

Retraction

Retracted: Research on the Impact of Credit Support on the Income Increase of Family Farms in China: Based on Hunan Province

Mathematical Problems in Engineering

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their

agreement or disagreement to this retraction. We have kept a record of any response received.

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- [1] Z. Luo and M. Zhou, "Research on the Impact of Credit Support on the Income Increase of Family Farms in China: Based on Hunan Province," *Mathematical Problems in Engineering*, vol. 2022, Article ID 8483031, 8 pages, 2022.

Research Article

Research on the Impact of Credit Support on the Income Increase of Family Farms in China: Based on Hunan Province

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Family farms are an important part of rural revitalization in China. Strengthening credit support for family farms is of great significance for increasing family farm income. This paper takes 1895 demonstrative family farms in Hunan Province as an example and proposes research hypotheses based on the theoretical analysis of the income growth effect of family farm credit. Based on the Cobb–Douglas theory, the Tobit model is used to make an empirical analysis of the income-increasing effect of family farms. And, we can add explanatory variables and QTE quantile effect model for testing. The results show that strengthening family farm credit support is conducive to increasing family farm income, and the coef. is 0.428. Family farm credit support is positively correlated with its total operating income. The more credit support for a family farm receives, the higher its total operating income. When the credit support of a family farm reaches a certain scale of 300,000 RMB, its income-increasing effect begins to diminish gradually.

1. Introduction

The rural revitalization strategy proposed by China will become an important measure for China to resolve the contradictions of the dual economic structure between urban and rural areas and the problems of high-quality economic and social development. Family farms are the mainstay of rural revitalization, maximize their economic benefits through input of land, capital, labor of production, to achieve agricultural development and increase farmers' income [1], and China supports the development of family farms. Many family farms need to invest a lot of money for production. Since the development of family farms in China is still in its infancy, and moderate concentration and area expansion of farmland management [2], family farms cannot support their own funds. Therefore, family farms are in urgent need of financing. There are two main ways of financing family farms, private loans, and formal bank credit. Among them, the credit support of formal financial institutions of banks is the main way for family farms to solve financing problems. Many scholars in China have

conducted extensive and in-depth research on the availability of family farm credit. They believe that, due to the characteristics of agricultural production and insufficient collateral for family farms, there are problems of “difficulty and expensive financing” in the process of family farm financing, such as family farm income, farmer education level, planting scale, understanding of lending policies, loan term, and loan interest [3, 4]. As the main body of the market economy, banks pay more attention to the safety of credit funds in family farm credit support. Whether the bank can recover the principal and interest on time has become the key to determining the bank's credit support for family farms. As a new type of agricultural business entity, family farms take agriculture as the main industry and can provide limited collateral. The operating income of family farms is the main source of loan repayment funds. There is a contradiction between family agricultural credit demand and bank credit supply. Therefore, studying the income-increasing effect of family farms obtaining credit support has important practical significance for family farms obtaining financing and bank credit support decision-making.

