

EUROPA ECONOMIC PERSPECTIVES



The Japanese Economy
Strategies to Cope with a
Shrinking and Ageing Population

Randall S. Jones



Research Institute of Economy, Trade and Industry
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Strategies to Cope with a Shrinking and Ageing Population

Randall S. Jones

Professional Fellow, Center on Japanese Economy and Business
Adjunct Professor, Johns Hopkins University

Distinguished Non-resident Fellow, Korea Economic Institute
Former Senior Counselor - East Asia and Head of Japan/Korea
Desk, Organisation for Economic Cooperation and Development
(OECD)

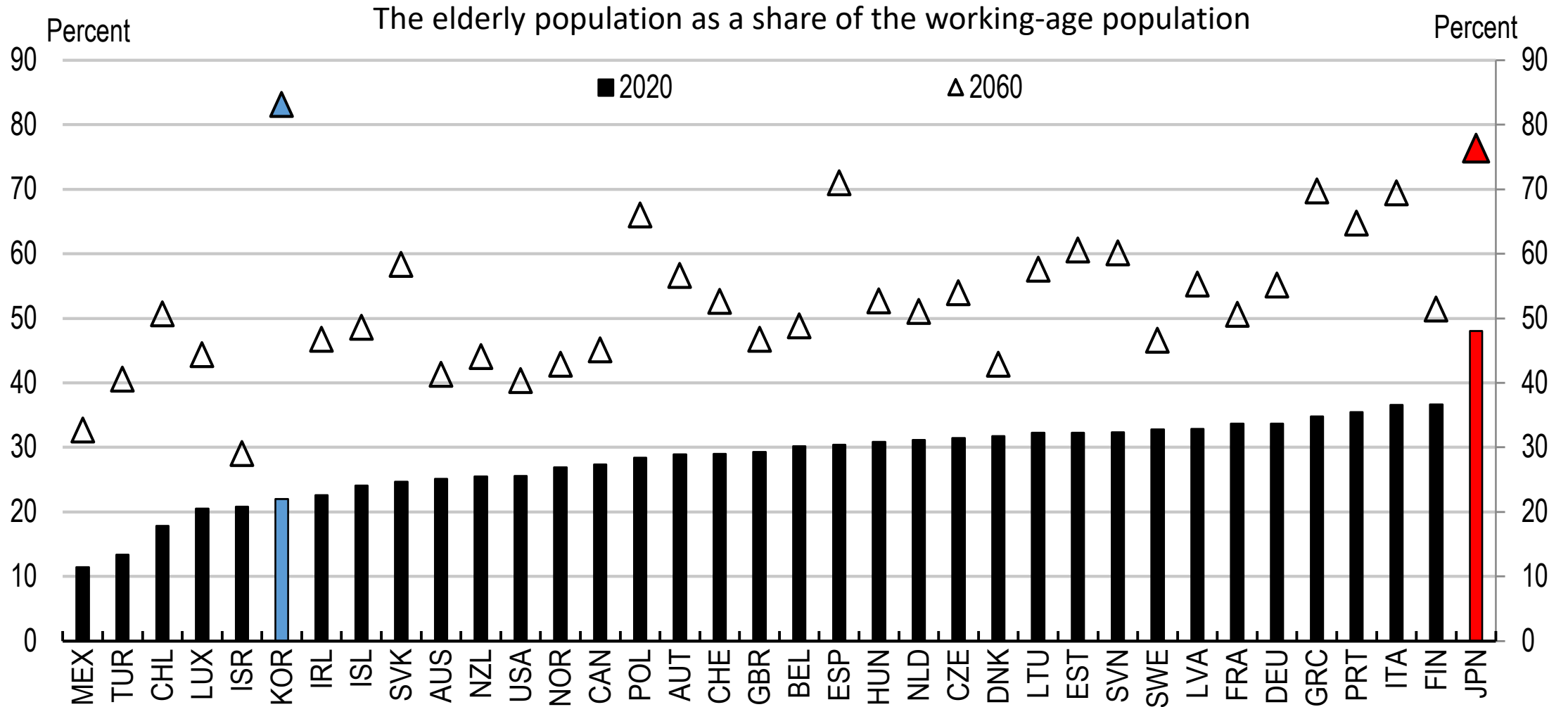
Main points of presentation

- Japan's population is projected to fall by more than a quarter by 2060 while the share of elderly rises to 39%, reducing the number of working-age persons to 1.3 per elderly person.
- The demographic shift threatens Japan's ability to fulfill its commitment to provide universal health and long-term care and pensions for the elderly.
- Meeting this commitment requires a comprehensive strategy to:
 1. Address the demographic problem.
 2. Limit the decline in the labor force by raising the participation of women and older persons and increasing the use of foreign workers.
 3. Boost labor productivity from its relatively low level compared to leading OECD economies by resolving the polarization of the Japanese economy.
 4. Increase the efficiency of health and long-term care.
 5. Implement effective fiscal policies to stabilize the government debt ratio and gradually reduce it.

Outline of presentation

1. Japan's demographic situation
2. Strategies to limit the decline in the labor force
3. Priorities to increase productivity
4. Policies to improve the efficiency of health and long-term care
5. Addressing the fiscal situation

Japan's elderly dependency ratio is the highest in the OECD and will continue rising



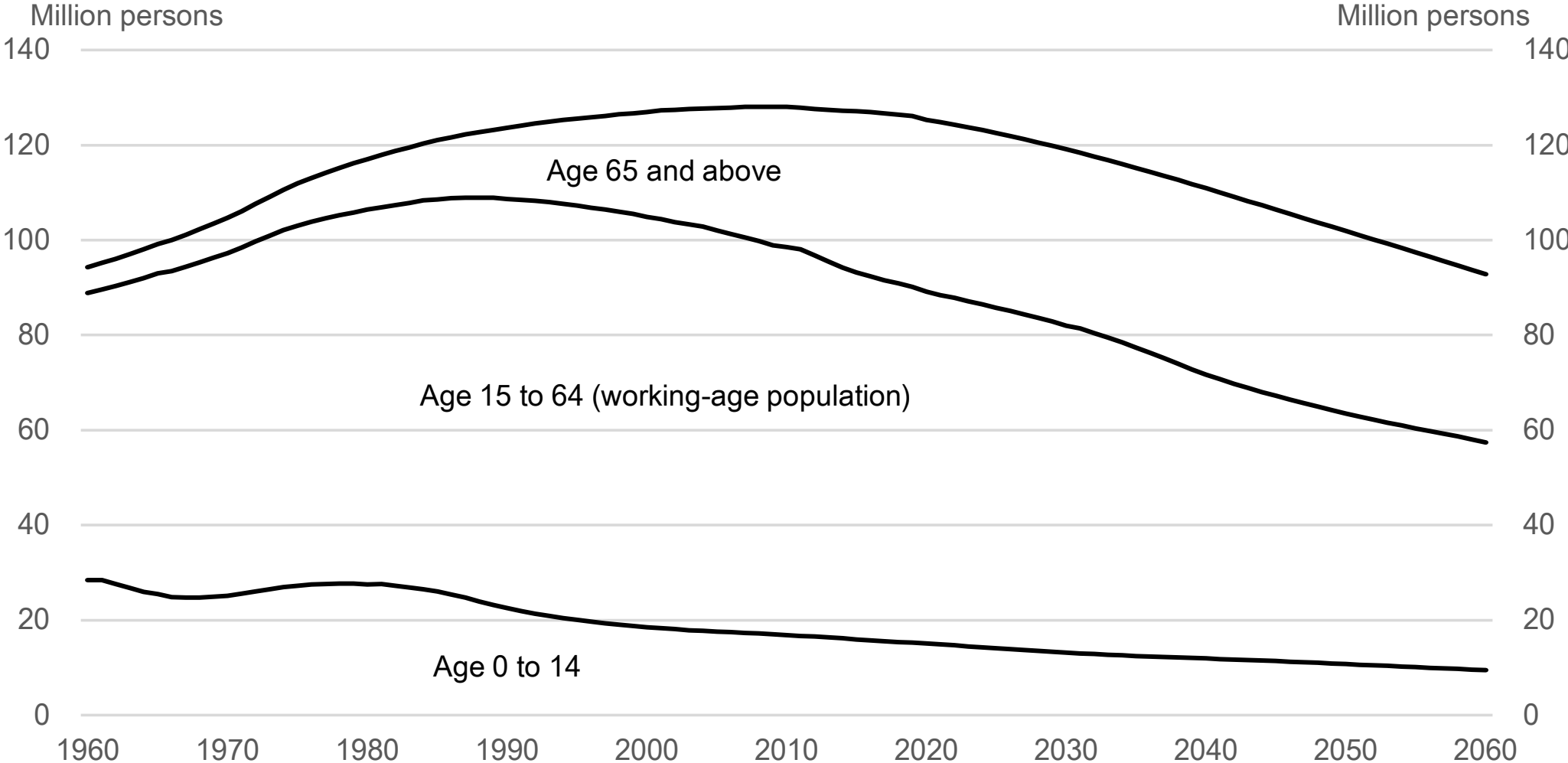
Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

1. Demographics: the speed of population aging has been very rapid in Japan

Country	Year when share of elderly (65 and over) make up:			Years elapsed	
	7% of Population	14% of population	20% of Population	7 to 14%	14 to 20%
Korea	2000	2018	2025	18	7
Japan	1970	1994	2006	24	12
Germany	1932	1972	2008	40	36
United Kingdom	1929	1976	2025	47	49
Italy	1927	1988	2008	61	20
United States	1942	2014	2028	72	14
Sweden	1887	1972	2018	85	46
France	1864	1979	2028	115	39

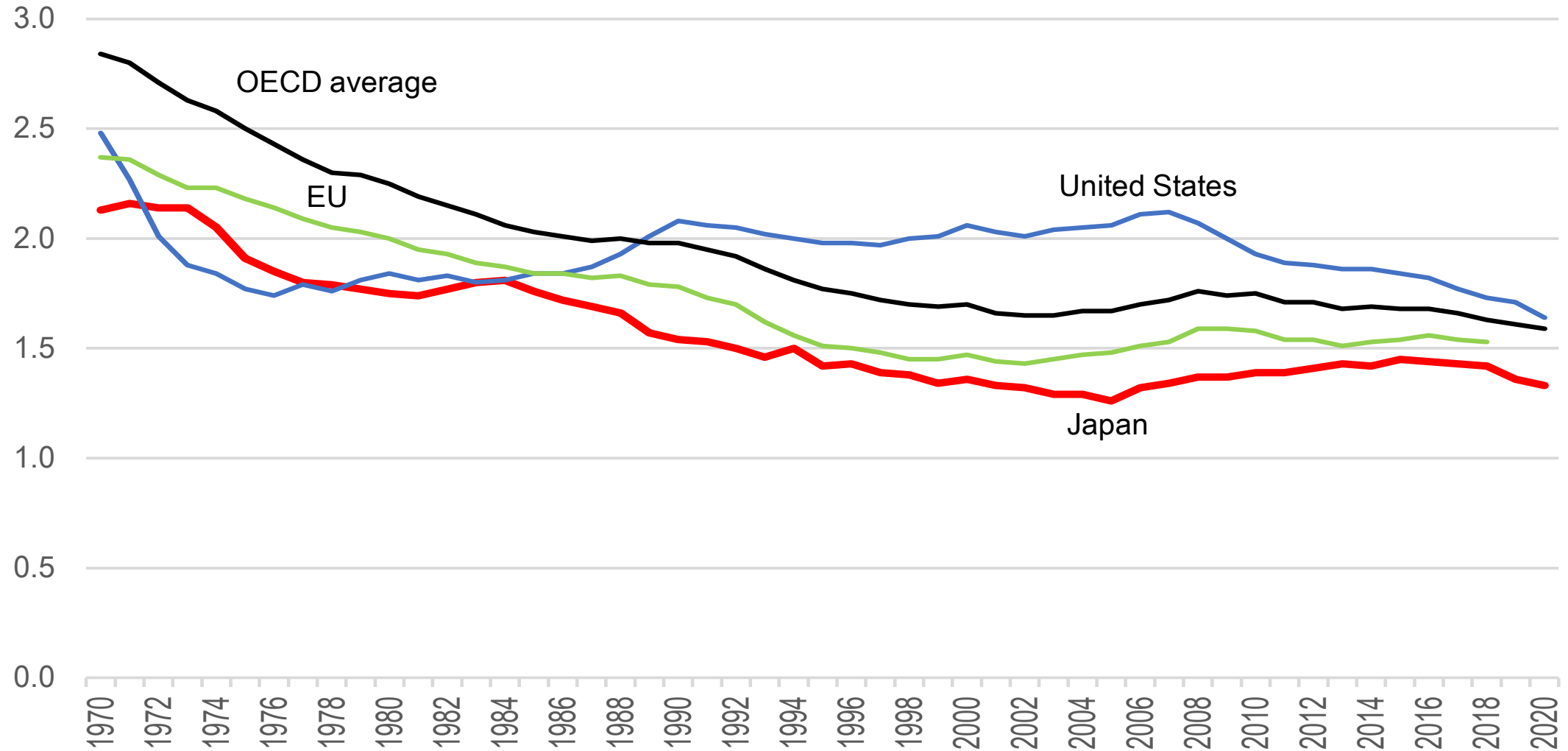
Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

By 2060, Japan's population is project to decline by one-fourth, while the share of elderly rises from 28% to 39%



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Japan's fertility rate is below the OECD average



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

What explains falling fertility rates?

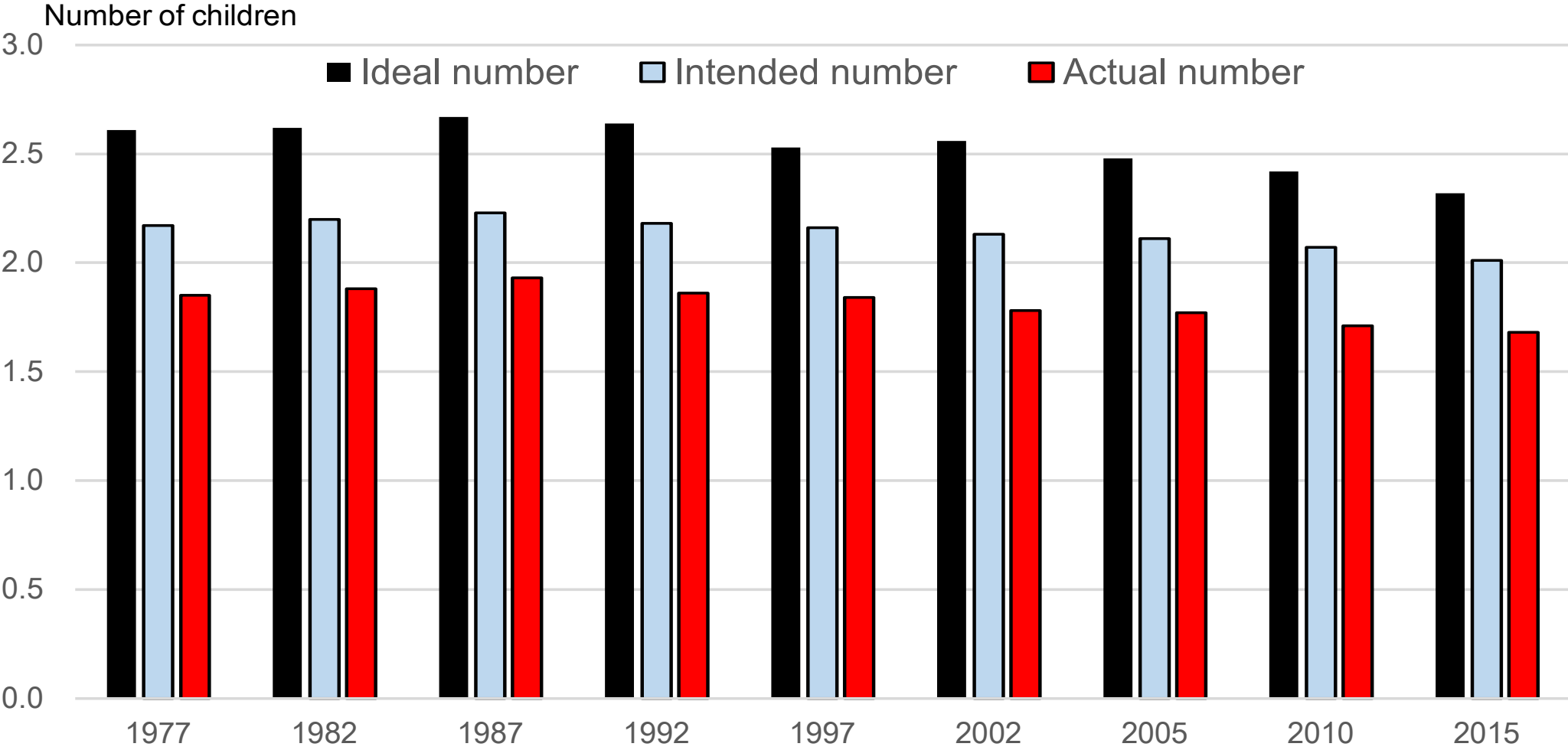
Traditional explanations of the negative relationship between fertility and GDP per capita:

1. Quantity-quality trade-off: as parents get richer, they invest more in quality (e.g. education), which is costly, so parents choose to have fewer children as income rises.
2. As wages increase, the opportunity cost of childcare rises. The result is a decline in fertility and greater female labor force participation.
 - However, in recent years, fertility behavior in high-income countries, appears driven by the degree of compatibility between women's careers and families. Without such compatibility, women choose to have fewer (or no) children.
 - In advanced countries, we are seeing a positive relationship between the fertility rate and female employment.

Compatibility of women's careers and families depends on:

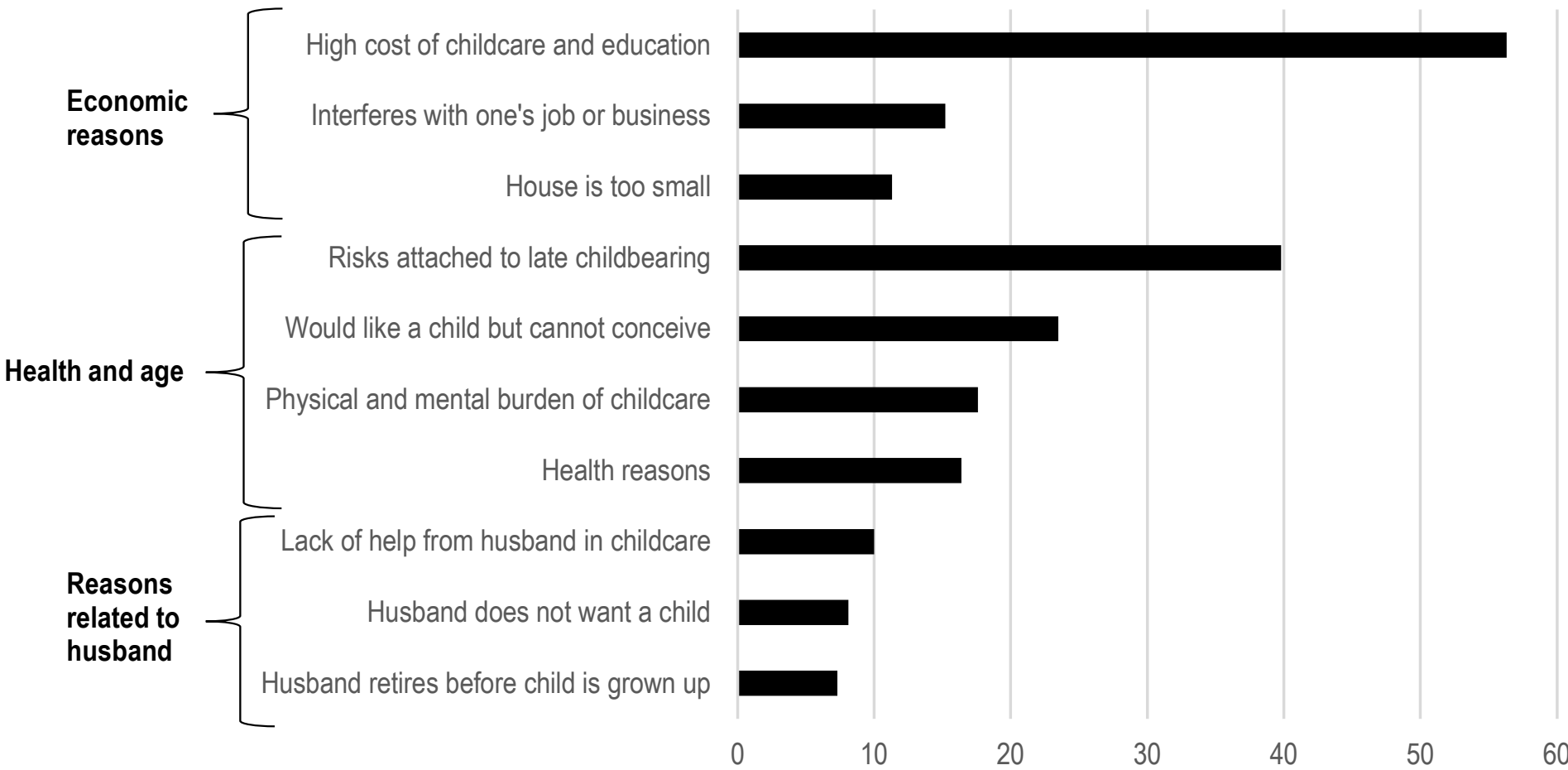
1. Family policies: In Japan, public social spending (including cash transfers, services and in-kind benefits and tax benefits) for families with children is at the low end of OECD countries (1.6% of GDP versus OECD average of 2.4%).
2. Favorable social norms: 教育ママ (Education Mother)
3. Flexible labor markets: The segmentation of Japanese labor markets between regular and non-regular workers makes it difficult for mothers to pursue careers.
4. Cooperative fathers: Improving but still an issue in Japan.

