Impact of Income Shock on Health Care Utilization of Rural Residents in China - Evidence from Charls

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SUMMARY

- The purpose of this study is to explore the effect of New Rural Pension Scheme （NRPS） pension receipt on the utilization of health care services among rural enrollees.
- We explored the natural experiment of the NRPS policy rule in China where only those over 60 years old can receive pension. Regression discontinuity design method was used to explore the causal effect of pension receipt on the medical （drug） utilization.
- Without significant changes in health status and medication needs, pension receipt as an income shock significantly increases the probability of drug purchase among insured rural residents. However, there is no significant effect on the utilization of outpatient and inpatient care.
- Small regular income shocks effectively increase the probability of spontaneous drug purchase among insured rural residents, proving that low income remains an important constraint to the health management among rural residents.

INTRODUCTION

- The proportion of the elderly population has been rising rapidly, and the healthy aging has gradually become an urgent issue to be addressed in the "Health China 2030" strategy.
- Compared to urban residents, rural Chinese are less healthy, have poorer Self-motivated health awareness, and often delay the utilization of necessary medical resources.
- Most of the current articles studying health care resource utilization focus on inpatient and outpatient attendance and are primarily concerned with the impact of health insurance
- We used the China Health and Retirement Longitudinal Study (CHARLS) 2018 data to examine the impact of New Rural Pension Scheme (NRPS) on rural participants' medical service utilization, adopting a discontinuity regression design, because the policy requires that they can receive NRPS pensions only when they reach the age of 60.

METHODS

- Because the time receiving the pension varies by local government, the probability of having the pension at age 60 takes a jump (less than 100%, as in figure 1), thus, we adopted the Fuzzy Regression Discontinuity Design.

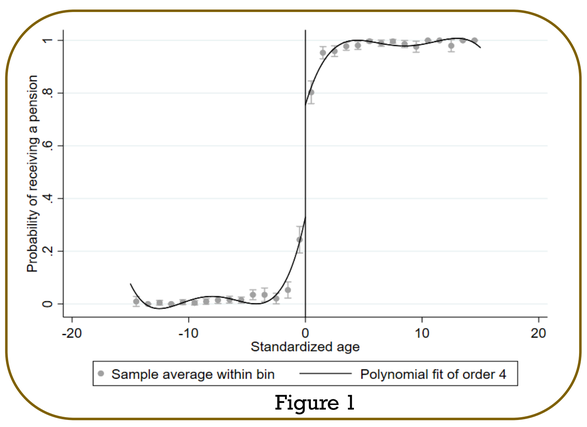

Figure 1

- In this paper, c(cutoff)=60, T indicates whether the individual is eligible for pension, if the respondent is older than 60 years old then T=1, and versa T=0; D represents whether the individual obtains pension, and if he obtains then D=1, and vice versa D=0; Y is the outcome variable, Y_1 is the outcome variable when the individual is assumed to receive pension; Y_0 is the outcome variable when the individual is actually receiving pension, Y can be expressed as:

$$Y = Y_1 D + Y_0 (1 - D) = Y_0 + (Y_1 - Y_0) D$$

- A nonparametric approach (Calonico et al., 2017a) was used to estimate the causal effects, and minimum mean square error was used to balance the representativeness and credibility approach to select the optimal bandwidth.
- Outcome variables included the probability of outpatient, inpatient visits and spontaneous drug purchases. The covariates include Gender, Marital Status, Education, Income, Self-rated health, Number of chronic diseases, Drug Requirements, Medical Insurance and Depression

RESULT

Table 1

	Panel A		Panel B		Panel C	
	First stage	Inpatient	First stage	Outpatient	First stage	Drug purchase
Pension	0.41956***	.09861	0.3582***	.11012	.30309***	.32909*
	0.04329	.08005	.04869	.10938	.05426	.18865
Bandwidth		3.379		2.739		2.299
Sample size		740； 1187		645； 891		556； 763

- Table 1 shows the results of the first stage of the regression and the outcome variables. The probability of outpatient and inpatient visits did not increase significantly after receiving the pension.
- The regression results also suggest a significant increase in the probability of spontaneous drug purchase after receiving the pension (as in figure 2).

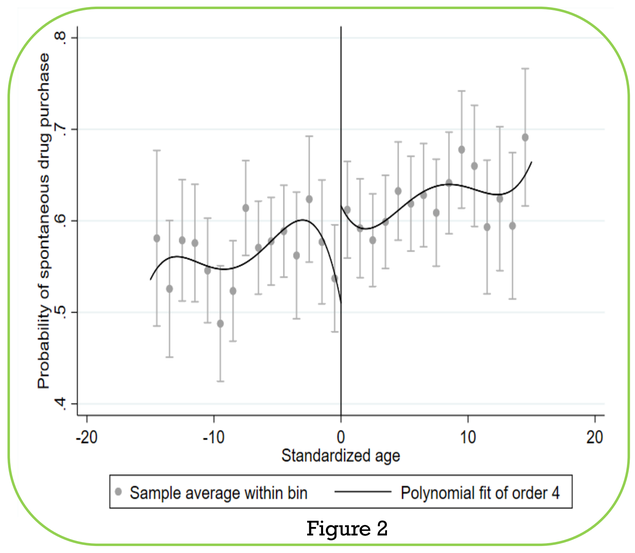

Figure 2

- Continuity check : As shown in Figure 3, all covariates do not change significantly around cutoff

