Academic Education Publishing House

Economic Society and Humanities Vol. 3 No. 7, 2026

Rural Pensions and the Changing Mix of Work among Older Adults in China: Evidence from CHARLS

Ruiqi Wang

Linfen Municipal Development and Reform Commission, Linfen, Shanxi, China

Abstract: This paper utilizes five-wave panel data from the China Health and Retirement Longitudinal Study (CHARLS) from 2011 to 2020 to construct binomial and multinomial logit models. It systematically examines the impact and heterogeneity of basic old-age insurance on the work style choices of urban and rural elderly residents, and uses instrumental variable methods to address potential endogeneity issues. The results show that: First, participation in basic old-age insurance significantly reduces the probability of elderly residents engaging in agricultural labor while significantly increasing their probability of engaging in non-agricultural labor. This effect is more pronounced when the level of old-age insurance benefits is high, indicating that basic old-age insurance does not simply exclude elderly workers from the labor market, but rather encourages them to shift from agricultural to non-agricultural labor. Second, the multinomial logit model further shows that old-age insurance participation increases the relative probability of choosing "only non-agricultural labor" by approximately 41.2% and the relative probability of choosing "mixed labor" by approximately 123.4%. This suggests that old-age benefits primarily lead to adjustments in work style structure, rather than a net decrease in labor force participation rate. Third, heterogeneity analysis showed that these effects were more significant among women, those aged 55-60, and those with poorer health, with income being the primary driving mechanism. Fourth, instrumental variable estimation confirmed the robustness of causality and indicated that baseline regression may have underestimated the true impact of pension insurance on the non-agricultural workforce. This study, by adjusting for job type, provides a new perspective for understanding the institutional effects of urban and rural pension insurance and offers empirical evidence for improving rural pension policies and promoting the rational allocation of elderly labor resources.

Keywords: Rural Pensions; Agricultural Work; Non-Agricultural Work; Older Adults; CHARLS

1. Introduction

In recent years, China's aging population problem has become increasingly serious. According to data from the Seventh National Population Census, in 2020, country's population aged 60 and above reached 264 million, accounting for 18.70% of the total population. With the acceleration of the aging process, the lives of rural elderly are increasingly affected by factors such as declining family support capacity, the continuous outflow of middle-aged and young laborers, and an imperfect social security system [1]. Their labor supply and choices are constrained by more practical factors [2,3]. To address the weaknesses in rural old-age security, my country has continuously promoted institutional development. In 2014, based on the integration of the New Rural Social Pension Insurance pilot project and the Urban Residents Social Pension Insurance pilot project, a unified basic old-age insurance system for urban and rural residents was formally established. Existing research shows that the old-age insurance system not only affects the labor supply of rural elderly but also influences their labor choices by changing the allocation of resources within families [4].

From a practical perspective, the labor participation patterns of rural elderly are undergoing structural changes. Existing research indicates that, given the relatively limited current pension levels, adjustments in the labor behavior of rural elderly may not manifest as a significant decline in overall labor participation, but rather as a shift and redistribution among different types of work. Therefore, the labor behavior of

rural elderly should not be simply understood as participation or withdrawal, but rather as a trade-off and adjustment among different types of work. Existing research on the impact of pension insurance on the labor behavior of elderly workers mainly focuses on labor participation rates and total working hours, failing to adequately consider the structural differences between different types of work. However, due to the generally limited welfare levels of urban and rural residents' pension insurance, receiving pensions may not significantly change the overall labor participation rate of elderly rural residents, but it may alter their distribution among different types of work. In other words, the impact of urban and rural residents' pension insurance on the labor behavior of elderly rural residents is more reflected in changes in labor patterns than a simple decline in labor participation. Based on this, this paper focuses on how the basic pension insurance system for urban and rural residents affects the employment choices of elderly rural workers. This paper examines whether this impact manifests as a withdrawal from labor or a shift from agricultural labor to non-agricultural or mixed labor. Furthermore, this paper analyzes the heterogeneity and mechanisms of this influence across different groups. This study contributes to a deeper understanding of the labor supply behavior of elderly rural laborers and provides a reference for improving the basic old-age insurance system for urban and rural residents and promoting the rational allocation of elderly rural human resources.

