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The Relationship Between Leverage Ratio Change and Economic Growth Rate in That Development of Financial Market

Shiyu Xing

One Direction Academy, Toronto, Canada

Abstract: The relationship between the change of leverage ratio and economic growth rate in financial markets has always been the focus of economists, policy makers and market participants. The goal of this paper is to deeply study how the fluctuation of leverage ratio affects the economic growth rate and explore the complex mechanism of this relationship. Based on the previous theoretical research on leverage ratio and economic growth, this paper shows that excessive financial leverage ratio will not only lead to economic decline, but also cause financial turmoil through the Pearson correlation research between financial leverage ratio and economic growth. The change of leverage ratio has an important impact on economic growth, but this impact is diversified and complex. A deep understanding of the relationship between leverage ratio and economy is very important for maintaining the stability of financial markets and sustainable economic growth, especially in the ever-changing global financial environment. This requires the joint efforts of policy makers, regulators and market participants to ensure the effectiveness and sustainability of leverage ratio management.

Keywords: Financial market, Economic growth, Leverage ratio.

1. Introduction

Financial market has always been regarded as an important part of modern economy, which plays a vital role in resource allocation, risk management and economic growth. In the financial market, leverage ratio is a key indicator, which reflects the extent to which market participants use borrowed funds to invest. The relationship between the change of leverage ratio and economic growth rate has always been concerned by scholars and policy makers, because this relationship may have a significant impact on the stability of financial markets and the entire economic system [1].

In the past few decades, the global financial market has undergone profound changes. Financial innovation, globalization and technological progress have all promoted the development of financial markets, making it easier for financial institutions and investors to obtain and use leverage [2-3]. This change leads to the fluctuation of leverage ratio, which may have a complex impact on economic growth. On the one hand, higher leverage ratio can increase the activity of financial markets and provide more financing opportunities for enterprises and individuals, thus promoting economic growth. On the other hand, high leverage ratio may also lead to the instability of the financial market. When the market encounters an impact, it may trigger a financial crisis and have a negative impact on the economy.

Therefore, this paper aims to deeply study the relationship between the change of leverage ratio and economic growth rate in the development of financial markets. Through the in-depth study of the complex relationship between leverage ratio and economic growth, we are expected to better understand how the evolution of financial markets affects the entire economic system and provide guidance for formulating effective policies. This is of great significance for maintaining the stability and sustainable development of the financial market and economic system, especially in the ever-changing global economic environment.

2. Mechanism of the Influence of Leverage Ratio Change on Economic Growth Rate

Leverage ratio, that is, the ratio of capital to debt in financial markets, has always been the focus of the complex relationship between financial markets and economic growth. The change of leverage ratio can have a positive or negative impact on the economy, which depends on many mechanisms and factors. The fluctuation of leverage ratio can be traced back to many factors, including financial innovation, monetary policy, economic cycle, investor confidence and changes in laws and regulations [4-5]. These factors can interact with each other, leading to the increase or decrease of leverage ratio, thus having different impacts on the economy.

The influence mechanism of leverage ratio change on economic growth can be divided into the following aspects:

Credit supply and demand: the increase of leverage ratio is usually accompanied by more credit supply, which can stimulate investment and consumption and promote economic growth. However, if the leverage ratio rises too fast or too high, it may lead to financial instability, thus inhibiting economic growth [6].

Risk transmission: High leverage ratio may make the financial market more fragile. When the market encounters shocks, risks may be more easily transmitted to the whole economic system, leading to a financial crisis and having a negative impact on the real economy.

Cost of capital: High leverage ratio may lead to higher borrowing costs, which may inhibit the investment of enterprises and individuals, thus slowing down economic growth.

Confidence and expectation: the change of leverage ratio may affect the confidence and expectation of market

participants, which can affect investment and consumption decisions and further affect economic growth [7].

The influence of leverage ratio is complicated because it is intertwined with other factors such as monetary policy, credit market, market sentiment and government policies. This makes it difficult to determine the impact of leverage ratio on economic growth in the real economy, because it may vary in different situations and periods. The change of leverage ratio has an important impact on economic growth, but this impact is complex and diverse, and many factors and mechanisms need to be considered. Therefore, policy makers and economists usually need to carefully analyze the consequences of changes in leverage ratio and take measures to maintain financial stability and sustainable economic growth.

Through empirical research, we can better understand how the change of leverage ratio in different countries and regions affects economic growth. This can help us identify the most significant mechanism and the changes in different environments.

