

An Analysis of Wage Inequality in Three Regions of China

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Abstract: With China's rapid economic growth since its accession to the WTO, the problem of inter-regional income inequality in China has become increasingly prominent. Comparing age, education, gender, hukou constraints, and Foreign direct investment (FDI), this paper finds that the earlier opening of eastern China to world trade and the better business environment has attracted a large amount of FDI, which creates jobs and pushes up income levels in the region. Currently, excessive urban pressure in the eastern region and under-utilized resources in the central and western areas will affect China's economic growth. Therefore, the government should make full use of the comparative advantages of each region for industrial layout, transferring low-end and medium-end industries from the east to the central and western areas, and making use of the resources of provinces and cities around the eastern cities for those industries that are inconvenient to relocate. In addition, the central and local governments should improve the social security system as soon as possible to alleviate people's worries about the future and promote personal consumption and investment.

Keywords: Wage Inequity, Gender, Hukou System, FDI.

1. Introduction

In the decades following China's reform and opening in the 1970s, the country's economy began to grow at a phenomenal rate and achieved great success in reducing poverty. At the same time, beginning in the 1980s, China experienced problems of inequality. Wage inequality has been a major problem for China's development. However, over the past decades, wage inequality in China has occurred not only between towns and cities, but also in the eastern, central, and western regions [1]. In 2008, per capita GDP in eastern China was RMB 39,826.3; in central China, it was RMB 18,229.26; in western China, it was RMB 16,507.08; and in the northeast region, it was RMB 21,511.78. The eastern region is the most developed in China. The eastern region is the most developed in China. The eastern region is the most developed region in China and the western region is the most developed region in China. Thus, the eastern region is the most developed region in China, which increases the likelihood that people from economically backward regions will migrate to the eastern region. This has led to sluggish economic development in central and western China, and many young people from central and western China prefer to enroll in schools in the east, given the relatively good education available in the east compared to other regions [2]. In this regard, what creates wage inequality in East, Middle, and West China.

This paper analyses the impact of gender, education, age, hukou system, and foreign direct investment on development imbalance and income inequality in the eastern, central, and western

regions of China. The next part of the paper shows the problem of uneven development in the East, middle, and West regions through the Gini coefficient, GDP per capita, and consumption per capita. The last part summarizes the ways to alleviate the problem of wage inequality caused by inter-regional development imbalance.

2. Literature Review

2.1. Age, Level of Education and Gender

With the transfer of large numbers of laborers from the central and western parts of the country to the developed regions of the east, many have chosen to seek employment in the large cities of the east. However, with the influx of migrant workers to the east, some unequal restrictions on migrant workers have emerged in eastern cities. The wage gap between them and the locals will also be reflected in the different workplaces, different levels, and geographical differences. Coupled with the fact that local enterprises sometimes favor local workers, their treatment will naturally be completely different from that of the locals [3]. This explains why labor shortages are in the center and the west. From 1988 to 2002, fewer and fewer young people under the age of 25 participated in the workforce. However, when wage earners reach the age of 55, China's legal retirement age, it is often difficult for them to continue working. Young people, on the other hand, chose to continue their education, and wages for older urban workers began to fall as China's aging problem intensified and labor shortages emerged in the labor market [4]. For those migrants who have come to the East, even though some of them have reached retirement age, they must choose to continue working. Although they could work closer to their place of residence, without the security of a local pension, they have no choice but to take that route.

Since the reform and opening, China has emphasized education, which is important in determining income distribution. Although there are more and more graduates in China, there is an income gap between different levels of education [5]. The educational imbalance in East, Central, and West China is a result of uneven regional economic development. The eastern part of the country has better access to international trade, which attracts many foreign enterprises to invest here, and these foreign enterprises have a high demand for high-quality personnel, while they also emphasize the training of high-quality workers [6]. In other words, foreign companies have given China trade liberalization since joining the WTO, which has raised the skill premium and the university premium in China. As a result, this has made firms more inclined to hire workers who are highly educated than those who are relatively less educated, which arguably increases wage inequality because trade liberalization raises the returns to education and the returns to skills [7]. This would explain the desperation of those young people from the center and the West to come to the East to study. At the same time, it can also prove that the eastern region is even ahead of the central and western regions in terms of education and economy, and the foreign-invested enterprises take the lead in pulling up the wages in the developed regions and have a bad influence on the wages in other regions [8].

