

Analysis of Regional Inequality in Jiangsu Province: A Perspective from the Inadequacy of Government Policy and Circle Effect

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Abstract: Since the open-up in 1978, China has begun its economic reforms and the economic inequality has increased rapidly between regions. One typical regional economic disparity problem that exists in Jiangsu Province has attracted tremendous concerns for a long period. This paper studies the GDP disparities between southern and northern Jiangsu in recent years. It aims to provide a deep insight into the factors currently expanding economic disparities between southern and northern Jiangsu. The question raised whether the current expanding inequality results from the circle effect or the inadequacy of the government assistance policy. Two hypotheses regarding the components of GDP and place mobility separately are made. The paper finds that the assistance policy of the Jiangsu government was effective which created a more beneficial economic environment for business operations and attracted more and more investment, talents, and large-scale industries which infers that the accumulation effect of wealth in the southern area grasping more resources, investment, and talents dominates the inequality.

Keywords: Regional inequality, circle effect, GDP calculation, place mobility.

1. Introduction

This paper studies the economic inequality between northern and southern Jiangsu in recent years. Socio-economic and cultural data have shown that Jiangsu Province can roughly be divided into three parts: the developed Southern Jiangsu, moderately developed mid-Jiangsu, and poor northern Jiangsu [1]. Jiangsu government has started to push the southern and northern Jiangsu assistance policy since 2001. Dramatic outcomes have been achieved as the GDP growth rate has increased faster in northern Jiangsu these years and the economy volume has rocketed through industrial transfer, technology diffusion, and talent exchange. The provincial inequality existing in Jiangsu tends to be much smaller compared with other provinces in China. However, it is astounding to find that the GDP disparities between southern and northern Jiangsu continue to magnify in these years after twenty years of efforts. Doubts arose about whether the current expanding inequality results from the circle effect or the inadequacy of the government assistance policy. Different tax amounts and foreign investments are taken into consideration first in the context of the composition of GDP (consumption, investment, government spending, and net exports) to see the prominent factors contributing to the large inequality. From the Document of the General Office of Jiangsu Provincial People's Government

published in 2015, talents are emphasized as the first resource for economic and social development, and talents and industries are the key to enhancing the internal driving force for the development of northern Jiangsu [2]. As a result, the place mobility of talents and industries has been studied from another perspective to assess whether the inequality comes from the stagnation of the mobility of scarce resources, advanced labor, and technology-oriented enterprises. Datum from Jiangsu Provincial Bureau of Statistics are reorganized and analyzed to evaluate the government's performance.

2. Literature Review

The regional inequality in Jiangsu Province is a complicated problem that can be attributed to the different geographical, historical, and political factors. Despite a fairly large number of studies on regional inequality in Jiangsu Province, there are obvious gaps in this literature. First, intensive research focusing on the factors of the inequality problems cluster at the beginning of this century when the economic lopsidedness showed signs of worsening. The coalescence of state policy, local agents, and foreign investment has been concluded as the contributors to severe the historical gap between northern and southern Jiangsu and is likely to accelerate intra-provincial inequality [3]. Moreover, from a political economy perspective, the preferential policies for the coastal especially the southern part were criticized as investors were able to manipulate preferential policies through relation to carry out large-scale rent-seeking activities. Therefore, the fiscal capacity of the central and provincial governments, however, is weakened, diminishing their ability to redistribute resources for a more even regional development [1]. However, through twenty years of reforms and government policy support, these findings may not provide new ideas for the current continuing economic disparity.

Later studies tend to focus on the effect of specific factors like foreign investment, place mobility, and land construction on regional inequality. Through years of development, foreign investment still contributes to the development of the economy a lot. It is found that in south Jiangsu, the unit FDI increase contributes most to the GDP development, with middle and north Jiangsu lagging [4]. The digesting ability is different among different locations. Moreover, the club effect plays a crucial role in regional development through an obvious and intensifying southern and northern divide. Researchers showed that the poor class was exclusively concentrated in northern Jiangsu. The paper shows that a strong core-periphery structure increases spatial polarization and reduces place mobility [5]. Research in 2016 studies the regional difference in urban construction land and finds that the urban construction land is the largest proportion in southern Jiangsu and the coordination of urban development and the land use type is crucial to promote the coordinated development of the regional economy [6]. However, few of them compare the effect of specific factors and the accumulation of economic effects to prove which dominates the increasing inequality.

The inequality problem in Jiangsu Province has endured from the onset of the opening reform. Previous dominant causes such as preferential policies, foreign investment, and place mobility are paid much attention by the Jiangsu government with abundant policies having been implemented. It is reasonable to show skepticism toward the effectiveness of the government policy. Other factors such as the wealth accumulation impact should also be taken into consideration for the future construction of all-round well-off in northern Jiangsu and eliminating the expanding economic disparity within the province.