3. An Empirical Analysis of The Relationship Between the Change of Leverage Ratio and Economic Growth Rate

3.1. Data collection

Before empirical analysis, the accuracy and quality of data are very important. Reasonable data collection and processing process can ensure the credibility and accuracy of the analysis, and thus draw a reliable conclusion about the relationship between the change of leverage ratio and economic growth. Economic growth data This includes the annual GDP growth rate, actual economic growth rate data and other macroeconomic indicators of a country or region, such as inflation rate and unemployment rate [8-9]. Leverage ratio data This includes the leverage ratio data of financial institutions, enterprises and individuals, usually expressed as the ratio of debt to capital. Different sources may provide different types of leverage data, including the overall level, industry level or individual level of leverage. In this paper, the leverage ratio of the financial sector is used, and the economic growth rate is expressed by the growth of GDP. The range of the two variables is from 2005 to 2015 (data comes from China Statistical Yearbook).

3.2. Pearson correlation analysis of leverage ratio and economic growth rate

Pearson correlation analysis between leverage ratio and economic growth rate is a common statistical method to detect the linear relationship between these two variables. Before analysis, the data has been cleaned, smoothed, outliers removed and standardized. This helps to ensure the quality and accuracy of the data.

Pearson correlation coefficient is used to measure the linear relationship between two continuous variables. Its calculation formula is as follows:

$$r = \frac{\sum\left(X_i - \overline{X}\right)\left(Y_i - \overline{Y}\right)}{\sqrt{\sum\left(X_i - \overline{X}\right)^2 \sum\left(Y_i - \overline{Y}\right)^2}} \quad (1)$$

Among them, X_i, Y_i represents the data of leverage ratio and economic growth rate of each observed value, and $\overline{X}, \overline{Y}$ represents the average value of leverage ratio and economic growth rate.

In order to determine whether Pearson correlation coefficient is significant, significance test is usually carried out. T- test can be used to test whether the correlation coefficient is significantly different from the null hypothesis (no correlation). The statistics of inspection are as follows:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \quad (2)$$

Where r is Pearson correlation coefficient and n is the number of observed values. By comparing the calculated t value with the critical t value, it can be determined whether the correlation is significant. Usually, statistical software or tables are used to find the critical t value.

The GDP growth rate is calculated by the growth of the annual value of the current year relative to the previous year, and the data selection deadline is the end of 2015, as shown in Figure 1.

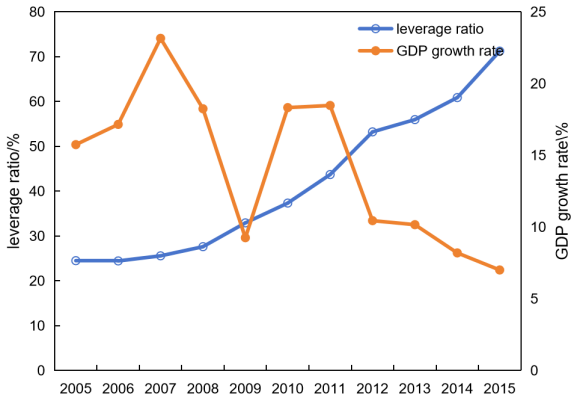

Figure 1. Time series table of leverage ratio and economic growth index (unit: 100 million yuan)

Table 1. Test result

	leverage ratio	GDP growth rate
leverage ratio	1(0.000***)	-0.763(0.006***)
GDP growth rate	-0.763(0.006***)	1(0.000***)

Note: * * *, * * and * represent the significance levels of 1%, 5% and 10% respectively.

Figure 2. Thermogram of correlation coefficient value

Table 1 shows the results of Pearson correlation test. Figure 2 above shows the value of correlation coefficient in the form of heat map, which mainly shows the value through the depth of color. It can be seen that the correlation between the two is significant ($P=0.006<0.05$), that is, the correlation is significant. At the same time, it can be seen that the correlation between the leverage ratio of the financial sector and GDP is -0.763, which is strong and negatively correlated. This shows that with the increase of leverage ratio, the economic growth rate will decrease. The leverage ratio within a certain range can stimulate economic growth. Once it exceeds the marginal line, the increase of leverage ratio will lead to the decline of economic growth and may cause economic turmoil.

4. Suggestions on Effective Deleveraging of Finance

Effective deleveraging of financial institutions and economic systems is an important part of maintaining financial stability and sustainable growth. Here are some suggestions to help achieve effective deleveraging:

Strengthening supervision and supervision: the government and regulatory agencies should strengthen supervision and supervision of financial institutions to ensure that they comply with the provisions and guidelines of leverage ratio. Supervision should be stricter to prevent unhealthy leverage.

Make a wise leverage ratio: make a wise leverage ratio standard for different types of financial institutions and markets to ensure that financial institutions can maintain a moderate leverage level under the premise of full capitalization.

