Farmers' Behavior and the Evolution of Agriculture Industrial Organization: Theory and the Empirical Research——Proof from "Wens group" in Guangdong Province

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Abstract: It is any particular enterprise's or organizational relationships that can be reduced to the individual relationship, realizing the internal and external equilibrium in relationship between individuals. Under distinguishing relationship between buyers and sellers strictly, a three-behavior game model between "producers" and "agent" is constructed, and its static and dynamic equilibrium is presented in this paper. Using the inner mechanism embodied in the model, the paper takes a case of "Wens Group" in Guangdong as example, explaining and analyzing the mechanism of the formation and evolution of the group, and revealing the essence of economic success, so as to prove and support the above model in experience.

Keywords: Individual Behavior; Economic Relations; Static game; Dynamic game; Game Equilibrium; Organization Evolution

1   Introduction

Generally, industrial organization refers to the organizational or market relations between enterprises within the same industry, including transaction, behavior, resource's occupancy and usage[1]. Any relationship among particular enterprises or organizations eventually could be restored to the relationship between the individuals, which should also be extended to the outside of the company or organization to realize the equilibrium between the internal and the external and promote the continuous change and evolution of industrial organization.

2   Individual differentiation and behavior model under the specific organizational institution

Within a specific industrial organization, whether it's in the same or different enterprise or organization, each player takes the different position and role[2]. Combined the effect of relevant structure and system of organization, the economic decision space chosen by each player is not consistent. So, all the participants appear differentiation: some in the position of producers, some in the position of management, some in the status of acquirer, some in the status of seller, some in the status of arbiter, some in a variety status of the above. In term of the producers, he has the optional space in the controllable input factors and volume of sale, related price, patterns of production and selling; in term of the buyer, he has the optional space in its controllable purchase quantity, price and patterns of purchase. Here, in order to facilitate the analysis of the related behavior in industrial organization, we refer to the former as"producer", the latter as the "agent" (agent to acquisition in favor of the organization or enterprise to which it belongs), accordingly, a behavior model between "producers" and "agent" constructed. According to the basic spirit of Baker's theory[3] and farmer behavior theory[4], it can be designed a three-players game model to describe the above behavior.

2.1 A mathematical model

In order to make an analysis in simple, it is assumed that:

1. There is only one producer (A) and two agents (D_1, D_2), and the two agents may belong to the same enterprise or organization, also may belong to two different enterprises or organizations;

2. The output of producer is the function of labor (L), capital (K) and technology (E) , namely, $Q = f(L, K, E)$, adequate in producer's own labor, shortage in funds, and the market price of labor is W;

3. Agents D_1 and D_2 provide different capital price (P_{K_1}, P_{K_2}), technology (P_{E_1}, P_{E_2}) and the purchase price (P_{A_1}, P_{A_2}) respectively to the producers, and each having different processing cost (C_1, C_2) and sales price (P_1, P_2);

4. The producer can only choose one provider of capital and one provider of technology;

5. There are three choices in technology for the producer: proprietary technology (E_0) whose price is zero($P_{E_0} = 0$; $P_{E_1}, P_{E_2} \neq 0$), the technology (E_1, E_2) afforded by agents D_1 and D_2;

6. The communication cost ($J_m, m = 0, 1, 2$) of producer and agents is the function of the time and income of the early stage (presented in part of the current capital);

7. All three parties are to maximize the utility of their own net income, namely, $Max.U(Y_m), m = 0, 1, 2$.

 If the utility of the net income is a increasing function of income, so:

$$Max.\, Y_m, \quad m = 0, 1, 2. \tag{1}$$

Constraints are:

$$Y_0 = (P_{A_1} \cdot Q_1 + P_{A_2} \cdot Q_2 + W \cdot L_w) - P_{K_j} \cdot K_{A_j} - P_{E_k} \cdot E_k - J_0, \quad j, k = 1, 2. \tag{2}$$

$$Q = F(K_A, L, E_m) = Q_1 + Q_2. \tag{3}$$

$$K_A = K_0 + K_{A_i}, \quad i = 1, 2. \tag{4}$$

$$K_{zy} = K_0 + K_{J_0}. \tag{5}$$

$$T_0 = L + L_w + T_{J_0}. \tag{6}$$

$$J_0 = W \cdot T_{J_0} + K_{J_0}. \tag{7}$$

$$Y_i = (P_i \cdot Q_i + P_{K_i} \cdot K_i + P_{E_i} \cdot E_i) - C_i - J_i, \quad i = 1, 2. \tag{8}$$

