THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

The Impact of Agricultural Insurance on Agricultural Production: An Empirical Study Based on Anhui Province of China

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Abstract:
This paper uses the panel data of 16 prefecture-level cities in Anhui Province, China, from 2008 to 2017 as research samples and elaborates on the mechanism of agricultural insurance's impact on agricultural production from pre-disaster and post-disaster perspectives, and sets up a dynamic differential GMM panel data model. Empirical research on the influence of agricultural insurance in Anhui Province on agricultural production. It concluded that the short-term and long-term effects of the pre-disaster impacts of agricultural insurance in Anhui Province have a positive impact on agricultural production, and the post-disaster impact of agricultural insurance has a positive impact on agricultural production. Therefore, the total effect of agrarian insurance in Anhui Province is favourable to the impact of agricultural production. The development of agrarian insurance promotes the level of agricultural output.

Keywords: *Agricultural insurance, agricultural production, dynamic differential GMM panel model*

1. Introduction

In recent years, China's agriculture has exhibited a large-scale and industrialized development model. Agricultural insurance plays a significant role in providing economic compensation, transferring and diversifying risks, and financing. The impact of agricultural insurance on agricultural production has become a key issue of common concern to the government, farmers, and society, and it is also a hot issue in academia.

Regarding the relationship between agricultural insurance and agricultural production, the research of scholars at home and abroad has mainly focused on two aspects. Most scholars believe that agricultural insurance can significantly promote agricultural production. Jingfeng Xu and Pu Liao (2014) have found through empirical research that agricultural insurance can effectively promote agrarian output. Cai et al. (2009) found that farmers' participation in the protection of sows can help them expand their breeding scale. Yongwu Dai, Hung-Hao Chang, Weiping Liu (2015) found that forest disaster insurance helps increase household income and agricultural production level. Wang Xiangnan (2011) found that agricultural insurance is conducive to raising the level of agricultural production based on panel data of 307 cities in China from 2005 to 2009. Zhou Wenhai, Zhao Guiling, and Yin Chengyuan (2015) used the data of various cities in Hebei Province from 2007 to 2013 to obtain agricultural insurance that positively affected the agricultural production level of the province. Zhou Wenhai & Zhao Guiling (2016) divided Hebei Province into three different regions and found that agricultural insurance promoted agricultural output in different areas. Huang Yalin (2017) takes the Zhangzhou area of Hunan Province as an example.

Through the comparison method, agricultural insurance is conducive to improving the level of agricultural production. However, some scholars believe that the relationship between agricultural insurance and agricultural production is not significant. Cai Chao, Sun Qian (2004), Zhang Yuehua, Shi Qinghua, and Gu Haiying (2006) empirically obtained the impact of agricultural insurance on agricultural output is not apparent. Chen Xiaoan (2011) pointed out that after the purchase of agricultural insurance, farmers have the result of a decline in the level of agricultural production because of the existence of the moral hazard. Li Yaqi and Han Xingyong (2016) according to the sequence data of agricultural insurance premium income, agricultural output, and agrarian insurance claims in China from 1985 to 2014, the farm insurance premium income and the compensation expense have little impact on the output.

It can see that domestic and foreign scholars have carried out a lot of research and analysis on the relationship between agricultural insurance and agricultural production. However, conclusions are quite different, mainly differences in the use of models and the selection of samples.

At the same time, some scholars did not consider the inertia effect of agricultural production lags in the first phase. For this reason, this paper selects the panel data of 16 prefecture-level cities in Anhui Province from 2008 to 2017 as the sample of empirical analysis. Considering the influence of the lagged, one period of the explained variables. I establish the dynamic differential GMM panel model study the impact of agricultural insurance on agricultural production in Anhui Province and put forward corresponding countermeasures and suggestions. I hope that can better improve the agricultural production level in Anhui Province through the favourable financial tools of agricultural insurance.

