Study on the Impact of Economic Growth Targets on the Return on Capital in China's Real Economy

Zhichun Wang

Surrey International Institute, Dongbei University of Finance and Economics, Dalian,116025, China

Abstract. Economic growth is a common goal pursued by various countries and regions, and among various economic sectors, the real economy is the foundation of a country's economy and is directly related to productivity and the actual level of development of the national economy, while the return on capital is an important indicator of the development of the real economy and responds to the profitability of market players, and in the face of the current pressure of demand contraction, supply shock and expected weakening of China's economic development. This paper theoretically analyzes the mechanism of the impact of economic growth targets on the return on capital of the real economy and empirically examines it using panel data of 30 provinces, autonomous regions and municipalities directly under the central government in China over a total of 18 years from 2003 to 2020. It is found that the impact of economic growth targets on the return to capital in the real economy is inverted U-shaped in terms of national data during the examined period, i.e., the return to capital in the real economy increases and then decreases as the economic growth targets are continuously increased. The results of the heterogeneity test show that the economic growth target has different effects on the return to capital of the real economy in different regions, among which, the relationship between the change in economic growth target and the change in the return to capital of the real economy is consistent with the inverted U-shape in the central and western regions of China, but the relationship is not significant in the eastern regions of China. The results of the intermediate effect test show that the economic growth target affects the return to capital of the real economy through government intervention, and also affects the return to capital of the real economy through fiscal pressure and other mechanisms of action. The purpose of this paper is to investigate the impact of changes in economic growth targets on the return to capital of the real economy and its transmission mechanism, and the findings of the study can provide a reference for setting economic growth targets with full consideration of the need for long-term sustainable development, focusing on innovation and avoiding over-reliance on short-term benefits and financial markets.

Keywords: Real Economy; Return on Capital; Economic Growth Target.

1. Introduction

With the continuous development of the global economy, economic growth has become the common goal pursued by all countries and regions. In the national economic structure, the real economy is the foundation of a country's economy and is directly related to the productivity and the actual level of development of the national economy.In 2022, General Secretary Xi Jinping emphasized in the report of the 20th Party Congress that it is necessary to build a modern industrial system, "insist on putting the focus of economic development on the real economy, promote new industrialization, and accelerate the construction of a strong manufacturing country, a Quality, Space, Transportation, Network, and Digital China" [1], which emphasizes that the Chinese modernization path should take the path of emphasizing the real economy. The emphasis on the development of the real economy necessarily requires an increase in the return on capital. Return on capital is an important indicator of the development of the real economy, which reflects the profitability of market players (Zhang, Xun and Xu, 2016)[2]. In the face of the current pressure of contracting demand, shocks to supply and weakening expectations in China's economic development, it is necessary to improve the business dynamics of market players, and the return on capital is a key factor in determining the dynamics of market players (Zhang Qiancheng and Bonnie Li, 2022) [3].

The goal of economic growth aims to achieve rapid economic development and prosperity by increasing production, raising employment, and promoting investment. Among them, investment is one of the important drivers of real economic growth, and when countries set economic growth targets,

they usually encourage increased investment to promote the development of the real economy. At this time, the setting of economic growth targets has a positive driving effect on the development of the real economy (Shulin Liu et al., 2019) [4], which can create more employment opportunities, increase labor productivity, improve infrastructure, and raise consumption levels.

However, the blind setting of economic growth targets also has the potential to inhibit the development of the real economy. First, driven by promotion incentives, local governments often show competitive strategic interactions when setting economic growth targets (Wang, Xianbin, and Huang, Liangxiong, 2019) [5], and the phenomenon of "cascading" of economic growth targets becomes obvious (Zhou, Li'an et al., 2015) [6], at which time, in order to achieve economic growth At this time, in order to achieve the economic growth target, the government may focus too much on short-term benefits and neglect long-term investment and development, which may bring a series of problems. Secondly, too high economic growth targets may lead the government or enterprises to rely excessively on borrowing and financial markets in order to achieve economic growth targets, triggering financial risks and bubble economies. Finally, excessive economic growth targets may lead governments or enterprises to excessively pursue high growth and high returns, triggering a widening gap between the rich and the poor and increasing social inequality, which in turn will harm the long-term development of the real economy. Therefore, it is important to study the impact of economic growth targets on the return to capital of the real economy.

The purpose of this paper is to investigate the impact of changes in economic growth targets on the return to capital of the real economy and its transmission mechanism, and the findings of the study can provide a reference for setting economic growth targets with full consideration of the need for long-term sustainable development, focusing on innovation and avoiding over-reliance on short-term benefits and financial markets.