The actual number of children for couples is below the ideal and intended numbers (2015)



Note: Survey for first-marriage couples in which the wife is under age 50 that asked "What is the ideal number of children for you as a couple?".
Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

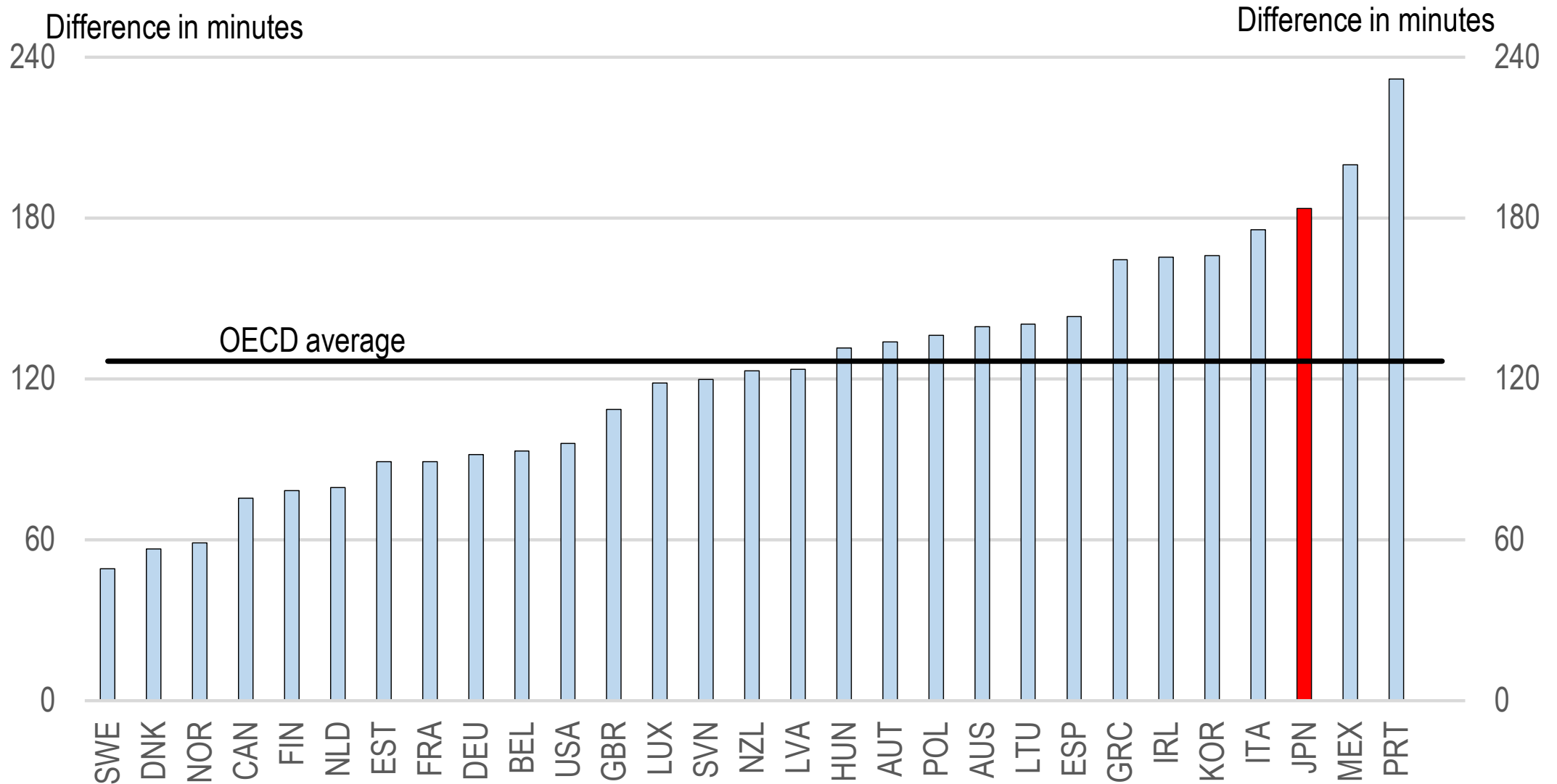
Reasons why couples do not achieve their ideal number of children



Note: The figures, based on a 2015 survey, are for first-marriage couples whose intended number of children is less than their ideal number. As multiples answers were permitted, the total exceeds 100%.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

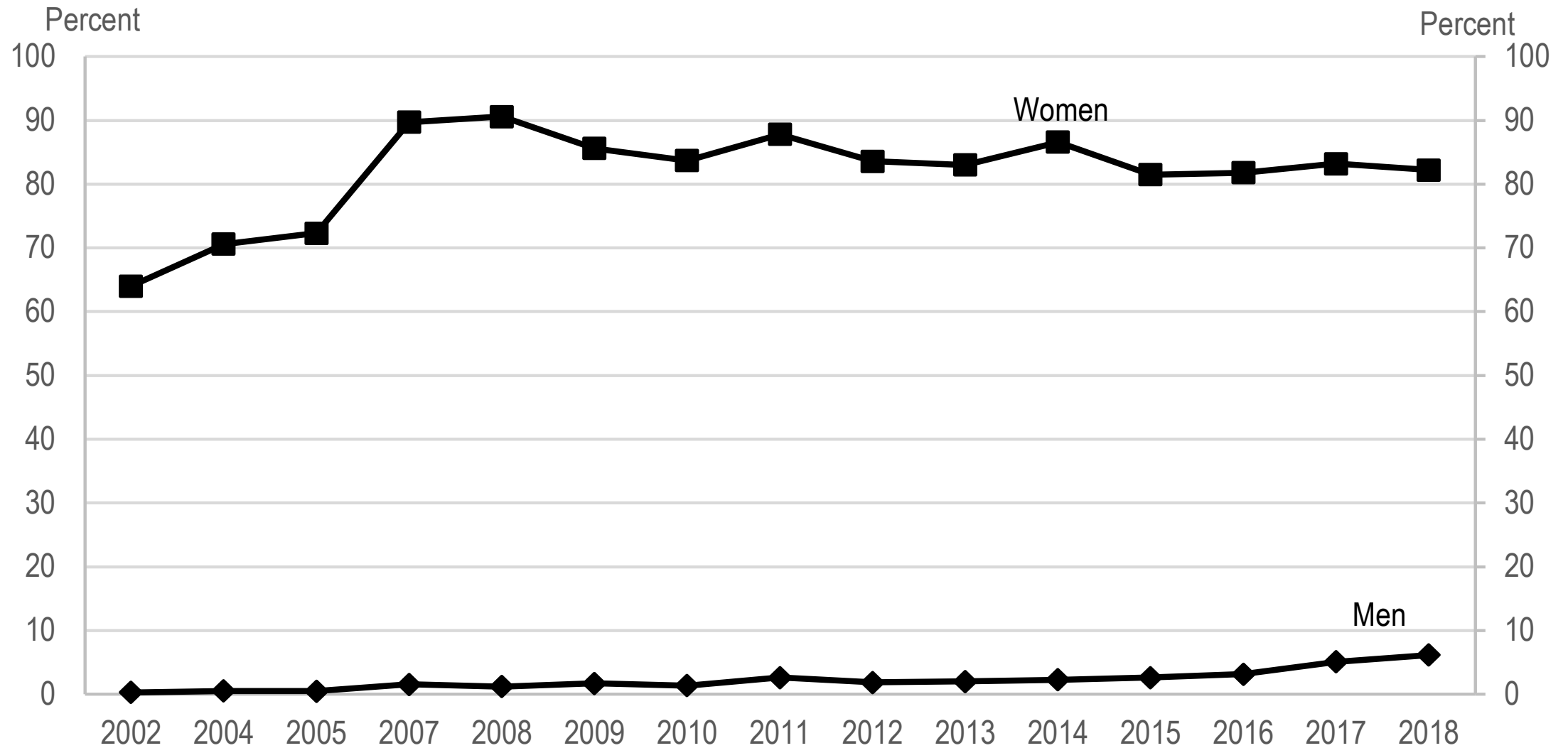
Japanese women spend much more time in unpaid work



Note: gap in minutes of unpaid work per day by 15-64 year-olds, female minus male. Unpaid work is housework and childcare.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

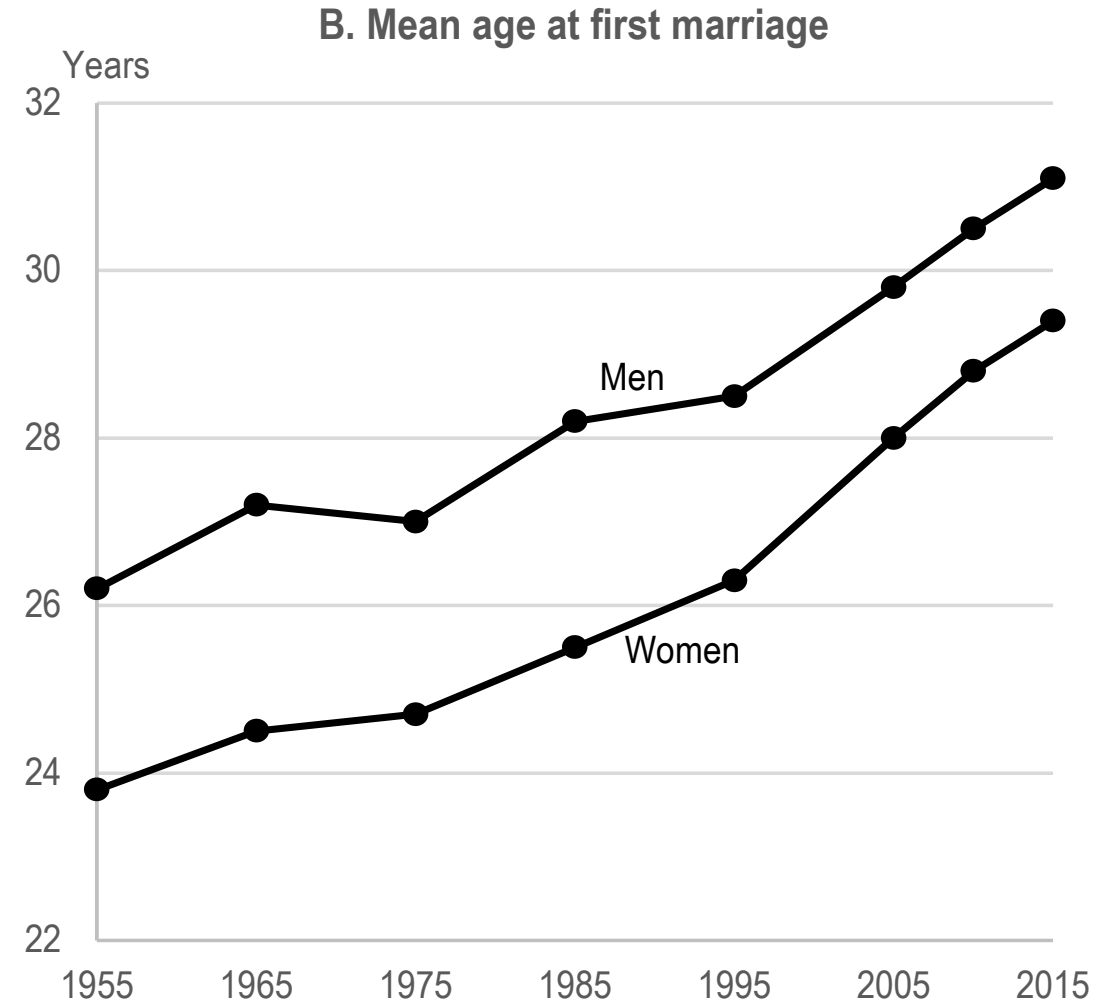
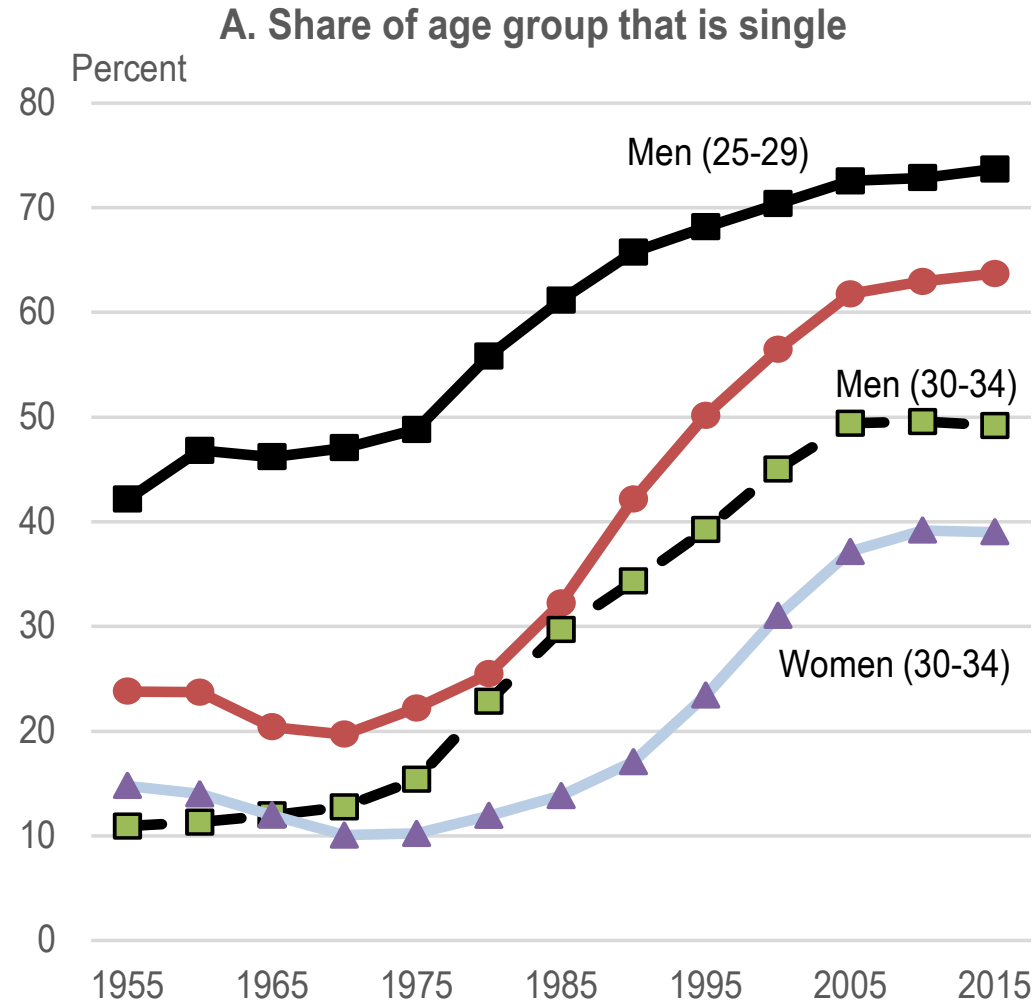
The share of men taking parental leave is low in Japan



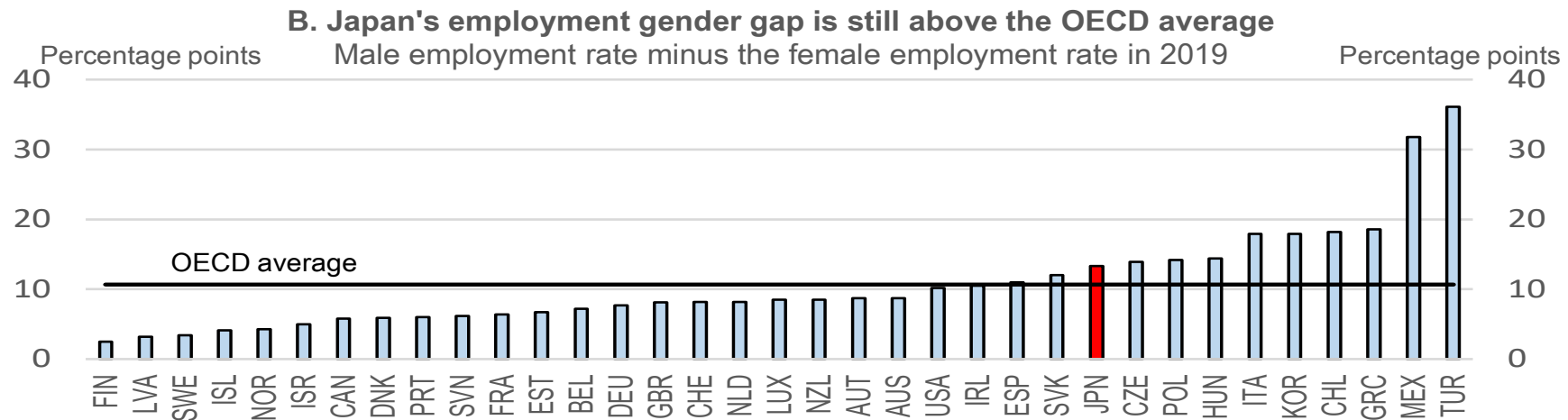
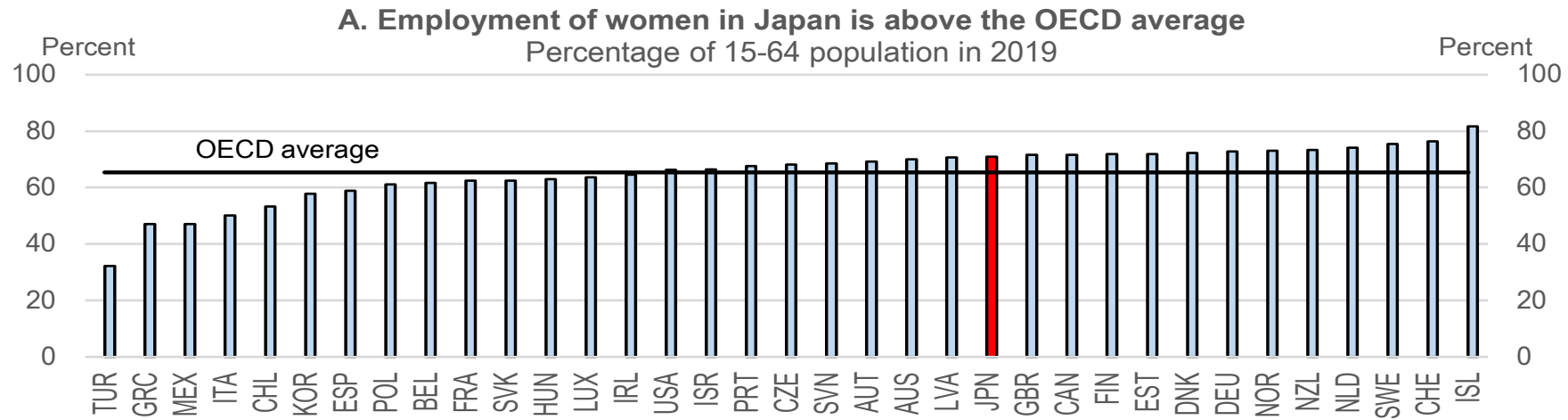
Note: The share of women (men) taking parental leave as a share of the total number of female (male) workers with newborns.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

