Study on the Impact of Rural Infrastructure Construction on Rural Economic Growth in Hunan Province

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Keywords: Rural infrastructure development, Rural economic growth, A panel fixed effects model

Abstract: This paper investigates the impact of rural infrastructure construction on rural economic growth in Hunan Province from rural infrastructure construction in Hunan Province using panel data from 2001-2018 for each city and state in Hunan Province using a fixed-effects model, and tests the multiple cointegration problem and robustness of the model. The empirical results show that farmland water conservancy infrastructure and rural energy infrastructure have a significant positive impact on rural economic growth. And the rural transportation infrastructure construction represented by equal external roads (not meeting the requirements of grade roads, represented by country roads) has a suppressive effect on the rural economic growth. In this paper, in exploring the relationship between rural infrastructure construction and rural economic growth in Hunan Province, we propose relevant suggestions to continue to strengthen the construction of farmland water conservancy infrastructure and rural energy infrastructure to effectively drive rural economic growth, while actively maintaining and repairing rural roads and transforming them into graded roads that have a positive impact on economic growth, thus reducing transaction costs to promote rural economic growth.

1. Introduction

1.1 Background and Significance of the Selected Topic

1.1.1 Background of the Selected Topic

Rural infrastructure is a prior condition for rural economic development, and since the central government issued the No. 1 document every year in 2003, rural infrastructure construction has attracted the attention of people from all walks of life[1]. As agriculture is the primary industry, the No. 1 document of the central government every year focuses on rural revitalization and rural development. The No. 1 document of the central government in 2022, “Opinions of the Central Committee of the Communist Party of China and the State Council on the Key Work of Comprehensively Promoting Rural Revitalization in 2022”, is the 19th No. 1 document of the central government focusing on rural development since the 21st century. This time, the document proposes two key words in rural infrastructure construction, one is digital economy and the other is transportation and water conservancy, one corresponds to new infrastructure and the other corresponds to old infrastructure, and the new and old infrastructures will work together to help the rural economy grow steadily in 2022. In the traditional infrastructure construction, the core points to rural flood management and renovation of dangerous bridges, for water conservancy, highway infrastructure construction is expected to increase; new infrastructure construction, for photovoltaic and other energy infrastructure mentioned for the first time, in addition to the digital countryside construction to refine, expand the rural big data application scenarios, favorable scenery equipment, data centers[2]. Rural infrastructure construction is conducive to rural economic development and the work of rural areas, but compared to new infrastructure, rural infrastructure construction still has many problems, such as insufficient investment, unreasonable results, backward construction level, etc., which has a strong constraining effect on economic growth. Therefore, it is important to study

the role of rural infrastructure construction on economic growth in the new era for the implementation of government policies and solving the three rural problems[3].

Hunan Province is a large agricultural province in China, with 3.789 million hectares of arable land in the province. The climate in the province is mild. However, since Hunan Province is located in the middle and lower reaches of Yangtze River, there are rains all year round and crops are affected by droughts and floods[4]. In order to make full use of agricultural resources, Hunan Provincial Government has strengthened rural water conservancy construction, rural electricity construction and other rural infrastructure construction in recent years and achieved remarkable results, but the infrastructure is inefficient, the equipment is aging, the investment is insufficient and the structure is However, the problems of low efficiency, aging equipment, insufficient investment and unreasonable structure still exist. At the same time, according to the "law of diminishing marginal returns" in Western economics, as the amount of labor and other factor inputs remain unchanged, increasing investment in infrastructure will lead to inefficiency and waste of resources, which is not conducive to rural economic growth. In this context, it is important to study the impact of rural infrastructure construction on rural economic growth, so that the government can reasonably arrange the field, structure and direction of infrastructure construction[5].

1.1.2 Research Significance

(1) Theoretical significance

First of all, domestic and international studies have proved that rural infrastructure development is related to rural economic growth and increase of farmers' income, and comprehensive and reasonable infrastructure will drive rural economic development and make rural areas look new. Moreover, studies have shown that rural infrastructure development has different effects on rural economic growth in different regions. As a large agricultural province, studying the impact of rural infrastructure construction on rural economic growth in Hunan Province can be a reference for rural economic development in other central regions.

Secondly, studying the impact of rural infrastructure on rural economic growth in Hunan Province enriches the study of the relationship between infrastructure and economic growth, while rural issues also involve many other areas, such as urban congestion. Therefore, studying the impact of rural infrastructure development on rural economic growth can provide inspiration for other areas of research.

