RIETI-JER Workshop

Economics of Aging in Japan and other Societies

Presentation

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Who are Protected in the Public Assistance Act?
Empirical Evidence from JSTAR

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Last Resort?

- Public Assistance Program guarantees the national minimum standard of living based upon the right to life in the Constitution of Japan.

- In spite of high poverty rate,
  - the capture rate: 29.6% - 15.3% (MHLW)

  - the protection rate: 32.1‰ (MHLW)

- Research Question:
 Who could be protected under the Public Assistance Program?

Related Research

- Most study by economists have focused on relationship between labour force participation rate and the program
  - eg. Schoeni and Blank (2000) , McKernan et al.(2000), Neumark and Powers(2005), Ohtake and Tamada(2004)
  - Almost study on the Public Assistance System in Japan uses cross-section or panel data aggregated in local government or administrative unit under the limited circumstance for data access.
- Our research question is unique because of the differences in entitlement situation between the US, Europe and Japan.

Outline of The Program

- If income is below the Minimum Standard of Living prescribed by Minister of Welfare, Japanese citizens can receive the difference between the income and the living standard

- The amount of the Minimum Living Standard is calculated in consideration of the recipients' age, sex, household composition, inhabited area, and so on.

Calculation Method of the Benefit (Yen per month)
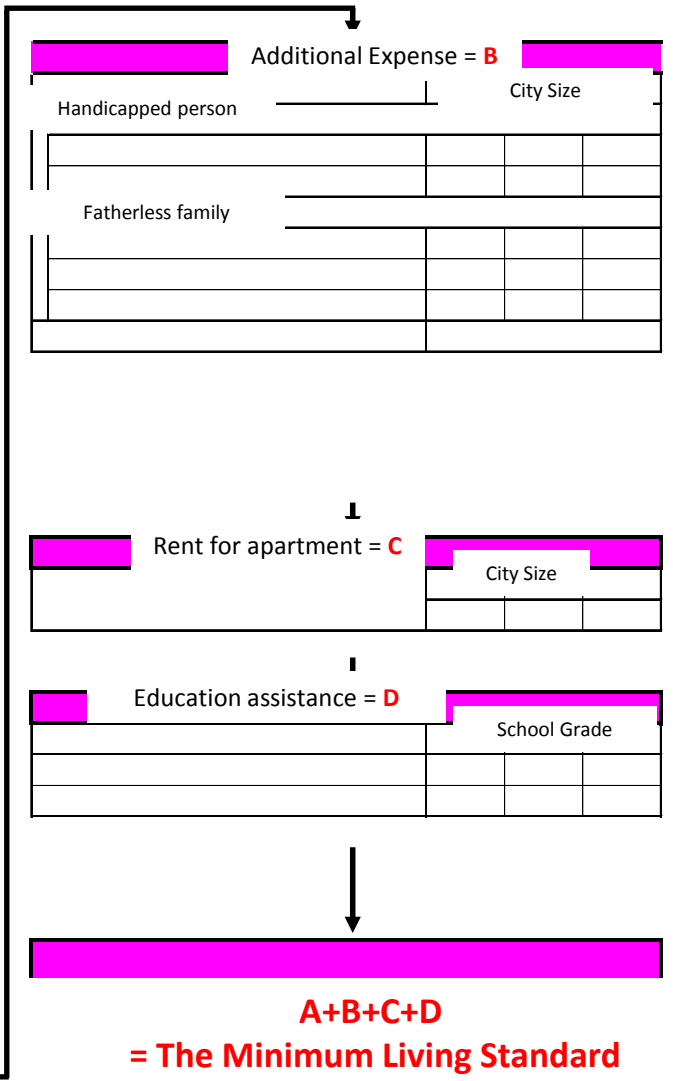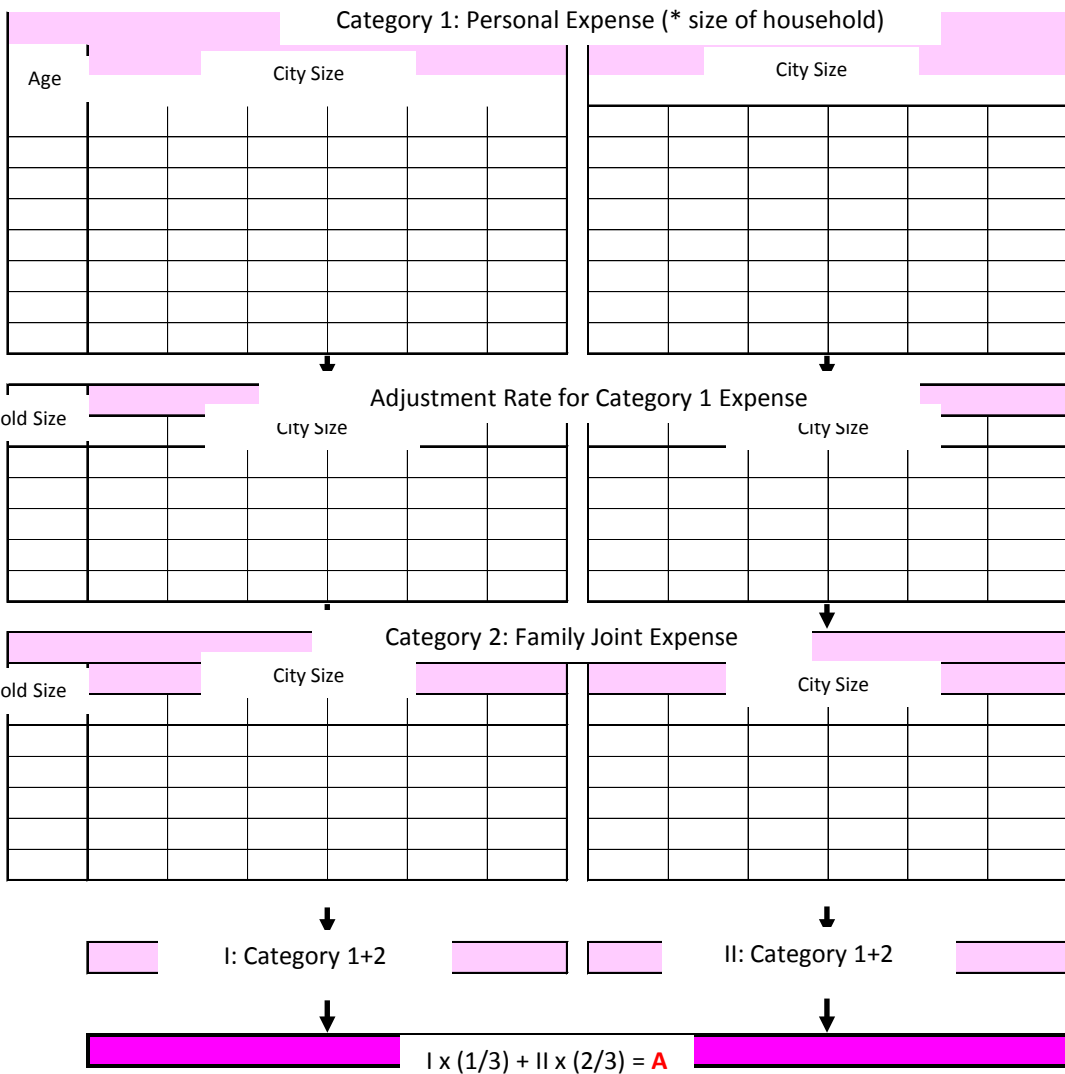
In addition to this, expense for medical service, long-term care, childbirth, vocational training, and funeral is paid from the program.

Requirement for the Benefit

- Utilization of working abilities
  - A Capacity and Will to Work
- Utilization of assets
  - Real properties shall be sold in principle
  - Cars shall be sold in principle
  - Deposits and savings shall be considered income in principle
- Precedence of dependent family support
  - Welfare office requires money sent by a person who is responsible for dependent family members to a person requiring the benefit.

Finance and Management

- Local governments are responsible for public assistance management.
 - Local governments set up welfare offices and assign a caseworker to each recipient household.
- 75% of the expenditures for the public assistance are financed by the central government and 25% by the local governments.
- (In theory) almost burden of the local government also are subsidized from the central government through the local tax allocation system.

