An Empirical Analysis of the Development of the Endowment Insurance System in China

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Abstract: Endowment insurance, with the full name of social basic endowment insurance, is a kind of endowment insurance system that is enforced by the state according to the national unified policy to ensure the basic needs of the majority of retirees. Endowment insurance is an important constituent part of the social security system and one of the most important one in the five major social insurance categories. In recent years, the construction of the social security system in China has achieved breakthrough progresses. The pension insurance system has been continuously improved and the number of participants has continued to increase. However, due to the gradual aggravation of such social problems as the populating aging and the like, endowment insurance is still confronted by enormous risks and challenges. Based on the current status and existing problems of the endowment insurance system, this paper adopts the multiple linear regression analysis to establish a model to study the factors affecting the development of the endowment insurance in China, and uses Eviews for regression analysis, collinearity test, heteroscedasticity test and sequence correlation test to adjust the model, thus finally putting forward feasible suggestions for the future development of the endowment insurance system.

1. Introduction

In recent years, the construction of the social security system in China has achieved breakthrough progresses. The pension insurance system has been continuously improved, the coverage of the basic endowment insurance kept on expanding, the number of participants has continued to increase, and the accumulative balance of the basic endowment insurance fund have reached a certain scale. However, the pension overall planning level in China is relatively low, and the economic and social development levels in different areas differ greatly. The financial situation of the developed countries in the eastern coastal areas is relatively good, the enterprises in such places have strong income-generating ability, and the number of young workers paying for the endowment insurance is vast. However, the governments of some underdeveloped areas have limited financial abilities, and there are many old enterprises with heavy pension burdens, and most of the young people paying for the endowment insurance flow to developed districts. Such a situation has caused huge differences in operating pensions in different areas. Moreover, as the background of China's population aging continues to deepen, the problem of the basic pension insurance payment gap becomes more severe. By the end of 2017, the number of elderly people over the age of 65 in China had been up to 150 million. This inevitably indicates that the population and period to be raised by the pension is increasing continuously, thus posing a huge challenge to the existing pension system. According to the data published by the Ministry of Human Resources and Social Security, by the end of 2012, after eliminating the financial subsidies, the actual annual income and expenditure of China's pensions showed a surplus, but the data showed a deficit of RMB 50 billion in 2013. Afterwards, the gap was becoming larger and larger. The large-scale financial subsidies covered the unsustainability of the pension system itself. However, as a matter of fact, the present pension system in China is hard to be maintained.

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2. Researches on Factors Affecting the Endowment Insurance Development in China

2.1 Research Method

In this case, the multiple regression analysis method is used for analysis. Multiple regression analysis can establish regression equations according to the optimal combination of multiple independent variables, so as to predict regression analysis of dependent variables. The equation for multiple linear regression analysis is:

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_k X_{ik} + \mu_i, i = 1,2,\ldots,n$$

In which, Y_i is an estimated value calculated according to all independent variables X, β_0 is a constant term, and β_1,β_2 to β_k is called as the regression coefficients of Y corresponding to X_1, X_2 to X_k, and μ_i is a random interference term. The regression coefficient indicates the influence of an explanatory variable on the mean of the dependent variable when other explanatory variables in the model are constant. This unique property of multiple regression can not only introduce multiple explanatory variables, but also figure out the influence of each explanatory variable X on the dependent variable Y.

The ordinary least square method is adopted to ensure that the residual sum of squares reaches the minimum value that is to obtain the optimal linear unbiased estimator. The goodness of fit of the multiple regression is estimated by the multivariate determination coefficient R^2. The closer R^2 is to 0, the worse the fitting degree is. Conversely, the closer R^2 is to 1, the better the fitting degree can be approved.

2.2 Variable Selection

According to the data of the National Statistics Bureau, the income of the basic pension insurance fund in China from 1990 to 2017 is selected the index of measuring the development of the endowment insurance market. It is defined as the dependent variable Y. Five factors are selected as independent variables to examine its influence on the endowment insurance fund income in China, which are respectively X_1: GDP per capita/RMB, X_2: the added value of the tertiary industry/%, X_3: natural population growth rate/‰, X_4: population aged 65 and over/ten thousand, X5: annual increase in saving and deposit/RMB 100 million.

