Exploration of Net Property Income in Different Regions

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Abstract: Nowadays, people's life satisfaction largely depends on their net property income, and as the quality of life improves, people begin to focus on the management of their existing assets and formulate investment strategies. This paper uses SPSS 26 analysis software to analyze the income indicators and potential influencing factors collected from various provinces in China, and finds that education, urbanization level and CPI index have strong influence on investment strategies, providing policy guidelines for governments that wish to improve the living standards of their residents.

Keywords: net property income, education, urbanization, CPI

1.   Introduction

The proposal of the Belt and Road Initiative in 2013 propelled the further development of China's economy. It promoted Sino-foreign trade cooperation, the development of trade and investment has effectively supported the development of China's economy and the growth of residents' income, with the average annual growth rate of per capita disposable income of the nation's residents exceeding 8% from 2013-2019 [1]. The implementation of Belt and Road will help upgrade the infrastructure level of the countries along the route, which can improve the degree of infrastructure interconnection of the countries along the route, thus promoting the upgrading of the industrial structure of the countries along the route [2], further accelerated China's economic transformation and upgrading, and safeguarded China's Since the reform and opening up in 1978, it turned out that the economy has continued to grow positively, and even under the impact of the new crown epidemic in 2020, it was still the only country with positive economic growth among the G20 members.

The quality of Chinese lives is getting more and more affluent, and we are experiencing rapid changes. Resident revenue is both the beginning and ending of economic development, but Chinese provinces characterize by varying level of development, purchasing power, labor costs, availability of labor, number of foreign companies etc. Even within one country there are cultural differences [3]. There are differences in revenue between different regions, and the source structure of revenue is also very

diversified. Multiple factors have a common impact on residential revenue, so the impact of different factors on residential income is quantified. Analysis is indispensable.

Peter Gottschalk, Sheldon Danziger analyzes distributional changes over the last quarter of the twentieth century. They focus on four distinct distributions: the distribution of hourly wage rates, the distribution of annual earnings of individuals, the distribution of annual earnings of families, and the distribution of total family income adjusted for family size. Finally they find out that increased family income inequality primarily reflects increased inequality of wage rates [4]. Yenni Arnas, Suse Lamtiar, Zulina Kurniawati, Benny Kurnianto, Nawang Kalbuana surveyed14 transportation companies listed on the Indonesian stock exchange in accordance with the research criteria. Of the variables used in this study, only intellectual capital has a positive impact on profit management [5]. This also draws attention to the education factor in this paper. GS Fields devises a new method for using the information contained in income-generating equations to "account for" or "decompose" the level of income inequality in a country and its change over time. In an application to rising earnings inequality in the United States, it is found that schooling is the single most explanatory variable, only one other variable (occupation) has any appreciable role to play, and all of schooling's effect was a coefficients effect [6]. The relationship between education and earnings is important on distributional grounds because the distribution of educational opportunities will have an impact on the future distribution of income, so that governments committed to long-term redistribution of income must consider the role of education [7].

Income inequality in the developing countries is greater than that in the advanced countries, and that such inequality may be growing even greater. Kuznets discusses in some detail the possible causes for this trend, examining those factors in the process of industrialization that tend to counteract the trend toward the increasing concentration of savings in the hands of the wealthy [8]. It turns out that in the short term, urbanization has a negligible impact on income inequality [9].

2.   Ease of Use

2.1.   Social Significance

Resident income growth is the basis for consumption growth. It is understood that in 1992, the proportion of labor income of Chinese residents reached 50%, but at present the proportion of labor income of residents is only 46%, which is lower than the world average of 65%. Relevant forecast analysis shows that if the proportion of labor income can be increased from 46% to 56% during the "14th Five-Year Plan" period, around 2025, my country's middle class may increase from the current population of 400 million to 550 million; if it increases to more than 60%, Close to the world average, by 2025 or 2036, my country's middle class may account for 45% to 40% of the total population. Exploring which key factors play a positive role in promoting income growth and strengthening and sustaining it, and which variables play the opposite role and need to be noted and controlled, is necessary to maintain today's great momentum.