2. Analysis of the Influence Mechanism of Agricultural Insurance on Agricultural Production

From a theoretical point of view, the impact of agricultural insurance on agricultural production is not sure. The result of agricultural insurance on agricultural production mainly includes two aspects, namely the pre-disaster effect and post-disaster effect.

2.1. The Impact of Agricultural Insurance Pre-Disaster Impact on Agricultural Production

The pre-disaster effect refers to the impact of agricultural insurance and agricultural insurance companies on insurance contracts and insurance premiums before the occurrence of risk accidents. The pre-disaster fact reflects in the following aspects:

2.1.1. Impact on the Probability of Loss and the Extent Of Loss

The moral hazard in the agricultural insurance market leads to market failure. Some farmers have relaxed their prevention of risks because they have purchased agricultural insurance. They are unwilling to take adequate measures to reduce the probability of loss. The implementation of premium subsidy agricultural insurance, the proportion of premium paid by farmers is low, the moral hazard is prominent, and the probability of loss occurrence increases accordingly, which is not conducive to the improvement of agricultural production level high.

However, insurance companies will take various measures to prevent risks. Before underwriting, conduct risk analysis, forecasting, and evaluation of underwriting targets. In the underwriting, actively distribute promotional materials to farmers and invite experts in the field of agriculture to provide on-site services. At the same time, insurance companies shall actively cooperate with the government to carry out disaster early warning in time, reduce the scope and extent of agricultural production loss, and improve the level of agricultural production.

2.1.2. Impact on Agricultural Technology Innovation and Promotion

Various economic theories, such as Harold-Doma theory and the Solow model, illustrate the importance of technological progress to output growth. Chen Xiwen (2004) believes that innovative agricultural technology faces uncertainties, and agrarian insurance allows more funds to enter high-risk technical fields actively. In the 1990s, Hotan introduced high-quality corn varieties from northeastern China. It is precisely because of the risk dispersion of agricultural insurance that technology c promoted successfully. Chen Xiaoan (2013) pointed out that the growth of agrarian insurance premium income is conducive to diversifying risks in agricultural production, stabilizing farmers' income expectations, and raising agricultural production levels.

2.1.3. Impact on the Scale and Intensification of Agriculture

According to Arrow-pratt's theory of absolute risk aversion, the production scale and risk aversion coefficient changed in the same proportion. That is to say, the greater the scale of agricultural production, the higher the aversion of farmers to risk. The high risk in large-scale production affects the expansion of the agricultural production scale. Agricultural insurance can disperse the risks of large-scale agricultural production. In large-scale agricultural production, the role of agricultural insurance reflected in reducing farmers' concerns about agricultural risks. Let it be more willing to expand production scale actively. At the same time, large-scale production is conducive to improving the utilization of idle resources and promoting the level of agricultural production through scale returns. That is to say, the utilization of agricultural insurance promotes the modernization and intensive development of agriculture and improves the level of agricultural production.

2.2. Impact of Post-Disaster Effects of Agricultural Insurance on Agricultural Production

The post-disaster effect refers to agricultural production after the risk accident. If the risk accident is within the scope of the insurance liability, and the crop loss can reach the claimed standard, the insurance company will pay for the agricultural products that have reached the contracted loss level. This case occurs after the affected farmers receive insurance compensation.The post-disaster effect of agricultural insurance manifested in: insurance claims help farmers to resume reproduction, and affected farmers can use the insurance compensation to purchase the material materials needed for the next cycle of production. Insurance claims ensure the sustainability of agricultural production and help farmers expand production scale to improve the level of agricultural production. However, the low amount of agricultural insurance compensation and the problem of claims may hurt the improvement of agricultural production.

