

A STUDY ON THE RELATIONSHIP BETWEEN THE DEVELOPMENT OF THE STOCK MARKET AND ECONOMIC GROWTH IN CHINA

Li Tan

Hunan University of Humanities, Science and Technology, China

ABSTRACT

This paper mainly studies the relationship between the Chinese stock market development and economic growth, through the VAR model of time series analysis. The analysis shows that the economic growth and development of the stock market appears China weak correlation.

Keywords: Stock Market, Economic Growth, Relationship, VAR Model

1. INTRODUCTION

The relationship between development of stock market and growth of economic has been a problem for economists. In the view of Western economists, the stock market has been playing a "barometer" role, but not necessarily applicable in our country. What is the relationship between the stock market and economic development in China? Is it positively correlated or negative? These issues also need us to further analysis and discussion. The article collects the data to establish the regression model, and analyzes the relationship between the development of the stock market and the economic growth.

2. MODEL

2.1 Vector Autoregressive (VAR) Model

Vector independent regression (VAR) is a model based on the statistical characteristics of the data. The model constructs the model as a function of the lag value of all the endogenous variables in the system. It is a multivariate time series variable model. The general form of the model is as follows.

$$y_t = \alpha_1 y_{t-1} + \dots + \alpha_p y_{t-p} + \beta x_t + \varepsilon_t \quad t = 1, 2, \dots, T$$

X_t is the exogenous variable column vector, Y_t representing the k dimension endogenous

variable, T is the number of samples, p representing the lag order. ε_t are the perturbation vectors, they can be related in the same period, but cannot be related to the variables on the right side of the equation and their own hysteresis values. β is the coefficient matrix to be estimated.

2.2 Co-integration Test

Co-integration is defined as follows: $y_t = (y_{1t}, y_{2t}, \dots, y_{kt})(t = 1, 2, \dots, T)$ Representation of k dimension vector time series. The sequence of components is called order co-integration, which is assumed to be satisfied:

- (1) $y_t \sim I(d)$, y_t is the order of the single.
- (2) there is a nonzero vector β , $\beta' y_t \sim I(d-b)$, $0 < b \leq d$;
- (3) y_t is co-integrated, where the vector β is a co-integration vector.

3. VARIABLE SELECTION AND DATA SOURCE

The sample was selected from the first quarter of 2001 to the fourth quarter of 2016, where quarterly data was used to increase the number of samples in order to reduce the error. On behalf of the economic growth indicators selected quarterly real GDP, the stock market indicators selected capitalization rate (CAP), trading rate (VAL) and turnover (TUR). The data comes from Chinese statistics.

4. EMPIRICAL RESULTS AND ANALYSIS

4.1 Co-integration Test Results

This paper carries out Johansen co-integration on the stock market and the indicators of economic growth. The test results are shown in the following table.

Table 1: co-integration test results

No. of CE(s)	Eigen values	T value	Critical value	P Value
None *	0.561891	115.2476	88.80380	0.0002
At most 1 *	0.446211	67.38086	63.87610	0.0246
At most 2	0.281704	33.10452	42.91525	0.3312
At most 3	0.141430	13.91386	25.87211	0.6647
At most 4	0.083696	5.069591	12.51798	0.5864

From the above table we can know that at a significant level of 2%, there is a co-integration relationship among the five variables, indicating that there is a long-term equilibrium relationship between GDP and CAP, TUR, VAL and DLNM2.

4.2 Impulse Response Analysis

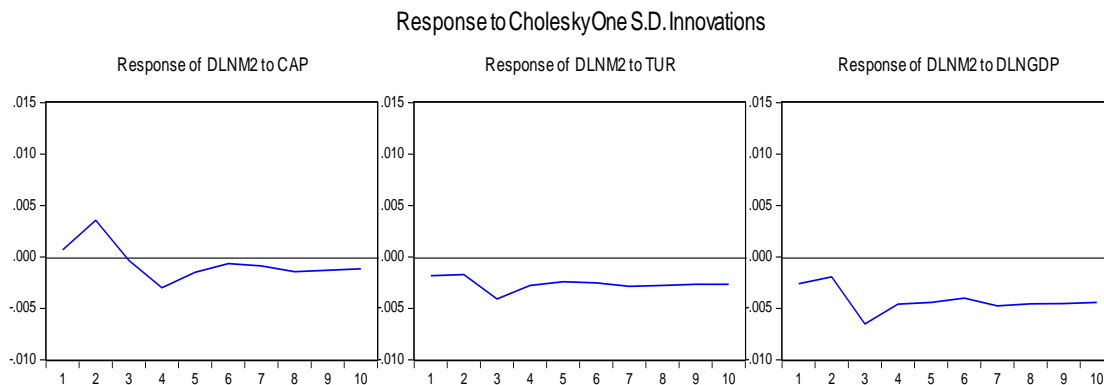


Figure 1: Impulse response results

It can be seen from Figure 1, TUR have a negative impact on dlnm2, CAP have a positive impact on dlnm2 firstly, but resulting in a negative impact. DLNGDP has a significant negative impact on DLNM2, because when the economy is in a state of upward, the state adopt a prudent monetary policy, while when the economy is more depressed, the state adjust the money supply to stimulate the economy.

5. CONCLUSIONS

On the whole, there is no obvious causal relationship between stock market development and economic growth. The development of China's stock market is weakly related to economic

growth.

ACKNOWLEDGEMENT

This paper is supported by Youth Fund of Hunan University of Humanities, Science and Technology. (2015QN12)

REFERENCES

Atje R, Jovanovic B. Stock Markets and Development [J]. *European Economic Review*, 1993,37:632-640.

Levine R, Zervos M. Stock Markets, Banks, and Economic Growth [J]. *American Economic Review*, 1998,88:37-58.

Thorsten Beck, Ross Levine. Stock markets, banks, and growth: Panel evidence [J]. *Journal of Banking and Finance*, 2004(28):423-442.

Demirguc-Kunt and R. Levine. Stock Market Development and Financial Intermediaries: Stylized Facts [J]. *The World Bank Economic Review*, 1996,10(2):291-332.

Richard Harris. Stock Market and Development: A Reassessment [J]. *European Economic Review*, 1997,41(2): 139-146.

Colin Mayer. New Issues in Corporate Finance [J]. *European Economic Review*, 1988, (32): 116-188.

Arestis P. Demetriades P. Financial Development and Economic Growth Assessing the Evidence [J]. *Economic Journal*, 1997,107 : 783-799.