2. Literature Review and Theoretical Analysis

The existing literature on return on capital has been studied mainly at the following levels: first, factors affecting return on capital. Existing literature has extensively studied the factors affecting return on capital, mainly including firm size, industry, tax policy, labor cost, technological innovation, etc. Compared with large firms, small firms face higher cost of capital use but have higher return on capital (Guner, Ventura and Xu, 2008) [7]. The manufacturing, real estate, and transportation, storage, and postal industries have high average annual capital stock but low average annual macro-efficiency of capital investment; the finance industry has a low average annual capital stock but the highest average annual macro-efficiency of capital investment of all industries (Holz, 2006) [8]. Tax policy affects firms' return to capital through two mechanisms: tax burden and investment volatility; reducing uncertainty in tax policy can significantly improve firms' return to capital, and compared with state-owned enterprises and collective enterprises, private firms' return to capital is less affected by policy changes (Yang, Jun et al., 2019) [9]. Rising labor costs promote the return to capital of enterprises in the eastern region, while there is no significant effect on the return to capital of enterprises in the central and western regions, and this effect is only related to the region where the enterprise is located and not to the capital-intensive type of the enterprise (Zhichao Liu and Wei Sun, 2018)[10]. The impact of the intensity of IPR protection on the return to capital is in an inverted "U" shape, and IPR protection in China has crossed the "optimal intensity" and has a dampening effect on the return to capital (Yang, Jun et al., 2023) [11]. According to the Solow model, only technological progress can explain the continuous growth of return on capital, and China should pay attention to the development of technology in order to promote sustainable economic development (Li, Yue and Li, 2019)[12]. method. The existing literature has elaborated and compared the measurement methods of return on capital, including traditional indicators such as accounting profitability, return on investment, and net profit margin, as well as modern indicators such as economic value added (EVA) and market value ratio (M/B). These methods can be broadly grouped into two categories: one based on the micro level, which estimates the return on capital of firms based on their financial statement

data, and the other based on the macro level, which is calculated based on the capital stock (Bai and Zhang, Qiong, 2014) [13].

The existing literature has conducted an in-depth study on the impact of economic growth targets on firm development, which mainly includes the following aspects: first, the impact of economic growth targets on firm innovation. Adequate economic growth targets can promote enterprises' technological innovation and R&D investment, enhance their competitiveness and innovation ability, and thus improve their productivity and profitability, but the "cascading" of economic growth targets significantly inhibits the improvement of innovation level in cities; it is not conducive to the improvement of enterprise innovation level; and it is not conducive to the improvement of innovation level in provincial capitals and sub-provincial cities. The inhibitory effect on the innovation level of provincial and sub-provincial cities is stronger than that of other cities (Li, Zheng, and Liu, Fengshuo, 2022) [14]. Second, the impact of economic growth targets on the financing environment of enterprises. An appropriate economic growth target can attract more investment and capital inflow, improve enterprises' financing channels and financing costs, and thus promote the development and expansion of enterprises. However, too high economic growth targets reduce the level of total factor productivity through the tidal wave effect of competing investments, distort the investment structure, inhibit industrial structure upgrading, crowd out technological innovation and lead to resource factor mismatch among enterprises and other mechanisms, which can have a significant deterrent effect on the efficiency of financial resource allocation and inhibit the efficiency of financial resource allocation (Yu Yongze et al., 2019) [15]. Third, the impact of economic growth targets on the capacity of enterprises. The achievement of appropriate economic growth targets can stimulate the growth of enterprise capacity, promote market expansion and consumption upgrading, and provide more opportunities and space for the development of enterprises. However, there is an "inverted U-shaped" relationship between economic growth targets and capacity utilization, in which the promotion effect of targets on actual output gradually decreases with the increase of targets, resulting in the first increase and then decrease of capacity utilization (Liu, Shulin et al., 2022) [16].

The impact of economic growth targets on the return on capital of real enterprises has both positive and negative aspects. On the one hand, the achievement of appropriate economic growth targets can promote market prosperity and enterprise development, which in turn can improve the return on investment of real enterprises. Specifically, economic growth can provide enterprises with broader market space and sales opportunities by promoting the improvement of market supply and demand and the increase of consumer demand, thus increasing the earnings and profits of enterprises. At the same time, economic growth can also drive enterprises' technological innovation and productivity enhancement, improve their production efficiency and competitiveness, and thus make them more profitable. On the other hand, excessive economic growth targets may also have a negative impact on the return on capital of real enterprises. First, excessive economic growth targets may lead to excessive concentration of investment in high-risk and high-return areas, resulting in uncertainty and volatility of investment returns faced by real enterprises in their daily production and operation. Secondly, excessive economic growth targets may lead to excessive expansion of enterprises in pursuit of growth, resulting in increased business risks and financial pressure, thus affecting the return on investment of enterprises. Therefore, properly handling the relationship between economic growth targets and the return on capital of real enterprises requires finding the right ratio and strategy in balancing economic growth with the long-term development, risk and profitability of real enterprises. The government needs to formulate suitable economic policies, maintain a favorable economic environment, and flexibly adjust economic growth targets according to its own regional conditions in order to achieve long-term sustainable development and a good return on capital.

Given that economic growth targets are set and promoted by the government, the government can encourage enterprises to increase investment, improve production efficiency and technology through various intervention mechanisms, i.e., adopting policy instruments such as introducing industrial preferential policies, preferential tax policies, and fiscal support policies to enhance the profitability of enterprises and return on capital, thereby guiding and promoting the development of the real

economy. At the same time, the government can also influence the investment behavior of enterprises and regulate the development rhythm of the real economy through fiscal pressure mechanisms, i.e., adjusting tax policies and monetary policies. Overall, the government can influence the return on capital of the real economy through two mechanisms of intervention and fiscal pressure, which can make enterprises pay more attention to profit and efficiency, increase investment and improve production efficiency, and thus improve the return on capital of the real economy.