A smaller share of young Japanese are married and marriages occur later



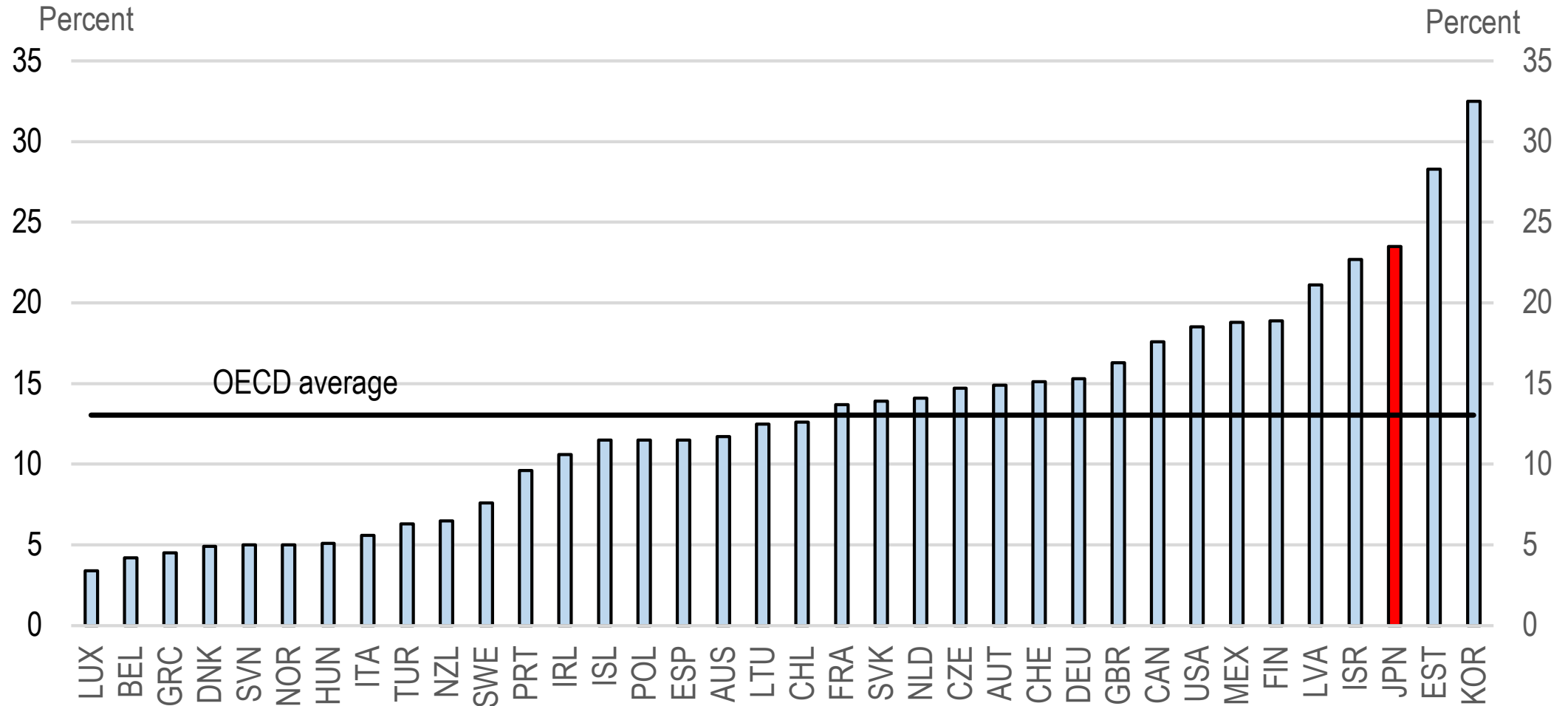
2. Limiting the decline in the labor force: Removing obstacles to the employment of women



Note: In 2019 or latest year available.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

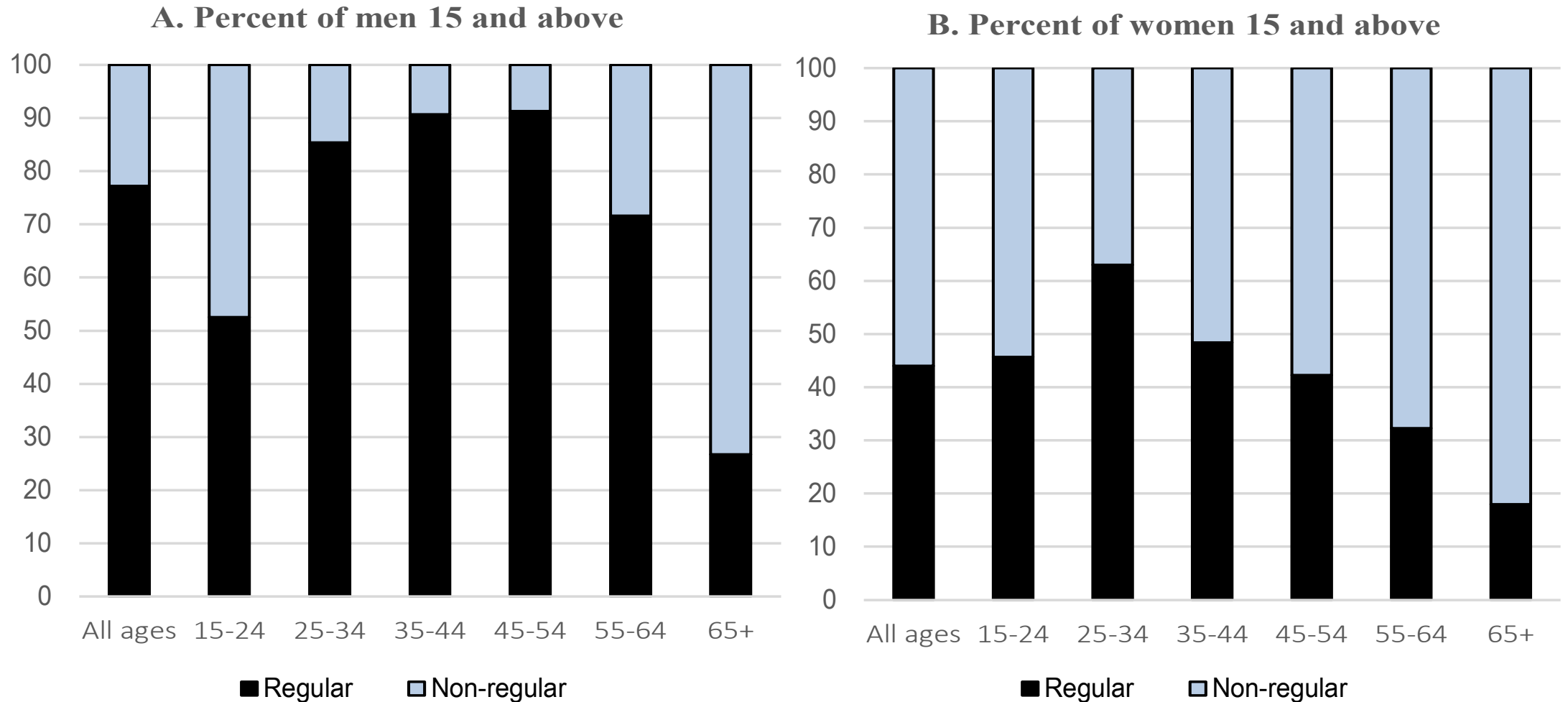
The gender wage gap in Japan is the third highest in the OECD



Note: In 2019 or latest year available. The gender wage gap is the difference between the median earnings of men and women relative to the median earnings of full-time male employees.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

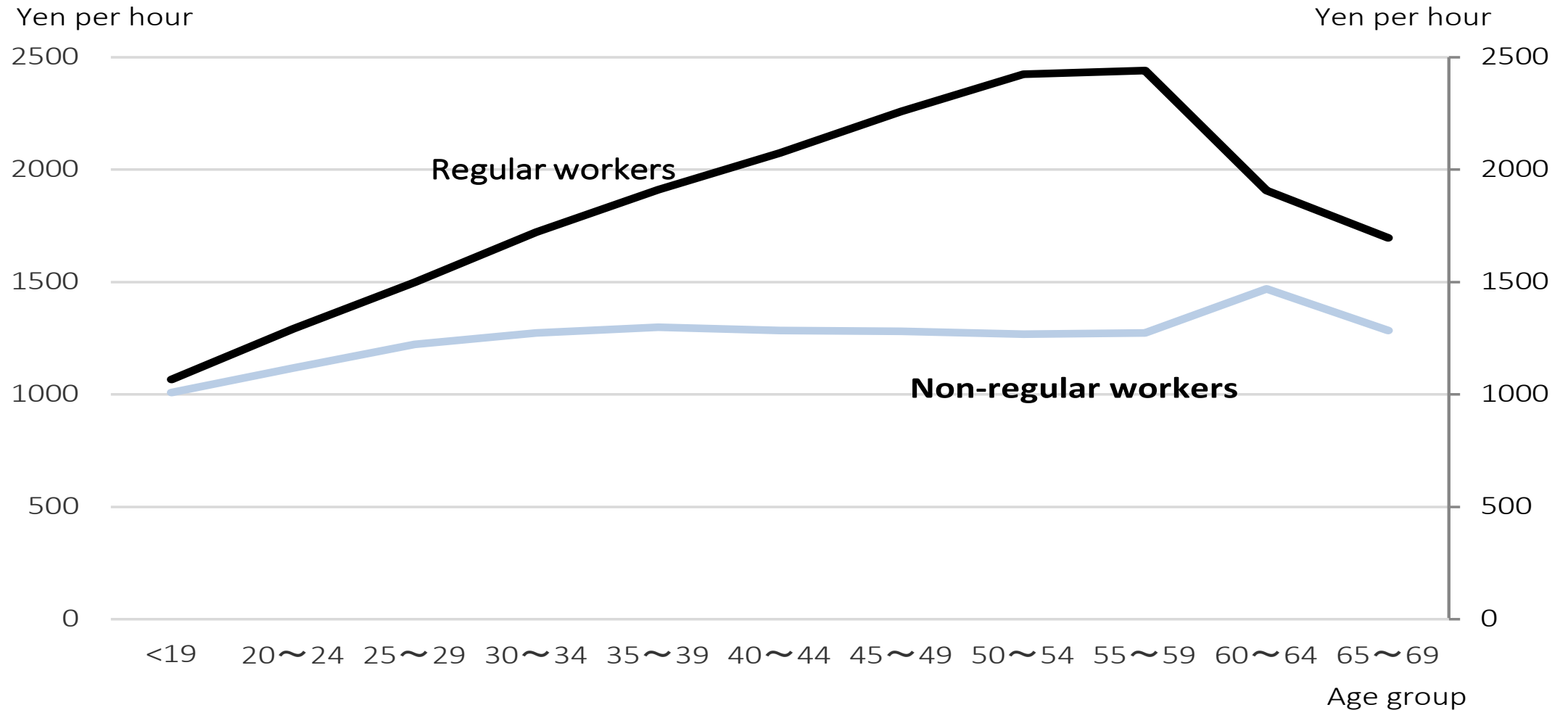
The large share of women in non-regular employment contributes to gender inequality and discourages female employment



Note: Share of employees classified by employment status in 2019.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Labor market dualism – the segmentation between regular and non-regular work leads to high wage inequality



Note: Scheduled cash earnings divided by actual number of scheduled hours worked.

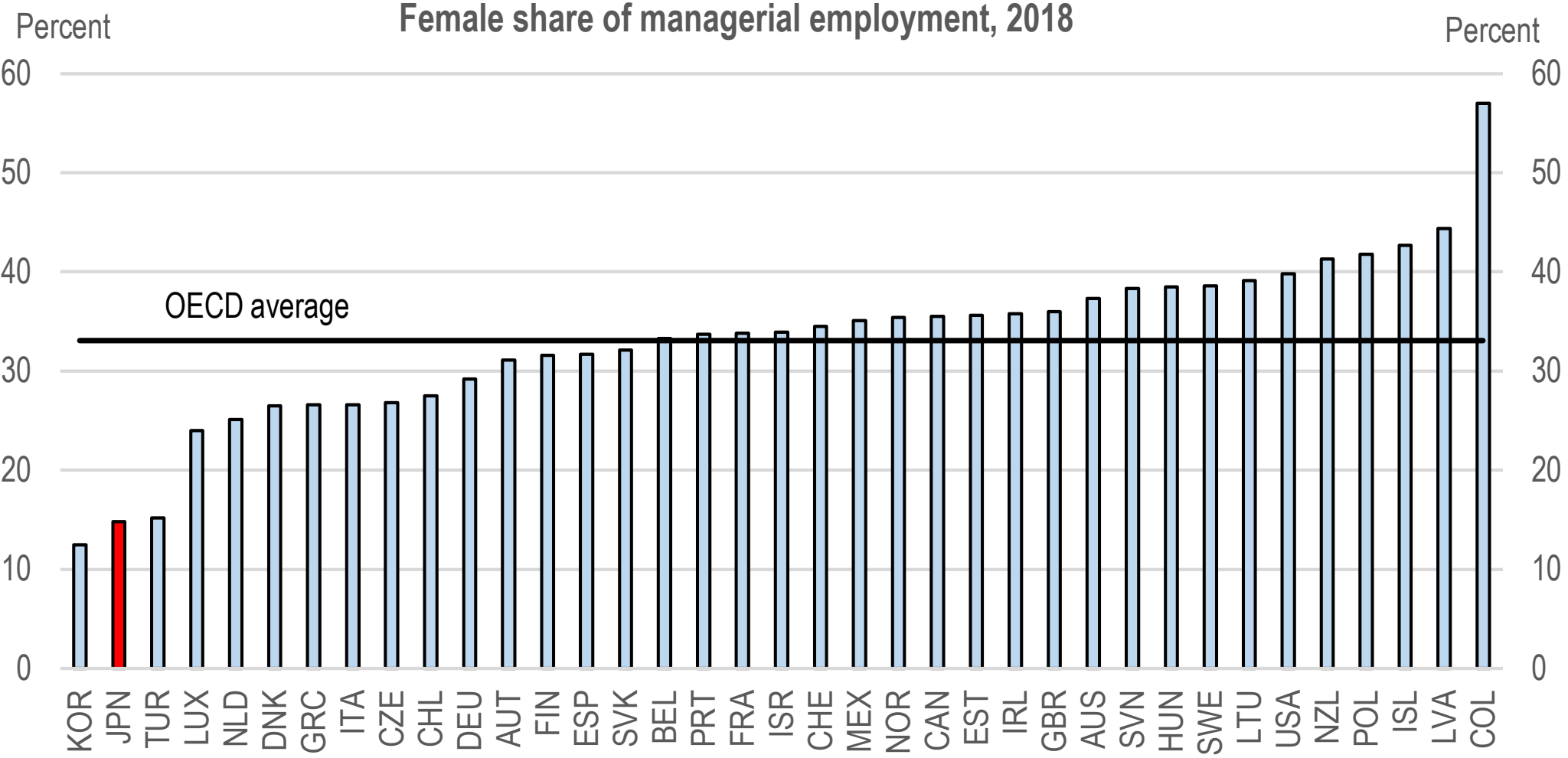
Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Prime Minister Abe set a goal in 2017: “the term non-regular work will be swept from this country”

Breaking down labor market dualism requires addressing the factors that encourage companies to hire non-regular workers. In a government survey that asked firms why they hire non-regular workers:

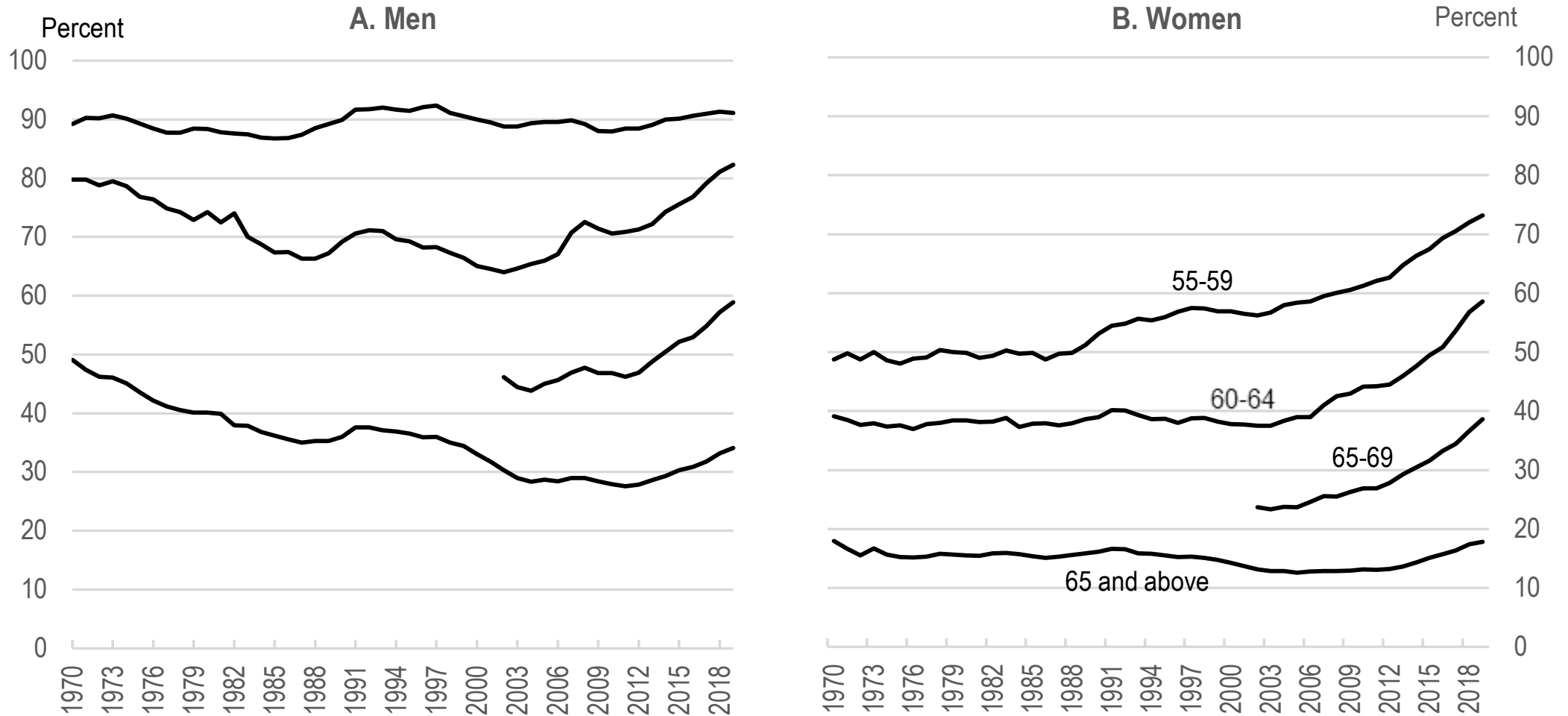
1. 39% cited the need to reduce labor costs (in addition to lower wage costs firms pay less in social insurance premiums, given the lower coverage of non-regular workers).
2. 33% cited the need for a more flexible workforce to adapt to changing workloads.
 - The lack of employment flexibility is a result of employment protection accorded to regular workers. According to the Global Competitiveness Index, Japan ranks in the lower third of OECD countries in its flexibility for hiring and firing workers.
 - Labor law states that any dismissal of workers that “lacks objective, reasonable grounds and is not considered to be appropriate in general societal terms, [shall] be treated as an abuse of power and be invalid.” Judicial precedents have established the criteria to determine whether employment adjustment in corporate downsizings is an abuse of power by the company.
 - This formulation allows the legal system considerable discretion. Consequently, according to JETRO, it is “exceedingly difficult to judge the validity of dismissal,” as these criteria leave considerable room for interpretation.
 - A comprehensive strategy is necessary to break down labor market dualism by increasing the coverage of social insurance and improving training programs for non-regular workers and reducing employment protection for regular workers, in part by increasing its transparency.
 - The fundamental goal should be to shift from protecting jobs to protecting workers, the so-called “flexicurity” epitomized by Denmark.