3. Framework Analysis

3.1. GDP Inequality Trend

Figure 1 shows the GDP changes from 2019 to 2023 in 13 prefecture-level cities in Jiangsu Province. Southern Jiangsu which includes Suzhou, Nanjing, Wuxi, Changzhou, and Zhenjiang maintains first, second, third, fifth, and ninth place separately taking over 60% percent of the whole province's GDP together. While the cities in the northern part including Xuzhou, Lian Yungang, Yancheng, Huaian, and Suqian rank at the last sixth place. Economic inequality has become severe since the beginning of the 21st century. The regional disparity issue has attracted tremendous attention from different areas of society. The government has adopted many policies to refine the unbalanced development. The southern and northern Jiangsu assistance policy is one of the most successful policies that aims at enhancing regional coordination. Dramatic outcomes have been achieved through the implementation of this policy to witness the increment of the growth rate of GDP in northern Jiangsu and the economy volume has expanded rapidly these years.

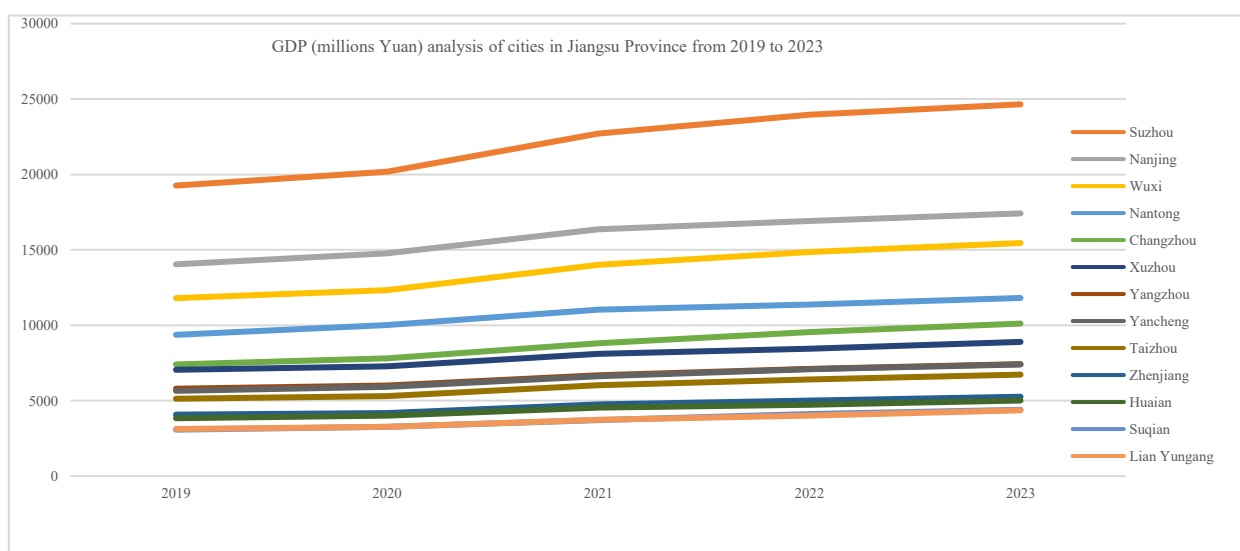


Figure 1: GDP analysis of cities in Jiangsu Province from 2019 to 2023 (Picture credit: Original).

The provincial inequality existing in Jiangsu tends to be much smaller compared with other provinces in China. However, from the recent annual GDP released from 2019 to 2023 (Table 1). It is obvious that the GDP difference between the southern and northern has become larger and larger. It is reasonable to expect an enduring high growth in the GDP of southern Jiangsu with the accumulation effect through high GDP over the years. Although the economy in northern Jiangsu has experienced dramatic development, the tremendous regional inequality remains which is harmful to the common development within the province, and addressing the issue of inequality is far from satisfaction. The question raised whether the current expanding inequality results from the circle effect or the inadequacy of the government assistance policy. This paper will take a deep insight into the possible factors that can be regulated to alleviate the regional inequality issue and two hypotheses are made below from two perspectives.

Table 1: GDP amount and difference in the southern and northern Jiangsu.

year	Southern GDP	Northern GDP	Difference
2019	56596.45	22759.34	33837.11
2020	59299.29	23753.96	35545.33

Table 1: (continued).

