



## Methodology Article

# Research on the Mechanism of Differences in Capital Structure Promoting Regional Development Differences

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**Abstract:** Capital structure is an important factor in the formation of regional development differences. Based on the background, this paper selects panel data of 31 provinces (municipalities, autonomous regions) in China from 2006 to 2017, and uses a fixed-effect panel model to analyze the relationship between the capital structure and regional development differences. According to the results of empirical research, there is indeed a relationship between the capital structure and the formation of regional differences, that is, capital efficiency of different subjects varies in promoting economic growth in the eastern, central and western regions, while the economic growth of different regions has different attractiveness to different capital subjects, this kind of influence will last for one period after another. It is this kind of cyclic interaction that forms the "Matthew effect" of "the strong get stronger and the weak get weaker" in regional development. Therefore, based on the problems mentioned in this article, regions should implement policies to attract the combined flow of various types of capital in a targeted manner, narrow the gap in China's eastern, central and western regions development as much as possible, thereby optimizing the regional capital structure and better promoting the coordinated development of China's regional economy.

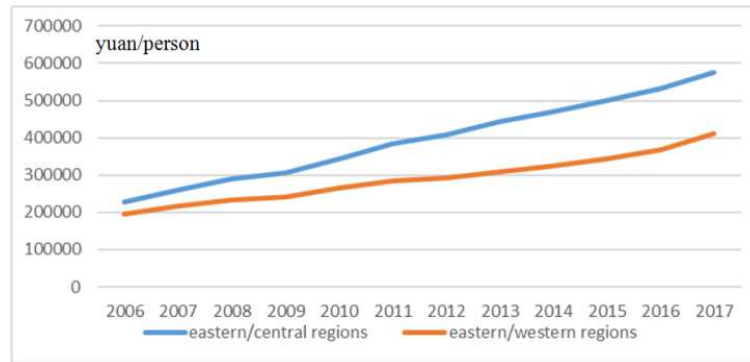
**Keywords:** Capital Structure, Capital Subjects, Regional Development Gap, Efficiency Difference, Attraction Difference

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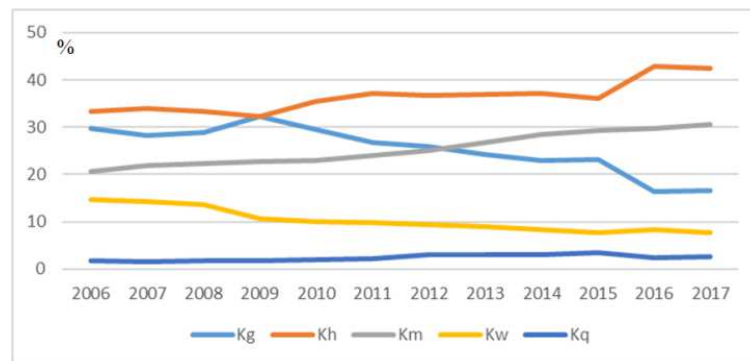
## 1. Introduction

Since the reform and opening up of China's economy, the nation has made remarkable achievements. However, with the continuous advancement of economic development, drawbacks have become increasingly apparent, among which the problem of regional economic development imbalance is quite prominent. As shown in Figure 1, from 2006 to 2017, the per capita GDP gap between the eastern/central regions and the eastern/western regions widens year by year. Excessive regional differences will not only restrict the coordinated development of China's economy, but also lead to a series of social, political and religious contradictions. Therefore, the causes of regional differences in China require scrutiny. Existing studies mainly analyze the formation of regional development differences from the perspective of technology, factor