$$J_i = W \cdot T_{J_i} + K_{J_i}, \quad i = 1, 2. \tag{9}$$

$$K_i = K_{A_i} + K_{J_i} + C_i, \quad i = 1, 2. \tag{10}$$

Q_1, Q_2 in Formula (2) are showing respectively the quantity of products sold by agents D_1 and D_2. Formula (3) means that the capital quantity of producer is K_A, labor quantity is L, the input of technology is E_m. Formula (4) means that the total inputting capital amount of producer equals to his own inputting capital (K_0) plus the amount borrowed outside (K_{A_i}). Formula (5) means that the total own capital amount of producer is equal to his own inputting capital (K_{zy}) plus the amount used for communicating (J_0). Formula (6) means that the total labor time (T_0) is equal to his own time of producer plus the amount hired in labor market, plus time for communicating. Formula (7) and (9) are showing respectively that communication cost of producers or agent is equal to the opportunity cost of communication time plus communication cost. Formula (8) means that the agent's net income is equal to the revenue of products and factors minus manufacturing cost of the product, minus communication cost. Formula (10) means that the total capital of the agent is equal to the loan plus the capital for communicating and product processing.

2.2   The Equilibrium of three-player game

Under the condition of static equilibrium, according to formula (2), the producer has four choices in combinations of capital and technology in total, accordingly in four kinds of net income. Conversely, the agents D_1 and D_2 also have four kinds of net income. The relations among them can be presented in table 1, static game matrix table of producer and agents.

If there is a Nash equilibrium in the process of static game among producer and agent D_1 and agent D_2 (seeing Table 1), the transaction may occur; otherwise, the transaction could not. The general rule of solving static Nash equilibrium is that each dealer try to maximize his profit, the marginal revenue of producer through selling his products and labor equaling the sum of the marginal production cost and the marginal social cost, marginal revenue of agents through selling processed goods and production factors equaling the sum of marginal processing cost and marginal communication cost. The Nash equilibrium of the three players will depend on their respective choice of earning ways and the size of the benefits.

Table 1: Static game matrix table of producer and agents

		Agent D_1	Agent D_2
Producer	The first combination	$Y_0^{<1>}, Y_1^{<1>}$	$Y_0^{<1>}, Y_2^{<1>}$
	The second combination	$Y_0^{<2>}, Y_1^{<2>}$	$Y_0^{<2>}, Y_2^{<2>}$
	The third combination	$Y_0^{<3>}, Y_1^{<3>}$	$Y_0^{<3>}, Y_2^{<3>}$
	The fourth combination	$Y_0^{<4>}, Y_1^{<4>}$	$Y_0^{<4>}, Y_2^{<4>}$

The value of each symbol in the Table represents as following:

$$Y_0^{<1>} = (P_{A_1} \cdot Q_1 + P_{A_2} \cdot Q_2 + W \cdot L_w) - P_{K_1} \cdot K_{A_1} - P_{E_1} \cdot E_1 - J_0,$$

$$Y_1^{<1>} = (P_1 \cdot Q_1 + P_{K_1} \cdot K_1 + P_{E_1} \cdot E_1) - C_1 - J_1, Y_2^{<1>} = P_2 \cdot Q_2 - C_2 - J_2;$$

$$Y_0^{<2>} = (P_{A_1} \cdot Q_1 + P_{A_2} \cdot Q_2 + W \cdot L_w) - P_{K_1} \cdot K_{A_1} - P_{E_2} \cdot E_2 - J_0,$$

$$Y_1^{<2>} = (P_1 \cdot Q_1 + P_{K_1} \cdot K_1) - C_1 - J_1, Y_2^{<2>} = (P_2 \cdot Q_2 + P_{E_2} \cdot E_2) - C_2 - J_2;$$

$$Y_0^{<3>} = (P_{A_1} \cdot Q_1 + P_{A_2} \cdot Q_2 + W \cdot L_w) - P_{K_2} \cdot K_{A_2} - P_{E_1} \cdot E_1 - J_0,$$

$$Y_1^{<3>} = (P_1 \cdot Q_1 + P_{E_1} \cdot E_1) - C_1 - J_1, Y_2^{<3>} = (P_2 \cdot Q_2 + P_{K_2} \cdot K_2) - C_2 - J_2;$$

$$Y_0^{<4>} = (P_{A_1} \cdot Q_1 + P_{A_2} \cdot Q_2 + W \cdot L_w) - P_{K_2} \cdot K_{A_2} - P_{E_2} \cdot E_2 - J_0,$$

$$Y_1^{<4>} = P_1 \cdot Q_1 - C_1 - J_1, Y_2^{<4>} = (P_2 \cdot Q_2 + P_{K_2} \cdot K_2 + P_{E_2} \cdot E_2) - C_2 - J_2.$$