2.3 Data Source

The statistics data of the official website of National Statistics Bureau is used as the basis, the data of 28 years from 1990-2017 is selected as follows:

Table 1

Years	Y	X_1	X_2	X_3	X_4	X_5
1990	178.80	1654.00	32.40	14.40	6368.00	1935.10
1991	215.70	1903.00	34.50	13.00	6938.00	2125.30
1992	365.80	2324.00	35.60	11.60	7218.00	2512.40
1993	503.50	3015.00	34.50	11.50	7289.00	3446.20
1994	707.40	4066.00	34.40	11.20	7622.00	6315.30
1995	950.10	5074.00	33.70	10.60	7510.00	8143.50
1996	1171.80	5878.00	33.60	10.40	7833.00	8858.60
1997	1337.90	6457.00	35.00	10.10	8085.00	7759.00
1998	1459.00	6835.00	37.10	9.10	8359.00	7127.70
1999	1965.10	7199.00	38.60	8.20	8679.00	6214.40
2000	2278.50	7902.00	39.80	7.60	3821.00	4710.60
2001	2489.00	8670.00	41.30	7.00	9062.00	9430.10
2002	3171.50	9450.00	42.30	6.50	9377.00	13148.20
2003	3680.00	10600.00	42.10	6.00	9692.00	16707.00

2004	4258.40	12400.00	41.20	5.90	9857.00	15937.70
2005	5093.30	14259.00	41.40	5.90	10055.00	21495.60
2006	6309.80	16602.00	41.90	5.30	10419.00	20544.00
2007	7834.20	20337.00	42.90	5.20	10636.00	10946.90
2008	9740.20	23912.00	42.90	5.10	10956.00	45351.20
2009	11490.80	25963.00	44.40	4.90	11307.00	42886.30
2010	13419.50	30567.00	44.20	4.80	11894.00	42530.80
2011	16894.70	36018.00	44.30	4.80	12288.00	40333.40
2012	20001.00	39544.00	45.50	5.00	12714.00	55915.20
2013	22680.40	43852.00	46.90	4.90	13161.00	48050.60
2014	23785.00	47203.00	47.80	5.20	13755.00	94800.00
2015	27979.00	50251.00	48.20	4.90	14386.00	41500.00
2016	38208.00	53935.00	50.20	5.80	15003.00	45400.00
2017	46614.00	59660.00	51.60	5.30	15831.00	38200.00

2.4 Multiple Linear Regression Analysis

The multiple linear regression equation is constructed with the least square method, so as to analyze the factors affecting the income of the pension fund in China. The linear regression model is set as:

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \beta_5 X_{5t} + \mu_t, t = 1,2,...,n$$

X_1: GDP per capita/RMB, X_2: the added value of the tertiary industry/%, X_3: natural population growth rate/‰, X_4: population aged 65 and over/ten thousand, X_5: annual increase in saving and deposit/RMB 100 million.

Assume that the random items in the model meet the basic assumption, OLS method is used to estimate the parameters. The estimation result is as follows:

Dependent Variable: Y
Method: Least Squares
Date: 12/09/18 Time: 18:04
Sample: 1990 2017
Included observations: 28

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.666376	0.081242	8.202358	0.0000
X2	899.3552	279.6121	3.216438	0.0040
X3	1482.585	304.6802	4.866036	0.0001
X4	0.262016	0.351424	0.745584	0.4638
X5	-0.116660	0.029513	-3.952913	0.0007
C	-51282.36	12870.93	-3.984355	0.0006

R-squared	0.983990	Mean dependent var	9813.657
Adjusted R-squared	0.980351	S.D. dependent var	12296.92
S.E. of regression	1723.727	Akaike info criterion	17.92977
Sum squared resid	65367176	Schwarz criterion	18.21525
Log likelihood	-245.0168	Hannan-Quinn criter.	18.01705
F-statistic	270.4207	Durbin-Watson stat	1.518775
Prob(F-statistic)	0.000000		

Fig.1: Multiple Linear Regression Analysis

The estimation equation is:

$$\hat{Y}_i = -51282.36 + 0.666376X_1 + 899.3552X_2 + 1482.585X_3 + 0.262016X_4 - 0.11666X_5$$

se: (12870.93) (0.081241) (279.6121) (304.6802) (0.351424) (0.029513)

t= (-3.984355) (8.202358) (3.216438) (4.866036) (0.745584) (-3.952913)

It can be seen from the result that: R^2＝0.983990 approaches to 1,F=270.42>$F_{0.05}(5,22)$=3.99

Therefore, the overall linear relationship between the development index of the endowment insurance market and the explanatory variables is significant and the fitting effect is good. However, the parameters of X_4 fail in the t test, so there will probably be multiple collinearity between the explanatory variables.

