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# *The Performance Prediction of Agricultural Cooperative Investment Fund Before and after Based on Improved Neural Network Algorithm*

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***Keywords:*** Neural Network Algorithm, Genetic Algorithm, Agricultural Cooperatives, Investment Fund Performance Forecast

***Abstract:*** Under the national policy support, the agricultural cooperative investment fund scale increases year by year, issued by the rapid growth fund investors, how can accurately evaluating fund and forecast development trend has been praised by the attention of people, establish fund of a relatively high accuracy analysis model and its application system, the fund investors and the fund management organ has important practical value. Fund and stock are different, it is a variety of stocks or portfolio investment combination, its asset allocation, market trend performance, fund manager's stock selection and timing ability, directly affect the change of fund net value. Therefore, this paper objectively evaluated the style of the fund from the historical net value of the fund, combined with the change trend of stock index and bond index, and used data mining algorithms such as clustering and neural network to infer its future returns and potential risks. The experimental results show that: from the overall score of the investment income ability, the average score of the cooperatives is 69.1. Among the 44 sample farmer cooperatives, 8 (19%) have the comprehensive score lower than 60. There were 15 cooperatives with qualified comprehensive scores, accounting for 32%; There were 13, or 28%, with medium overall scores. Good 10, 21%; Excellent 0. The main reason is that the cooperatives are still in the early stage of development. Although the polarization of the investment income ability of the cooperatives is not obvious, the overall investment income ability of the cooperatives is at a level below the average level.

## 1. Introduction

In the 1980 s, under the spring tide of reform and opening to the outside of the socialist market

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economic development, rural small-scale production in the socialist market, farmers' professional cooperatives in China (hereinafter referred to as cooperative) arises at the historic moment, made outstanding contribution to both the effective docking, this also prove that cooperatives have good development space. After entering the 21st century, China's cooperatives have attracted more attention and received various policy support from the government. Since then, cooperatives have developed rapidly. By the end of 2013, the number of registered legal cooperatives nationwide has increased by 43% compared with that of 2012, to nearly 1 million. Among them, there are more than 100,000 model cooperatives in counties, cities, provinces and at the national level, accounting for over 10% of the total number. In addition, the situation of mutual competition, mutual promotion and common development of cooperatives in agriculture, forestry, supply and marketing and other fields has added vitality to the construction of new rural areas in China. Agricultural cooperatives have become an important modern agricultural operation subject in China, playing an important role in improving the degree of agricultural organization, establishing the dominant position of farmers in the market, improving the overall quality of agriculture, transforming and innovating agricultural scientific and technological achievements, increasing farmers' income and innovating rural social management mechanism. Although the concept of family farm has set off a boom in the development of family farm in rural areas, the cooperative is still an important force in the rural reform and development because it is still in the unstable primary stage of exploration. Its importance is not only tested in reality, but also fully recognized by the government and society.

Investment fund, start late in our country. At present, it is still in the initial stage, but the development speed is fast, and it has played an important role in the operation of the capital market [1]. With the increasing number and types of funds in China, how to select and predict the performance of funds has become an important research topic [2]. The analysis and selection of funds and performance prediction are important links to promote the healthy development of the fund industry, which are of great significance to investors, fund management companies and market supervision departments [3]. Any participant in an investment fund is concerned about whether the operation of the fund can truly reflect its claimed advantages in improving returns and preventing risks [4]. For investors, by analyzing the past performance and comparing the difference between the investment effect of randomly selecting stocks and scientific selecting professional management, they can avoid the loss caused by blindly following some false information and make the right investment choice among different funds [5-6]. For fund management companies, the establishment of scientific fund selection investment model. It can find the deficiencies of the company's investment plan, scientifically evaluate the investment performance of its professional team, summarize the management experience, and improve the level of operation and management; As for the regulatory authorities, they can objectively evaluate the performance and operation of the fund by establishing a scientific and complete fund investment model system, so as to formulate or improve the regulatory rules [7].

