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Japanese Women and Middle-Skill Jobs

**—Changing Occupational Structure and
Its Impact on Highly Educated Women—**

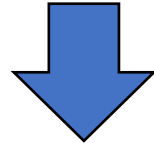
**July 4, 2021,
SASE 33th Annual Conference**

Research Question

Q:

What kind of occupations have been increasing and declining over the last decade in Japan:

high-paid jobs, low-paid jobs, or both?



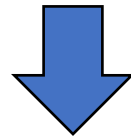
How does this affect women?

Key word: Job polarization

Research Question

job polarization

= a pattern of occupational change



a decline in the share of total employment in **middle-paid jobs**, which has been offset by increases in the shares of both **high-paid** and **low-paid jobs**. (OECD 2017)

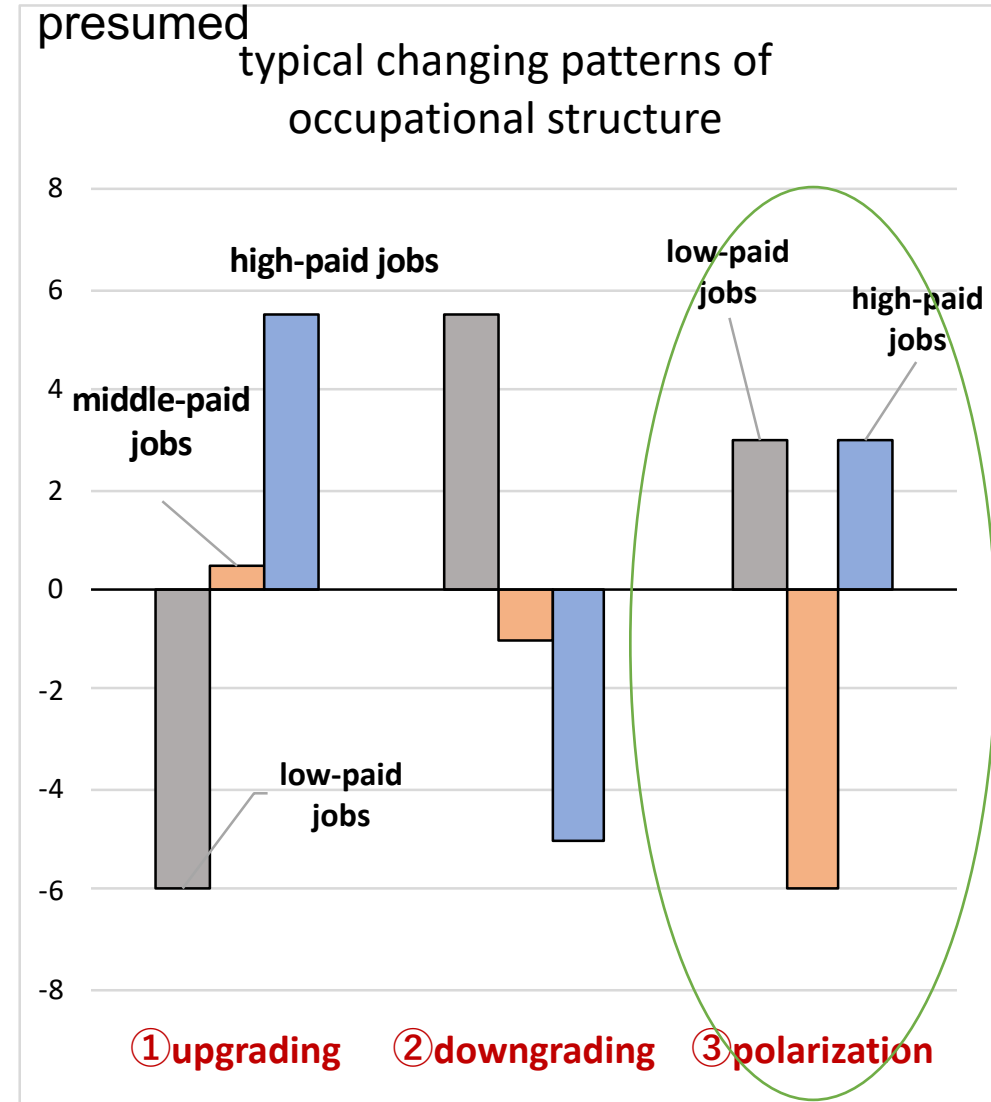
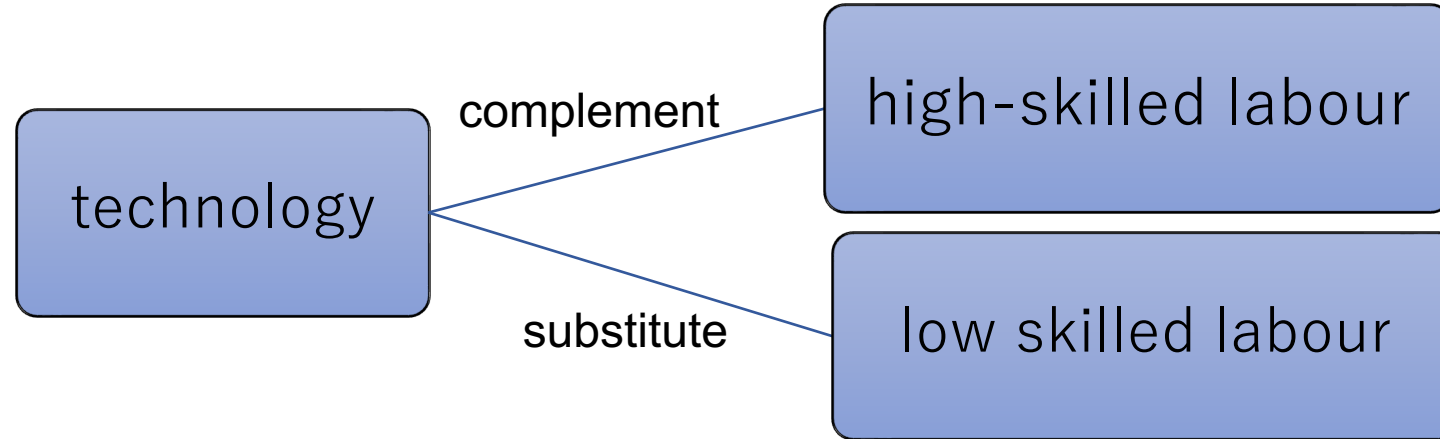