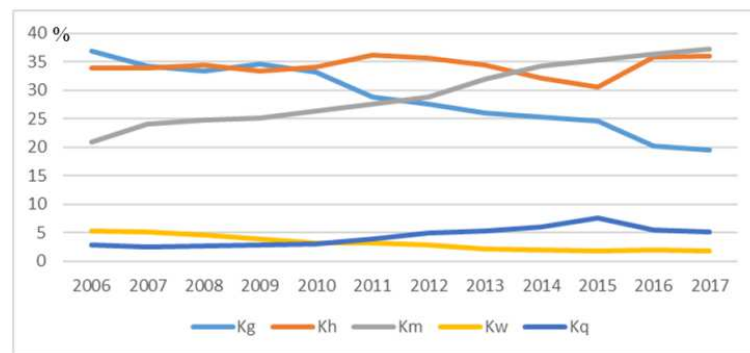
endowments, and industrial structure [1, 16, 23]. But there is no doubt that even with the increasing relative importance of current technology and other production factors, regional development still depends on the amount and efficiency of capital to a considerable extent -- and differences in the regional capital structure just reflect this. As shown in Figures 2, 3 & 4, during the period of 2006-2017, there are obvious differences in the capital structure and its changing trends of the eastern, central and western regions. These differences point to a potential explanation for differences in development of China's eastern, central and western regions. This article conducts an in-depth study of this issue, to provide new policy enlightenment for local governments at all levels to narrow the regional development gap.



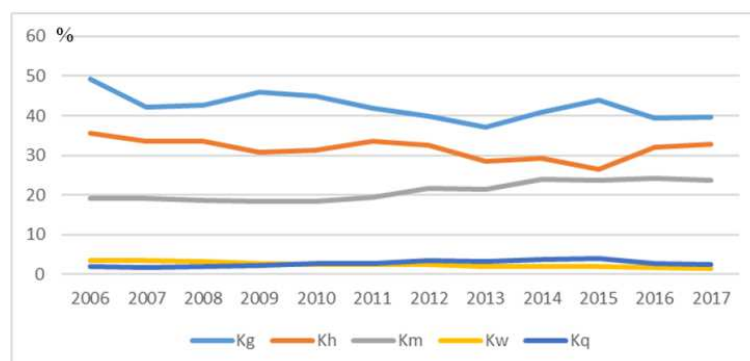
**Figure 1.** The changing trends of per capita GDP gap between eastern/central regions and eastern/western regions in 2006-2017.



**Figure 2.** Proportion of capital investment by different subjects in the eastern region in 2006-2017.



**Figure 3.** Proportion of capital investment by different subjects in the central region in 2006-2017.



**Figure 4.** Proportion of capital investment by different subjects in the western region in 2006-2017.

Regarding the reasons for the formation of regional economic development differences, the existing literature has analyzed the issue from multiple research perspectives. Some

scholars believe technological progress is the motive difference of regional economic growth, which leads to the imbalance of regional economic development [10, 20, 5, 22];

while others think input difference of multiple factors such as labor, capital and human capital are important factors affecting the change of regional economic disparity [8, 4, 14, 13, 2]; in addition, a third group acknowledges the role of factor endowments, pointing out that policy and institutional factors are important reasons for widening of the gap [15, 12].

However, for now there are relatively few existing studies analyzing the formation of regional differences from the perspective of the capital structure, with more research analyzing the impact of the capital of different subjects on regional economic growth. Miao and Zhang [6] found that fixed asset investment in the state-owned economy has the greatest effect on the economic growth of the eastern region, followed by the western region, and finally the central region; Xiong and Ge [18] believe state-owned economic investment and non-state-owned economic investment have different effects on economic growth; Cui and Wei [3] through calculations found private investment has a significant role in promoting regional economic growth; Zhao and Bai [11] found that local government investment promotes the development of urbanization, but the positive driving force is very different, the eastern is the strongest, the central is the second, and the western is the weakest; Xue, Ji and Zhu [7] think the role of FDI in China's regional economic growth is diminishing from the eastern region to the western region. Thus, it can be seen that due to the different investment efficiency of different capital subjects, the contribution rate to the economic growth of each region is different, which will bring about differences in the economic growth effect of each region, thereby increasing the regional development gap [19].

