Retirement Process and Social Security in Japan
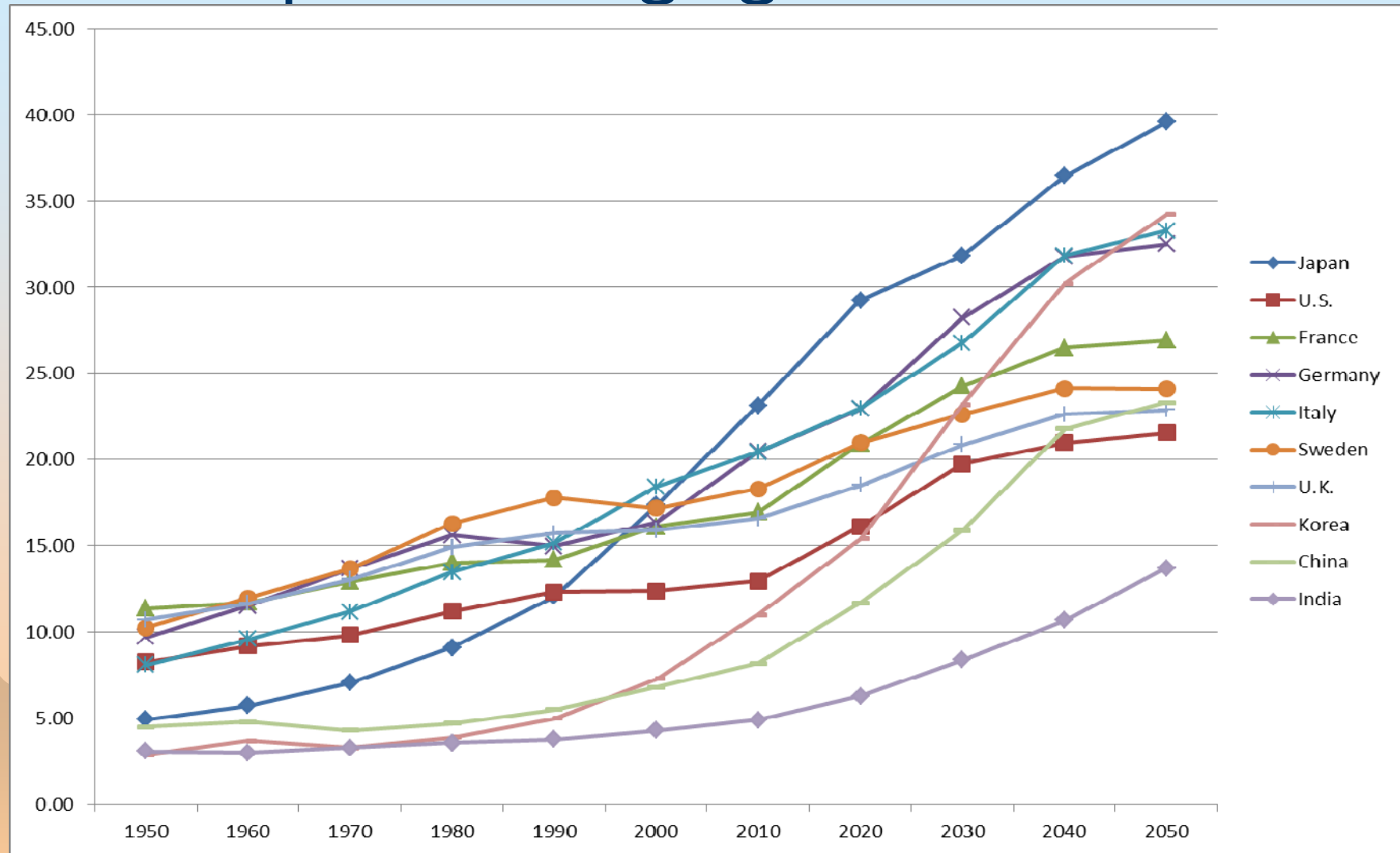
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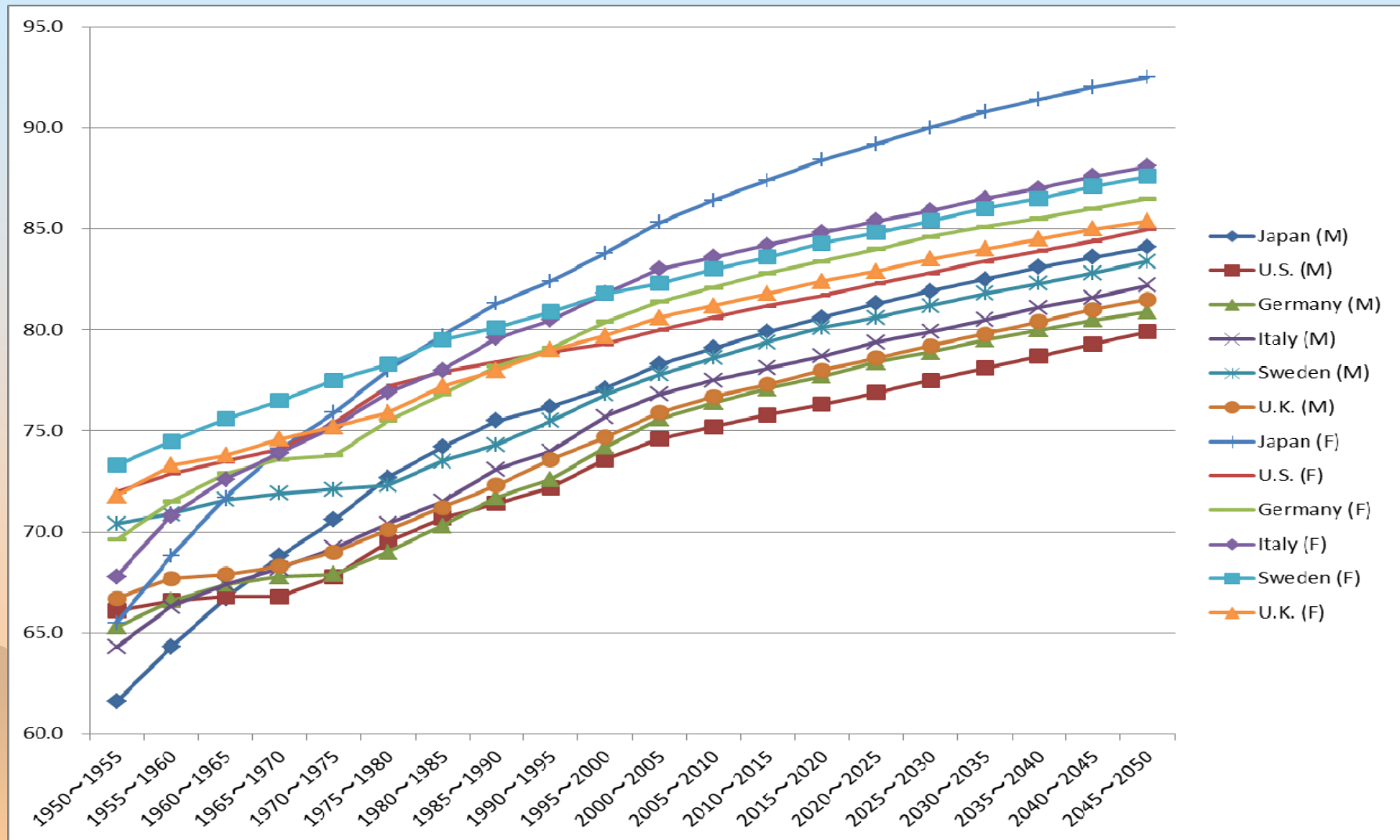
Population Aging in the World
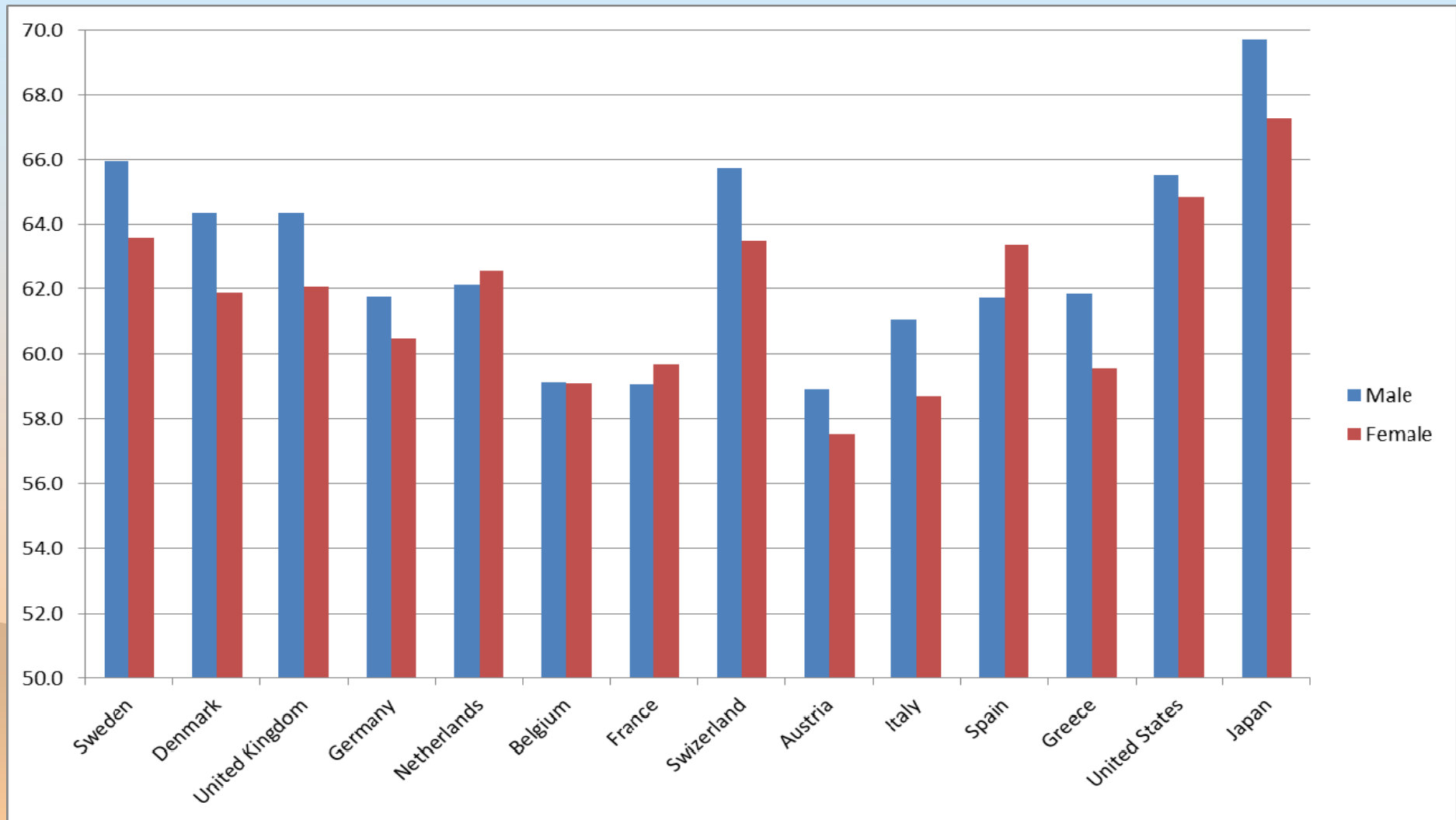

