Older Worker Employment and Retirement Consumption Puzzle in Japan

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November 11, 2023

The 5th Fall Meeting of the Nippon Finance Association

This work was supported by JSPS KAKENHI (Grant Number 19131895)

The results of this study were compiled independently by the authors using information from the National Survey of Family Income and Expenditure, administered by the Statistics Bureau, Ministry of Internal Affairs and Communications in Japan.

Background

- Employment environments have recently changed significantly in Japan.
  - Senior workers are **continuing to work** even after attaining the mandatory retirement age.
  - **Partial retirement** has become more popular as part-time worker before full retirement.
- The traditional analysis of consumption behavior in relation to retirement in Japan should be revistied.

Background

- "Act on Stabilization of Employment of Elderly Persons" in 2006 was implemented in Japan.
- The aim of this law is to promote and extend employment until early 60's persons reach the public pension age. Companies are required to do one of the following:

  (1) raise the mandatory retirement age from 60 to 65 years,

  (2) introduce a continued employment system, or

  (3) abolish the mandatory retirement age.

Previous studies have found consumption drops after retirement

- Unanticipated shocks at retirement (Banks et al. 1998),
- Lower income replacement rates and behavioral explanations (Bernheim et al. 2001),
- The timing of retirement income (Stephens 2003),
- Unanticipated early retirement (Barrett and Brzozowski 2012; Smith 2006),
- Workers' expectations about retirement (Haider and Stephens 2007),
- Decline in family size after retirement (Battistin et al. 2009; Hori and Murata 2014; Wakabayashi 2008),
- Households with a low income and low retirement lump-sum payment (Stephens and Unayama 2012), and
- Deteriorating health (Hori and Murata 2014).

Many studies show results that are consistent with the LC-PIH (no-drop)

- Aguiar and Hurst (2005) found that households can maintain a smooth consumption by substituting time for expenditures.
- Aguila et al. (2011) found no significant decline in total non-durable consumption at retirement.
- Stephens and Unayama (2012) found no significant drop of non-durable and food consumption in a Japanese household with age 55–65.

Contribution of study

- We consider the case of **partial retirement** in which an individual continues to work as part-time or self-empolyment after reaching the mandatory retirement age until full retirement
  - This reflects a recent change in Japan's employment environment.
- We also considers the **endogenous nature retirement** decision by using the change of public pension eligibilities as instruments
  - The mandatory retirement age is no longer explaining the timing of retirement for most senior workers
  - Retirement should not be treated as exogenous variable.

Conclusion

- We find that partial retirement (part-time and self-employment) **positively impacts** non-durable, nonwork-related, and food expenditures.
- This increase is due to the **liquidity effects** of the retreatment lump-sum payment.
- Partial retirement **increases** the total savings, stock, and mutual fund investments while **decreasing** household income.
- These results are inconsistent with the life-cycle permanent income hypothesis and retirement consumption puzzle.
- The **liquidity effect** is pronounced for the liquidity-constrained households.

Data

- This paper use household micro data of the National Survey of Family Income and Expenditure by Ministry of Internal Affairs and Communications (MIAC) .
- The survey includes overall family structure and incomes, assets and expenditures, covering households with two or more members chosen from households nationwide in accordance with selection methods specified by the MIAC.
- This survey has been conducted every five years since 1959, recording average monthly expenditures from September to November.

Data

- The original number of respondents who answered surveys was 54,404 households in 2009 and 50,965 in 2014.
- We limit the respondents to those aged **55–70 male household** heads with two or more persons.

Regression with IVs (Fuzzy RDD Design)

- IV-Second

$$\ln \textit{Expenditure} = \alpha + \beta_1 \textit{Part\_time \& Self\_employment} + \beta_2 \textit{Retirement} + \theta \cdot Age + \gamma \cdot Z + \varepsilon$$

- IV-First

$$\textit{Part\_time \& self\_emplyment} = \alpha + \beta_3 \textit{EPA} + \beta_4 \textit{NPA} + \theta \cdot Age + \gamma \cdot Z + \varepsilon$$