(2) Relevance

Under the background of national vigorous promotion of rural revitalization and new rural construction, Hunan provincial government has actively implemented the project, which has greatly improved rural infrastructure construction and achieved remarkable results in rural economy. At present, China's economy has entered into a new normal, requiring the economic growth rate to change from high speed to medium speed growth, and pursuing the quality of economic development. Then how to make the rural economy high quality development is particularly important.

Hunan Province is rich in agricultural resources, but due to the rural infrastructure construction there are still structural imbalance, aging equipment, investment efficiency is not high, so that the resources can not be fully utilized, and infrastructure is a public good, generally need to be provided by the government, capital consumption, then the study of the role of infrastructure on economic development is conducive to the government to rationalize capital investment, improve investment efficiency, with the least amount of money to obtain Maximum benefit.

1.2 Research Content

This paper describes the impact of rural infrastructure development on rural economic growth in both qualitative and quantitative terms, and examines the impact of rural infrastructure development on rural economic growth using a fixed-effects model based on data on different rural infrastructures in each city, state, and province of Hunan Province from 2001 to 2018. Based on data availability, three types of infrastructures were selected: agricultural water conservancy infrastructure, rural transportation infrastructure, and rural energy infrastructure. Finally,

corresponding policy recommendations are proposed based on the empirical results and the actual situation in Hunan Province[6].

The first part is the introduction, which describes the research background and significance of this paper, the innovation and difficulties, the research content and research methods.

The second part is the literature review, which makes an organized review of relevant literature. These can provide references for the study of rural infrastructure construction on rural economic growth in Hunan Province.

The third part is data sources and descriptive statistics. Firstly, data sources as well as processing, secondly, the selection construction of main indicators, and finally descriptive statistics.

The fourth part is model building and testing. Using fixed effects model, a model is developed for panel data of each prefecture-level city, state in Hunan from 2001-2018. Multicollinearity and robustness tests are performed.

The fifth part analyzes the empirical results.

The sixth part proposes corresponding policy recommendations.

1.3 Research Methods

1.3.1 Literature Research Method

According to the research direction and theme of this dissertation, a large amount of literature was collected and read, combined with library materials, to understand the direction of previous research and research results, to learn the existing research methods, and to construct the framework of their own articles[7].

1.3.2 Normative Analysis and Empirical Analysis

This paper first adopts the normative analysis method to summarize the existing literature on rural infrastructure construction on rural economic growth, and then adopts the panel data of Hunan Province and uses the fixed effect model to carry out the empirical analysis on the impact of rural infrastructure construction on rural economic growth[8].

1.4 Innovation Points and Difficulties

1.4.1 Innovation Points

(1) Based on a large amount of literature reading, it is found that most of the studies in rural infrastructure construction on rural economic growth are national, few are provincial, and there are fewer studies on Hunan province. At the same time, rural infrastructure construction on rural economic growth has differences in different regions, so this paper draws on the analysis of other scholars to study the Hunan region. As a large agricultural province with abundant agricultural resources, the study of rural infrastructure on rural economic growth in Hunan Province can provide reference significance for its rural economic growth.

(2) This paper adopts a combination of normative and empirical analysis, selects the corresponding indicators, and adopts a fixed-effects model to empirically analyze the impact of rural infrastructure construction on rural economy in Hunan Province, and selects relatively recent data from 2001-2018 to make the empirical results more informative. Using stata analysis software, it is easier.

1.4.2 Difficulties

On the one hand, the data utilized in this study is the panel data of Hunan Province, which is different from the provincial data, and the data of prefecture-level municipalities often have problems such as not easy to search and inconsistent caliber units. Therefore, it is more difficult to determine the data availability and thus the indicators. On the other hand, in terms of model construction selection, this paper determines the variables included in the model by stepwise regression and performs Hausman test for fixed effects model selection.

2. Literature Review

2.1 Status of Foreign Research

Foreign research on the relationship between rural infrastructure and the economy began early and has a long history.

Paul N. Rosensten Rodan, who proposed infrastructure in 1943, believed that infrastructure is the prior capital of society, and infrastructure must precede general production investment. It includes all public services from law, health, and education to farming, transportation, and power. Aschauer (1989) studied the relationship between infrastructure and economic growth using a C-D function with time series data from 1945 to 1985, and showed that the output elasticity of infrastructure to economic growth in the United States was 0.39[9].