Source: United Nations *Population Prospects*.

Life Expectancy at birth

Legend:
- Japan (M)
- U.S. (M)
- Germany (M)
- Italy (M)
- Sweden (M)
- U.K. (M)
- Japan (F)
- U.S. (F)
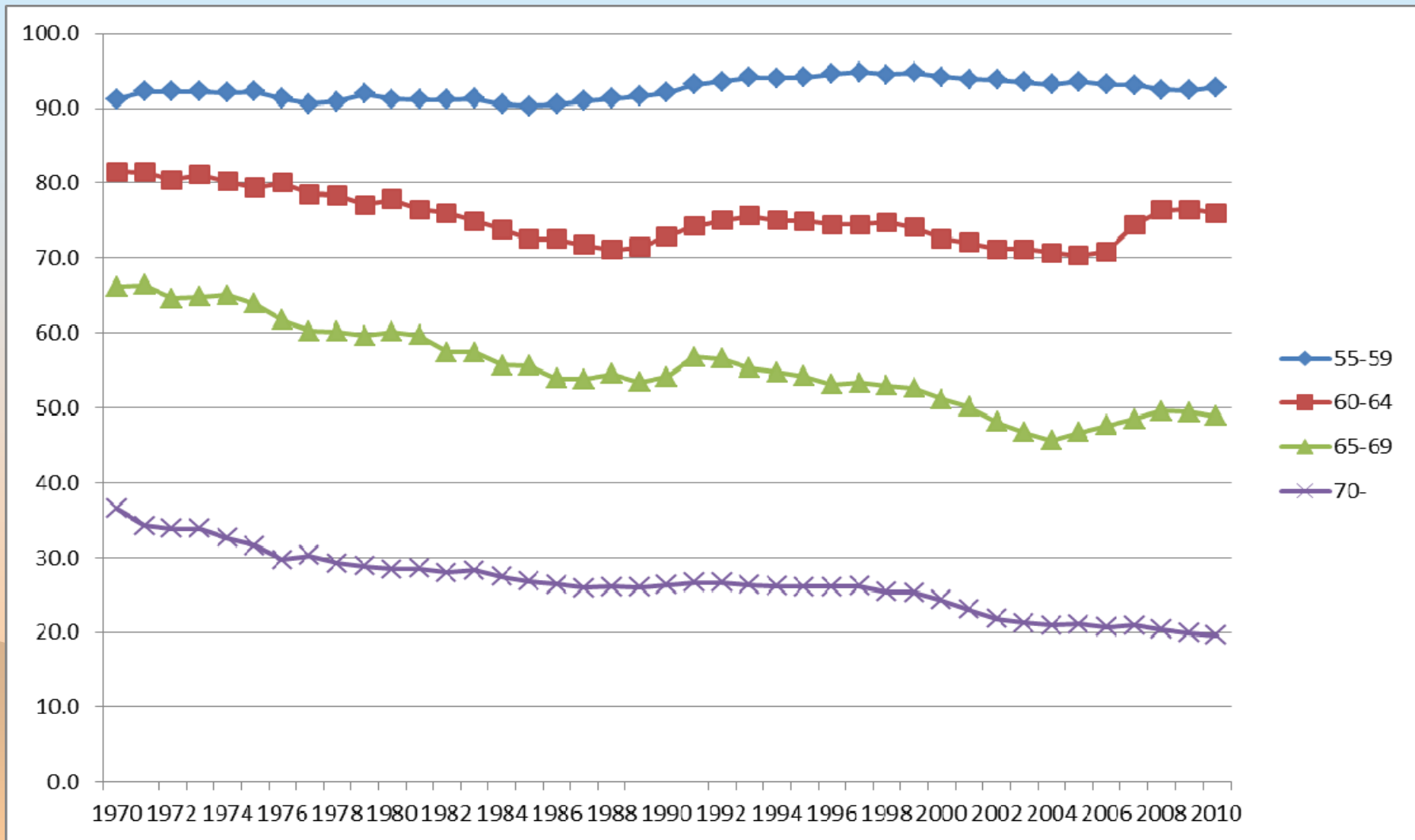- Germany (F)
- Italy (F)
- Sweden (F)
- U.K. (F)