If a dynamic game of three players is considered, for example, assumed that the market situation is a probability function, the above static game model is shifted into a dynamic game model, in which the income matrix contains a probability function of market sentiment, and there may be a Nash equilibrium or Bayesian equilibrium in the income matrix under the condition of dynamic game model.

Assuming the market prosperity degree is t, the value of the symbol represented in Table 1 can be adjusted as following:

$$Y_0^{<1>} = (P_{A_1} \cdot Q_1 + P_{A_2} \cdot Q_2 + W \cdot L_w) \cdot t - P_{K_1} \cdot K_{A_1} - P_{E_1} \cdot E_1 - J_0,$$

$$Y_1^{<1>} = (P_1 \cdot Q_1 + P_{K_1} \cdot K_1 + P_{E_1} \cdot E_1) \cdot t - C_1 - J_1, Y_2^{<1>} = P_2 \cdot Q_2 \cdot t - C_2 - J_2;$$

$$Y_0^{<2>} = (P_{A_1} \cdot Q_1 + P_{A_2} \cdot Q_2 + W \cdot L_w) \cdot t - P_{K_1} \cdot K_{A_1} - P_{E_2} \cdot E_2 - J_0,$$

$$Y_1^{<2>} = (P_1 \cdot Q_1 + P_{K_1} \cdot K_1) \cdot t - C_1 - J_1, Y_2^{<2>} = (P_2 \cdot Q_2 + P_{E_2} \cdot E_2) \cdot t - C_2 - J_2;$$

$$Y_0^{<3>} = (P_{A_1} \cdot Q_1 + P_{A_2} \cdot Q_2 + W \cdot L_w) \cdot t - P_{K_2} \cdot K_{A_2} - P_{E_1} \cdot E_1 - J_0,$$

$$Y_1^{<3>} = (P_1 \cdot Q_1 + P_{E_1} \cdot E_1) \cdot t - C_1 - J_1, Y_2^{<3>} = (P_2 \cdot Q_2 + P_{K_2} \cdot K_2) \cdot t - C_2 - J_2;$$

$$Y_0^{<4>} = (P_{A_1} \cdot Q_1 + P_{A_2} \cdot Q_2 + W \cdot L_w) \cdot t - P_{K_2} \cdot K_{A_2} - P_{E_2} \cdot E_2 - J_0,$$

$$Y_1^{<4>} = P_1 \cdot Q_1 \cdot t - C_1 - J_1, Y_2^{<4>} = (P_2 \cdot Q_2 + P_{K_2} \cdot K_2 + P_{E_2} \cdot E_2) \cdot t - C_2 - J_2.$$

Of course, more complex situations also can be considered: under different market prosperity, the prices of factors and related products are not the same, that is, price is a function of market prosperity.

$$P_{A_i} = P_{A_i}(t); \ \ P_i = P_i(t); \ \ P_{K_i} = P_{K_i}(t); \ \ P_{E_i} = P_{E_i}(t), \ \ \ i = 1, 2.$$

Bringing the above price into the corresponding formula in Table 1, we can obtain a new income matrix under dynamic game.

2.3   Expansion of the model and related explanations

Relax the various hypothesis, we can expand the explanation scope of the behavior model among producer and agents in rural industrial organization.

1. There are more than two producers and agents. Then, the model is a multi-player game model, and Nash equilibrium existing or not will depend on the interplay among them, ultimately depending on each one's cost-revenue function.

2. Individual has more than one in identification. On the one hand, the different identifications are needed to be decomposed further, calculating their cost - revenue function; on the other hand, all kinds of the costs and benefits should be considered jointly, calculating their resource allocation. This is equivalent to a production and management association acted by multiple individuals.

