

Impact of the New Individual Income Tax Reform on Resident Consumption-Based on Empirical Data from Hubei Province

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Abstract: Tax reform, as an important measure of national macroeconomic regulation, is of great significance in stimulating resident consumption. The article selects data on individual income tax and resident consumption levels in Hubei Province from 2016 to 2021 as research samples, and uses SPSS software to empirically analyze the impact of the 2019 new individual income tax reform on resident consumption. The research results indicate that individual income tax reform can effectively promote resident consumption expenditure, and reducing residents' tax burden is beneficial for promoting resident consumption. Based on this, the article proposes suggestions from three aspects: the individual income tax collection system, the individual income tax rate structure, and the tax regulatory system, providing theoretical reference for deepening the individual income tax reform.

Key words: New individual income tax reform; Resident consumption; Tax regulatory system

1. Introduction

At present, various government agencies and departments have specifically pointed out that "vigorously developing domestic demand" is an important work content, to connect various aspects of production, circulation, and consumption, in order to improve resident consumption level. With the gradual development of the economy, the income distribution gap among residents in China is still large, and social development still faces the problem of insufficient consumption demand. In order to expand social consumption demand, the government has taken the tax system as the key point of reform, of which individual income tax is regarded as the main tax reform point because of its function of regulating residents' income, and it is also a key factor in promoting the optimization of consumption expenditure and consumption structure. Individual income tax is directly related to residents' disposable income, and deepening the regulation of income redistribution is an effective way to expand domestic demand and promote consumption. How to continuously deepen the reform of individual income tax and better play the role of individual income tax in economic development remains an important task for China in the future.

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collection and comprehensive collection of individual income tax, together with the further improvement of standard deductions and the increase of six special additional deductions, is a major step in the reform of individual income tax, which has significantly changed the disposable income and consumption expenditure of residents. Therefore, analyzing whether the reform of individual income tax can effectively stimulate resident consumption and to what extent it can promote consumption is increasingly attracting attention from all sectors of society.

Based on this, the paper mainly conducts empirical research around the impact of the new individual income tax reform on resident consumption, aiming to put forward policy recommendations for deepening the reform of the individual income tax collection system in the future, and strive to improve the consumption environment, improve the consumption level, and promote social fairness, to optimize China's future economic development model.

2. Research Basis and Research Design

2.1. Research Basis

At present, domestic and foreign scholars have conducted a profound analysis of the effects of individual tax policies mainly from two aspect, namely, the relationship between individual income tax and resident income and the impact of individual income tax on resident consumption, which provides a solid theoretical basis for the country to further optimize individual income tax policy and improve the level of residents' consumption.

2.1.1. The Relationship between Individual Income Tax and Resident Income

Domestic and foreign scholars agree that the individual income tax has an obvious regulatory effect on resident income. Hidayat Amir examines the impact of income tax reform in Indonesia on factors such as poverty and income distribution. Studies have shown that a reduction in individual income tax has led to a slight decline in the poverty rate; However, tax cuts are more beneficial to high-income households and therefore lead to increased income inequality [1]. Sérgio Wulff Gobetti & Rodrigo Octávio Orair analyzed the effect of income distribution before and after the individual income tax reform in Brazil, and believed that the tax exemption policy for dividends and dividends has a reverse adjustment effect on the income distribution effect [2]. Silvia Avram conducted a study on the redistribution effect of individual tax in several European countries through micro-simulation methods, and the results showed that the deduction of individual income tax is more obvious for middle- and upper-income groups [3]. Roberto Ramos, Nezih Guner and Javier López-Segovia found that the more progressive taxes, the lower the work income and quality of life of residents [4]. Li Jing and Niu Xuehong analyzed that the distribution effect of individual income tax income after the 2019 reform has weakened compared to before [5]. Liu Pengyan and Yang Xiaomei stated that the progressivity of individual income tax and its proportion of income affect the effectiveness of income redistribution regulation, and progressive taxation is conducive to narrowing the income gap [6].