Scholars from all over the world have participated in the study of the effect of family farm credit and income increase. In developed countries, family farms have a long history of development and a high degree of marketization. Family farm credit is usually regarded as small and medium-sized enterprises. Early scholars summarized the input elements of family farm production and management as land, labor, capital, and management. Some scholars believe that capital is an important factor affecting family farm production and market competitiveness. The formal credit distribution of family farms has an impact on agriculture. There is a remarkable economic and political dualism between family farmers and commercial farmers or agribusiness in constant competition for the provision of rural credit funds in Brazil. High credit interest rates, insufficient loans, and insufficient loans have a certain negative impact on the production efficiency of the family farm industry [5, 6]. The SFA model and the DEA model were used to calculate the efficiency of Italian citrus farming farms, and it was found that institutional arrangements, capital input, operator characteristics, and business models may all affect the income efficiency of family farms [7]. Other scholars believe that rural credit assistance is an important agricultural policy adopted by Brazil, and the higher the household income, the easier it is to obtain Polonav and TA. Low interest credit should be introduced for the family farmers, specifically for the small and marginal family farmers to increase their income producing sources. At the same time, loans increase the income and net income of family farms, especially the poorest fifth of disadvantaged farmers and women, to increase income and get rid of poverty [8, 9]. Some scholars have formal borrowing constraints on the repayment of principal and interest. Most farmers in poverty-stricken areas are risk-averse. Under the dual pressure of production development and avoiding potential credit default risks, they will devote all their efforts to production and business development, in order to make credit investment returns. Besides principal and interest repayment expenses, due to the lack of capital endowment and insufficient early credit rationing, farmers' income growth has been slow, preventing farmers from using financial leverage to get rid of poverty and become rich [10, 11]. In China, family farms are defined as "engaged in large-scale, intensive, specialized, and commercial production operations, with agricultural income as the main source of family income." It can be seen that agricultural income is the main income of family farms. Most Chinese scholars believe that agricultural loans have an effect on improving the industrial production and profitability of family farms and found that the income and employment effects of family farm financing are positively significant. And, policy agricultural insurance and the development of urbanization increases the operating income of farmers' families [12, 13]. Some scholars believe that the withdrawal of homestead is an inevitable requirement for the implementation of the rural revitalization strategy. There is a positive correlation between the education level, land area, annual household income, loan interest rate, and perception of credit policy and farmers' demand for mortgage financing of farmland management rights. The operating income of

farmers has a positive impact on the wage income and total household income of farmers. There are differences in the changes of farmers with different educational backgrounds, age groups, and credit financing income [14–16]. Generally speaking, there are relatively few research literature on the effect of family farm credit support in domestic and foreign academic circles. This article hopes to explore and enrich the theoretical research on the effect of family agricultural credit through empirical research. The author discovered in the process of research that bank credit support to family farms will have certain economic, social, and environmental effects. Among them, the social and environmental effects are difficult to quantify, and the economic income growth of family farms is relatively intuitive, so this article focuses on the economic effects of income increase effects for research in China.

2. Materials and Methods

2.1. Theoretical Analysis. According to the survey of family farms, the income sources of family farms in China are mainly composed of agricultural business income, transfer income, wage income, and property income. Among them, agricultural business income is the most important part. The amount of transfer income from government financial subsidies is limited, and the coverage is low. Other wage and property incomes, such as income from migrant workers and income from the integration of primary, secondary, and tertiary industries, are not the main component of most family farm operating income, so this paper will not focus on it. Credit support is indirect to the increase in family farm income. If the family farm receives credit support, it will expand the scale of reproduction, increase land circulation, purchase modern agricultural machinery and equipment, and expand the scale of production. With the improvement of scale and labor production efficiency, total income will further increase; after the expansion of the agricultural production scale of family farms, it will be easier to obtain government financial support and subsidies and enter a virtuous circle. The process of forming the income-increasing effect of family farm credit support is shown in Figure 1.

2.2. Theoretical Hypotheses. According to the above flow chart, planting scale, credit support, and financial support are the important conditions for family farm income growth. This article proposes hypotheses on the income growth effect of family farms from these aspects.

Funding is the blood of the family farm. Family farm credit financing is mainly used to expand agricultural reproduction. When the credit support funds enter the nonrepetitive agricultural production factors of the year, increase family farm income; when the credit support funds enter the repetitive production factors, the current year and subsequent annual income are increased. Therefore, the hypothesis is as follows:

Hypothesis: credit support significantly positively affects family farm income.