Obviously, The above research only considered the "one-way" impact of the capital structure on economic growth, and did not contemplate the reverse impact of economic growth to the capital structure. From a practical point of view, differences in regional economic growth will inevitably lead to differences in regional capital environment, which in turn will have influence on attracting different capital subjects in different regions, and

further strengthen or dissimilate the existing capital structure. This forms a closed-loop interactive impact between the capital structure and regional economic growth. Therefore, this article develops the two-way impact between the capital structure and economic growth, analyzes the impact of the capital structure on the formation of regional differences, and draws relevant conclusions and makes recommendations.

## 2. Theoretical Analysis and Research Hypothesis

### 2.1. Theoretical Analysis

Generally speaking, the efficiency of capital varies greatly, as the capital structure of a region determines the efficiency structure of capital use in the region. As an important factor of economic output, the different utilization efficiency of capital will inevitably lead to the different regional output, thus forming variations in regional economic growth rate. Conversely, disparities in regional economic growth will also influence the capital structure. On the one hand, regions with higher economic growth have increased economic activity and increased opportunities for different capital investments. In addition, local government may pay more attention to the optimization of the local economic development environment, which can attract more and better capital subjects, producing a siphon effect on investment, and further optimize the local capital structure---forming a "virtuous circle". But on the other hand, regions with lower economic growth are less attractive to different capital investments, due to reduced investment opportunities, so that the more efficient capital are less likely in the region, which results in the alienation of the local capital structure---forming a "vicious circle". These two cycles eventually lead to the Matthew effect of "the strong get stronger and the weak get weaker" in regional development in China. The mechanism of action is shown in Figure 5:

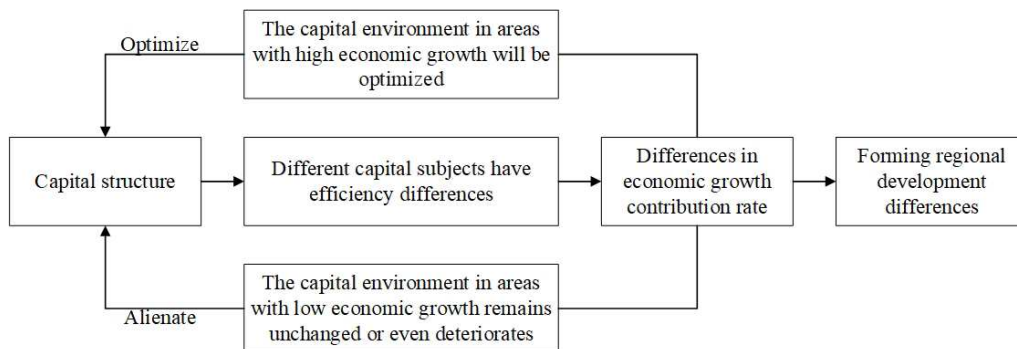


Figure 5. The relationship between the capital structure and the formation of regional differences.

### 2.2. Research Hypothesis

Through the above analysis, this article proposes two research hypotheses:

Hypothesis 1: Differences in capital subjects will have varying contributions to regional economic growth due to diverging

capital efficiency, thereby forming regional economic development differences. Hypothesis 2: Differences in capital environment and opportunities brought about by variations in regional economic growth will cause changes in capital subjects, thereby enlarging regional economic development differences due to differences in the efficiency of capital subjects.

### 3. Research Design

#### 3.1. Model Setting

To analyze the degree of contribution of the capital structure to the economic growth of each region, this article constructs a linear measurement model of the impact of different capital subjects on economic growth:

$$pgdp_{it} = \beta_0 + \beta_1 K_{it}^T + \lambda Control_{it} + \varepsilon_{it} \quad (1)$$

In model (1),  $pgdp_{it}$  represents the level of economic development;  $K_{it}^T$  is the investment in fixed assets with different ownership properties, namely  $K_g$ ,  $K_h$ ,  $K_m$ ,  $K_w$ ,  $K_q$ , respectively representing state-owned capital investment, mixed capital investment, private capital investment, foreign capital investment and other capital investment;  $Control_{it}$  represents control variables. At the same time, drawing on the analysis of economic growth by multiple scholars [9, 17, 21], taking transportation infrastructure (tra), opening level (open), human capital (hc) and industrial structure (ind) as control variables;  $\varepsilon_{it}$  represents the random error term.