3. The scale of production is so enormous that need to hire labor outside. This needs to consider the scale problem of optimal labor inputs, simply adding the labor cost and deducting the net income gotten from the sale of additional labor in the producer's income formula of the model.

4. Producers can sell his technology and lend out his capital. At this time, it needs to add the income of technology and capital in the producer's income formula.

5. There are different network of relationship established by different producers and agents. This is a problem of cumulative communication resources or communication cost, in which there are existing different advantages in different trades, showing that behavior person has the lower marginal transaction or communication cost in his advantage transactions.

6. After a certain income, the utility of net income is no longer an increasing function of net income. At this time, the individual will act in a stable income level that can give maximum satisfaction, namely, seek the minimum input of resources in a given income level. This is another side of the same problem that seeking to maximize revenue with a given resource, unchanged in essential.

7. Individual utility depends not only on income. At this time, behavior individuals will choose a basket among income and other factors, determining the specific or optimal level of income according to the optimal utility principle and then finding the minimum input of resources.

In additional, it can also consider the changes in the structure of the market of specific industrial organization, in the behavior rules of enterprise or organization, in the cumulative relationship of personal behavior state. While the model of the revenue and costs will therefore be adjusted, eventually it can be represented in the new cost-benefit relationship of t he individual behaviors in the model.

The basic spirit of the producers and the agent behavior model is: (1)the economic decision space of the individual is decided by a certain industrial specific organizational rules and the individual's cumulative resources; (2)because of the incomplete information is endogenous in the decision space, thus the behavior between individuals is endogenous as incomplete information game; (3)each individual will do his best to realize the respective optimal utility through the exchange of resources and energy, and in this process maybe generates the Nash equilibrium.

3   Individual behavior and the evolution of industrial organization: "Wens group" as an example

In the real world, farmers or families can form a variety of loose or tight union in production or sales through various institutional arrangements. The alliance will inevitably be affected by the state of the formed industrial organization, and impact on the existing state of industrial organization, which will affect the farmers' or families' controllable economic decision space. In the following analysis, the farmers can be regarded as producers, while agricultural production organization can be thought of as agent A, the other purchaser or market out of the organization as agent B. This section will offer a case to do a specific analysis: under the specific organizational system arrangement, how farmers or families do choose their own optimal behavior as well as the specific mechanism of the evolution of industrial organization.

3.1   Introduction of the case

The case selected in this paper is a typical agricultural industry organization in Guangdong province– Wens food group, which was established in 1983, located in the XinXingXian. The predecessor of Wens group was a private chicken farm in Zhule town, has been developed into an integration enterprise group insist of a set of agriculture, industry, scientific research, trade firms from a small farm originally for operation with farmers and families or households after 30 years . And the company implements the joint stock cooperative system in internal and provides seed, feed, drugs, technical advice and procurement services in external.* In 2008, all the farmers in the group got profit at 1.36 billion yuan, 34000yuan in average household. By the end of 2013, there are a total number of 54600 peasant households in cooperation with the company. Cooperative farmers received up to 3.807 billion yuan (including all kinds of subsidies from company) after deducting material cost of seedlings, feed and animal health products, 69200 yuan in average household. In 2013, the group sold 848 million chickens, 10.13 million pigs, 14.72 million ducks, total sales income 35.2 billion yuan. And the group has built more than 160 integrated companies among 23 provinces (municipalities and autonomous regions).

Initially, Wing group set a "joint business fixed in linkages" with farmers. Particular way was: the company signed a contract with professional farmers, and established a "four unified services" file for every family. Each family paid for 5 yuan as the production cost to the company in advance when he reared a chicken, while company provided four aspects of service in unified chicken seedlings, feed, epidemic prevention drugs, technical guidance in accordance with the provisions. The data of farmers' expenditures was imputed into the computer by the company, and farmers can query them at any time, gotten regular invoicing with more retreated and less filled. At the time, accounting listed in company was: a chicken weighed 1.5 kg was sold 10 yuan in the market, and profit distribution of each chicken after deducting the cost of production and sales, 3 yuan surplus, was that farmers kept $1.5 \sim 1.8$ yuan while the company kept $1.2 \sim 1.5$ yuan. If the poultry market returned on the jump, the company still acquired product on the floor price to the farmers, loss part of which was subsided by other comprehensive income, such as chicken seedlings, feed and etc., so as to ensuring stable income of farmers. The company balanced its accounting through integrated management, although it transferred the benefit to farmers.