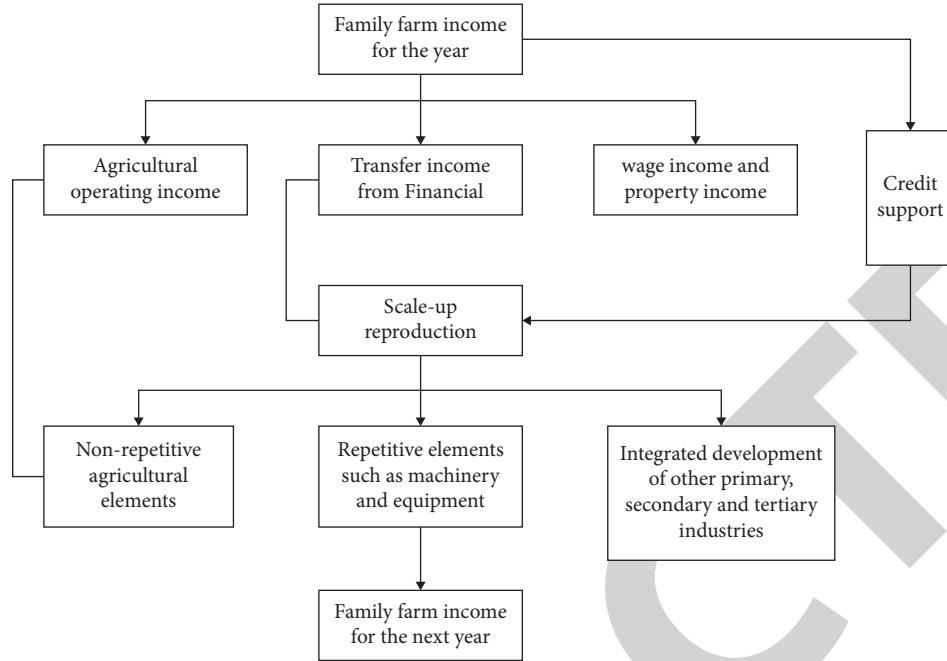


FIGURE 1: Flow chart of the formation of income-increasing effect of family farm credit support.

2.3. *Theoretical Model.* Based on the theory above, this article draws on the Cobb–Douglas (C–D) production function to construct a family farm credit effect model and analyzes the impact of credit support on family farm income growth. The theoretical model of the Cobb–Douglas production function is

$$\begin{aligned}
 Y_i &= F(K, L) \\
 &= AK^\alpha L^\beta e^\varepsilon.
 \end{aligned}
 \tag{1}$$

In the above equation, Y is the total income of the family farm, A is the comprehensive technical level, L is the scale of planting land, K is the scale of credit support, α is the elasticity coefficient of L output, β is the elasticity coefficient of K , and ε is the effect of random disturbance. In modern agricultural production, due to the widespread use of science and technology and modern agricultural machinery, the impact of labor on the income of family farms is reduced, but the scale of planting is still very important.

To reduce the effect of heteroscedasticity [17], take the natural logarithm of both sides of (equation (1)) to get the following regression model:

$$\ln Y_i = A + \alpha K_i + \beta L_i + \varepsilon_i.
 \tag{2}$$

In the model analysis framework, A is the comprehensive technical level, Y_i represents the total income level of the i th family farm, K_i represents the credit support fund level of the i th family farm, L_i represents the planting scale level of the i th family farm, α represents the output elasticity of credit support funds, β represents the output elasticity of the planting scale, and ε_i is the error term.

Government financial support income is relatively independent of family farm agricultural business income and income derived from family farm credit support, and

government financial support funds have detailed and accurate data records. Therefore, it is more appropriate to use the amount of financial support as an auxiliary variable in the endogenous test, and the new analysis framework model is obtained as follows:

$$K_i = \theta L_i + \gamma F_i + \varepsilon_i.
 \tag{3}$$

In the model, the newly added F_i represents the government transfer payment financial support level of the i th family farm, γ represents the output elasticity of government financial support funds, and ε_i is the error term. In the same way, other control variables can also be added for endogeneity testing.

2.4. *Tobit Model Design.* This article uses the total income of the family farm as the dependent variable to study how the independent variable affects the income level of the family farm. The credit support line of the family farm bank is greater than or equal to 0, but the dependent variable is approximately continuously distributed on the positive value. Therefore, a restricted dependent variable (Tobit) regression model is selected to analyze the impact of credit support on family farm income. The basic form of the model is as follows:

$$\begin{aligned}
 y_i &= X_i' \gamma + \varepsilon, \varepsilon_i \sim N(0, \sigma^2), \\
 y &= \begin{cases} \alpha, & y_i^* \leq \alpha \\ y_i^*, & \beta < y_i^* < \alpha. \\ \beta, & \beta < y_i^* \end{cases}
 \end{aligned}
 \tag{4}$$

y_i is the dependent variable, i.e., the income level of the i th family farm; α represents the right intercept point; β is the

left intercept point, where α represents the maximum income level of the family farm, and β represents the minimum income level of the family farm; X_i is the explanatory variable which is the main factor that affects the effect of increasing the credit income of the i th family farm. γ is the regression coefficient, ε_i is the random error, and the disturbance term ε_i obeys a normal distribution with a mean value of 0 and a variance of σ^2 .