2.1.2. The Effect of Individual Income Tax on Resident Consumption

Domestic and foreign scholars agree that the individual income tax reform has a significant impact on resident consumption. Hüseyin Şen and Ayşe Kay empirically analyzed the influence of resident consumption in Turkey by the tax policy of the country, and the results showed that among all international tax systems, the highest impact on residents' living consumption is value-added tax and individual income tax [7]. Jason DeBacker selected income tax data from the federal administration of Kansas from 2010 to 2014 as a research sample, and empirically showed that the reform of individual income tax increased economic activities such as consumption [8]. Mitja studied the effectiveness of the individual income tax reform during the financial crisis in Slovenia. The results showed that personal consumption further increased in the short term, but over time, the growth of personal consumption has been decreasing [9]. Maren Froemel and Charles Gottlieb found that the income tax credit system can increase household savings and improve the consumption situation of impoverished households [10]. Mao Jun pointed out that the redistribution effect of individual income tax can adjust income distribution, achieve social fairness, and improve the consumption capacity of the overall residents [11]. Li Zhaoqi pointed out that the newly added six special deductions have played a positive role in stimulating resident consumption potential and expanding their consumption demand [12].

2.1.3 Literature Review

Looking at existing literature, most scholars at home and abroad believe that reducing the individual income tax burden has a significant promoting effect on resident consumption. However, some scholars believe that the positive impact of individual income tax reform on resident income distribution is relatively unstable, and there are some problems in promoting consumption, and corresponding improvement suggestions have been proposed.

Although relevant research at home and abroad has deeply analyzed the significance of the impact of individual income tax on resident consumption, and generally concluded that the individual income tax reform has a significant impact on resident consumption; however, in terms of empirical analysis, many studies only focus on the current consumption situation after the individual income tax reform. Due to the influence of various factors, consumers often have lagging consumption tendencies, so they will affect the accuracy of the research results. Therefore, future research should further expand the selection range of research data [13,14].

2.2. Research Design

2.2.1. Research Hypothesis

Friedman proposed two concepts in the theory of persistent income: persistent income and temporary income. The viewpoint holds that persistent consumption is determined by persistent income, while temporary consumption is determined by temporary income. The consumption expenditure of residents will not increase in a short period of time due to temporary income increases, and consumption expenditure will only increase with the increase of residents' permanent income. It can be seen that the temporary tax reduction policy of the government will not have a positive impact on the consumption behavior

of residents, but will increase the savings behavior of residents. Therefore, the government should take long-term tax reduction measures to increase residents' persistent income, thereby increasing residents' consumption expenditure, and the promotion effect on resident consumption will be more significant.

Based on this, the article proposes the corresponding hypothesis that the reform of individual income tax has a significant impact on the resident consumption level.

2.2.2. Sample Selection and Data Sources

The research compiles relevant data from the official website of the National Bureau of Statistics and the China Statistical Yearbook. In order to ensure that the research results are more targeted and enhance their indicative role in regional development, the research will select relevant data on individual income tax, resident income, and consumption in Hubei Province from 2016 to 2021, to research the impact of individual income tax on resident consumption levels.

2.2.3. Variable Setting

The dependent variable: per capita consumption expenditure of residents, mainly reflecting the degree of changes in the resident consumption level in Hubei Province before and after the individual income tax reform.

Explanatory variable: per capita individual income tax of residents, mainly reflecting the tax burden level of individual income tax in Hubei Province.

Control variables: select the added value of the financial industry and the expenditure value of the general public budgeting as the control variables, respectively reflecting the service provided by financial institutions in Hubei Province to convert savings into investment and the distribution and use of funds raised by the finance.

