Empirical Analysis on the Contribution of Producer Services on Economic Growth in Anhui Province

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Keywords: Producer services; Economic growth; Contribution rate; Anhui province.

Abstract: By using GDP, producer service industry investment scale, added value of producer service and producer services industry data of Anhui province from 2006 to 2015, the paper taken empirical analysis of two aspects. On one hand, the paper has analyzed the effect of Anhui province’s GDP on the producer services inputs. The results show that the contribution is obviously, but the modern service industry of producer services contribution is less; on the other hand, it has analyzed the influence of producer service industries of Anhui Province GDP. The results show that the contribution of various industries is different. In view of this analysis conclusion, this paper puts forward that market-oriented, industrialization, socialization and internationalization should be taken as the guidance to promote the development of producer service industry in Anhui province.

Introduction

Since the reform and opening up, great achievements have been made in economic development of Anhui. At the same time, the service industry has also been developing rapidly. However, from the data in recent years, the growth rate of producer services is lower than the growth rate of GDP during the same period. For example, the growth rate of GDP in Anhui was 8.73% in 2015, transportation, storage and postal services increased by only 1%, and the financial sector increased by 7% compared with the previous year while in the producer services. Therefore, this paper discusses the contribution of producer services to economic growth in service industry, and how to further play the role of producer services of Anhui.

Variable and Model Selection

Variable Selection

Based on the sufficiency and availability of the data, this paper selects the main sectors of producer services as samples to measure the development of producer services [1]. Specifically, the financial industry, transportation, warehousing and postal services, information transmission, computer services and software industry are to be selected and leasing and business services are selected as the sample industry[2][3]. At the same time, the data were selected from 2006 to 2015.

Model Selection

In order to analyze the contribution of the investment scale to economic growth in the producer service industry in Anhui province, the gross domestic production of Anhui province will be selected as the explanatory variable, which is expressed as GDP. Choose producer service industry input scale as explanatory variable [4]. According to economic growth theory, economic growth depends mainly on labor and capital investment. On the one hand, it will select the sum of the fixed assets investment in the four sample industries and represent the capital investment scale of producer services, which is represented by $inv$. On the other hand, the combined employment of the four sample industries will be selected to represent the labor input scale of producer services, which is represented by $emp$. In order to keep the variables stable, the logarithmic transformation of each variable is carried out [5]. Building regression model is as follows:

$$\ln(gdp)=a+b\ln(inv)+c\ln(emp)+d$$

(1)
a is constant; b and c are the coefficients of fixed asset investment scale and labor input scale respectively for the independent variable producer services. d is a random error. The data of Anhui province from 2006 to 2015 are selected for regression analysis. The data of this paper are from the statistical yearbook of 2006-2015 in Anhui province [6].

Model Analysis

The multi-collinearity test shows, the scale of investment in fixed assets and labor input of producer services in Anhui size does not exist between the multi-collinearity, therefore, can use multivariate linear regression method, the ln (gdp), ln (inv) and ln (emp) from 2005 to 2011, data analysis, obtained the regression equation as follows:

\[
\ln(gdp)=-5.7824+0.3182\ln(inv)+1.8312\ln(emp) \tag{2}
\]

(4.4872) (1.3218) (2.4693)

\[R^2=0.9816 \quad F=70.7837 \quad S.E.=0.0813\]

In the regression model, for a, b, and c, t statistic was 4.4872, 1.3218 and 2.4693, were greater than the corresponding critical value, it shows that the producer service industry scale of investment in fixed assets and labor input scale is significant impact on regional GDP; From the sample decision coefficient, it can be seen that the fitting of the model is ideal; From the producer services of the scale of investment in fixed assets and labor input size of positive and negative situation, both is positive, the investment scale of producer services in Anhui province economic growth promoter action; In terms of the specific quantity relation between variables, every 1% increase in fixed assets investment in producer services in Anhui province increases the GDP growth is 0.32%, however, the influence of the scale of labor input to economic growth is more outstanding, whenever the labor input scale increases by 1%, GDP will grow by 1.83%, this shows that producer services in our province is mainly based on the traditional service industry is given priority to, modern service industry needs further development.