2.5. Variables. The paper selects the explained variables, explanatory variables, and control variables as follows.

2.5.1. Explained Variable. This article uses the total annual income of the family farm (Y) as an explanatory variable. The data is detailed. The larger the data, the greater the income of the family farm.

2.5.2. Explain Variables. This paper selects an indicator, the total amount of family farm loan funds, as the main influencing factor to explain the income effect of family farm operations on land area.

2.5.3. Covariate Variables. According to the statistical classification standard of Chinese resident income, income is divided into four components: business income, transfer income, wage income, and property income, while the income of family farms mainly comes from agricultural business income and transfer income, and credit is important to increase the operating scale and increase the income. Therefore, this paper selects the area of land used for family farm operations, and the total amount of financial support funds at all levels as explanatory variables, as the main influencing factors to explain the effect of family farm operations on the land area.

2.5.4. Control Variables. In order to enhance the explanatory stability and persuasiveness of the model, this article combines the previous theoretical analysis and adds two indicators as control variables. The variables are defined in Table 1.

In Table 1, the variable name, variable unit, and variable definition are all from the Family Farm Directory Management, which are indicators for the management of family farms by the Ministry of Agriculture and Rural Affairs of China, and the Family Farm Directory Management will be explained in detail later.

2.6. Data Sources. Hunan Province is a major agricultural province in China and the hometown of Chairman Mao Zedong. This article takes Hunan Province as an example. The data in this paper should be derived from Family Farm Directory Management, which is an information system launched by the Ministry of Agriculture and Rural Affairs of China. The registered family farm information is included in the directory management, and it is timely filled in and reported to the national family farm directory system. The

“Family Farm Directory Management” of the Hunan Provincial Department of Agriculture and Rural Affairs is responsible for the statistical management of family farm information in Hunan Province and has all registered family farm information in Hunan Province. The data for this paper come from the official statistics of the Family Farm Directory Management. From the catalog of 194,000 family farms, 1895 model family farms are selected for analysis. The explanatory variables meet three conditions at the same time: obtaining credit support of more than 10,000 yuan, and land management area greater than 0 mu. The economic support of family farms is greater than 0. Due to the large variance of the collected data, natural logarithmic processing is performed on the data.

Through the analysis of the sample data of 1895 family farms in Hunan Province, it is found that the data are quite different. The largest annual total income is 26.3 million Yuan, and the smallest annual total income is 5 million Yuan. The minimum arable land is 1 Mu, and the maximum is 15,000 Mu; the most supported loan fund is 6 million Yuan, and the least is 10,000 yuan; the sample data that receives the most financial support funds at all levels is 45 million yuan, and the least is 10,000 yuan. 242 households have registered trademarks, and 1653 have unregistered trademarks; 470 households have passed the agricultural product quality certification, and 1425 have not passed the agricultural product quality certification. Use Stata15.0 software to make a statistical description of the family farm sample group data (see Table 2):

2.7. Variable Multicollinearity Test. Before applying the model analysis, the multicollinearity of other variables that affect the income increase effect of the family farm was tested. According to the criterion of VIF not greater than 10, it shows that there is no multicollinearity among the variables of the selected sample group, and it can be used as a model variable to study the effect of family farm income. The VIF (variance inflation factor) test results for this sample group are shown in Table 3.

3. Results and Discussion

3.1. Tobit Regression Results. In the selected family farm sample data, the total income of the dependent variable family farm is positive and relatively continuous, and the data can only be truncated to a certain range, so the Tobit model is used for regression. In this Tobit model, the minimum value of the original data of the dependent variable is 10,000 yuan, and the maximum value is 26.3 million yuan. Because the data change greatly, the natural logarithm (L_n) is also used for processing before the model is used, and then Tobit regression, and the results are shown in Table 4.