2.2.4. Model Building

Based on the above analysis, a linear regression equation is established as follows:

$$Y = \alpha X_1 + \gamma_1 X_2 + \gamma_2 X_3 + \beta \quad (1)$$

Where, Y represents the per capita consumption expenditure of residents, X_1 represents the per capita individual income Tax, X_2 represents the added value of the financial industry, and X_3 represents the expenditure value of the general public budgeting, α, γ_1 and γ_2 represents the coefficients of each variable, β is a constant term.

3. Empirical Analysis

3.1. Descriptive Statistical Analysis

The descriptive statistical analysis results of each variable are shown in Table 1.

According to Table 1, the consumption status of residents during the observation period was relatively ideal, and the average consumption expenditure per capita is 19504.00, indicating that the average consumption level of residents was relatively good

and the overall consumption status was at a relatively high level. In addition, the minimum average consumption expenditure of residents is 15889.00, while the maximum value is 23846.00, with a difference of 7957. This indicates that there is a significant change in resident consumption expenditures in Hubei Province from 2016 to 2021, and there is likely to be some room for improvement in the level of residents' consumption.

The average individual income tax per capita of residents is 70040.27, while the maximum value is 86415.55, and the minimum value is 55859.19. The individual income tax per capita of residents changes greatly, reflecting the obvious tax reduction effect of individual income tax reform, which has a great relationship with the level of regional economic development. With the continuous development of the economy, the tax payable of residents has increased, and the per capita individual income tax of residents has also increased, which has also increased the per capita disposable income of residents.

The average added value of the financial industry is 2792.90, indicating that the relevant income brought by the financial industry to residents has always been considerable; the average value of general public budgeting expenditure is 7474.03, and the maximum value is 8443.00, indicating that the government has gradually increased its efforts in economic construction.

Table 1. Statistics of descriptive statistical analysis results for each variable

| Variable | Minimum | Maximum | Mean | Std. Dev. |
|----------|-----------|-----------|-----------|-----------|
| Y_t | 15,889.00 | 23,846.00 | 19,504.00 | 2,926.75 |
| X_t | 55,859.19 | 86,415.55 | 70,040.27 | 11,328.82 |
| X_2 | 2,318.87 | 3,432.74 | 2,792.90 | 392.26 |
| X_3 | 6,423.00 | 8,443.00 | 7,474.03 | 734.75 |

3.2. Correlation Analysis

In order to test the relationship between the explained variable and various indicators in the data, the section uses SPSS software to conduct correlation analysis on various indicators based on Pearson correlation theory, and studies the significance of the relationship between various indicators. The correlation calculation results of various indicators are shown in Table 2.

Table 2. Statistics of the correlation analysis results of each variable

| Variable | X_t | X_2 | X_3 |
|----------|-------|--------|--------|
| X_t | 1 | -0.043 | 0.753 |
| X_2 | — | 1 | -0.269 |
| X_3 | — | — | 1 |

Note: ** and * represent significant at the 1% and 5% levels

According to the data of Table 2, there is no significance between the three variables of per capita individual income Tax, added value of the financial industry and general public budgeting expenditure, and the model that do not exist independent variable multiple linear problems.

3.3. Regressive Analysis

The results of linear regression analysis are shown in Table 3.

Table 3. Regression analysis results statistics

| Variable | Non standardized coefficient | | Standardized Coefficient | t | Sig. |
|----------------|------------------------------|------------|--------------------------|--------|-------|
| | Coefficient | Std. Error | Coefficient | | |
| (β) | 8448.244 | 2509.896 | — | 3.366 | 0.078 |
| X_1 | 0.426 | 0.061 | 1.647 | 6.974 | 0.020 |
| X_2 | -3.041 | 1.446 | -0.408 | -2.103 | 0.067 |
| X_3 | -1.372 | 0.546 | -0.359 | -2.515 | 0.128 |
| R^2 | 0.989 | | Durbin-Watson stat | 1.756 | |
| Adjusted R^2 | 0.972 | | F-statistic | 58.836 | |