2. Literature Review

2.1 The Economic Effects of Urban and Rural Residents' Old-Age Insurancee

Since the establishment of old-age insurance systems for rural and urban residents, the focus of academic research has shifted from system design to evaluating policy effects. More systematic discussions have mainly focused on income, consumption, subjective well-being, household resource allocation, and labor supply. Regarding income and consumption, research has shown that the new rural old-age insurance can reduce consumption disparities among rural residents and has a significant "poverty mitigation effect"[5,6]. Regarding subjective well-being, the new rural old-age insurance significantly reduces depression and improves life satisfaction among rural elderly, but the overall welfare effect is limited [7-9]. Regarding household resource allocation, pensions, to some extent, substitute for intergenerational economic support within families and influence family care arrangements and resource allocation [4]. Regarding labor supply, existing research indicates that the impact of pension insurance is more often reflected in changes in labor force types than in a significant decline in labor force participation rates [10]. In summary, existing research has broadly investigated labor force participation rates and working hours, but has not paid sufficient attention to labor force type choices.

2.2 Factors Affecting the Labor Supply of Older Workers

Existing research on the determinants of labor supply among the elderly primarily focuses on three levels: personal characteristics, family relationships, and the institutional environment.

At the level of personal characteristics, education level influences labor supply decisions through the payback period and the rate of return on labor [11-13]. Meanwhile, health improvement generally increases labor supply, but the impact of deteriorating health remains uncertain [12-16]. At the level of family relationships, simultaneous retirement of couples is a common phenomenon. Changes in a spouse's health may increase labor supply due to the need for income compensation, or they may hinder labor participation due to the need for caregiving. At the institutional level, public pension systems significantly increase the likelihood of individuals leaving the labor market as they approach retirement age, whereas taxation exerts influence through the relative strength of income and substitution effects [13,17]. From a broader perspective, the supply of older labor affects economic growth through capital accumulation, the volume of labor, and the quality of labor.

3. Research Design

3.1 Data Sources

The analysis pools the 2011, 2013, 2015, 2018, and 2020 CHARLS waves. Based on research needs, this paper selects data from five periods in the CHARLS dataset to construct micro-panel data on rural elderly people from 2011 to 2020. In terms of sample processing, this paper filters

the original data according to the research objectives, retaining only rural elderly people, regardless of whether they hold rural household registration or participate in the basic pension insurance for urban and rural residents, and limiting the sample age range to 60 to 75 years old. Furthermore, this paper removes observations with missing values in the core variables and uses mean substitution (for continuous variables) and mode substitution (for categorical variables) to fill missing values in the control variables. Robustness tests further validate the effectiveness of the substitution methods. After the above processing steps, 30,203 valid observations are obtained, forming unbalanced panel data at the individual and year levels. The sample consists of 51.0% males and 49.0% females, with a mean age of 63.74 years. The participation rate in the basic old-age insurance for urban and rural residents was 65.1%, and the sample structure was relatively balanced, which meets the requirements for subsequent empirical analysis.

3.2 Variable Selection and Coding

3.2.1 Dependent variables: labor participation and labor type

In this paper, explanatory variables are constructed in two ways, depending on the purpose of the analysis. One is two labor participation variables used in a basic binomial logit regression analysis, and the other is a multi-category variable, "labor type," used in a multivariate logit model. Specifically, the following variables were constructed based on two key questions from the CHARLS questionnaire: "Did you participate in agricultural production and management activities last year?" and "Did you participate in income-generating activities (non-agricultural) last year?" First, two independent binomial dummy variables were constructed as dependent variables for the binomial logit model. Agricultural labor participation: A value of 1 is assigned if the participant participated in agricultural production and management activities last year, and 0 otherwise. Non-agricultural labor participation: A value of 1 is assigned if the participant participated in income-generating non-agricultural activities last year, and 0 otherwise. Next, based on this, four mutually exclusive multi-category variables were constructed to reflect the differences in labor types in the multivariate logit model analysis. 0 = No work (not engaged in any agricultural or non-agricultural work), 1 = Engaged only in agricultural work (engaged only in agricultural work and not in non-agricultural work), 2 = Engaged only in non-agricultural work (engaged only in non-agricultural work and not in agricultural work), 3 = Mixed work (engaged in both agricultural and non-agricultural work). In the multivariate logit empirical analysis, "No work" (0) was used as the baseline group, and the impact of the core independent variables on the choices of different types of work among older adults was examined.