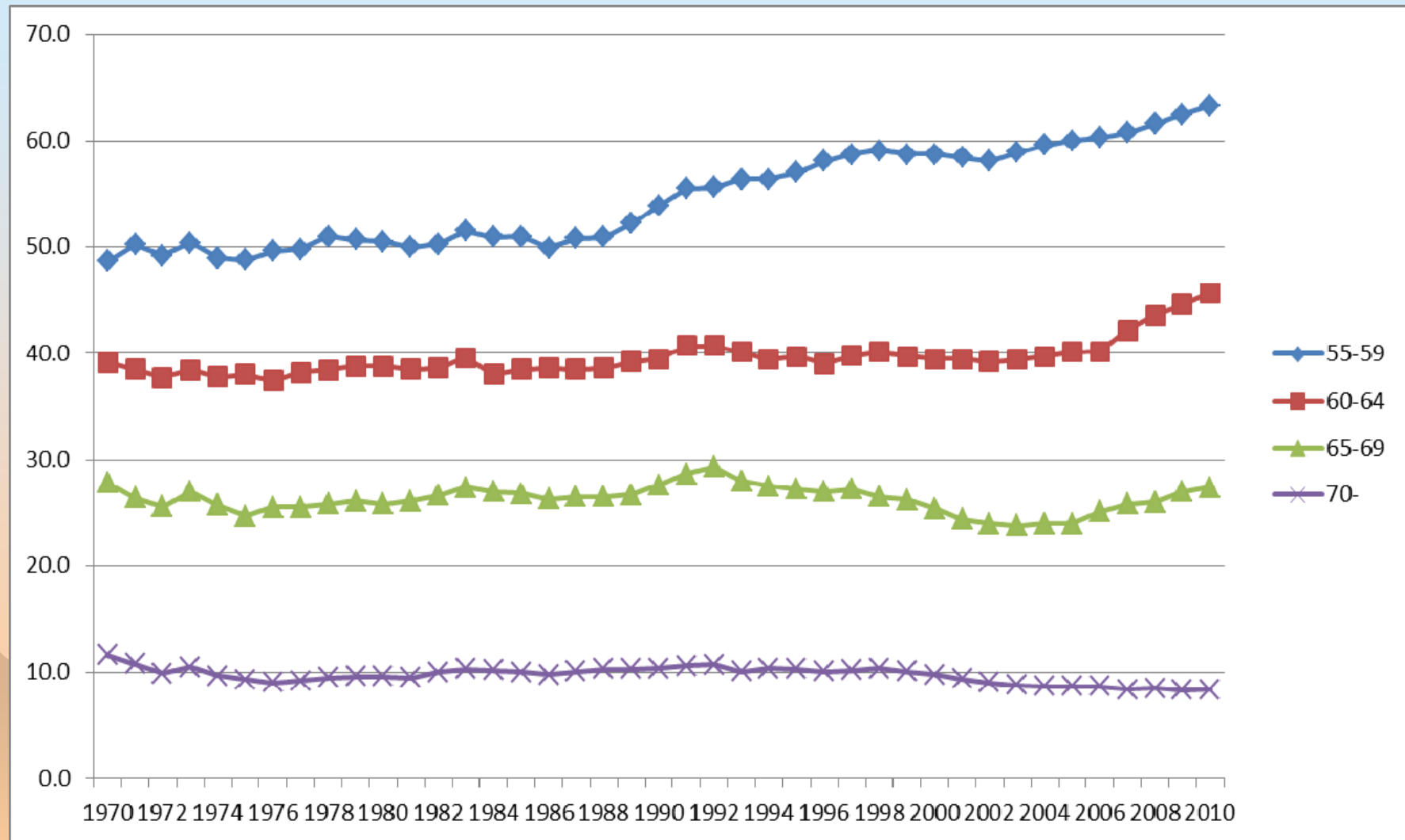# Average Effective Retirement Age

Source: OECD (2010)

Labor force Participation （Male）

Source: Ministry of Internal Affairs and Communications "Labor Force Survey"
(various years) and JILPT.

Labor force Participation (Female)

Source: Ministry of Internal Affairs and Communications "Labor Force Survey" (various years) and JILPT.

Macro Observations in Japan

- <u>Unprecedented speed of population aging:</u> the share of 65+ exceeded 20% in 2005 and will be 30% in 2025 and 40% in 2050.

- <u>Long life expectancy at birth</u>: 79.6 to 84.1 (male, fourth in the world) & 86.4 to 92.5 (female, top in the world) between 2010 and 2045–2050.

- <u>Late retirement</u>: retirement age belongs to the highest group both sexes.

- <u>LFP in old age</u>: High for male but declining in 65+, modest for female but increasing 55–59 and 60–64.
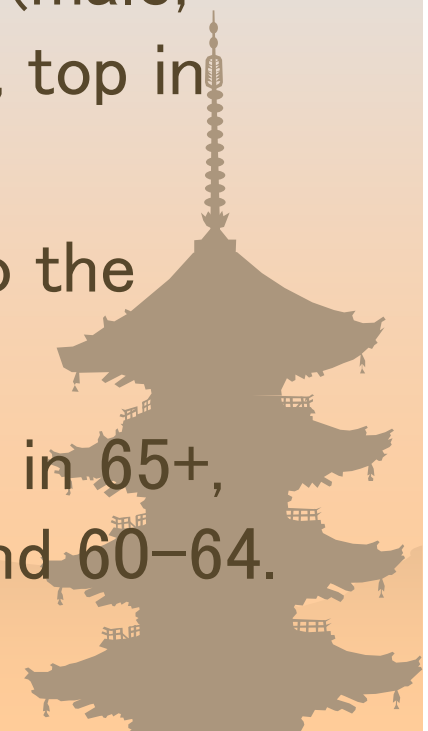
Micro observations

❀ <u>Next question to be explored</u>: individual decision making in retirement focusing on policy effects.

❀ <u>Diversity and incentive mechanism</u> (i.e., social security and labor supply) to lead policy implication in the real world.

❀ However, large scale, longitudinal and interdisciplinary data has been scarce in Japan.