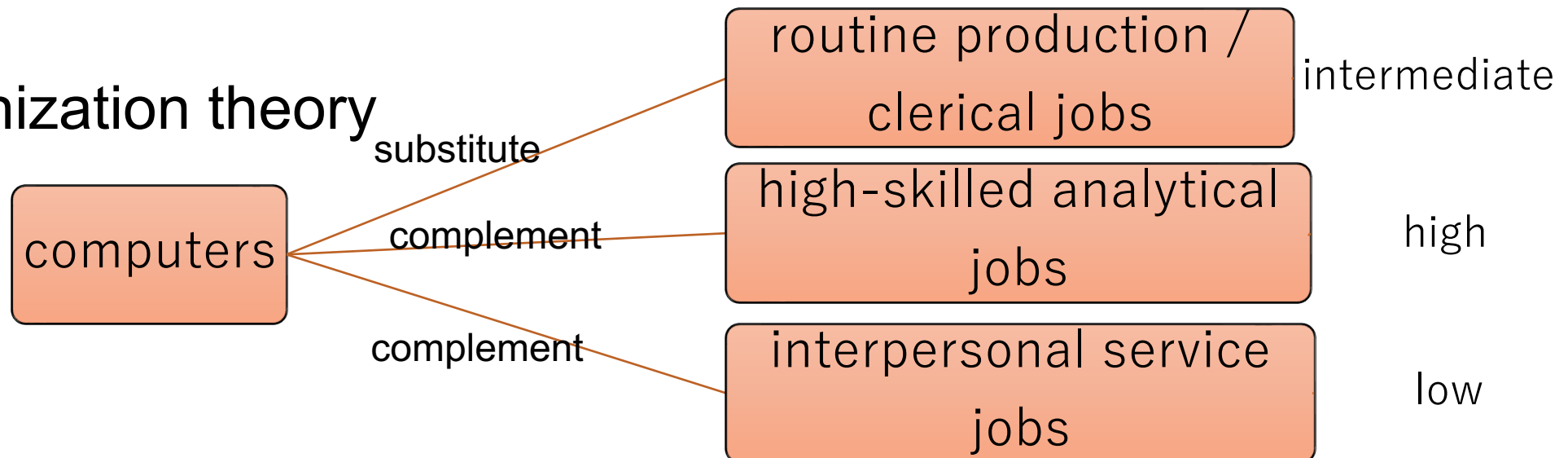
Figure1 Hypothesis of occupational change

Polarization debate ① 1990-early 2000s

1. SBTC (skill biased technological change) theory:



2. Routinization theory



Polarization debate ① 1990-early 2000s

- Autor et al. (2003) : US

Job Polarization deteriorated in US during 1990s.