In order to more clearly define the pre-disaster effect of agricultural insurance and the impact mechanism of post-disaster effects on agricultural production, this paper makes the following assumptions based on economic principles and the actual situation of agricultural production in Anhui Province: First, the short-term and long-term effects of pre-disaster effects of agricultural insurance on agricultural production. Among them, the attitude of farmers to risk accidents after paying premiums and the disaster prevention and demolition activities of insurance companies are short-term effects, which have a direct impact on the current level of agricultural production. Agricultural insurance disperses agricultural risks, raises the level of agricultural technology, and promotes the large-scale development of the agricultural output, which is a long-term impact, reducing production costs in the long run and promoting the level of agricultural production. Second, the impact of post-disaster effects on agricultural production is short-term. After the affected farmers receive insurance claims, they will directly use it to make up for the current agricultural production losses. Only a small part used in the next agricultural production, so this paper assumes agriculture. The post-disaster effect of insurance has only a short-term impact.

3. Materials and Method

3.1. Index Selection

The selection of some variables in empirical research comes from the Cobb-Douglas production function (C-D production function), which often used in economics. The basic form of this function is as follows:

$$Y(t) = A(t)L(t)^{\alpha} K(t)^{\beta} \quad (\alpha < 1, \beta < 1) \qquad (1)$$

For agricultural production, Y(t) refers to the total agricultural production value in the t-the year, L(t) refers to the farm labour input in the t-the year, and K(t) refers to the agricultural capital in the t-the year. A(t) refers to the change in agricultural production caused by technological progress under individual labour and capital conditions. In agricultural production, the land is a significant capital factor input, so in the agricultural production function, K(t) indicates land elements. In this way, several variables have an impact on agricultural production: production technology, land, and labour. To get the effect of the insurance market on agricultural production. Web bet.al (2002) revised the C-D production function, which assumes that the scale of the production function does not change, and adds Z(t) that can reflect the economic growth effect of financial activities. Go to the C-D production function. In this paper, to analyze the impact of agricultural insurance on agricultural production, Z(t) contains variables related to agricultural insurance. Prevent the separation of empirical research results and theories in this paper, a large number of documents are referenced, taking into account the availability of data and the reliability of empirical findings, and rigorously select the useful indicators of this paper. Referring to the revised C-D production function, the variables used in the practical model are as follows:

3.1.1. Agricultural Production Level (Y)

According to the existing literature, two leading indicators can represent the level of agricultural production, namely the total output value of agriculture, forestry, animal husbandry, and fishery, and the added value of agriculture, forestry, animal husbandry, and fishery. Wang Xiangnan (2011) used the total output value of agriculture, forestry, animal husbandry, and fishery to represent the status of agricultural production. The total output value of agriculture, forestry, animal husbandry, and fishery measured by currency was reduced year by year, eliminating the impact of changes in agricultural product prices. Zhou Wenhai, Zhao Guiling, Yin Chengyuan (2015) The three scholars used the per capita added value of agriculture, forestry, animal husbandry, and fishery to represent the level of agricultural production. The added value of agriculture, forestry, animal husbandry, and fishery are equal to the total output value of agriculture, forestry, animal husbandry, and fishery minus the intermediate input. Compared with the total output value, the added value avoids the double calculation of the intermediate input products, which is the value of the outcome of the society, that is, the industry to the community. The actual contribution made. Therefore, choosing the added value of agriculture, forestry, animal husbandry, and fishery can reflect the exact contribution of agriculture to society and the input and output of agriculture, and can provide more reference for the smooth operation of agricultural production.

Therefore, concerning the papers of Zhou Wenhai (2015), in the selection of the explanatory variables of the empirical model, the value-added of per capita agriculture, forestry, animal husbandry, and fishery is used as an indicator to measure the level of agricultural production. It is from 16 places in Anhui Province from 2008 to 2017. The added value of agriculture, forestry, animal husbandry, and Y indicates fishery in the city divides by the number of employed persons in the primary industry in 16 prefecture-level cities in Anhui Province in the corresponding year. The larger the value, the higher the level of agricultural production, and the smaller the value, the lower the level of the agricultural output.