RomeoG.Teruel used Translogcost-basedmodel (2005) to study the relationship between rural infrastructure development and economic growth in the Philippines, and the study showed that public infrastructure can reduce the cost of agricultural production, and for every one percent increase in agricultural water infrastructure, the cost of agricultural production decreases by 0.12 percent[10]. Calderon (2011) and others studied the impact of infrastructure investment on output using panel data and found that the elasticity of infrastructure on output ranged from 0.07 to 0.1 in the long run[12].

2.2 Current Status of Domestic Research

Compared with foreign studies, domestic scholars have also conducted a large number of studies on the impact of rural infrastructure development on rural economic growth and farmers' income increase using a combination of normative and empirical analysis. This section is presented based on the different scope of the research subjects[12].

2.2.1 Based on National Perspective

Lin Yifu (2000) points out that the construction period of rural water and electricity infrastructure projects is short, the material inputs are mainly domestic production, and the stimulus to domestic demand is deep[13]. This type of infrastructure construction is dominated by rural labor, which can provide more employment and income opportunities and help to narrow the urban-rural gap. In “Rural infrastructure investment and agricultural relief”, Daiyan Peng (2002) points out that rural transportation infrastructure construction and rural health infrastructure construction have a significant positive effect on increasing farmers' income, while rural science and technology infrastructure has a suppressive effect on increasing farmers' income[14]. In “Study on the Impact of Rural Infrastructure Construction on Farmers' Income”, Huang Shan (2015) used relevant provincial-level data from 2002-2010 in mainland China to establish a spatial autoregressive model to analyze the impact of rural infrastructure construction inputs on increasing farmers' income[15]. It was found that productive infrastructure construction and living infrastructure construction had a strong positive effect on farmers' income growth, while social infrastructure construction had an inverse inhibitory effect on farmers' income, and circulation infrastructure construction had an insignificant effect on farmers' income growth. In the paper “The impact of rural infrastructure on agricultural economic growth”, Zhang Yichi and Dai Ruixi (2018) conducted a study on the impact of rural infrastructure construction on rural economic growth using provincial panel data from 2003-2014 using a two-way fixed effects model[16]. It was concluded that rural water infrastructure, rural information infrastructure, rural health infrastructure and rural transportation infrastructure which lagged two periods had a significant contribution to the rural economy[17].

2.2.2 Based on Provincial Perspective

Xie, Navy (2008) et al. selected panel data of 27 counties in Liaoning Province from 1992-2005 to establish a panel data model to analyze the impact of rural infrastructure level on rural economic growth[18]. The results show that rural infrastructure is an important factor in promoting rural economic growth, and the promotion effect of infrastructure on rural economy is greater in areas with good economic development than in areas with poor economic development. Xie Jingjing

(2008) combined normative and empirical analyses to study the impact of rural infrastructure investment on rural economy in Zhejiang Province, and used panel data of 58 sub-counties and cities in Zhejiang Province from 1986 to 2006 to establish a systematic equation model to analyze the role of rural infrastructure investment on rural economic growth in different regions[19]. The study concluded that increasing investment in agricultural research, water conservancy, electricity and communication equipment could significantly promote agricultural economic growth, while investment in roads and education had no significant effect on agricultural production in Zhejiang Province. In terms of investment effects, scientific research inputs have the highest contribution to total agricultural value and farmers' income. Gulipastan-Baimati (2012) analyzed the relationship between rural infrastructure investment and agricultural economic growth in Xinjiang using a gray correlation model, and the study showed that the correlation between agricultural economic growth and infrastructure investment in rural water conservancy, hydropower, transportation, communication and education was high in Xinjiang, with water conservancy and transportation being the highest. Xiao Haiyue (2016) in "Exploring the relationship between rural infrastructure construction and agricultural economic growth in Guangdong Province" used data from 1985-2014 to establish a multivariate nonlinear regression model to study the relationship between rural infrastructure construction and agricultural production, nonfarm production, and farmers' per capita income, and the results showed that rural infrastructure construction had a significant impact on all three aspects, with the education variable having the most significant impact on rural economic The most significant effect of education on rural economic growth.

