



Research on the Construction of Agricultural Risk Compensation Fund in Dalian based on the Principle of Tax Benefit

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Abstract

For a long time, agricultural risk has been the main contradiction and prominent problem that restricts the development of rural economy. This paper constructs the Agricultural Risk Compensation Fund in Dalian on the basis of the principle of tax benefit, the social public attribute of Agricultural Risk Compensation Fund is put forward systematically. Individual accounts and social pool accounts shall be set up respectively, and the individual accounts shall be paid by the insured farmers in proportion to the area of cultivation and cultivation, the social pooling account shall be supplemented by the additional tax levied by the local finance on the Agricultural Risk Compensation Fund. The innovation of this paper is mainly embodied in the operation and implementation of the Agricultural Risk Compensation Fund under the principle of tax benefit, and puts forward the special financing and investment plans under the budget deficit and budget surplus respectively.

Keywords: Tax Benefit; Dalian City; Agricultural risk; Compensation Fund

1. INTRODUCTION

Unlike the mechanization of large-scale farm operations in countries in Europe and the United States, agricultural production is dominated by the decentralized household system, in China, poor and backward rural areas do not yet have the conditions for futures and options trading of agricultural products, the weak farmers can not afford the high cost of commercial insurance, in addition, commercial insurance companies in order to avoid business risk, also unwilling to undertake agricultural catastrophe risk. Agricultural risk management can not simply copy foreign experience [1], but should combine the causes and characteristics of agricultural risk in Dalian Dalian to build local agricultural risk compensation fund, the operation, management and management of Agricultural Risk Compensation Fund need to be studied urgently.

2. NECESSITY AND PRACTICAL SIGNIFICANCE OF CONSTRUCTING AGRICULTURAL RISK COMPENSATION FUND IN DALIAN

2.1. Social ublic attribute of agricultural risk compensation fund

The Agricultural Risk Compensation Fund [2] refers to a kind of social security fund established for the loss of agricultural production caused by natural disasters, which establishes corresponding individual accounts and social pooling accounts according to the administrative measures of social medical insurance. The individual account of the Agricultural Risk Compensation Fund shall be paid by the insured farmers according to a certain proportion of the planting area and the breeding area. When agricultural production suffers natural disasters such as drought, flood, storm, rainstorm, Lightning Strike, hail, frost, pestilence, etc. , in accordance with the approved economic losses, the payment is made by the individual account of the Agricultural Risk Compensation Fund and the Social Pool Account.

2.2. The necessity of establishing agricultural risk compensation fund in Dalian

If the farmers' income can not be guaranteed effectively, they will lose the enthusiasm of agricultural production. Abandoning farming and going out for work will lead to the double contradiction of the loss of rural labor force and the increase of the price of agricultural products. For example, there was an outbreak of African swine fever in rural areas of Dalian, in October 2018. In order to effectively control the spread and spread of the epidemic, health and epidemic prevention authorities disposed of live pigs in high-risk areas, however, the economic compensation for pig farmers is very limited, so pig raising is equivalent to losing money. By 2019, the expected impact of the African swine fever epidemic, a large number of farmers to abandon pig breeding, go out to work, leading to a surge in the market price of pork, up 97.0% Urban laid-off workers can receive unemployment benefits, but the farmer suffers the natural disaster risk loss actually not to obtain the equal social security[3].

2.3. The practical significance of constructing agricultural risk compensation fund in Dalian

Dalian municipal Party committee and government of the Communist Party of China put forward the implementation of strengthening the rural medical and health and social security capabilities, and moderately improving the basic living standards of the rural minimum living allowance and special poverty relief, on March 23, 2020. The new rural cooperative medical system, rural social pension system and rural minimum living security system have been widely implemented in rural areas of Dalian. However, the risk loss of farmers caused by natural disasters has not been included in the social security system. The farming production in rural areas will be threatened by drought, storm, frost, hail, soil erosion and insect pests at any time, and the breeding production will be attacked by the plague at any time[4].

