The Investigation and Analysis on the Willingness of Tax-deferred Pension to Participate in the Market --Take Ningbo as an Example

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Abstract: Personal tax-deferred pension is a major breakthrough in the "the third pillar" construction of the multi-level pension system in China. Based on the survey of 497 questionnaires in Ningbo City, Zhejiang Province, this paper analyzes the attitude and response of urban residents to the policy of personal tax-deferred pension, and sets up a logistic model of residents participating will. In combination with the current pension system, this paper puts forward some opinions on the improvement of the residents participation.

Introduction

In recent years, with the deepening of aging degree, the pressure of social endowment insurance system in our country is prominent. However, at present, the "multi-pillar" pension insurance system has not achieved balanced development, the pension replacement rate of basic pension is low, and the coverage of enterprise annuity is small and the development is slow. In this background, China urgently needs to encourage the development of the "third pillar". On May 1, 2018, China carried out a pilot project of personal tax-deferred pension in Shanghai, Fujian and Suzhou Industrial Parks. Personal tax-deferred pension belongs to the category of commercial pension. It is a complex and huge system engineering involving social security, tax, finance and other fields. It has gone through 11 years from the beginning of the research to the implementation of the policy. It is a major breakthrough in the construction of the "third pillar" of the multi-level pension system in our country. From the national level, the implementation of tax-deferred pension policy will certainly play a positive role in filling the gap of pension funds, help to cope with the aging trend of the population, help to establish and improve the multi-level pension system, realize the supplement of "first pillar" social security and "second pillar" enterprise or occupational annuity, and thus improve the pension substitution rate. For ordinary people, the way of paying personal income tax before tax and paying personal income tax can reduce the personal tax burden. At the same time, it can also help the insured to carry out pension planning and financial planning, thus greatly improving the quality of providing for the aged in the future. In order to understand and grasp the attitude and reaction of urban residents to the landing of personal tax-deferred pension policy, this paper conducted a questionnaire survey on 6 districts of Ningbo City, Zhejiang Province, namely, Beilun District, Haishu District, Jiangbei District, Yinzhou District, Zhenhai District and Fenghua District. 520 questionnaires were sent out mainly in squares, residential areas, office buildings and administrative units, and 497 valid questionnaires were finally sent out.

An Analysis of the Present Situation of the Participation of the Residents Personal Tax-deferred Pension

Residents don’t Know Enough About Personal Tax-deferred Pension, but the Market Reaction is More Positive. The survey results show that 60.20% of the respondents have not heard of tax-deferred pension, and only 3.20% of the respondents are basically familiar with the tax-deferred
pension, see figure 1. This shows that urban residents don't know much about tax-deferred pension, which mainly lies in the tax-deferred pension is still in its infancy in our country, and the promotion is not enough related.

As can be seen in the survey of the pension sources expected by the residents (Fig.2), the percentage of social basic pension reaches 85.10%, which is the most desirable source of pension for the population, and the percentage of individual saving cases reaches 62.30%, which is the second important source of pension. These are all in line with the current domestic endowment insurance structure. The percentage of investment cases such as relying on children and real estate, stocks and other investment cases is relatively low, which suggests that the residents are increasingly looking to rely on their own pension rather than on their children or high-risk investment, and the percentage of commercial pensions reaches 45.80% compared with that of relying on children, and the commercial pensions is much higher than that of the children. It is the third important source of old-age pension, which means that the residents also expect the business endowment insurance to play an important role in the security of the old-age.

![Fig 1. Residents understanding of the personal tax-deferred pension](image1)

![Fig 2. Sources of pension funds expected by residents](image2)

In fact, as an important part of commercial pension, tax-deferred pension has become very mature in developed countries, accounting for more than 35% of the pension proportion. In 2018, China conducted a pilot tax-deferred pension in Shanghai, Fujian and Suzhou Industrial Parks. Among the residents views on the implementation of this policy (Table 1), 35.40% believe that the tax-deferred pension policy is the state to benefit the people, residents should respond positively. 24.80% of the residents think that our country should be carried out on the basis of the pilot project, which indicates that the residents response to the tax-deferred pension is more positive. But at the same time, 23.50% of the residents think that our country should be carried out on the basis of the pilot project, which indicates that the residents response to the tax-deferred pension is more positive. But at the same time, 23.50% of the residents think that the national conditions are different, the pension structure does not need to be the same as others, 16.3% of the residents think that the people consciousness of old-age security is different, and the foreign situation has no reference value, which also reflects that the urban residents don't know much about the problems faced by the social endowment insurance in our country.