2.2.3 Based on Local and Municipal Perspectives

Yin Shi (2013) used the rural time series data of Chengdu city from 2000-2011 to establish a gray correlation model to analyze the correlation between various types of infrastructure on farmers' income growth, and the study showed that rural road infrastructure had the highest correlation with agricultural economic growth, followed by water conservancy, and communication and education and health facilities had a weaker correlation with economic growth. Xu Dandan (2014) conducted a cointegration test on the long-term relationship between rural infrastructure stock and agricultural economic growth using time series analysis of Chongqing city data from 1996-2010, and found that there is a long-term cointegration relationship between the two. Using data from 2006-2011 for fifteen counties in the two wings of Chongqing city, we analyzed the impact of infrastructure such as rural electric power facilities, rural road transportation facilities and agricultural modernization facilities representing large and medium-sized agricultural machinery inputs on agricultural economic growth. The impact of rural infrastructure on agricultural economic growth is relatively small in poor counties.

3. Data Sources and Descriptive Statistics

3.1 Data Source and Processing

This paper uses panel data for 13 cities and Xiangxi Prefecture in Hunan Province from 2001-2018, with data from the Hunan Statistical Yearbook, China Regional Economic Statistical Yearbook, 30 Years of Reform and Opening Up in Hunan 1978-2008, and statistical bulletins on the national economic and social development of each city and state in Hunan Province. Most of them come from the Hunan Statistical Yearbook. The database includes indicators of various aspects related to national economy accounting, population, employed persons and workers' wages, foreign economy, agriculture, industry, etc. in Hunan Province, which are more comprehensive in scope and detailed in indicators. However, due to the problems of abnormal variable size, missing individual values and inconsistent units in the database, the raw data need to be pre-processed. For the problem of missing individual values, this paper adopts the processing method of taking the average value of the previous year and the next year for the missing values in the middle year, and using the average growth rate in the last year to estimate.

3.2 Selection and Construction of the Main Indicators

Explanatory variable: the growth of rural economy is chosen to be measured by the total output value of agriculture, forestry, animal husbandry and fishery. The growth of rural economy mainly comes from agriculture, forestry, animal husbandry and fishery, and this indicator responds to the scale of agricultural production, including agriculture, forestry, animal husbandry and fishery. It can represent the level of primary industry well.

Core explanatory variables: (1) farmland water conservancy infrastructure can be replaced by the effective irrigated area of farmland, and this indicator can effectively reflect the perfection of water conservancy equipment. In this paper, the unit is standardized to thousand hectares. (2) Rural energy infrastructure is replaced by rural electricity consumption, which is a good proxy for rural energy supply, as electricity has become the most common energy source in China since villages were connected to electricity in 2015. (3) The rural transportation infrastructure is replaced by the mileage of off-grade roads. Off-grade roads are roads whose technology has not yet reached any grade standard, and are more common in rural areas and are the main mode of transportation for rural residents. For individual years where the number of off-grade road mileage is not directly given, this paper uses the total number of road mileage minus the number of graded road mileage to calculate the mileage of off-grade roads.

Control variables: (1) Fertilizer application amount. It is an important factor to improve crop yield, which is conducive to the increase of income of rural residents and the growth of rural economy. In this paper, the discounted amount of fertilizer application is used to measure. (2) Rural workers, as a labor factor input for rural economic growth, the amount of this indicator can directly determine the yield of agricultural products. (3) Crop sown area, which refers to the area actually sown or transplanted with crops, can directly contribute to the rural economic growth.

The variables and their meanings are shown in Table 1.

Table 1 Variable Description Table

Variable Type	Variable Name	Variable Meaning	Variable Symbol
Explained variables	Rural Economic Growth	Total output value of agriculture, forestry, animal husbandry and fishery (million yuan)	y
Core explanatory variables	Farmland Water Infrastructure	Effective irrigated area (thousand hectares)	yxgg
	Rural Energy Infrastructure	Rural electricity consumption (million units)	ele
	Rural Transportation Infrastructure	Equivalent road mileage (km)	road
Control variables	Fertilizer Application	Discounted volume (million tons)	huafei
	Crop Sown Area	Crop seeding area (thousand hectares)	bzmj
	Rural workers	Rural employees (ten thousand people)	labor

3.3 Descriptive Statistics of the Data

Table 2 Main Characteristics Of Each Variable

Variable Name	Sample size	Mean	SD	Min	Max
y	252	2456106	1588376	238286	7053332
yxgg	252	204.546	93.11971	48.02	469.31
ele	252	65978.95	48149.86	6255	226803
road	252	3000.305	2376.031	3	13482
bzmj	252	611.935	261.0563	187.3	1228.05
huafei	252	16.1277	7.425768	4.4108	37.52
labor	252	218.7411	77.25769	68.78	396.1