On the one hand, there is a wealth of research on the factors influencing the return on capital, and on the other hand, the existing literature has studied the impact of economic growth targets on business development from various perspectives. However, the impact of economic growth targets on the return to capital of the real economy and the transmission mechanism of the return to capital have not been addressed. In view of this, this paper focuses on the impact of different economic growth targets on the return to capital in the real economy and the mechanisms of their effects. In comparison with the existing literature, the marginal contributions of this paper are: first, in terms of research perspective, this paper studies the impact of economic growth objectives on the return on capital in the real economy and its transmission mechanism, which enriches the existing literature and provides an in-depth understanding of economic growth and enterprise development, and provides a new idea and theoretical basis for promoting economic development. Second, in terms of policy inspiration, studying the relationship between economic growth targets and return on capital in the real economy can help the government formulate macro-control policies and industrial policies more precisely, making them more consistent with the needs and development characteristics of the real economy, while improving the effectiveness and relevance of policies; it can provide theoretical support and practical guidance for enterprises' investment decisions, helping them grasp market trends and economic cycles and It can provide theoretical support and practical guidance for enterprises' investment decisions, help them grasp market trends and economic cycles, and reasonably arrange investment structures and risk control to achieve long-term stable development and high-quality investment returns; it is also conducive to deepening scholars' understanding of the nature of the real economy and economic growth mechanisms, and promoting further development and innovation of economic research and academic theories.

3. Study Design

3.1 Fixed-effects Model

This paper focuses on the impact of economic growth targets on the return to capital in the real economy, for which the following panel econometric model is constructed:

$$CR_{it}=\alpha_0+\alpha_1 EGT_{it}+\alpha_2 EGTsq_{it}+\gamma control_{it}+\delta_i+\delta_t+\varepsilon_{it} \quad (1)$$

where the explanatory variable CR_{it} is the return to capital in the real economy, the core explanatory variable EGT_{it} is the economic growth target, $EGTsq_{it}$ is the squared term of the economic growth target, i and t denote province and year, respectively, and $control_{it}$ are a series of control variables, andδ_i and δ_t denote individual fixed effects and year fixed effects, ε_{it} is the random disturbance terms.

3.2 Mediating Effect Model

This paper draws on the approach of Zhao Fang et al. (2022) [17] to construct equations (2) and (3), which together with equation (1) form a complete mediating effects model for empirical testing:

$$D_{it}=\varepsilon_i+\varphi_t+\beta_1 EGT_{it}+\beta_2 control_{it}+\mu_{it} \quad (2)$$

$$CR_{it}=\theta_i+\vartheta_t+\rho_1 EGT+\rho_2 D_{it}+\rho_3 control_{it}+\tau_{it} \quad (3)$$

In equation (2) and equation (3), D denotes the mediating variables, which are fiscal pressure (FP) and government intervention (GI).

3.3 Description of Variables

3.3.1 Explanatory Variables

The industrial sector is the main component of the real economy, and the financial data of industrial enterprises are more complete. Therefore, the ratio of total profits of industrial enterprises above the scale of each province, autonomous region and municipality directly under the central government (hereinafter referred to as provinces) to their net fixed assets is used to measure the return on capital of the real economy. This ratio can reflect the ability of enterprises to generate income from fixed assets, and is universal, and can also reflect the long-term development trend of enterprises. In this paper, CR_{it} denotes the return on capital in the real economy for each province i in year t.

3.3.2 Explanatory Variables

In this paper, we use the economic growth target values given in the government work report. In this paper, EGT_{it} denotes the economic growth target of each province i in year t. In addition, considering the possible complex non-linear effects of the explanatory variables EGT_{it} on the explanatory variable CR_{it}, this paper deliberately includes the squared term of the explanatory variable $EGTsq_{it}$ in equation (1) to test them.

3.3.3 Control Variables

Referring to the existing literature, the following indicators are selected as control variables in this paper: trade factor (TF), measured by the ratio of import and export trade to its GDP in each province; because trade factor is one of the important factors affecting economic growth; trade can promote domestic production and consumption and expand the market; trade can also affect the revenue and cost structure of enterprises, which in turn affects the return on capital of enterprises in the real economy. Infrastructure (IN), measured using the number of road miles in each province; because the construction and improvement of infrastructure can increase productivity and efficiency, thus contributing to economic growth; also, good infrastructure can reduce the operating costs of businesses and increase productivity and competitiveness, thus increasing the return on capital in the real economy. Population factor (PF), measured using population density in each province; because population growth can promote the expansion of market size and increase labor supply, thus promoting economic growth; however, excessive population growth may also lead to problems such as resource shortage and environmental pollution, reducing the return on capital in the real economy. Technology factor (TEF), measured using the ratio of internal R&D expenditures to their GDP in each province; because technological progress can improve productivity and efficiency, thus promoting economic growth; at the same time, the application of new technologies can also improve the return on capital in the real economy, such as reducing production costs and improving product quality. Urbanization (UR), measured by the urbanization rate of each province; because urbanization can promote labor mobility and agglomeration, improve resource allocation efficiency, and thus promote economic growth At the same time, urbanization can also drive urban economic development, increasing investment opportunities and returns to capital in the real economy.

3.3.4 Mediating Variables

Referring to the existing literature, the following indicators are selected as mediating variables in this paper: fiscal pressure (FP), which is measured by the ratio of fiscal expenditure to its fiscal revenue in each province; because fiscal pressure can reflect the strength and direction of government intervention, the government usually adopts fiscal policies to influence the return on capital of the real economy when achieving economic growth targets; secondly, fiscal pressure can also reflect the economic growth target's feasibility and restrictiveness, when the economic growth target is too high, the government may need to adopt excessively expansionary fiscal policies to support economic growth, leading to increased fiscal pressure. The return to capital in the real economy may be adversely affected in this case. Government intervention (GI), measured using the ratio of fiscal spending to its GDP in each province; because government intervention can affect the operation of the real economy by changing tax policy, monetary policy, industry policy, and regulatory policy,

which in turn affects the return on capital of the real economy; government intervention can also affect the achievement of economic growth targets by directing investment and adjusting interest rates.