At present, the construction of agricultural cooperatives has entered a bottleneck stage of adjusting the structure and promoting development, on which scholars at home and abroad have basically reached a consensus [8]. According to Yongcai WANG, due to the limitation of financing, most cooperatives can only engage in low-level services and operations, and only a few have sufficient economic strength to engage in the businesses aimed at increasing the added value of agricultural products [9]. As China's capital market is not developed, especially in rural areas, there is no capital market to talk about, the external financing problem has seriously restricted the development of cooperatives, mainly in the commercial loans difficult, difficult to attract investment, the lack of national financial support and other three aspects. According to the investigation of Bai Bai, the capital problem has become a common problem that restricts the development of cooperatives [10]. By participating in the guarantee pilot work, Suo Junfeng found

that the lack of collateral is only the surface of the financing difficulty of agricultural cooperatives. The deep-rooted reasons for the financing difficulty of agricultural cooperatives are firstly the inherent deficiency of the system design, and secondly the conservative risk control standard of financial institutions, namely the requirement of cooperatives according to the urban enterprise standard [11].

This paper objectively evaluates the style of the fund from the historical net value of the fund, combining with the change trend of stock index and bond index, and using data mining algorithms such as clustering and neural network, so as to infer its future returns and potential risks. The experimental results show that: from the overall score of the investment income ability, the average score of the cooperatives is 69.1. Among the 44 sample farmer cooperatives, 8 (19%) have the comprehensive score lower than 60. There were 15 cooperatives with qualified comprehensive scores, accounting for 32%; There were 13, or 28%, with medium overall scores. Good 10, 21%; Excellent 0. The main reason is that the cooperatives are still in the early stage of development. Although the polarization of the investment income ability of the cooperatives is not obvious, the overall investment income ability of the cooperatives is at a level below the average level.

## 2. Proposed Method

### 2.1. Optimized BP Neural Network Improved by Genetic Algorithm

(1) Genetic Algorithm

Genetic algorithm is a global optimization algorithm inspired by the idea of biological evolution. In essence, it is a direct search method independent of specific problems. It only needs to give the description of the objective function, starting from a group of randomly generated initial solution called "population", and searching the optimal solution of the problem from the global space. GA represents the solution of the problem as "chromosome", which is a binary coded string in the algorithm [12]. Moreover, before the genetic algorithm is implemented, a group of "chromosomes" is given, that is, the hypothetical solution. Then, these hypothesis solutions are placed in the "environment" of the problem, and according to the principle of survival of the fittest, the more adaptable "chromosomes" are selected from them for replication, and then a new generation of more adaptable "chromosomes" is generated through crossover. In this way, the evolution from generation to generation will eventually converge to the most suitable environment of a "chromosome", which is the optimal solution to the problem.

(2) Steps of Genetic Algorithm

Initialization: selects a group, i.e. selects a collection of strings or individuals. This initial group is the set of hypothetical solutions to the problem. Usually a set of strings or individuals is generated by random method, and the optimal solution of the problem will be obtained by the evolution of these initial hypothesis solutions.

Selection: select the next generation of individuals according to the survival of the fittest. When choosing, with fitness is choosing principle. The fitness criterion reflects the natural law of survival of the fittest and elimination of the unfit [13]. Given the objective function f, f(ib) is called the fitness of individual ib. Individuals with higher fitness had more offspring. Individuals with low fitness have fewer offspring; Even eliminated. In this way, offspring with strong adaptability to the environment are produced. In terms of problem solving, it is to choose the intermediate solution which is close to the optimal solution [14].

Crossover: for the selected individuals for reproduction, the same position of two individuals is randomly selected, and the selected position is exchanged according to the crossover probability. This process reflects the random information exchange; The aim is to produce new combinations of genes, or new individuals. When crossing, can carry out single - point crossing or multi - point

crossing.

Variation: according to the principle of gene variation in biological inheritance, the probability of variation is used to perform variation on some bits of some individuals. In the case of mutation, the corresponding bit of the string performing the mutation is inverted, that is, 1 is changed to 0, and 0 is changed to 1. The mutation probability is consistent with the case of minimal biological variation. Variation alone will not yield any benefit in the solution. However, it ensures that the algorithmic process does not produce a single population that cannot evolve. Because when all the individuals are the same, the crossover cannot produce new individuals, in this case, the mutation can only produce new individuals. In other words, variation increases the characteristics of global optimization.

Global optimal convergence: when the fitness of the optimal individual reaches a given threshold, or the fitness of the optimal individual and the fitness of the population do not rise, the iterative process of the algorithm converges and the algorithm ends. Otherwise, the new generation group obtained through selection, crossover and mutation will replace the previous generation group, and return to the second step, namely the selection operation, to continue the circular execution [15]. Represents the execution process of genetic algorithm.