The sample in this part of the study is the panel data of 13 cities in Hunan Province and Xiangxi Prefecture from 2001-2018. The basic characteristics of each variable are shown in Table 2: The mean value of total output value of agriculture, forestry, animal husbandry and fishery is 2456106, the minimum value is 238286, the maximum value is 7053332, and the standard deviation is

1588376 in the sample period with 2001 as the base period, which shows that there are large differences in total output value of agriculture, forestry, animal husbandry and fishery in different regions in different years.

4. Empirical Results and Analysis

4.1 Benchmark Model

Based on the above analysis, the following benchmark econometric model is set: $y_{it}=\alpha_k+\alpha_t+\beta_1 yxgg_{it}+\beta_2 ele_{it}+\beta_3 road_{it}+\beta_4 control_{it}+e_t$. i and t denote city, state and year, respectively. αk and αt are individual fixed effects and time fixed effects, respectively, and the core explanatory variables include yxgg,ele,road. yxggit denotes effective irrigated area (thousand ha), eleit denotes rural electricity consumption (million kWh), roadit denotes external roads (km), and controlit denotes control variables, including fertilizer application (huafei), crop sown area (bzmj), and rural workers (labor). yit denotes the explanatory variable, i.e., total output value of agriculture, forestry, animal husbandry, and fishery (million yuan). β denotes the coefficient to be estimated and et denotes the residual term. The model estimation results are shown in the following table.

Table 3 Model Estimation Results

	M1	M2
	y	y
yxgg	15290.4***	9010.7***
	(6.95)	(4.70)
ele	29.16***	17.20***
	(19.77)	(10.08)
road	-47.58**	-53.72***
	(-2.41)	(-3.20)
huafei		151921.2***
		(5.74)
bzmj		2626.1***
		(3.48)
labor		11917.2***
		(2.67)
_cons	-2452457.6***	-7024713.6***
	(-5.44)	(-7.86)
N	252	252

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

As shown in the Table 3, M1 is the estimation result of adding the core explanatory variables, and M2 is the estimation result of adding the control variables on top of M1, and the results are still significant, only the coefficients are slightly changed. The specific analysis is as follows.

(1) From Model 1, it can be seen that effective irrigated area of farmland, rural electricity consumption, and equal external roads have significant effects on the explanatory variables total output value of agriculture, forestry, animal husbandry and fishery at 1%, 1%, and 5% levels of significance, respectively. For every 1 unit increase in effective irrigated area, the total output value of agriculture, forestry, animal husbandry and fishery increased by 15,290.4 units. For every 1 unit increase in rural electricity consumption, the total output value of agriculture, forestry, animal husbandry and fishery increased by 29.16 units. For every 1 unit increase of external roads, the total output value of agriculture, forestry, animal husbandry and fishery will decrease by 47.58 units. It can be seen that for Hunan Province, the effective irrigated area of farmland has the greatest impact on the total output value of agriculture, forestry, animal husbandry and fishery.

(2) From Model 2, it can be seen that effective irrigated area of farmland, rural electricity consumption, external roads, fertilizer application, crop sown area, and rural workers all have significant effects on the explained variable total output value of agriculture, forestry, animal husbandry and fishery at 1% significance level. And fertilizer application has the greatest effect on total output value of agriculture, forestry, animal husbandry and fishery, followed by rural

employees, third is effective irrigated area, fourth is crop sown area, fifth is eternal road and still inhibited, and sixth is rural electricity consumption.

4.2 Estimation Method

In this paper, the fixed effects and random effects are selected, and the fixed effects model is selected in this paper, considering the following: first, theoretically, fixed effects are consistent estimates regardless of whether individual effects are correlated with the explanatory variables. Models generally cannot include all variables, and there are inevitably omitted variables, and if the omitted variables are correlated with the explanatory variables, the random effects estimates will be inconsistent, so most scholars use the fixed effects model. Secondly, from the data, this paper conducted Hausman test on the model, and the results showed that chi2=44.98,p=0.0000, indicating that the original hypothesis was rejected at one percent significance level, and the fixed effect model was chosen.