3. OPERATION AND IMPLEMENTATION OF AGRICULTURAL RISK COMPENSATION FUND UNDER THE PRINCIPLE OF TAX BENEFIT

3.1. On the principle of tax benefit

The principle of tax benefit comes from the principle of equivalent exchange in market transactions, which takes "how much benefit" as the standard of tax burden distribution, that is, economic entities have tax liability because they benefit from the "policy dividend" brought by government budget expenditure. The level of tax burden is directly proportional to the taxpayer's "benefit"[5]. Those who benefit more bear more tax burden, while those who benefit less bear less tax burden. On the one hand, it can balance the income redistribution among the microeconomic subjects; On the other hand,

Pareto improvement among microeconomic subjects should be realized.

3.2. Application of tax benefit principle in agricultural risk compensation fund

When the risk of natural disasters sweeps agricultural production, the government should allocate funds to rural disaster areas to help agricultural production return to normal, which lays a theoretical basis for the collection of agricultural risk fund[6]. For the agricultural producers who do not have the ability to pay taxes, an individual account of the agricultural risk compensation fund should be established, and the payment of the individual account should be collected according to a certain proportion of the planting or breeding area. For the subjects who have the ability to pay taxes, we should establish a unified social pooling account, whose collection basis is the value-added tax payable of the transaction subject in the current period, because the value-added tax payable in the current period reflects the benefit degree of the transaction subject.

According to the proportion of 8% of the individual account of social medical insurance and 22% of the social pooling account, the agricultural risk compensation fund is shared, which means that the social pooling part of the agricultural risk compensation fund will have a deficit or surplus. Budget deficit is a difficult problem in the operation and implementation of agricultural risk compensation fund. Especially in the trend of normalization of epidemic prevention and control in 2020, the budget revenue and expenditure of Dalian in the first three quarters continues to decline in table 1 and in table 2, which means that the government should establish special financing for the agricultural risk compensation fund. In the budget surplus part, we should maintain and increase the value of funds, and use investment and financial management tools to resist the purchasing power risk caused by inflation and rising prices.

TABLE 1. GENERAL PUBLIC BUDGET REVENUE DATA FOR DALIAN CITY

Date	Budget revenue	
	Absolute number number (CNY100mn)	Relative number (%)
Jan. to Mar., 2019	194.4	6.0
Jan. to Jun., 2019	385.6	1.6
Jan. to Sep., 2019	558.0	0.4
Jan. to Mar., 2020	145.5	-25.1

Jan. to Jun., 2020 322.6 -16.3

Jan. to Sep., 2020 536.9 -3.8

TABLE 2. GENERAL PUBLIC BUDGET EXPENDITURE DATA FOR DALIAN CITY

Date	Budget expenditure Absolute number (CNY100mn)	Relative number (%)
Jan. to Mar., 2019	262.8	11.4
Jan. to Jun., 2019	508.7	5.2
Jan. to Sep., 2019	718.8	7.9
Jan. to Mar., 2020	191.2	-27.3
Jan. to Jun., 2020	423.3	-16.8
Jan. to Sep., 2020	658.1	-8.4

3.3. Special financing scheme and operation implementation under budget deficit

The problem of budget deficit faced by agricultural risk compensation fund is that the agricultural risk compensation fund, as one of the VAT surcharges, is not enough to meet the needs of social overall planning and supporting funds, and this budget gap needs to be paid by special financing. According to China's current budget law, unless otherwise stipulated by laws and administrative regulations, local governments are not allowed to issue bonds without authorization. Therefore, the special financing scheme under the budget deficit can only be transferred to local government loans. The local

government guarantees the project loan risk, and commercial banks or Agricultural Development Bank of China give credit support to the agricultural risk budget management center.