2.5 Multicollinearity Analysis

2.5.1 Inspect the Relevant Coefficients

The related coefficient matrix of X_1,X_2,X_3,X_4,X_5.

Correlation						
	Y	X1	X2	X3	X4	X5
	Y	X1	X2	X3	X4	X5
Y	1.000000	0.968756	0.872535	-0.592784	0.898127	0.729125
X1	0.968756	1.000000	0.918465	-0.712290	0.937566	0.843427
X2	0.872535	0.918465	1.000000	-0.881068	0.898355	0.781685
X3	-0.592784	-0.712290	-0.881068	1.000000	-0.748896	-0.687435
X4	0.898127	0.937566	0.898355	-0.748896	1.000000	0.808335
X5	0.729125	0.843427	0.781685	-0.687435	0.808335	1.000000

Fig.2: relevant coefficient matrix between variables

It can be seen from the correlation coefficient matrix: It is visible from the above table that all the absolute values of the correlation coefficients among the variables Y, X_1, X_2, X_3, X_4 and X_5 are greater than 0.5, and the correlation coefficients among various explanatory variables are relatively higher, proving that there is indeed serious multicollinearity. Therefore, it is required to modify the model and eliminate the collinearity.

2.5.2 Modified Model

The OLS method is used to gradually calculate the regressions of Y to each explanatory variable. Combining with the economic significance and statistics inspection, the unary linear regression equation with the best fitting effect can be selected. The regression results of Y to X_1, X_2, X_3, X_4 and X_5 are as follows:

Table 2

variable	X_1	X_2	X_3	X_4	X_5
parameter estimator	0.660333	1981.456	-2492.990	3.837538	0.400800
t statistic	19.91679	9.106658	-3.753119	10.41432	5.432398
R^2	0.938488	0.761317	0.351393	0.806631	0.531624

It can be seen from the result that: R_1^2=0.938488, R_2^2=0.761317, R_3^2=0.351393k, R_4^2=0.806631 and R_5^2=0.531624. If it is sequenced as the R^2 value: X_1, X_4, X_2, X_5 and X_3.

With X_1 as the basis, other variables are gradually added for gradual regression. Firstly add X_4, the regression result is:

$$\hat{Y}_i = -765.7506 + 0.713935X_1 - 0.358385X_4$$

se: (4350.885) (0.096538) (0.605152)

t= (-0.175999) (7.396390) (-0.592223)

It can be seen that t inspection of the parameter X_4 is unable to be approved, so the variable can be eliminated.

Similarly, the t test of the parameters X_1, X_2, X_5, and X_3 is passed, so the parameters X_1, X_2, X_5, and X_3 are retained, which is the result of eliminating multicollinearity.

2.5.3 Gradual Regression

In the same while, the collinearity can be eliminated through gradual regression.

Dependent Variable: Y
Method: Stepwise Regression
Date: 01/14/19 Time: 00:00
Sample: 1990 2017
Included observations: 28
No always included regressors
Number of search regressors: 6
Selection method: Stepwise forwards
Stopping criterion: p-value forwards/backwards = 0.05/0.05

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
X1	0.700128	0.066806	10.47996	0.0000
X5	-0.116228	0.029221	-3.977616	0.0006
X2	900.2140	276.8971	3.251077	0.0035
X3	1441.457	296.7380	4.857674	0.0001
C	-49067.46	12401.92	-3.956441	0.0006

R-squared	0.983585	Mean dependent var	9813.657
Adjusted R-squared	0.980730	S.D. dependent var	12296.92
S.E. of regression	1707.004	Akaike info criterion	17.88330
Sum squared resid	67018874	Schwarz criterion	18.12119
Log likelihood	-245.3662	Hannan-Quinn criter.	17.95603
F-statistic	344.5396	Durbin-Watson stat	1.445994
Prob(F-statistic)	0.000000		

Selection Summary

Added X1
Added X5
Added X2
Added X3
Added C

*Note: p-values and subsequent tests do not account for stepwise selection.