- Oesch (2014) : UK, Germany, Spain, Switzerland, Denmark

Job upgrading in 4 countries except for UK, between 1990-2007/8

Polarization debate ② after the Great Recession

OECD (2017) : Cross-country comparison

on recovery from the Great Recession in 2008

1. Overall trend

unemployment rate
returned to pre-crisis level



almost all OECD countries have
experienced occupational polarization

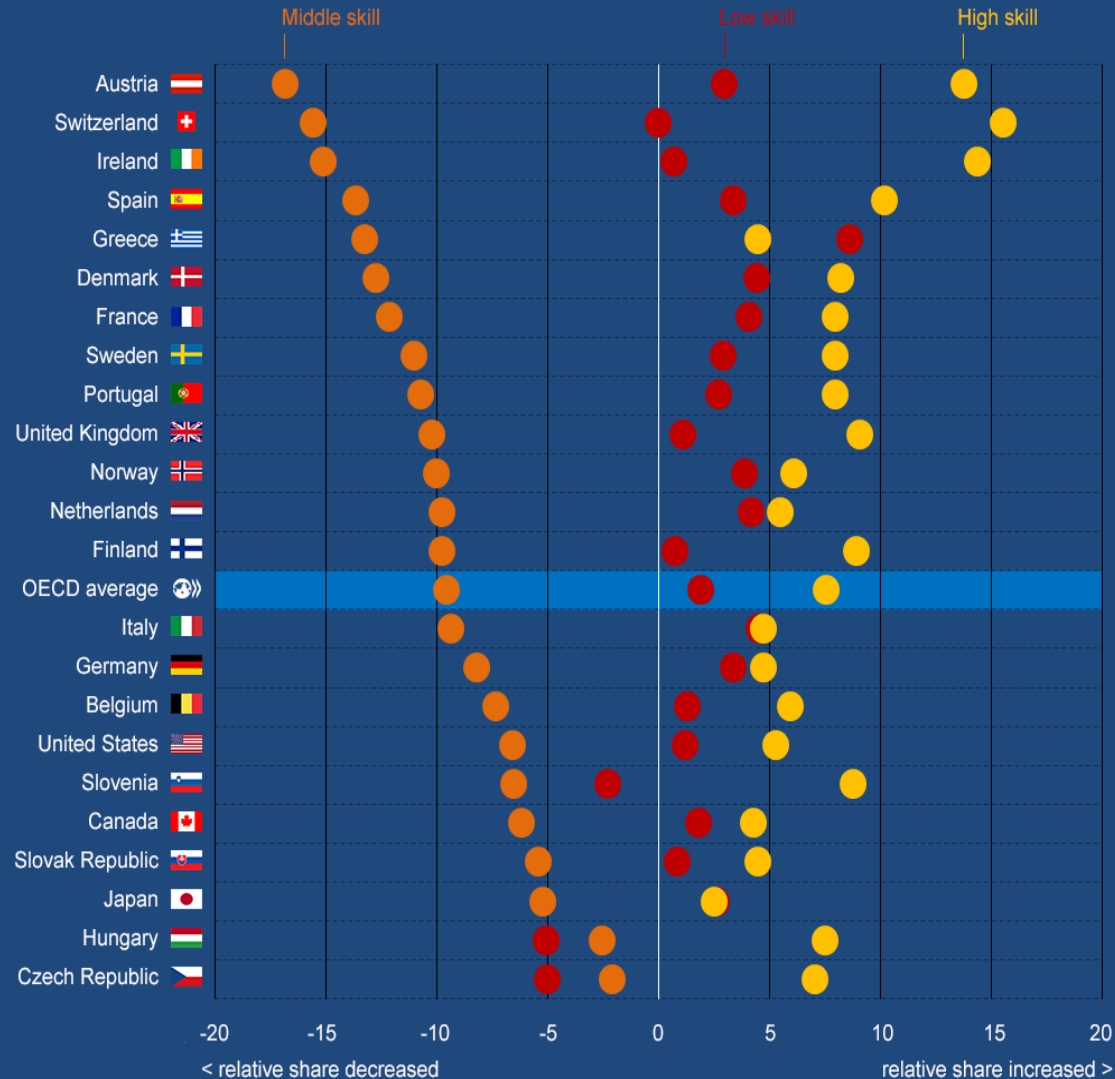
a shift in employment away from **manufacturing** and towards **services**.

2. Cross-country variation



Job polarisation in OECD countries

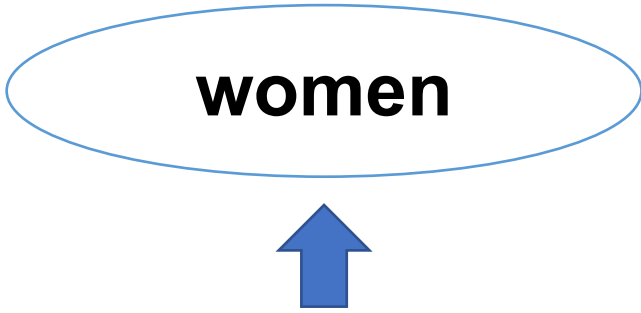
High, middle and low skill occupations
Change in respective shares of total employment between 1995 and 2015 (Percentage point)



Source: OECD Employment Outlook 2017



How about Japan ?
Is the situation stable and healthy ?
Any overlooked reality?



- shift in employment
manufacturing ⇒ **services**
- educational advancement

Figure 2 Job Polarisation in OECD Countries (OECD 2017)