In Table 4, the p value is the probability that the sample outcome or more extreme outcomes occur when H_0 is true. The smaller the p value, the more the H_0 should be rejected, that is, the more significant the result. When p value is <0.01 , the sig is “***”; when p value is <0.05 , the sig is “**”; when p value <0.1 , the sig is “*.”

TABLE 1: Variable definitions.

Variable category	Variable code	Variable name	Variable unit	Variable definition
Explained variable	Y	Total annual income of the family farm	10 thousand yuan	Income generated by family farms from production and business activities such as selling agricultural products and providing various services
The core explanatory variable	X ₁	Operations total loan funds	10 thousand yuan	The total amount of loan support funds obtained by family farms this year
Covariate variables.	X ₂	Land area for family farm obtained	Mu	The actual area of the family farm
	X ₃	Total financial support funds at all levels	10 thousand yuan	The total amount of financial support funds received by family farms at all levels
	X ₄	Whether to register a trademark		Whether the family farm has a registered trademark of agricultural products (1 is yes, and 0 is no)
Control variable	X ₅	Whether to pass the agricultural product quality certification		Whether the agricultural products of the family farm have passed the quality certification of green food, organic food, geographical indication agricultural products, forest food, etc. (1 is yes, and 0 is no)

TABLE 2: Descriptive statistics.

Variable	Obs	Mean	Std. dev.	Min	Max
Y	1895	50.227	106.511	0.5	2630
X ₁	1895	13.632	32.013	1	600
X ₂	1895	176.635	460.622	1	15000
X ₃	1895	9.07	114.109	0.076	4500
X ₄	1895	0.128	0.334	0	1
X ₅	1895	0.248	0.432	0	1

TABLE 3: Variance inflation factor.

	VIF	1/VIF
X ₁	2.324	0.430
X ₂	1.587	0.630
X ₃	2.025	0.494
X ₄	1.809	0.553
X ₅	1.491	0.671
Mean VIF	1.847	0.001

According to the above Tobit simulation results, we can know that the selected explanatory variables total family farm loan funds (X₁), covariate variables family farm land area (X₂), and total financial support funds at all levels (X₃) are all at the 1% confidence level. Through the significance test, the comprehensive coefficient is 0.949, which shows that these three indicators have a rich explanatory significance for the income increase effect of family farms. The area of arable land of family farms, the total amount of loan funds obtained, financial support funds at all levels, and the total income of family farms are positive. At the same time, through the analysis of a single indicator, the coef. of the total family farm loan funds (X₁) is 0.428, which is also a positive effect, and it has a greater contribution to the family farm's income increase effect. This may be related to the credit effect of the family farm's agricultural production. The family farm is willing to choose that when providing credit support through banks and other financial institutions, family farms need to bear the capital cost and interest of the

credit funds, so they are more cautious about financing. Without a certain degree of income increase, the willingness to finance credit may be reduced, even if the family farm obtains credit funds. The funds will also be invested in the key link in the production and income increase of family farms, "good steel is used on the blade." Therefore, the positive effect of the total family farm loan funds on the income increase of family farms is relatively prominent. The coef. of the explanatory variable family farm land area (X₂) is 0.273, which has a positive effect on the total income of family farms. The coef. of the total financial support funds at all levels (X₃) is 0.18, and the impact on the family farm's income increase is also positive. There is no doubt that once the government's transfer financial support income is obtained, it will directly provide the family farm. For small and medium-sized family farms, due to the low annual income base of family farms, the impact of financial support at all levels on family farm income is also obvious. However, the effect of this indicator on family farms' income is lower than that of cultivated land and family farm loan funds. Such variables may be related to the probability of family farms receiving financial support at all levels. After all, most family farms, especially small and medium-sized family farms, are difficult to obtain large amounts of financial support funds from governments at all levels.

In the above statistics, the *p* value of the three explanatory variables of the total family farm loan funds (x₁), the family farm land area (x₂), and the total financial support funds at all levels (x₃) are close to 0, and the *t* statistics are all relatively low. The statistical results are significant. Therefore, the hypothesis that the explanatory variable has nothing to do with the increase in family farm income can be completely rejected. The hypothesis is valid.

