RETIREMENT AGE MANAGEMENT IN THE CONTEXT OF DEMOGRAPHIC CHANGES

Economic Analysis. Legal Analysis of Solutions From Japan, The Netherlands and Sweden

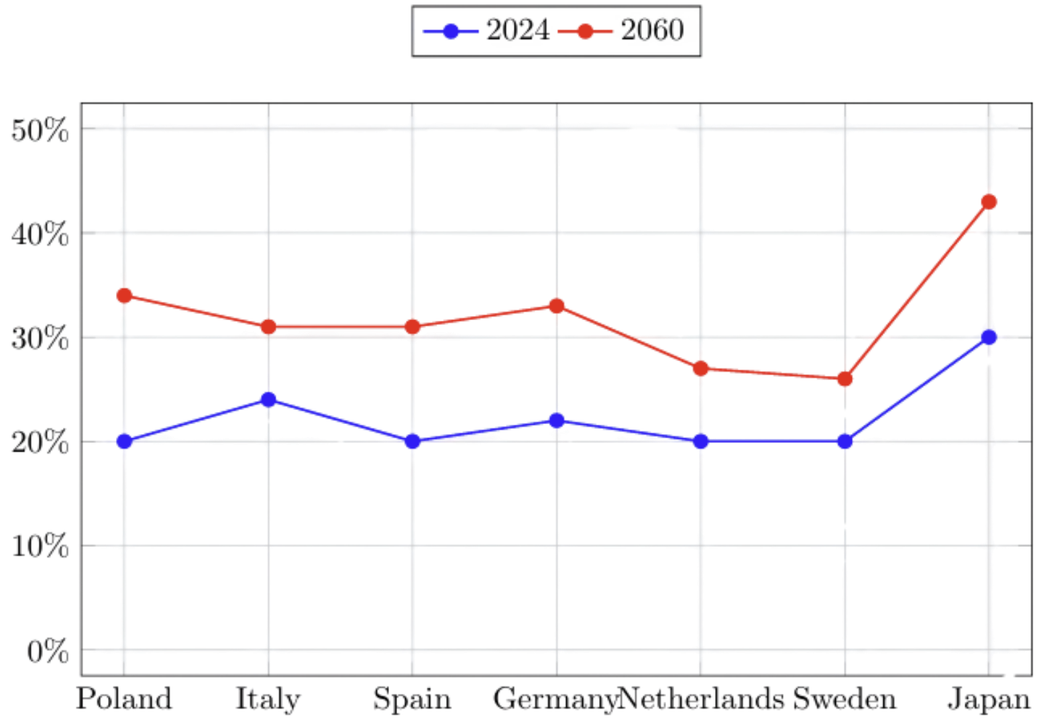
NATALIA KAMIŃSKA
UNIVERSITY OF PADUA, IT

Why retirement age management matters?

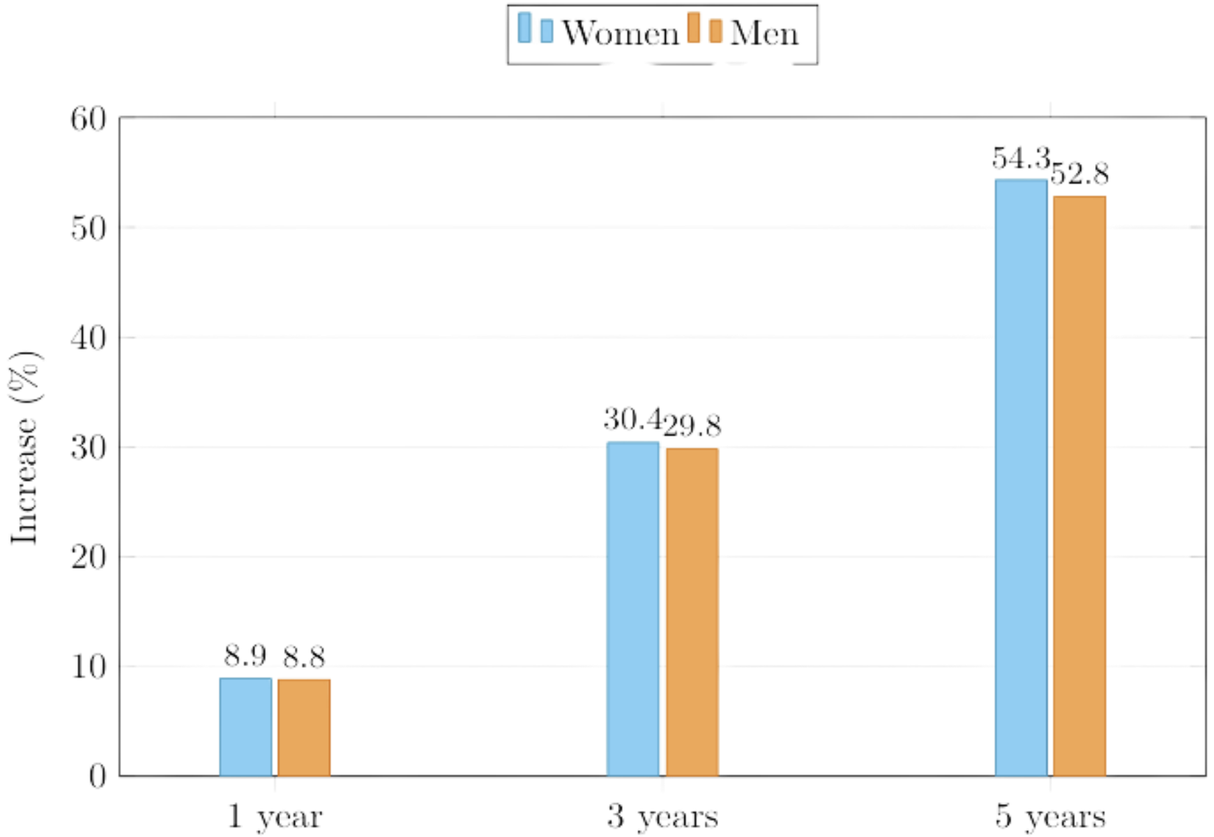
- Population ageing
- Increasing life expectancy
- Declining fertility
- **Retirement age as an unique policy instrument**

