Financial Literacy and Retirement Planning in Japan

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Why is financial literacy becoming an important issue in Japan?

1) Previous studies find that having a savings plan for retirement increases the level of wealth. However, many Japanese households cannot develop a plan due to the lack of financial literacy.

■ The Hartford's International Retirement Survey

・82% have no plan for retirement.

(the highest percentage among 9 countries)

・28% are not confident in their knowledge and ability with financial planning at all.

(the highest percentage among 9 countries)

Why is financial literacy becoming an important issue in Japan? (cont'd)

2) Many people purchase risky assets they do not know adequately.

■ The Survey on the Defined Contribution Pension 2007

43% of Japanese households who participated in defined contribution pension do not know how their contributions are allocated.

⇒ They might be more likely to suffer wealth loss than people who are well equipped with knowledge about risky assets.

The objectives of my paper

1. Provide an overview of the level of financial literacy in Japan, analyze the determinants of financial literacy and link financial literacy to retirement planning.

2. Focus on the effect of savings promotion activities in schools (children's banks) on retirement planning.

3. Deal with endogeneity problem of financial literacy using instrumental variable approach.

SLPS

- ■ "Survey of Living Preferences and Satisfaction" 2009

- Representative panel survey of Japanese households

- Conducted annually since 2003 by Osaka University.

- Male and female aged 20-69

- Two-stage stratified random sampling

- Paper and pencil format

- Response rate is 88%
  (gift certificates: 1,500 yen (=14 euro))

- The number of observation is 5266

Measuring financial literacy 1

Interest Compounding

"Suppose you had 10,000 yen in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?"

(i)More than 10,200 yen; (ii) Exactly 10,200 yen;

(iii) Less than 10,200 yen; (iv) Do not know;

(v) Refuse to answer.

Measuring financial literacy 2

Interest and Inflation

"Suppose that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy with the money in this account?"

(i) More than today; (ii) Exactly the same; (iii) Less than today; (iv) do not know; (v) refuse to answer

Measuring financial literacy 3

Risk Diversification

"Do you think that the following statement is true? Buying a single company stock usually provides a safer return than a stock mutual fund."

(i) True; (ii) False; (iii) Do not know; (iv) Refuse to answer

Interest

	Japan (frequency)	Japan (%)	U.S. (%)	Netherland (%)
more than 10,200 yen	3,711	70.5	69.0	76.2
exactly 10,200 yen	314	6.0	29.1	19.6
less than 10,200 yen	495	9.4		
do not know	746	14.2	1.9	4.2
total	5,266	100.0	100.0	100.0

Note: The results for Japan is based on the SLPS 2009.

The results for the U.S. and Netherland are obtained from Lusardi and Mitchell (2009, Table 1A and 2A) and Van Rooij, Lusardi, and Alessie (2007, Table 1A and 2A), respectively.

Inflation

	Japan (frequency)	Japan (%)	U.S. (%)	Netherland (%)
more	303	5.8	8.8	8.6
exactly the same	262	5.0		
less	3,100	58.9	87.1	82.6
do not know	1,601	30.4	4.2	8.8
total	5,266	100.0	100.0	100.0

Note: The results for Japan is based on the SLPS 2009.

The results for the U.S. and Netherland are obtained from Lusardi and Mitchell (2009, Table 1A and 2A) and Van Rooij, Lusardi, and Alessie (2007, Table 1A and 2A), respectively.

Risk Diversification

	Japan (frequency)	Japan (%)	U.S. (%)	Netherland (%)
"right"	145	2.8	4.0	24.8
"false"	2,080	39.5	71.4	48.2
do not know	3,041	57.7	24.5	27.0
total	5,266	100.0	100.0	100.0

Note: The results for Japan is based on the SLPS 2009.

The results for the U.S. and Netherland are obtained from Lusardi and Mitchell (2009, Table 1A and 2A) and Van Rooij, Lusardi, and Alessie (2007, Table 1A and 2A), respectively.

Planning 1

"Do you have a savings plan for after the household head retires? (If the household head has already retired, do you have a savings plan for the future?)"

(i) I have a specific plan (5%)

(ii) I have a rough plan (34%)

(iii) I do not have a plan now, but I am going to make a plan in the future (40%)

(iv) I do not have a plan now, and I am not going to make a plan in the future (21%)

Planning 2

"How much have you thought about retirement?"