2.2.   The Influence to Society

China is one of the fastest aging countries in the world and continues to accelerate, which means that in the next 30 years, China will face a labor shortage and consequent capital outflow problem. Enhancing the income security system of the population is indispensable to maintain sustainable development. At the same time, income inequality persists, which to a certain extent inhibits the economic dynamism of some regions. Only by effectively studying the key variables affecting residents' income and putting

poverty alleviation policies into practice can we truly build a moderately prosperous society in all respects

3.　Latent Factor Analysis

Starting from the region, we retrieved four monthly income indicators of 31 provinces in China in 2019-wage income, net operating income, net property income, and net transfer income, and analyzed the internal relationship between the four income indicators. Three education factors, per capita GDP and urbanization rate are selected as independent variables to study the income level.

The income level of residents can be represented by per capita GDP, per capita GNI and per capita disposable income. The per capita disposable income of residents reflects the living standard and purchasing power of the people on the one hand, and reflects the income distribution pattern of residents in my country from the micro level. It is said that the per capita disposable income of residents is closely related to the living conditions and life satisfaction of the residents. It is necessary to analyze the per capita GDP in each province and study the factors that affect the per capita disposable income.

First, in order to simplify the data set for the further research, the hierarchical cluster analysis is applied to the further research. Among them, cluster 1 includes Beijing and Shanghai, accounting for 6.5% of the total. Beijing and Shanghai, as the first and second largest cities in China, have resource endowments that far exceed those of other provinces. And the whole industry, especially the high-tech industry, is full of vitality, with high value-added products importing a lot of profits for both places, making the income of local residents increase as well. The feature is that the salary level of this cluster is much higher than that of other cases, indicating that residents of these two provinces have high salary levels. Cluster 2 includes Jiangsu, Zhejiang and Guangdong, accounting for 9.7% of the total. The characteristic of this cluster is that the general public budget education expenditure is much higher than that of other cases, indicating that these three provinces attach more importance to education than other provinces. Cluster 3 includes the remaining 26 cases, accounting for 83.9% of the total, and the data does not have very representative characteristics.

We then performed a linear regression analysis on the data. The "disposable income per capita" commonly used in statistics is composed of four parts, which are: wage income (salary, etc.), transfer income (pension, etc.), operating income (commercial trading income, etc.) and property income. In the "disposable income per capita", "wage income" dominates, accounting for about 70%. Compared with current assets, China has always had the habit of accumulating fixed assets. In modern times, there is also a trend of purchasing financial assets with cash. In addition to the funds necessary for daily life, most of the income will be converted into financial assets and non-financial assets such as housing. The amount of net property income means whether more people enter the middle class, and it also reflects the era of "common prosperity". Therefore, it is necessary to study per capita disposable income, especially net property income in today's society. Net property income was selected as the dependent variable and other indicators as independent variables. After analysis, inputting the share of higher education headcount, wage income, and net business income for stepwise analysis yielded F-values of 101.248, 64.548, and 53.071, respectively, and the significance all met less than 0.05, indicating that the independent variables have a significant effect on net property income. Observing the regression coefficients, the final B-values of the model analyzed jointly for the three variables are 0.653, 0.388, and 0.200 for the share of higher education headcount, wage income, and net business income, respectively, indicating that all three variables show a significant positive influence relationship on net property income.

The model equation is:

Net property income = -456.243 + 0.653 * share of higher education population + 0.388 * wage income + 0.2 * net business income.

Knowledge changes destiny, and the rapid progress of human society is due to the progress of knowledge and the popularity of education, higher education level means more talents. The truth is the most wealth is often created by the least elite, so it is undeniable that education plays the most significant impact on net property income. Wage income, on the other hand, also has a significant impact on net property income because it is only when wages increase that people have more free money to invest and thus create net property income. Business income is generally created by enterprises, which pay considerable taxes to the government in addition to the corresponding wages to their employees, and some of the government's expenditures are served to residents, so business income also plays a direct or indirect role in net property income.

In addition, by testing the multiple cointegration of the model, it was found that the VIF values in the model were all less than 5, implying that there was no cointegration problem and the model was well chosen.

Table 1. KMO and Bartlett's test.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.764
Bartlett's Test of Sphericity	Approx. Chi-Square	253.858
	df	36
	Sig.	0.000

To measure whether the observations meet the correlation requirements, we also performed a factor analysis on the data. As can be seen from the Table 1, the value of the statistic of Bartlett's spherical test is 253.858, and the corresponding probability P-value is 0.000. At the significance level, the original hypothesis should be rejected, and the correlation coefficient matrix is considered significantly different from the unit matrix. The KMO value was also calculated to be equal to 0.764, which in summary indicates that the observation is more suitable for factor analysis.

