)	13.3506	14.2646	0.0693	None
	0.3428	3.8415	0.5582	At most 1
(JTZ,NLC)	28.6923	15.8921	0.0003	None *
	10.7004	9.1645	0.0254	At most 1 *
(JTZ,GDP)	14.2266	14.2646	0.0507	None
	3.2660	3.8415	0.0707	At most 1
(JTZ,NRS)	40.8127	19.3870	0.0000	None *
	33.5319	12.5180	0.0000	At mo
(JTZ,JCK)	18.9964	14.2646	0.0083	None *
	5.4153	3.8415	0.0200	At most 1 *
(JTZ,NAX)	12.0217	15.8921	0.1847	None
	2.5299	9.1645	0.6716	At most 1

Note: the level of 5% means refusing null hypothesis

TABLE V.
THE CAUSALITY RELATIONSHIP TEST OF JIANGSU AND ZHEJIANG PROVINCE

Null hypothesis	F statistics	P value	Whether or not receive Null hypothesis
NLC does not Granger Cause HYL	1.9621	0.2548	Yes
HYL does not Granger Cause NLC	0.2618	0.7819	Yes
GDP does not Granger Cause HYL	3.6792	0.1240	Yes
HYL does not Granger Cause GDP	0.3961	0.6967	Yes
NRS does not Granger Cause HYL	4.6652	0.0900	No
HYL does not Granger Cause NRS	1.5028	0.3260	Yes
JCK does not Granger Cause HYL	1.2889	0.3698	Yes
HYL does not Granger Cause JCK	1.3593	0.3545	Yes
NAX does not Granger Cause HYL	2.0748	0.2409	Yes
HYL does not Granger Cause NAX	2.3213	0.2142	Yes
NLC does not Granger Cause JTZ	2.4823	0.1991	Yes
JTZ does not Granger Cause NLC	0.0412	0.9601	Yes
GDP does not Granger Cause JTZ	7.1484	0.0478	No
JTZ does not Granger Cause GDP	12.4650	0.0191	No
NRS does not Granger Cause JTZ	10.0885	0.0274	No
JTZ does not Granger Cause NRS	2.1945	0.2274	Yes
JCK does not Granger Cause JTZ	0.9005	0.4755	Yes
JTZ does not Granger Cause JCK	4.9558	0.0827	No
NAX does not Granger Cause JTZ	3.2604	0.1446	Yes
JTZ does not Granger Cause NAX	14.1211	0.0154	No

TABLE VI.
THE CAUSALITY RELATIONSHIP TEST OF ANHUI AND JIANGXI PROVINCE

Null hypothesis	F statistics	P value	Whether or not receive null hypothesis
NLC does not Granger Cause HYL	1.0604	0.4484	Yes
HYL does not Granger Cause NLC	0.1898	0.8364	Yes
GDP does not Granger Cause HYL	0.0466	0.9555	Yes
HYL does not Granger Cause GDP	25.5527	0.0377	No
NRS does not Granger Cause HYL	2.2456	0.2534	Yes
HYL does not Granger Cause NRS	2.8788	0.2005	Yes
JCK does not Granger Cause HYL	1.9724	0.2839	Yes
HYL does not Granger Cause JCK	50.7073	0.0049	No
NAX does not Granger Cause HYL	0.2638	0.7913	Yes
HYL does not Granger Cause NAX	0.0692	0.9353	Yes
NLC does not Granger Cause JTZ	11.3240	0.0400	No
JTZ does not Granger Cause NLC	0.7329	0.5506	Yes
GDP does not Granger Cause JTZ	0.8604	0.5375	Yes
JTZ does not Granger Cause GDP	9.3229	0.0969	No
NRS does not Granger Cause JTZ	5.8117	0.0929	No
JTZ does not Granger Cause NRS	91.7146	0.0020	No
JCK does not Granger Cause JTZ	8.8960	0.0548	No
JTZ does not Granger Cause JCK	29.2384	0.0108	No

Causality relationship test: The following Table V and Table VI shows the result of the test which is made by Eviews 6.

The results of Table V show: from the perspective of the request of the logistics, at the level of 10%, NLC, GDP, JCK and NAX all have no "Granger Causality" relationship with HYL; NRS "Granger Cause" HYL, but HYL does not "Granger Cause" NRS; from the perspective of the development of the logistics, at the level of 10%, NLC has no "Granger Causality" relationship with HYL; GDP and JTZ "Granger Cause" each other; NRS "Granger Cause" JTZ, but JTZ does not "Granger Cause" NRS; JCK does not "Granger Cause" JTZ, but JTZ "Granger Cause" JCK; NAX does not "Granger Cause" JTZ, but JTZ "Granger Cause" NAX.

