



# Research on the Dynamic Model of Financial Support for Tourism Development

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**Abstract.** The direction of financial support can affect the development of tourism, and a scientific and reasonable financial support way can help the healthy and stable development of tourism. In order to explore the influence of financial support on tourism development and improve the financial support mode, this paper conducts an empirical analysis according to the dynamic model. The paper selects the loan balance and tourism income data of financial institutions in County a, uses ADF stability test and EG two-step co-integration test, and establishes an error correction model to judge the relationship between financial support and tourism development by actual data. This study concludes an important conclusion: there is a positive relationship between financial support and tourism development. This conclusion can help both the financial industry and the tourism industry to develop together.

**Keywords:** Finance · Model · Tourism · Development

## 1 Introduction

With the development of China's economy in recent years, people's demand for tourism is also growing. Although the tourism industry has broad prospects, the capital recovery cycle of the tourism industry is relatively long, and the risks and costs are high. The tourism industry requires high-cost investment by the government and enterprises in the early stage of development [5]. In this context, the development of tourism in the region requires a lot of financial support to develop tourism areas [4]. Today, many regions hope to develop tourism, but the support of financial institutions is insufficient, resulting in an unstable foundation for tourism development. Today, tourism and financial institutions have not yet formed a complete and effective docking mechanism. The financial industry does not have enough understanding of the development and income of the tourism industry, lack of experience in managing tourism projects, and cannot carry out effective risk assessment and early warning for tourism development. In order to enhance the confidence of the financial industry in tourism and attract financial institutions to invest in tourism development, many studies have conducted in-depth discussions on the relationship between financial support and tourism. This paper mainly uses the error correction model to confirm the relationship between the loan balance of financial institutions and the tourism revenue data of county a [2].

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## 2 The Necessity of Financial Support for Tourism

Finance occupies an important position in national economic development. Finance can guide the rational allocation of resources in the market and regulate economic operation. Finance can guarantee the sustainable, healthy and stable development of the national economy. The tourism industry is an important part of the economy. With the improvement of people’s living standards in recent years, the tourism industry is gradually becoming a growth point of behavioral economy. Connecting the financial industry with the tourism industry can promote the development and prosperity of the tourism industry [1] (Fig. 1).

Tourism development projects are generally led by the government, and the government’s financial capacity is not strong. In order to ensure the smooth progress of tourism development, tourism development projects need the support of financial institutions and enterprises [9]. In order to maintain the development of various stages of tourism projects, it is necessary to utilize a variety of financial products for risk transfer. It is not enough to rely solely on the government or enterprises to develop tourism projects [12]. In the process of developing tourism, a lot of capital is needed, so tourism projects need to be financed through various means. Nowadays, the development of tourism is in some natural scenic spots. The infrastructure construction in these places is weak and requires extensive infrastructure construction. The construction of tourist attractions requires a large amount of and diversified industrial investment to build a well-equipped tourist attraction. A perfect tourist attraction attracts more users.

Financial means can gather idle funds in the market, and then invest in a reasonable way to achieve a reasonable distribution of funds and meet the capital needs of different

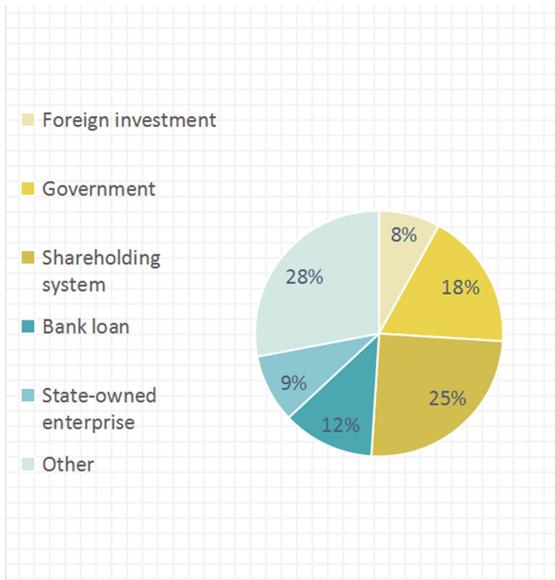
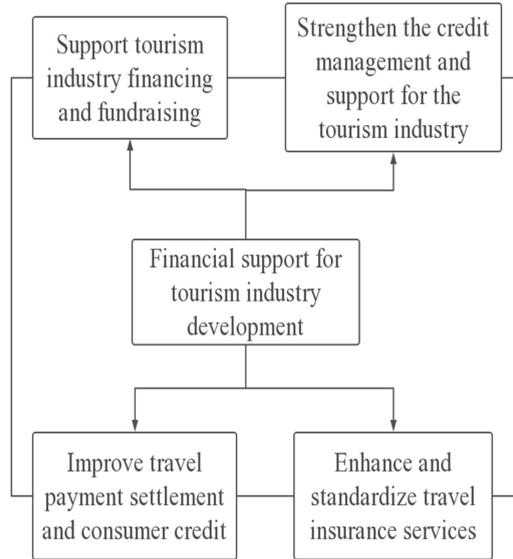