3.2. Add Explanatory Variables for Endogeneity Testing. The two indicators of whether the control variables have registered trademarks (X₄) and whether they have passed the quality certification of agricultural products (X₅) are

TABLE 4: Tobit regression analysis.

Y	Coef.	St. Err.	t-value	p-value	[95% conf. Interval]	Sig
X_1	0.428	0.02	21.06	0.001	0.388 0.468	***
X_2	0.273	0.023	11.70	0.001	0.227 0.319	***
X_3	0.180	0.023	7.860	0.001	0.135 0.224	***
Constant	0.949	0.094	10.12	0.001	0.765 1.133	***
Var (e)	0.728	0.024	0.001	0.001	0.683 0.776	
Mean dependent var		3.003			SD-dependent var	1.291
Pseudo-R-squared		0.247			Number of obs	1895
Chi-square		1568.613			Prob > chi2	0.001
Akaike crit. (AIC)		4786.993			Bayesian crit. (BIC)	4814.728

*** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

TABLE 5: Robustness test with added control variables.

Variables	(1) y	(2) y	(3) y
X_1	0.428*** (21.06)	0.422*** (20.79)	0.414*** (20.39)
X_2	0.273*** (11.70)	0.268*** (11.51)	0.265*** (11.45)
X_3	0.180*** (7.86)	0.165*** (7.12)	0.148*** (6.36)
X_4		0.228*** (3.65)	0.129* (1.94)
X_5			0.230*** (4.34)
Constant	0.949*** (10.12)	0.963*** (10.30)	0.957*** (10.29)
Observations	1,895	1,895	1,895

t statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

successively added, and the abovementioned Tobit model is used to reregress. The regression results are summarized in Table 5).

According to the regression results of the Tobit model with the addition of two control variables, it is found that these two control variables and the dependent variable have a significant impact on the income increase of family farms. From the perspective of statistical economic interpretation, despite the addition of two new control variables, the original explanatory variable family farm land area (X_1) has a positive effect and a positive effect on family farm income increase coefficients of 0.268 and 0.265, respectively. Compared with the value of 0.273 before the increase of the control variable, the value has not changed largely. The coefficients of the total family farm loan funds (X_2) on the income increase of the family farm are 0.422 and 0.414, respectively, which are still positive effects, and the positive effect value is different from the value before the increase of the control variable. The total amount of financial support funds at all levels (X_3) is also a positive effect on family farms' income-increasing effect coefficient, and the positive effect value is attenuated, but the value is not obvious. Compared to the newly added control variable whether there is a registered trademark (X_4), The two indicators of whether they have passed the agricultural product quality certification (X_5) have a weaker interpretation of the positive effect of family farm income increase.

3.3. Quantile Regression for Stability Test. In order to explore the impact of different levels of family farm credit support on income growth effects, this paper adopts quantile processing effect (QTE) to further analyze. The goal of quantile regression is to minimize the residual value of the asymmetry absolute value. Its advantages are mainly a more comprehensive description of the relationship between the explanatory variable x and the explained variable y . In fact, because the explanatory variable x at different quantiles may have different effects on the explained variable y , the quantile regression coefficient may be different from the original Tobit regression coefficient. Let q represent the quantile level, and the quantile regression estimator β_q minimizes the objective function. The function form is

$$Q(\beta_q) = \sum_{i: y_i > x'_i \beta_q} q |y_i - x'_i \beta_q| + \sum_{i: y_i < x'_i \beta_q} q |y_i - x'_i \beta_q|. \quad (5)$$

Using the data of 1895 demonstrative family farms, use Stata15.0 software to perform quantile processing effect regression, and the results are shown in Table 6.