Discrimination also contributes to Japan's wage and employment gender gap



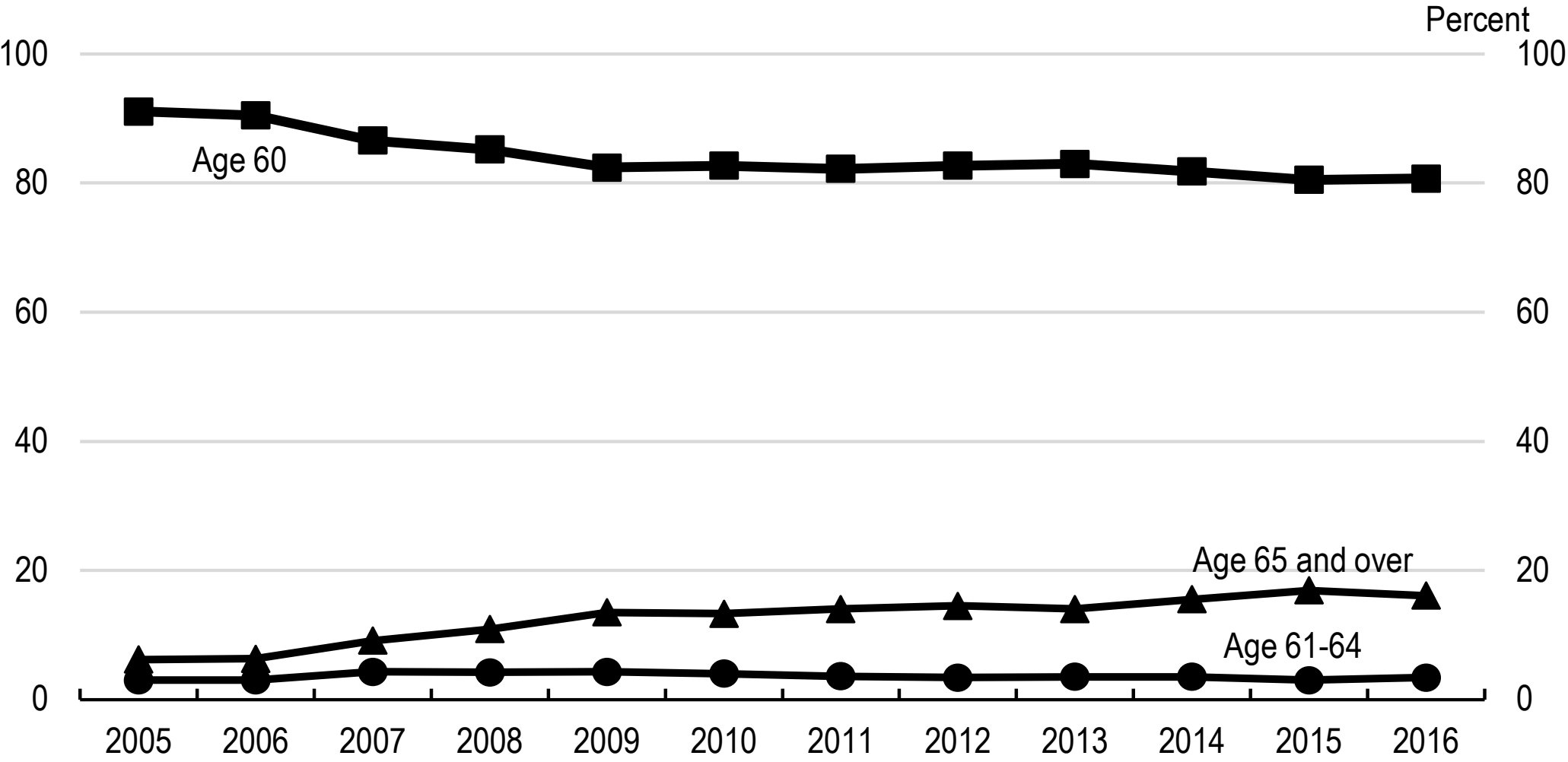
Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

The employment rate of older persons in Japan has been trending up



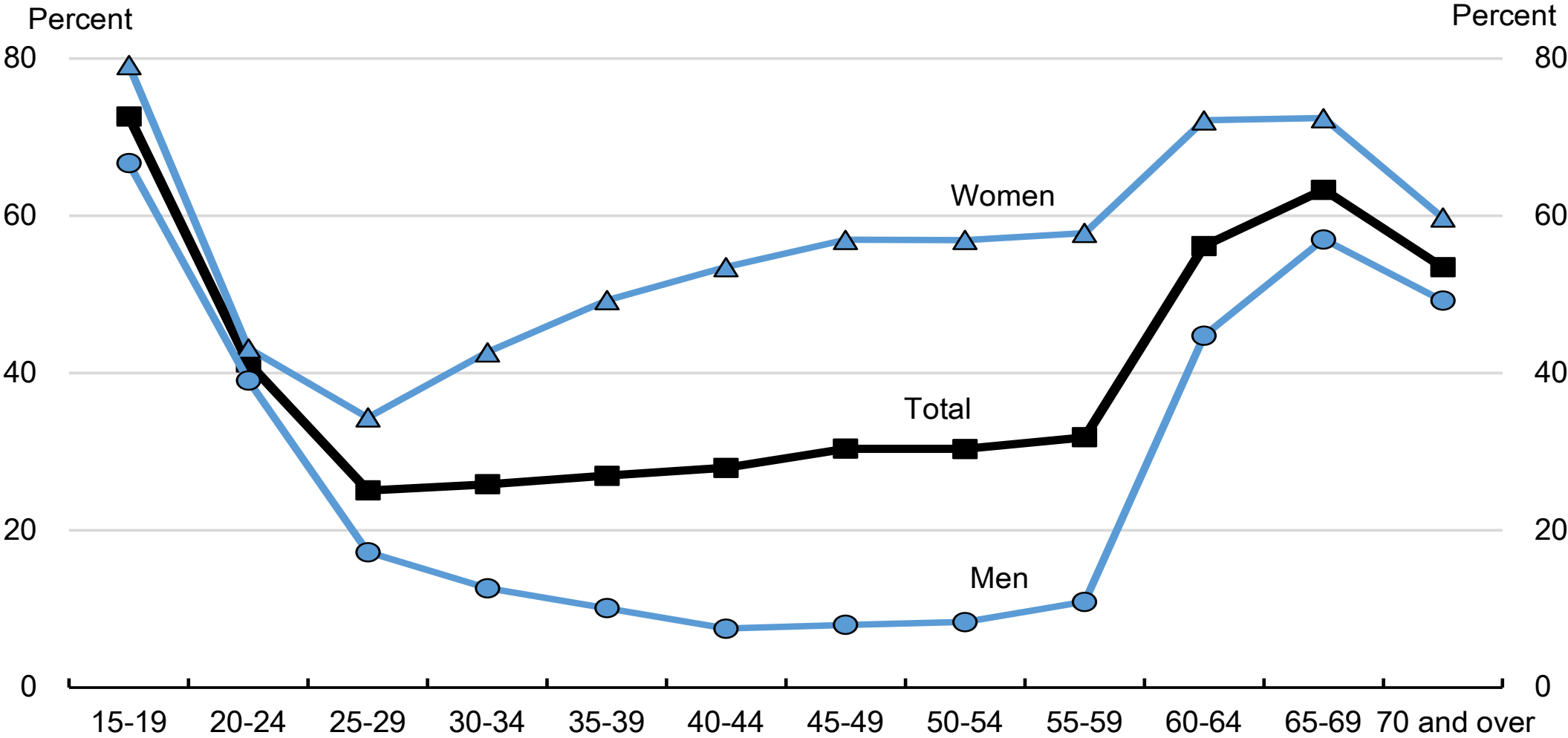
Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

In 1998, the government prohibited companies from setting a mandatory retirement age below 60



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

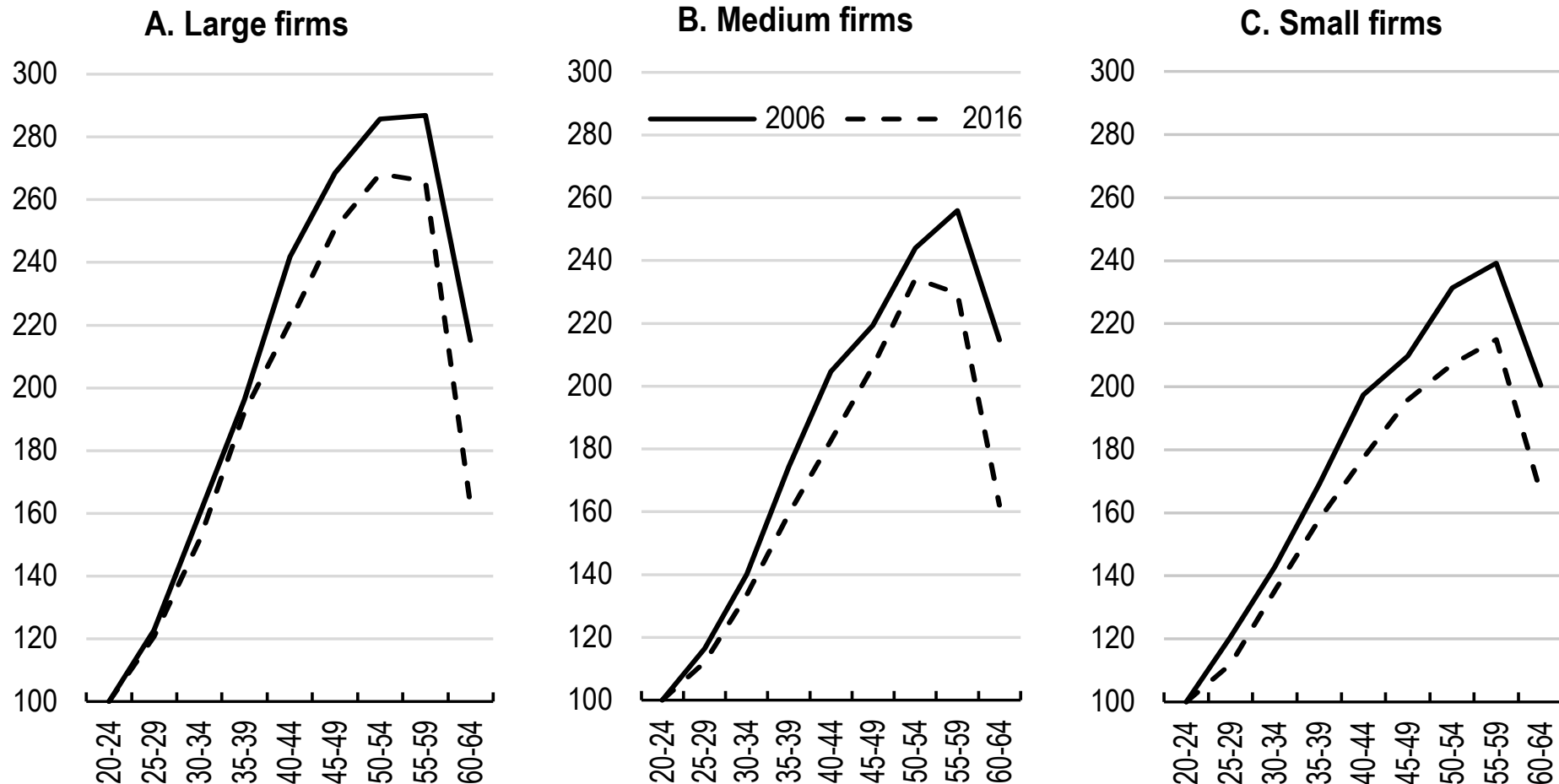
Since 2013, workers are allowed to continue until age 65, but many are forced to become non-regular workers



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Japan's seniority-based wage system encourages firms to dismiss older workers or shift them to lower-paid non-regular employment

The wage profile for male lifetime employees, 20-24 age group = 100 in 2017



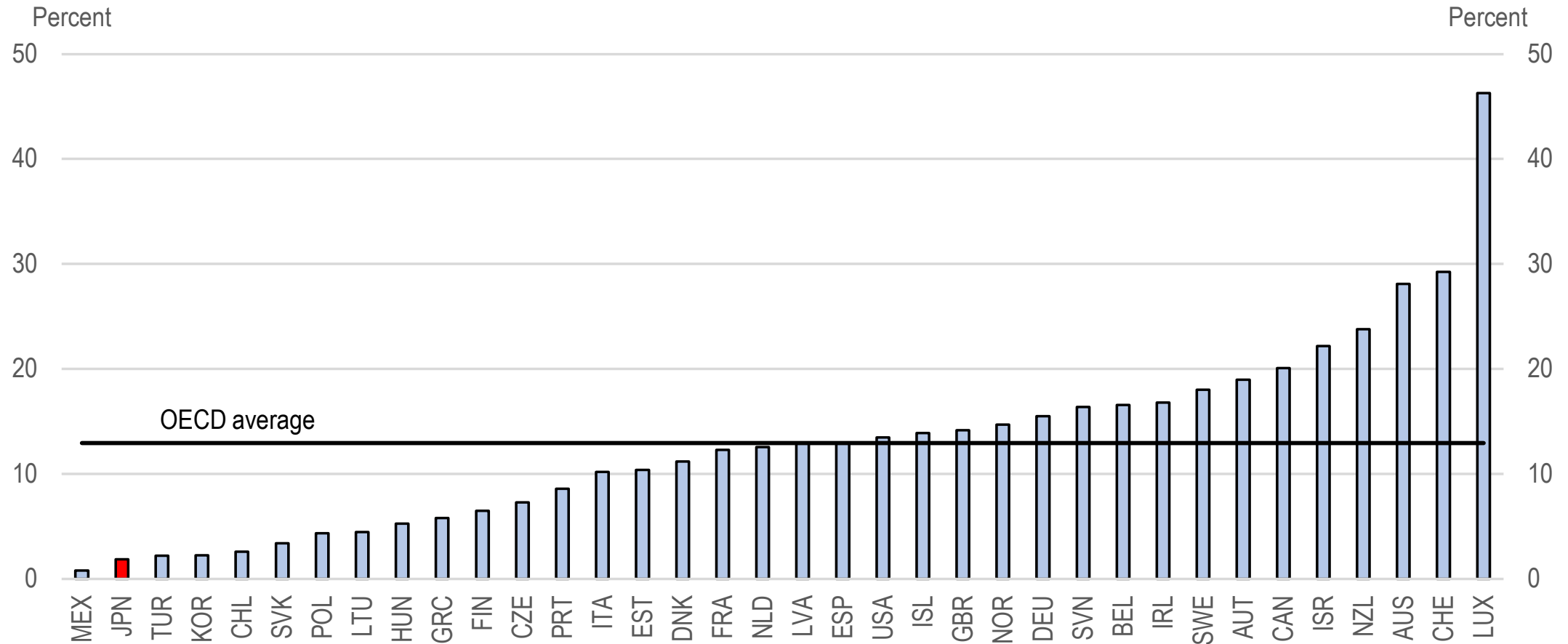
Policies to enable older persons to extend their working lives

The higher educational attainment of older age cohorts, longer life expectancy, improved health and the changing nature of work will encourage the employment of older persons who wish to continue working. A number of policy reforms would be beneficial to support work opportunities for older persons:

1. The right of companies to set a mandatory retirement age should be abolished.
2. The pension eligibility age should be raised further after reaching the target of 65 (in 2025 for men and 2030 for women). Twelve OECD countries raised their pension eligibility age above 65 by 2016 and another 18 countries had passed legislation to raise it.
3. Wage systems should give less weight to seniority and more to job type and performance, with the government taking the lead in adopting such practices.
4. Expanding lifelong training and education for older persons is important to provide them with the skills for an increasingly digital economy.
5. Ensuring appropriate working conditions and better work/life balance to promote longer working lives.

Immigration into Japan remains low compared to other OECD countries

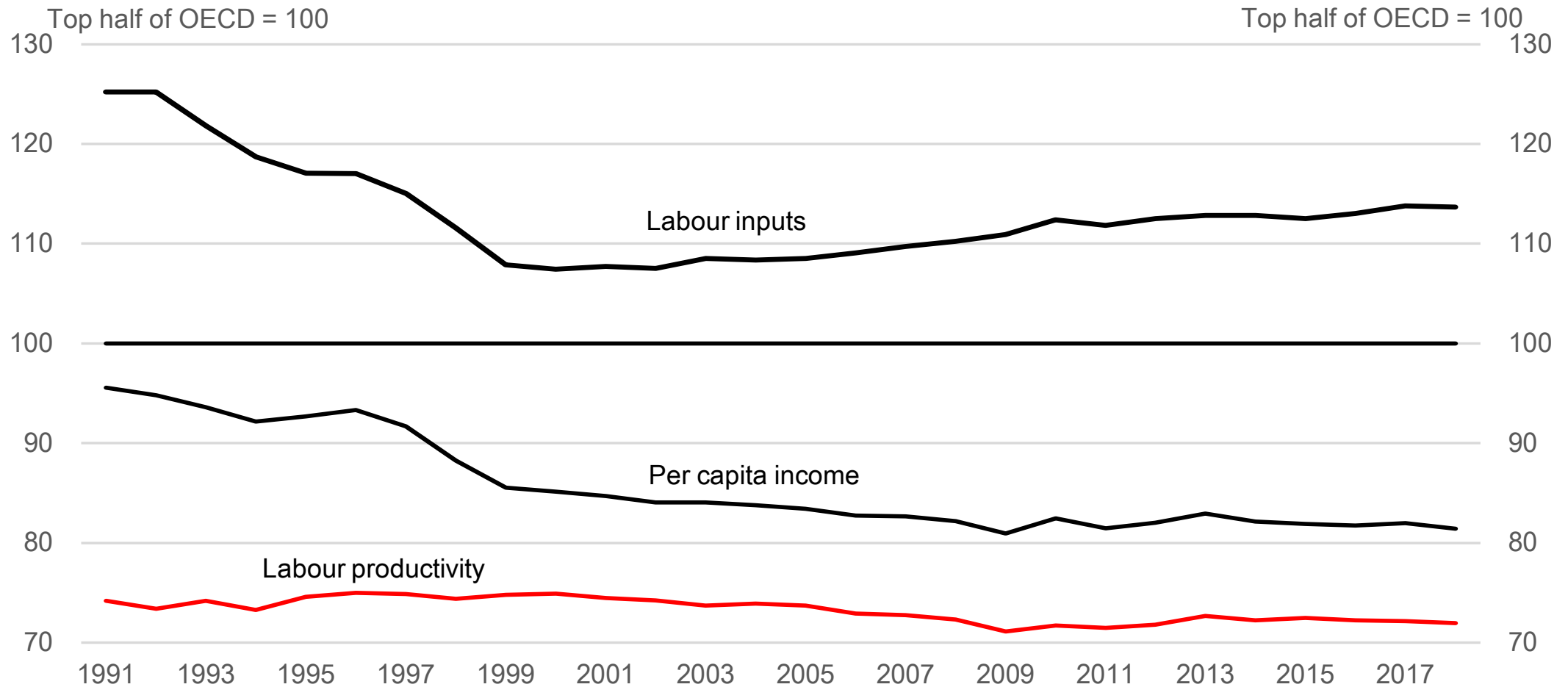
Share of the foreign-born population in 2017



Note: In Japan, foreigners are defined as those staying in Japan for the mid to long-term with a resident status in the Immigration Control and Refugee Recognition Act.

Source: OECD (2019), *Society at a Glance 2019*, OECD Publishing, Paris, [soc_glance-2019-en.pdf \(oecd-ilibrary.org\)](https://www.oecd-ilibrary.org/publications/society-at-a-glance-2019-en).