Fig. 1. Tourism investment sources



**Fig. 2.** Way of financial support

entities. Investment in tourism by financial institutions is an effective market competition mechanism. Taking advantage of market competition can help the economy develop efficiently. Financial support can reduce the information cost of both parties to the greatest extent (Fig. 2).

### 3 Error Correction Model

This study used a cointegration model and an error correction model to close the relationship between financial support and tourism. Cointegration models can explain long-term relationships between variables. Error correction models can analyze short-term fluctuations on top of cointegration models. The cointegration model comes from the cointegration relationship in economics. Cointegration theory and its methods provide a more accurate and long-term approach for modeling non-stationary series. Although some economic variables are themselves non-stationary series, their linear combinations may be stationary series. Cointegration model can find long-term stable equilibrium relationship between variables [15]. An error correction model is an econometric model with a specific form. After discovering a cointegration relationship between variables, this relationship can constitute an error correction term. A short-term model can be built on top of the error correction term, treating the error correction term as an explanatory variable. By integrating the explanatory variables, a short-term model can be obtained, and this short-term model is an error correction model [3].

To analyze the relationship between financial support and tourism development, we must first establish a relationship model between financial support and the level of rural tourism development in county a. The specific formula is as follows:

$$Y = a + \beta x + \mu$$

In the formula,  $a$  is the constant term.  $\beta$  is the coefficient of influence between the loan balance of financial institutions and the tourism income of county  $a$ .  $\mu$  is the residual term [13].

At present, the financial support that Chinese financial institutions can provide is mainly reflected in the issuance of loans, so the data selected in this study comes from the loan balance  $X$  of financial institutions. The size of  $X$  reflects the strength of financial support. For the effect of tourism development, in this study, the total tourism income  $Y$  of county  $a$  was selected. The calculation results in this study were obtained by the software Eviews8.0.

### 4 Evidence

First, establish the regression model between  $X$  and  $Y$  using EG two-step method, and test the stationarity of the meal sequence of the regression model. If the residual sequence is stable, there is a cointegration relationship between  $X$  and  $Y$ . If the residual sequence is not stationary, then the cointegration relations do not exist. The OLS regression of  $X$  and  $T$  starts by using the EG two-step method. Results are available from the software:

$$Y_t = -0.1076 + 0.9277X_t + \mu_t$$

$$t = (-0.056)(35.78562)$$

$$R^2 = 0.976754$$

As is seen from the t-test, the constant term did not pass the significance test at the significance level of 0.01. This shows that there is no constant term in the model, and the regression coefficient is significantly not 0, indicating that the financial support strength  $X$  has a significant impact on the total tourism revenue  $Y$  [8] (Fig. 3).

The second step is to test the stationarity of the residual sequence. The validation results of the software are shown in Table 1.

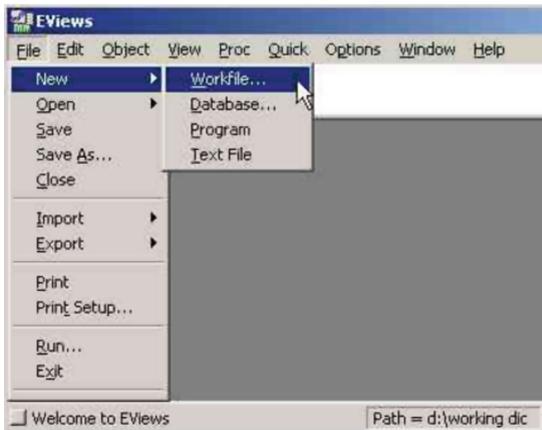


Fig. 3. Schematic diagram of the software operation

**Table 1.** The stationarity test of the residual items

variable		e
ADF value		-2.568190
critical value	1%	-2.645210
	5%	-1.972631
	10%	-1.610283
Whether stable		Yes

As can be seen from Table 1, there is a cointegration between the original variables X and Y, that is, there is a long-term equilibrium relationship.