Trend of the Benefit (billion yen)

nce   Funeral Assistance   Total Cost(Right Axis)

Data source: IPSS

8
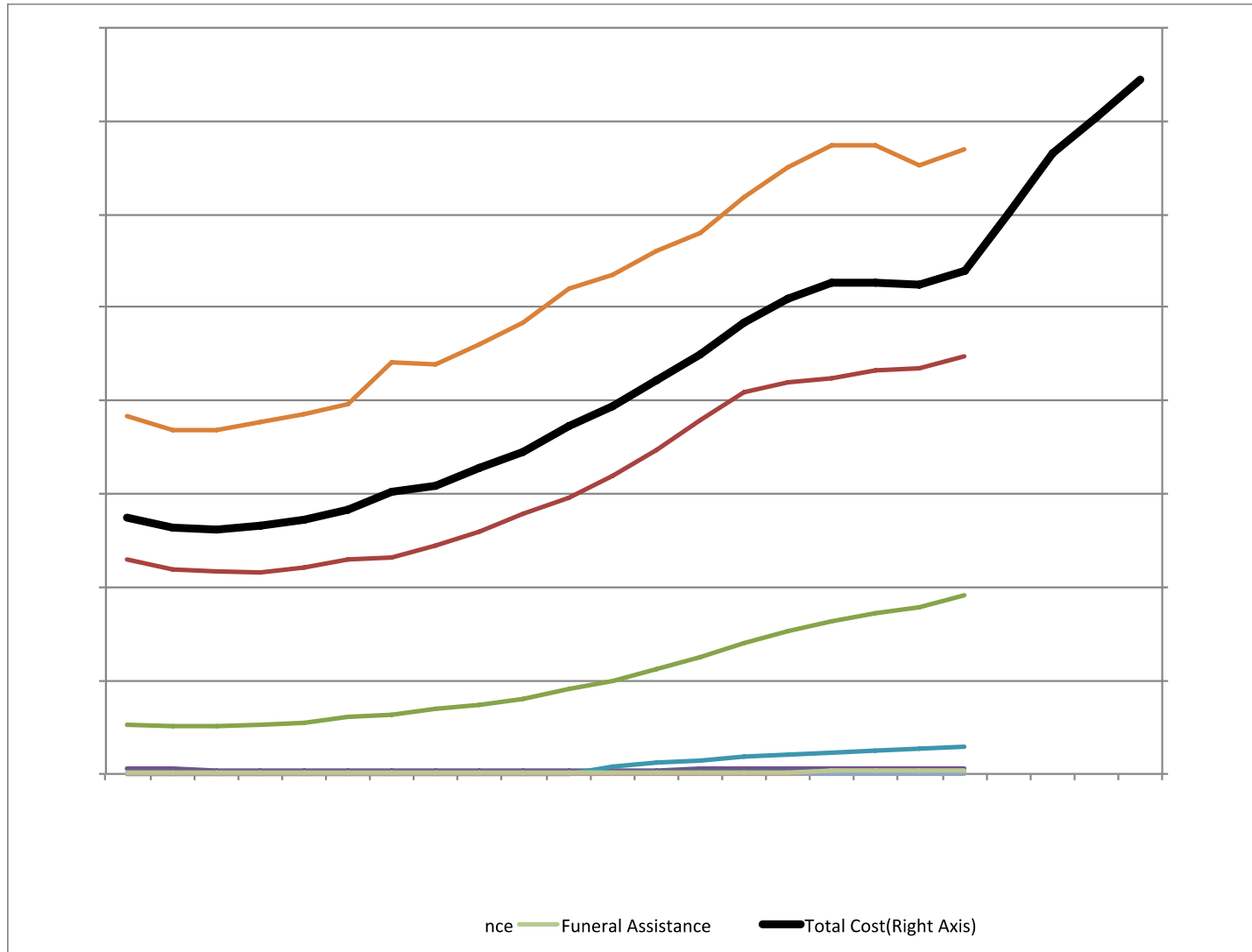
The Beneficiary Type of the Program
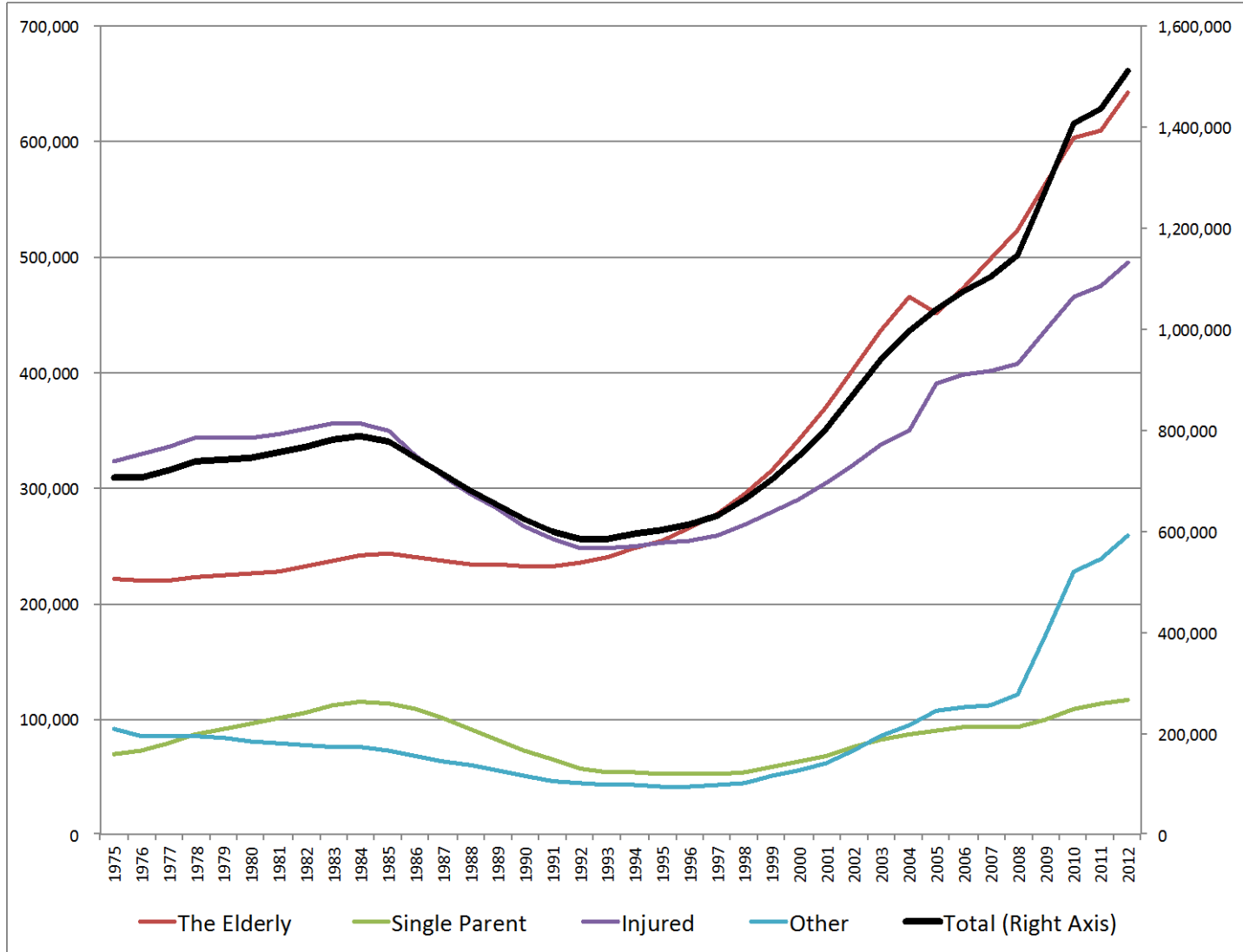
Data source: IPSS