To analyze the attractive effect of regional economic growth on different capital subjects, this paper sets model (2) as follows:

$$K_{it}^T = \alpha_0 + \alpha_1 pgdp_{it} + \mu Control_{it} + u_{it} \quad (2)$$

In model (2), attracting capital in addition to the level of regional economic growth, the regional infrastructure, industrial structure, and technological level are also important factors that affect various types of capital. Therefore, this paper takes the three variables of regional transportation infrastructure (tra), industrial structure (ind) and technology level (tec) as the control variables of the model, while  $u_{it}$  represents the random error term. Other variables are defined as described above.

#### 3.2. Data Collation and Descriptive Statistics

This article uses data from 31 provinces and cities in China from 2006 to 2017. The original data of each variable mainly comes from the *China Statistical Yearbook*, the websites of the national and provincial statistical bureaus, and the EPS data platform, etc. Missing data in this paper is complemented by interpolation. At the same time, to reduce the heteroscedasticity of the original data and keep its changing trend unchanged, the variable data are all processed by logarithm.

Table 1. Variable description.

Variable name		Variable definitions
Economic growth level	pgdp	Gross Regional Product/Total Population
State-owned capital investment	$k_g$	Sum of investment in the state-owned economy and investment in the collective economy/overall fixed asset investment in the whole society
Mixed capital investment	$k_h$	Sum of investment in stock cooperation, joint ventures, limited liability companies, and joint stock limited companies/overall fixed asset investment in the whole society
Private capital investment	$k_m$	The sum of private and individual investment/whole society's fixed asset investment
The investment from abroad, H. K., Macao and Taiwan	$k_w$	The sum of foreign investment and Hong Kong, Macao and Taiwan investment / fixed asset investment in the whole society, (Hereinafter referred to as Foreign capital investment)
Other capital investment	$k_q$	Other investment in the fixed asset investment of the whole society / the fixed asset investment of the whole society
Human capital	hc	Number of regular colleges and universities/Regional permanent population
Openness to the outside world	open	Total import and export volume at the location of the operating unit/GDP
Industrial structural	ind	Added value of the tertiary industry/added value of the second industry
Transport infrastructure	tra	Reflected by highway mileage
Technique level	tec	Use patent application acceptance items to reflect

### 4. Empirical Results and Analysis

Due to the data set in this article is panel data, it is necessary to determine whether to construct a fixed-effects model or a random-effects model through Hausmann's test. After testing, the model results all reject the null hypothesis and are significant at the 1% level. Therefore, this article applies the fixed effects model for analysis.

#### 4.1. Analysis on the Contribution of Different Capital Subjects to the Economic Growth of Eastern, Central and Western Regions

To understand regional difference in efficiency of the contribution of various capital subjects to economic growth, this paper divides China's 31 provinces and cities into three

regions: the eastern, the central and the western\*, and performs regression test and difference analysis on these three regions in turn.

Table 2 indicates that in the eastern region, state-owned capital investment, mixed capital investment, foreign capital investment and other capital investment all have a negative correlation with per capita GDP. That is, when the proportion of these four types of capital subjects increases by 1 unit, the per capita GDP of the eastern region will fall by 0.58, 0.22, 0.39, and 0.03 units, respectively. However, the effect of mixed capital investment and other capital investment on the economic growth of the eastern region is not significant. There

\* The eastern region includes 11 provinces and cities in Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan; The central region includes 8 provinces of Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei and Hunan; The western region includes 12 provinces and cities in Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Shaanxi, Gansu, Ningxia, Tibet, Xinjiang and Qinghai.

is a positive correlation between private capital investment and per capita GDP, every increase of 1 unit of private capital investment will increase the local per capita GDP by 0.59 units.