(3) Improve the Execution Strategy of BP Neural Network

1) Coding Scheme

The evolutionary process of genetic algorithm is based on the coding mechanism. Coding has a great influence on the performance of genetic algorithm such as search ability and population diversity. The common encoding methods used to optimize feedforward neural network mainly include binary encoding and real encoding. By comparison, binary encoding has better search ability than real encoding, but real encoding can maintain better population diversity in mutation operation than binary encoding. For high-dimensional, continuous optimization problems, binary coding is often inconvenient. This inconvenience is mainly reflected in: first, there is a discrete error from the continuous quantity to the binary quantity. The existence of this error makes it either difficult for the genetic algorithm to find high-precision solutions, or it has to search a very long chromosome space (that is, requiring a very long code length L). Since genetic algorithm is solving combinatorial optimization problem, it is difficult to solve combinatorial optimization problem in a high dimensional space. Second, binary coding is not easy to reflect the specific knowledge of the problem (especially the information based on continuity), nor is it easy to develop genetic operators with specific knowledge of the problem, so some valuable experience accumulated in the study of some classical optimization algorithms cannot be used here. Real number encoding is regular coding, that is to say, there is one to one correspondence between the individual space and feasible solution space, and it provides not only to individual decoding rules, also provide the only encoded representation of feasible solution, its biggest advantage is suitable for high accuracy calculation, is advantageous for the large space search, cancelled as binary complex encoding and decoding process, improve the speed and precision of the algorithm convergence, to strengthen the search ability of the space, and facilitate promotion or amalgamation classical continuous optimization algorithm, the defect is only used in the continuous variable problem.

2) Group Setting and Initialization

Population is the basis of genetic algorithm evolution. To some extent, the change of population property determines the searching ability of genetic algorithm, and the convergence of genetic algorithm depends on the convergence of population. The following two aspects are analyzed from the size and diversity of the population.

Population size affects the final result of genetic optimization and the execution efficiency of genetic algorithm. For different problems, there is a different reasonable population size, which is directly related to the function property, dimension, coding accuracy, etc. It is generally believed

that for complex optimization function, the population size should not be lower than the chromosome string length. As far as the amount of computation permits, try to select larger groups to ensure their diversity and evolutionary ability. If the variable size group, initial population size should be kept in a larger value, the weights of neural network structure and the optimization design is the nature of the search in a real space process of the optimal network structure and weights, individual coding length determines the dimension of search space, and even in a neural network weights have at least a dozen or even dozens of, so the search space dimension. Therefore, based on the above discussion, we choose a group size of N= 1.5l, which can not only maintain the diversity of the group, avoid the algorithm to search for the sub-optimal solution due to premature convergence, but also avoid large-scale operation, and achieve a balance between algorithm performance and computation. Although the genetic algorithm is insensitive to the initial population, the setting of the initial population seriously affects the search speed. For example, in the optimal design of neural network, the range of initial weights is not large enough or the diversity of the initial population cannot be guaranteed. Therefore, the initialization function in the genetic algorithm cannot assign the weight to random Numbers between [-1,1] as in the gradient algorithm. In view of the prior knowledge of global minima obtained by using the gradient algorithm to train the network, the weight is assigned between [-2,2].

## 2.2. Specialized Farmer Cooperatives

Our government's definition of farmer specialized cooperatives starts from two aspects: concept and service object. Conceptually, "farmers' specialized cooperatives are mutually supportive economic organizations that, on the basis of rural household contract operation, are producers and operators of the same kind of agricultural products or providers and users of the same kind of agricultural production and operation services, voluntarily and democratically managed. In terms of service objects, "with its members as the main service objects, it provides services such as the purchase of agricultural production means, the sale, processing, transportation and storage of agricultural products, and the technology and information related to agricultural production and operation.