Situation in Japan after 2000

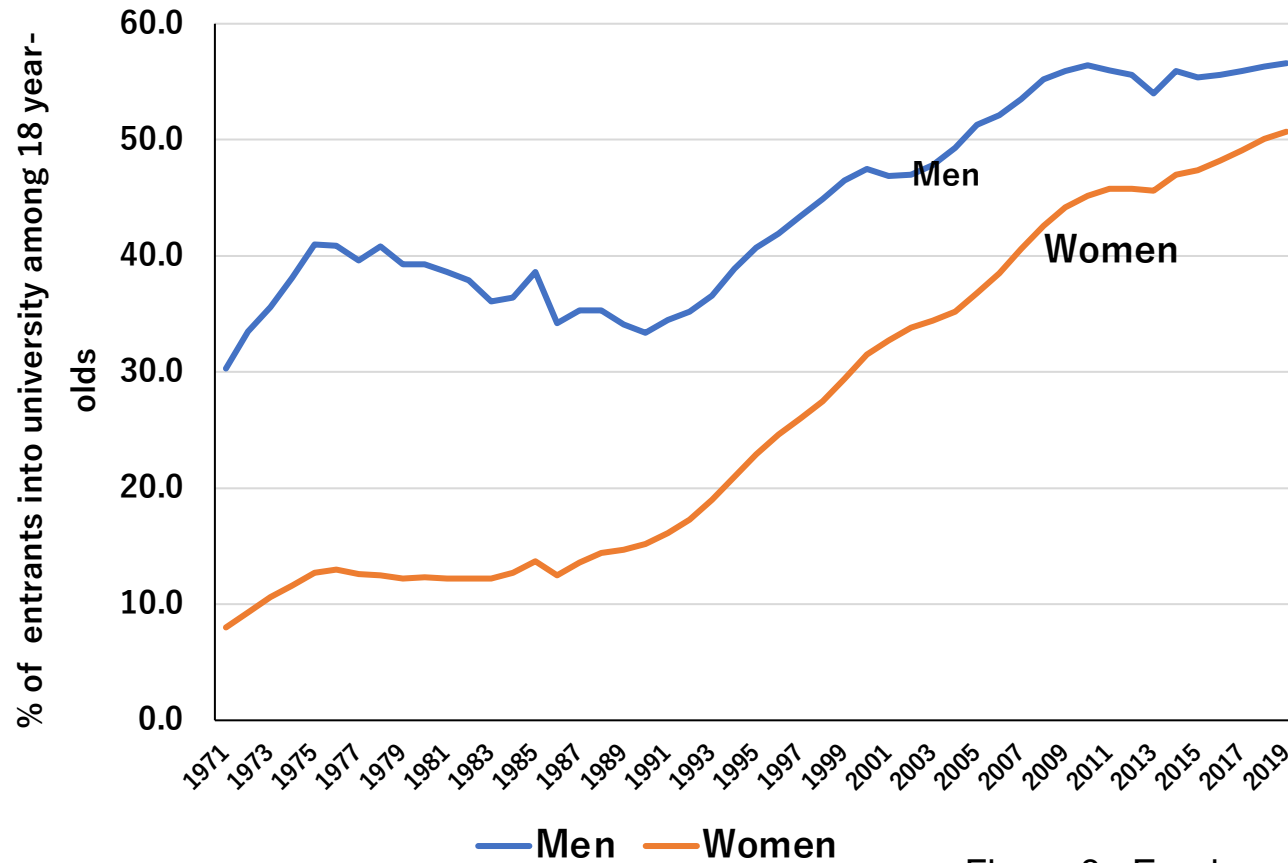


Figure 3: Enrolment ratio to university among 18 year-olds
Source: Gakko Kihon Chosa, MEXT

service industry → impacts on women who graduated from university

Analytical Strategy

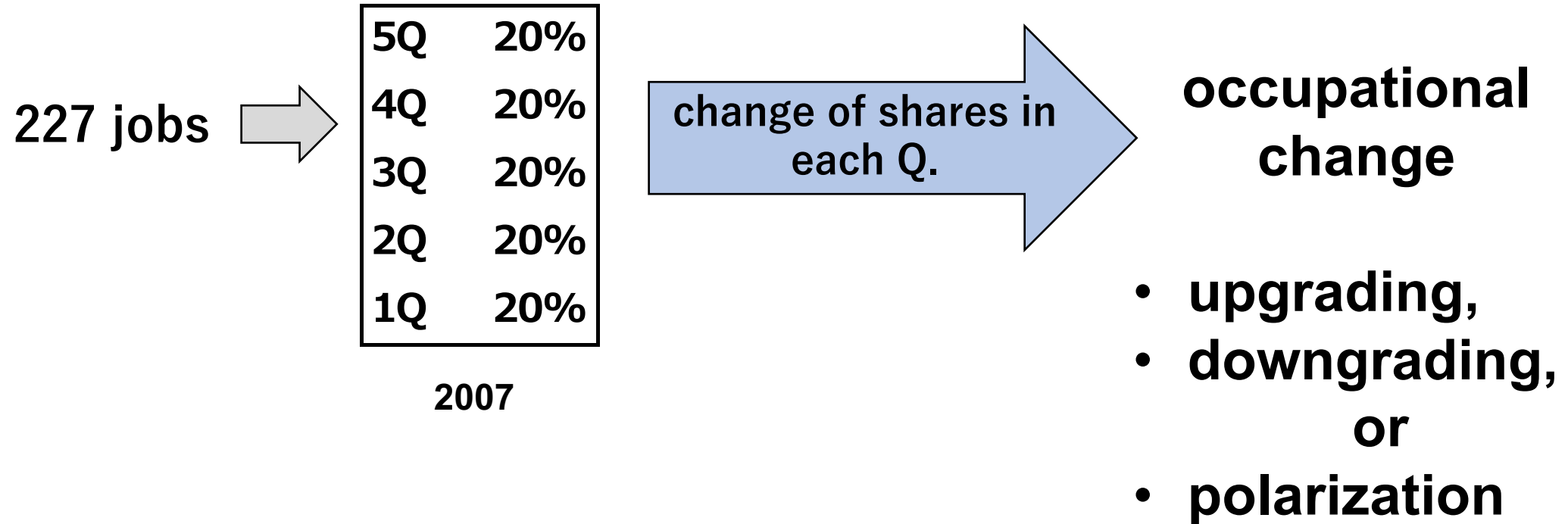
- **Data**
Shugyo Kozo Kihon Chosa (Occupational Structure Survey)
large scale micro data by Ministry of Internal Affairs and Communications
2007 / 2017
*provided under Article 33 of the Japanese Statistics Law.
- **Analysis** : What kind of jobs have been increasing and decreasing over the last decade.

variation in terms of gender / education / age

Analytical Strategy

- **Method** developed by Wright and Dwyer 2003

building block of the analyses



Analytical Strategy

1. Rank 229 jobs in order of average income of 2007 and 2017, and allocate them to 5 equally large categories based on 2007 employment level.