3.1.2. Development Level of Agricultural Insurance (AI)

According to the existing literature, several indicators can represent the level of agricultural insurance development. Zhang Xiaodong and Sun Rong (2015) used the agricultural insurance density, that is, the per capita agricultural insurance premium income to represent the level of agricultural insurance development. Zhou Wenhai, Zhao Guiling, and Yin Chengyuan (2014) used the two variables of per capita agricultural insurance claims and per capita agricultural insurance premium income as indicators to measure the level of agrarian insurance development. Zhou Wenhai (2015), Yan Yanjun (2015), and others used the lag of the first phase of agricultural insurance claims to represent the level of agrarian insurance claims. Referring to the previous studies, and considering that agricultural insurance affects the level of agricultural production from the two perspectives before and after the disaster, this paper selects the per capita agricultural insurance premium income and the agricultural insurance loss rate to measure the development level of agricultural insurance in Anhui Province.

- Agricultural insurance protection level (Pre). The per capita agricultural insurance premium income is selected as an indicator to measure the impact of agrarian insurance pre-disaster effect on agricultural production, which is equal to agrarian insurance premium income/first industry employment, expressed by Pre. The higher the value, the stronger the role of agricultural insurance in Anhui Province before the disaster, and vice versa. According to the previous analysis, Pre is selected as an indicator to measure the short-term effects of agricultural insurance pre-disaster results, and Pre (-1) is chosen as an indicator to measure the long-term effects of agricultural insurance pre-disaster effects.
- Agricultural insurance compensation level (Com). The agricultural insurance loss ratio is selected as an indicator to measure the impact of agricultural insurance on agricultural production, which is equal to agricultural insurance claims/agricultural insurance premium income, expressed by Com. The larger the value, the higher the compensation effect of the farming disasters in Anhui Province in agrarian production.

3.1.3. Control Variables

In order to better study the impact of agricultural insurance on agricultural production, this paper also sets the following control variables, which will have a certain degree of influence on agricultural production.

- The level of agricultural modernization (Mod), using rural electricity consumption / the number of employed people in the primary industry. The larger the value, the higher the level of modernization of agricultural production, and the more favourable it is for agricultural production.
- Per capita chemical fertilizer application (Che), which is equal to the amount of chemical fertilizer applied / the number of employed people in the primary industry, expressed by Che. The larger the value, the more fertilizer used in agricultural production, and the more favourable it is for agricultural production.
- Human Capital (H). Human capital represents the accumulation of knowledge acquired by agrarian producers in education, and the increase in human capital helps to increase agricultural productivity. Reference Psacharopoulos (1986), quantified human capital as an indicator of per capita years of education, and is indicated by H. Calculated as follows:

$$\text{human capital}=\sum W_i S_i \quad (2)$$

Among them, Wi is the proportion of the degree of education to the total number of people, and Si is the number of years of training for the degree of knowledge.

According to the Anhui Statistical Yearbook, the education level of residents divides into five groups: illiterate (1 year), primary school (6 years), junior high school (9 years), high school, and secondary school (12 years). Junior college (15 years). Because it takes a period for human capital to turn into actual products, there is a time lag in its impact on agricultural production. Therefore, this paper uses the lag phase of human capital to estimate the parameters.

3.2. Model Construction

The main advantage of the panel data is that it can reflect the trend of the individual on the time axis. However, the individual behaviour may have inertia; that is, the individual's current period is affected by the previous period or even several periods. In this case, the lag of the explained variable needs to introduce into the model. As an explanatory variable, this panel model is dynamic.

The dynamic panel model can better avoid the problem of missing variables and reverse causality. However, because the dynamic panel model treats the lag term of the explanatory variable as an explanatory variable, the model is usually endogenous. In this case, the mixed ordinary least squares method, the fixed-effect model, and the random effect model in the static panel model are all biased and inconsistent estimates. Therefore, the estimation method in the static panel model is less accurate. However, the generalized moment estimation (GMM) does not require the random error term to satisfy the normal distribution. That is to say, the GMM estimation method is not affected by the heteroscedasticity or the sequence correlation of the random error term, so it used in parameter estimation. Therefore, in this paper, we use the differential GMM estimation method proposed by Arellano and Bond in 1991. The differential GMM can deal with the endogeneity problem of the model. The following briefly introduces the differential GMM estimation method:

Assume that the dynamic panel data model is:

$$y_{it}=\alpha+\lambda y_{it-1}+\beta X_{it}+u_i+\varepsilon_{it} \quad (3)$$

Making first-order differences eliminates the effects of special effects u_i :

$$\Delta y_{it}=\lambda\Delta y_{it-1}+\beta\Delta X_{it}+\Delta\varepsilon_{it} \quad (4)$$

Among this,， $\Delta y_{it-1}=y_{it-1}-y_{it-2}$， because y_{it-1} and ε_{it-1} are related，So the first-order difference of the lagged term of the explained variable is related to $\Delta\varepsilon_{it}$， therefore Δy_{it-1} is endogenous explanatory variable。The tool variable method can better deal with the endogenous variables existing in the model. A suitable instrument variable must satisfy two conditions: first, the instrument variable is related to the endogenous explanatory variable. Second, the instrumental variables are not related to the random perturbation term. Arellano and Bond (1991) pointed out that GMM estimation performed using all possible lag terms of the interpreted variables as instrumental variables. This method is also called differential GMM estimation.

Because agricultural production has inertial effects, this paper establishes a dynamic panel model as follows:

$$\ln Y_{it}=c+\beta\ln Y_{it-1}+\alpha_1\ln \mathrm{Pr}\,e_{it}+\alpha_2\ln \mathrm{Pr}\,e_{it-1}+\alpha_3\ln Com_{it}+\alpha_4\ln Mod_{it}+$$
$$\alpha_5\ln hf_{it}+\alpha_4\ln H_{it-1}+u_i+v_t+\varepsilon_{it} \quad (5)$$

In formula (5), $\ln Y_{it-1}$ indicates the per capita added value of per capita agriculture, forestry, animal husbandry, and fishery.

Using the differential GMM estimation method proposed by Arellano and Bond in 1991, the parameter estimation is firstly obtained by first-order differential transformation to eliminate the influence of individual effects, and then the second-order lag term of agricultural production level is used as the instrumental variable of the difference equation to avoid the endogenous effects of the differential equation may exist.，

After the end of the estimation, the following two tests performed. First, check whether the random perturbation term has a serial correlation. The null hypothesis of the casual disturbance term is ‘the random disturbance term ε_{it} has no autocorrelation’; that is, the probability value of satisfying AR (2) is higher than 5%. Second, over-identify the test to determine if the tool variable is valid. If the probability of the Sargan test is higher than 5%, the model does not have a weak instrumental variable problem.

4. Empirical Test Results

4.1. Data Processing

In order to smooth the data before the empirical study, the logarithm of each indicator data took. Here, we use Stata14 to analyze the data and get the statistic description in the table below.

Variable	Min	Max	Mean	Median	Std. Dev	N
lnY	8.65	10.49	9.56	9.60	0.38	160
lnPre	0.78	5.59	4.41	4.68	0.94	160
lnCom	-2.07	1.00	-0.46	-0.49	0.50	160
lnMod	5.67	8.10	6.78	6.66	0.64	160
lnhf	-2.35	-0.64	-1.51	-1.51	0.41	160
lnH	1.97	2.52	2.14	2.14	0.08	160

Table 1: Descriptive Statistics for Each Variable

As can be seen from the table1, the mean and median of each variable are very close, basically consistent, and generally exhibit a standard distribution characteristic, which can use for the next estimation.

4.2. Empirical Test Results

The improvement of agricultural production level is not only related to agricultural insurance premium income, agricultural insurance loss rate, and other control variables. At the same time, the inertia characteristics of agricultural production determine that it is greatly affected by agricultural production in the previous cycle, so the level of the agricultural output is introduced here. The lag phase uses as an explanatory variable. According to the formula (5), the differential GMM estimation method used to dynamically analyze the impact of agricultural insurance in Anhui Province on agricultural production, and obtain the following estimation results.