$\textit{Retirement}$ is similar

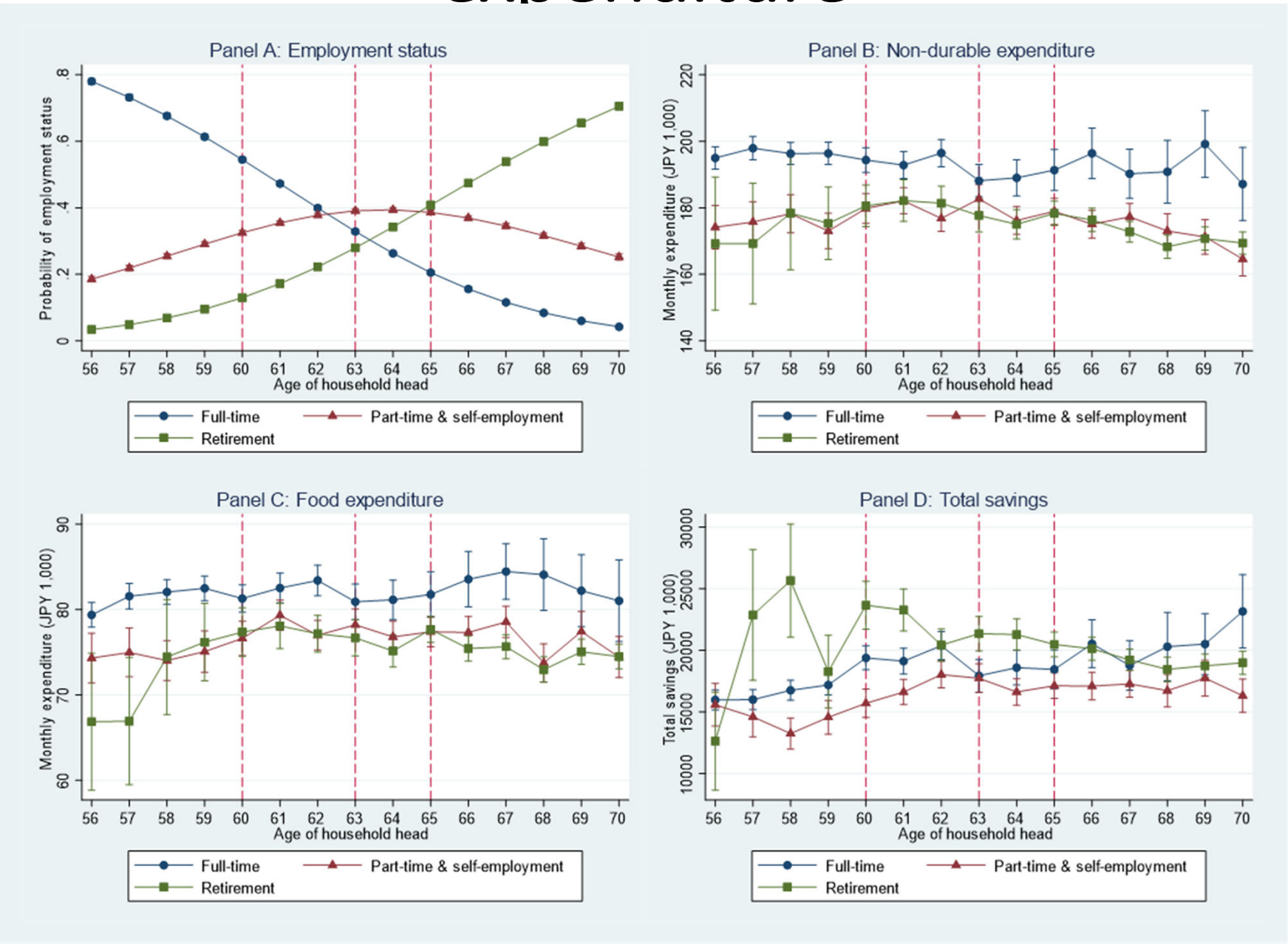
External variation for NPA according to sample year

	Year	
Age	2009	2014
56		
57		
58		
59		
60	**EPA,** Mandatory retirement age for many companies	**EPA,** Mandatory retirement age for many companies
61		
62		
63	**NPA**	
64		
65	Mandatory retirement age for some companies	**NPA**, Mandatory retirement age for some companies
66		
67		
68		
69		
70	**Latest pension age**	**Latest pension age**

Definition of Variable

- ***Retirement***
  - Full-time employment, part-time & self-employment, and full-retirement
- ***Expenditure***
  - Non-durable, work-related, non-word-related, food expenditure
- ***Other outcome***
  - Household income, total savings, and stock and mutual fund investments

Figure 1: Retirement-status and expenditure



Results for non-durable expenditure Endogeneity test is rejected: part-time and retirement are endogenous variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ln Non-durable expenditure						
	OLS	IV 2nd stage	OLS	IV 1st stage Part & self	IV 1st stage Retiremnt	IV 2nd stage	Difference = (6) - (3)
Part-time & self-employment			-0.089 ***			0.073 **	0.162 ***
Retirement	-0.031 ***	-0.026	-0.085 ***			0.029	0.114
Age	-0.005 ***	-0.005	-0.002 **	0.001	0.032 ***	-0.009 **	-0.007 **
Control variable	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EPA				0.194 ***	0.011		
NPA				0.185 ***	0.111 ***		
N	31,556	31,556	31,556	31,556	31,556	31,556	
F-value	226.07 ***	221.27 ***	242.48 ***			192.32 ***	
Kleibergen-Paap Wald rk F statistic		110.73 ***				55.23	
First-stage SW F-value				554.53 ***	114.64 ***		
Endogeneity test		0.00				21.45 ***	
Joint test for the differences							21.00 ***

	(2)	(5)	(8)	(11)	(14)	(17)
	ln Work-related expenditure	ln Non-work-related expenditure	ln food expenditure	ln Household income	ln Total savings	ln Stock and mutual fund
	IV	IV	IV	IV	IV	IV
	2nd stage	2nd stage	2nd stage	2nd stage	2nd stage	2nd stage
Part-time & self-employment	0.102	0.125 ***	0.108 ***	-0.863 ***	0.838 ***	0.972 ***
Retirement	0.093	0.037	-0.065	0.153	0.014	-0.075
Age and Control variable	Yes	Yes	Yes	Yes	Yes	Yes
N	31,675	31,595	31,567	31,345	28,449	7,397
F-value	252.23 ***	208.46 ***	205.88 ***	573.22 ***	57.77 ***	19.37 ***
Kleibergen-Paap Wald rk F	52.41 ***	58.87 ***	55.22 ***	71.57 ***	55.35 ***	15.21 ***
Endogeneity test	23.09 ***	31.43 ***	23.41 ***	294.50 ***	75.88 ***	13.80 ***

- Part-time & self-employment have **positive impact** on non-work-related, food expenditures, total savings, and stock investments.
- Part-time & self-employment have **negative impact** on household income.

Conclusion

- We find that partial retirement (part-time and self-employment) **positively impacts** non-durable, work-related, and food expenditures.
- This increase is due to the **liquidity effects** of the retreatment lump-sum payment.
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