Strengthen risk management: Financial institutions should strengthen risk management, including stricter examination of borrowers' credit quality and timely monitoring of risk exposure. This helps to reduce risks and reduce the volatility of leverage.

Transparency and information disclosure: Improve the transparency and information disclosure of financial markets so that market participants can better understand the leverage and risk exposure of financial institutions. Transparency helps to reduce uncertainty and improve market stability [10].

Diversified sources of funds: Financial institutions should strive to diversify their financing sources and reduce their dependence on short-term debt and external financing. This helps to reduce liquidity risk and the vulnerability of financial institutions.

Coping with cyclical shocks: The government and the central bank should establish mechanisms to cope with cyclical shocks. This includes moderate adjustment of monetary policy and emergency fiscal policy to alleviate the instability of financial markets.

Financial education and training: financial practitioners and investors should receive training and education on leverage and risk management to improve their risk awareness and reduce the probability of wrong decisions.

International cooperation: The international financial system needs international cooperation to meet the challenges of the global financial market. International standards and coordinated policies can help reduce the risk of cross-border leverage.

Regular evaluation and adjustment: Policymakers and regulators should regularly evaluate the effectiveness of leverage rules and policies and make adjustments according to market and economic changes.

Monitoring innovation and emerging risks: constantly monitor financial innovation and emerging risks, and formulate corresponding policies and regulations in time to avoid instability.

Effective deleveraging requires comprehensive consideration of various factors, including supervision, risk management, policies and market mechanisms. By adopting the above suggestions, we can help the financial system maintain stability and promote sustainable economic growth.

5. Conclusions

Moderate leverage ratio helps to promote economic growth. Moderate debt level can help enterprises to finance projects, accelerate investment and stimulate consumption, thus promoting economic growth. Excessive or unstable leverage ratio may lead to financial instability. When the leverage ratio rises rapidly or exceeds the sustainable level, the financial market may be more vulnerable to shocks, which may trigger a financial crisis and have a negative impact on the economy. The change of leverage ratio is not the only influencing factor. Factors such as monetary policy, regulatory policy, market sentiment and macroeconomic environment will also have a significant impact on the relationship between the change of leverage ratio and economic growth. The change of leverage ratio has a profound impact on economic growth, but this relationship is complex and multifaceted. Policymakers need to adapt flexibly to different economic environments and take measures to maintain the stability of financial markets in order to support sustainable economic growth. At the same time, financial institutions and market participants also need to have the ability of risk management to cope with the possible challenges brought by the fluctuation of leverage ratio. Effective leverage ratio management is a key link to realize the stable and sustainable development of financial markets and the whole economic system.

References

[1] Liu Zhexi, Guo Junjie, & Chen Weize. (2022). Study on the relationship between economic growth and macro-leverage ratio-a new mechanism of "debt-asset price". Economic Research, 57(10), 17.

[2] Pi Jun, Zhou Jianjun, Yang Shenggang, Xing Wei. (2017). The inverted U-shaped relationship between economic growth and fluctuation in China: from the perspective of asymmetric change mechanism of leverage ratio. China Soft Science, 000(002), 132-147.

[3] Liu Xiaoguang, Liu Yuanchun, & Wang Jian. (2018). Leverage ratio, economic growth and recession. China Social Sciences (6), 21.

[4] Cheng Jinlu, & Fang Ronghui. (2020). Study on the relationship between the leverage level of the real economy and economic growth. Financial Theory and Practice (7), 9.

[5] Wang Shaomei, Yi Na,&Sun Li. (2019). Analysis of influencing factors of China's speculative degree and policy arrangement. Macroeconomic research (12), 10.

[6] Liu Xixi,&Wei Peng. (2018). Leverage ratio, financial risk and policy choice. Economic system reform (1), 5.

[7] Tan Xiaofen, Ethan, & Wang Kexin. (2019). Financial Structure and De-leveraging of Non-financial Enterprises. China Industrial Economy (2), 19.

[8] You Yu, Liu Fangzheng, & Huang Zongye. (2022). Macro-prudential Policy and Economic Growth. Economics Trends (9), 20.

[9] Mick Zhang,&Xue Yuxuan. (2019). Internal mechanism of rising leverage ratio-based on the perspective of economic transformation. Research on financial development (8), 6.

[10] Youth Research Group of Guiyang Central Sub-branch of the People's Bank of China. (2020). Structural Differences and Time-varying Characteristics of the Impact of Leverage on Economic Growth —— Based on the Country Comparative Study of Residents, Governments and Enterprises. Financial Theory and Practice (9), 9.