3. Productivity growth: Japan's labor productivity is nearly 30% below the top half of OECD countries

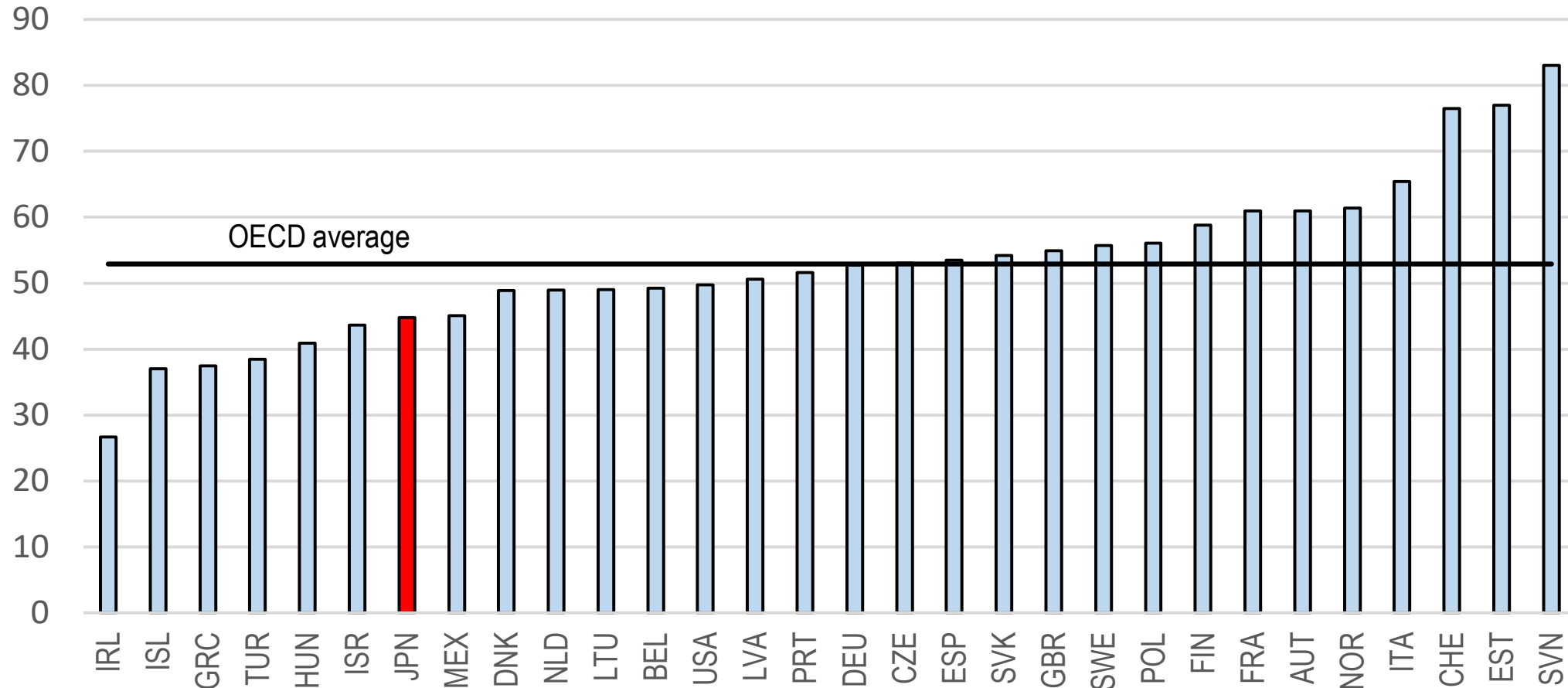


Note: GDP per capita is shown in constant prices and at purchasing power exchange rates, with 2015 set as the base year. Labor productivity is GDP per hour worked. Labor inputs are hours worked divided by the population aged 15-74.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Japan's productivity gap between large firms and SMEs is wide compared to other OECD countries

Labor productivity in firms with 20-49 workers, relative to firms with more than 250 workers (equals 100)

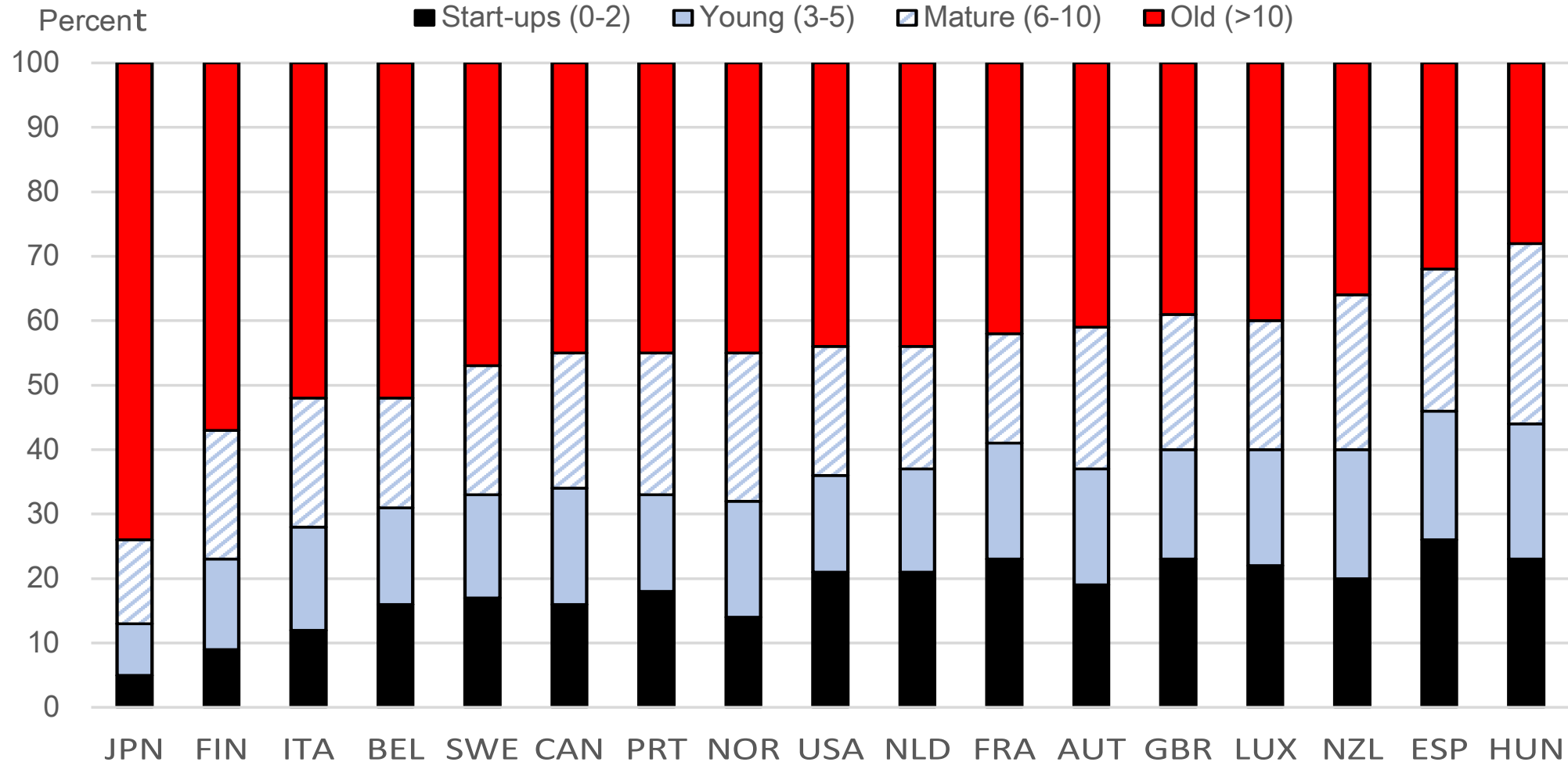


Note: Value added in 2016 per employed person.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

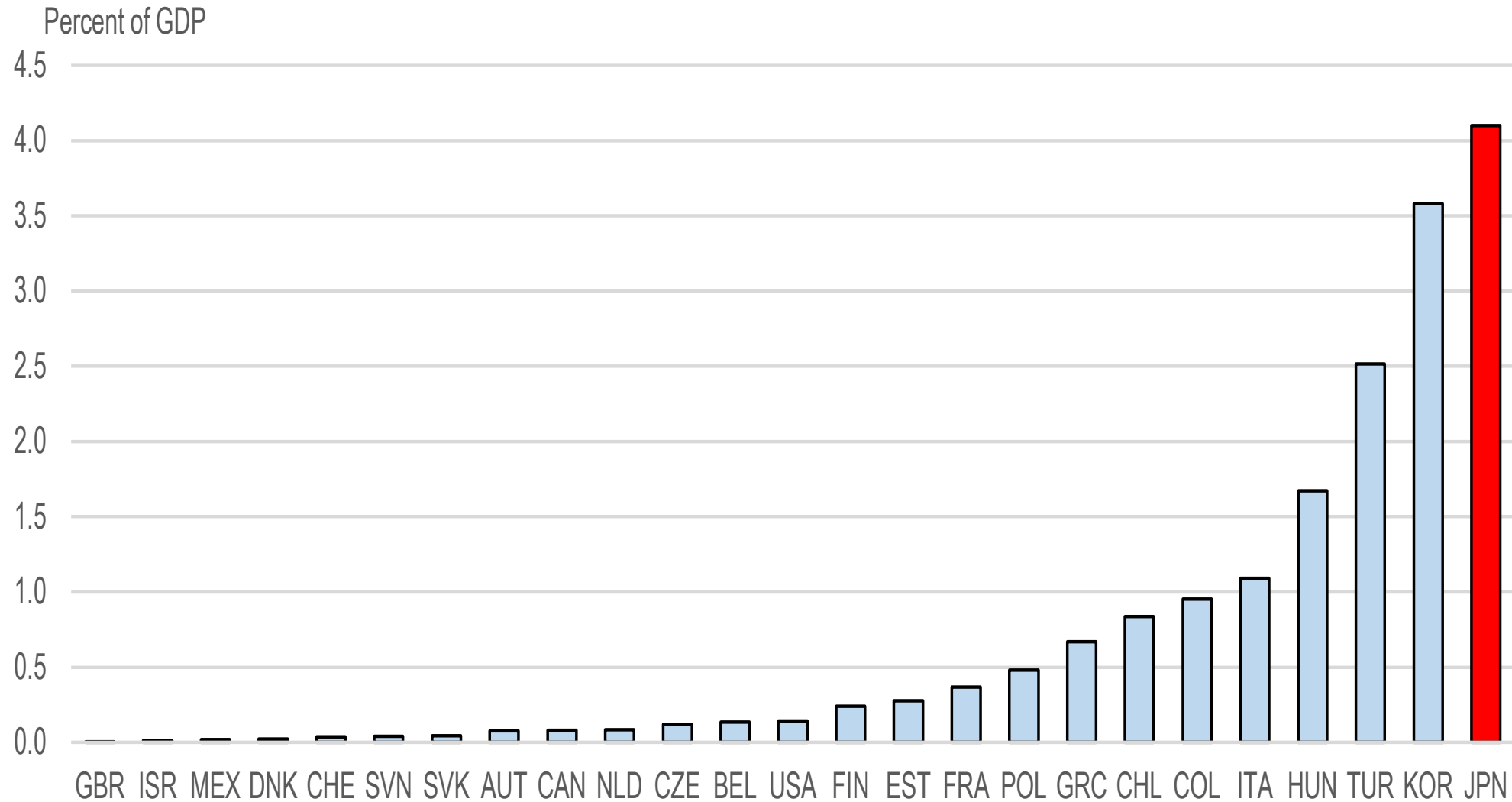
Mature firms in Japan are small compared to other advanced economies, leading to less scope for economies of scale

Firms with less than 50 workers by age (in years)



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

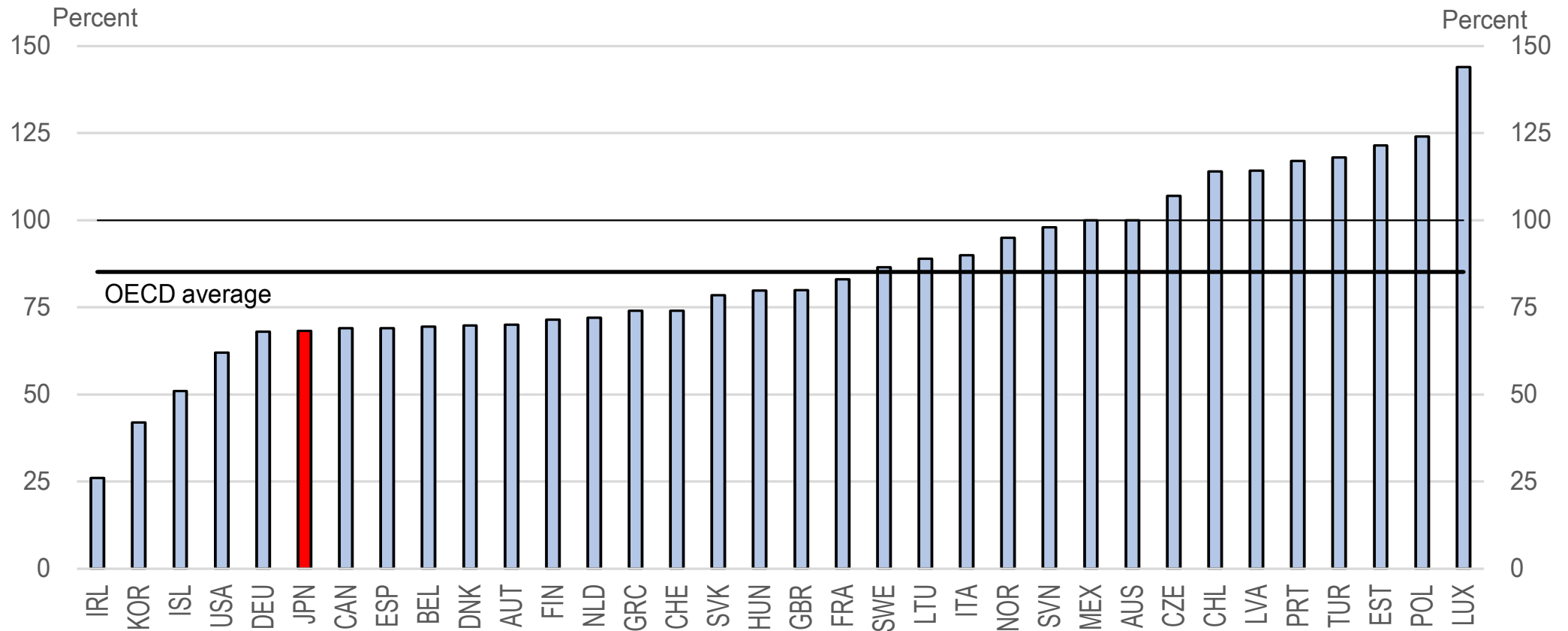
Japan provides high support for SMEs, including for government guarantees for SME loans



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Labor productivity in Japanese services is only two-thirds of that in manufacturing

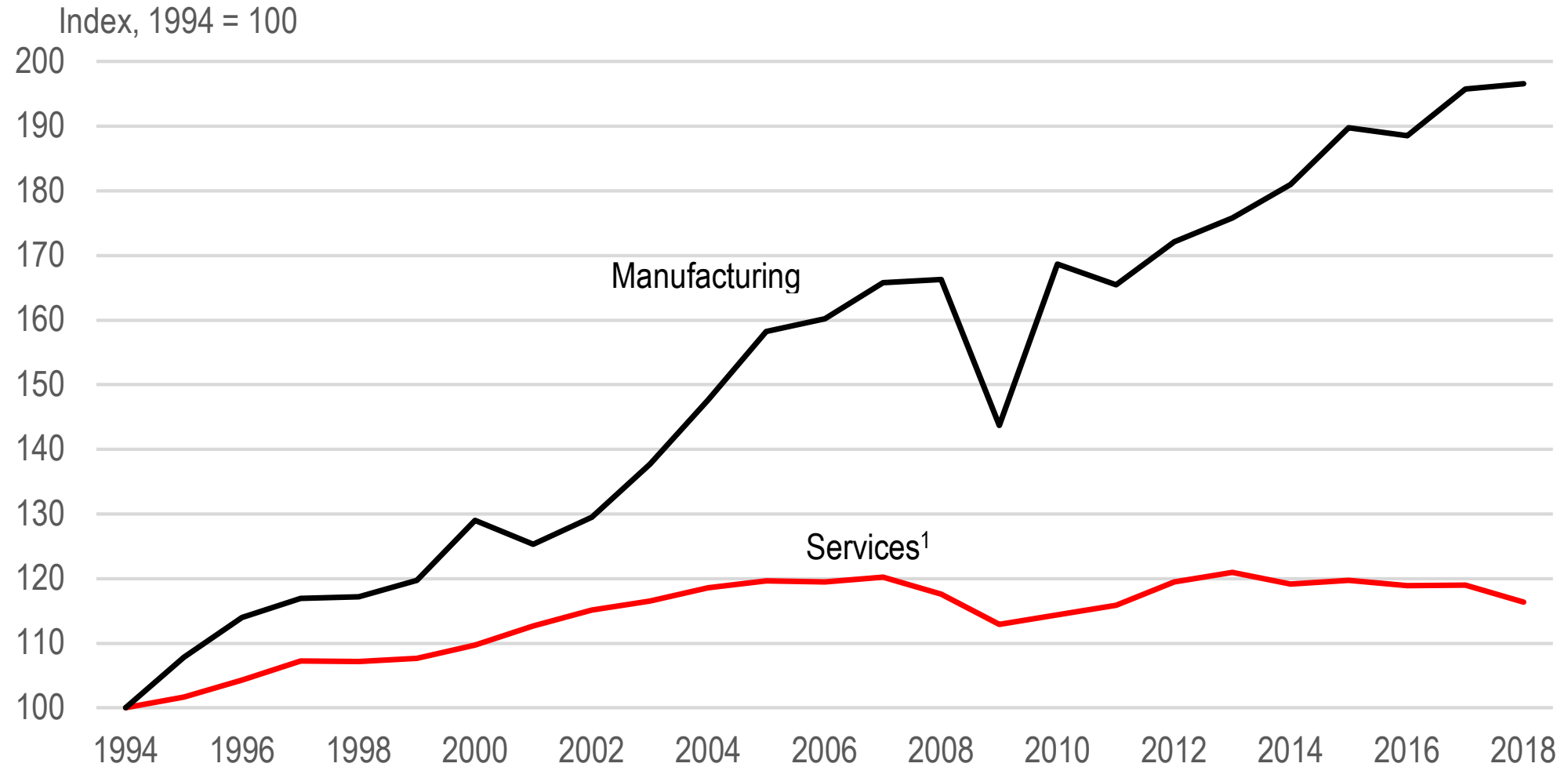
Labor productivity in the service sector as a percentage of the manufacturing sector in 2015



Note: Figures show the ratio of labor productivity in the non-financial market service sector (ISIC Rev.4 industries 45-63 and 68-82) to labor productivity in manufacturing (industries 10-33). Sectoral labor productivity is the ratio of sectoral value added (in volume) to sectoral employment.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