❀ <u>JSTAR is the first "world standard" data</u> that is publicly available and contributes to empirical foundation of policy making.

Three features of retirement

1. "Retirement" depends on definition. Several measures should be considered (Lazear (1986), Lumsdaine and Mitchell (1999). Indeed, there are some gaps across measures (Banks and Smith (2006) for U.K., Shimizutani (2011) for Japan).

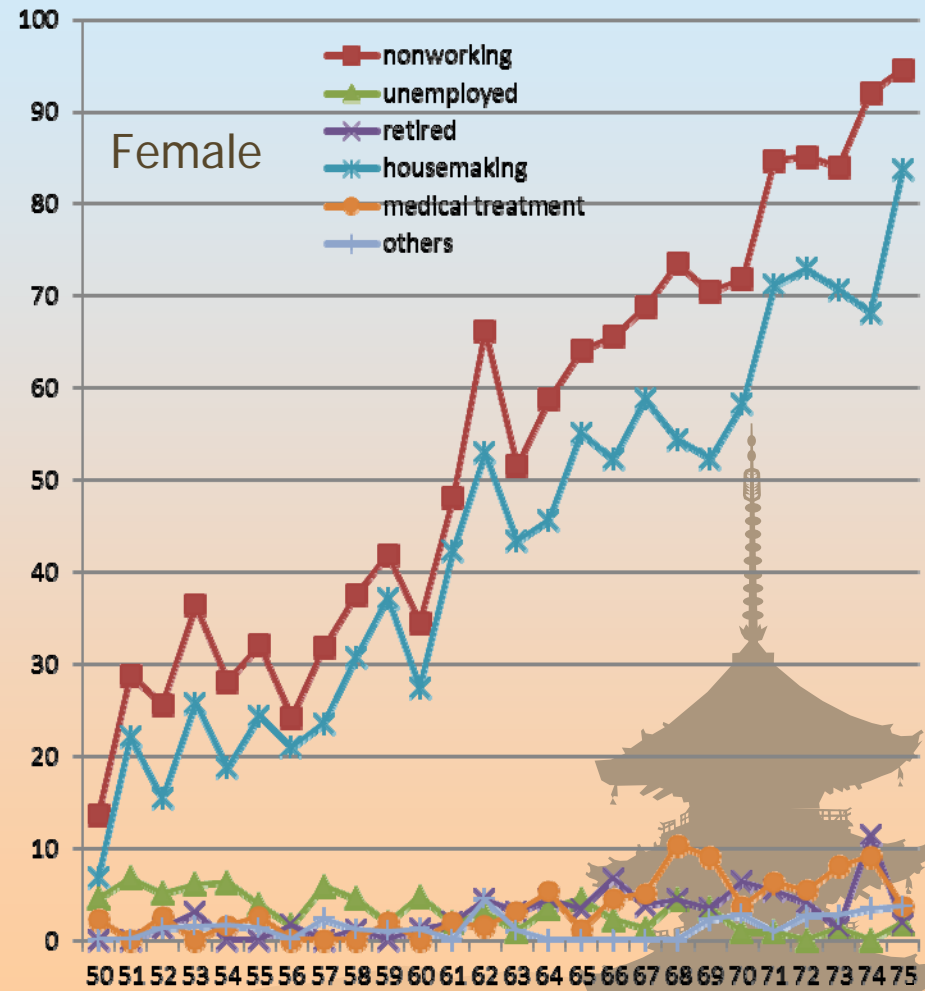2. Retirement may be a gradual process, not a sudden exit from labor force and not be an absorbing state.

3. Retirement may be a joint decision of a couple.

Those issues will be examined by JSTAR data.

Working status in JSTAR

Male

Female
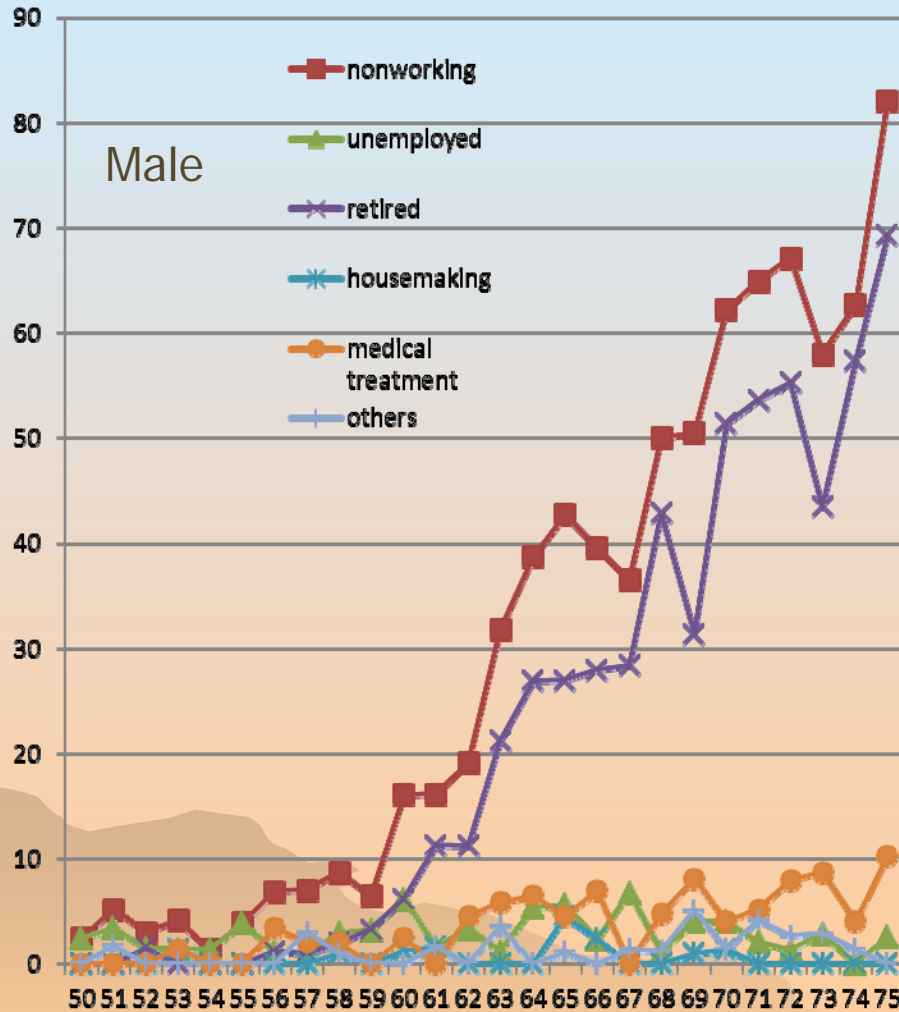
Ichimura and Shimizutani (2011) using JSTAR 1st wave.

Retirement age in JSTAR

Ichimura and Shimizutani (2011) using JSTAR 1st wave. Respondents who has already retired only.