Variable	Dynamic Differential GMM Panel
lnY (-1)	0.4356***(8.25)
lnPre	0.0858***(4.25)
lnPre (-1)	0.0318***(3.51)
lnCom	0.0224* (1.78)
lnMod	0.1135***(2.85)
lnhf	0.4432***(6.39)
lnH (-1)	0.2838**(2.01)
_cons	4.2385***(12.36)
N	128
AR (1)	0.0057
AR (2)	0.2419
Sargan	0.0556
Num	16

Table 2: Empirical Results of the Dynamic Differential GMM Panel Model

Note: （1）***、**、* represented significant at the 1%, 5%, and 10% significance levels, respectively；（2）the dynamic differential GMM panel estimates the value in parentheses as the z value.

As shown in Table 2, the two conditions of the dynamic panel model, the random error term ε_{it} without sequence correlation, and the absence of weak instrument variables are all satisfied. The following is an analysis and evaluation of the estimation results of the dynamic differential GMM panel model:

The lag phase of agricultural production (lnY(-1)) positively correlated with the current agricultural production level at the 1% significance level, and the regression coefficient is 0.4356, which is 1% increase in the previous agrarian output, agricultural production levels will increase by 0.4356%. The short-term impact of the pre-disaster effect of agricultural insurance (lnPre) positively correlated with the level of agricultural production at a scale of 1%, and the regression coefficient is 0.0858. This result is mainly due to the rapid spread of insurance subsidies in Anhui Province, the positive impact of the insurance company's disaster prevention and reduction measures on agricultural production exceeds the negative effect of farmers' moral hazard on agricultural production. The long-term effects of agrarian insurance pre-disaster effects (lnPre(-1)) were positively correlated with agricultural production levels at a 1% significance level with a regression coefficient of 0.0318. Mainly because of the risk dispersion function of agrarian insurance, it has promoted the improvement of agricultural technology level, in the long run, supported innovative agricultural science and technology, and achieved large-scale and intensive development of agricultural production. In a word, agricultural insurance effectively improves agricultural productivity, reduces agricultural production costs. The post-disaster effect of agricultural insurance (lnCom) positively correlated with the level of agricultural production at a level of 10%, and the regression coefficient is 0.0224. The insurance claims received by the farmers compensate for the current production losses, enhance the farmers' confidence in the next agricultural production, and prepare adequately for the following agricultural production. Even if there are unfair claims or the low compensation amount of agricultural insurance itself, the negative impact on farmers' production enthusiasm is still less than the positive effect of insurance claims on restoring agrarian reproduction.

In summary, the two index coefficients reflecting the pre-disaster effect added together, and the total ratio is 0.1176, that is, the long-term and short-term effects of the pre-disaster impact of agricultural insurance are significantly positive. The factor of agricultural insurance post-disaster effect index is 0.0224. It can measure the coefficient values of agricultural insurance pre-disaster effect and post-disaster effect index, and obtain the total effect of agrarian insurance on agricultural production, which is 0.14, indicating that agricultural insurance is promoting agricultural production.

The regression coefficients of per capita rural electricity consumption, per capita chemical fertilizer application, and human capital are all positive. It shows that the increase of rural electricity consumption, the application of chemical fertilizers, and the improvement of human capital in Anhui Province have positive effects on agricultural production. The more electricity used in rural areas, the higher the level of agricultural modernization, which is conducive to improving rural productivity and promoting the level of agricultural production. The increase in the application rate of chemical fertilizers provides good material conditions and rich nutrition for the growth of crops, which is conducive to improving the level of agricultural production. With the improvement of the level of the human capital of farmers, they have more useful knowledge and skills in agricultural production and apply them rationally to the agricultural production process to improve the level of agricultural production.