3.2.2 Key explanatory variables: participation in and benefits from the urban-rural resident pension scheme

Pension status is measured in two ways. PP identifies enrollment in the resident scheme. ln_pa records the size of the payment after transformation. The two measures are not placed in the same regression, since enrollment and receipt are mechanically related and capture different margins.

PP equals one when a respondent reports participation in the Urban-Rural Resident Pension Scheme and zero when no pension coverage is reported. For sample members below the usual claiming age, PP refers to enrollment; it should not be interpreted as evidence that a monthly benefit has already been paid.

Pension_Amount is the reported monthly payment in yuan and is set to zero in person-waves with no payment. Its distribution contains many zeros and a long upper tail. We use ln(Pension_Amount + 1), labelled ln_pa, so that zero-payment observations remain in the sample after taking logs.

3.2.3 Control variables

The covariate set follows the broad structure in Jia and Ma [18]. It includes characteristics that may influence both pension enrollment and the kind of work a respondent reports.

At the individual level, the models include age, gender, self-rated health, education, and marital status. Gender equals one for men. Health ranges from one (very poor) to five (very good). Education is grouped into illiterate, primary school, and junior high school or above. Married and remarried respondents living with a spouse are coded one; women, illiterate respondents, and those without a spouse form the relevant reference categories.

Household controls are usual household size, number of children, annual income per person,

and co-residence with a child. Family size and co-residence are retained separately. Two households of equal size can differ sharply in care obligations and support if one includes an adult child and the other does not.

Regional indicators divide the sample into eastern, central, and western China; the east is omitted. Rural registration does not appear again as a control because it defines the sample and has no variation within it. Wave dummies absorb shocks common to all respondents in a survey year.

3.2.4 Sample profile and descriptive statistics

The pooled file contains 30,203 person-wave records. Average age is 63.74 years, and the age range is 55-75. Men account for 51.0% of the observations. Resident-pension participation is reported in 65.1% of records. The mean monthly pension is 251.44 yuan, with a standard deviation of 490.52 and a maximum of 2,858.33 yuan; the wide spread and the mass at zero motivate the ln(amount + 1) transformation used in the regressions. Self-rated health averages 2.95 on the five-point scale, while mean education is 1.68 on the three-category measure. Most records are for respondents with a spouse (87%). The average household contains 3.16 members and 2.86 children, and half of respondents live with at least one child. Annual household income per person averages 4,364.24 yuan but is much more dispersed than the demographic variables. Because the panel is unbalanced, these figures describe person-wave records rather than unique individuals or a single survey year. Rural registration is constant by construction and is therefore not entered again as a regressor.

3.3 Model Specification

3.3.1 Binary labor choice models

We estimate one binary Logit model for agricultural work and another for non-agricultural work. A respondent may appear in both outcomes in the same wave, which is precisely why the two equations are kept separate at this stage.

For either activity, let Y_i equal one when person i reports participation:

$$Y_i=\begin{cases}1, & \text{Participates in a given type of work}\\ 0, & \text{Does not participate in this type of work.}\end{cases} \quad (1)$$

The Logit equation is written as:

$$\ln\left(\frac{P(Y_i=1)}{1-P(Y_i=1)}\right)=\alpha+\beta_1 Pension_Participate_i+\beta_2 Pension_Amount_i+\gamma X_i+\varepsilon_i \quad (2)$$

In Equation (2), the outcome changes with the model: Y_i refers to farming in one regression and non-agricultural work in the other. X_i contains the individual, household, and regional controls, together with wave indicators.

Equation (2) displays both pension terms to define the notation. The estimated regressions include only one at a time. One set therefore compares pension participants with uncovered respondents; the other uses variation in the logged payment.

3.3.2 Labor-type choice model

The binary models allow the two activities to overlap. The next model removes that overlap by assigning each person-wave to one of four labor states and estimating them jointly with multinomial Logit.