(Wright and Dwyer 2003, Oesch 2014, OECD 2019)

Using the information on the wage of workers who stay at the present job over 1 year, working 30 hours/week or more, aged 18-79

2. the change of shares between 2007-2017



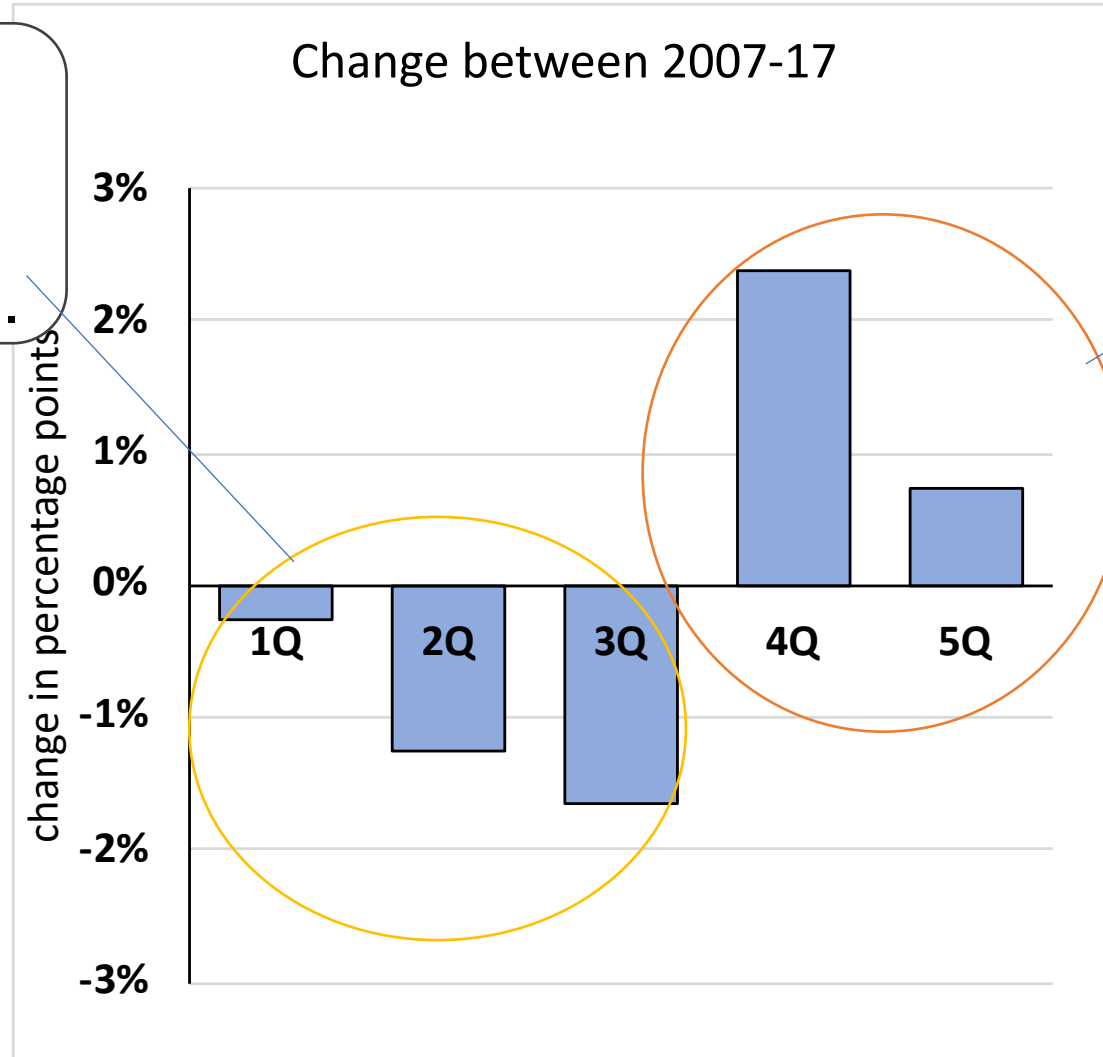
Target: respondents who work 20 hours/week or more.

475,515 respondents in 2007 (men 281,125, women 194,390) ,

421,383 respondents in 2017 (men 242,636, women 178,747)

Result ① Overall Trend

2. middle-paid jobs in 3Q declined more than low-paid jobs in 1-2Q.



1. modest growth in 5Q, strong growth in 4Q

job polarization hypothesis can be rejected.