The results of Table VI show: from the perspective of the request of the logistics, at the level of 10%, NLC, NRS and NAX all have no "Granger Causality" relationship with HYL; GDP does not "Granger Cause" HYL, but HYL "Granger Cause" GDP; JCK does not "Granger Cause" HYL, but HYL "Granger Cause" JCK; from the perspective of the development of the logistics, at the level of 10%, NLC "Granger Cause" JTZ, but JTZ does not "Granger Cause" NLC; GDP does not "Granger Cause" JTZ, but JTZ "Granger Cause" GDP; Both NRS and JCK "Granger Cause" JTZ, and JTZ also "Granger Cause" both NRS and JCK.

Additional causality relationship test: Aiming at the above test results, author makes causality relationship test between JiangSu and ZheJiang province separately again from GDP, JCK and HYL.

Table VII shows the test result of JiangSu province: GDP does not "Granger Cause" HYL, but HYL "Granger Cause" GDP; JCK and HYL have no "Granger Causality" relationship between each other.

Table VIII shows the test result of ZheJiang province: GDP and HYL have no "Granger Causality" relationship between each other; JCK "Granger Cause" HYL, but HYL does not "Granger Cause" JCK.

TABLE VII.
THE CAUSALITY RELATIONSHIP TEST OF JIANGSU PROVINCE

Null hypothesis	F statistics	P value	Whether or not receive null hypothesis
GDP does not Granger Cause HYL	5.9453	0.0634	No
HYL does not Granger Cause GDP	0.6884	0.5535	Yes
JCK does not Granger Cause HYL	3.9559	0.1128	Yes
HYL does not Granger Cause JCK	1.0661	0.4255	Yes

TABLE VIII.
THE CAUSALITY RELATIONSHIP TEST OF ZHEJIANG PROVINCE

Null hypothesis	F statistics	P value	Whether or not receive null hypothesis
GDP does not Granger Cause HYL	3.4765	0.1334	Yes
HYL does not Granger Cause GDP	0.5040	0.6380	Yes
JCK does not Granger Cause HYL	7.6402	0.0430	No
HYL does not Granger Cause JCK	6.5989	0.0541	Yes

IV. CONCLUSION

The explanations of the results are as follow:

In view of the HYL: as what we can see from Table IX to Table XII of the appendix, the percentages of the agricultural output value of these four provinces are all not high, which can explain why NLC has no "Granger Causality" relationship with HYL; with the development of economy and urbanization, the rural percentage of the whole society consumption has been decreased greatly, at the same time, the urban percentage becomes the consumptive backbone, which is the reason that NAX and HYL have no "Granger Causality" relationship with each other; the average agricultural income of AnHui and JiangXi province is lower than the income in the province of JiangSu and ZheJiang, which can explain why NAX has no "Granger Causality" relationship with HYL about AnHui and JiangXi province; as for GDP of JiangSu and ZheJiang province has no "Granger Causality" relationship with HYL, this result is out of our exception, and author will explore the reason in the following Table VII and Table VIII.

In view of the JTZ: we can get the conclusion from the tables that the indexes of the economy are suitable with JTZ except NLC of JiangSu and ZheJiang province, but these two provinces' agricultural percentage rather low which can explain the last phenomenon.

Additional causality relationship test shows: we can draw the conclusion from Table VII and Table VIII that the result of JiangSu is contrary to ZheJiang's. As to this phenomenon, it is thought that the development model is the mainly reason: the foreign capital of JiangSu province occupies a great share, and the leading effect of the government`s investment is more obvious, among which the government`s factor is much more; private corporations of Zhejiang province are more advanced, which is called the bellwether economy of China, and its economy is easily influenced by the market as well as the

imports and exports. All in all, the results are basically suitable with the actual conditions.

Relying on the above analysis, we can see the gap of the logistics and the economy is so clear between these two groups. The agricultural percentage of AnHui and JiangXi is higher relatively, yet the rural average income and consumption are low. So, only after raising the farmer`s income in these two provinces could the request of the logistics be increased.

However, at the same time, there are similarities and differences between JiangSu and ZheJiang province. The rural average income and consumption in these two provinces are all at the high level, and the request of the logistics is also high, so they should raise the rural income steadily to meet further improvement of logistics. Meanwhile, JiangSu should increase its sum and share of the imports and exports; yet ZheJiang province should optimize its economic structure so as to withstand the economic crisis more effectively.

As the length of this paper is limited, and the finiteness of the data as well as the complexity of china's actual conditions, author just chooses four provinces to analyze which is not enough, so the next research objective is to explore the detail index from a more extensive scale.