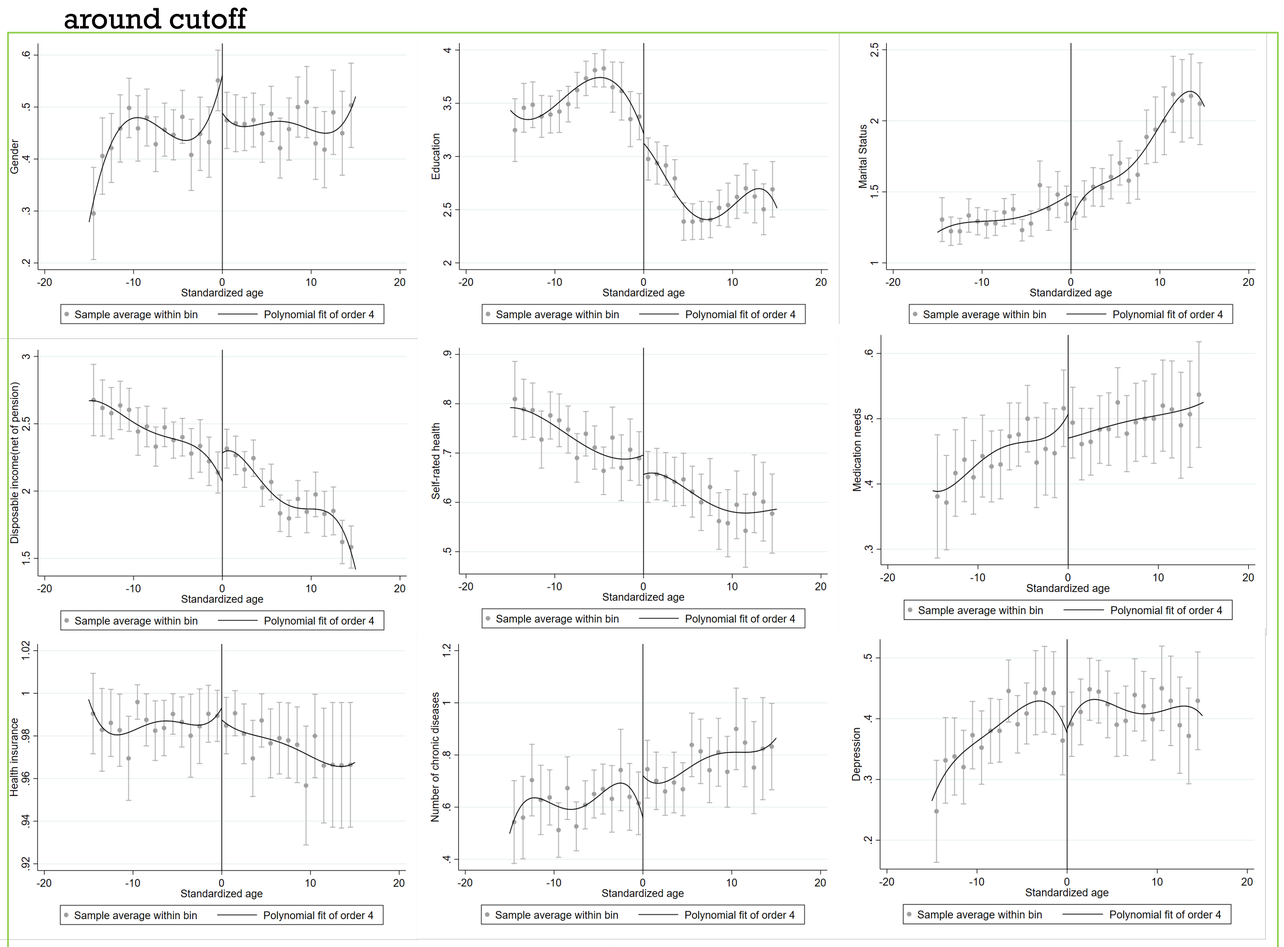

Figure 3

- In addition, using different bandwidths, placebo tests for pseudo-cutoffs, data Heaping and other methods all suggest that the results are robust.

DISCUSSION & CONCLUSION

- There was no significant deterioration in the physical or mental health of the respondents before and after receiving the pension
- We generated medication requirement based on the responses of chronic disease management and pain control in the CHARLS questionnaire, and there was no significant change around the cutoff.
- The probability of spontaneous drug purchase was significantly higher among respondents after receiving the pension, suggesting that income is still a constraining factor for rural residents in their health resource utilization and that subsidized income can improve rural residents' health behavior
- We conjectured that the regular, small amount of NPRS pension payments would just about cover the same regular, small drug expenditures, while having no significant effect on the unpredictable and more expensive cares like inpatient and outpatient.
- For rural residents, whose necessary and immediate medical and pharmaceutical needs remain suppressed, future research could explore the impact of the regularity and magnitude of income shocks on the use of medical resources

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