2021	66647.9	26731.89	39916.01
2022	70284.07	28397.04	41887.03
2023	72911.42	30081.47	42829.95

3.2. Accumulation and Circle Effect

The accumulation of wealth enlarges the inequality is a circle effect phenomenon as the investment opportunities and resources are more accessible holding more wealth which is well known as Matthew's effect for individual inequality. The expanding inequality between regions follows the same rule. The place with a large volume of capital and GDP tends to attract more investment to the place and have more funds for industrial innovation and talent cultivation. In the case of Jiangsu Province, assuming the government has eased the FDI non-equilibrium and place mobility issues, it is still difficult for northern Jiangsu to catch up with the southern place whose economic scale is huge. Even though the growth rate of factors like foreign investment and industry development in northern Jiangsu eclipsed that of the south, it's still a long time for the north to reach an analogous GDP volume as the south. According to the Kuznets curve which graphs the hypothesis that as an economy develops, market forces will first increase and then decrease the economic inequality. In conclusion, it is reasonable to see the expanding inequality between southern and northern Jiangsu despite what efforts the government has made.

3.3. The Expenditure GDP Calculation Method

According to the expenditure GDP calculation method, GDP can be regarded as the combination of consumption, investment, government spending, and net exports. This paper will study the composition of GDP in the context of tax and foreign investment in the first place to gain a more comprehensive understanding of the regional economic differences in Jiangsu Province. Consumption is highly correlated to the individual's income which has a positive relationship with the regional GDP. It is reasonable to conjecture that regional consumption tends to be low corresponding to the low GDP in northern Jiangsu. Moreover, equipped with more foreign industries and high-quality ports, the inequality in net exports between regions can be easily inferred. The factors of consumption and net exports belong to the accumulation effect is an internal circle effect of the inequality issue. The two components will be shed light on and the foreign investment in investment part and the tax revenue from government spending will be specifically studied to evaluate the effectiveness of government assistance policy.

One hypothesis regarding the expanding disparity is that the foreign investment is at a low level in northern Jiangsu and the collection of tax payments is relatively high in the northern province. Previous study shows that the positive effect that FDI brings to GDP growth is notable and magnificent [7, 8]. Jiangsu is one of the FDI (foreign direct investment) clusters in China. But it was facing the problem of development non-equilibrium from the beginning of this century. It is suggested that the full use of the positive effects should be made to encourage regional economic development. This paper wants to see whether the FDI has got comprehensive enhancement by the method of southern and northern assistance policy these years.

Table 2 shows the GDP and FDI in the southern and northern parts from 2018 to 2022. Both FDI and GDP grow yearly while foreign investment in northern Jiangsu was far less than that of the south. However, the growth rate of FDI in northern Jiangsu is far larger than that of southern Jiangsu achieving nearly twice of the growth rate from 2020 to 2022. Foreign investment is expected to get

closer to the southern FDI if maintaining the high growth rate and the current weakness in the FDI cannot be the reason for the continuously increasing GDP gap.

Table 2: GDP and FDI comparison between southern and northern Jiangsu.

year	Southern GDP	Northern GDP	Southern FDI	Northern FDI	Growth Rate of Southern FDI	Growth Rate of Northern FDI
2018	32608.18	10632.66	114.34	28.82	-0.035	0.063
2019	56596.45	22759.34	116.05	32.75	0.015	0.136
2020	59299.29	23753.96	125.92	33.11	0.101	0.149
2021	66647.90	26731.89	142.56	44.33	0.132	0.339
2022	70284.07	28397.04	141.42	40.96	0.120	0.237

When coastal regions race to the top, there will be a mobile factor of capital with less tax on capital but a high tax burden on the land and a better investment environment. As a result, tax burdens tend to be extremely high in poor regions with agriculture as the major means of production [9, 10]. In the context of decentralization, it is usually the case that economic inequality will rocket with the disparate regional tax policy. Table 3 below shows the tax proportion in the southern and northern Jiangsu separately. However, it is obvious that the tax amount in northern Jiangsu is far less than that in the southern area and the tax proportion in the total GDP is also much smaller. It is worth emphasizing that the proportion of tax revenue in northern Jiangsu's GDP is declining every year with the continuing increasing GDP which indicates that the collection of tax payments is gradually alleviating and the market environment tends to be more beneficial for the business operating thus stimulating the development of economy and industrial.

Table 3: GDP and tax proportion comparison between southern and northern Jiangsu.

year	Southern GDP	Northern GDP	Southern tax proportion (%)	Northern tax proportion (%)
2018	32608.18	10632.66	10.30	7.50
2019	56596.45	22759.34	6.28	3.32
2020	59299.29	23753.96	6.10	3.20
2021	66647.90	26731.89	5.83	3.28
2022	70284.07	28397.04	4.68	2.39

In conclusion, the Jiangsu government has devoted abundant efforts to cutting the tax burden in the northern part and attracting the FDI to develop the regional economy. Although the economic disparity tends to become larger, the internal accumulation effect is likely to play an indispensable role in creating larger differences.