<table>
<thead>
<tr>
<th>Table 1. The views of the residents after the implementation of the policy of the tax-deferred pension</th>
<th>percentage</th>
<th>sort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax-deferred pension is already mature in the developed countries, accounting for more than 35% of the pension. What do you</td>
<td>On the basis of pilot projects, China should carry out them in an all-round way. Tax-deferred pension plan is the state to benefit the people, residents should respond positively People pension security awareness is</td>
<td>24.80%</td>
</tr>
<tr>
<td></td>
<td>35.40%</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>16.30%</td>
<td>4</td>
</tr>
</tbody>
</table>
think about it? different, foreign situation has no reference value.
The state of the country is different, and the pension structure is not necessary to be the same as others 23.50% 3

The preference of Tax-deferred Pension Products is Obvious, and the Intensity of Preferential Treatment is Weak. The survey results show that 55.90% of the residents will choose the "2.5% of the additional benefits of the base" of the product, and 30.00% of the residents will choose the "3.5% of fixed income" products, and 14.10% of the residents will choose the “full-floating income” products, as shown in Figure 3. This means that in the case of a tax-deferred pension product, the urban residents are more preferred to a product with a higher level of guaranteed income and a portion of the extra-income, while the products with no guaranteed income are not to be considered.

In terms of the preferential intensity of tax-deferred pension products, 56.20% of the respondents think that the preferential intensity of tax-deferred pension in Shanghai is not very strong, only 4.40% of the respondents think that the preferential intensity is very large, see figure 4 specifically, which shows that the preferential intensity of tax-deferred pension in the pilot project is weak. When the state comprehensively popularizes the tax-deferred pension, it still needs to be closer to the people in the design of insurance products and the degree of preferential treatment, combined with the local actual situation and the level of economic development, to increase the intensity of preferential treatment.

The Willingness to Buy is to be Stimulated. In terms of the willingness of urban residents to purchase tax-deferred pension, 7.20% of the respondents indicate that they are very willing to purchase, 32.60% of the respondents are willing to, but the largest proportion is no difference, accounting for 38.20%. The proportion of not willing to or not willing to at all, accounting for 21.90%, is shown in Figure 5. This means that, according to the current pilot tax preference and other related policies, the residents who are willing to purchase the tax-deferred pension are not low, but residents with indifferent attitudes also need to be stimulated.
Fig.5 The degree of purchase intention of the residents  

Fig.6 The degree of guarantee of future pension insurance for residents

According to the current China pension demand, the survey found that only 12.50% of the respondents believe that the old-age insurance can meet all needs, while 39.00% of the respondents consider that the old-age insurance can meet some needs, and 7.00% say that the gap is large, and only meet few needs, as shown in figure 6. The present situation of the endowment insurance should be said to be relatively serious, requiring the government, the society and the individual group to act together to solve the problems of the old.

As the "third pillar", the tax-deferred pension is born in this background, it will play a positive role in filling the gap of pension funds, and will help to establish and improve the multi-level old-age security system. In the survey of what cities should do to prepare for the upcoming implementation of tax-deferred pension (Table 2), "is a new thing in China, and should strengthen the propaganda and guidance of the policy of giving benefit to the people,""Raise people awareness of old-age security," and "Perfect and optimize the tax incentive Policy for different income, Age and so on." the proportion of these three types of preparations is similar, all of which are more than 20%. This shows that urban residents hope that before the implementation of tax-deferred pension, the relevant departments should make more efforts to publicize, enhance people awareness, tax incentive policy and so on, and actively prepare for it. The two preparation ratios of "doing a good job of service" and "product development and innovation" are slightly lower, which are mainly due to the fact that these two tasks are mainly concentrated in the later stage of the implementation of tax-deferred pension.

Table 2. What preparations do you think should be made?

<table>
<thead>
<tr>
<th>In cities where tax-deferred pension has not yet been implemented, what preparations do you think should be made?</th>
<th>percentage</th>
<th>sort</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is a new thing in China, and should strengthen the propaganda and guidance of the policy of giving benefit to the people</td>
<td>20.4%</td>
<td>3</td>
</tr>
<tr>
<td>Raise people awareness of old-age security</td>
<td>23.7%</td>
<td>1</td>
</tr>
<tr>
<td>Perfect and optimize the tax incentive Policy for different income, Age and so on</td>
<td>23.1%</td>
<td>2</td>
</tr>
<tr>
<td>The relevant institutions such as tax, insurance, supervision shall make good service for the personal management of the account</td>
<td>17.9%</td>
<td>4</td>
</tr>
<tr>
<td>To strengthen the product development and innovation of the Tax-deferred pension, and to meet and adapt to the diversified pension security requirements</td>
<td>14.9%</td>
<td>5</td>
</tr>
</tbody>
</table>