Fig.3: diagram of using the stepwise regression method to carry out multiple linear regression

The results of the above five independent simple regression test can be obtained by stepwise regression. In the end, it can found that, at the 5% significance level, the corresponding P values of X_1, X_2, X_3, and X_5 are all less than 0.05, and the results are significant. Therefore, the final multiple linear regression equation is obtained as follows:

$$\hat{Y}_i = -49067.46 + 0.700128X_1 + 900.2140X_2 + 1441.457X_3 - 0.116228X_5$$

se: (12401.92) (0.066806) (276.8971) (296.7380) (0.029221)

t= (-3.956441) (10.47996) (3.251077) (4.857674) (-3.977616)

R^2 =0.983585, DW=1.445994, s.e.=1707.004, F=344.5396

Therefore, the parameters X_1, X_2, X_5, and X_3 are retained, which is the result of eliminating multicollinearity.

2.6 Test for Heteroscedasticity

The case adopts the income of the basic endowment insurance fund from 1990 to 2017 as an index measuring the development of the endowment insurance market. Due to the large time span and the rapid change of social development speed, the selected independent variables will make difference as the time goes by. Such a difference makes the model produce heteroscedasticity easily, so as to affect the estimation and application of the model. For this purpose, it is required to test the model for the presence of heteroscedasticity.

2.6.1 Goldfeld-Quanadt Test

The values of variable X1 are arranged in ascending order. It is required to construct a subsample interval and build a regression model. The sample size is n=28, and the middle 1/4 observations, namely, about 8 observations are deleted, and the remaining part is equally divided into two sample intervals: 1-10 and 19-28. The sample numbers are both 10, that is, n1=n2=10, and then the following results are obtained by the OLS method:

Dependent Variable: Y
Method: Least Squares
Date: 01/14/19 Time: 00:50
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.337748	0.075879	4.451154	0.0067
X2	-21.07700	102.6120	-0.205405	0.8454
X3	-52.18705	127.6284	-0.408898	0.6995
X5	-0.087750	0.077677	-1.129674	0.3099
C	1174.436	5126.363	0.229097	0.8279

R-squared	0.982165	Mean dependent var	885.5100
Adjusted R-squared	0.967897	S.D. dependent var	594.5151
S.E. of regression	106.5218	Akaike info criterion	12.48143
Sum squared resid	56734.50	Schwarz criterion	12.63272
Log likelihood	-57.40715	Hannan-Quinn criter.	12.31546
F-statistic	68.83596	Durbin-Watson stat	1.986648
Prob(F-statistic)	0.000147		

Fig.4: the first sample interval regression analysis diagram

Dependent Variable: Y
Method: Least Squares
Date: 01/14/19 Time: 00:50
Sample: 19 28
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.385391	0.258065	1.493386	0.1956
X2	2219.776	1204.587	1.842769	0.1247
X3	4499.300	3492.468	1.288286	0.2540
X5	-0.112481	0.044915	-2.504319	0.0542
C	-113440.2	38452.69	-2.950125	0.0319

R-squared	0.982013	Mean dependent var	23081.26
Adjusted R-squared	0.967624	S.D. dependent var	11835.38
S.E. of regression	2129.578	Akaike info criterion	18.47209
Sum squared resid	22675511	Schwarz criterion	18.62338
Log likelihood	-87.36044	Hannan-Quinn criter.	18.30612
F-statistic	68.24599	Durbin-Watson stat	1.837386
Prob(F-statistic)	0.000150		

Fig.5: the second sample interval regression analysis diagram

Calculate the F statistics value. Based on the data of residual sum of squares in diagram fig.4 and fig.5, namely, the value of Sum squared resid, the residual sum of squares is calculated as $\sum e_{1i}^2$ =56734.50, $\sum e_{2i}^2$ =22675511. According to Goldfeld-Quanadt inspection, the F statistics amount is:

$$F = \frac{\sum e_{2i}^2}{\sum e_{1i}^2} = \frac{22675511}{56734.50} = 399.68$$

In the circumstance of the $\alpha = 0.05$,freedom degrees of the numerator and the denominator are both 5, and the critical value is $F_{0.05}(5,5)=5.05$ by checking the F distribution table, because $F=399.68>F_{0.05}(5,5)=5.05$, so the original assumption is rejected, indicating that the model indeed has heteroscedasticity.

2.6.2 Heteroscedasticity Modification

Modification is carried out by using weighted least squares (WLS). The WLS method is to weight the original model and enable it to become a new model with no heteroscedasticity. Afterwards, the OLS is used for parameter estimation. The WLS estimate is based with $\frac{1}{|e_i|}$ as the weight, thus obtaining the below results.