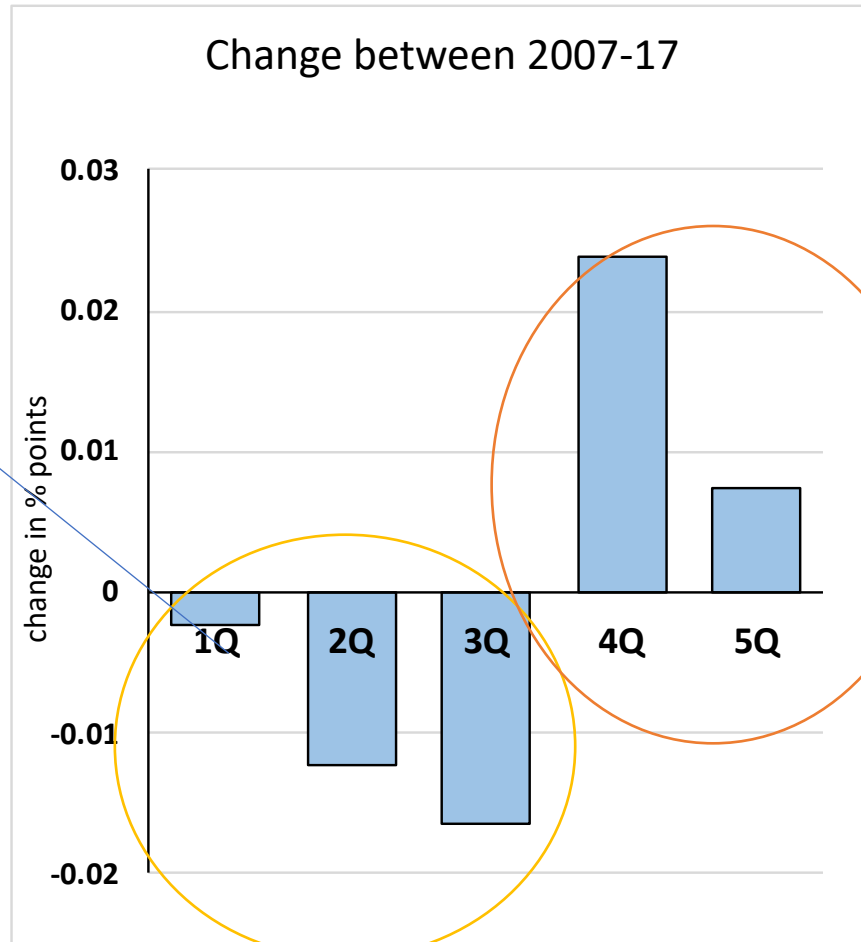
moderate job upgrading

Figure 4. Relative employment change in 5 quartiles, 2007-2017 (in % points),

Result ① Overall Trend

major occupations that decreased in 1-3Qs

1Q	farmers
	textile manufacturing workers
	cook
2Q	sales persons
	retailers, wholesalers
	carpenters
3Q	general office clerks
	drivers
	electronic-equipment assemblers



major occupations that increased in 4 and 5Qs

4Q	nurses
	physiotherapy technicians
	sales / customer service clerks
	production clerks
	personnel clerks
	software developers
	auto assemblers

5Q	information and communication technology professionals
	pharmacists
	transportation machinery engineers
	mechanical engineers
	teachers for the handicapped

routinized theory applies:
production workers, agricultural workers, sales workers, general office clerks decreased.

healthcare professionals, high-skilled engineers increased.

Result ② Gender

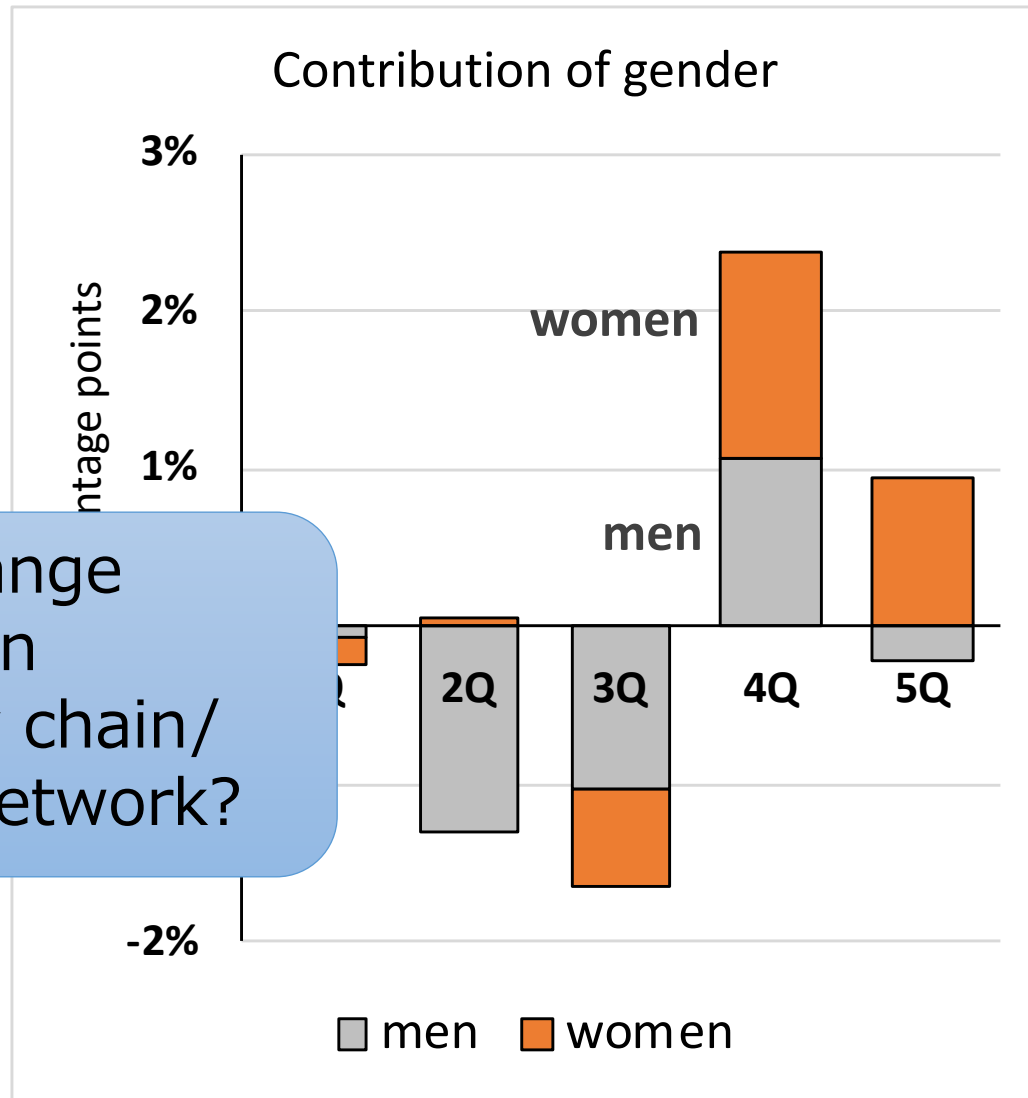


Figure 5. Contribution of gender groups to the pattern of occupational change (relative change in employment in percentage points)

job upgrading for women

- decrease in 1Q, 3Q ⇒ increase in 4Q, 5Q

(for women)