4.3 Possible Problems of the Model and Measures to Solve Them

4.3.1 Multicollinearity

In this paper, the variance expansion factor is used to test the multicollinearity. The closer the vif is to 1, the weaker the multicollinearity is. The results of this paper are shown in Table 4, the variance expansion factor is less than 10, the multicollinearity problem is weak, and the test is passed.

Table 4 Variance Inflation Factor

Variable	VIF	1/VIF
bzmj	18.39	0.054390
yxgg	12.94	0.077298
huafei	11.26	0.088798
labor	3.57	0.280291
ele	1.59	0.628279
road	1.23	0.813509
Mean VIF	8.16	

4.3.2 Robustness Test

(1) The endogeneity problem is part of the robustness problem. For the endogeneity problem of omitted variables, this paper adopts a panel fixed effects model, which itself is an important way to solve the endogeneity problem. In this paper, three control variables, crop sowing area, rural workers and fertilizer application, are selected to overcome the problem.

Table 5 Robustness Tests

	(1)	(2)
	y1	y2
yxgg	44.32***	54.18***
	(4.58)	(4.18)
ele	0.0626***	0.0855***
	(7.27)	(7.42)
road	-0.202**	-0.285**
	(-2.38)	(-2.51)
huafei	700.1***	707.0***
	(5.23)	(3.95)
bzmj	6.909*	1.889
	(1.81)	(0.37)
labor	14.23	22.91
	(0.63)	(0.76)
_cons	-20411.0***	-23850.1***
	(-4.52)	(-3.95)
N	252	252

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

(2) Robustness problem

This paper adopts a full-sample robustness test, and uses y1 (total output value of agriculture, forestry, animal husbandry and fishery industry per rural worker) and y2 (total output value of agriculture, forestry, animal husbandry and fishery industry per rural population) to replace the original explanatory variables y (total output value of agriculture, forestry, animal husbandry and fishery industry), and the results are still significant as Table 5, indicating that the explanatory power of the indicators in this paper has certain robustness.

5. Results of the Empirical Analysis

(1)The effective irrigated area has a significant positive effect on rural economic growth with a coefficient of 9010.7, which indicates that farmland water conservancy infrastructure can effectively contribute to rural economic growth. This is mainly due to the fact that Hunan Province is located in the middle and lower reaches of the Yangtze River and is vulnerable to droughts and floods. Good farmland water infrastructure can reduce the losses caused by disasters and improve the effectiveness of irrigation to promote grain production.

(2)Rural energy infrastructure can effectively contribute to rural economic growth with a coefficient of 17.20. This indicates that rural energy infrastructure in Hunan Province has not reached saturation, and increasing rural energy infrastructure is still beneficial to economic growth.

(3)Equivalent external roads have a dampening effect on the growth of the rural economy; an additional kilometer of equivalent external roads reduces the rural economy by 537,200 yuan. This is mainly due to the fact that out-of-grade roads are roads whose technology has not yet reached any grade standard, often referring to country roads with low road quality, which affects the efficiency of transporting agricultural products, raises transport costs, and inhibits rural economic growth. On the contrary, the total road mileage is composed of equal external roads and graded roads, and the construction of graded roads has a catalytic effect on rural economic growth. Improving the quality of rural roads and building them into graded roads that meet national standards can promote the communication between rural areas and the outside world, facilitate the transfer of agricultural and sideline products, and effectively promote rural economic growth.

6. Policy Recommendations

(1)Among the different types of rural infrastructure, farmland water conservancy infrastructure has the greatest impact on rural economic growth in Hunan Province. It is still important to maintain a high level of investment in farmland water conservancy infrastructure, which is directly related to rural economic growth, and to use the limited funds where they can generate the greatest economic benefits. Focus on improving irrigation efficiency, conserving water resources, and enhancing drought and flood resistance.

(2)The role of rural energy infrastructure construction on rural economic growth still has a lot of upside, and should continue to strengthen rural energy infrastructure construction and improve the aging infrastructure and other issues. There is still a lot of room to make up for the shortcomings in infrastructure. At the same time, strengthen the construction of new energy infrastructure and develop environmentally friendly energy.

(3)Pay attention to the construction of rural road quality, improve the quality of rural roads. For rural roads in a timely manner to repair, on time maintenance, gradually rural roads by building into the national highway requirements of the grade highway, improve the rural transportation system, and promote the “four good” road construction. This will effectively promote economic growth in rural areas of Hunan Province, expanding domestic demand.

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