Expected retirement age

Male

Female
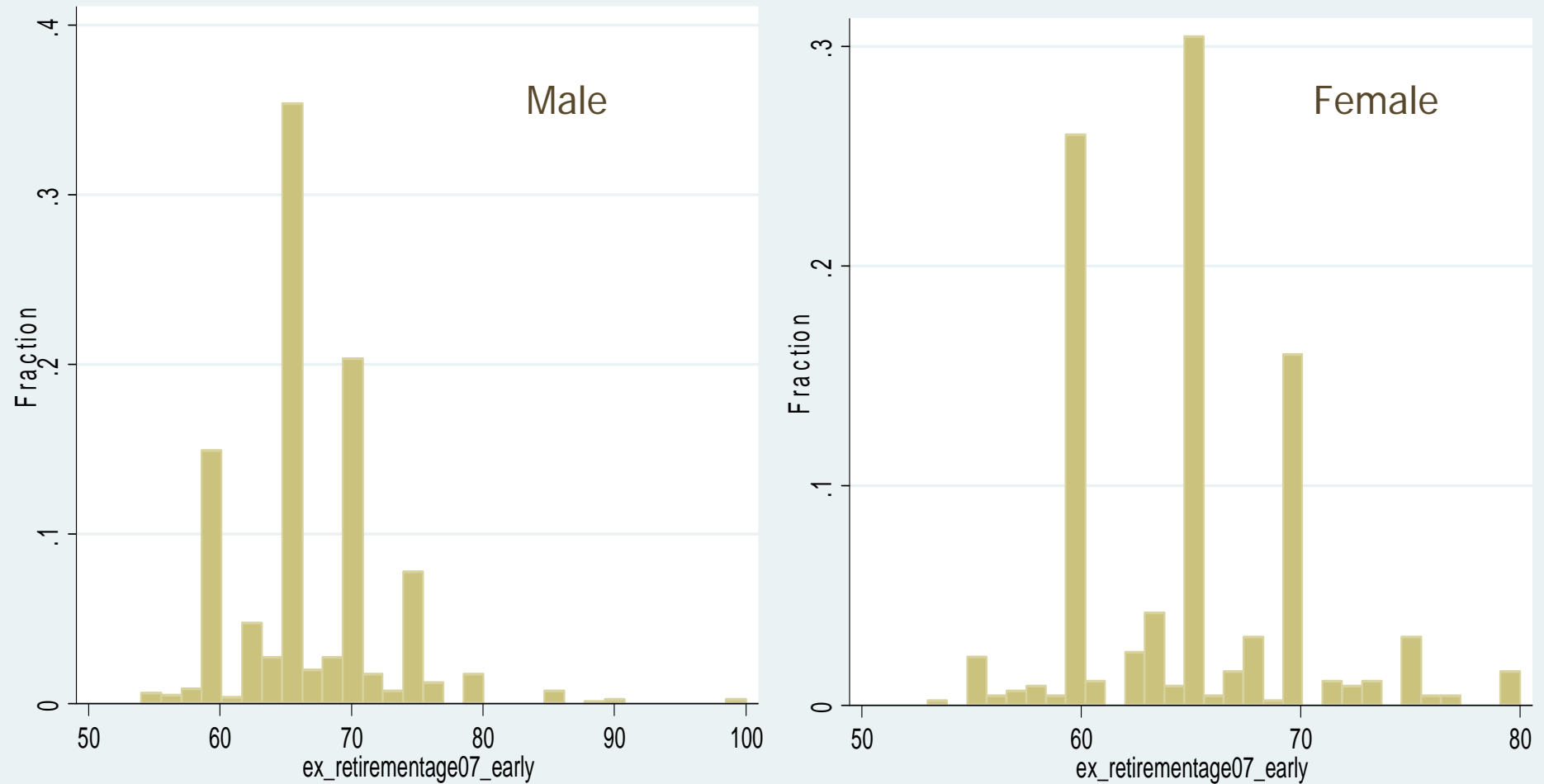
Ichimura and Shimizutani (2011) using JSTAR 1st wave. Respondents who has not yet retired only.

Age to start receiving pension
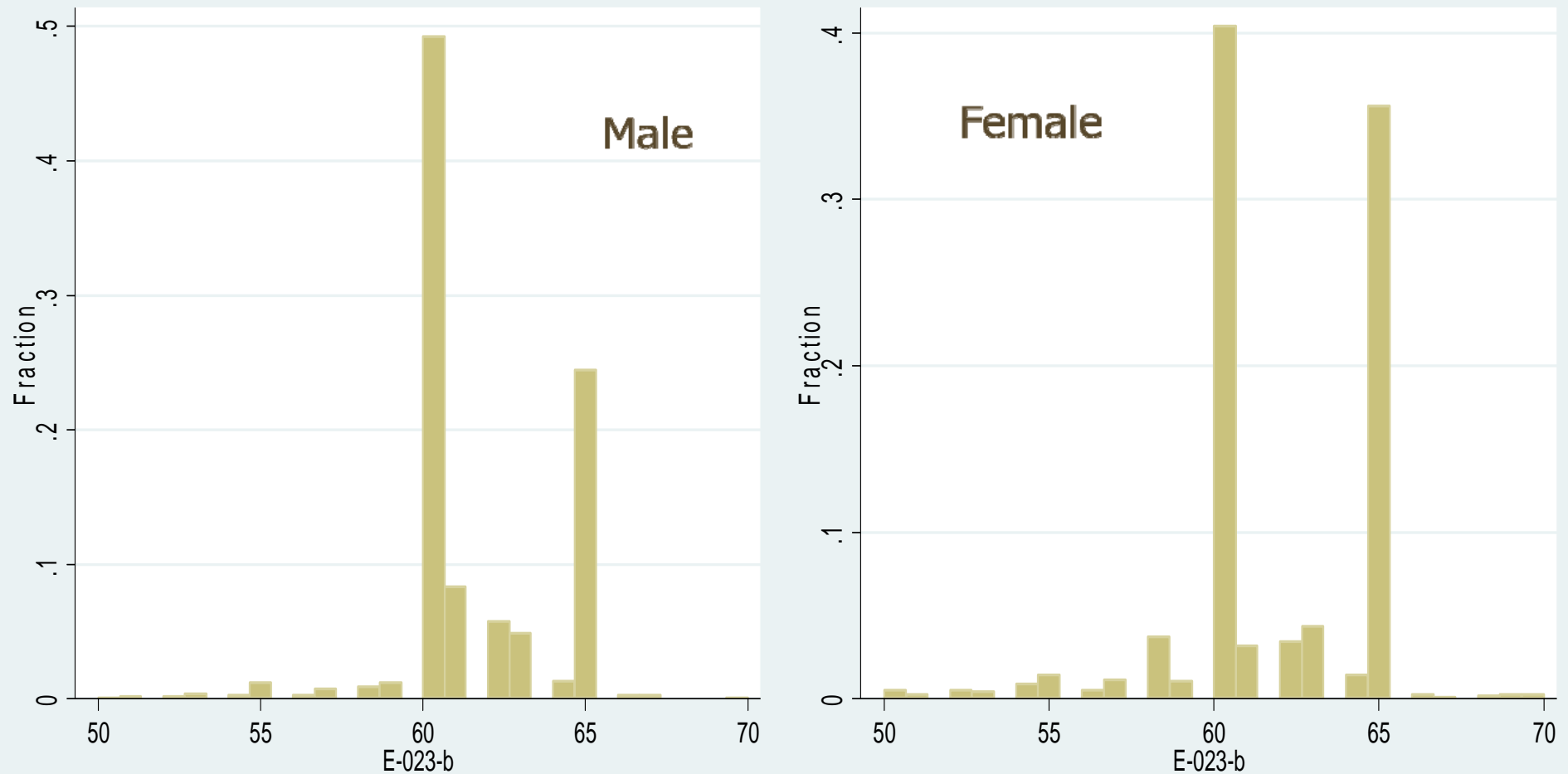
Retirement age in JSTAR

