

Research on the Impact of Healthcare Financial Inputs on Economic Growth in Liaoning Province

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Introduction

The main content of this paper can be divided into two parts, which are theoretical discussion and empirical analysis. The theoretical part of the paper analyzes the theoretical basis and influence mechanism of government expenditure on health care affecting economic growth by reviewing information, collecting and organizing data. The empirical part firstly constructs the vector autoregressive model (VAR model), adopts the ADF test to test the smoothness of the variables, and applies the Johansen cointegration test to exploring the long-run equilibrium relationship between fiscal expenditure and the economy. Finally, robustness test is conducted to ensure the reliability of the results.

Research Questions

This study aims to explore in depth the relationship between GDP growth and the development of the healthcare sector in Liaoning Province from an economic perspective, and to utilize the model to derive the magnitude of the influence of each factor, so as to provide practical and effective suggestions for the healthy development of society.

Methodologies

In this present work, we use the empirical methods of econometrics, such as unit root test, selection of the optimal lag order, cointegration test, and robustness test, to carry out the study by building a multivariate linear econometric model, so as to draw relevant conclusions.

Mathematical Formulas

$$\begin{bmatrix} \ln y_t \\ \ln x_{1t} \\ \ln x_{2t} \\ \ln x_{3t} \end{bmatrix} = \alpha + \beta_1 \begin{bmatrix} \ln y_{t-1} \\ \ln x_{1,t-1} \\ \ln x_{2,t-1} \\ \ln x_{3,t-1} \end{bmatrix} + \beta_2 \begin{bmatrix} \ln y_{t-2} \\ \ln x_{1,t-2} \\ \ln x_{2,t-2} \\ \ln x_{3,t-2} \end{bmatrix} + \dots + \beta_n \begin{bmatrix} \ln y_{t-n} \\ \ln x_{1,t-n} \\ \ln x_{2,t-n} \\ \ln x_{3,t-n} \end{bmatrix} + \varepsilon$$

Tables

VAR model validation

Variant Variable	Ratio	Statistics Standard Deviation	T-value	P-value	95% Confidence Interval	
L4.lny	0.834	0.167	4.990	0.000	0.507	1.161
_cons	22.057	7.820	2.820	0.005	6.731	37.383
L4.lnx1	1.624	0.270	6.020	0.000	1.096	2.153
_cons	-12.318	12.628	-0.980	0.329	-37.069	12.433
L4.lnx2	1.760	0.328	5.370	0.000	1.118	2.402
_cons	7.835	15.341	0.510	0.610	-22.233	37.904
L4.lnx3	0.050	0.022	2.240	0.025	0.006	0.094
_cons	3.419	1.049	3.260	0.001	1.363	5.474

This result indicates that there is a positive contribution of healthcare infrastructure and employment levels to economic development.

Conclusion

In this study, taking Liaoning Province as an example, by establishing a regression model and applying econometric methods, we find that healthcare expenditures have a positive driving effect on economic growth in the long run. And the following conclusions are drawn: (i) as the level of healthcare services improves, related industries such as medical equipment manufacturing, pharmaceutical production, and the healthcare finance industry will also develop; (ii) the healthiness of human capital is maintained and enhanced, which in turn improves the level of work efficiency and productivity.