Dependent Variable: Y
Method: Least Squares
Date: 01/14/19 Time: 11:13
Sample: 1 28
Included observations: 28
Weighting series: 1/ABS(RESID)
Weight type: Inverse standard deviation (EViews default scaling)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.679025	0.026954	25.19169	0.0000
X2	780.9988	103.5654	7.541118	0.0000
X3	1302.409	139.2253	9.354684	0.0000
X5	-0.096100	0.013031	-7.374974	0.0000
C	-43297.77	4971.470	-8.709249	0.0000

Weighted Statistics

R-squared	0.998012	Mean dependent var	16055.15
Adjusted R-squared	0.997666	S.D. dependent var	36034.38
S.E. of regression	438.7345	Akaike info criterion	15.16610
Sum squared resid	4427223.	Schwarz criterion	15.40399
Log likelihood	-207.3254	Hannan-Quinn criter.	15.23883
F-statistic	2886.533	Durbin-Watson stat	1.319738
Prob(F-statistic)	0.000000	Weighted mean dep.	2903.692

Unweighted Statistics

R-squared	0.982144	Mean dependent var	9813.657
Adjusted R-squared	0.979039	S.D. dependent var	12296.92
S.E. of regression	1780.354	Sum squared resid	72902172
Durbin-Watson stat	1.107059		

Fig.6: regression analysis diagram after using the WLS

The estimation result is

$$\hat{Y}_i = -43297.77 + 0.679025X_1 + 780.9988X_2 + 1302.409X_3 - 0.096100X_5$$

se: (4971.470) (0.026954) (103.5654) (139.2253) (0.013031)

t= (-8.709249) (25.19169) (7.541118) (9.354684) (-7.374974)

R^2 =0.998012,DW=1.319738,s.e.=438.7345,F=2886.533

It can be seen that after eliminating the heteroscedasticity with the WLS means, the t-test of the parameters is significant, the coefficient of determination is greatly improved, and the F-test is significant as well. Although this model may have some other problems requiring to be further solved, this estimation result may better approach the real situation than the conclusion in the unadjusted model in the past.

2.7 Sequence Correlation Test

According to general experience, it can be known that, for the econometric problem of using time series data as the sample, due to the time continuity of other factors except the explanatory variable on different sample points, the continuity of their influence on the explained variables has been brought, so there is usually sequence correlation. In the case, there might be endogeneity of the front and rear association generated by the inherent inertia of the economic time data, so it is required to conduct endogeneity inspection.

2.7.1 Dw Inspection

For the sample size of 28 and the explanatory variable of 4, the significant level is 5%. Through checking the DW statistical table, it can be seen, d_L=1.10, d_U= 1.75, d_L <DW=1.319738< d_U in the model. DW test only applies to the first order self-related circumstances, so it is unable to determine whether there is a first-order autocorrelation in the model.

2.7.2 LM Inspection

LM inspection method is used for the sequence correlation analysis: 2-order hysteresis.

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.457125	Prob. F(2,21)	0.6393
Obs*R-squared	1.168144	Prob. Chi-Square(2)	0.5576

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 01/14/19 Time: 13:37
Sample: 1 28
Included observations: 28
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.037123	0.078760	-0.471341	0.6423
X2	205.4937	377.0679	0.544978	0.5915
X3	260.1959	440.2764	0.590983	0.5608
X5	0.019339	0.036141	0.535092	0.5982
C	-10034.01	17602.81	-0.570023	0.5747
RESID(-1)	0.350794	0.369323	0.949831	0.3530
RESID(-2)	0.072802	0.338322	0.215184	0.8317

R-squared	0.041719	Mean dependent var	5.23E-12
Adjusted R-squared	-0.232075	S.D. dependent var	1575.494
S.E. of regression	1748.780	Akaike info criterion	17.98354
Sum squared resid	64222886	Schwarz criterion	18.31659
Log likelihood	-244.7696	Hannan-Quinn criter.	18.08536
F-statistic	0.152375	Durbin-Watson stat	1.592635
Prob(F-statistic)	0.986456		

Fig.7: regression analysis diagram of adopting the LM inspection method

The estimation result is

$$\tilde{e}_t = -10034.01 - 0.037123X_1 + 205.4937X_2 + 260.1959X_3 + 0.019339X_5 + 0.350794\tilde{e}_{t-1} + 0.072802\tilde{e}_{t-2}$$

Table 3

	c	X_1	X_2	X_3	X_5	e_{t-1}	e_{t-2}
s.e.	17602.81	0.078760	377.0679	440.2764	0.036141	0.369323	0.338332
t	-0.570023	-0.471341	0.544978	0.590983	0.535092	0.949831	0.215184

R^2 =0.041719,n=28, p=2, k=5(including the constant term)

$$LM = (N-P)R^2 = (28-2)\times 0.041719 = 1.084694$$

$$LM = 1.084694 < \chi^2_{0.05}(2) = 5.99$$

Accept the original assumption, indicating that the model has no 2-order self-correlation, thus requiring no further modification.