Later, the group implemented the joint stock cooperative system in the internal, only 7 families, 8 strands at the beginning, similar to the partnership. With the development of production and the increase of the non-shareholder workers, on the basis of products liquidation and assets accounting, chicken farms reformed shareholder with labor as the unit from the household, and became a full shareholders enterprises. Until to 1989, the firm released the internal stock, converting workers' accumulation and capital into shares to individuals as well as offering free subscription of new shares to the worker, thus the capital past only on account embodied in the form of a negotiable instrument and can flowing freely in the internal. In terms of distribution, half of the annual net income was distributed according to work, and another half for stock dividends but no cash (20% of bonus can be changed into cash in order to take care of the workers' need, started in 1994).

3.2   The static game equilibrium and the evolution of industrial organization

According to the above data, at the beginning of the enterprise chicken farmers can have three options: signing a contract with the group and selling products to the enterprise(SC&S), signing a contract with the group but not to sell products to the enterprise(SC&NS), producing and selling products independently(P&S). While Wins group also has three options:

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*The main data of the case are quoted from *Agricultural industrial organization: evolution, comparison, and innovation*, Luo Biliang, Li Kongyue, Wang Jingan. Beijing: China economic publishing house, 2002:290.

signing a contract with the farmers and buying products from the farmers(SC&B), signing a contract with the farmers but not to buy products from the farmers(SC&NB), producing and selling products independently(P&S).

According to the above case, a revenue matrix under static game is designed to present the relationship between the group and farmers in cooperation (assumed that the net revenue is 0 under the condition of poor market), showed in Table 2, the net revenue per chicken matrix of farmers and enterprises under static game a static game.

Table 2: The net revenue per chicken matrix of farmers and enterprises under static game

			Firm		
			SC&B	SC&NB	P&S
Farmer	Good market	SC&S	1.5, 1.5+a	-5, a	1.5, 3
		SC&NS	3-a, a	3-a, a	3-a, 3
		P&S	3, 1.5+a	3, a	3, 3
	Poor market	SC&S	1.5, a	-5, a	-5, 0
		SC&NS	-a, a	-a, a	-a, 0
		P&S	0, a	0, a	0, 0

Description: a represents the profit of enterprises offering a variety of services to farmers signed the contract, ranging between $0 \sim 5.0$.

Analyzing the data of Table 2, we can know presumably: under the condition of good market, if a is more than 3.0, the enterprise's optimal choice would be "signing a contract with the farmers but not to buy products from the farmers (SC&NB)"; if a is less than 3.0, the enterprise's optimal choice would be " producing and selling products independently(P&S)"; and no matter what the enterprise chooses, the optimal choice of farmers would be "producing and selling products independently(P&S)". Therefore, under the condition of good market, Nash equilibrium is (P&S, P&S), the corresponding profit value is (3.0, 3.0).

Under the condition of poor market, the choice of enterprise would be "SC&B" or "SC&NB"; correspondingly the choice of farmer would be "SC&S" or "P&S". Therefore, in the poor market, the ultimate Nash equilibrium is (SC&S, SC&B), the corresponding profit value is (1.5, a).

Therefore, it is very important for the farmers and enterprises what kind of production - sales contracts should be choosed. [5] In fact, after the June 1989, because of the deeper weakness of the poultry market, the chicken could not be sold out in a good price. In order to raise the revenue of the famers, the chicken factory began to recycle the chicken from farmers in the floor price, pioneered in using comprehensive benefit to promote the circulation of products, and pioneered the mode of "company + farmers". In 1990, the chicken factory began to issue internal stock to workers, a total of 10000 papers. The model "company + farmers" won the widespread recognition and support of the government at all levels, which can enhance the confidence of farmers into cooperating, strengthen the company's production and operation, help company to expand the scale, and ensure the safety of the food's supply at the same time, reducing the production cost of the companies effectively and enhancing the competitiveness of the company[6]. This is the deeper reason and the general process that the model of "company + peasant household" could be formed[7-8]. The result of this system actually reflects the Nash equilibrium under the poor market[9].