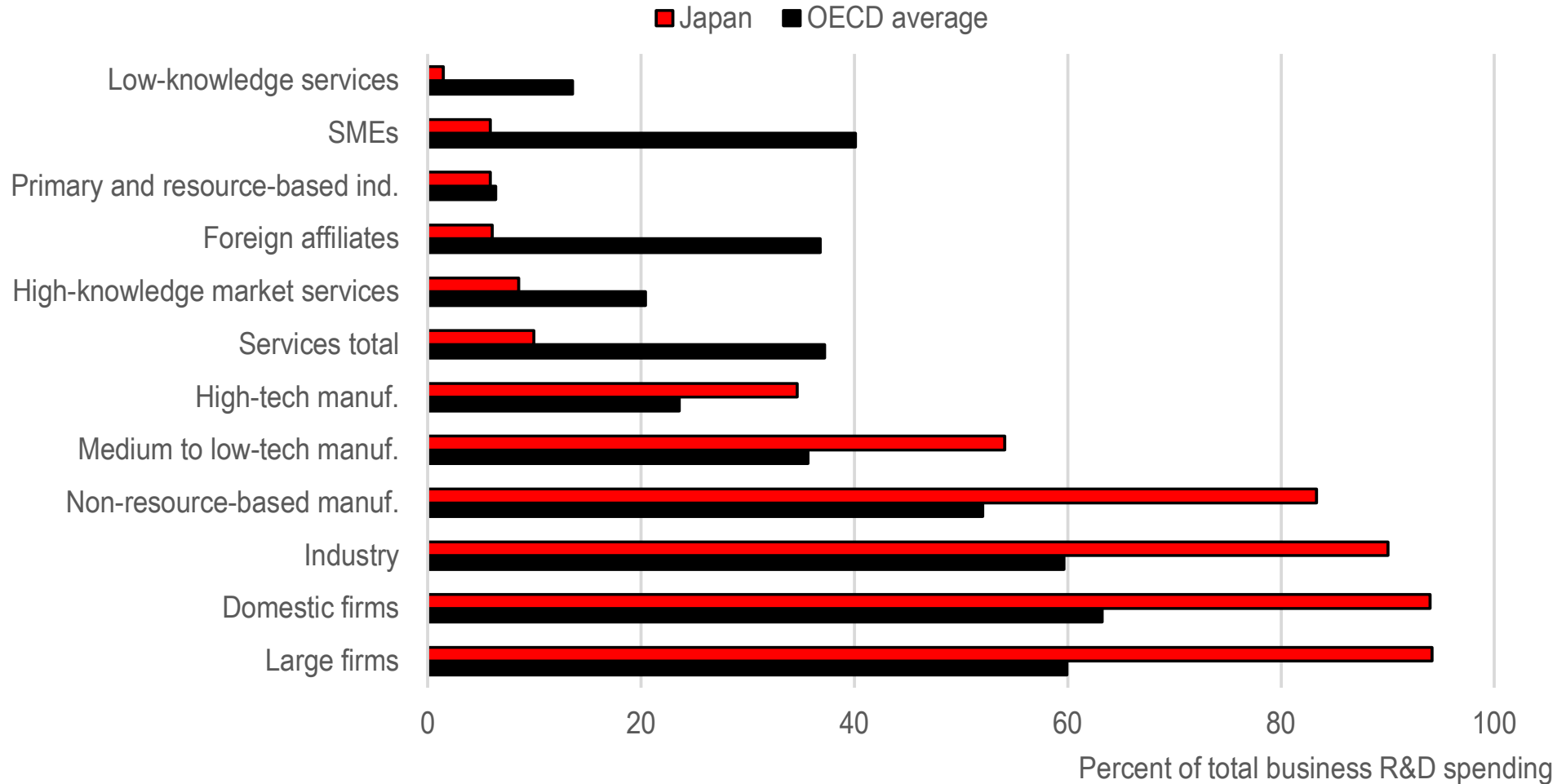
Productivity growth in Japan's manufacturing has far exceeded services



1. Business services, excluding real estate.

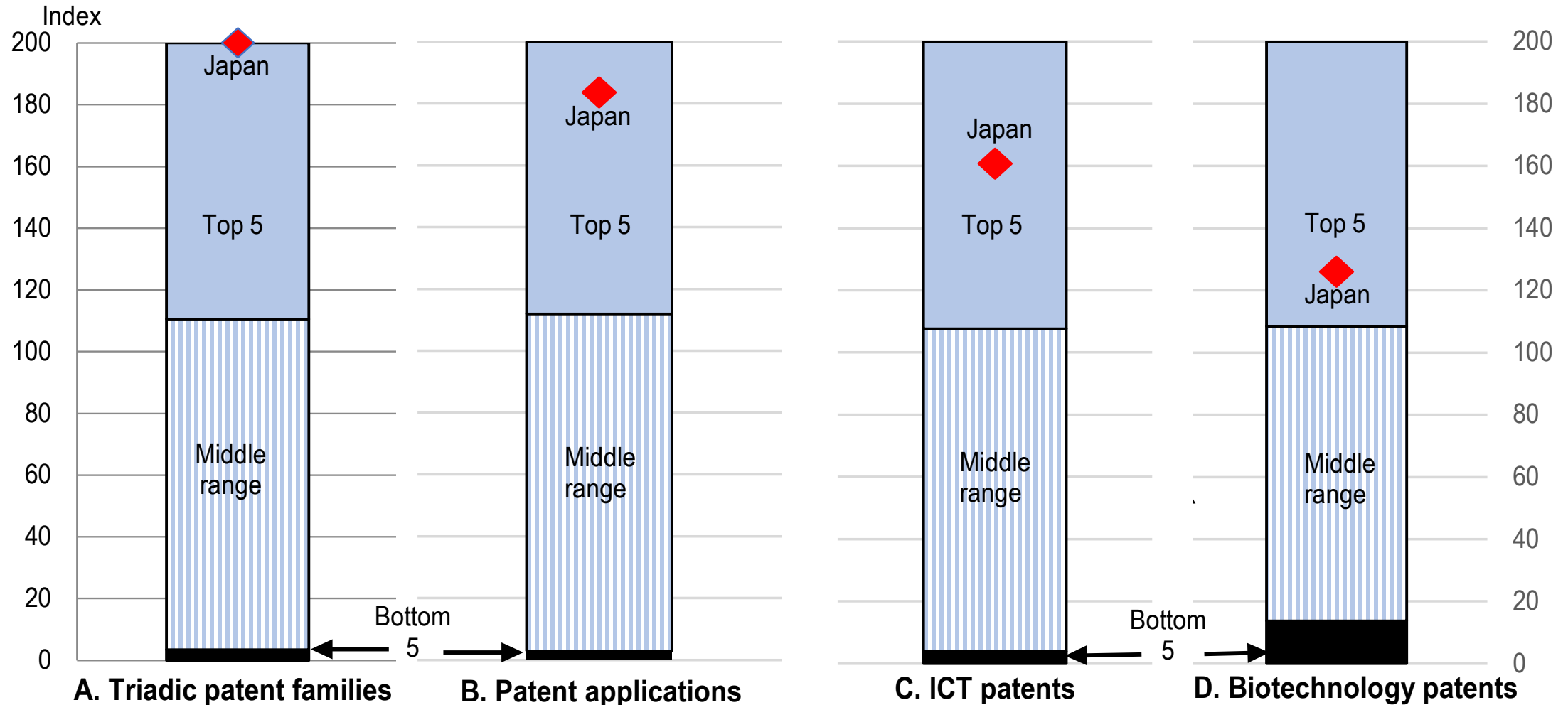
Source: OECD data, *Productivity and ULC by Main Economic Activity (ISIC Rev.4)*, OECD.Stat, [OECD Statistics](#). Accessed March 2, 2021.

The service sector and SMEs account for a small share of Japan's business R&D (2013)



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

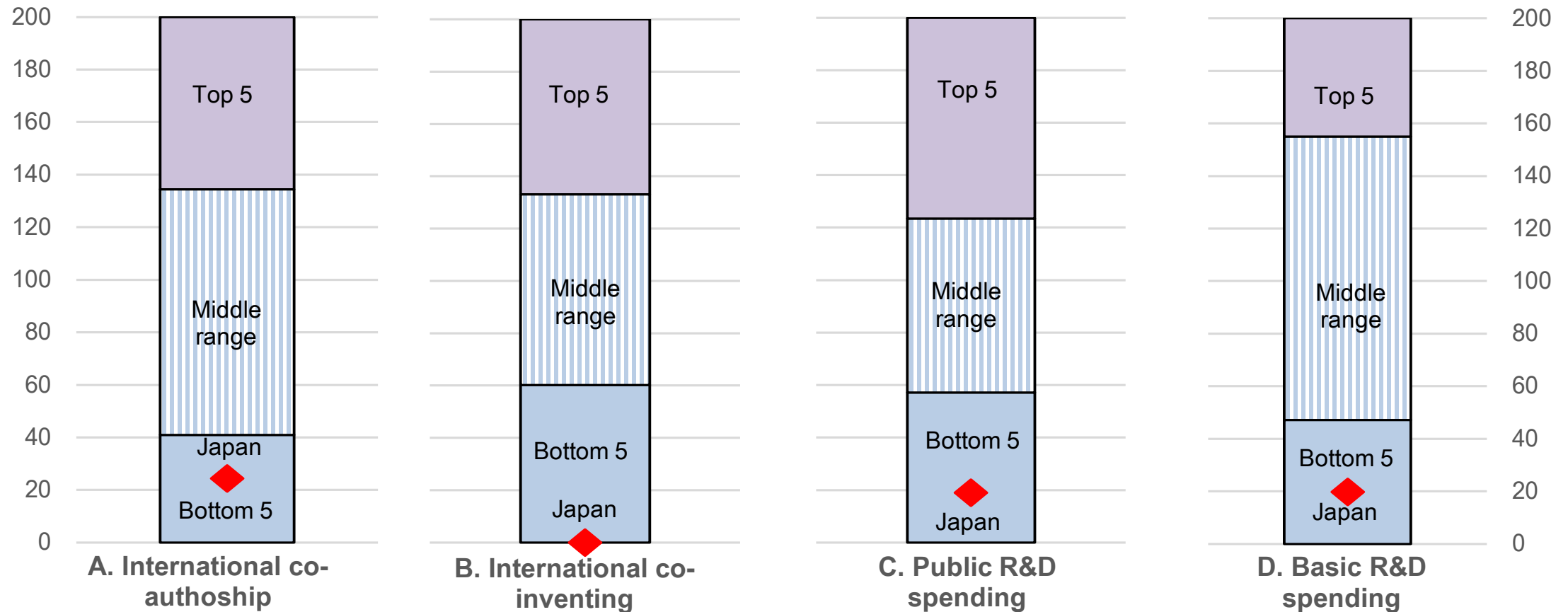
Japan stands out for its high level of patents



Note: Normalized index of performance relative to the OECD median, which is set at 100. The best performer is set at 200 and the worst at zero. For example, Japan was the second-highest performer in Panel B with a score of 184. In 2018 for triadic patent families and 2017 for patents. Triadic patent families are sets of patents filed at the three major patent offices (USPTO, JPO and EPO). The number of patents refers to those filed under the Patent Cooperation Treaty.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

However, international R&D linkages, public R&D and basic research are low in Japan



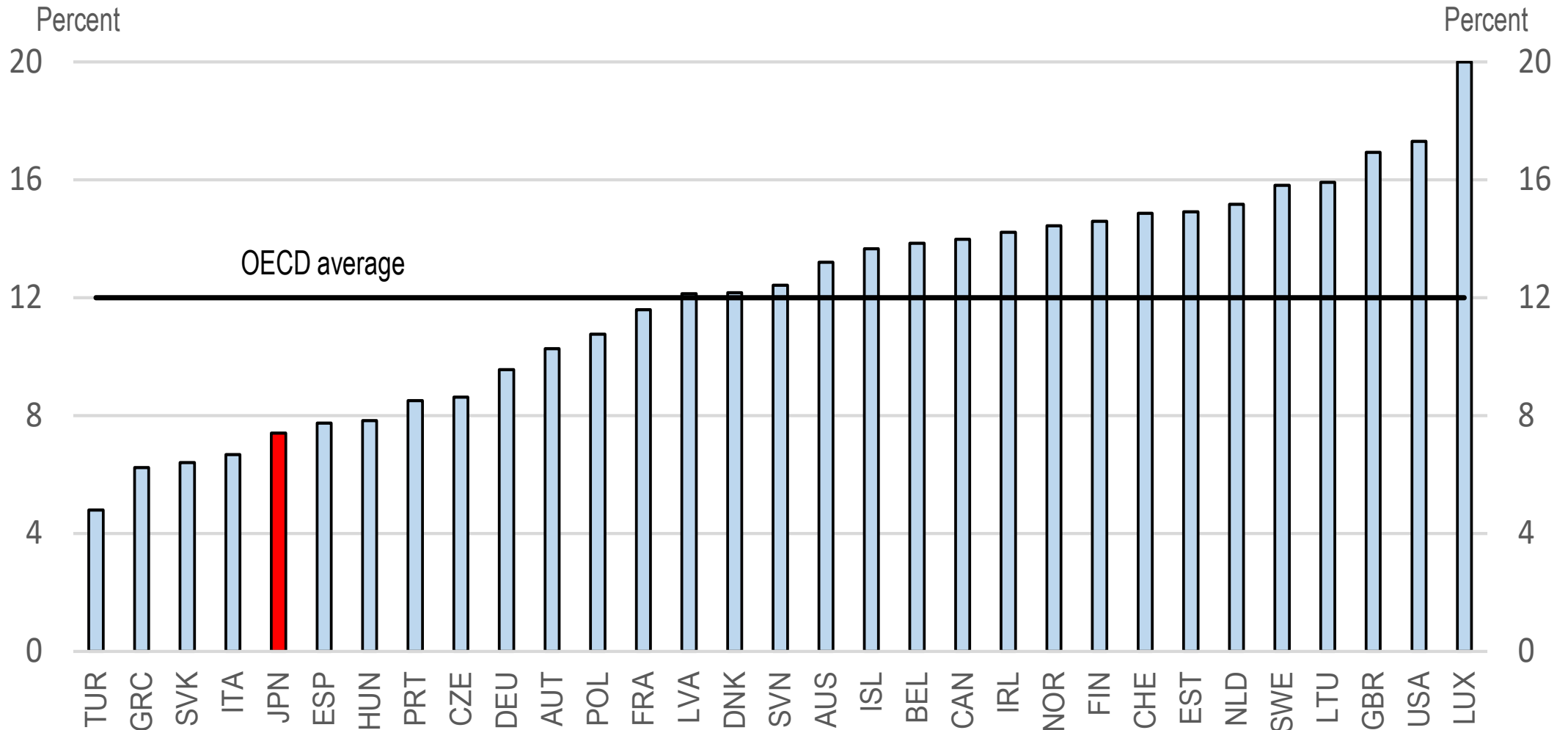
Note: Panel A: A scientific document is deemed to have international co-authorship if institutions from different countries are present in the list of affiliations reported by the author(s). Panel B. International co-inventions are measured as the share of IP5 patent families by inventors in at least two countries out of the total number of IP5 patent families by inventors located in the country under consideration. Panels A and B cover 2005-16. Panel C: Government-financed R&D as a share of total R&D spending in 2018. Panel D: Basic R&D as a share of total R&D spending in 2018.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

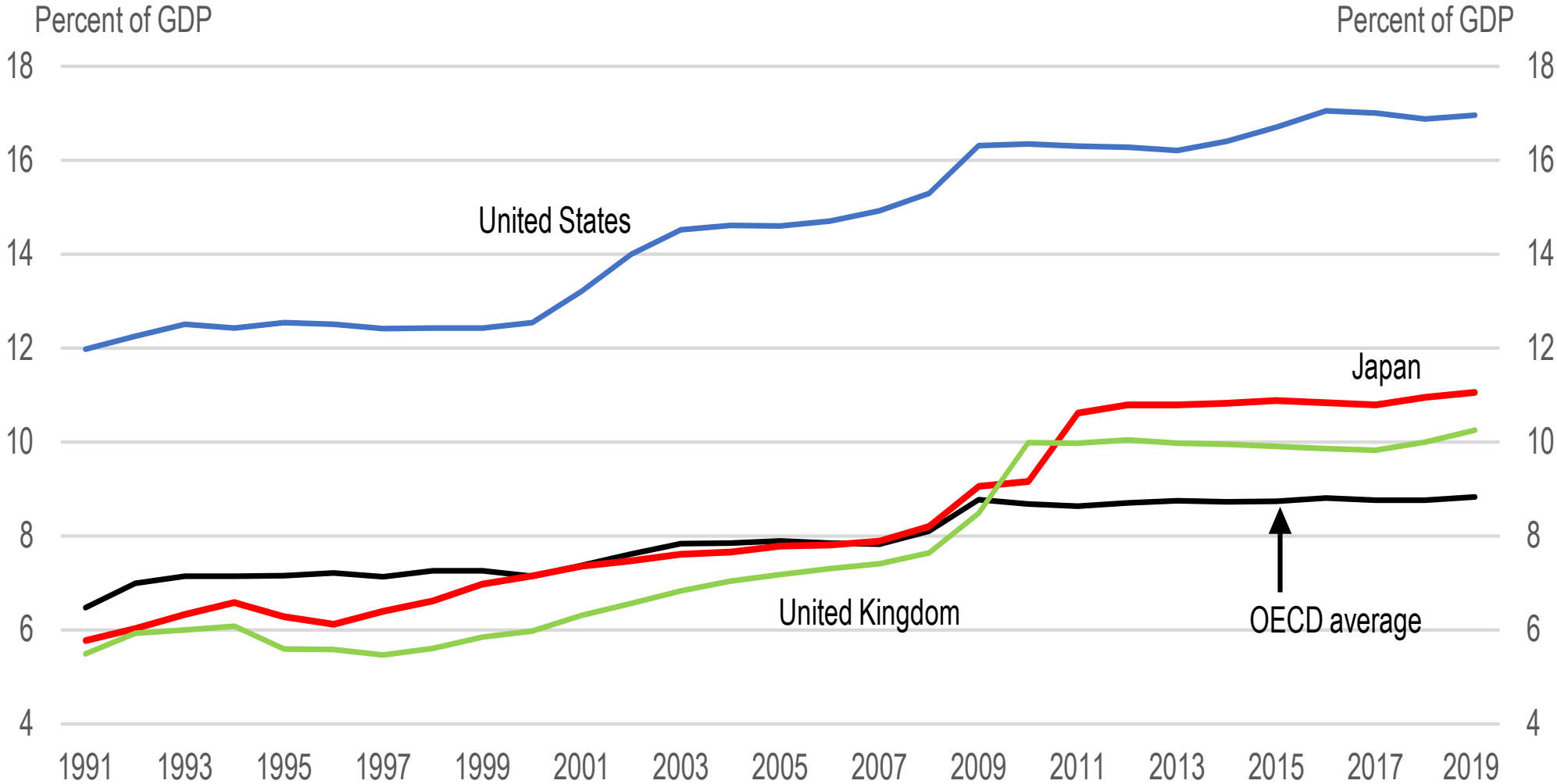
Flows of Japanese R&D funds in 2018

		Allocation of R&D spending by sector performing it:				
Source of funding	Share of total R&D spending	Government	Universities	Business enterprises	Non-profits	Total
Government	14.5	51.3	41.0	4.4	3.3	100.0
Universities	5.1	0.5	99.3	0.1	0.1	100.0
Business enterprises	79.1	0.3	0.5	98.9	0.4	100.0
Non-profit	0.7	5.1	19.6	7.0	68.4	100.0
Foreign sources	0.6	2.3	2.1	93.8	1.8	100.0

A relatively low share of Japanese employees work in ICT task-intensive occupations (in 2017)

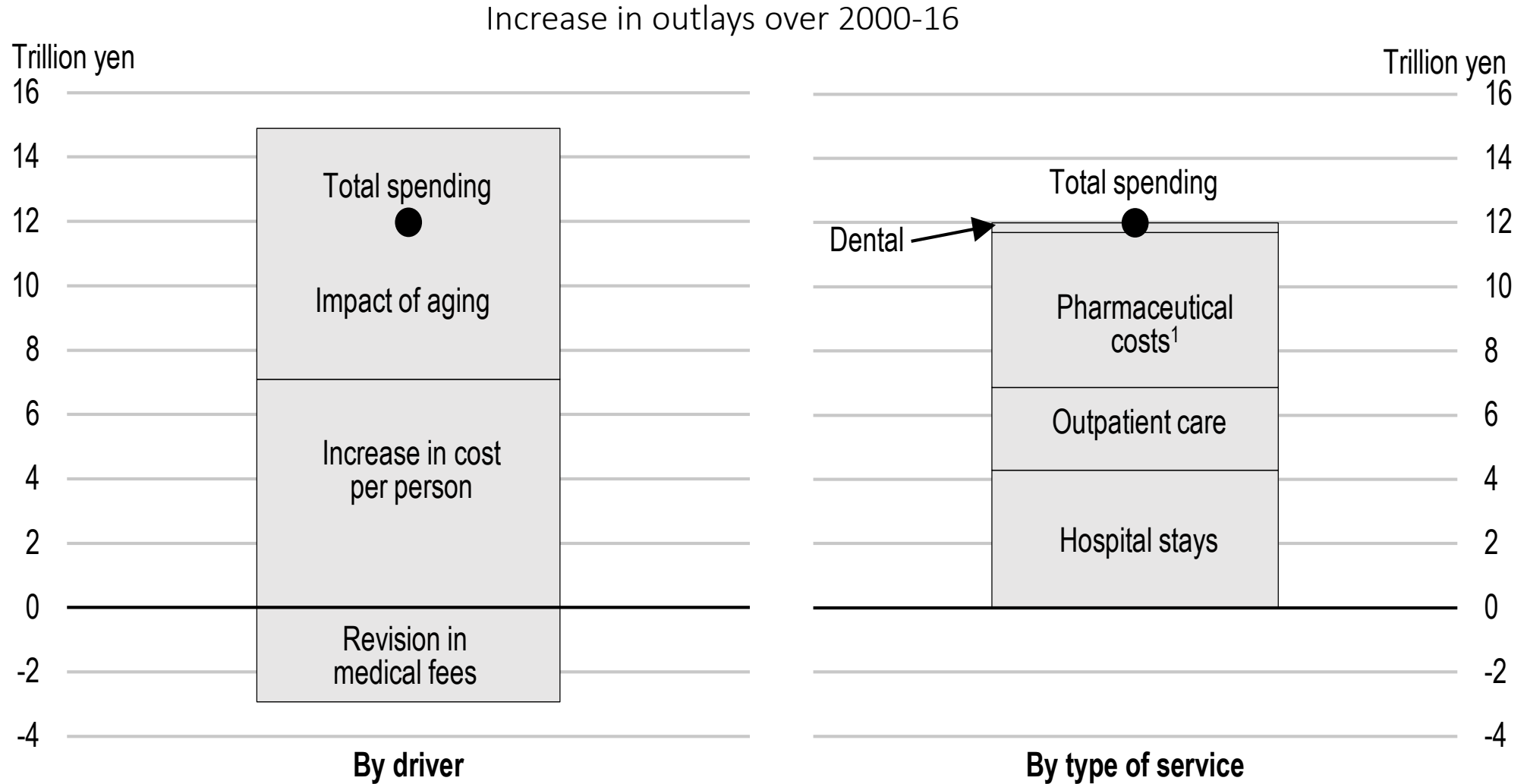


4. Healthcare: healthcare spending in Japan has risen significantly



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Population aging has played a large role in rising healthcare spending