The coefficient R^2 is an indicator for evaluating the rationality of regression equations. When R^2 is greater than 0.75, it indicates that the model has a good fit. From the regression result, the calculated R^2 is 0.989, and R^2 is greater than 0.75, indicating that the regression model has a good fit and a high degree of interpretability for the dependent variable. Based on the above analysis, the model is adjusted. After adjustment, the R^2 value changes slightly from the original 0.989 to 0.972, which shows that the fitting degree of the equation is good, indicating that the per capita individual income tax, the added value of the financial industry, and the general public budgeting expenditure value of local finance have 97.2% of the explanation degree of per capita consumption expenditure. The Durbin-Watson value is an effective method to test whether a model has autocorrelation, and when it is between 1.5 and 2.5, it indicates that the model does not have significant autocorrelation issues. The Durbin-Watson value of the model is 1.756, indicating that there is no significant sequence correlation and no abnormal issues in the model. The F -statistic of the model is 58.836, passing the F -test at the 1% significance level, indicating that the overall regression effect of the model is relatively ideal.

The regression equation obtained from the regression coefficient is:

$$Y = 0.426X_1 - 3.041X_2 - 1.372X_3 + 8448.244 \quad (2)$$

3.4. Analysis of Results

The empirical analysis results show that the per capita individual income tax is positively correlated with the resident consumption expenditure, and the hypothesis is valid. This is because with the continuous development of the economy, the resident income will increase, and the individual income tax will also increase, which will ultimately affect the resident consumption expenditure. The significance of both is 0.020, indicating that the T-test has been passed at a significance level of 5%, indicating that promoting resident consumption requires implementing tax reduction and burden reduction policies in the context of continuous economic development to reduce resident tax burden.

There is a negative correlation between the added value of the financial industry and resident consumption expenditure, and it is significant at the 10% level. The higher the

added value of the financial industry, the higher the resident savings rate; the more preventive savings behaviors occur, the more restrained consumer spending will be.

The value of general public budgeting expenditure of finance has a negative correlation with resident consumption expenditure, but it is not significant and has not passed the significance test. On the one hand, the expenditure value of the general public budgeting will reduce resident consumption, on the other hand, it will promote output, thus increasing resident consumption. The two are not significant. It may be that the distribution is unreasonable and the use efficiency is not high, which indicates that the general public budgeting expenditure in the future should be more reasonably distributed and the expenditure structure should be improved.

The results of the study further validate the previous views of domestic and foreign scholars, and the sample selection includes data from three years before and after the individual income tax reform, providing more sufficient evidence for the establishment of this viewpoint.

4. Suggestions on Deepening the Individual Income Tax Reform

According to the above analysis, to further promote resident consumption and deepen the reform of individual income tax, the ideas are: first, increase resident income level by relying on relevant tax reduction policies of the individual income tax collection system, so as to increase resident consumption expenditure; the second is to adjust the income distribution gap, make income distribution more fair, and reduce the preventive savings behavior of people with consumption potential. Therefore, the chapter puts forward suggestions on deepening the reform of individual income tax from the aspects of individual income tax collection system, individual income tax rate structure and tax regulatory system.

4.1. Improve the Individual Income Tax Collection System

Increasing resident disposable income can effectively promote resident consumption, and individual income tax is closely related to resident income, so the government can improve the special deduction items and expense deduction mechanism in the individual tax collection system, reduce residents' tax burden, and improve residents' wage income.

4.1.1. Improve Special Additional Deduction Items

With the gradual opening of China's fertility policy, households are paying more attention to their children's education and increasing their education expenses. However, raising children not only requires education expenses, but also bears expenses such as food, housing, medical care, and transportation, which account for a significant proportion of household expenses. Therefore, the deduction scope should be appropriately expanded to cover the majority of childcare expenses as much as possible.

In addition, the special additional deduction items in China only apply different deduction standards for housing rent based on the size of the city, while the deduction standards for other items are fixed and unchanged. With the increase of price levels, the quota deduction mechanism lacks rationality, and expenses for children's education, elderly care, and other projects are also related to regional economic development.