Table 2. Communalities (continue).

Communalities		
	Initial	Extraction
Wage income	1.000	0.883
Net transfer income	1.000	0.880
General public budget expenditure on education	1.000	0.935
Number of people in advanced education	1.000	0.924
Proportion of advanced education	1.000	0.914
Per capita GDP	1.000	0.899
Urbanization rate	1.000	0.856

CPI	1.000	0.866
Net property income	1.000	0.899

In the Table 2 of variance of the common factor, the extracted values are greater than 0.8 except for the net transfer income, which indicates that the variables can be well expressed by the common factor, and the extracted value of 0.586 for the net transfer income can also be expressed. In the total variance explanation table, three factors are extracted based on the eigenvalues greater than 0.8, and the three factors together explain 86.402% of the total variance. It means that GDP per capita, wage income and urbanization rate explain 86.402% of the net property income, where the percentage of variance of the initial eigenvalue of GDP per capita is 54.868%, which can indicate that it explains the strongest explanation of the net property income. GDP per capita and people's living standards show a strong positive correlation, while net property income also indirectly reflects the amount of assets held, which largely indicates the living standards of residents, so the amount of GDP per capita can more adequately explain the changes in net property income.

Table 3. Rotated component Matrixa.

Rotated Component Matrix			
	Component		
	1	2	3
Net property income	0.942		
Proportion of advanced education	0.928		
Wage income	0.879		
Per capita GDP	0.874		
Urbanization rate	0.860		
General public budget expenditure on education		0.961	
Number of people in advanced education		0.934	
Net transfer income			0.868
CPI			0.842

In the Table 3, as shown in the figure, the five values in the first column are all greater than 0.85, and all of them have considerable weights. They correspond to net property income, the proportion of the number of people in higher education, urbanization rate, GDP per capita and wage income, and most of them are related to social economy, so we can attribute the factor to social economy. The second column, with the maximum values of 0.961 and 0.934, corresponds to the general public budget for education and the number of people in higher education, respectively, and can be attributed to education. The third column, with a maximum value of 0.864, corresponds to net transfer income which means various transfers from the state, units, and social groups to households and income transfers between households. It can be equivalent to the various forms of subsidies given by the state, so we can attribute the factor to social welfare subsidies.

Table 4. ANOVA (continue).

ANOVA					
Net property income					
	Sum of Squares	df	Mean Square	F	Sig.

Between Groups	1656501.451	2	828250.726	32.280	.000
Within Groups	718434. 019	28	25658.358		
Total	2374935.470	30			

Finally, we conducted ANOVA one-way analysis of the data, and from the table 4, it can be seen that the sum of squares between groups is 1656501.451 and the sum of squares within groups is 893044.901. The F-value of the sum of squares between groups is 32.280, and the significance is 0.000, which is less than the significance level 0.05. Overall, we conclude that different groups have a significant effect on net property income, namely, economic and education have a significant effect on net property income.

Then the analysis of the multiple comparison table shows that the means of all groups are significant. Thus, it can be seen from this that the difference in means between the three clusters is very significant, again arguing that there is a significant difference in the effect of different factors on income. In other words, the impact of different factor combinations on net property income varies greatly. In that how to choose the optimal combination of factors to exploit limited resources and maximize utility requires planners to choose carefully, taking into account their own conditions and development trends

We should fully understand the importance of income on consumption levels and analyze whether there is regionalization, so we first conducted a cluster analysis where we retrieved four monthly income indicators wage income, net business income, net property income, and net transfer income from 31 provinces in China in 2019 from a regional perspective, and selected GDP per capita, urbanization rate, education factor, and CPI as independent variables to study income levels. The variables were divided into three clusters, and it was found that cluster 1, which has higher wage income, and cluster 2, which values education, both have better levels of net property income. We then conducted a linear regression analysis to verify the previous conjecture and found that education and wage income had a greater impact on net property income than other influencing factors, which fully illustrates the importance of education for the development of a region. In order to ensure the credibility of the analysis and improve the rigor, we conducted factor analysis, and the values derived from Sig. and Bartlett's test in KMO and Bartlett's test are within the ideal range. In the common factor variance table, the extracted values are greater than 0.8 except for net transfer income, which indicates that the common factor can express the variables well, and three factors are extracted based on the eigenvalues greater than 0.8. The three factors explain a total of 86.402% of the total variance indicating that GDP per capita, wage income and urbanization rate explain 86.402% of the net property income, among which the percentage variance of the initial eigenvalue of GDP per capita is 54.868%, which can indicate the accuracy and truthfulness of the above observations. However, it is worth noting that in the rotated component matrix, we summarized the data according to the largest percentage and named the three groups of categories as socioeconomic, education factor and social welfare subsidy, respectively. Finally, we conducted an ANOVA one-way analysis of the data and concluded that different combinations of factors have significantly different effects on net property income.