3.3   The dynamic game equilibrium and the evolution of industrial organization

Considering the case of the Nash equilibrium of the dynamic game, assuming that the probability of market in good condition is t, we can get the Table 3, the net revenue per chicken matrix of farmers and enterprises under dynamic game. From Table 3, we can know whether the Nash equilibrium of game between the farmers and the enterprise exists or not and what balanced choice combination is depends on the profit," a", and the probability of a good market, "t". Under the condition of bad market, the market competition intense, such as $t = 0.4$, the Nash equilibrium of non-cooperative game is (P&S, P&S). If farmers and enterprise want to maintain the alliance of production and sale, namely

the cooperative game, the profit that the enterprise gained must be ensured large enough as much as possible to increase farmers' income distribution, while the benefits of the Nash equilibrium under the cooperative game would be bigger than the Nash equilibrium of non-cooperative game, which is required effective institutional constraints, such as strict exit mechanism for farmers, reasonable income distribution mechanism, effective aversion mechanism from market risk, etc.

Table 3: The net revenue per chicken matrix of farmers and enterprises under dynamic game

| | | Firm | | |
		SC&B	SC&NB	P&S
Farmer	SC&S	$1.5, 1.5t + a$	$-5, a$	$1.5t$-a, $3t$
	SC&NS	$3t - a, a$	$3t - a, a$	$3t - a, 3t$
	P&S	$3t, 1.5t + a$	$3t, a$	$3t, 3t$

In fact, it is in these aspects of reform that Wens group do later. First, Wens group set up a sales cooperation, conducting "membership for consumer", and then upgraded to form the "company + farmers" mode, which ensured the cooperative game equilibrium between the seller and the buyer to a certain extent. Therefore, the traditional agricultural cooperation organization comply to upgrade to the senior form of joint-stock company[10]. Through this model, Wens group encouraged customer to sell its products to society, raising the market share so as to further improve the company's whole profit and the income of farmers, and create a good economic benefit and social benefit. On December 30, 2012, Wens group successfully transformed into Guangdong Wens food group co., LTD. After the reform, Wens group has changed from loose alliance of production and sales to close joint-stock enterprise alliance, making its alliance with the farmer's production and sales continue to exist and run down.

4   Conclusions and countermeasures

To sum up, the following conclusion can be drawn:

First, for any particular firm or organization, the relationship between the enterprises or organizations eventually can be restored to the relationship between the individual and individual; Various relationships between them are subject to a particular organization system arrangement within the industry, which also includes all kinds of relationship such as transaction, conduction, usage of resource and also are extended to the outside of the company or organization, realizing the internal and external equilibrium of personal relationships.

Second, within a specific industrial organization, whether it's in the same enterprise or organization or in different two enterprises or organizations, each player plays different position and role. Combined with the influence of relevant organizational structure and system, each economic decision space individual can choose is not in the same. So, all the participants appear differential. The interaction between individuals becomes the power of the evolution of specific industrial organization, by which the rules of formation is the foundation of the system of industrial organization.

Third, we can construct a game model of three players in considering the "producers" and "agents" mutual behavior. The basic spirit of the model is: economic decision space is decided by a certain industry specific organizational rules and accumulation of resources of the individual, in which the game behavior is an endogenous incomplete information game, likely coming out the Nash equilibrium. Through the Wens group's case, this paper analyzes the existing condition of Nash equilibrium under static game and dynamic game and evolution process, demonstrating the explanatory power of the above model for the agricultural industry organizational evolution.

In increasing the income of farmers and promoting the formation and healthy development of agricultural industrial organization, the above analysis also allows us to obtain some beneficial enlightenment:

First, government should increase investment into the rural human capital, and make the poor farmers and regional get rid of poverty trap. In order to promote the living standards of rural residents continuously to improve and develop effective rural industrial organizations, the state must increase the investment in rural human capital.

Second, government should optimize the innovation system of agricultural technology, making the farmer improve agricultural production technology[11]. In order to realize the function of innovation system, state should establish enterprise system and improve the government system of agricultural research and extension, clearly defining the government's role and constructing agricultural extension network, etc [12].

Third, government should speed up the organizational innovation of agricultural industry, promoting the industrialized operation of agriculture[13]. State should concentrate on cultivating and developing a group of leading enterprises able to pull the agricultural industry upgrading with radiating and driving ability in regional economic development, and promote the development of the agricultural products processing and modern logistics industry [14]. State should take market-oriented, developing agricultural industry and rural economy that market needs, and promote agricultural industrialization through the economic means and ways, improving the level of enterprises management and supporting the development of leading enterprises with agricultural industrialization, etc.

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