Therefore, the deduction of additional expenses should fully consider setting up a deduction mechanism that can reflect regional development differences, and achieve regional balance and fairness. If the deduction standard is linked to the price level, dynamic adjustments should be made in a timely manner to ensure that the special additional deduction policy can effectively reduce the tax burden on residents and increase their willingness to consume.

4.1.2. Adjusting the Basic Expense Deduction Mechanism

The establishment of a basic cost deduction mechanism is essentially to ensure the basic living expenses of residents. With the rise of domestic prices and the uneven regional development level in China, there is regional heterogeneity in resident consumption levels. If the expense deduction standard is not adjusted in time, the basic living income of some residents in underdevelopment will also be included in the collection scope of individual income tax. Therefore, the reform of individual income tax can consider linking the expense deduction standard with the consumer price index, creating a dynamic adjustment mechanism, combining the expense deduction mechanism with the changes in the consumer price index of residents, and also using resident income, consumption expenditure, etc. as reference basis to make more scientific adjustments. In this way, not only can residents' wage income be effectively increased, but also the impact of rising prices on resident consumption can be optimized.

4.2. Optimize the Structure of Individual Income Tax Rates

In the 2019 new individual income tax reform, the gap between the three low tax rates was expanded and the gap between the 25% tax rates was reduced, while the gap between the three high tax rates remained unchanged. The adjustment has increased the per capita disposable income of low-income residents, but the high-end tax rate has not changed, so the effect of policy adjustment on high-income groups is not significant. As for the middle-income group, the ideal disposable income and high-level consumption demand jointly promote the improvement of their consumption level. However, the consumption demand of the high-income group has gradually saturated, making it difficult to develop higher-level consumption demand. It can be seen that the main potential of social consumption is composed of middle-income groups with large base numbers and high consumption potential. Therefore, it is possible to consider reducing the tax rate hierarchy, adjusting the tax rate structure appropriately, reducing the tax burden, and promoting increased consumption.

Reducing the hierarchy of middle and low tax rates can effectively reduce the tax burden on low and middle-income groups, stabilize their income capacity, and stimulate resident consumption potential; reducing the hierarchy of high-level tax rates and adopting higher tax rates can stimulate the redistribution effect of taxation and improve the efficiency of the entire society. Targeted individual income tax reform not only promotes resident consumption and upgrades their consumption structure, but also deeply explores China's potential domestic demand.

4.3. Improve the Tax Regulatory System

With the rapid development of information technology, China's tax collection and payment methods have been constantly enriched. However, due to the asymmetry of

information between the two parties, some residents have missed the tax preferential time or improper operation, and have not been able to enjoy the tax reduction brought about by the individual income tax reform; in addition, there are also some middle to high income individuals who use tax regulatory deficiencies to engage in illegal activities such as tax evasion. Therefore, we should further improve the tax regulatory system, coordinate the tax system, tax rate structure and regulatory system, and maximize the positive role of individual income tax on resident consumption.

Firstly, the government should improve tax regulatory policies. The improvement of tax laws should keep pace with the times, reduce tax planning space, and establish strict punishment systems to crack down on illegal activities that harm national interests, evade taxes, and increase the cost of illegal activities.

Secondly, the government should improve its tax supervision level, enhance citizens' tax awareness through publicity and education, promote a composite tax model that combines residents' active declaration and corporate withholding and payment, and open up online and offline multi-channel service channels to help taxpayers solve relevant tax issues and reduce tax compliance costs.

Finally, the government should improve the informatization of tax supervision, improve the individual income tax information management system, and use Internet technologies such as artificial intelligence and Big data to achieve intelligent supervision; at the same time, we should strengthen information sharing, create a comprehensive sexual network service platform, provide taxpayers with timely information about tax policies, solve the problem of information asymmetry, ensure that taxpayers can effectively enjoy relevant tax preferential policies, and reduce the tax burden of residents to promote consumption.