While in the central region, all capital subjects have a significant effect on local economic growth. State-owned capital investment, foreign capital investment and per capita GDP are negatively correlated. Table 3 indicates the proportion of state-owned capital investment and foreign capital investment increases by 1 unit respectively, the per capita GDP of the central region will fall by 0.47 and 0.44 units, and the negative effect of state-owned capital investment on economic growth is greater than foreign capital investment. But mixed capital investment, private capital investment and other capital investment have a positive correlation with per capita GDP. When the proportion of these three types of capital subjects increases by 1 unit, the per capita GDP will increase by 0.73, 0.43, and 0.18 units respectively. And mixed capital investment has the greatest effect on the economic growth of the central region, followed by private capital investment, and finally other capital investment.

In the western region, state-owned capital investment and foreign capital investment have a negative correlation with per capita GDP. Table 4 shows when the proportion of state-owned capital investment and foreign capital investment increases by 1 unit, the per capita GDP of the western region will decrease by 0.30 and 0.19 units, and the negative effect of state-owned capital investment on economic growth is greater than that of foreign capital investment. But mixed capital investment, private capital investment and other capital

investment have a positive correlation with per capita GDP. When the proportion of these three types of capital subjects increases by 1 unit, they will increase per capita GDP increase by 0.12, 0.117 and 0.002 units respectively, but these are not statistically significant.

Comparing the empirical results of the three regions in the eastern, central and western regions, we found: 1) the negative effect of state-owned capital investment on the economic growth of the eastern region is greater than that of the central and western regions; 2) mixed capital investment has a positive effect on the economic growth of the central and western regions, but it has a better effect on the central region, and has a negative effect on the economic growth of the eastern region; 3) the effect of private capital investment on the economic growth of the eastern region is greater than that of the central and western regions; 4) foreign capital investment has a negative effect on the economic growth of all regions, but the negative effect on the central region is the largest, followed by the eastern region, and finally the western region; 5) other capital investment has the greatest and significant effect on the economic growth of the central region, has little effect on the economic growth of the western region, but has a negative impact on the economic growth of the eastern region. It can be seen from the above that the effect of capital from various subjects on the economic growth of the eastern, central and western regions is completely different, and this points to an important reason for the formation of differences in regional development. Therefore, the research Hypothesis 1 is supported.

*Table 2. Contributions of various capital subjects in the eastern region to economic growth.*

Variable name	pgdp	pgdp	pgdp	pgdp	pgdp
K <sub>g</sub>	-0.5769*** (-3.98)				
K <sub>h</sub>		-0.2223 (-1.31)			
K <sub>m</sub>			0.5955*** (8.53)		
K <sub>w</sub>				-0.3965*** (-4.76)	
K <sub>q</sub>					-0.0341 (-0.68)
open	0.2508*** (5.56)	0.1455*** (3.24)	0.2577*** (7.30)	0.3879*** (6.40)	0.1493*** (3.03)
tra	0.0877* (1.78)	0.2112*** (5.39)	0.0746** (2.11)	0.1406*** (3.56)	0.2375*** (4.81)
ind	0.0808 (0.92)	0.3746*** (3.66)	0.6361*** (8.71)	0.2426*** (3.46)	0.2647*** (3.30)
hc	1.1671*** (8.65)	1.3654*** (10.21)	1.2336*** (11.44)	0.9897*** (6.81)	1.3910*** (9.57)

Note: \*, \*\*, \*\*\* respectively represent significant at the level of 10%, 5%, and 1%

Source: authors' calculations.