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

International comparisons show scope for healthcare cost savings in Japan

	Number of doctor consultations per capita per year	Average total hospital stay ¹	Average hospital stay for acute care ¹	Total number of hospital beds ²	Number of acute-care beds ^{2,3}	Number of long-term care beds ^{2,3}	Number of beds in long-term care facilities ²
Japan	12.8	28.5	16.3	13.1	7.8	2.7	6.5
OECD average	7.4	8.4	6.6	4.9	3.7	0.7	7.6
Highest country	17.0	28.5	16.3	13.1	7.8	4.8	12.9
Lowest country	2.8	3.8	4.0	1.5	1.5	0.0	0.7

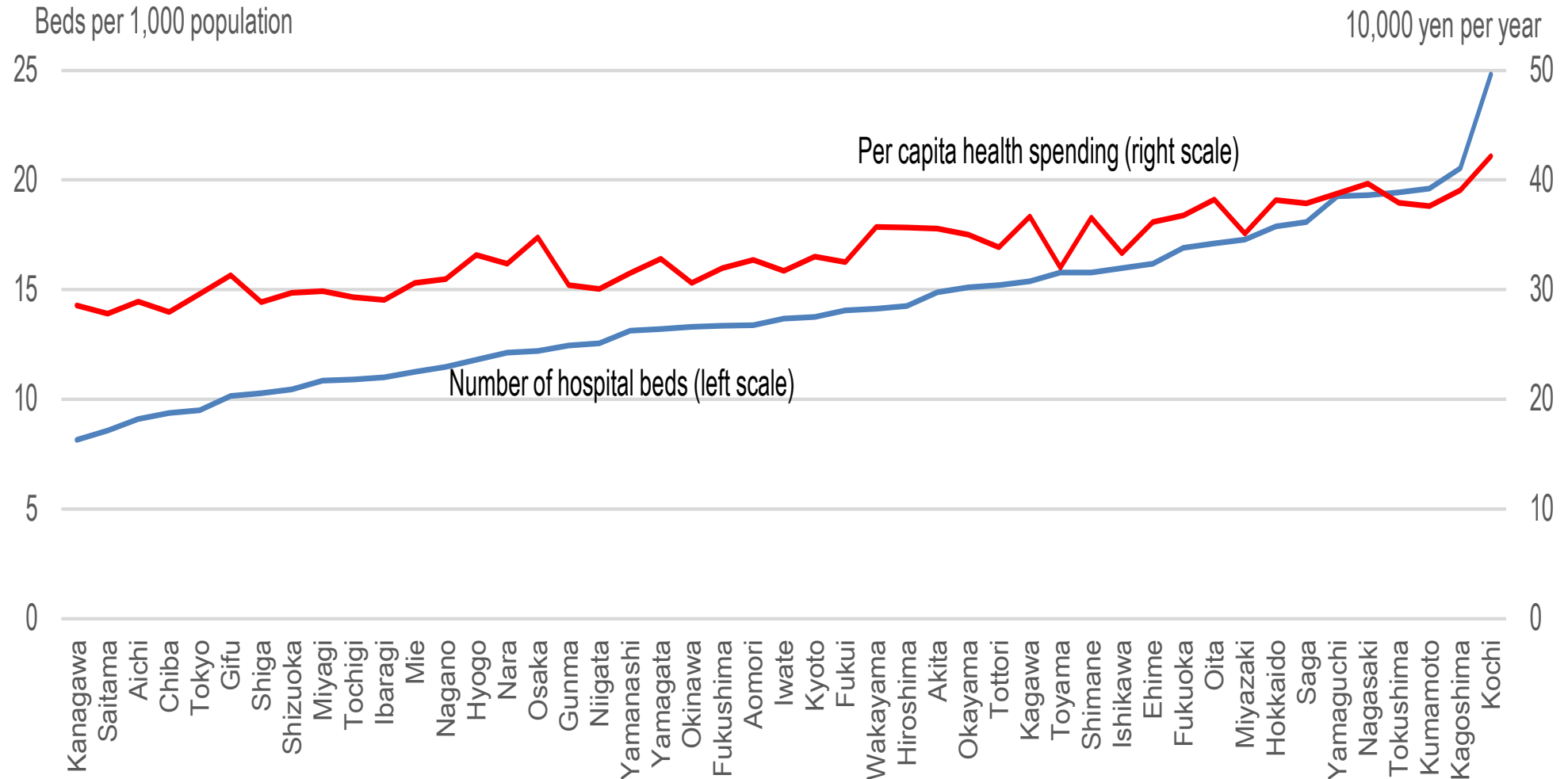
1. In days.

2. Per 1,000 population.

3. In hospitals.

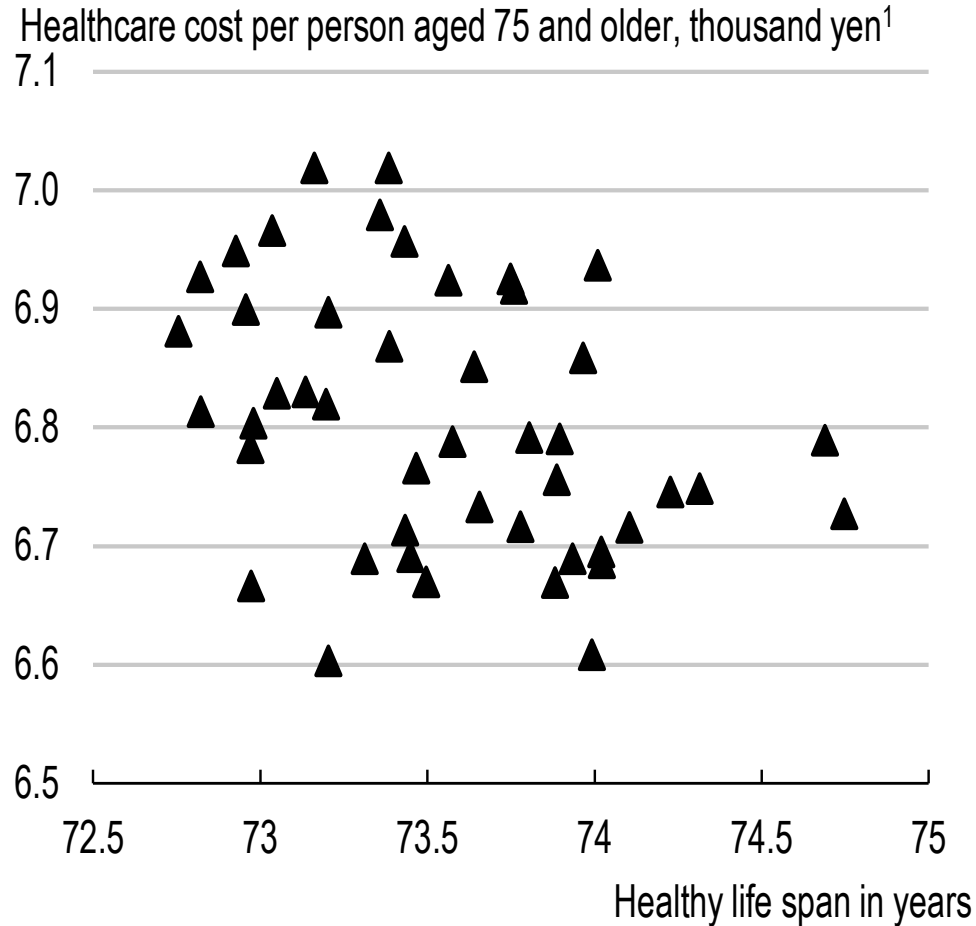
Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

The greater the number of hospital beds, the greater is healthcare spending per person



The benefits of lengthening the healthy lifespan

A. Longer healthy life span leads to lower healthcare costs for the elderly



B. Longer healthy life span leads to higher labor force participation of the elderly



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Healthcare reforms

Hospitals

- Cut the number of excess hospital beds in line with the 2025 targets and address the mismatch problem in hospital beds.
- Improve the payment system and promote the standardization of treatment through greater use of the Diagnosis Procedure Combination.

Outpatient care

- Shift from a fee-for-service to a pay-for-performance system to reduce the number of consultations.
- Increase the number of doctors to cope with the needs of the elderly.

Pharmaceuticals

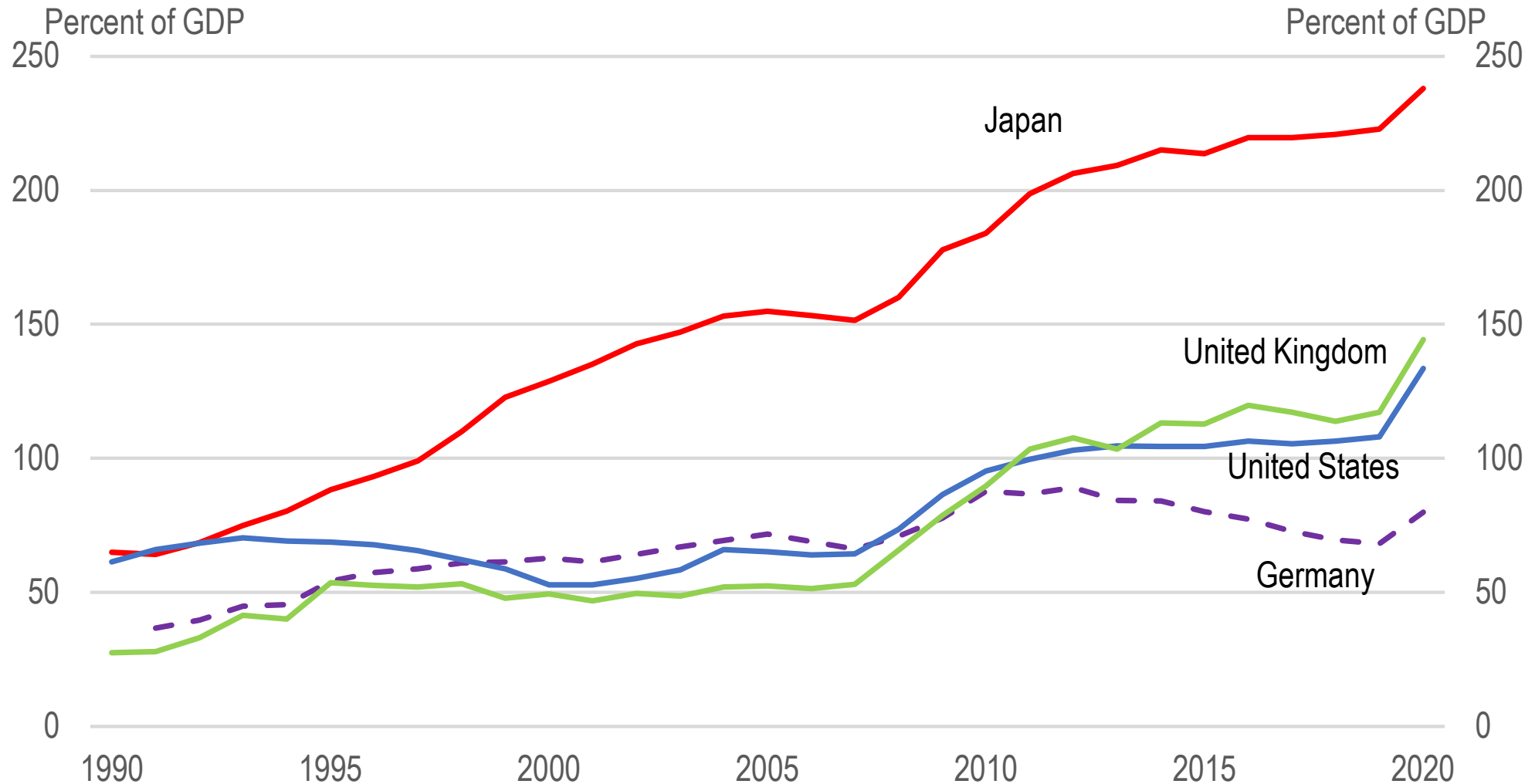
- Promote the use of generic drugs by making them the standard for reimbursement by health insurance.

Long-term care

- Move long-term care out of hospitals (so-called “social hospitalization”) and prioritize home-based care.
- Lower the need for long-term care by improving preventive care and promoting healthy aging.

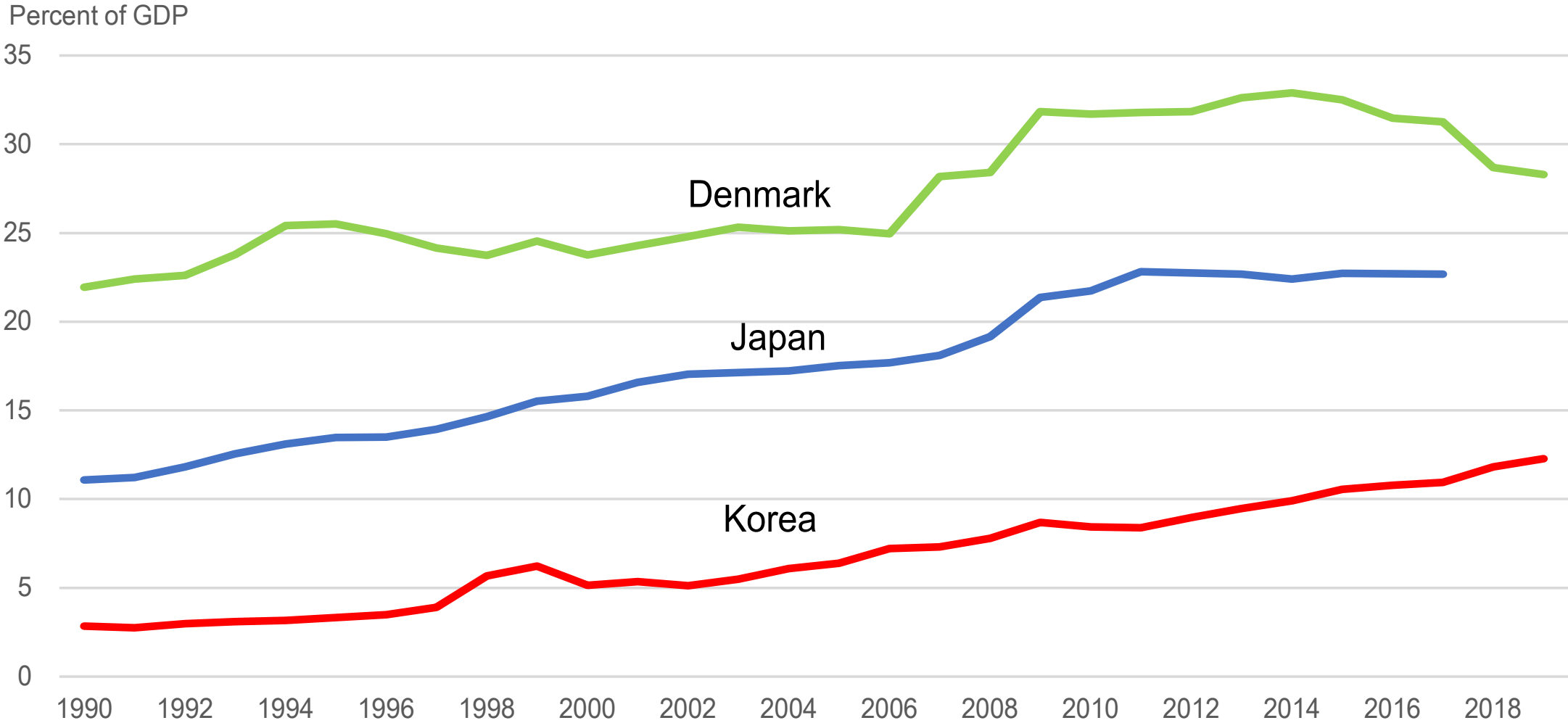
5. The fiscal situation: Ensuring fiscal sustainability

Gross government debt as a percentage of GDP



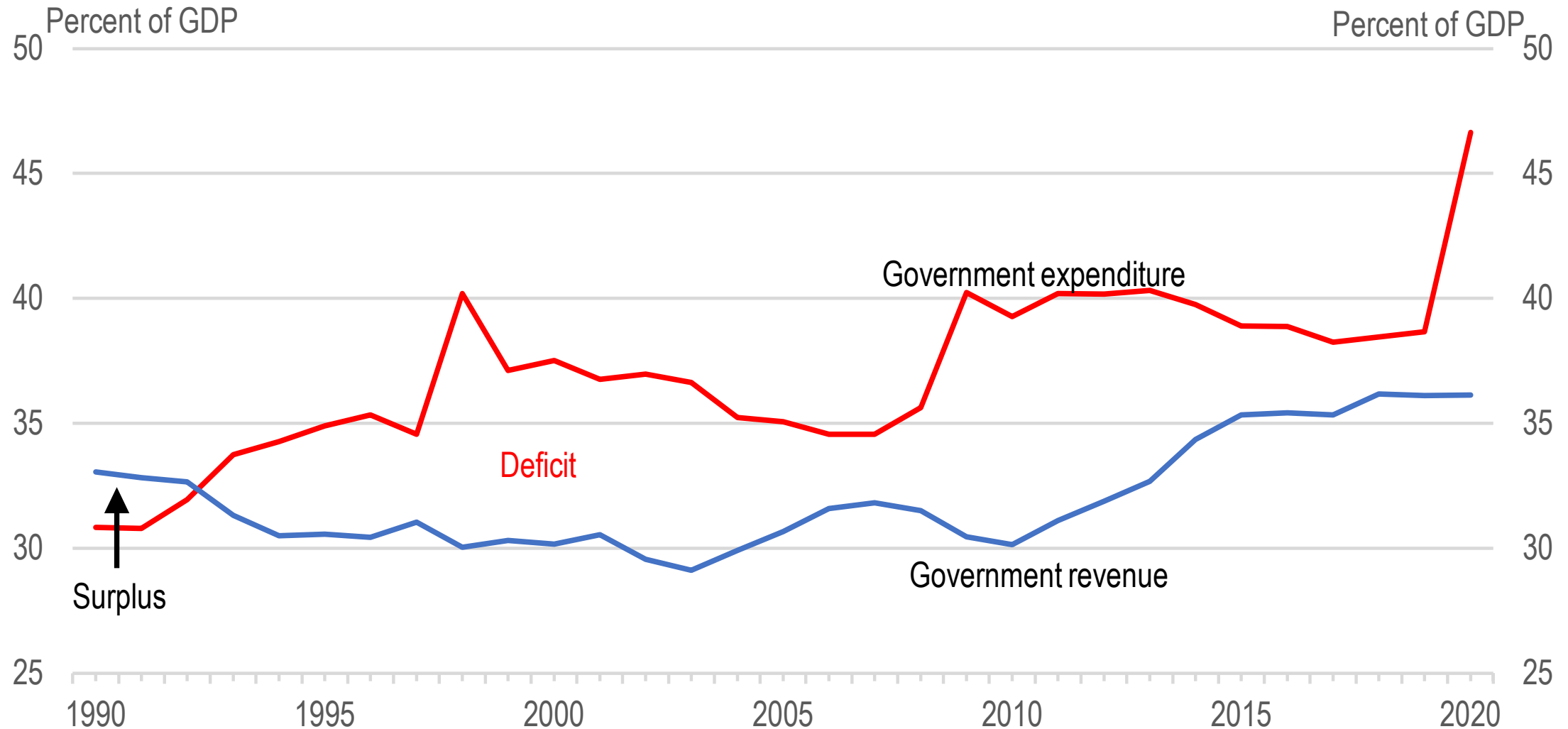
Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Rising public social spending – driven by population aging – is a major reason for Japan’s fiscal problem



Note: Includes mandatory private social spending.
Source: OECD data (2021), Social Expenditure - Detailed data, OECD.Stat, [OECD Statistics](#).