In addition to the two cases mentioned above, gender differences have also been recognized as a problem of regional wage inequality. The traditional culture in many backward regions still influences the lifestyle and thinking of the local people, preventing many women from joining the local labor market. The low wages in some enterprises in the backward regions have led women to migrate to the developed eastern regions, where they are often free from family constraints [9]. However, the female labor force is still lower than the male labor force in terms of occupational status, working hours, and labor force participation rate. Even though their education level is rising, there is still a large income gap between them and men. In other words, the root cause of wage inequality between men and women in China lies in human capital differences and gender segregation. Although the Chinese government has been committed to advocating equal pay for equal work for men and women,

this remains a difficult problem to solve [10]. In China's manufacturing sector, the employment rate of female workers is also very low. However, foreign and export-oriented companies are more inclined to employ them, and the income gap between men and women in these foreign as well as exporting firms is entirely greater than in other Chinese firms, but the female labor force tends to be assigned to very low-skilled and trained positions. Therefore, the skills and training of female workers need to reach a higher dimension to address gender wage inequality [11].

2.2. Political System

China's political system has also contributed to regional wage inequality in some cases. In today's China, the hukou, a household registration system designed to control the movement of people, is still practiced, and the hukou system has been restricting the work of migrant workers, which has increased the gap between migrants and locals. China's hukou system originated in 1951, and hukou is divided into urban and rural hukou. During the planned economy, any transfer of hukou required official approval. However, since the 1980s, as the hukou policy changed and more and more foreigners moved to the cities, the government began to provide them with some facilities, such as purchasing a house to obtain a local blue-print hukou that is not managed by the central government, and for those who have a job, a temporary residence permit will be issued. Despite the changes in the Hukou system, the prevailing philosophy was that urban areas were higher than rural areas and that developed areas were higher than backward areas [12].

Although it is said that for a short period such a policy can properly accommodate migrant workers, such a relaxation policy will also lead to more movement of people, which will cause a surge of pressure on the government. At the same time, this will also add to the economic hardship of the backward regions [13]. Problems arising from the liberalization of the Hukou system have already arisen. Coupled with the strengthening of the labor market's influence on employment and wages by foreign-owned enterprises and private firms, the competition in the market is so fierce that these enterprises tend to pay lower wages to migrant workers, and this gives rise to the problem of discrimination against them. They will be discriminated against not only in their workplaces but also in several other areas. For social welfare, they are different from the locals in terms of health care and pension because they come from backward areas (e.g. the Midwest). Secondly, in terms of housing, there is also a sharp contrast between the locals [14]. Therefore, the impact of the Hukou system on the low-wage migrant labor force is far-reaching, and inequitable social benefits and public services will exacerbate their bad situation [15]. For example, in the Beijing area, if the person buying a house does not have a Beijing Hukou, then he will not be able to buy a property in Beijing. He needs to pay social security in Beijing for 5 years before he can buy a property, but a person with a Beijing hukou can directly buy a property. Therefore, one can get a result from the previous account, that is, in China, the migrant population's hukou is inherited from their parents; even though they enjoy the right to abode in the developed areas, they can't enjoy the same treatment as the locals, and at the same time, their children can't enjoy the same education as the locals [16].

Age, education, gender, and political system are indeed the causes of wage inequality in the three regions of China, but there is another important reason that should be accounted for.

3. Methodology

3.1. Data collection and processing

To measure the existence of income inequality in China, this paper first analyzes the regional analysis of per capita income by using the Gini coefficient accounted for in China's National Statistical Yearbook. If the Gini coefficient is very high, it indicates that the income is very unbalanced, and a line graph is used to represent the Gini coefficients of the three regions in China from 2000 to 2022.

Second, this paper examines the per capita income of the residents of the three regions by analyzing the per capita GDP of the Eastern, Central, and Western China regions from the CEIC database and representing it in line graphs. Next, this paper utilizes the per capita consumption line graph to measure the consumption level of the three regions in China. If the per capita consumption level in certain areas is too low, it indicates that the income of the residents in that region is not stable. After all, only stable or higher wages can drive consumption.

To address the factors that have previously contributed to wage inequality in China's three major regions, this paper extracts data on the share of the employed population aged 25-65 in the three major regions from the China Census Yearbook and presents them in the form of pie charts. Meanwhile, this paper obtains the population share of the three regions as well as the labor force participation rates of men and women in the three regions in 2010 and 2020 respectively, from the China Census Yearbook database and demonstrates them in the form of pie charts and tables.

Then, also in the China Census Yearbook database, by analyzing the population share of the three regions, as well as the number of migrant population flows and the proportion of migrant population in the total urban population of the provinces, municipalities, and autonomous regions under the jurisdiction of each region, this paper will present the results in pie charts and tables.

Finally, for educational attainment, we chose the China Statistical Yearbook database and extracted data on academic achievement at the junior college and above for the three regions from 1996-2022, represented by line graphs.