*Table 3. Contributions of various capital subjects in the central region to economic growth.*

Variable name	pgdp	pgdp	pgdp	pgdp	pgdp
K <sub>g</sub>	-0.4722*** (-5.03)				
K <sub>h</sub>		0.7264*** (3.26)			
K <sub>m</sub>			0.4332*** (3.99)		
K <sub>w</sub>				-0.4394*** (-11.40)	
K <sub>q</sub>					0.1759*** (3.19)
open	-0.2292*** (-2.79)	-0.2656*** (-2.92)	-0.1723** (-2.02)	-0.0517 (-0.86)	-0.0814 (-0.87)
tra	0.0611 (0.65)	0.2529*** (2.65)	0.0705 (0.71)	0.1531** (2.39)	0.0788 (0.76)
ind	0.1432 (1.37)	0.1786 (1.57)	0.1071 (0.98)	-0.1198 (-1.53)	0.0244 (0.21)
hc	1.4818*** (9.20)	1.6961*** (10.42)	1.5664*** (9.49)	1.4993*** (13.43)	1.6349*** (9.79)

Note: \*, \*\*, \*\*\* respectively represent significant at the level of 10%, 5%, and 1%

Source: authors' calculations.

**Table 4.** Contributions of various capital subjects in the western region to economic growth.

Variable name	pgdp	pgdp	pgdp	pgdp	pgdp
K <sub>g</sub>	-0.3023** (-2.21)				
K <sub>h</sub>		0.1239 (0.98)			
K <sub>m</sub>			0.1175 (1.16)		
K <sub>w</sub>				-0.1981*** (-4.58)	
K <sub>q</sub>					0.0016 (0.03)
open	-0.2127*** (-3.46)	-0.1748*** (-2.84)	-0.2005*** (-3.21)	-0.1133* (-1.92)	-0.1840*** (-2.99)
tra	0.0125 (0.22)	-0.0174 (-0.28)	0.0176 (0.31)	0.0321 (0.60)	0.0054 (0.09)
ind	0.0754 (0.57)	0.0922 (0.54)	-0.0209 (-0.17)	-0.3466** (-2.50)	-0.0220 (-0.17)
hc	0.9518*** (9.04)	1.0181*** (9.96)	0.9822*** (9.20)	1.0165*** (10.63)	1.0175*** (9.55)

Note: \*, \*\*, \*\*\* respectively represent significant at the level of 10%, 5%, and 1%  
Source: authors' calculations.

#### 4.2. Analysis on the Attraction of Economic Growth in the Eastern, Central and Western Regions to Different Capital Subjects

To analyze Hypothesis 2, this paper also used a fixed effects model to analyze the differences in the degree of attraction of various capital subjects due to differences in economic growth in various regions. Tables 5-7 shows the estimated results of model (2).

As can be seen from Table 5, when the per capita GDP of the

eastern region increases by 1 unit, the proportion of state-owned capital investment will decrease by 0.46 units, foreign capital investment will decrease by 1.43 units, while the proportion of mixed capital investment will increase by 0.16 units, private capital investment will increase by 0.68 units, and other capital investment will increase by 1.69 units. This means that the growth of per capita GDP in the eastern region will bring about a decrease in state-owned capital investment and foreign capital investment, as well as an increase in mixed capital investment, private capital investment and other capital investment.

**Table 5.** Attraction of economic growth to various capital subjects in the eastern region.

Variable name	K <sub>g</sub>	K <sub>h</sub>	K <sub>m</sub>	K <sub>w</sub>	K <sub>q</sub>
pgdp	-0.4609*** (-5.68)	0.1585** (2.24)	0.6836*** (5.43)	-1.4310*** (-8.32)	1.6873*** (7.16)
tra	-0.3079*** (-10.27)	0.0488* (1.87)	0.3591*** (7.72)	-0.5397*** (-8.49)	1.0322*** (11.85)
ind	-0.2463*** (-5.13)	0.3925*** (9.39)	-0.7837*** (-10.52)	0.1964* (1.93)	-0.7813*** (-5.60)
tec	0.1268*** (4.66)	-0.0823*** (-3.47)	-0.1477*** (-3.50)	0.4639*** (8.04)	-0.6204*** (-7.85)

Note: \*, \*\*, \*\*\* respectively represent significant at the level of 10%, 5%, and 1%  
Source: authors' calculations.