In recent years, the definition of specialized farmer cooperatives has been debated. Farmers' professional cooperatives to establish independence, equality, voluntariness, and not for the purpose of profit principle, think that farmers' professional co-operatives economically self-sustaining independently, on the distribution for the most part, which is based on transaction amount incurred and the equity allocation cooperative surplus, its for-profit principle applies to trading members, while on other economic independent trading is in the nature of for-profit businesses. Farmers have different degrees of closeness in economic cooperation, so the economic cooperation organizations can be divided into professional associations, joint-stock cooperatives and professional cooperatives. Professional associations are the farmers' cooperative organizations with the lowest degree of cooperation, which occupy the majority of the farmers' professional cooperative organizations. The stock cooperative is under the leadership of the leading unit to absorb part of the capital of members to establish, its stock is small, its nature is more inclined to enterprises. However, the farmer specialized cooperatives have the closest internal economic cooperation relationship, which not only realizes the complete ownership by members, but also promotes the integration process of the production and processing chain of agricultural products. In terms of development progress, the current stock of farmers' specialized cooperatives only accounts for one tenth of that of farmers' economic cooperation organizations, and they are unevenly distributed, mostly existing in more developed provinces in the eastern part of the country and have broad prospects in the future. Farmers' professional co-operatives historical position, it is the sublation of the rural household

contract responsibility system, in not touches the existing production and distribution relations, on the basis of the agricultural producers and business operators in line with the basis of voluntary, self-management and self benefits, to resist risks, improve competitiveness and achieve 'income for the purpose, its essence is a kind of system innovation. On the basis of the existing theoretical achievements, the farmer specialized cooperative is an independent economy, which has the following basic characteristics: an enterprise organization with external economic independence; Having internal non-profit cooperative organizations; All the subjects, management subjects and main service objects are members of farmer specialized cooperatives. Institutional flexibility and managerial democracy.

### 2.3. Prediction of Fund Returns and Risk Changes

Input data selection and processing of fund net value, the Shanghai composite index and shenzhen stock and bond index daily data, using the type (1) ~ (8) to calculate, get eight characteristics of each element value, then respectively by the month to transformation of the scale of the k-means clustering, get every month each cluster value coexist in the database, as one of the input data of BP neural network.

Revenue growth:

$$f_1 = \frac{1}{n}\sum_{i=1}^{n} v_i \tag{1}$$

Income change (risk):

$$f_2 = \frac{1}{n}\sum_{i=1}^{n} |w_i| \tag{2}$$

Similarity with Shanghai composite index:

$$f_3 = \frac{1}{n}\sum_{i=1}^{n} |S_i - F_i| \tag{3}$$

Similarity with Treasury bond index:

$$f_4 = \frac{1}{n}\sum_{i=1}^{n} |G_i - F_i| \tag{4}$$

Beyond the Shanghai composite index range:

$$f_5 = \frac{1}{n}\sum_{i=1}^{n} |\mathrm{F}_i - S_i| \tag{5}$$

Beyond the Treasury bond index:

$$f_6 = \frac{1}{n}\sum_{i=1}^{n} |F_i - G_i| \tag{6}$$

In order to reflect the characteristics of the fund in 6 monthly change of situation, will fund for the month and the month before on cluster value difference as input data, if it is the growth are positive, if is to reduce the present negative. Therefore, there is a total of 12 input data. In order to train the neural network and test the accuracy of prediction, there need certain training with the output data. The scaling method of the input data is to input the data of the first 6 items, cluster them into 9 groups by k-means, and then use formula (7) to scale them:

$$Ni = \frac{x_i + 1}{10} \tag{7}$$

For the last 8 input data, the k-means were used to cluster them into 9 groups, and then the difference between the current month and the last month was calculated.

$$N_i = \frac{x_i - x_{i-1} + 10}{20} \tag{8}$$

Data preprocessing of data integration, such as cleaning, building, and formatting after work, in order to be able to accurately model prediction accuracy, the processed input data into training set and testing set of 2 parts: part of the training set to train model, the other part is used to model test of the test set.

## 3. Experiments

### 3.1. Data Sources

The sample data used in this paper are from the investigation records and questionnaire results of a county agricultural cooperative. The indicators that can be directly measured and the actual data obtained from the sample survey; Data that could not be directly measured were obtained by likert scale questionnaire. Then, discuss the contents of the questionnaire with the relevant person in charge of the cooperative of the agricultural and industrial department of the county, and revise and sort out the questionnaire. Forty-seven co-operatives were randomly selected for the study. Through the sorting and screening of questionnaires, a supplementary survey was conducted on the questionnaires with incomplete information and problems, with 20 valid samples. Therefore, it can be considered that the sample data of this survey are true and valid.