3.4 Data Sources

This paper selects data from 30 provinces in China (excluding Hong Kong SAR, Macau SAR, Taiwan Province and Tibet Autonomous Region) during the 18-year period from 2003 to 2020 for the study. Considering that the industrial sector is the main body of China's real economy and its return on capital contributes the most to the overall return on capital in China, the analysis of this paper is limited to industrial enterprises above the scale in China. To eliminate the heteroskedasticity among variables, all variables except ratio data and negative data are logarithmized. Some of the missing data were supplemented using the averaging method. The data sources were related to the China Statistical Yearbook, China Industrial Statistical Yearbook, China Science and Technology Statistical Yearbook, and the statistical yearbooks of each province in previous years. The results of descriptive statistics of relevant variables are shown in Table 1.

Table 1. Descriptive statistics of variables

Variable Name	Description	Number of samples	Average value	Standard error	Minimum value	Maximum value
EGT	Economic growth target	540	9.255	1.954	3.8	15
TF	Trade Factors	540	30.480	36.942	0.757	172.148
IN	Infrastructure	540	3373.079	2087.735	200	14190
PF	Demographic factors	540	416.810	514.681	7.665	2976.433
TEF	Technical Factors	540	1.451	1.086	0.175	6.444
UR	Urbanization	540	53.886	14.476	24.77	89.6
FP	Financial pressure	540	22.230	0.978	1.052	6.745
GI	Government intervention	540	21.729	9.785	7.918	64.301
CR	Return on capital in the real economy	540	0.179	0.085	-0.177	0.461

4. Analysis of the Empirical Results

4.1 Full-sample Analysis

Table 2 reports the results of the two-way fixed effects regression. As can be seen from Table 2, the coefficient of the primary term of economic growth target is significantly positive, which indicates that the appropriate increase of economic growth target in the sample period has a positive impact on the return on capital of the real economy; the coefficient of the squared term of economic growth target is significantly negative, which indicates that the excessive increase of economic growth target in the sample period has a negative impact on the return on capital of the real economy and plays a suppressive role, and the impact of the change of economic growth target on the change of the return on capital of the real economy The impact of the change in economic growth target on the change in return to capital in the real economy shows a significant inverted U-shaped relationship.

This result can be explained by economic theory. Firstly, the appropriate increase of economic growth target can stimulate the development of real economy, increase investment and consumption, and thus increase the return on capital, which is consistent with the "growth effect" theory. Secondly, the excessive increase of economic growth target may lead to over-investment and waste of resources, thus inhibiting the development of real economy and reducing the return to capital, which is consistent with the theory of "diminishing marginal effect". Finally, the inverted U-shaped relationship may be due to the fact that the excessive increase in economic growth target stimulates economic activities to a certain extent, but also leads to the wasteful and unreasonable allocation of economic resources, thus affecting the long-term development of the real economy and lowering the return on capital.

Table 2. Baseline estimation results of the impact of economic growth targets on the return to capital in the real economy

	CR(1)	CR (2)	CR (3)	CR (4)
EGT	0.098*** (4.62)	0.555*** (3.07)	0.463*** (2.60)	0.484*** (2.65)
EGT2	——	-0.107** (-2.54)	-0.088** (-2.14)	-0.090** (-2.15)
TF	——	——	0.029*** (3.32)	0.030*** (3.34)
IN	——	——	0.033* (1.65)	0.036* (1.67)
PF	——	——	0.199*** (4.16)	0.158*** (2.88)
TEF	——	——	——	0.009 (0.55)
UR	——	——	——	-0.074 (-1.51)
Time Effect	yes	yes	yes	yes
Regional effects	yes	yes	yes	yes
Constant term	-0.115** (-2.4)	-0.603*** (-3.05)	-1.892*** (-5.85)	-1.452*** (-3.37)
R^2	0.337	0.346	0.383	0.386
Obs	540	540	540	540

Note: t-values in parentheses, ***, **, * indicate significant at 1%, 5%, and 10% significance levels, respectively, as follows.

The regression results of the control variables are largely in line with expectations. There is a significant positive effect of trade factors on the return on capital of the real economy, mainly because trade can help enterprises expand their market scale, increase sales, and improve the visibility and brand value of their products; trade can reduce the cost of purchasing raw materials and production equipment, as well as reduce transportation costs, which improves the productivity and profitability of enterprises; trade can promote the flow and dissemination of technology, which makes enterprises able to grasp the latest technology faster and improve production efficiency and product quality, which in turn improves the return on capital; trade can promote market competition, forcing enterprises to improve product quality and service levels and continuously enhance their competitiveness, thus improving the return on capital (Yang, Jun and Xiao, 2015) [18]. There is a significant positive impact of infrastructure on the return on capital of the real economy, mainly because good infrastructure construction can promote the smooth flow of logistics, information and capital, enabling the efficient flow and allocation of production factors; it can reduce the cost of enterprise production, lower logistics, communication and energy costs, and increase enterprise profits; it can expand the market coverage of enterprises, increase sales and improve brand value ; it can promote technological R&D and innovation, the development of digital technology and smart manufacturing, and improve the productivity and competitiveness of enterprises; it can improve the business environment, improve the level and efficiency of government services, and enhance the confidence and willingness of enterprises to invest, which in turn can promote the development of the real economy and improve the return on capital of the real economy (Peiwen Bai and Hui He, 2022) [19]. There is a significant positive effect of demographic factors on the return on capital in the real economy, mainly because an increase in population means an increase in the number of potential consumers, which provides a broader market space for enterprises and increases sales and profits; it also means an increase in labor force, which improves the productivity and competitiveness of enterprises; it also means an increase in the number of labor force with high skills and knowledge, which brings more It also means an increase in the number of highly skilled and knowledgeable labor force, which brings more talents and technical support to enterprises and promotes their technological