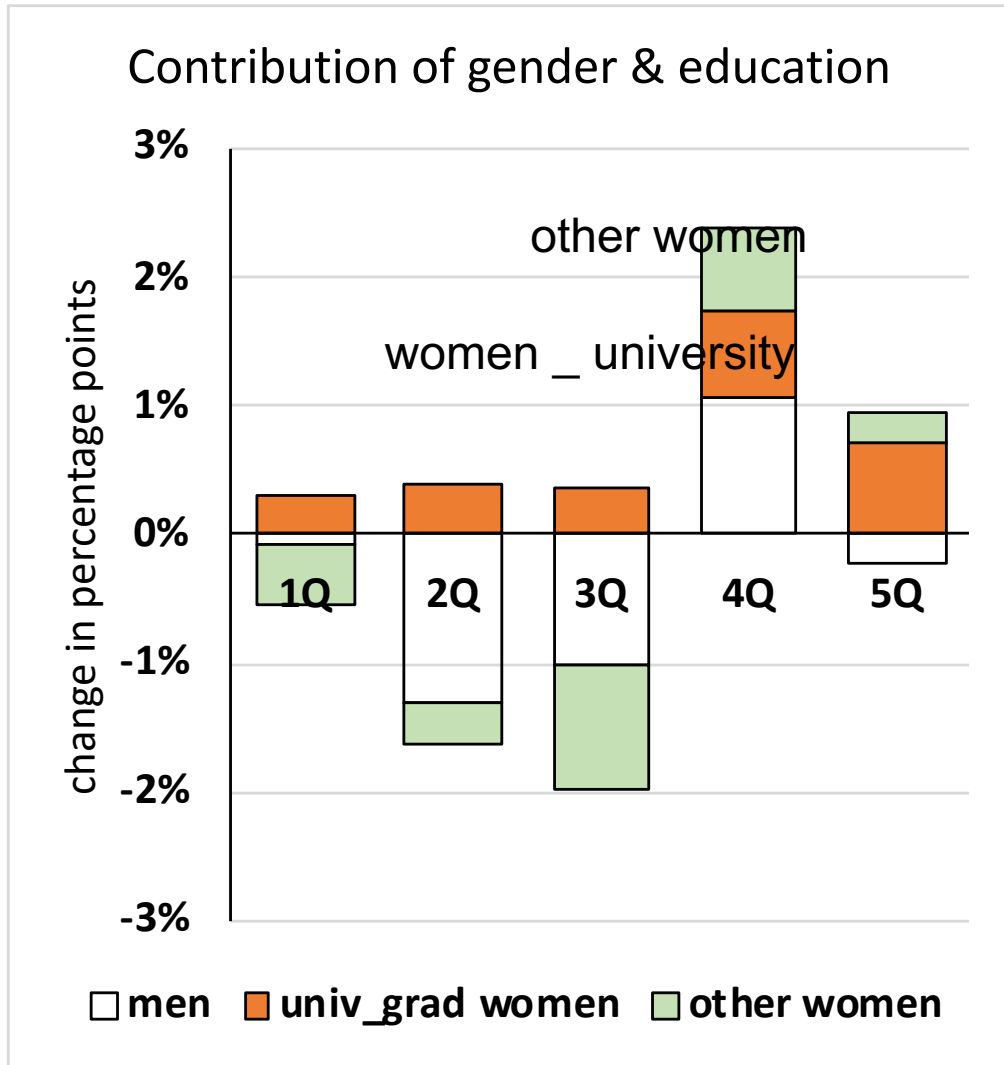
increased jobs:

- inter-personal professionals in healthcare (4Q)
- **customer service clerks (4Q)**
- managers, administrators (5Q)

decreased jobs:

- **general office clerks(3Q)** ← largest decline in its share
- **sales persons(3Q)**