5. Robustness Test

In the previous analysis, the differences in geography, culture, and resources of 16 prefecture-level cities in Anhui Province do not take into consideration. In order to verify the model selected is robust, it is necessary to test the robustness of the model. The prefecture-level city is excluded as an outlier and then empirically researched. If the sub-sample estimation result is the same as the full-sample estimation result, it means that the model has high robustness, which proves that the research conclusions of this paper are highly reliable. Calculate the average of all variables used in this article. It found that the per capita income of agriculture, forestry, animal husbandry, and fishery in Hefei City and the per capita agricultural insurance premium income are the largest. The per capita rural electricity consumption in Maanshan City is the largest. In the robustness test, this paper chooses to eliminate Hefei and Maanshan, and then separately perform differential GMM regression on the subsamples of a certain city. The empirical results are as follows:

Variable	（1）Excluding Hefei	（2）Excluding Maanshan
lnY(-1)	0.4131***(7.58)	0.4502***(8.12)
lnPre	0.0945***(4.47)	0.0893***(4.09)
lnPre(-1)	0.0346***(3.73)	0.0298***(2.91)
lnCom	0.0230*(1.7)	0.0235**(1.75)
lnMod	0.1112***(2.67)	0.1112***(2.84)
lnhf	0.4100**(5.86)	0.4683**(6.46)
lnH(-1)	0.2768*(1.87)	0.2830**(1.96)
_cons	4.3778***(12.06)	4.1528***(11.96)
N	120	120
AR (1)	0.0044	0.0060
AR (2)	0.2062	0.3500
Sargan	0.0610	0.2768
Number of individuals	15	15

Table 3: Model's Robustness Test

It can see from Table 3 that after removing two subsamples, the results of all variables are still significant, and both conditions of the dynamic differential GMM panel model are satisfied. In summary, the estimation results of the dynamic differential GMM panel model in this paper are effective and robust. The regression results of the full samples and subsamples are the same. The estimation results in the whole sample do not change due to the change of the sample selection. Therefore, the empirical model is robust, and the conclusion of this paper is reliable.

6. Conclusion and Policy Implications

From the above empirical analysis, we can see that the early stage of agricultural production in Anhui Province has a greater impact on the current period, which shows that the agricultural production in Anhui Province has continuity and inertia. The production situation in this period mainly depends on the previous period, and the agricultural production in the previous period has a greater impact on the current period. At the same time, Anhui agricultural insurance has a positive impact on agricultural production both before and after the disaster, that is, Anhui agricultural insurance has a positive impact on agricultural production. As an important system for dispersing and transferring agricultural risks, raising the level of protection, and making up for losses, Anhui Agricultural Insurance has a significant role in promoting the improvement of agricultural production. Therefore, it is feasible to use agricultural insurance to develop this financial tool to improve the production level of agriculture in Anhui Province. Besides, we should further improve the modernization level of agricultural production, promote the improvement of agricultural production efficiency. Use chemical fertilizer reasonably, provide healthy and sufficient nutrition for the production of crops, increase the training for farmers, improve the level of human capital, and promote the further growth of agricultural production level in Anhui Province.

The government and insurance companies should attach great importance to the promotion and popularization of agricultural insurance, and incorporate the agrarian products with local characteristics into the coverage of agricultural insurance to develop more new types of agricultural insurance. Vigorously publicize the agricultural insurance policy and establish the credit file of farmers. The government, regulatory agencies, and insurance companies should develop cooperative relations, increase the propaganda of agrarian insurance policies, and improve the honesty awareness of farmers through the establishment of credit files. Establish an effective disaster prevention and reduction mechanism to enhance the effectiveness of disaster prevention and reduction. Increase investment in agricultural science and technology, cultivate professionals in the agricultural field, encourage the development and promotion of new agricultural products, increase the amount of capital invested in agricultural science and technology. The government gives consistent policy support, cultivate modern planting and breeding techniques, and build an advanced management mechanism. Promote the transfer of land, realize large-scale production of agriculture, concentrate area to massive planters, and achieve large-scale development of the agricultural output. Adopting the development model of ‘policy + commercial insurance,’ agricultural insurance has continuously transitioned from cost insurance to production insurance, and gradually improved the compensation level after agrarian insurance.

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