### 3.2. Data Processing

The specific calculation of the comprehensive operation capacity of agricultural cooperatives is as follows:

Firstly, the function coefficient method is used to conduct dimensionless processing on the original data, so as to eliminate the influence of dimension of different indexes and not affect the score calculation. Dimensionless calculation formula:

$$d_{ij} = \frac{X_{ij} - X_{sj}}{X_{mj} - X_{sj}} \times 50 + 50 \tag{9}$$

Second, the comprehensive value of cooperatives is calculated by the standardized index value and weight. The calculation formula is:

$$A_{i\,j} = \sum_{j=1}^{13} W_j d_{ij} \tag{10}$$

Finally, they are sorted by the value of the ability of all agricultural cooperatives to earn investment income. The total score of investment earning ability is 100, which is divided into five grades. Below 59 is unqualified,60~69 is qualified,70~79 is medium,80~89 is good, and above 90 is excellent.

## 4. Discussion

### 4.1. Income Capability Analysis of Agricultural Cooperative Investment Fund

On the whole, agricultural cooperatives are not very strong investment earning capacity. The comprehensive ranking cooperatives have been established for a long time, the organizational system is relatively sound, the internal operation mechanism is relatively perfect and standardized, the operation and management personnel have accumulated certain experience in production and operation management, and they are in the leading position in terms of guarantee ability, production

and processing level and market development level of cooperatives. The practice of these cooperatives shows that with the continuous improvement of the operation system of the cooperatives, the cooperatives have the ability to strengthen the income from investment, which has an important impact on the realization of agricultural industrialization, the improvement of farmers' income and the protection of members' interests. The overall score of the investment income ability of agricultural cooperatives is shown in Figure 1.

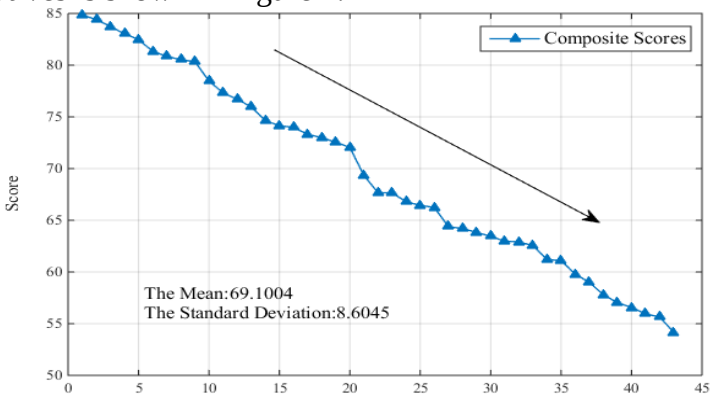


*Figure 1. Overall rating of agricultural cooperatives earning capacity on investment*

However, according to the overall score of the investment income ability, the average score of the cooperatives was 69.1. Among the 44 sample farmer cooperatives, 8 of them (19%) scored below 60. There were 15 cooperatives with qualified comprehensive scores, accounting for 32%; There were 13, or 28%, with medium overall scores. Good 10, 21%; Excellent 0. The main reason is that the cooperatives are still in the early stage of development. Although the polarization of the investment income ability of the cooperatives is not obvious, the overall investment income ability of the cooperatives is at a level below the average level. Therefore, no matter from the input, production, processing or management aspects are not perfect, the future of the ability of cooperative investment and income needs to be further improved.

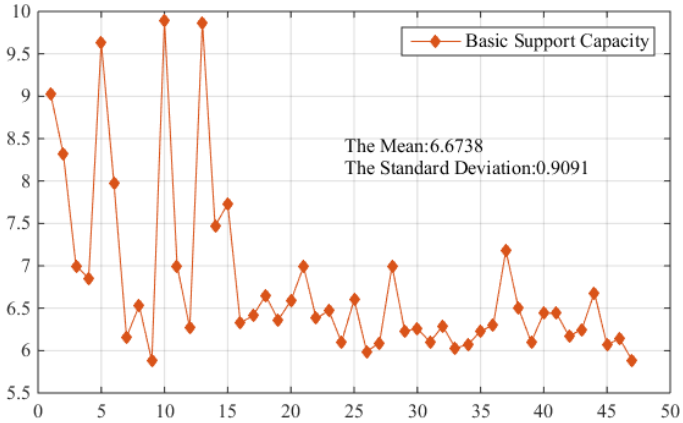


*Figure 2. Score of evaluation index of basic security capability*

The evaluation index score of basic guarantee ability is shown in Figure 2. As can be seen from the figure, the basic guarantee capacity is ok. From the score of the evaluation index of basic security ability, the average score is 6.67, the scoring rate is 57%, and the standard deviation is 0.91, with a small difference. The score data of each sub-index shows that most of the cooperatives have limited chairman capacity, which indicates that the management level of the cooperatives is not high. To be specific, the cooperative with better investment earning ability has a larger registered