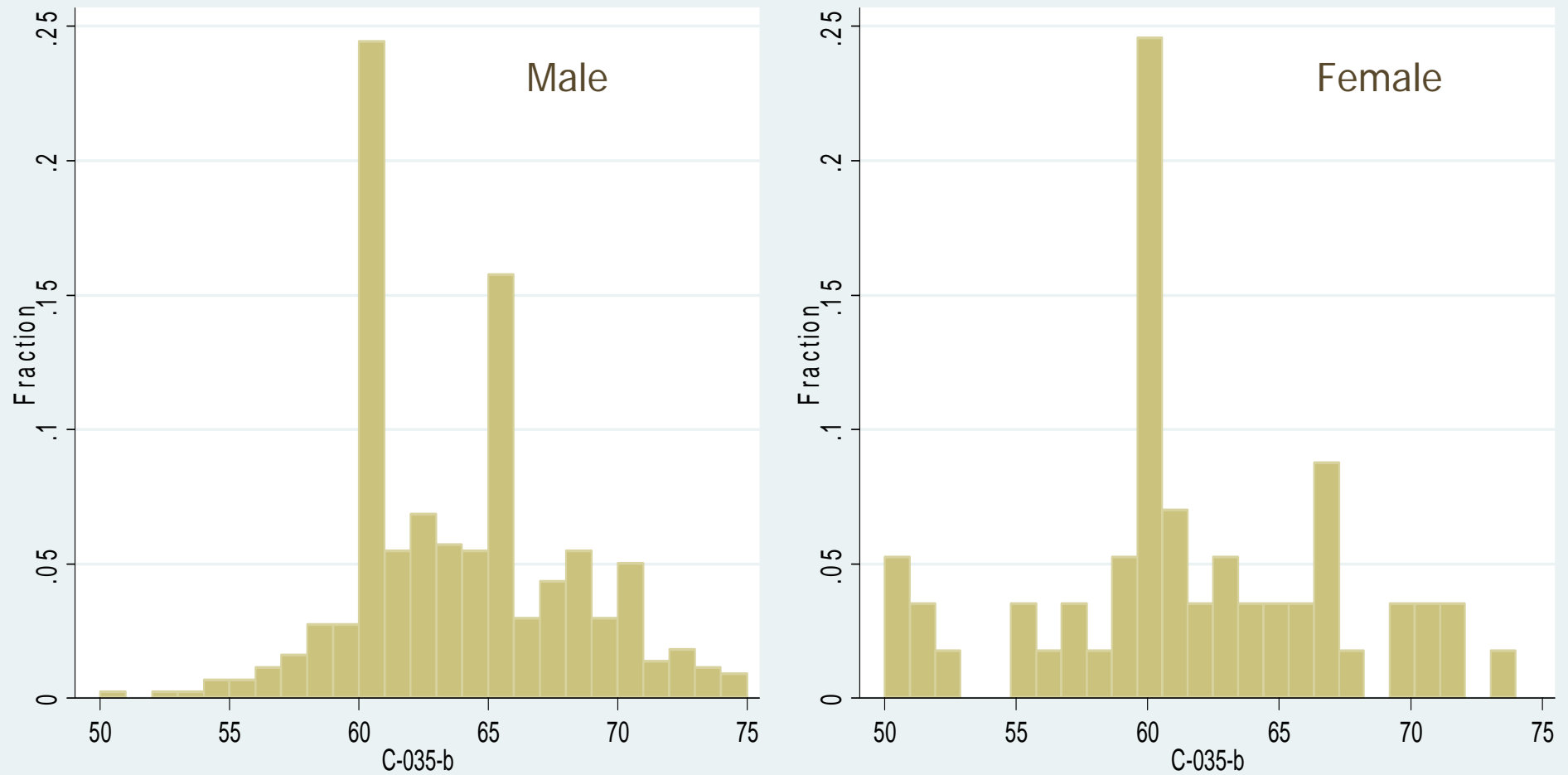- Non working status jumps in the 60s but still less than 70% around age 70 for male, mostly accounted by retirement. The proportion of non-working is higher for female, mostly explained by house-making.

- Age to retire is concentrated on age 60 for both sexes, followed by age 65 for male. Expected age to retire is dominant in age 65.

- Age to start receiving (claim) public pension benefit is also concentrated on age 60 or 65. More fraction in the 50s for female.
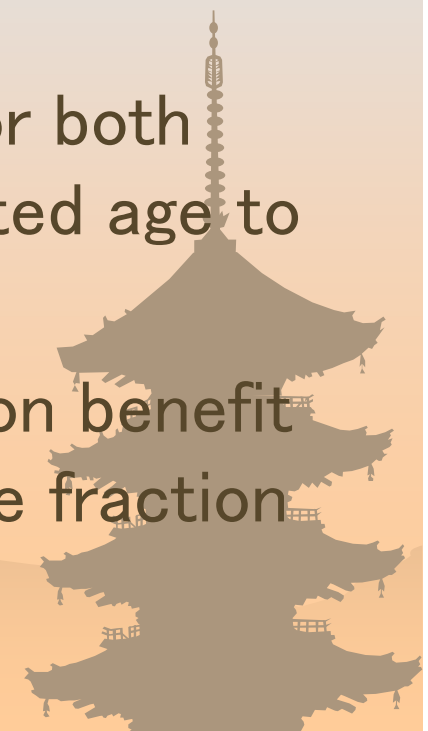
Claiming behavior (1)

- The distribution of retirement age forms "twin peaks" at ages 62 (the earliest to claim) and 65 in the U.S.

- In Japan, the normal eligible age is 65, but National Pension Insurance (NPI) beneficiaries (self-employed) can claim between 60 and 70.

- Employees' Pension Insurance (EPI) beneficiaries (private company employees) can claim the flat rate component before age 64 (male) or 62 (female) in 2011 or claim later after age 65.

Claiming behavior (2)

Age to claim	Relative to the benefits at age 65	Age to claim	Relative to the benefits at age 65
64	94% (89%)	66	108.4% (112%)
63	88% (80%)	67	116.8% (126%)
62	82% (72%)	68	125.2% (143%)
61	76% (65%)	69	133.6% (164%)
60	70% (58%)	70	142% (188%)

Note: The proportion of benefits at each age out of the benefit at age 65 for individuals who were born after April 2nd, 1941. The figures in the parentheses refers to those for individuals who were before April 2nd, 1941.

Claiming behavior (3)

- 20–30% of new beneficiaries claim (start to receive) benefit earlier than the normal age and 2–3% claim later (Social Security Administration).

- Previous studies in the U.S.

- A take-up decision is associated with survival probability, subjective discount rate, liquidity constraint and family status (Coile et al. (2002)).

- Survival probability (Hurd et al. (2004)) and "framing effect" (Brown et. al (2011)) also affect timing to claim.