"Defense Operation at the Border Line"

- Social workers of Welfare Office usually give "ADVICE" for applicant to the program, especially for young, and relatively young applicants who may have a capacity to work.
  - "Defense Operation" of Welfare Office
- If the welfare office accepts the application and If the applicant satisfy the condition, the local government must pay the benefit.
  - Hayashi (2010) pointed out that subsidies from the central government are insufficient to finance the program, especially for urban areas
  - Subsidies from the central government go to the general account of the local government, not the special account for welfare program.
- Although the existence of this operation is reported in some news media, it is not confirm in empirical studies, especially microeconometric studies

Main Determinants of the Benefit
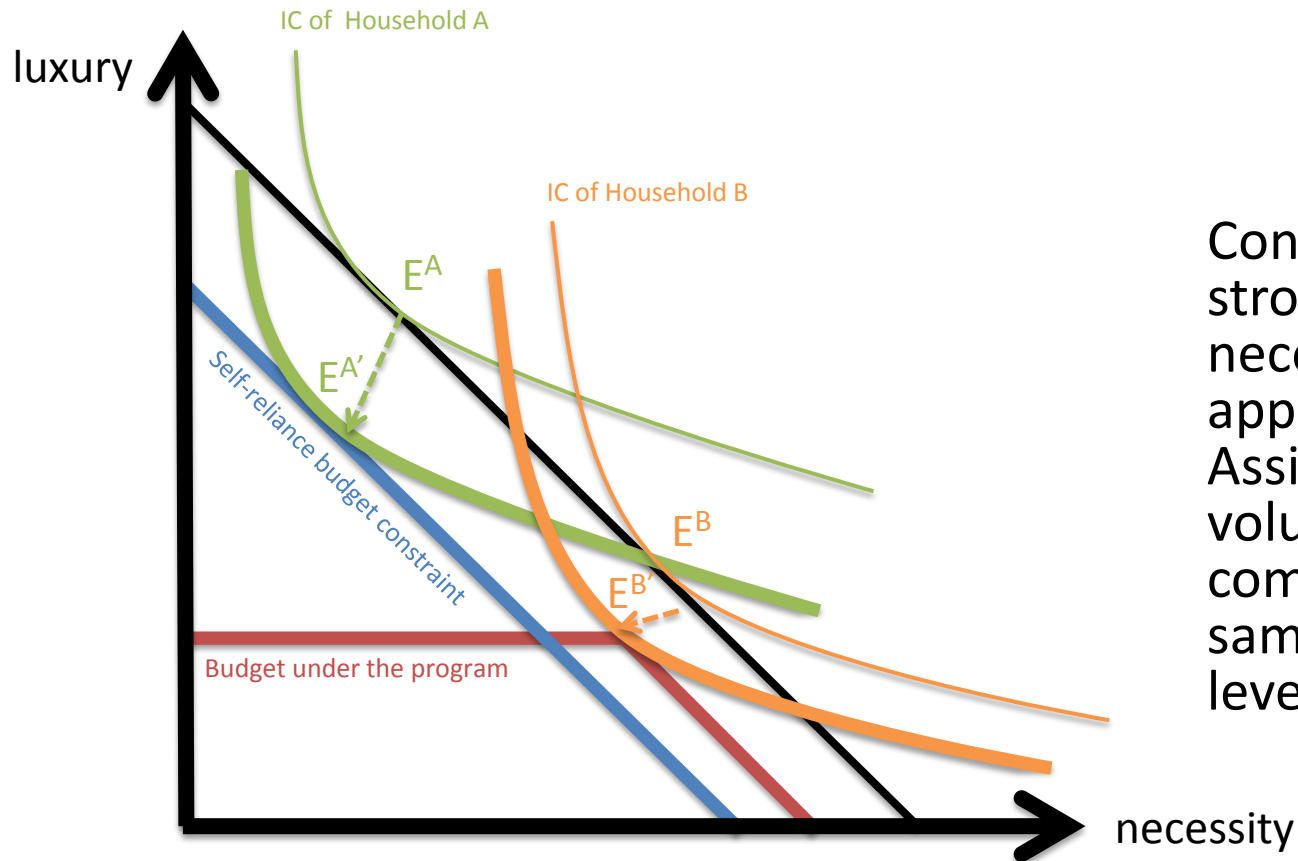
- Eligibility for Application
  - Income below the Minimum Living Standard
  - Insufficient pension benefit for the elderly
  - Small amount of assets
- Capability to work
  - Gender
  - Education
  - Health condition
- Family support
  - Residence
  - Transfer
- Strained budget constraint of local government
  - Debt payment ratio of the general account of the local government

Health Condition

- Endogeneity of the subjective health evaluation
  - Some respondent may report the bad condition to affirm that they receive the benefit.
- Subjective health report in 5 degrees (1.very good, 2. good, 3. ordinary, 4. bad, 5.very bad)
- CES-D flag (cut off line of CES-D score is 16) and physical condition
  - IADL score
  - Number of main diseases in the past
  - Number of three major disease for Japanese and chronic illness, experience of fracture of the femur.

Rational Choice for the Program

luxury

IC of Household A

IC of Household B

E^A

$E^{A'}$

Self-reliance budget constraint

E^B

$E^{B'}$

Budget under the program

necessity

Consumer who has strong preference for necessity is tending to apply for the Public Assistance Program voluntarily in comparison among same consumption level households.