capital and fixed asset investment. On the contrary, the cooperatives with less registered capital and less investment in fixed assets have relatively weak investment earning capacity. In the investigation, it is also found that the cooperatives have a great deal of arbitrariness in the investment of fixed assets, and the phenomenon of blind purchase and repeated purchase is serious, the utilization rate is low, and the waste is serious. In addition, the majority of the funds of the cooperative are used for the production of the cooperative, less for the construction of the cooperative base, technology research and development, and the investment effect is poor.

## 4.2. Analysis on Investment and Development Capacity of Agricultural Cooperatives

Agricultural cooperatives have relatively high production and processing capacities, which are shown in Figure 3. From the perspective of production capacity, the average production capacity of cooperatives is 18.49, scoring rate is 81% and standard deviation is 1.96. It shows that most of the cooperatives can provide unified purchase, standardized production and unified sales services for members, and the service ratio is relatively high. The cooperatives play an important role in the production process of agricultural products to ensure the quality of agricultural products. From the perspective of processing ability, the average score of the cooperative's processing ability is 29.14, the scoring rate is 68%, and the standard deviation is 6.27. From the sub-index, the average value of the construction of processing enterprises is 1.3, and the scoring rate is 43%, indicating that the cooperative has certain processing capacity, but the construction of processing enterprises is poor. However, the average value added ratio index is 1.83 and the scoring rate is 37%, indicating that the processing degree of agricultural products in the cooperative needs to be improved. Can be seen from the processing ability of the two indicators, cooperatives as a special kind of enterprise, is still in the early stage of development, construction and product value-added processing enterprise scale is limited, and cooperative processing capacity accounted for the largest in the ability of operation, it shows that the performanee of cooperatives is unitary, mainly concentrated in the agricultural production and marketing services, most of the cooperative is just to simple processing of agricultural products, less involved, fine processing of agricultural products, lack of competitiveness of agricultural products.

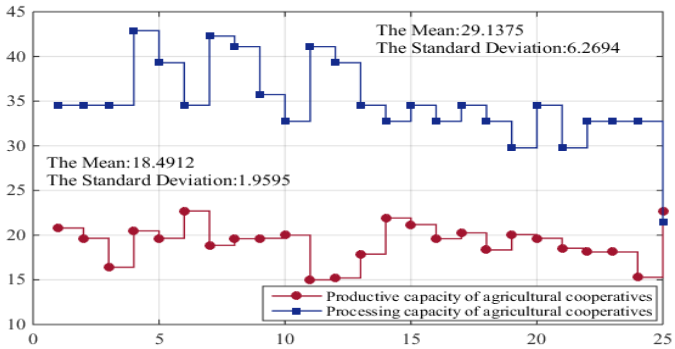


*Figure 3. Production and processing capacity index scores of agricultural cooperatives*

The index scores of agricultural cooperatives' development capacity and macro-environmental impact are shown in Figure 4. The development capacity of cooperatives is relatively low. Among the indicators of development capacity, the average value of technical training and production guidance is 2.3, and the scoring rate is 46%, indicating that cooperatives should strengthen technical training and production guidance, organize farmers to learn production technology in a unified way, and improve labor efficiency. The average index of brand degree of main products is 0.8, and the scoring rate is relatively low, only 28%. In the survey, we found that the cooperatives were better in terms of production capacity, and the main differences were in brand building and service

standardization. As an important carrier for the transformation of science and technology into production, cooperatives provide few services to farmers. Although some cooperatives provide services such as technology, processing and sales, there is no standardized service operation process and lack of quality standards. The brand construction of the cooperative is formalized, emphasizing the trademark registration rather than the development, paying no attention to the product design, production, packaging, advertising and publicity, not to mention the perfect product management mechanism support. The influence of macro environment is lower than that of other indexes, and the influence of macro environment needs to be improved. The average score of the impact capacity of the macro environment of the cooperatives was 4.0678, lower than the production and processing capacity and basic security capacity, and slightly higher than the development capacity, indicating that the growth rate of the net income of the members of the cooperatives was low, and the number of households that led the local non-member farmers to get rich together was also small. The standard deviation is 0.5931, which is lower than the other four capabilities, indicating that the difference in the impact of the macro environment of cooperatives is not large.