innovation and product upgrading. The increase in population also provides more opportunities for innovation and entrepreneurship, and the activities of innovation and entrepreneurship help to promote the development and growth of the real economy, thus increasing the return on capital of the real economy (Luo Zhi and Guo Xibao, 2014) [20].

4.2 Heterogeneity Test

Since different regions of China have different levels of economic development and regional development policies vary greatly, the impact of economic growth targets on the return to capital in the real economy is likely to be heterogeneous. In view of this, this paper divides the sample of provinces into two parts, the eastern region and the central and western region, for sub-sample regressions and measures them separately according to the standards of the National Bureau of Statistics. The regression results are shown in Table 3.

Table 3. Grouping tests by region

	Eastern		Midwestern	
EGT	0.160 (0.50)	0.479 (1.62)	0.732*** (3.27)	0.519** (2.29)
EGT2	0.005 (0.07)	-0.069 (-1.00)	-0.149*** (-2.88)	-0.116** (-2.40)
TF	——	-0.083*** (-4.20)	——	0.057*** (5.74)
IN	——	-0.022 (-1.08)	——	0.175*** (4.95)
PF	——	-0.072 (-1.05)	——	-0.326*** (-3.39)
TEF	——	0.058** (2.32)	——	-0.007 (-0.36)
UR	——	-0.349*** (-4.85)	——	0.335*** (4.49)
Time Effect	yes	yes	yes	yes
Regional effects	yes	yes	yes	yes
Constant term	-0.245 (-0.72)	1.746** (2.59)	-0.808*** (-3.30)	-1.604*** (-3.23)
R^2	0.575	1.690	0.337	0.477
Obs	198	198	342	342

The results in Table 3 show that the relationship between changes in economic growth targets and changes in the return to capital in the real economy still conforms to the inverted U-shape described earlier in the central and western regions of China, but it is not significant in the eastern region of China.

This regional difference may be due to the different development stages of the eastern and central and western regions. The eastern region is the most economically developed region in China, with superior geographical location, economic environment and industrial base, and its economic development is already more mature than that of the central and western regions, where capital-intensive industries dominate and capital markets are relatively developed, so the economic growth target may have relatively less impact on the return to capital of the real economy. In contrast, the central and western regions are relatively backward, with relatively weaker development space and industrial base, less developed capital markets, and relatively less development of capital-intensive industries, so the impact of economic growth targets on the return to capital of the real economy may be more significant.

This regional difference may also be due to the different economic structures in the eastern and central and western regions. In the eastern region, some high-tech and high value-added industries are more concentrated, and these industries tend to have higher returns to capital, so the eastern region

may rely more on the development of these high-return industries to drive economic growth. In contrast, in the central and western regions, industries with relatively homogeneous industrial structures and low returns to capital are more common, and therefore, the central and western regions may rely more on higher returns to capital to improve the profitability of local industries and drive economic growth (Guo, W. and Wang, H., 2021) [21].

In addition, policy differences between regions may also be a factor affecting the results. The eastern region has more policy advantages and resources, and the government may adopt more aggressive policies to encourage investment and economic growth, which may offset the negative impact of economic growth targets on the return to capital of the real economy (Ding, Y. and Zheng, J., 2021) [22]. Therefore, the eastern region may be less constrained by the return to capital in the real economy in terms of its impact on economic growth, while the central and western regions may rely more on the increase in the return to capital to drive economic growth.

4.3 Analysis of Intermediary Effects

From the perspective of fiscal pressure, the government's implementation of economic growth targets usually requires a large amount of fiscal capital, for example, through measures such as expanding fiscal spending and tax cuts to stimulate economic growth. These measures may stimulate economic growth in the short term, but in the long term, they may lead to increased fiscal pressure on the government. When the government faces fiscal pressure, it may adopt policies that are unfavorable to the return on capital of the real economy, such as increasing the tax burden on enterprises and reducing investment in the real economy, which may lead to a decrease in the return on capital of the real economy.

From the perspective of government intervention, the government may adopt various intervention measures in the process of achieving economic growth targets, such as giving priority to supporting certain industries and enterprises, setting industry access and regulatory requirements, etc. These interventions may lead to an unreasonable allocation of market resources and generate some undesirable market signals and risks, thus reducing the return on capital in the real economy. In addition, the government may also adopt some administrative measures to achieve economic growth goals, such as increasing corporate profits by reducing environmental, safety and labor costs, which may lead to increased short-term gains for firms but may harm the healthy development of the real economy and the return on capital in the long run.

To verify the above mechanisms of action, this paper uses the ratio of fiscal expenditure to fiscal revenue for each province to measure fiscal pressure (FP) and the ratio of fiscal expenditure to its GDP for each province to measure provincial government intervention (GI) to test both mechanisms, and the regression results are shown in Table 4.