Percentage of people aged 65+ in selected countries. Data from 2024 and forecasts for 2060.

Source: the author's own elaboration. Based on materials published by Eurostat and reports of demographic forecasts by statistical offices appearing in each country.



Increase in pension benefits resulting from postponing retirement in the Polish pension system.



Source: the author's own elaboration. Based on materials provided by the Social Insurance Institution of Poland.

Research question:

How should retirement age be managed to ensure both:

- sustainable pension systems
- adequate retirement income

Objectives:

- Development of analytical framework
- Emphasize of dual effect of a decision variable: retirement age.
- Comparison of three countries
- Proposition of policy recommendations

Functions of retirement age

- pension sustainability in a long-term perspective
- labor market participation
- redistribution between generations
- pension adequacy
- future financial safety

Determinants for increasing retirement age

- longer life expectancy
- possible positive influence on mental and physical health
- technological progress
- growth of ergonomic workplaces

Analytical Framework

FEASIBILITY OF THE MODEL OF THE RETIREMENT AGE MANAGEMENT

$$\frac{cyn}{e_x} + P_v \geq P^*. \tag{1}$$

where:

c = retirement contribution rate,
y = average annual gross income from contributions paid during employment,
n = number of years of paying pension contributions,
e_x = remaining life expectancy at retirement age x,
P_v = annual income from voluntary retirement savings,
P^* = required annual retirement income to keep the desired/simillar standard of living.

$$P = \frac{cyn}{e_x} \tag{2}$$

where:

P = estimated annual retirement pension
c = total retirement contribution rate (combined employer and employee contributions),
y = income from contributions paid during employment
n = number of years of paying pension contributions,
e_x = average remaining life expectancy at retirement age x (years).

Analytical Framework

UNIQUE DUAL EFFECT OF THE DECISION VARIABLE ON PENSION INCOME: RETIREMENT AGE

$$n = R - L$$

Analytical Framework

MODEL OF THE RETIREMENT AGE INFLUENCE ON THE PENSION, ESTIMATED ANNUAL INCOME

$$P = \frac{cy(R - L)}{e_x} \tag{4}$$

where:

P = estimated annual retirement pension,

c = retirement contribution rate,

y = income from contributions paid during employment,

R = retirement age,

L = labour market entry age,

e_x = average remaining life expectancy at retirement age x (years).

Analytical Framework

IMPACT OF VOLUNTARY SAVINGS FOR TIME OF THE OLD AGE

$$P_T = P + P_v \tag{5}$$

where:

P_T = total annual retirement income,
P = annual public pension,
P_v = annual income, from voluntary savings for the old age.

$$P_T = \frac{cy(R-L)}{e_x} + P_v \tag{6}$$

Feasibility of the model:

$$P_T \geq P^* \tag{7}$$

Analytical Framework

DUAL EFFECT OF INCREASE OF RETIREMENT AGE

Increase of the contribution period: $R = (R - A) \uparrow$
Decrease of the avarage life expectancy: $R = (e_x) \downarrow$

Analysis of good practices of retirement age from: Japan, The Netherlands and Sweden

Japan

- social dialogue
- employment after 65
- long-term planning

The Netherlands

- retirement age linked to demographics
- sustainable increases
- developed sector occupational pensions

Table 1: The process of changing the retirement age in the Netherlands.