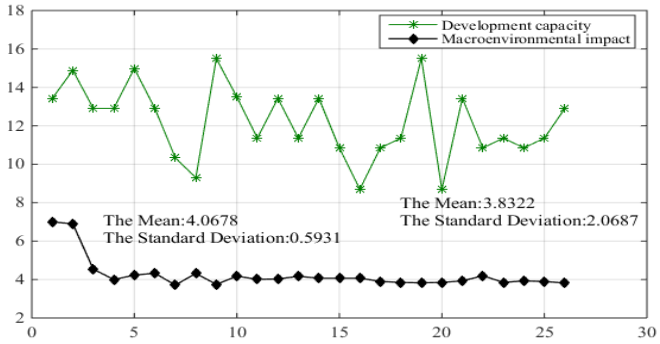


*Figure 4. Index scores for the development capacity and macro-environmental impact of agricultural cooperatives*

The measurement results of investment income ability of farmer specialized cooperatives are shown in table 1. There is no inevitable relation between the strength of the investment income ability of the cooperative and its industry type. The types of cooperatives in this research are mainly concentrated in farming, animal husbandry and other industries, and mainly sales cooperatives. Whether it is vegetables, grains, fruits, flowers, seedlings or cultivation, there are cooperatives with strong investment earning ability and cooperatives with weak operation earning ability, and there is no inevitable correlation between the two.

*Table 1. Measurement results of investment income ability of farmer specialized cooperatives*

| - | Production capacity | Processing capacity | Development capacity | Composite scores |
|---|---|---|---|---|
| The Mean | 18.4912 | 29.1375 | 3.8322 | 69.1004 |
| The Standard Deviation | 1.9595 | 6.2694 | 2.0687 | 8.6045 |

## 5. Conclusion

Agricultural cooperatives have become an important modern agricultural operation subject in China, playing an important role in improving the degree of agricultural organization, establishing the dominant position of farmers in the market, improving the overall quality of agriculture, transforming and innovating agricultural scientific and technological achievements, increasing farmers' income and innovating rural social management mechanism. Although the concept of

family farm has set off a boom in the development of family farm in rural areas, the cooperative is still an important force in the rural reform and development because it is still in the unstable primary stage of exploration. Its importance is not only tested in reality, but also fully recognized by the government and society. But, at the same time, many problem which restricts the healthy development of cooperatives are also constantly emerge: most cooperative fund shortage, some unreasonable profit ability is not strong, the distribution of financial activities, such as particularly prominent problems, has seriously hindered the development of cooperatives, even about its survival, also will inevitably affect the long-term steady growth of agriculture and rural economy in our country.

With the increasing number and types of funds in China, how to select and predict the performance of funds has become an important research topic. Predict funds is very difficult, just smaller than the stock market risk, fund managers through dozens of stock holdings to balance the benefits, and not as one of the two stocks and make the fund net value to be affected, and one of the professional fund managers to buy high quality stock, so just to avoid the risk of single stock, so the funds are not suitable for short-term operation, generally held for a long time will have higher earnings. The fund analysis and performance forecast is an important link to promote the healthy development of the fund industry, which is of great significance to investors, fund management companies and market supervision departments. Its purpose is to use quantitative methods as far as possible, through single factor, multi-factor indicators, or some characteristics of performance (such as securities selection ability, timing ability, performance continuity, investment style, management mode, performance attribution) to analyze, so as to objectively and scientifically evaluate the effect of investment management.

This paper studies the cooperative investment activity capacity. Firstly, the status of the investment activities of cooperatives is viewed from the perspective of investment income. Firstly, the experience and achievements of the income creation of cooperatives are summarized from the perspective of practice. Secondly, the problem of investment income of cooperatives is discussed. Secondly, the factors influencing the earning capacity of cooperative investment are analyzed. Finally, the evaluation model of cooperative investment income ability was constructed, and the evaluation analysis was carried out based on the relevant data of 44 cooperatives in a county. This paper is the second step in the study of the financial activity capacity of cooperatives, and it is also a key step in the survival and development of cooperatives.

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## Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

## Conflict of Interest

The author states that this article has no conflict of interest.

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