In Table 4, the results in column 1 indicate that the relationship between economic growth target and government intervention is also U-shaped, i.e., as the economic growth target keeps increasing, government intervention in the economy first decreases and then increases, so the return to capital of the real economy first increases and then decreases; the results in column 3 indicate that the relationship between economic growth target and fiscal pressure is U-shaped, i.e., as the economic growth target keeps increasing, the fiscal pressure of the government The results in column 3 show that the relationship between economic growth target and fiscal pressure is U-shaped, i.e., as the economic growth target increases, the fiscal pressure on the government decreases and then increases, so the return to capital of the real economy increases and then decreases.

The results in Table 2 have shown that the effect of economic growth target on the return to capital of the real economy is inverted U-shaped, i.e., as the economic growth target keeps increasing, the return to capital of the real economy first increases and then decreases. In Table 4, the results in column 2 show that after controlling for the mediating effect of government intervention, both the primary and secondary coefficients of the economic growth target are no longer significant, indicating that government intervention is a fully mediating variable and the economic growth target affects the return on capital of the real economy through government intervention; the results in column 4 show

that after controlling for the mediating effect of fiscal pressure, the secondary coefficient of the economic growth target is no longer significant and the economic The results in column 4 show that after controlling for the mediating effect of fiscal pressure, the quadratic coefficient of economic growth target is no longer significant, and the primary coefficient of economic growth target is still significant, but its absolute value decreases, indicating that fiscal pressure is a partial mediating variable, and economic growth target will not only affect the return to capital of the real economy through fiscal pressure, but also affect the return to capital of the real economy directly or indirectly through other mechanisms.

Table 4. Intermediary mechanism test

	GI (1)	CR (2)	FP (3)	CR (4)
EGT	-1.148*** (-3.82)	0.263 (1.50)	-0.677*** (-2.76)	0.376** (2.09)
EGT2	0.268*** (3.88)	-0.039 (-0.96)	0.143** (2.53)	-0.068 (-1.64)
GI	——	-0.192*** (-7.35)	——	——
FP	——	——	——	-0.160*** (-4.85)
TF	0.004 (0.24)	0.031*** (3.60)	0.019 (1.58)	0.033*** (3.76)
IN	0.058 (1.63)	0.047** (2.29)	0.050* (1.73)	0.044** (2.08)
PF	-0.468*** (-5.19)	0.068 (1.27)	-0.455*** (-6.17)	0.085 (1.53)
TEF	0.091*** (3.36)	0.027* (1.68)	-0.003 (-0.14)	0.009 (0.53)
UR	-0.226*** (-2.80)	-0.118* (-2.50)	-0.179*** (-2.70)	-0.103** (-2.12)
Time Effect	yes	yes	yes	yes
Regional effects	yes	yes	yes	yes
Constant term	6.816*** (9.61)	-0.142 (-0.32)	4.206*** (7.25)	-0.780* (-1.76)
R^2	0.860	0.447	0.532	0.414
Obs	540	540	540	540

These two results can be explained by economic theory. At the initial stage when the economic growth target is raised, the government usually adopts more aggressive intervention policies, such as increasing investment in infrastructure construction and preferential tax policies, etc. The implementation of these policies can effectively promote the growth of the real economy and thus increase the return on capital of the real economy, but as the economic growth target is continuously raised, the government's intervention in the economy becomes more and more excessive, which may lead to distortion of resource allocation and efficiency, thus negatively impacting the real economy and making the return on capital of the real economy decline. In terms of fiscal pressure, the government's fiscal expenditure will increase with the increase of economic growth target, leading to increasing fiscal pressure, at this time, the government may take measures to raise taxes to cope with the fiscal distress, and enterprises will need to pay higher taxes, thus reducing the cash flow of enterprises, which may lead enterprises to reduce investment; the government may also take measures to reduce expenditure, which will reduce the government's investment in the real investment in the real economy, limiting the growth potential of firms and making the real economy's return on capital lower.

4.4 Robustness Analysis

4.4.1 Treatment of Endogeneity Problem

Considering that the endogeneity problem may arise between the economic growth target and the return on capital of the real economy due to the existence of reverse causality and other relationships, this paper considers the lag effect and lags the explanatory variables by one period, and the regression results are reported in column 1 of Table 5, which shows that the primary term of the economic growth target is still significantly positive and the secondary term is still significantly negative for one period, which again verifies that the effect of the economic growth target on the return on capital of the real This again verifies that the impact of the economic growth target on the return to capital of the real economy is inverted U-shaped, i.e., the return to capital of the real economy increases and then decreases as the economic growth target is continuously increased.

4.4.2 Excluding the Disturbance Term

Given that the economic growth targets of municipalities directly under the central government may be more inclined to high value-added industries such as services and finance, which have relatively higher returns to capital, and municipalities directly under the central government may also attract more external investment and talent mobility, the inclusion of municipalities directly under the central government in the regression sample may interfere with the regression results; therefore, this paper draws on the method of Liu, Liangliang, and He, Jun (2022) [23] to remove four municipalities directly under the central government from the sample. Column 2 of Table 5 reports the regression results, and the empirical results show that the sign and significance of the impact of the economic growth target on the return to capital in the real economy remain largely unchanged, i.e., the inverted U-shaped relationship still exists.