Labor_Type is coded as follows:

$$Labor_Type_i \in \{0,1,2,3\} \quad (3)$$

The values are 0 for no work, 1 for farming only, 2 for non-agricultural work only, and 3 for mixed work. Setting category 0 as the base gives:

$$\ln\frac{P(Y_i=j)}{P(Y_i=0)}=\alpha_j+\beta_{1j} Pension_Participate_i+\beta_{2j} Pension_Amount_i+\gamma_j X_i+\varepsilon_{ij},\ j=1,2,3 \quad (4)$$

For j = 1, 2, or 3, the coefficient compares labor state j with no work. PP and ln_pa again enter separate versions of the model.

We exponentiate the coefficients and report relative risk ratios:

$$RRR=e^{\beta} \quad (5)$$

An RRR of one marks no change in he relative risk. Values above one indicate a higher relative risk of state j versus no work; values below one indicate a lower relative risk. These are ratios, not percentage-point changes in the probability of working.

3.3.3 Instrumental-variable model

Selective enrollment is a plausible source of bias. Work preferences, household resources, and local administrative capacity may affect participation as well as employment. Adapting the local-coverage-rate strategy used by Jia and Ma [18], we instrument PP with the average resident-scheme participation rate in the respondent's county or district. Jia and Ma study non-portable health insurance, so their design is a methodological analogy rather than direct validation of a pension instrument. The local rate should ideally exclude the respondent's own observation; the available results do not document whether this leave-one-out step was used.

The enrollment equation is:

$$PP_{it}=\alpha_0+\alpha_1 County_Pension_Rate_{it}+\gamma X_{it}+\mu_i+\lambda_t+\varepsilon_{it} \quad (6)$$

PP_it is individual enrollment in wave t. X_it is the control vector, and the model includes person and wave fixed effects. Identification in the first stage comes from changes in local participation intensity.

The labor equation is:

$$Y_{it}=\beta_0+\beta_1 \widehat{PP}_{it}+\gamma X_{it}+\mu_i+\lambda_t+u_{it} \quad (7)$$

The IV outcomes are agricultural and non-agricultural participation. Predicted enrollment replaces observed PP in the second stage. A strong local participation rate can satisfy relevance, but validity requires more: after the controls and fixed effects, the local rate must not affect work through another channel. Local labor markets and pension administration could violate that restriction. We consequently treat the IV estimates as a demanding robustness check, not as automatic proof of causality.

4. Empirical Analysis

4.1 Baseline Regression Results

Table 1 reports the binary Logit estimates. In the agricultural equation, PP is -0.263 ($p < 0.01$) and ln_pa is -0.017 ($p < 0.05$) in the corresponding separate regression. Pension participants are therefore less likely to report farm work than otherwise similar uncovered respondents. A stable transfer may reduce reliance on household production, and physically demanding fieldwork may be the first activity to be scaled back. The estimates do not distinguish between those two channels.

Table 1. Baseline Logit Estimates

Variable	Agricultural Labor Participation (1)	Non-agricultural Labor Participation (2)
Pension Participation (PP)	-0.263***	0.442***
	(0.034)	(0.063)
Log Pension Benefits (ln_pa)	-0.017**	0.034***
	(0.006)	(0.009)
Control Variables	Yes	Yes
Wave Fixed Effects	Yes	Yes
Observations (N)	30,203	30,203
Pseudo R^2	0.039	0.071

Note: ***, **, and * denote significance at the 1%, 5%, and 10% levels. Person-clustered robust standard errors are in parentheses. PP and ln_pa enter separate models.

Non-agricultural work has the opposite sign. PP is 0.442 and ln_pa is 0.034, with both estimates significant at 1%. A modest pension is unlikely to finance retirement, but it may reduce immediate subsistence pressure or cover small costs of casual work, such as travel and equipment. CHARLS does not observe every task or entry cost, so these remain possible explanations rather than tested mechanisms.

Pseudo R-squared values are 0.039 for farming and 0.071 for non-agricultural work. Their size is less informative here than the reversal in signs: pension status is linked to less farm work but more activity outside agriculture, not to a uniform reduction in work.

4.2 Results of the Multinomial Logit Model

The binary outcomes overlap, so they cannot show whether a person who enters non-agricultural work has also kept farming. Table 2 assigns each observation to one labor state and uses no work as the base category.