Claiming behavior (4)

- JSTAR is the only data source to examine a forward-looking claiming decision, which has important policy implication for designing public pension policies.

- 1st wave includes all the information on those elements (expectations and explicit measures on subjective discount rate and liquidity constraint).

- Shimizutani and Oshio (2011):survival probability and liquidity constraint is significantly related with claiming behavior (preliminary).

Panel vs. Cross section

Medium of weekly working hours

	2007	2009	Change in %
Age	55	57	
Male (crosssection)	50	44	-12.00
Male (panel)	48	45	-6.25
Female (crosssection)	35	30	-14.29
Female (panel)	36.5	35.5	-2.74
Age	60	62	
Male (crosssection)	45	40	-11.11
Male (panel)	45	45	0.00
Female (crosssection)	32.6	33	1.23
Female (panel)	29	33.5	15.52
Age	65	67	
Male (crosssection)	40	35	-12.50
Male (panel)	41	40	-2.44
Female (crosssection)	24.5	24	-2.04
Female (panel)	22.5	25	11.11

Change in work status

Male		2009	
Age60-64		Working	Not working
2007	Working	80.3%	19.7%
	Not working	17.1%	82.9%
		2009	
Age65-69		Working	Not working
2007	Working	75.0%	25.0%
	Not working	5.4%	94.6%
		2009	
Age70-75		Working	Not working
2007	Working	77.5%	22.5%
	Not working	5.0%	95.0%

Female		2009	
Age60-64		Working	Not working
2007	Working	83.0%	17.0%
	Not working	8.2%	91.8%
		2009	
Age65-69		Working	Not working
2007	Working	85.1%	14.9%
	Not working	5.6%	94.4%
		2009	
Age70-75		Working	Not working
2007	Working	73.0%	27.0%
	Not working	2.6%	97.4%

Ichimura and Shimizutani (2011) using JSTAR 1st and 2nd waves.

Change in employment status

Male		2009	
Age60-64		Employed	Self-employed
2007	Employed	98.0%	2.0%
	self-employed	0.0%	100.0%
		2009	
Age65-69		Employed	Self-employed
2007	Employed	100.0%	0.0%
	self-employed	4.1%	95.9%
		2009	
Age70-75		Employed	Self-employed
2007	Employed	100.0%	0.0%
	self-employed	0.0%	100.0%

Female		2009	
Age60-64		Employed	Self-employed
2007	Employed	98.5%	1.5%
	self-employed	1.8%	98.2%
		2009	
Age65-69		Employed	Self-employed
2007	Employed	97.1%	2.9%
	self-employed	3.8%	96.2%
		2009	
Age70-75		Employed	Self-employed
2007	Employed	100.0%	0.0%
	self-employed	0.0%	100.0%

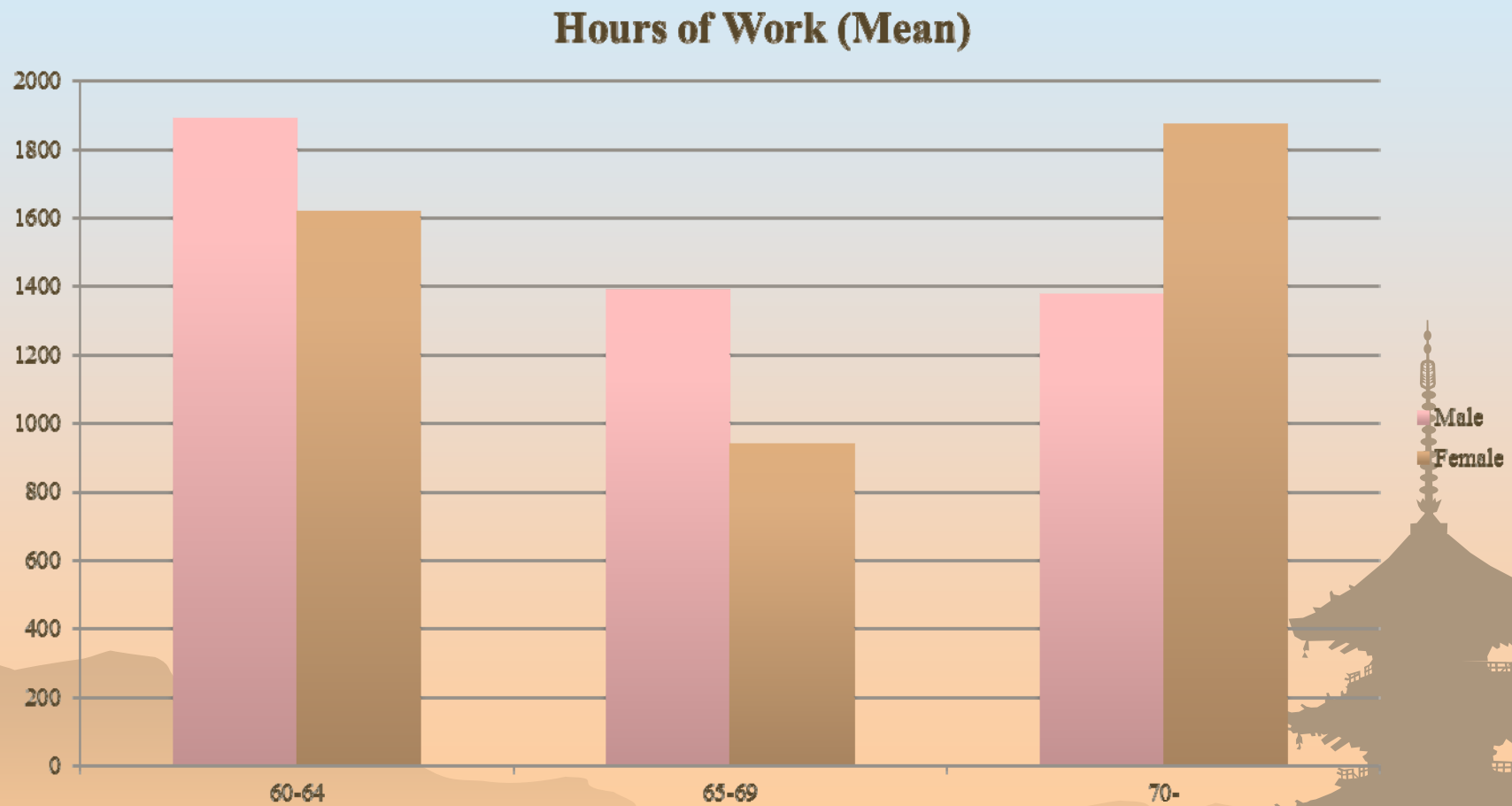Ichimura and Shimizutani (2011) using JSTAR 1st and 2nd waves.

Change in full/part time status

Male		2009	
		Full time	Part time
Age60-64		Full time	Part time
2007	Full time	28.6%	71.4%
	Part time	5.4%	94.6%
		2009	
Age65-69		Full time	Part time
2007	Full time	40.0%	60.0%
	Part time	2.0%	98.0%
		2009	
Age70-75		Full time	Part time
2007	Full time	16.7%	83.3%
	Part time	0.2%	99.8%

Female		2009	
		Full time	Part time
Age60-64		Full time	Part time
2007	Full time	42.1%	57.9%
	Part time	2.0%	98.0%
		2009	
Age65-69		Full time	Part time
2007	Full time	37.5%	62.5%
	Part time	0.9%	99.1%
		2009	
Age70-75		Full time	Part time
2007	Full time	50.0%	50.0%
	Part time	0.1%	99.9%

Ichimura and Shimizutani (2011) using JSTAR 1st and 2nd waves.