**Table 6.** Attraction of economic growth to various capital subjects in the central region.

Variable name	K <sub>g</sub>	K <sub>h</sub>	K <sub>m</sub>	K <sub>w</sub>	K <sub>q</sub>
pgdp	-0.1889** (-2.06)	0.0649 (1.35)	0.1078 (1.28)	-0.9927*** (-6.92)	0.4691** (2.42)
tra	0.1344 (1.06)	-0.1734** (-2.61)	-0.0259 (-0.22)	-0.3439* (-1.73)	0.8261*** (3.07)
ind	0.1849* (1.87)	-0.1479*** (-2.85)	-0.0584 (-0.64)	-0.3026* (-1.95)	0.5203** (2.48)
tec	-0.1593*** (-3.03)	0.0231 (0.84)	0.1483*** (3.07)	0.1446* (1.76)	0.0264 (0.24)

Note: \*, \*\*, \*\*\* respectively represent significant at the level of 10%, 5%, and 1%  
Source: authors' calculations.

As can be seen from Table 6, when the per capita GDP of the central region increases by 1 unit, the proportion of state-owned capital investment will decrease by 0.19 units, foreign capital investment will decrease by 0.99 units, while the proportion of mixed capital investment will increase by 0.06 units, private capital investment will increase by 0.11 units, and other capital investment will increase by 0.47 units.

This means that the growth of GDP per capita in the central region will bring about a decrease in state-owned capital investment and foreign capital investment, and will also bring about an increase in mixed capital investment, private capital investment, and other capital investment. However, the increase in mixed capital investment and private capital investment is not significant.

**Table 7.** Attraction of economic growth to various capital subjects in the western region.

Variable name	K <sub>g</sub>	K <sub>h</sub>	K <sub>m</sub>	K <sub>w</sub>	K <sub>q</sub>
pgdp	0.0107 (0.31)	-0.0439 (-0.96)	-0.0853** (-1.94)	-0.7775*** (-6.96)	0.2343* (1.84)
tra	0.2449*** (6.72)	0.0318 (0.66)	-0.4484*** (-9.69)	-0.3364*** (-2.86)	0.2874** (2.15)
ind	0.1994*** (3.21)	-0.8369*** (-10.19)	0.1790** (2.27)	-1.4337*** (-7.15)	0.6678*** (2.92)
tec	-0.1505*** (-9.99)	0.0842*** (4.23)	0.2360*** (12.32)	0.3449*** (7.09)	-0.0220 (-0.40)

Note: \*, \*\*, \*\*\* respectively represent significant at the level of 10%, 5%, and 1%  
Source: authors' calculations.

As can be seen from Table 7, when the per capita GDP of the western region increases by 1 unit, the proportion of state-owned capital investment will increase by 0.01 unit, other capital investment will increase by 0.23 unit, while the proportion of mixed capital investment will decrease by 0.04 unit, private capital investment will decrease by 0.09 unit, and foreign capital investment will decrease by 0.78 units. This means that the increase in per capita GDP in the western region will bring about an increase in state-owned capital investment and other capital investment, but the increase in state-owned capital investment is not significant, and it will also bring about a decrease in mixed capital investment, private capital investment, and foreign capital investment. However, the reduction in mixed capital investment is not significant.

Comparing the empirical results of the three regions in the eastern, central and western regions, we found that if the per capita GDP of the eastern, central and western regions increases at the same time, state-owned capital investment in the eastern and central regions will decrease, and the decline in the eastern region is greater than that in the central region, while state-owned capital investment in the western region will increase. Mixed capital investment and private capital investment in the eastern and central regions will increase, and the proportion of the increase in the eastern region will be greater than that in the central region, while the proportion of mixed capital investment and private capital investment in the western region will decrease. The proportion of foreign capital investment and other capital investment in the eastern, central, and western regions will all decrease, with the

proportion of decline being the largest in the eastern region, followed by the central region, and last in the western region. As can be seen from the above, the economic growth of various regions has brought great differences in the investment attraction of different capital subjects.