According to the regression of the quantile treatment effect of the explanatory variables above, it is found that the total amount of family farm loan funds (X_1), the land area of family farms (X_2), and the total amount of financial support funds at all levels (X_3) all pass significant at the 1% confidence level Sexuality test shows that the income-increasing

TABLE 6: Quantile regression results.

y	Coef.	St. err.	t value	p value	[95% conf. interval]	Sig
X1	0.356	0.016	22.03	0.001	0.324 0.388	***
X2	0.314	0.019	16.92	0.001	0.278 0.350	***
X3	0.283	0.018	15.55	0.001	0.247 0.318	***
Constant	0.659	0.075	8.84	0.001	0.513 0.805	***
Mean dependent var		3.003		SD-dependent var	1.291	

*** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

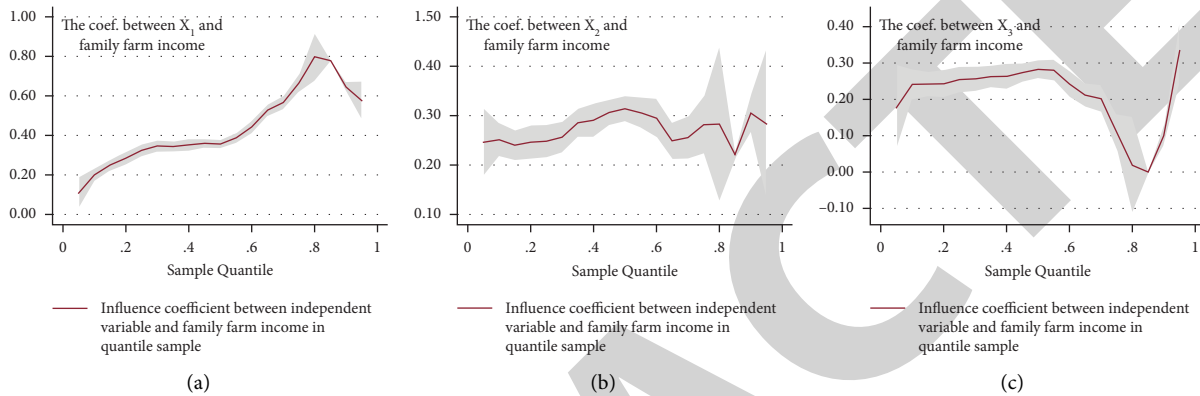


FIGURE 2: Quantile regression analysis diagram. (a) is the impact of credit support on the income increase of family farms; (b) is the impact of land area on the income increase of family farms; (c) is the impact of total financial support funds on the income increase of family farms.

effect on family farms is a positive effect, and the comprehensive explanatory coefficient is 0.659. The results of the quantile regression are shown in Figure 2.

For 5 equal parts of the explanatory variable, according to the quantile treatment effect regression analysis diagram above, it can be seen that the effect of total farm loan funds (X_1) on family farms' income has begun to increase with the increase in family farm's planting scale and financing credit funds, and its positive effect is also on the rise. When the business scale reaches a certain value (300,000 yuan RMB), The income increase effect of family farms credit has begun to decline. With the expansion of family farms, the turning point data of the credit support amount may increase. The impact of the farm operating land area (X_2) on the income increase effect of the family farm is relatively stable, and the coef. fluctuates between 0.25 and 0.32; The credit support amount at the turning point of income increase effect is currently estimated to be about 300,000 yuan RMB. The income-increasing effect of the total amount of financial support funds at all levels (X_3) is for family farms is generally a positive effect. It was relatively stable at the beginning, and then began to decline rapidly, and finally showed a rapid rebound. This may have a lot to do with the probability of family farms receiving financial support from governments at all levels.

4. Conclusions

Through the analysis above, the conclusions can be drawn as follows: at first, increasing family farm credit support is conducive to increasing the total income of family farm

operations, and the influence coef. is 0.428 between credit and income. Secondly, credit support is conducive to the expansion the expansion of production planning for family farms. Thirdly, the more the family farm receives credit, the more its total annual operating income. However, when the credit scale of the family farm reaches a certain stage (300,000 yuan RMB), the income increase effect of the family farm will weaken. Therefore, strengthening the credit support for family farms is of great significance to improving the operating income of family farms and provides a new method for innovatively solving the problem of rural revitalization in China and supporting the development and growth of family farms. At last, it will further study how to innovate the credit model in the next step, improve the access to family farm credit, and improve the availability of family farm credit, so as to achieve the goal of increasing family farm income.

Data Availability

The figures and tables used to support the findings of this study are included in the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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