3.2. Results

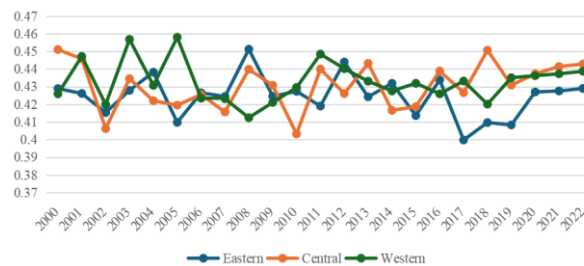


Figure 1: Trends in Gini coefficients in three regions of China

Figure 1 illustrates the trend of the Gini coefficients of the three regions of China from 2000 to 2022, and for most of the time, the Gini coefficients of the central and western regions of China have been higher than those of the eastern region of the country. In 2020, the Gini coefficient in the western and central regions was about 0.44, but the Gini coefficient in the eastern region was about 0.43. The Gini coefficients in the west and central regions are larger than those in the east region, which can indicate that there is a difference between wages in the west and central regions and those in the eastern region.

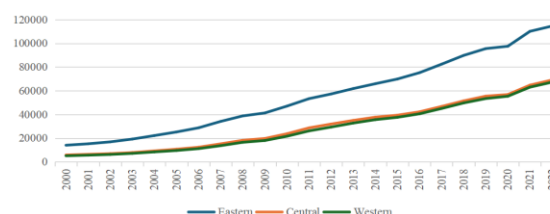


Figure 2: Trends in per capita GDP in East, Central and West China

Figure 2 depicts the trend of GDP per capita in China between 2000 and 2022. This figure shows that the GDP per capita in central and western China has been lower than that in eastern China, while in 2022, the GDP per capita in central China will be about RMB 69,051, and in western China about

RMB 67,204, but in eastern China, it will be RMB 114,496. Therefore, by observing the above data, it can be concluded that the living standard as well as the salary level of the residents in the central and western parts of the country are not as good as the eastern part of the country.

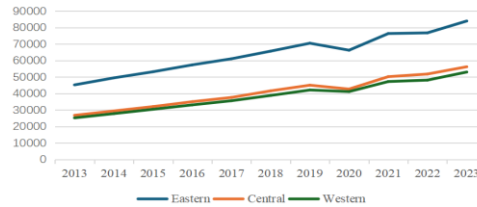


Figure 3: Consumption level of the population in East, Central and West China

Figure 3 analyzes the consumption levels of the three regions of China during the decade 2013-2023, and the consumption level in the central and western regions is slightly lower than that in the eastern region. In 2023, the consumption level in the western region will be about 53,010 RMB, in the central region about 56,202 RMB, and in the eastern region about 83,937 RMB. As there is a link between consumption and wage level. The higher the consumption, the higher the wage. Therefore, looking at Figure 1 and Figure 2 again, there is a gap between the wages in the east, center, and west.

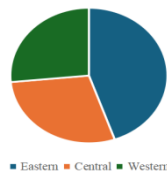


Figure 4: Share of employed population aged 25-65 by region

Figure 4 shows the share of the employed population aged 25-65 in the three regions, where the East has the largest share of the employed population at about 0.45, but the Center and the West have about 0.29 and 0.27, respectively. This suggests that the East occupies the largest share of the working population of young adults and that the East is attractive to them.

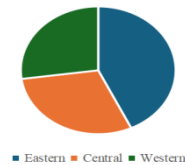


Figure 5: Percentage of total population in Eastern, Central and Western regions

Figure 5 describes the proportion of the population of the three regions to the total population of China, in which the proportion of the population in the east is still the highest, at about 0.43. However, the proportions in the central and western parts of the country are about 0.30 and 0.27, which suggests that the population of China has shifted to the east.

Table 1: Number of migrant populations in the three regions and the proportion of the population of other provinces to the total urban population

Regions	Cities/ Provinces	Inflow of people from other provinces (People)	Proportion of population in other provinces to total urban population (%)
East	Beijing	193,811	0.89
	Tianjin	105,561	0.76

Table 1: (continued).

Regions	Cities/ Provinces	Inflow of people from other provinces (People)	Proportion of population in other provinces to total urban population (%)
	Hebei	635,854	0.85
	Liaoning	508,644	1.19
	Shanghai	200,988	0.81
	Jiangsu	882,316	1.04
	Zhejiang	647,911	1.00
	Fujian	548,928	1.32
	Shandong	1,078,130	1.06
	Guangdong	1,476,884	1.17
	Hainan	99,367	0.99
	Total	6,378,394	-
Central	Shanxi	414,714	1.19
	Jilin	345,516	1.44
	Heilongjiang	363,815	1.14
	Anhui	682,543	1.12
	Jiangxi	500,231	1.11
	Henan	905,339	0.91
	Hubei	772,915	1.34
	Hunan	672,699	1.01
	Total	4,657,772	-
West	Inner Mongolia	391,683	1.63
	Guangxi	473,680	0.94
	Chongqing	492,209	1.54
	Sichuan	1,220,209	1.46
	Guizhou	365,385	0.95
	Yunan	464,228	0.98
	Tibet	19,714	0.54
	Shaanxi	425,825	1.08
	Gansu	221,048	0.88
	Qinghai	60,901	1.03
	Ningxia	112,911	1.57
	Xinjiang	230,920	0.89
	Total	4,478,713	-