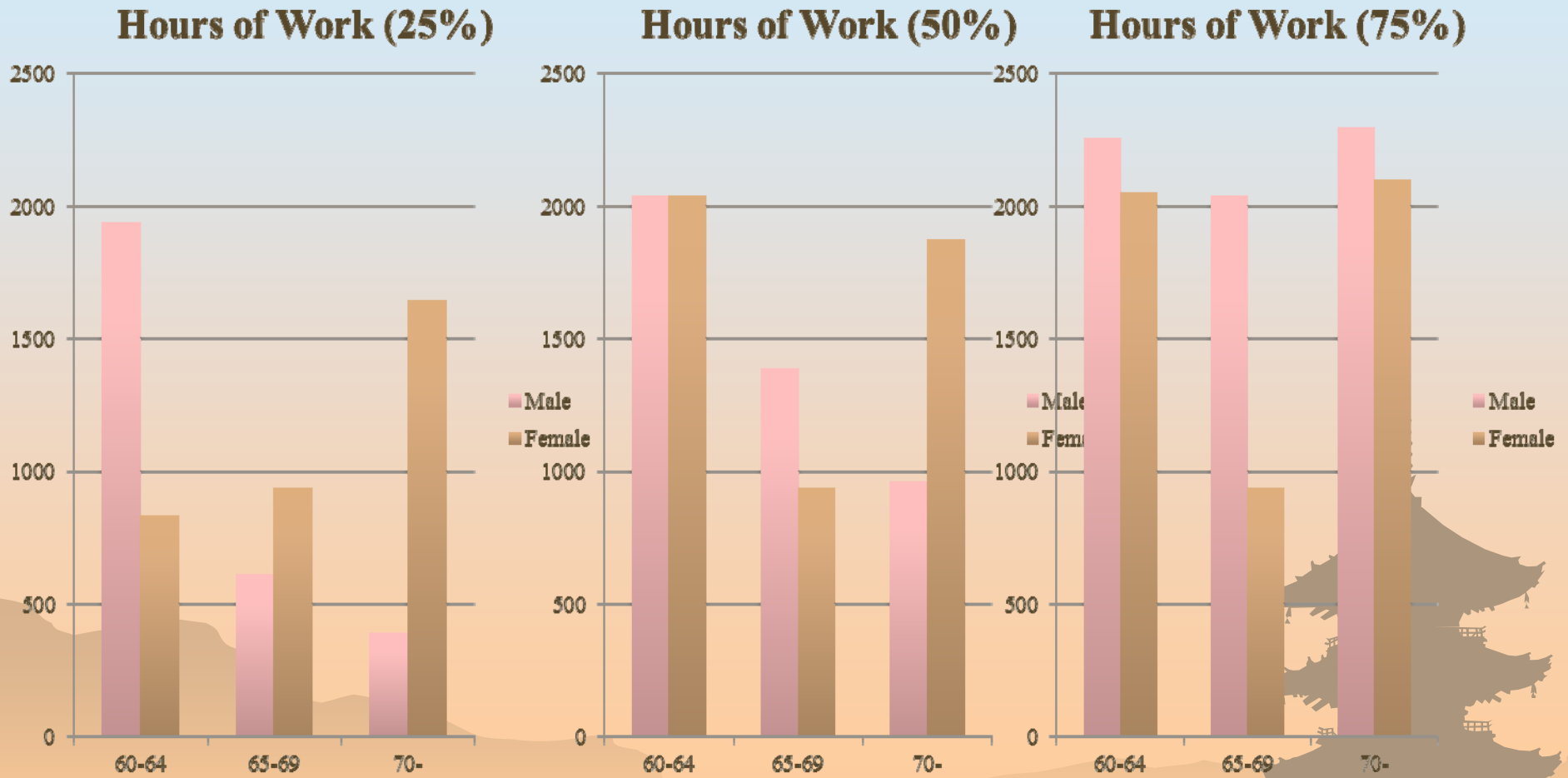# Hours worked before retirement

Hours of Work (Mean)

Ichimura and Shimizutani (2011) using JSTAR 1st and 2nd waves.

Hours worked before retirement

Ichimura and Shimizutani (2011) using JSTAR 1st and 2nd waves.

Regression Analysis (1)

❀ Factors observed in 2007 affecting probability of working in 2009 using a linear probability model.

❀ Male's work probability declines:

1. 30% at age 60 (pension claim);

2. 12% by spousal separation & 10% by spousal separation from work;

3. 13% if net lifetime asset exceeding 36 million yen;

4. 38% by onset of ADL limitation; 13% by depression in both years; lower powers of memory (2% per word).
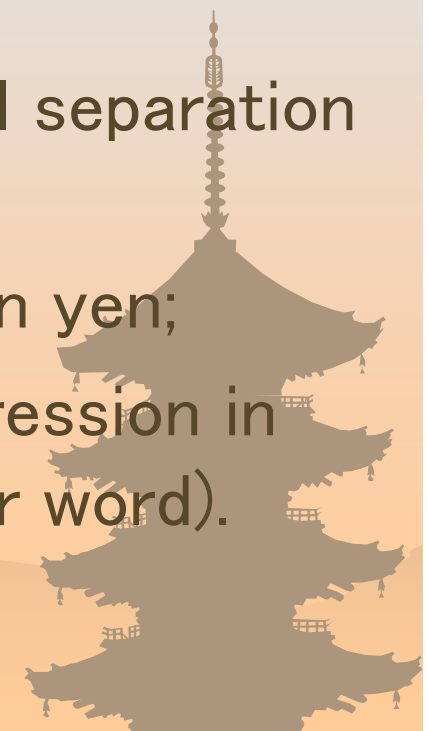
Regression Analysis (2)

❀ Female's work probability declines

1. slightly at age 60 or if working less in 2007;

2. 44% by spousal separation from work (but *increases* 8% by spousal separation);

3. 12% if lifetime assets is less than 36 million yen;

4. No systematic effects of health/cognitive factors.

❀ If not working in 2007, work probability in 2009 declines by 20% after age 60 for male and by health factors for female. For both sexes, spousal decision to start to work declined work probability on 2009.

Regression Analysis (3)

❀ Factors observed in 2007 affecting working hours in 2009 using quantile regression.

❀ Working hours in 2009 is

1. longer if working hours is longer in 2007 (10 hours longer for male and 15 for female full timers);

2. shorter if male aged 65+ at the median;

3. shorter by 20 hours by spousal separation for male but longer for female at the median (no effect by spousal separation from working for both sexes);

4. affected by ADL limitation (both sexes) and lifetime assets (male only) at different % tiles.

Concluding remarks

- JSTAR is a nice opportunity to explore retirement "process" by (1) longitudinal (tracking the same person over time), (2) interdisciplinary (health/cognitive and family (spouse) statuses) and (3) international (standardized survey across countries) properties.

- Further examination of the "process" by JSTAR is indispensable to policy evaluation and new scientific knowledge by which JSTAR contributes to the world.

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