Year	Raising (in months)	Retirement age
2015	–	65 years
2017	9 months	65 years and 9 months
2018	3 months	66 years
2019	–	66 years
2020	4 months	66 years and 4 months
2021	–	66 years and 4 months
2022	3 months	66 years and 7 months
2023	3 months	66 years and 10 months
2024	2 months	67 years
2028	3 months	67 years and 3 months

Source: Own study based on https://www.svb.nl/en/aow-pension/aow-pension-age/your-aowpension-age, accessed on August 12, 2025.

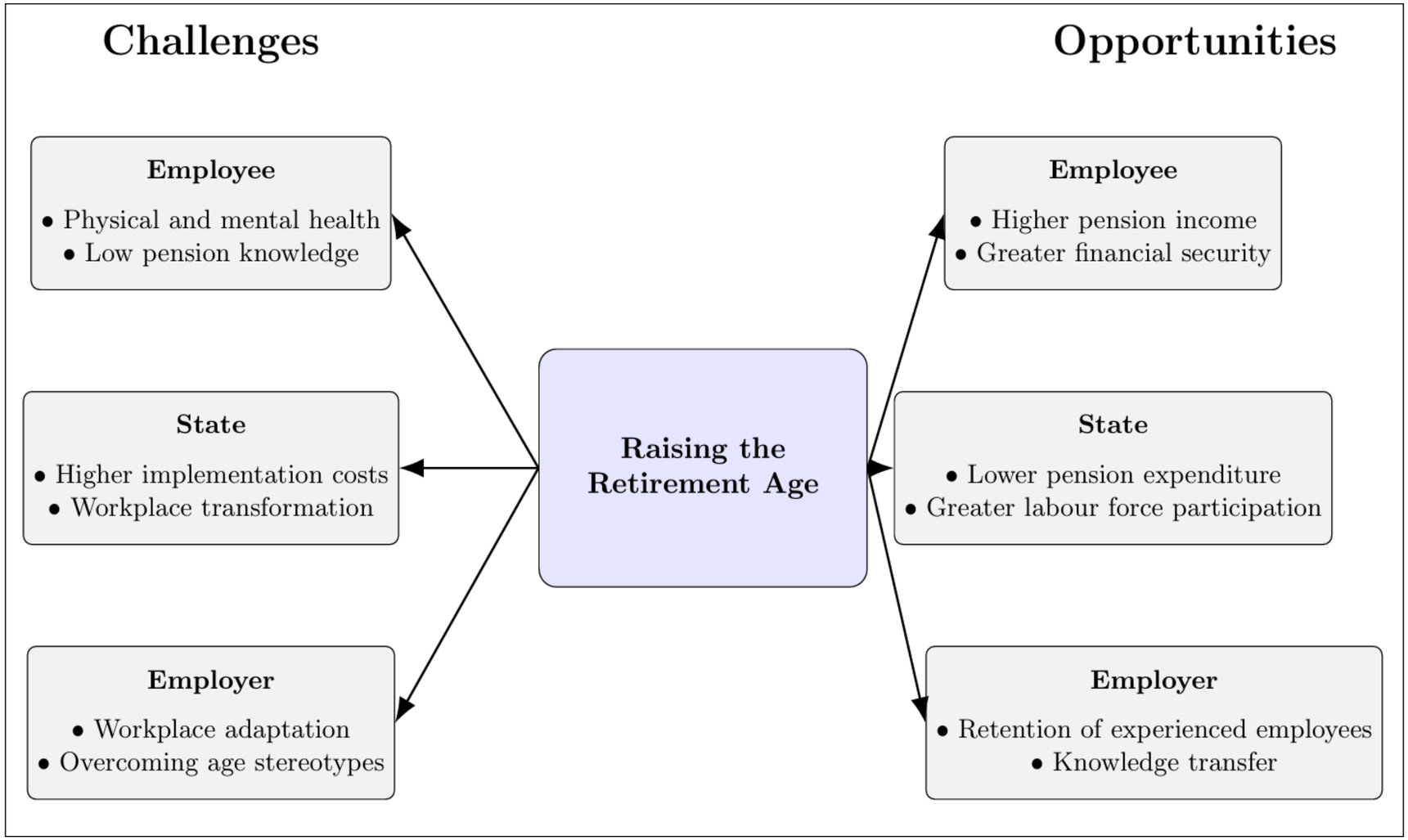
Sweden

- flexible retirement options
- guarantee pension
- investment culture

Comparison

Japan	Netherlands	Sweden
Social Dialogue	Automatic Adjustment	Pension Education
Gradual Reforms	Predictability	Investment Culture
Active Ageing	Sustainability	Individual Responsibility

Challenges and opportunities- perspective of state, employees, and entrepreneurs



Policy recommendations for the retirement age management

- gradual reforms
- demographic forecasting
- pension education
- healthy workplaces
- cooperation between government, employers and employees

THANK YOU