4.4.3 Instrumental Variables Approach

Table 5. Robustness test results

	One period behind	Sample replacement	Instrumental Variables Method
EGT	0.812*** (3.22)	0.522*** (2.63)	1.752*** (3.14)
EGT2	-0.165*** (-2.92)	-0.106** (-2.32)	-0.369*** (-3.03)
TF	0.032*** (3.32)	0.035*** (3.39)	0.032*** (2.97)
IN	0.044* (1.86)	0.086*** (3.39)	0.042* (1.68)
PF	0.162*** (2.65)	0.082 (1.10)	0.126* (1.65)
TEF	0.012 (0.65)	0.001 (0.05)	-0.013 (-0.66)
UR	-0.127** (-2.27)	0.067 (1.20)	-0.186** (-2.45)
Time Effect	yes	yes	yes
Regional effects	yes	yes	yes
Constant term	1.683*** (-3.65)	-1.970*** (-4.08)	-2.433*** (-2.83)
Cragg-Donald Wald F statistic			36.578
R^2	0.338	0.407	
Obs	510	468	510

This paper draws on Bing-Zhan Shih and Guo-Ming Xian (2012) [24] to select the one-period lagged term of the explanatory variable as the instrumental variable, i.e., the one-period lagged term of the economic growth target as its own instrumental variable. On the one hand, they are significantly correlated, i.e., the previous year's economic growth target will have an impact on the current or future economic growth target; on the other hand, since the lagged variable has already occurred, its value is already fixed from the current period's perspective, i.e., it is "pre-determined" and thus uncorrelated with the current period's stochastic disturbance term (Bai, Junhong, and Bian, Yuanchao 2016) [25].

The regression results are reported in column 3 of Table 5, and it can be seen that the previous findings still hold, i.e., the impact of the economic growth target on the return to capital in the real economy is inverted U-shaped, with the return to capital in the real economy increasing and then decreasing as the economic growth target increases.

5. Conclusion and Implications

This paper theoretically explores the mechanism of the impact of China's economic growth target on the return to capital of the real economy, and conducts an econometric test using panel data of 30 provincial administrative units in China from 2003 to 2020, mainly concluding the following: first, the impact of economic growth target on the return to capital of the real economy is inverted U-shaped, that is, as the economic growth target keeps increasing, the return to capital of the real economy First, the impact of economic growth targets on the return to capital of the real economy is inverted U-shaped, i.e., as the economic growth target increases, the return to capital of the real economy increases and then decreases. Second, there is a heterogeneous impact of economic growth targets on the return to capital of the real economy in different regions, among which the relationship between changes in economic growth targets and changes in the return to capital of the real economy is consistent with the inverted U-shape in the central and western regions of China, but this relationship is not significant in the eastern regions of China. Third, the economic growth target affects the return to capital of the real economy through government intervention, and also through fiscal pressure and other mechanisms.

In view of the current situation that the unreasonable setting of economic growth targets in the process of China's economic development has led to its negative impact on the return on capital of the real economy, the findings of this paper have relatively strong policy implications: first, in the process of economic growth, economic growth targets should be moderately increased to promote the improvement of the return on capital of the real economy; however, excessive pursuit of economic growth targets may have a negative impact on the return on capital of the real economy return on capital, and therefore the relationship between economic growth and the return on capital in the real economy needs to be balanced in policy formulation. Investment in real economy capital should be enhanced, including greater investment in infrastructure, technology, and human capital, in order to improve the return on real economy capital. Emphasis should be placed on environmental protection and sustainable development to avoid the negative impact of economic growth on the environment so as to guarantee the sustainability of economic growth and the return on capital of the real economy. A series of policy measures, such as promoting clean energy, reducing pollutant emissions, and promoting green production methods, can be adopted to protect the environment and promote sustainable development. Second, in the central and western regions, it should be noted that excessive increases in economic growth targets may have negative impacts on the return on capital of the real economy, and policymakers should avoid pursuing economic growth targets excessively, and instead should appropriately adjust and control economic growth targets on a sustainable basis; in the eastern regions, due to relatively mature economic development, the return on capital of the real economy is less sensitive to changes in economic growth targets are less sensitive to changes in economic growth targets, so policymakers can set economic growth targets more freely and can pay more attention to the quality and efficiency of economic growth rather than simply pursuing growth rates; however, both in the central and western regions and in the eastern region, they should focus on investment in real economic capital, including greater investment in infrastructure, technology and human capital, in order to improve the return on real economic capital. In addition, the government should strengthen coordinated regional development and promote balanced development in the eastern, central and western regions, and can adopt a series of policy measures, such as promoting the construction of "One Belt, One Road" and strengthening transportation and information infrastructure in the eastern, central and western regions, in order to promote inter-regional economic cooperation and synergistic development, so as to achieve sustainable development of the national economy. Thirdly, the

government should make a concerted effort in formulating economic growth plans. Third, the government should consider the balance between economic growth targets and fiscal pressure when setting economic growth targets, which will increase when economic growth targets are raised to a certain level, and excessive fiscal pressure may have adverse effects on the economy. sustainability and stability. The government should pay attention to the balanced relationship between the economic growth target and the real economy, focus on the investment in the real economy in the process of raising the economic growth target, and strengthen the investment in infrastructure construction, technology research and development, and human resources in order to improve the efficiency and quality of the real economy, so as to achieve a win-win situation for both economic growth and real economy development. The government can also strengthen fiscal management and supervision to avoid excessive fiscal spending, while optimizing the structure of fiscal spending to ensure maximum efficiency in the use of funds. A series of measures can be taken, such as strengthening budget preparation and execution, optimizing the tax system and fiscal transfer mechanisms, so as to achieve a balance between economic growth and fiscal pressure. The government can also strengthen cooperation with social capital and external investment, and take advantage of the advantages of social capital and external investment to enhance investment and support for the real economy and improve the return on capital of the real economy.