Table 2. Multinomial Logit Estimates by Labor Type

Variable	Agricultural Work Only	Non-agricultural Work Only	Mixed Work
	RRR	RRR	RRR
Pension Participation (PP)	0.783***	1.412***	2.234**
	(0.027)	(0.092)	(0.691)
Log Pension Benefits (ln_pa)	0.986*	1.031**	1.011
	(0.006)	(0.009)	(0.041)
Control Variables / Wave Fixed Effects	Yes	Yes	Yes
Observations (N)	30,203	30,203	30,203
Pseudo R^2	0.039	0.039	0.039

Note: ***, **, and * denote significance at the 1%, 5%, and 10% levels. Entries are RRRs relative to no work. PP and ln_pa come from separate multinomial models; standard errors appear in parentheses.

For farming only, the PP RRR is 0.783, implying a relative risk 21.7% lower than that for no work. The ln_pa RRR is 0.986 and is significant only at 10%. Non-agricultural work only shows the reverse pattern: RRRs are 1.412 for PP and 1.031 for ln_pa. The multinomial results therefore preserve the reallocation seen in the two binary equations.

The PP estimate is largest for mixed work: RRR = 2.234 ($p < 0.05$). Read literally, the relative risk of combining farm and non-farm work rather than reporting no work is 123.4% higher among participants. It is not a 123.4 percentage-point increase in the probability of mixed work. The result matters because a move toward non-agricultural activity does not necessarily entail leaving farming altogether.

Seasonality offers a practical route into mixed work: farm tasks can dominate during busy months, while temporary paid work fills quieter periods. Pension income may serve as a small buffer between the two. Yet ln_pa has an RRR of 1.011 for mixed work and is not significant, suggesting that enrollment status, rather than marginal variation in benefit size, drives this estimate.

4.3 Heterogeneity Analysis

Table 3 brings the gender, age, and health estimates into one comparison. These regressions show where the average pattern is concentrated; they do not establish that every pair of subgroup coefficients differs statistically. That stronger claim would require formal equality tests.

Table 3. Heterogeneity in Pension Participation Estimates

Dimension	Group	N	Farming Only	Non-farm Only	Mixed Work
Gender	Male	15,516	0.810***	1.305**	0.458*
	Female	14,687	0.754***	1.542***	0.721
Age	55-60	9,922	0.734***	2.138***	9.150***
	61-75	20,281	0.826***	1.362**	1.132
Health Status	Better Health	6,162	0.868*	1.415*	2.207
	Poorer Health	24,041	0.765***	1.426***	2.286*

Note: ***, **, and * denote significance at the 1%, 5%, and 10% levels. The reported RRRs refer to PP, with no work as the base state.

Age produces the sharpest contrast. The mixed-work RRR is 9.150 at ages 55-60 but 1.132 and insignificant at ages 61-75. Younger respondents are more able to switch between physically different tasks. The very large RRR should still be treated cautiously: when mixed work is rare in the comparison group, a limited absolute change can generate a large ratio. The concentration in the younger group is more credible than the exact value of 9.150.

For non-agricultural work only, the RRR is larger for women than for men (1.542 versus 1.305). That pattern does not carry over to mixed work. Health gives a more consistent farming contrast: the farming-only RRR is 0.765 among respondents in poorer health and 0.868 among those in better health, while both non-agricultural RRRs remain above one. Scaling back demanding fieldwork is one interpretation, although self-rated health may itself respond to work.

4.4 Instrumental-Variable Results

The baseline comparison may combine a pension relationship with selection into enrollment. Table 4 instruments PP with the average resident-scheme participation rate in the respondent's county or district and reports IV-Probit and 2SLS estimates for both binary outcomes, together with ordinary Probit estimates as a benchmark.

The first stage is strong in the statistical sense: its F-statistic is 2,282.98, far above the usual threshold of 10. Strength does not settle validity. County pension administration may share local determinants with employment conditions, and fixed effects cannot rule out every such link.

For farming, PP remains negative in IV-Probit (-0.223) and in the 2SLS linear-probability model (-0.074). The Wald test gives $p = 0.351$, so exogeneity is not rejected. Raw coefficient sizes are not compared across Logit, Probit, and linear-probability models because they use different scales.