The Prospect of Tax-deferred Pension is Promising. The results show that 51.80% of the respondents are optimistic about the future development of the tax-deferred pension, while only 12.90% of the respondents are not promising or are not promising at all the tax-deferred pension, as shown in figure 7. This shows that as long as on the basis of the pilot project, the promotion and publicity are more in-depth and targeted, the incentive policy and product design can meet the diversified old-age needs, and the market prospect of tax-deferred pension is optimistic.
It can also be seen from the extent that the residents support the purchase of the tax-deferred pension for their families. Figure 8 shows that 44.90% of the respondents support or very support the family purchase of tax-deferred pension products. Only 11.90% of the respondents don't support or don't support at all the purchase of tax-deferred pension for their families, but 43.30% of the respondents are "no difference", suggesting that while the current pilot policy has not a few proponents, But if we can improve the relevant policies and preferences of the tax-deferred pension it is believe that more people will be willing to buy the tax-deferred pension, and the potential of the market development is also very large.

A Logistic Model of the Willingness to Participate in Tax-deferred Pension

The "The tax-deferred pension is a new kind of new insurance for the just-on-ground pilot, and if the country can perfect the incentive policy for different income, age and so on, do you want to buy the tax-deferred pension" is the dependent variable, the "be willing to" of the "be unwilling to" is answered, the "0" of the "1" is answered, and the demographic characteristic of the object to be investigated is the independent variable. In this case, because the variable is a bipartite variable which is willing to participate, the nonlinear probability model is considered, and the logistic regression model is most suitable. The model is used to estimate the probability (P) of the event with the formula (1).

$$P = \frac{1}{1 + e^{-Z}}$$

(1)

In formula (2), Z is a linear combination of variables X1 and X2.XP.

$$Z = B_0 + B_1 X_1 + B_2 X_2 + \ldots + B P X P$$

(2)

According to the transformation of formula (1) and formula (2), the ratio of the occurrence of an event to the probability of occurrence of an event is (odds), that is, the ratio of the probability of occurrence of an event to the probability of not occurring is estimated by formula (3):

$$\ln\left(\frac{P}{1-P}\right) = B_0 + B_1 X_1 + B_2 X_2 + \ldots + B P X P$$

(3)

This study used SPSS software to estimate the model using the stepwise inclusion method of likelihood ratio criteria (forward: LR). the results are presented in table 3. The regression results show that the variables of the final entry model have the variables such as the age and the monthly income before tax, while the gender, the marital status, the degree of education, the number of family members, the type of work unit, the length of service are not statistically significant and don't enter the model.

Table 3. Estimation results of residents willingness to participate in tax-deferred pension by logistic Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>Wald</th>
<th>df</th>
<th>p-value</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.435</td>
<td>.098</td>
<td>19.567</td>
<td>1</td>
<td>.000</td>
<td>.647</td>
</tr>
</tbody>
</table>
### Monthly Income Before Tax

<table>
<thead>
<tr>
<th></th>
<th>268</th>
<th>114</th>
<th>5.525</th>
<th>1</th>
<th>.019</th>
<th>1.307</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.179</td>
<td>.352</td>
<td>11.203</td>
<td>1</td>
<td>.001</td>
<td>3.250</td>
</tr>
<tr>
<td>-2 Log Likelihood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>375.650</td>
</tr>
<tr>
<td>Cox &amp; Snell R Square</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.074</td>
<td></td>
</tr>
<tr>
<td>Nagelkerke R Square</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.102</td>
<td></td>
</tr>
</tbody>
</table>

### Inspiration

**Strengthen the Consciousness of Providing for the Aged and Break Through the Existing Cognition.** China has entered an aging country, and there is a big economic gap between China and developed countries. "getting old before getting rich" is an important feature of China population aging. Moreover, due to the low or even negative growth of the working population for 20 years in a row, the ratio of the elderly population to the working population in China, that is, the dependency ratio of the elderly, continues to rise, and it is predicted that the rate of increase will continue to accelerate. This means that the demand for old-age security of the elderly population in our country is increasing, the problem of old-age security has become more and more prominent, and there is a great challenge to the "security for the elderly". Therefore, each of us should strengthen their awareness of providing for the aged, break through the existing cognition, and do a good job of planning.

**Strengthen the Propaganda Guidance and Transform the People Concept.** Personal tax-deferred pension is a new thing in China, which can not only reduce the current personal tax burden, but also help the policy-holder to carry out the pension and financial planning, so as to greatly improve the future pension quality. The state should increase the propaganda and guidance of the policy, and the media and insurance companies in various sectors should also respond positively to the state policy, enhance the people understanding of it, and change the past concept of providing for the aged.

**Perfecting and Optimizing Tax Incentive Policy.** In the current pilot scheme, the preferential tax policy is unwell-defined, which will create a new and unfair phenomenon. Different preferences should be developed for different populations and should not be generalized. For now, the preferential policies for fast-retired workers, freelancers, high-income and low-income people should be different.

### Acknowledgement

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### References