Note: The eastern region includes Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Guangdong, Shandong, Fujian and Hainan, a total of 11 provinces; the central and western regions include Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, Hunan, Shanxi, Guangxi, Inner Mongolia, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang, a total of 20 provinces, but the data of Tibet Autonomous Region is not included in this paper because its data is incomplete.

References

[1] Xi Jinping: "Holding high the great banner of socialism with Chinese characteristics to unite and struggle for the comprehensive construction of a modern socialist country --- Report at the 20th National Congress of the Communist Party of China", People's Publishing House 2022.

[2] Zhang Xun, Xu Jianguo. The drivers of capital returns in China [J]. Economics (Quarterly), 2016, 15(03).

[3] Zhang Qiancheng, Li Bonnie Ting. Financial sector expansion and return to capital in the real economy[J]. Financial Development Research,2022,No.491(11):3-10.

[4] Liu, Shu-Lin, Wang, Xian-Bin, Huang, Liang-Hsiung. Do economic growth targets drive investment:A theoretical analysis and empirical test based on a sample of prefecture-level cities from 2001-2016 [J]. Financial Research, 2019(8):1-19.

[5] Wang Xianbin, Huang Liangxiong. Local economic growth target management: a theoretical construction and empirical test of a ternary framework [J]. Economic Theory and Economic Management, 2019 (9): 30-44.

[6] Zhou L.A., Liu C., Li X., et al. "Cascading" and officials' incentives [J]. World Economic Digest, 2015 (1): 1-15.

[7] Guner, N. and G. Ventura, et al. (2008). "Macroeconomic implications of size-dependent policies." Review of Economic Dynamics 11(4): 721-744.

[8] Holz, C.A., New capital estimates for China. China Economic Review, 2006. 17(2): p. 142-185.

[9] Yang, J., Huang, S. H., Song, X. Y. Can reducing tax policy uncertainty improve firms' return on capital--a quasi-natural experiment based on income tax revenue sharing reform[J]. Journal of Zhejiang University (Humanities and Social Sciences Edition),2019,49(06):116-131.

[10] Liu Zichao, Sun Wei. Interprovincial differentiation characteristics of industrial capital returns--based on industrial labor migration perspective[J]. Journal of Jiangxi University of Finance and Economics, 2018, No. 119(05):13-21.

[11] Yang Jun, Xiao Mingyue, Jiang Mo Bing. Intellectual property protection, technological innovation and return on capital in China[J]. Research Management,2023,44(02):137-145.

[12] Li Yue, Li Junyin. Empirical analysis of China's economic growth and influencing factors--based on Solow model [J]. Inner Mongolia Statistics,2019(03):5-9.

[13] Bai Chong'en, Zhang Qiong. Analysis of return to capital and its influencing factors in China[J]. World Economy, 2014(10):3-30.

[14] Li Zheng, Liu Fengshuo. "Cascading" and urban innovation--an empirical analysis based on the difference of economic growth targets between provinces and cities[J]. Journal of Social Sciences of Jilin University, 2022, 62(01):127-137+237.

[15] Yu Yongze, Liu Dayong, Gong Yu. Too much is too little and too slow is too much:Local economic growth target constraints and total factor productivity[J]. Management World,2019,35(07):26-42+202.

[16] Liu, Shu-Lin, Wang, Xian-Bin, Huang, Liang-Hsiung. Did high economic growth targets lead to overcapacity--theoretical analysis and empirical test based on four-digit industries in prefecture-level cities [J]. China Economic Issues,2022,No.330(01):168-185.

[17] Zhao Fang, Jiang Guoliang, Li Jintan. Economic growth pressure and government audit quality-evidence from economic growth targets[J]. Audit Research,2022,No.229(05):37-48.

[18] Yang Jun, Xiao Mingyue. Does production at the low end of the value chain limit the return to capital in China - a GMM approach based on provincial dynamic panel data[J]. International Trade Issues, 2015, No.390 (06):53-62.

[19] Pei-Wen Park, Hui He. Infrastructure investment, return to capital and inclusive development in China[J]. Nanjing Social Science,2022,No.419(09):19-30.

[20] Luo Zhi, Guo Xibao. Mechanism analysis and empirical study on the impact of labor transfer on the return to capital [J]. Quantitative Economic and Technical Economics Research,2014,31(01):93-111.

[21] Guo W, Wang HY. Analysis of return to industrial capital in China:1978-2018[J]. Western Forum, 2021, 31 (03):17-27.

[22] Ding Y, Zheng Juan. Research on the return on capital in China[J]. Survey World,2021,No.335(08):51-59.

[23] Liu Liangliang, He Jun. Does fiscal vertical imbalance inhibit the improvement of regional innovation efficiency [J]. Contemporary Finance and Economics,2022,No.452(07):27-37.

[24] Shi B. Z., Sin G. M. Factor price distortions and the export behavior of Chinese industrial firms[J]. China Industrial Economics,2012,(2):47-56.

[25] Bai JH, Bian YC. Factor market distortions and efficiency loss of innovation production in China[J]. China industrial economy,2016,No.344(11):39-55.