4. EVALUATION OF AGRICULTURAL RISK COMPENSATION FUND UNDER THE PRINCIPLE OF TAX BENEFIT

4.1. Evaluation of agricultural risk compensation fund at the initial stage

In order to encourage agricultural production activities, individual accounts should be paid according to the minimum standard of land use tax of CNY0.6 per square meter for counties and towns. Agricultural risk compensation fund will transfer tax burden with the circulation of agricultural products, and ultimately, the majority of agricultural consumers will bear the cost. Based on the national policy of protecting people's livelihood, the comprehensive collection rate of agricultural risk compensation fund should be 1%, and the processors and middlemen of primary agricultural products should pay 1% of the value-added tax to the social pooling account of agricultural risk compensation fund. In the initial stage of the establishment of agricultural risk compensation fund, due to the relative scarcity of individual account balance and social overall account balance of agricultural producers, the agricultural risk compensation fund will be in the state of budget deficit first.

The probability of agricultural risk accidents is random and uncertain, and its probability distribution shows an irregular trajectory with time. moreover, different regions and different seasons have different economic losses. In order to ensure a virtuous cycle of agricultural production, we should make up for the budget deficit of agricultural risk compensation fund through agricultural risk government guidance fund in advance. The social pooling account of the agricultural risk compensation fund is listed as the master fund of the government guided fund, and the fund management company is entrusted to raise capital from the private sector, and the future social pooling account funds are used to repay the principal and interest of investors, in the figure 1.

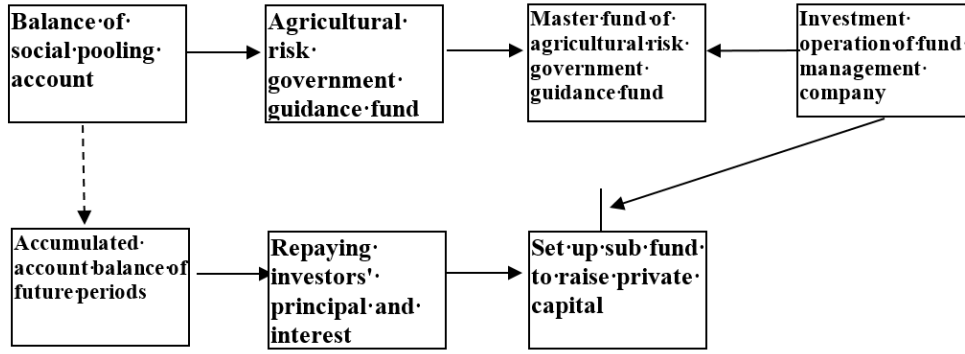


Figure 1. Operation process of agricultural risk government guiding fund.

4.2. Evaluation of the maturity period of agricultural risk compensation fund

With the continuous operation of agricultural risk compensation fund, the accumulated balance of individual account and social overall account of agricultural producers will be on the rise. In this period, if the probability of agricultural risk accidents is low, it will form a large number of idle funds. In the context of inflation expectations, idle funds should be effectively

managed to maintain and increase value. The individual account of agricultural risk compensation fund needs to obtain the consent of agricultural producers and entrust the fund management company to invest. The social pooling account of agricultural risk compensation fund is invested and operated by the fund management company entrusted by the local financial department. The fund management company chooses the corresponding investment and financial management projects according to the expected investment income and risk control objectives, in the figure 2.