Preference for a Necessity

- We regard "food expenditure" as a proxy of an expenditure on a necessity.

- Thus, we define that a proportion of food expenditure over total expenditure as a proportion of a necessity over expenditure.

- Divided all households into quintile with their expenditure by age group for avoiding aging and Engel curve bias

$$food\_ratio_{i,t} = \frac{\dfrac{food_{i,t}}{other\_expenditure_{i,t}}}{\dfrac{food_{q,age,t}}{other\_expenditure_{q,age,t}}}$$

Irrational Choice for the Program

- Preference for addiction goods
  - Daily alcoholic drinking (5 days over per week)
  - The habit of smoking

Subjective Value of Social Security

- Question:
  Who do you think should be responsible for assuring the livelihood of the elderly? Should such responsibility be borne by individuals and families or rest with the national and/or relevant local government(s)?
  - 3. Probably or 4. Definitely, the natiolnal/local government(s)–>1

Estimation (Preparation)

- JSTAR contains the information of the beneficiary of the Public Assistance Program
  - Q: Type of Public Medical Insurance
- Sample is limited only for respondent who has eligibility for the program.
  - Income<Minimum Living Standard
  - Financial Assets < 0.5*expenditure(per year)

Estimation (1) Panel Logit

- Estimation model

$$Welfare_{i,t} = \alpha_{i,t} + \beta_{i,t} x_{i,t} + \gamma_{i,t} h_{i,t} + \nu_{i,t} f_{i,t} + \phi_{i,t} g_{i,t} + \delta_{i,t} p_{i,t} + \varepsilon_{i,t}$$

Welfare=1 if i is the beneficiary of the program
x: attributes of respondent(sex, education, residence, pension benefit)
h: health condition
f: attributes of family(transfer, child's education)
g: local government's debt payment ratio
p: preference for necessity, addiction goods, and social security

Estimation Result (1) Panel Logit

	Odds ratio	SE	Odds ratio	SE	Odds ratio	SE	Odds ratio	SE
Female Dummy	0.298	0.252	0.32	0.251	0.341	0.256	0.244*	0.204

Estimation (2) Pooled Logit
Change in the recipient status

- Focus on the determinants of newly recipient

- Limited sample with respondents who did not receive the benefit in 2007 or 2009

- Regression on the explanatory variables with lag

Transition of receipt status

		receipt status in 2009		total
		0	1	
receipt status in 2007	0	3,924 99.82%	7 0.18%	3,931 100%
	1	1 5.56%	17 94.44%	18 100%
total		3,925 99.39%	24 0.61%	3,949 100%

		receipt status in 2011		total
		0	1	
receipt status in 2009	0	5,357 99.80%	11 0.20%	5,368 100%
	1	11 16.18%	57 83.82%	68 100%
total		5,368 98.75%	68 1.25%	5,436 100%

Estimation Result (2) Pooled Logit

	Odds ratio	SE	Odds ratio	SE	Odds ratio	SE	Odds ratio	SE
Female Dummy	0.634	0.303	0.815	0.419	0.767	0.386	0.649	0.338

Estimation (3)
Probit with sample selection

- Pooled data with newly recipients, but not limited with eligibility.

- The recipient is observed only when the eligibility is approved. In this sense, the model structure is the two-equation model with sample selection (Heckman Probit).

$$eligibility_i = \begin{cases} 1 & if\ eligibility_i^* > 0 \\ 0 & if\ eligibility_i^* \leq 0 \end{cases}$$

$$eligibility_i = x_1' \beta_1 + \varepsilon_1$$

$$welfare_i = \begin{cases} 1 & if\ eligibility_i^* > 0 \\ 0 & if\ eligibility_i^* \leq 0 \end{cases}$$

$$welfare_i = x_2' \beta_2 + \varepsilon_2$$

Estimation Result (3-1)
Heckman Probit

	1							
	Coef	SE	Coef	SE	Coef	SE	Coef	SE

, ** p<0.05, * p<0.1

Estimation Result (3-1)
Heckman Probit

	Coef	SE	Coef	SE	Coef	SE	Coef	SE
Constant			-0.367***	0.0935			3 -0.377***	0.0938

Conclusion

- "Defense Operation at the Border Line" may affects the probability of receipt.

- Significant effect of mental health

- Some applicants make a rational choice for the program

- Residential type affects the probability of receipt.

Thank you for your attention