4.   Conclusions

"This is the best of times, the worst of times," as Dickens described in A Tale of Two Cities, the material abundance of the present day, it is right that everyone should live a life of plenty, yet there is no era where the class gap is as wide as it is today, where some people are still worried about making ends meet, while others have endless possessions to squander. In a global economy, it is not enough to talk about national economies. Individual regions should be the center of researchers' attention. The average data of economic indices do not give a full picture of the regions, which is why more specific studies are

needed. In China, there are very rich and developed regions, but on the other hand there are also poor and underdeveloped regions. Some regions are taking the lead, but we need to remember that there are many regions and provinces that are lagging behind in terms of economic development.

There is no doubt that the overall economy of China is changing all the time. While technology-intensive industries have become the primary means of accessing capital in developed countries, the vast majority of China's regions, with the exception of some of the more economically developed regions, are still unable to escape the shackles of labor-intensive industries and remain at the bottom of the smile curve, thus failing to complete industrial upgrading. The economic growth of these regions depends on the low labor cost and sufficient labor force, but at the same time, the labor force also limits the development. Drawing on the experience of developed regions, economic success cannot be achieved without education and infrastructure.

As it turns out, China's economic divide is clearly visible in the structure of various population income data, GDP per capita, urbanization rate, education factor, and CPI. Some regions place an impressive emphasis on education, while others have high GDP per capita. China is characterized by huge imbalances in development, with Shanghai's wage income being equivalent to that of nearly nine Gansu provinces. Even considering the differences in price levels, the differences between regions cannot be ignored. There are some remote cities on China's map, such as Xinjiang, Yunnan, Tibet, and Inner Mongolia, which depend on the support of national policies and their own special environment, and through a differentiated path, their economies are gradually getting on the right track. Provinces like Hebei, Jiangsu, Zhejiang or Guangdong, which have made education a top priority, have shown strong creativity and development potential. There are still many regions that have not found their way and are currently performing mediocrely in various indicators, but with so many pioneers as role models, their show their ambition.

References

[1] Yu Jinping, and Huang Zhen. "The Impact of the "One Belt, One Road" Initiative on Regional Income Gap in my country." Journal of Hohai University (Philosophy and Social Sciences Edition) (2021).

[2] Wang Hui, and Zhong Xin. "Has the "Belt and Road" Initiative Promote the Upgrading of the Industrial Structure of Countries Along the Route?." Economics and Management Research 42.10(2021)

[3] Jankowiak, Anna H. "Economic differentiation of regions in China." Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu 370 (2014): 267-280.

[4] Gottschalk, Peter, and Sheldon Danziger. "Inequality of wage rates, earnings and family income in the United States, 1975–2002." Review of Income and Wealth 51.2 (2005): 231-254.

[5] Arnas, Yenni, et al. "Factors Affecting Earning Management On Transportation Corporations In Indonesia." International Journal of Economics, Business and Accounting Research (IJEBAR) 5.1 (2021): 165-174.

[6] Fields, Gary S. "Accounting for income inequality and its change: A new method, with application to the distribution of earnings in the United States." Worker well-being and public policy. Emerald Group Publishing Limited, 2003

[7] Woodhall, Maureen. "Earnings and education." Economics of Education. Pergamon, 1987. 209-217.

[8] Kuznets, Simon. "Economic growth and income inequality." The gap between rich and poor. Routledge, 2019. 25-37.

[9] Ha, Nguyen Minh, Nguyen Dang Le, and Pham Trung-Kien. "The impact of urbanization on income inequality: A study in Vietnam." Journal of Risk and Financial Management 12.3 (2019): 146.