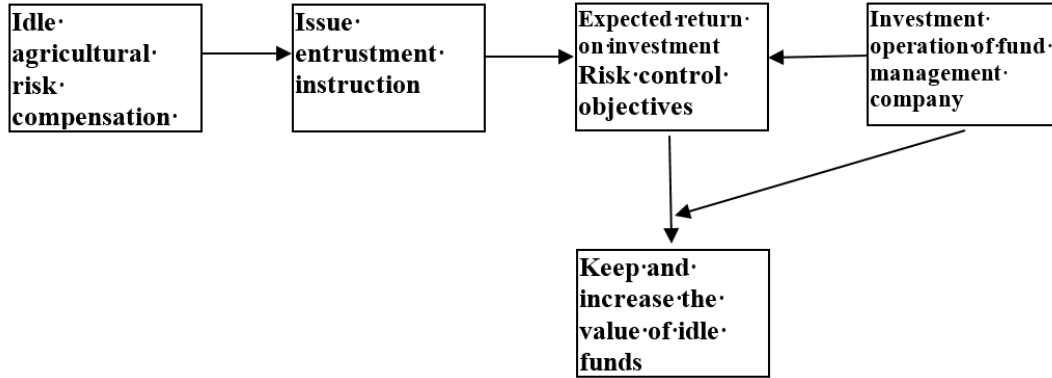


Figure 2. Investment operation process of agricultural risk compensation fund

Due to the randomness and uncertainty of agricultural risk accidents, and the economic loss caused by each accident is difficult to predict, the investment operation of agricultural risk compensation fund is limited to the projects with stable income and strong liquidity. According to Markowitz (1952) portfolio theory, this paper uses mean and variance to measure the expected return and risk of portfolio. The expected return of the portfolio is the weighted average of the expected return of each security, and the weight is the corresponding investment proportion. Risk is the variance of portfolio return, and its standard deviation reflects the volatility.

The optimal portfolio can be divided into two levels. One is to maximize the expected return under the given risk level; The other is to minimize the portfolio risk under the given expected return. In equation 1, the Lagrange method of differential equation is used to solve the problem. Under the limited conditions, the optimal

investment proportion is obtained when the portfolio risk is the lowest. In equation 2, according to the optimal investment weight of each asset in the portfolio, the set of minimum variance solutions under different expected return levels is obtained. The set of minimum variance solutions is the effective portfolio of securities investment. According to the risk preference and expected return of investors, the best portfolio is selected.

$$\min \delta^2(r_p) = \sum \sum w_i w_j cov(r_i, r_j) \quad (1)$$

$$E(r_p) = \sum w_i r_i \quad (2)$$

5. CONCLUSIONS

5.1. Social insurance is the inevitable choice of agricultural risk loss

As of 2018, China's arable land area is about 1432960

square kilometers, ranking third in the world, and the problem of agricultural risk compensation needs to be studied urgently. The primary industry agriculture is a typical high-risk industry. Agricultural production itself is vulnerable to natural disasters, and the risk loss is large in scale and high in frequency. Different from other types of risks, agricultural risks are often caused by force majeure, so it is impossible to estimate the economic losses caused by each risk in advance. Commercial insurance is a kind of for-profit insurance. Generally speaking, the occurrence of liability accident is a small probability event, and the economic loss caused by risk accident can be estimated in advance. Therefore, agricultural risk does not have the preconditions required by commercial insurance, and social insurance is the inevitable choice of agricultural risk.

5.2. Agricultural risk compensation fund is the foundation of social insurance

Agricultural risk compensation fund is a kind of social security fund set up for agricultural production losses caused by natural disasters. Corresponding individual accounts and social overall accounts should be established respectively. When agricultural production suffers from risk and disaster losses, it should be paid by the individual account of agricultural risk compensation fund and the social coordination account. According to the minimum standard of land use tax of 0.6 yuan per square meter in county and town, agricultural producers turn in the individual account of agricultural risk compensation fund, and the ownership of this part of the fund belongs to the individual agricultural producers. The processors and middlemen of primary agricultural products shall pay the social integrated account of the agricultural risk compensation fund according to 1% of the value-added tax (from the low applicable tax rate).

5.3. Agricultural risk compensation fund should carry out financing management and investment management

In the initial stage of the establishment of agricultural risk compensation fund, due to the relative scarcity of individual account balance and social overall account balance of agricultural producers, the agricultural risk compensation fund will be in the state of budget deficit first. If there is an agricultural risk accident within this period, some agricultural risk losses will not be fully compensated. In order to ensure a virtuous cycle of agricultural production, we should make up for the budget deficit of agricultural risk compensation fund through agricultural risk government guidance fund in advance. With the continuous operation of agricultural risk compensation fund, the accumulated balance of individual account and social overall account of agricultural producers will be on the rise. In this period, if the probability of agricultural risk accidents is low, it

will form a large number of idle funds. The idle agricultural risk compensation fund should be invested and operated by the fund management company entrusted by the local financial department. Under the background of inflation expectation, the idle funds can be effectively preserved and increased.

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