3.4. Place Mobility of Talents and Industries

Due to the accumulation effect, it is reasonable to assume that the wealthy tend to become wealthier holding more resources and population within the region while the indigent area will get worse accompanied by the loss of labor and resources as time goes by without the government's control and regulation. Despite the intervention of the Jiangsu government in the aspect of the severe provincial economic inequality, the mobility between areas may still be an issue for the expanding disparity in the GDP as most industries and populations are reluctant to immigrate to poor areas for regional

development while sacrificing their interests. Hypothesis 2 is made assuming that the place mobility problem exists as the flexibility in talents and industries is much lower than expected. An OLS regression model on the effect of several industrial and talents has been made below (Table 4).

Table 4: OLS regression.

log_GDP	Coef.	Std. Err.	t	P > t	[95% Conf. Interval]	
log_industrial	1.518467	0.3215454	4.72	0.000	.8575205	2.179413
log_talents	3.387003	0.7334465	4.62	0.000	1.879383	4.894624
region	-5.441393	0.774494	-7.03	0.000	-7.033388	-3.849398
_cons	-15.19135	2.098577	-7.24	0.000	-19.50504	-10.87767

Variables of GDP, Talents, and Industrial are all in the log form. Datum is from Jiangsu Provincial Bureau of Statistics. Combining the stata outcomes, the regression model has the form: $\log_GDP = 1.52 * \log_industrial + 3.39 * \log_talents - 5.44 * region - 15.19$. Talents and industries play indispensable roles in economic development. As the model shows that a 1% increase in the industrial output is associated with an average increase of approximately 1.52% in GDP and a 1% increase in the talent level can lead to an average increase of approximately 3.39% in GDP. However, the direct increment of the amount of talent and industries is impossible as the resources of labor of capital are limited. Industries transferring and talents attraction policies are made one after another. The place mobility problem will be studied in this part to see whether the low flexibility of talents and industries is a factor for the increasing GDP gap for the two areas in Jiangsu.

Table 5 shows the number of talents represented by the number of graduates from the regional universities and the number of industrial enterprises above the designated size. For the number of talents, the number of talents in northern Jiangsu spurt from 2018 to 2022 while the number of graduates in the southern part fluctuated showing a sign of declining these years. The increment of graduates from the universities in northern Jiangsu is emblematic of the success in attracting talents to develop regional economy of the revitalization policy of northern Jiangsu. The number industries, although the number of industries in northern Jiangsu maintains a low level compared with that of the southern area, the growth rate of the number increment eclipses southern Jiangsu's growth rate. However, the high level appeared just in 2021 and the latter tendency is unpredictable. Moreover, although the growth rate in the south is lower than the north's currently, the growth rate is still at a relatively high status with the latest amount of 7.81(%) with the number of industries already in a high state. It's predictable to see the inequality in the number of industries expand in the following years due to the continuing accumulation effect. The government's efforts to attract innovative industries and more talents seem to achieve initial effectiveness. The expanding disparity between southern Jiangsu and northern Jiangsu then can be attributed to the accumulation effect-oriented from the aspects of consumption and net exports.

Table 5: GDP and number of talents and industrial enterprises above designated size.

year	Southern GDP	Northern GDP	Southern talents	Northern talents	Southern number industries (growth rate (%))	Northern Number industries (growth rate(%))
2018	32608.18	10632.66	134.32	32.97	14960 (.)	4068 (.)
2019	56596.45	22759.34	140.04	33.63	15960 (6.68)	3796 (-6.69)
2020	59299.29	23753.96	146.58	34.74	17615 (10.37)	3857 (1.61)
2021	66647.90	26731.89	132.78	42.03	19439 (10.35)	4285 (11.10)
2022	70284.07	28397.04	131.72	44.87	20958 (7.81)	4836 (12.86)

4. Conclusion

This paper summarizes the GDP tendency in the current five years and finds an expanding inequality trend between southern and northern Jiangsu which is anomalous considering the enduring government assistance policy towards the northern area. The question raised whether the increasing inequality from the accumulation effect of wealth or the inadequacy of government policy. Two hypotheses are made as one considers the components of GDP and the other takes other important factors influencing GDP nowadays as place mobility into account to prove the effectiveness of government assistance actions. Consequently, the accumulation effect of wealth in the southern area which can attract more resources, investment, and talents for the local business dominates the inequality. It's expected that with the resisting dedications of the government northern area can gain the advantage one day and decrease the inequality and it is just the time of problem. It is still necessary to have continuing support for the north and total regulation in the whole province instead of waiting. The policy of enhancing the attraction of talents and industries should be maintained to strengthen the internal driving force for the development of northern Jiangsu. It is suggested to support the introduction of basic and applied talents and improve the talent policy system in northern Jiangsu while giving play to the main role of enterprises and public institutions in attracting and employing talents. Moreover, expanding effective demand can be an effective method as the government takes policies and measures to increase people's ability and willingness to spend and promote the basic role of consumption in economic development.

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