5. Conclusions

Through empirical research on the impact of the 2019 individual income tax reform on resident consumption in Hubei Province, it can be concluded that the individual income tax reform has a significant impact on resident consumption. The innovation of this paper is that the empirical research on the impact of individual income tax on resident consumption does not select the national sample data, but takes Hubei Province as a research case, which makes the research content more detailed, the research results more targeted, enhances the indicative role of the paper, more specifically reflects the impact of individual income tax reform, and plays a role in promoting the future deepening of individual income tax reform.

In recent years, China's industrial structure has undergone continuous optimization. Expanding internal demand and promoting resident consumption will be the main development direction for China in the future, in order to further promote economic growth. The article explores the impact of individual income tax on resident consumption expenditure, which is beneficial for the government to consider the actual situation when improving the tax system in the future, implement the current national policies to promote consumption, and strengthen the overall consumption strength of society. For residents, the article also provides new ideas from the perspective of individual income tax to stimulate consumption, enhance people's well-being, and improve residents' living standards.

References

- [1] Hidayat Amir, John Asafu-Adjaye, Tien Duchpham. The impact of the Indonesian income tax reform: A CGE analysis[J]. *Economic Modelling*, 2013.
- [2] Sérgio Wulff Gobetti & Rodrigo Octávio Orair. "Taxation and distribution of income in Brazil: new evidence from personal income tax data" [J]. *Brazilian Journal of Political Economy*, 2017: 267-286.
- [3] Silvia Avram. Who benefits from the "hidden welfare state"? The distributional effects of personal income tax expenditure in six countries[J]. *Journal of European Social Policy*, 2018, 28(3): 271-293.
- [4] Roberto Ramos, Nezih Guner, Javier López-Segovia. Reforming the individual income tax in Spain[J]. *SERIEs*, 2020, 11 : 369-406.
- [5] Li Jing, Niu Xuehong. Research on the income distribution effect of individual income tax based on income structure[J]. *Macroeconomic Research*, 2022, (02): 16-26 (in Chinese).
- [6] Liu Pengyan, Yang Xiaomei. The internal logic and optimization path of direct tax to promote common prosperity[J]. *Tax Research*, 2022, (10): 12-17 (in Chinese).
- [7] Hüseyin Şen, Ayşe Kaya. Taxes and private consumption expenditures: a component-based analysis for Turkey[J]. *Turkish Studies*, 2016, 17(3).
- [8] Jason DeBacker, Bradley T. Heim, Shanthi P. Ramnath, Justin M. Ross. The impact of state taxes on pass-through businesses: Evidence from the 2012 Kansas income tax reform[J]. *Journal of Public Economics*, 2019.
- [9] Mitja Čok, Boris Majcen. Distribution of personal income tax changes in Slovenia[J]. *Post-Communist Economics*, 2020, (10): 123-135.
- [10] Maren Froemel, Charles Gottlieb. The earned income tax credit: targeting the poor but crowding out wealth[J]. *Canadian Journal of Economics*, 2021, 54(1): 193-227.
- [11] Mao Jun. Quantitative analysis of financial and tax policies and resident Consumption[M]. Beijing: Economic Science Press, 2020 (in Chinese).
- [12] Li Zhaoqi. Implementation status and optimization analysis of the new individual income tax special additional deduction[J]. *Bohai Rim Economic Outlook*, 2021, (07): 119-122 (in Chinese).
- [13] Paul E. Shao, Mussa Ally Dida, "Embedding Stock Tracking Module into Electronic Fiscal Device Machine and its Management System to Reduce Tax Evasion: A case of Tanzania", *International Journal of Information Engineering and Electronic Business*, Vol.11, No.5, pp. 24-32, 2019.
- [14] Mihuandayani, Ema Utami, "Design Concept Integration Tax Payment System with Implementing Financial Technology", *International Journal of Information Engineering and Electronic Business*, Vol.10, No.5, pp. 15-22, 2018.