APPENDIX A THE BASIC DATA

TABLE IX.
THE BASIC DATA OF JIANGSU PROVINCE FROM 2001 TO 2011

YEAR	HYL	JTZ	NLC	GDP	NRS	JCK	NAX	PRICE INDEX
2001	1524.96	395.63	1956.10	9456.84	3785	513.55	2374.70	303.4
2002	1549.12	363.11	2011.48	10606.85	3996	703.05	2625.20	304.0
2003	1817.44	405.64	1952.20	12442.87	4239	1136.70	2704.37	307.7
2004	2398.64	484.37	2417.63	15003.60	4754	1708.57	3035.12	321.9
2005	3068.88	535.30	2576.98	18598.69	5276	2279.41	3567.10	329.6
2006	3644.79	564.65	2718.61	21742.05	5813	2839.95	4135.20	335.2
2007	4099.16	578.49	3064.72	26018.48	6561	3496.71	4791.70	351.3
2008	4707.50	643.33	3590.64	30981.98	7357	3922.68	5328.40	371.0
2009	5154.46	886.66	3816.02	34457.30	8004	3388.32	5804.45	369.2
2010	6111.57	996.53	4297.14	41425.48	9118	4657.93	6542.90	385.0
2011	7514.00	1190.32	5237.45	49110.27	10805	5397.59	7693.30	407.9

TABLE X.
THE BASIC DATA OF ZHEJIANG PROVINCE FROM 2001 TO 2011

YEAR	HYL	JTZ	NLC	GDP	NRS	JCK	NAX	PRICE INDEX
2001	1371.60	223.18	1053.57	6898.34	4582	328.00	3479	305.0
2002	1616.61	227.28	1101.86	8003.67	4940	419.57	3693	302.8
2003	2047.48	295.54	1184.04	9705.02	5431	614.11	4287	311.6
2004	2701.48	476.16	1332.27	11648.70	6096	852.13	4659	325.9
2005	3416.90	641.36	1428.28	13417.68	6660	1073.91	5215	329.8
2006	4363.71	777.44	1422.60	15718.47	7335	1391.47	5762	333.1
2007	4962.38	673.05	1597.15	18753.73	8265	1768.56	6442	347.7
2008	5476.25	740.80	1780.01	21462.69	9258	2111.09	7072	366.2
2009	5659.78	979.63	1873.40	22990.35	10007	1877.35	7375	359.6
2010	7117.04	1040.68	2172.86	27722.31	11303	2535.33	8390	372.9
2011	8634.82	1102.93	2534.90	32318.85	13071	3093.78	9644	393.8

TABLE XI.
THE BASIC DATA OF ANHUI PROVINCE FROM 2002 TO 2011

YEAR	HYL	JTZ	NLC	GDP	NRS	JCK	NAX	PRICE INDEX
2002	1224	1028376	1305.6	3519.72	2118	41.8	1476	99
2003	1329	1168297	1305.4	3923.11	2127	59.43	1596	101.7
2004	1456	1668584	1644.4	4759.3	2499	72.11	1814	104.5
2005	1585	2297456	1666.2	5350.17	2641	91.2	2196	101.4
2006	1703	3000856	1779.9	6112.5	2969	122.6	2421	101.2
2007	1989	3485756	2070.1	7360.92	3556	159.3	2754	105.3
2008	5843	3783625	2446.5	8851.66	4202	204.4	3284	106.2
2009	6322	5029509	2569.5	10062.82	4504	156.4	3655	99.1
2010	7153	6682157	2955.4	12359.33	5285	242.8	4013	103.1
2011	8446	5592573	3459.7	15300.65	6232	313.4	4957	105.6

TABLE XII.
THE BASIC DATA OF JIANGXI PROVINCE FROM 2002 TO 2011

YEAR	HYL	JTZ	NLC	GDP	NRS	JCK	NAX	PRICE INDEX
2002	718	1797604	824.5	2450.48	2306	16.9	1785	100.1
2003	769	2419109	841.6	2807.41	2458	25.27	1908	100.8
2004	870	2200391	1055	3456.7	2787	35.29	2095	103.5
2005	922	2550004	1143	4056.76	3129	40.6	2484	101.7
2006	952	3273961	1228.3	4820.53	3460	61.9	2677	101.2
2007	1029	2802371	1426.9	5800.25	4045	94.8	2994	104.8
2008	2285	2550559	1680.5	6971.05	4697	137.5	3309	106
2009	2334	3810429	1733.8	7655.18	5075	126.6	3533	99.3
2010	2720	4887095	1900.6	9451.26	5789	214.7	3912	103.0443
2011	2985	4090212	2207.3	11702.82	6892	315.6	4660	101.5265

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