The non-agricultural estimates remain positive: 0.970 in IV-Probit and 0.115 in 2SLS. Here the Wald test rejects exogeneity at $p < 0.001$. Although the IV-Probit coefficient exceeds the baseline Logit coefficient, the difference does not by itself prove downward bias; the two latent-index scales are not directly comparable.

What survives the IV exercise is the direction of the association - less farming and more non-agricultural work. The causal magnitude is less certain and still rests on the county-level exclusion restriction.

Table 4. Instrumental-Variable and Probit Estimates

Variable	Agricultural Work	Non-agricultural Work
IV-Probit		
Pension Participation (PP)	-0.223***	0.970***
	(0.072)	(0.096)
Wald Test of Exogeneity (p-value)	0.351	<0.001
2SLS Linear Probability Model		
Pension Participation (PP)	-0.074***	0.115***
	(0.024)	(0.013)
First-stage F-statistic	2,282.98	2,282.98
Probit Model		
Pension Participation (PP)	-0.498***	0.236***
	(0.045)	(0.030)
Observations (N)	30,203	30,203
Instrumental Variable	Average pension participation rate within the same county/district (County_Pension_Rate)	Average pension participation rate within the same county/district (County_Pension_Rate)

Note: ***, **, and * denote significance at the 1%, 5%, and 10% levels; standard errors are in parentheses. The first-stage F-statistic speaks to relevance, not to the exclusion restriction.

4.5 Further Robustness Checks

Table 5 collects checks based on a different estimator, winsorized pension payments, actual pension receipt, and a linear-probability IV specification.

Table 5. Further Robustness Checks

Robustness Check	Agricultural Outcome	Non-agricultural Outcome	Mixed Work
Baseline MLogit (PP)	0.783***	1.412***	2.234**
Probit (PP Coefficient)	-0.498***	0.236***	-
Excluding Extreme Pension Values (MLogit)	0.786***	1.421***	2.035*
Pension Receipt (MLogit)	0.835***	1.217**	1.366
2SLS (PP Coefficient)	-0.074***	0.115***	-

Note: ***, **, and * denote significance at the 1%, 5%, and 10% levels. The MLogit rows report RRRs for mutually exclusive labor states; the Probit and 2SLS rows report coefficients for the overlapping binary agricultural and non-agricultural participation outcomes. Dashes indicate that mixed work was not estimated in those rows, and magnitudes should not be compared across estimators.

Probit gives a PP coefficient of -0.498 for farming and 0.236 for non-agricultural work. After pension payments are winsorized at the 1st and 99th percentiles, the RRRs are 0.786, 1.421, and 2.035 for farming only, non-agricultural work only, and mixed work. These values stay close to the baseline, although mixed work is significant only at 10%.

Replacing enrollment with actual receipt yields RRRs of 0.835 for farming only and 1.217 for non-agricultural work only. Mixed work falls to 1.366 and loses significance. The 2SLS linear-probability estimates are -0.074 for farming and 0.115 for non-agricultural work.

Across these checks, the farming/non-agricultural contrast does not change direction. Mixed work is less stable: it appears with enrollment and after winsorization, but not when receipt replaces enrollment. The evidence therefore supports a claim about work reallocation more strongly than a claim about every mixed-work arrangement.

5. Conclusions and Policy Recommendations

Based on the empirical analysis results of this paper, the following three main conclusions are drawn.

First, enrollment in the Basic Old-Age Pension for urban and rural residents significantly reduces the probability of rural elderly people

engaging in agricultural labor, and this inhibitory effect becomes more pronounced as the level of old-age welfare improves. This aligns with the results of the gradualist verification and suggests that the Old-Age Pension contributes to alleviating the financial hardships of rural elderly people and reducing their dependence on agricultural labor by serving as a stable source of non-labor income.

Second, the effects of the Basic Old-Age Pension for urban and rural residents are evident not only in the decrease in agricultural labor participation rates but also in the increase in non-agricultural labor participation rates. This implies that the Old-Age Pension does not simply exclude the elderly from the labor market but facilitates the adjustment of their labor patterns. Some elderly people are transitioning from purely agricultural labor to non-agricultural labor or more flexible forms of work, which has a significant impact on the labor supply structure of the elderly.