The Contribution Analysis of Economic Growth of Producer Services Sector in Anhui Province

By analyzing the impact of the overall economic growth of producer services in Anhui province, it can be seen that its contribution is significant. For the further study of producer services in Anhui province of the specific effect on economic growth in the industry, then, in-depth analysis of producer services in Anhui province subdivision industry's contribution to the economic growth.

In view of the above variable selection and data shows that for the analysis of producer services in Anhui province subdivision industry's contribution to the economic growth, in this case, will still choose the calendar year in Anhui province is gross domestic product (GDP) as the explained variable; The three sample industries, apart from leasing and business services, will be selected as independent variables. So, the following regression model was built:

\[
\ln(gdp)=e+f\ln(log)+g\ln(fin)+h\ln(tec)+i \tag{3}
\]

Among them, gdp represents gross regional product; log represents logistics in producer services; fin represents the financial sector in producer services; tec represents high technology services in the production services industry. Using data from 2006 to 2015, the following model is obtained by gradual regression.

\[
\ln(gdp)=1.8593+0.8936\ln(log)+0.3701\ln(fin)+0.0071\ln(tec) \tag{4}
\]

(5.4591) (10.9218) (5.8312) (0.6984)

\[R^2=0.9853 \quad F=249.8124 \quad S.E.=0.0747\]

By the model (4) may safely draw the conclusion as follows:

(1) From the power of the t value, F value determination coefficient, goodness of fit of the model is ideal. Among them, e,f,g,h, the corresponding values were 5.4591, 10.9218 5.8312, 0.6984, were greater than the corresponding critical value, that is the influence of each variable significantly; The F value of the model is 249.8124, which is also greater than the corresponding critical value, indicating that the common influence of the three independent variables is significant.
(2) From the explanatory variables coefficient of plus or minus, the three major producer services industry's impact on GDP is positive, further proof that the producer service industry's contribution to the regional economic growth significantly.

(3) From the variable coefficient of the size of the case, in the three industries, the logistics industry's contribution to the economic growth in Anhui province, the largest regional GDP per 1 unit, the logistics industry has contributed up to 84.7%.

Countermeasures for Further Development of Producer Services in Anhui Province

Adhere to Market-oriented Orientation

To adhere to market-oriented orientation, it is to play the role of market mechanism in resource allocation in producer services and enhance the competitiveness of producer service enterprises. The market mechanism mainly includes price mechanism, supply and demand mechanism and competition mechanism, and these mechanisms should play a role and must have sufficient market environment.

Adhere to Internationalization Orientation

To be internationalized is to "bring in" and "go out" in producer services. Among them, "introduction" includes the introduction of advanced enterprises, advanced technologies, advanced management experience, common standards and excellent talents of foreign producer services. "Going out" includes producer services enterprises going abroad, participating in international competition, occupying international markets and earning international profits.

Increase the Outsourcing of Internal Services and Optimize the Demand Structure of Producer Services

Lead to a certain size, good performance of provincial or municipal key industrial enterprises to optimize the management process, extends the industrial chain, and stronger, do deep solid, its main business, stripping distribution services, logistics services, logistics services, etc., to form a large number of around the main contact social independent business accounting, legal entity cultivating new producer service main body, optimize the structure of the producer service requirements.

Cultivate Industrial Agglomeration Area and Optimize the Layout Structure of Producer Services

The industrial agglomeration zone should be cultivated to optimize the layout structure of producer services in Anhui province. At present, the cultivating of producer services, should be combined with the industry characteristics of producer services, around the release characteristics of relevant industries in Anhui province at present, contact the country's industry layout, completes the aggregation of producer services planning, and take the corresponding support policy, innovation and development mode, cultivate the modern logistics industry clusters, research and development innovation clusters, the information industry clusters.

Acknowledgement

This research was financially supported by the Key research projects of Suzhou University (NO. 2016yzd13), Outstanding young talent support program of Suzhou University (NO. 2016XQNRW005), and Opening research platform of Suzhou University (NO. 2015YKF26), 2018 Anhui humanity and social science research projects (NO. SK2018A0465).

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