#### 4.3. Calculation of Regional Economic Growth Under the Evolution of The Regional Capital Structure

According to the foregoing empirical analysis of the contribution of different capital subjects to the economic growth of each region and the increase and decrease of different capital subjects caused by the economic growth of each region. Under the assumption of continuous economic growth in various regions, it is possible to calculate the increment in the next period of per capita GDP brought about by the increase of per unit of current per capita GDP in each region under the interactive influence of economic growth and capital structure. Calculated as follows:

Increment of GDP per capita in the next period in each region equals to the capital investment inflows (or outflows) of different subjects brought about by the per capita GDP growth of 1 unit in each region in the current period multiplied by per capita GDP output brought about by the capital of different subjects in each region.

According to this calculation formula, assuming the current economic growth in the eastern, central and western regions, the effect of regional economic growth in the next period can be estimated as follows:

$$y_{\text{eastern}} = -0.5769 * (-0.4609) + (-0.2223) * 0.1585 + 0.5955 * 0.6836 + (-0.3965) * (-1.4310) + (-0.0341) * 1.6873 = 1.1477$$

$$y_{\text{central}} = -0.4722 * (-0.1889) + 0.7264 * 0.0649 + 0.4332 * 0.1078 + (-0.4394) * (-0.9927) + 0.1759 * 0.4691 = 0.7017$$

$$y_{\text{western}} = -0.3023 * 0.0107 + 0.1239 * (-0.0439) + 0.1175 * (-0.0853) + (-0.1981) * (-0.7775) + 0.0016 * 0.2343 = 0.1358$$

From the above calculation, it can be seen that under the interactive influence of regional economic growth and the capital structure, the eastern region will have the largest economic growth effect in the next period, reaching 1.1477; followed by the central region, reaching 0.7017; finally, the western region, reaching 0.1358. This difference in growth also leads to a growth gap of 0.446 units in the eastern and central regions, and 1.0119 units in the eastern and western regions; That is to say, for each additional unit of output in the current period in each region, under the influence of the capital structure, the next period will bring a growth gap of 0.446 units to the eastern/central regions, and a growth gap of 1.0119 units to the eastern/western regions. After many cycles, the growth difference between the eastern/central regions and the eastern/western regions will show an increasing trend year by year, and Hypothesis 2 is supported.

## 5. Conclusion and Discussion

This article analyzes the relationship between the capital structure and the formation of regional development

differences, and uses panel data from 31 provinces (cities) in China from 2006 to 2017 to conduct empirical tests. The results show that: 1) different capital subjects have variation in their contribution efficiency to the economic growth of the eastern, central and western regions, which is an important reason for the formation of differences in regional development; 2) the economic growth of the eastern, central and western regions attracts different capital subjects, which brings about changes in the capital structure in each region. This change in the capital structure based on differences in capital efficiency will further lead to the expansion of regional development differences.

Based on the above research, this article proposes the following policy recommendations. The first is that each region needs to implement policies based on capital to induce the combined flow of various types of capital in a targeted manner, and to optimize the capital structure. The eastern region should further encourage private capital investment, the central region should focus on encouraging mixed capital investment and private capital investment. Relatively speaking, the western region can further encourage



state-owned capital investment and foreign capital investment to reduce the marginal diminishing effects of these two capital efficiencies in the eastern and central regions. The second is that the central and western regions need to further optimize the regional capital environment, such as strengthening the infrastructure construction in the central and western regions, optimizing the local industrial structure layout, attracting more high-level talents, enhancing technological innovation capabilities, etc. Their efforts would break the circular effect of regional choices for capital investment in order to eliminate "Matthew effect" of regional development.

It should be noted that China's development focus has shifted from quantitative development to quality development, and a reasonable economic structure is the prerequisite for high-quality economic growth. Therefore, in future research, we can analyze high-quality economic growth from the perspective of the capital structure.

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