Table 1 shows the number of floating populations in the three regions and the proportion of population from other provinces to the total urban population. It is easy to see that the east is still ahead of the other regions for 6,378,394 people, of which Beijing, Tianjin, Shanghai and Guangdong's proportion of population from other provinces is 0.89, 0.76 and 1.17, respectively. This suggests that China's hukou system restricts the inflow of people from other parts of Beijing, Tianjin, and Shanghai. However, Guangdong's relatively liberal hukou policy, which generally allows direct settlement with a bachelor's degree or higher, and the provision of public rental housing for the new labor force reduces the burden of high real estate prices on the labor force's cost of living, and thus also reduces the crowding out effect of housing costs on per capita consumption. Even though the Hukou system

is restrictive in the East, the greater number of job opportunities and higher wages encourage more people to stay in these provinces and cities.

Table 2 : Labor force participation rates for men and women in the three regions

	2010			2020		
	East	Central	West	East	Central	West
Male	0.508	0.507	0.510	0.597	0.595	0.582
Female	0.492	0.493	0.490	0.403	0.405	0.418

Table 2 shows the labor force participation rates for men and women in the three regions in 2010 and 2020. This table illustrates that female workplace participation has risen, but the share in the workplace has declined relative to a decade ago. However, this may be due to economic transition, increased childcare responsibilities, gender discrimination in the labor market, and delayed entry into the workforce due to the general increase in the number of years of female education.

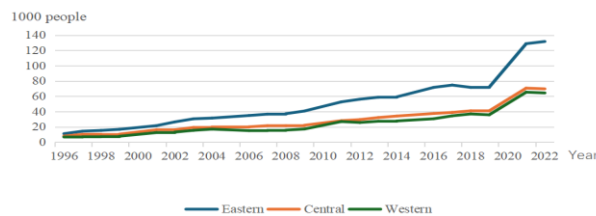


Figure 6: Number of people with junior college and above in China

Figure 6 illustrates the number of people with junior college and higher degrees in the three regions of China from 1996 to 2022. After the reform and opening, the number of people with higher degrees in each region of China has been increasing, and in 2022, the number of people with higher degrees is 131,542 in the east, and 69,620 and 64,251 in the central and western parts of the country, respectively. Figure 6 shows that the East has better educational resources, which attracts many students to go to the East to study.

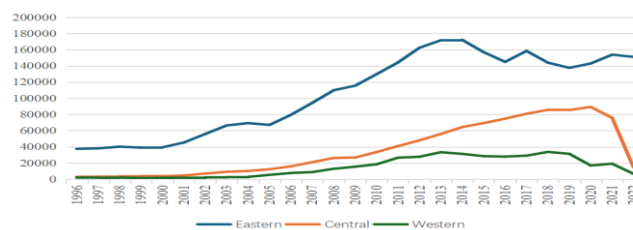


Figure 7: Foreign direct investment (FDI) in three regions

Figure 7 explains FDI in the three regions between 1966 and 2022, with the East consistently investing more than the Center and West. In 2022, the eastern part of the country will have about \$151.1 billion, the central part about \$145.8 billion, and the western part only about \$66.5 billion. The figure illustrates that since China's opening and its accession to the WTO, many foreign investors have prioritized investment in the eastern region, while they have rarely invested in the central and western regions. The increase in foreign investment has brought many jobs to the east, which has resulted in fewer jobs in the center and west than in the east. In particular, the decline in employment in the central and western regions has been more pronounced over the years.

4. Conclusion

China's rapid economic growth since the beginning of the twenty-first century has been accompanied by an imbalance in the development of the eastern, central, and western parts of the country, which has given rise to interregional wage inequality. The main drivers of wage inequality can be categorized into age, education, gender, and hukou systems, as well as foreign investment. Among them, the wage inequality problems presented on gender, age, and education do not significantly differ between regions. Although the hukou system has slowed down population mobility in the central and western regions, the attraction of the eastern areas for labor is still strong. The real reason for the rapid economic development of the eastern region is still the earlier accession to global trade and the input of FDI. Therefore, to effectively alleviate the problem of inter-regional development imbalance, on the one hand, it is necessary to transfer low-end and medium-end industries from the eastern region to the central and western areas rather than to Southeast Asia to prevent the problem of industrial hollowing out. For industries that cannot be relocated, cities in the eastern region can consider integrating the resources of neighboring provinces, cities, and counties to alleviate the problem of urban population pressure and resource shortage. On the other hand, the national and local governments should strengthen the social security system, for example, by increasing maternity subsidies for women or improving unemployment insurance coverage.

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