In the meanwhile, the statistics of LM test (Obs*R-squared)=1.168144, the corresponding adjoint probability (Prob. Chi-Square(2)) is 0.5576, which is significantly higher than $\alpha = 0.05$, and the coefficient of RESID(-1) in the auxiliary regression equation is not significant. (The p value of the t-statistic is 0.3530> $\alpha = 0.05$), and the coefficient of the RESID(-2) in the auxiliary regression equation is not significant (the p value of the t-statistic is 0.8317> $\alpha = 0.05$), which further proves that there is no self-correlation in this model.

2.8 Final Model

$$\hat{Y}_i = -43297.77 + 0.679025X_1 + 780.9988X_2 + 1302.409X_3 - 0.096100X_5$$

se: (4971.470) (0.026954) (103.5654) (139.2253) (0.013031)

t= (-8.709249) (25.19169) (7.541118) (9.354684) (-7.374974)

R^2 =0.998012,DW=1.319738,s.e.=438.7345,F=2886.533

In which, Y: basic pension fund income/RMB, X_1: GDP per capita/RMB, X_2: the added value of the tertiary industry/%, X_3: natural population growth rate/‰, X_5: annual increase in saving and deposit/RMB 100 million.

2.9 Economic Significance

According to the results of the above model estimation, it can be seen that the income of the endowment pension fund has the closest relationship with the GDP per capita, and the correlation coefficient is 0.938488. Therefore, the key step of increasing the endowment pension fund income lies in how to increase the amount of GDP per capita. The second is the tertiary industry added value constitution, and the correlation coefficient is 0.761317. In order to increase the proportion of the endowment pension, it is required to deliberate how to increase the proportion of the tertiary industry in the total composition of the three industries. The next is the annual increase in saving and deposit, and the correlation coefficient is 0.531624, so reducing the amount of saving and deposit is conducive to increasing the income of pension funds in the era of diversified investment. The last one is the natural population growth rate, and the correlation coefficient is 0.351393. In the present condition of opening up the second-child policy, the fertility rate increases, and the natural population growth rate increases accordingly, which is also conducive for alleviating the problem of population aging and increasing the income of pension fund.

3. Conclusion and Suggestion

3.1 Perfect the Basic Endowment Insurance Market

To implement market investment operations, security is the first to be met, which means to achieve the expected benefits under the premise of ensuring to safely collect the basic endowment insurance fund, so as to realize its own endowment security function. It is required to follow a prudent and sound investment direction in promoting the basic pension fund to enter the market. For investment projects with high risks, it is required to strictly control the proportion of investment and always adhere to the principle of safety-oriented. At the same time, in the market investment operation, the fund pension fund fully plays its role and realizes self-appreciation.

3.2 Retard the Retirement Age

In order to solve the gradually increasing pressure on pension payment in China, the government has been studying the practice of retarding the retirement age. Retarding the retirement age can extend the time for employees to pay pension insurance, shorten the time for drawing the pension, improve the overall planned account and perfect the fund-raising model of the pension insurance in China. Such a manner can establish a sustainable fund solvency.

3.3 Improve the Pension Fund Raising Mode

In order to relieve the financial pressure of pension insurance in various areas, it is required to improve the overall planning level of pension insurance, avoid decentralized management, and play the mutual assistance and support function of endowment insurance. Capital investment needs to realize open and transparent information. The current situation of decentralized management of the endowment insurance in China is not conducive to the investment management of basic endowment insurance. In order to increase the rate of return on investment in pension insurance, it is in urgent need of improving the level of overall planning. Raising the level of overall planning, establishing provincial-level co-ordination in the short term, and finally achieving national co-ordination are the requirements for the market-oriented operation of pension insurance, and are also necessary for the standardized management of pension insurance.

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