The third part is getting the cointegration equation. The long-term equilibrium equation is as follows:

$$Y_t = 0.9264 Y_t$$

$$(111.9872)$$

The co-consolidation equation indicates the long-term balance between the loan balance of financial institutions and the total tourism revenue of County A. It can be seen from the equilibrium equation that there is a positive correlation between the financial support and the total tourism revenue, that is, the greater the financial support, the higher the total tourism revenue [11].

The cointegration model can find out the long-term equilibrium relationship between the variables, but the short-term fluctuations may deviate from the equilibrium [7]. In actual economic data changes, data generally arise from nonequilibrium processes [10]. The construction of economic models requires approaching the long-term equilibrium of economic theory with the dynamic nonequilibrium of data [6]. The error correction model can be regarded as a short-term fluctuation model built together with an explanatory variable and other variables reflecting short-term fluctuations. The model can measure the short-term deviation of variable Y in a certain period about variable X at a certain point in time. In this study, regression was used to establish a short-term fluctuation model [16].

The first step in establishing the error correction model is to return to the following equations to derive the residuals:

$$Y_t = a_0 + \beta_0 X_t + \varepsilon_t e_t$$

Then use the residuals as an explanatory variable to produce an error correction model:

$$Y_t = a_0 + a_1 Y_{t-1} + \beta_0 X_t + \beta_1 X_{t-1} + v_t$$

$$\Delta Y_t = a_0 + \beta_0 \Delta X_t + \gamma e_{t-1} + v_t$$

The short-term wave equation results are:

$$\begin{aligned}\Delta Y_t &= 0.8926734 \Delta X_t - 0.087366 e_{t-1} \\ t &= (8.342874)(-0.982730) \\ R^2 &= 0.239721\end{aligned}$$

As can be seen from the t-test results, the coefficients in the following period of the error correction term all passed the significance test, indicating that there is an autocorrelation between the variables.

## 5 Financial Support for the Direction of the Tourism Industry

The role of financial support to tourism is very obvious. This paper determines the relationship between financial support and tourism development according to the dynamic model. The financial industry needs to use its own power to help the development of the tourism industry. The financial industry should increase credit support for the tourism industry, improve infrastructure, broaden financing channels, and improve the financial ecology.

When financial institutions support the tourism industry, they should fully consider the future development direction and characteristics of tourist attractions, and formulate a credit support plan suitable for the development of tourist attractions. The most important point in the construction planning of tourist attractions is to create features. An excellent experience project in the scenic spot can quickly help the development of the scenic spot. When financial institutions support the development of the tourism industry, they should pay attention to the capital investment in the infrastructure construction of tourism projects, and support the tourist attractions with independent characteristics. Such investment is scientific and reasonable.

The national government should support well-established tourism enterprises in terms of policies to carry out listing and financing. Tourism enterprises with sufficient profitability and a sound management system can use the listing to issue stocks or bonds, broaden the channels of funding sources, and enable tourism enterprises to develop more stably and long-term. After social capital joins the tourism industry, tourism development can have a stronger development foundation, and in the development process, the needs of social consumer groups can be more considered, thereby enhancing the profitability of tourist attractions. In terms of listing financing, government leadership is required. The government should encourage financial institutions or individuals to invest in capable tourism projects through the guidance of policies. Financial institutions should develop specialized financial products according to the development of tourism to meet the investment needs of individuals in the tourism industry [14].

Improving the financial ecology is an important step for the financial support of the tourism industry. A perfect financial ecology can reduce the risk of tourism projects. The financial industry should strengthen the risk prevention and control for the development of tourism projects. Banks and financial institutions are required to conduct regular investigations, reviews and controls on lending tourism companies. A sound supervision system can ensure the smooth operation of tourism projects. Before financial institutions

invest, they need to introduce professional talents to conduct risk assessment, risk estimation and risk response for tourism projects. The government needs to speed up the construction of the credit system to avoid a credit crisis. In order to prevent financial institutions from daring to invest in tourism projects, the government should use subsidies to reduce the risks of financial institutions and increase the enthusiasm of financial institutions for the tourism industry.

## 6 Conclusion

This study analyzed the tourism revenue and financial support data in County A using Eviews software. The models used in conducting the analysis in this study are the cointegration models and the error correction models, which allow for a deep analysis of the changes in the economic data. In the study, the short-term and long-term relationship between financial support and tourism development is tested, and the final conclusion is that financial support has the time lag of tourism development in the short term. In the long run, financial support promotes the tourism industry. Based on this research results, the government should use a variety of means to encourage financial institutions to finance and invest in tourism, which is conducive to the development of tourism.

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