Result ③ Gender & Education



growing difference
among
women who graduated from university

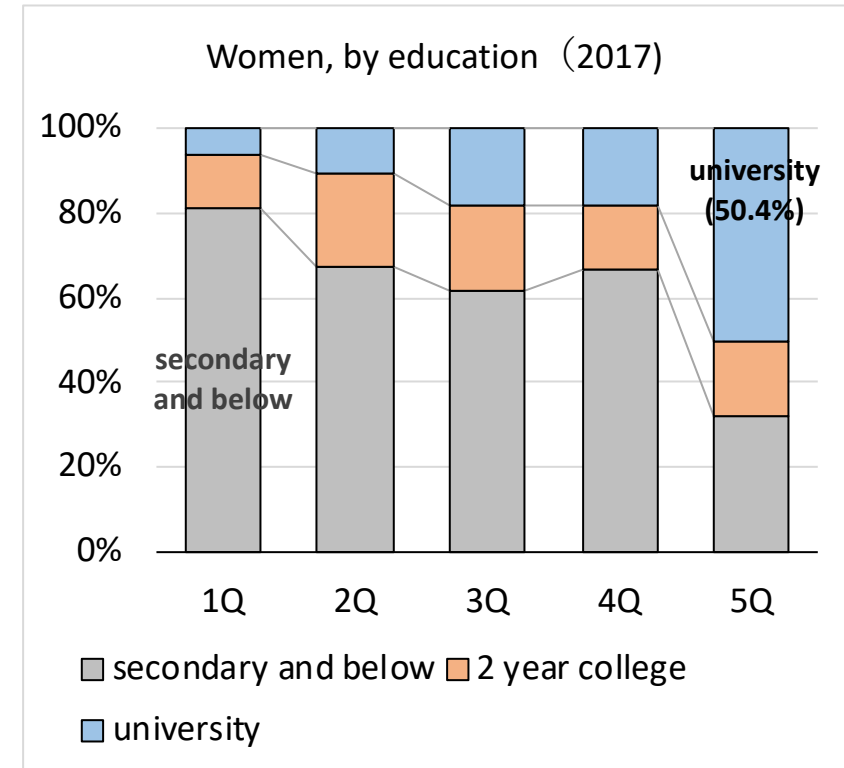


Figure 6. Contribution of gender and education groups to the pattern of occupational change (relative change in employment in percentage points)

Figure 7 Share of educational backgrounds for each quintile

Result ③ Gender & Education

Table 2 Occupational change for women who graduated from university (JGSS 2000-15)

Top 15 Jobs which increased the shares, among women who graduated from university

	(%) <early 2000s>	<2010s>	change of shares	
⇒ 1 nursery school teachres	0.66	2.88	2.22	2Q
2 sales/customer service clerks	1.99	3.90	1.91	4Q
⇒ 3 other helthcare service workers	0.99	2.88	1.89	4Q
4 computing systems designers and analysts	0.99	2.71	1.72	5Q
5 other types of clerical workers not elsewhere classified	0.99	2.71	1.72	5Q
⇒ 6 nurses	0.66	2.20	1.54	4Q
7 sales persons	5.63	6.95	1.32	2Q
8 building caretakers	0.33	1.19	0.86	1Q
9 accountants	5.30	6.10	0.8	5Q
10 cooks	0.33	1.02	0.69	1Q
11 doctors	0.00	0.68	0.68	5Q
12 dentists	0.00	0.68	0.68	5Q
13 librarians	0.00	0.68	0.68	3Q
14 estate agents	0.00	0.68	0.68	5Q
⇒ 15 kidergarten teachres	0.33	0.85	0.52	2Q

Note: Data used for <early 2000s> are JGSS-2000, 2001, 2003.

Data used for <2010s> are JGSS-2010, 2012, 2015.

growing difference
among
women who graduated from
university

Result ③ Women & Age



The rise in job polarization of younger cohorts

Figure 8 Change in the distribution of employment across quintiles for age cohorts

Summary

Occupational change in Japan between 2007-2017

1. Job polarization hypothesis can be rejected.

moderate job upgrading

2. Women show more expansion in 5Q than men.

job upgrading for women

3. Growing difference among women graduated from university in their occupation.

increased shares across 1Q-5Q ⇔ still dominant in 5Q

4. Job polarization in younger cohorts, for both women and men.

Thank you for listening.

< Reference >

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Implications

changing occupational structure → women who graduated from university

technological change



world's fastest aging society

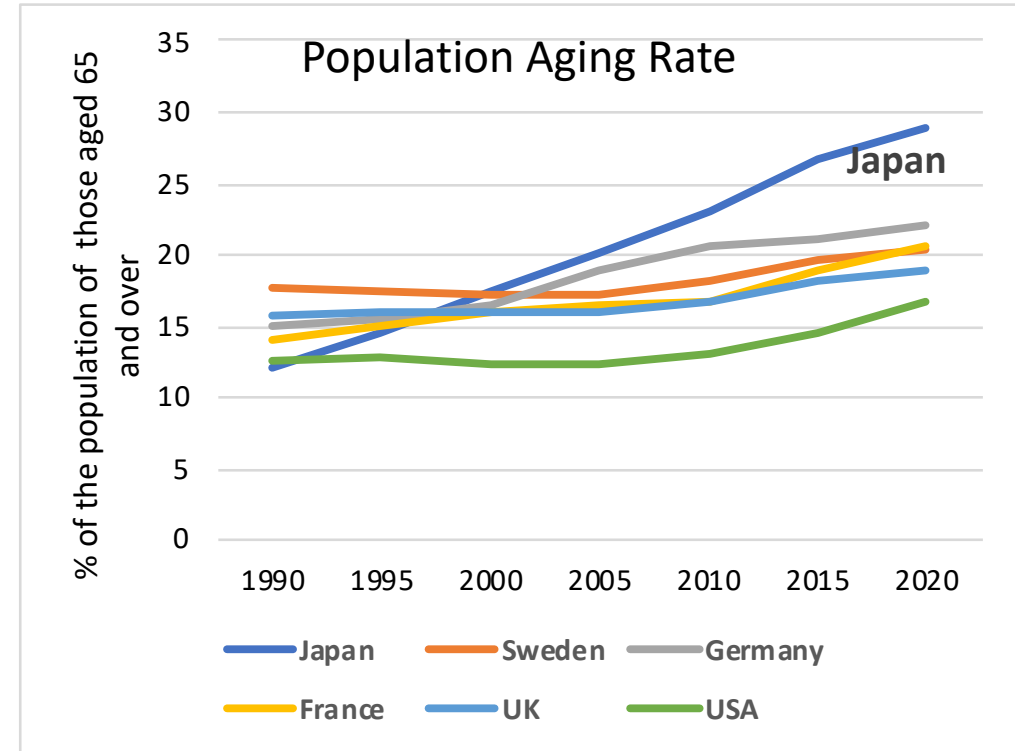


Figure 9 Population aging rate among advanced countries
(Source: UN World Population Prospects : The 2017 Revision)