Third, the impact of the Basic Old-Age Pension for urban and rural residents on the work behavior of rural elderly people varies by group. It was found that women, the 55–60 age group, and older adults with poor health were more significantly affected. This may be related to the impact of income constraints and supports the view that income effects play a crucial role in the adjustment of work behavior. While younger and healthy older adults are expected to shift to non-agricultural sectors, pension insurance primarily serves as a basic social safety net for the elderly and those with poor health.

References

[1] Du Yang, Cui Huimin. Rural Population Ageing: Trends, Challenges and Policy Responses. China Rural Survey, 2025(4): 3-17.

[2] Xie E. The Effects of the New Rural Pension Scheme on the Labor Supply and Welfare of Rural Older Adults. Journal of Finance and Economics, 2015, 41(8): 39-49.

[3] Gai Q, Guo N, Li B, et al. Rural Pensions, Labor Reallocation, and Aggregate Income: An Empirical and Quantitative Analysis of China. Econometrica, 2025, 93(5): 1663-1696.

[4] Yue Ximing, Fan Xiaohai. The Effects of the New Rural Pension Scheme on the Labor Supply and Welfare of Older Adults. Journal of Guizhou University of Finance and Economics, 2024(2): 1-11.

[5] Zhou Guangsu, Zhang Xuanyi, Jia Shen, et al. The Effect of the New Rural Social Pension Insurance Scheme on Consumption Inequality. China Economic Quarterly, 2020, 19(4): 1467-1490.

[6] Yang Jing, Deng Dasong, Shen Yun. Pension Insurance, Non-agricultural Employment and Income Disparities among Rural Households. Journal of Jiangxi University of Finance and Economics, 2019(3): 63-72.

[7] Chen Huashuai, Zeng Yi. Who Benefits from the New Rural Pension Scheme: Older Adults or Their Children?. Economic Research Journal, 2013, 48(8): 55-67, 160.

[8] Zhang Chuanchuan, Chen Binkai. Can Social Pensions Substitute for Family Support? Evidence from China's New Rural Social Pension Insurance Scheme. Economic Research Journal, 2014, 49(11): 102-115.

[9] Jiao Na. Does Social Pension Insurance Change Intergenerational Support within Rural Chinese Households?. Population Research, 2016, 40(4): 88-102.

[10] Zhu Huoyun. The Effect of the Urban-Rural Resident Pension Scheme on Intergenerational Income Transfers: A Longitudinal Analysis Based on CLHLS Data from 2005 to 2014. Social Security Review, 2019, 3(2): 94-108.

[11] Ben-Porath Y. The Production of Human Capital and the Life Cycle of Earnings. Journal of Political Economy, 1967, 75(4, Part 1): 352-365.

[12] French E, Jones J B. Health, Health Insurance, and Retirement: A Survey. Annual Review of Economics, 2017, 9(1): 383-409.

[13] Hurd M D, Boskin M J. The Effect of Social Security on Retirement in the Early 1970s. The Quarterly Journal of Economics, 1984, 99(4): 767-790.

[14] Gustman A L, Steinmeier T L. Retirement in Dual-Career Families: A Structural Model. Journal of Labor Economics, 2000, 18(3): 503-545.

[15] Fadlon I, Nielsen T H. Family Labor Supply Responses to Severe Health Shocks: Evidence from Danish Administrative Records. American Economic Journal: Applied Economics, 2021, 13(3): 1-30.

[16] Anand P, Dague L, Wagner K L. The Role

of Paid Family Leave in Labor Supply Responses to a Spouse's Disability or Health Shock. Journal of Health Economics, 2022, 83: 102621.

[17]Liu Rong, Tang Yunpeng, Zhao Lingxiao. The Effect of Individual Income Tax Reform on the Labor Supply of Middle-Aged and Older Adults: Evidence from CHARLS Panel Data. Journal of Peking University (Philosophy and Social Sciences), 2019, 56(5): 87-100.

[18]Jia Nan, Ma Junlong. The Lock-in Effect of Non-portable Health Insurance on Rural Labor Mobility. Management World, 2015(9): 82-91.