(i) A lot (12%)
(ii) Some (41%)
(iii) A little (34%)
(iv) Hardly at all (13%)

Estimation Model

Planning =a+b(Financial Literacy)

+c(Children's Banks)

+d(Household Characteristics)+u

☐Planning: Planning 1, Planning 2

☐Financial Literacy: 3 correct, No. of correct answers

☐Children's banks

☐Household Characteristics: gender, decision makers, the number of children, age, educational level, and household income.

Children's Banks

- Children's banks are the systems in which students can deposit and withdraw money to/from financial institutions through schools.

- Interest incomes on the money deposited through children's banks are tax exempt.

"When you were elementary school students, was there a children's bank in your school?"

Yes / No / don't know

OLS Results

	Planning 1		Planning 2	
financial literacy: 3 correct (d)	0.0856***		0.0475***	
	(0.0175)		(0.0169)	
financial literacy: 0 to 3 correct		0.0494***		0.0281***
		(0.0067)		(0.0074)
children's banks (d)	0.0551***	0.0531***	0.0433**	0.0421**
	(0.0145)	(0.0148)	(0.0176)	(0.0177)

Endogeneity Problem

- Household may learn and improve their knowledge via developing a savings plan and thinking about retirement.

- Ameriks et al (2003) use respondents' mathematical skills as an IV for the propensity to plan

- I use respondents' Japanese level as an IV for financial literacy because respondents have to know the meaning of words in the financial literacy questions and comprehend the sentences in the financial literacy task.

IV 1: Respondents' Japanese Level

● Individuals with a higher level of Japanese reveal a higher level of financial literacy than those with a lower level of Japanese.

"When you were fifteen years old where did your grades in Japanese rank among others in your grade?" (i) in lower rank; (ii) in rather lower rank; (iii) in the middle; (iv) in rather higher rank; (v) in higher rank

I define the individual levels of Japanese on the 0-4 scale from "in the lower rank" to "in higher rank."

IV 2: The Interaction Term Between the Individual and Regional Level of Japanese Skills

● The effect of Japanese skills on the level of financial literacy is magnified by Japanese skills of people living in the same prefecture in which respondents live.

Average Japanese score by prefecture obtained from

"Nationwide Academic Achievement Exams" 2010

Determinants of Financial Literacy

	3 correct	0 to 3 correct
respondents' grades of Japanese	0.1443***	0.3947***
	(0.0205)	(0.0376)
respondents' grades of Japanese*prefectural average score of Japanese	0.0010***	0.0028***
	(0.0002)	(0.0004)
observations	5266	5266

F-values of the excluded instruments are 27 (Prob>F=0.0000) and 58 (Prob>F=0.0000), respectively.

Determinants of Financial Literacy (cont'd)

	3 correct	0 to 3 correct
children's banks (d)	-0.0032	0.0276
	(0.0191)	(0.0436)
male (d)	0.1398***	0.3642***
	(0.0159)	(0.0320)
age: 35 and younger (d)	-0.1162***	-0.3384***
	(0.0146)	(0.0394)
age: 36-50 (d)	ref.	ref.
age: 51-65 (d)	0.0660***	0.2093***
	(0.0137)	(0.0317)
age: 66 and older (d)	0.0900***	0.2094***
	(0.0208)	(0.0543)
lower secondary education (d)	-0.1070***	-0.4406***
	(0.0235)	(0.0536)
upper secondary education (d)	ref.	ref.
tertiary education (d)	0.0820***	0.2300***
	(0.0131)	(0.0298)
income: 1st quartile	ref.	ref.
income: 2nd quartile	0.0554***	0.2223***
	(0.0194)	(0.0386)
income: 3rd quartile	0.0674***	0.2609***
	(0.0141)	(0.0335)
income: 4th quartile	0.1491***	0.4204***
	(0.0192)	(0.0434)

GMM Results

	planning 1		*planning2*	
financial literacy: 3 correct (d)	0.5294***		0.7102***	
	(0.1389)		(0.1225)	
financial literacy: 0 to 3 correct		0.1911***		0.2545***
		(0.0538)		(0.0439)
children's banks (d)	0.0564***	0.0481***	0.0467***	0.0355*
	(0.0165)	(0.0175)	(0.0177)	(0.0183)

✓ Hansen's J statistics=0.6844 (p=0.4081) in sp. 1
                       0.5264 (p=0.4681) in sp. 2
✓ Exogeneity of financial literacy was rejected at 1% significance level in any specifications.

Conclusions

- The level of financial literacy of Japanese households is lower than that of U.S. and Dutch households.

- The young, female, and individuals with low education and with low income exhibit a lower level of financial literacy.

- Financial literacy and children's banks increase the propensity to plan for retirement and to think about retirement.