Japan stabilized government spending (as % of GDP) and raised revenue over 2009-19



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Spending has been limited by reducing the share of spending outside of social expenditures

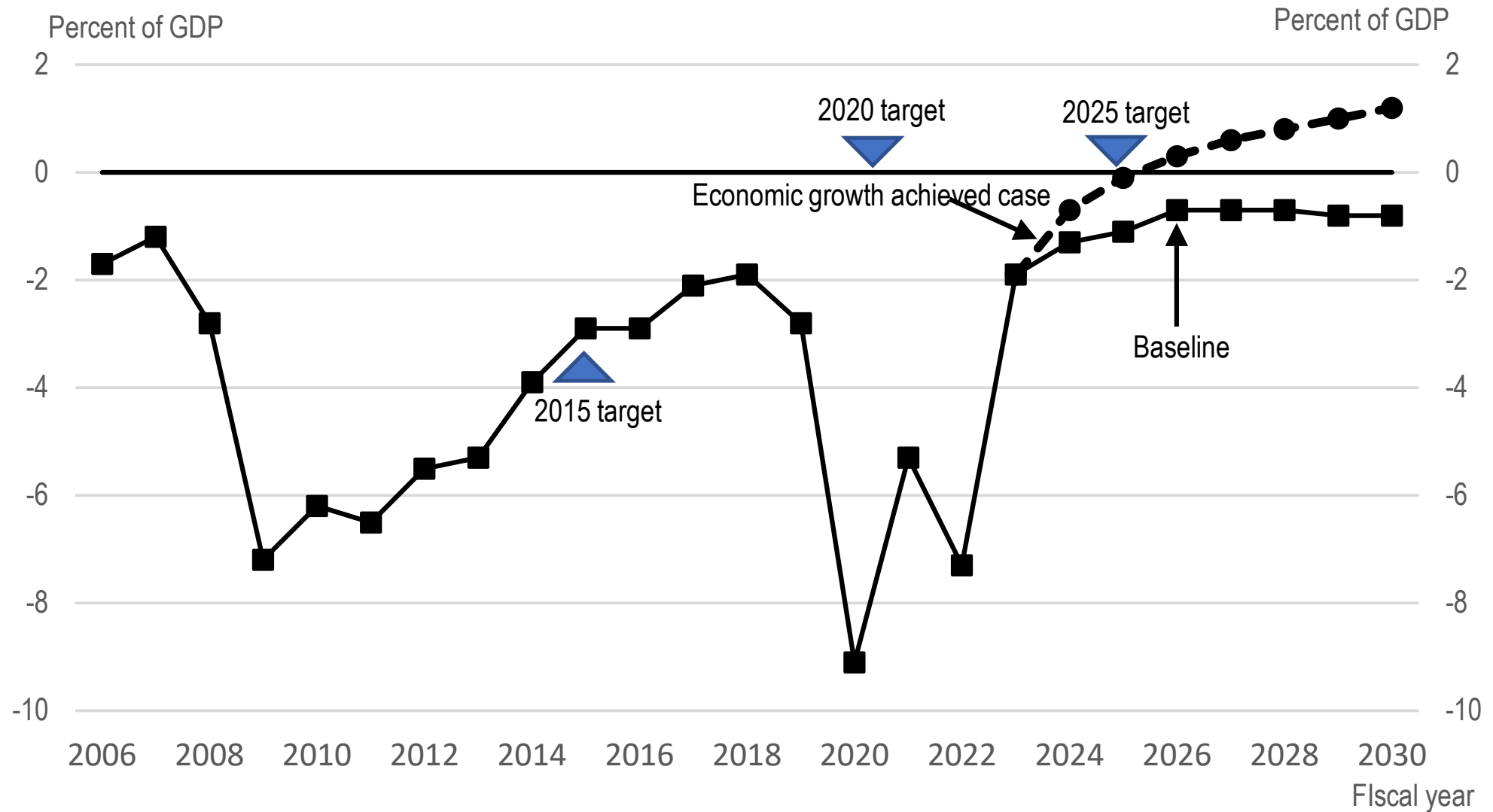
Central government general account, including temporary and special measures, initial budget

	FY2009 % of total outlays	FY2019 % of total outlays	Change in share ¹
A. General spending	58.4	61.1	2.6
Social spending²	28.0	33.7	5.6
Other spending	30.4	27.4	-3.0
Education & science	6.0	5.5	-0.5
National defense	6.3	5.4	-0.9
Public works	8.0	6.8	-1.2
Economic assistance	0.7	0.5	-0.2
Promotion of SMEs	0.2	0.2	0.0
Energy	1.0	1.0	0.0
Other	7.3	7.1	-0.2
B. LAT grants, etc³	18.7	15.8	-2.9
C. Debt service⁴	22.9	23.2	0.3
Total	100.0	100.0	0.0
Percent of GDP	18.1	18.1	0.0

1. Percentage point change in share of spending between FY2009 and FY2019.
2. Includes pensions, health and long-term care and social assistance.
3. LAT (local allocation tax) is a transfer from the central government to local governments.
4. Includes interest payments and debt redemption.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Japan's primary balance target



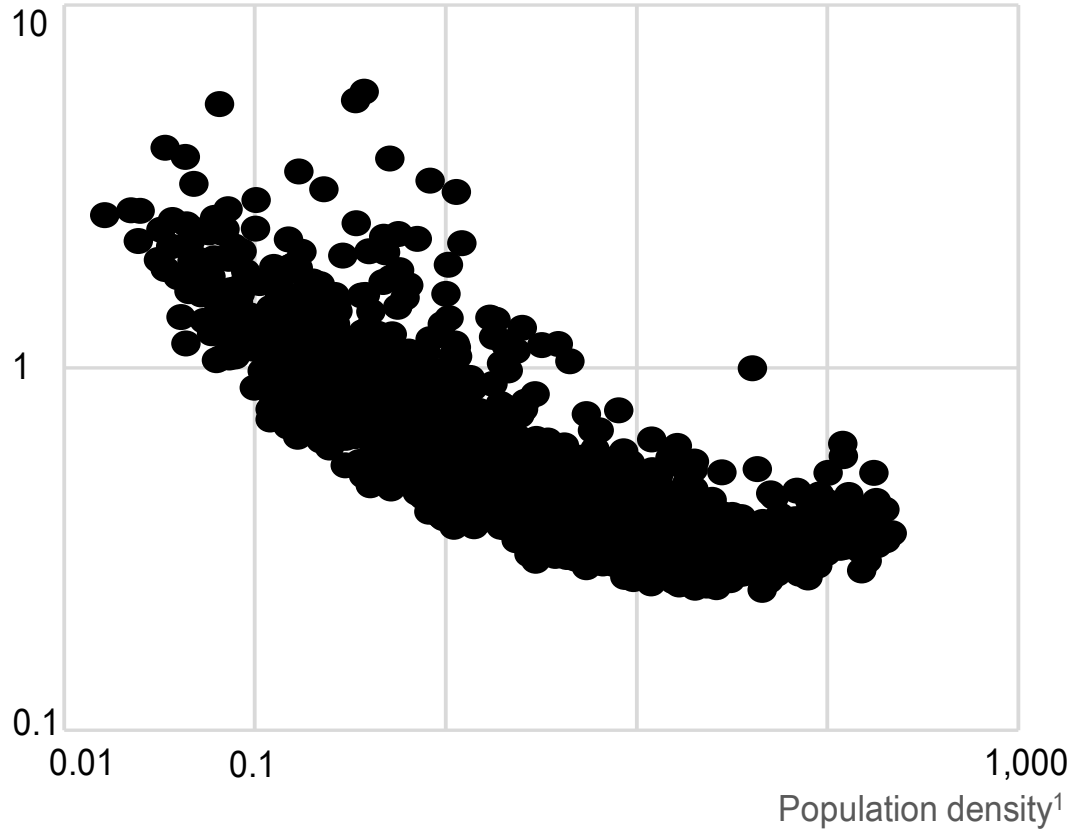
Note: The figure shows the primary balance (which excludes net interest payments) of central and local governments. Government projections in July 2022. Real GDP grows 1.1% in FY2023 and from FY2024-FY2030 at a 0.9% annual rate in the baseline scenario and 2.0% in the economic growth achieved case.

Source: Cabinet Office (2022), *Economic and Fiscal Projections for Medium to Long Term Analysis*, [projection202207.pdf \(cao.go.jp\)](https://www.cao.go.jp/projection202207.pdf).

Falling population density and aging put upward pressure on government spending

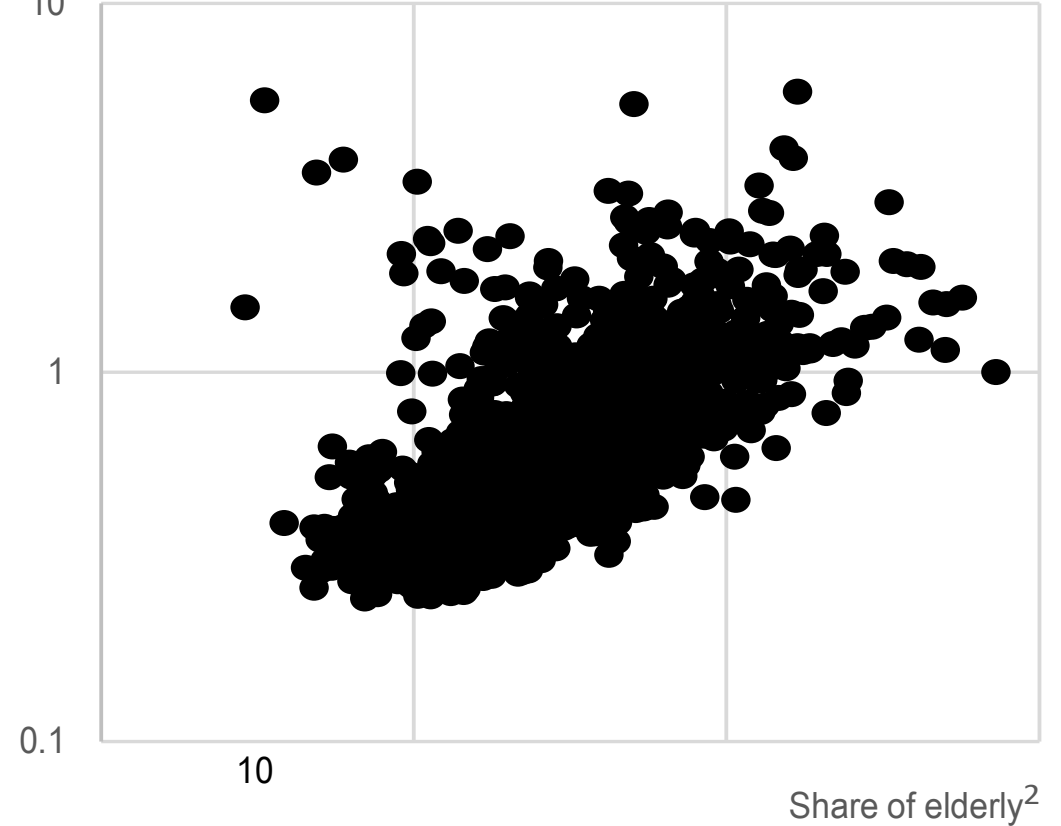
Spending per capita, million yen

A. Spending per capita rises as population density declines



Spending per capita, million yen

B. Spending per capita rises with share of elderly

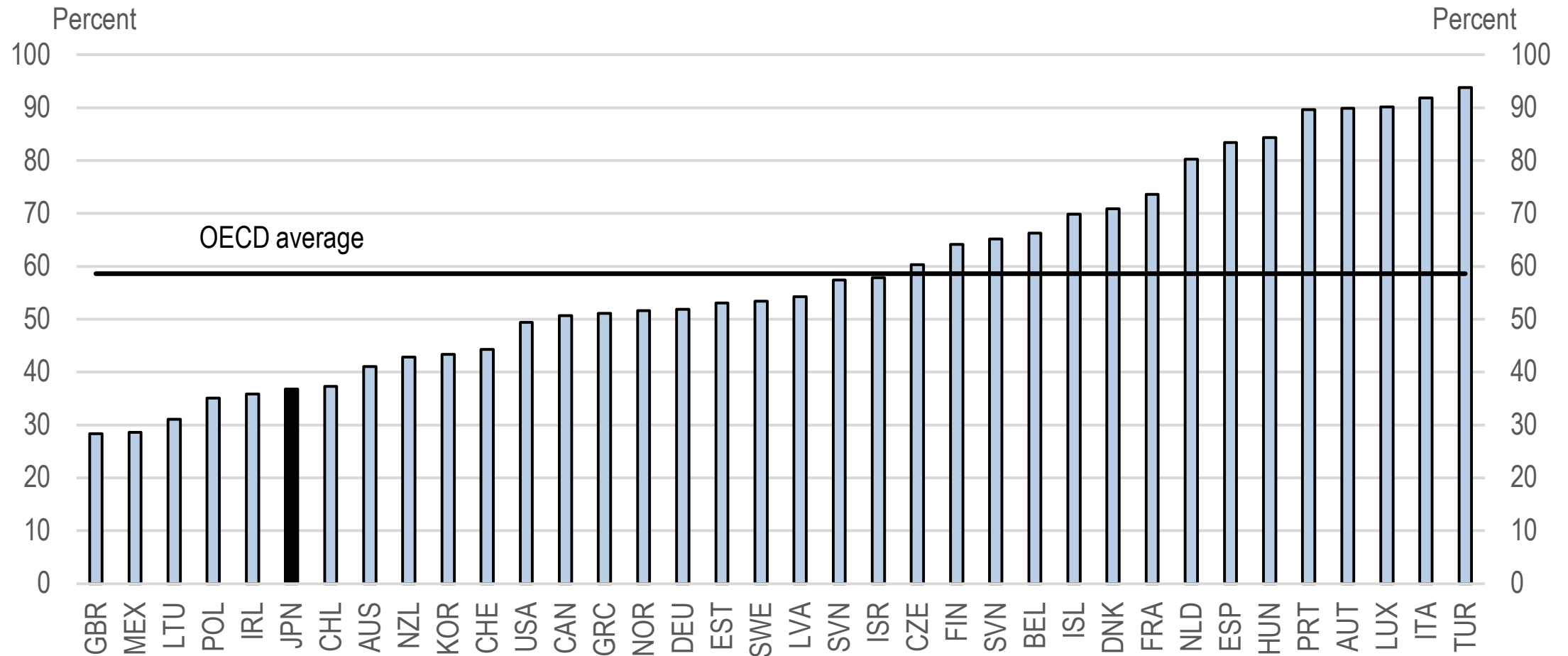


1. Persons per square hectare.

2. Share of population age 65 and over in the total population.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

The low pension replacement rate suggests that Japan will have to rely heavily on social welfare to support the elderly



Note: Future gross replacement rates for a full-career (from age 22), average-wage worker under the current pension framework. The replacement rate is the pension benefit as a share of pre-retirement income.

Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Increasing the pensionable age is essential to ensure the pension system's effectiveness in reducing elderly poverty

Cases ¹	Real GDP growth rate		Replacement rate ² (%) in 2050 for pension eligibility age of:		
	FY2014-23	FY2024 onward	65 years	68 years	70 years
Case C	1.1	0.9	51.0	63.9	72.5
Case E	1.1	0.4	50.6	63.3	71.8
Case G ³	0.2	-0.2	42.0	52.8	60.0
Case H ⁴	0.2	-0.4	41.9	52.7	59.8

1. This table shows four of the eight simulations done by the Ministry of Health, Labor and Welfare.

2. Pension benefit as a share of final earnings. The replacement rate by the Japanese measure was 62.7% in FY2014.

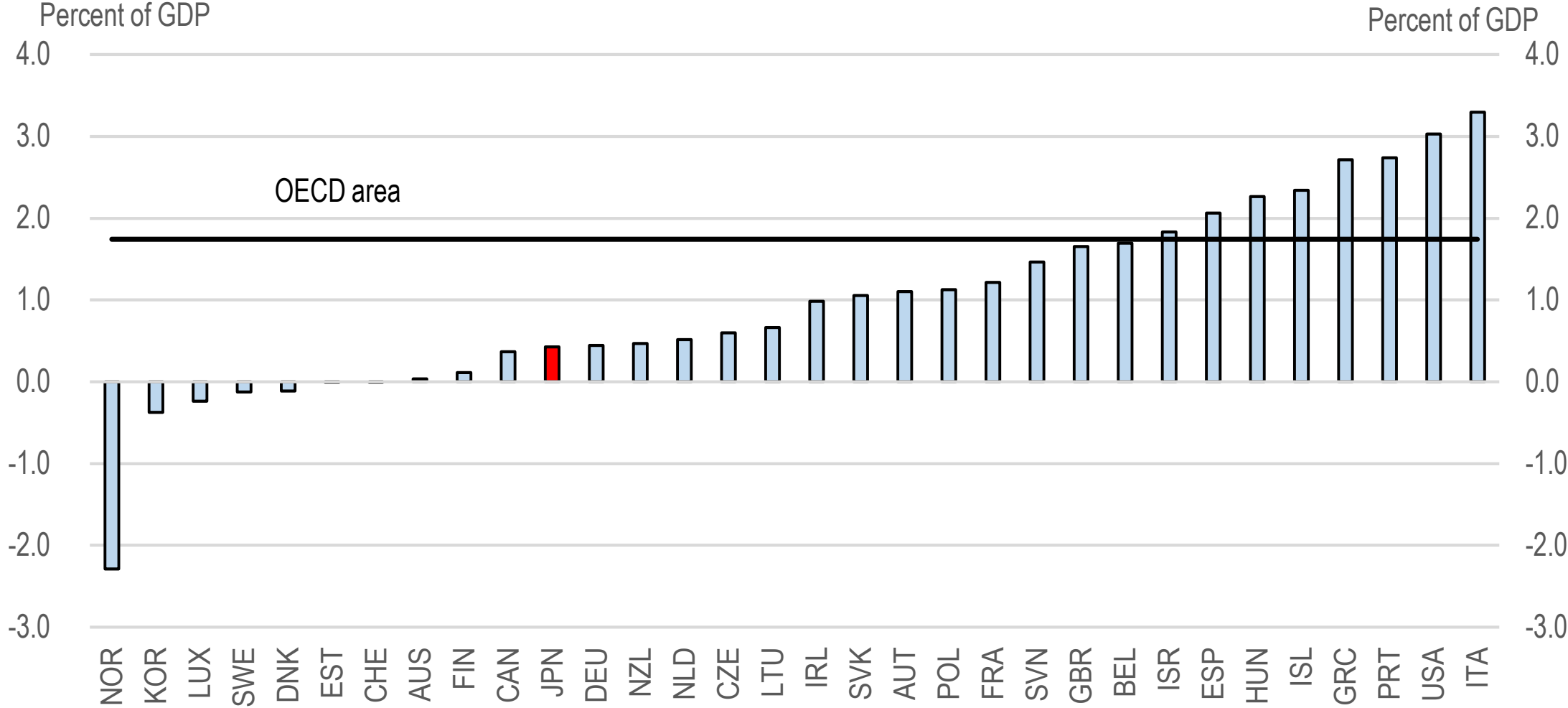
3. The replacement rate is for 2058 for the retirement age of 65.

4. The replacement rate is for 2054 for the retirement age of 65.

Source: The Ministry of Health, Labor and Welfare (2014), *Summaries of the 2014 Actuarial Valuation and Reform Options*, Tokyo,

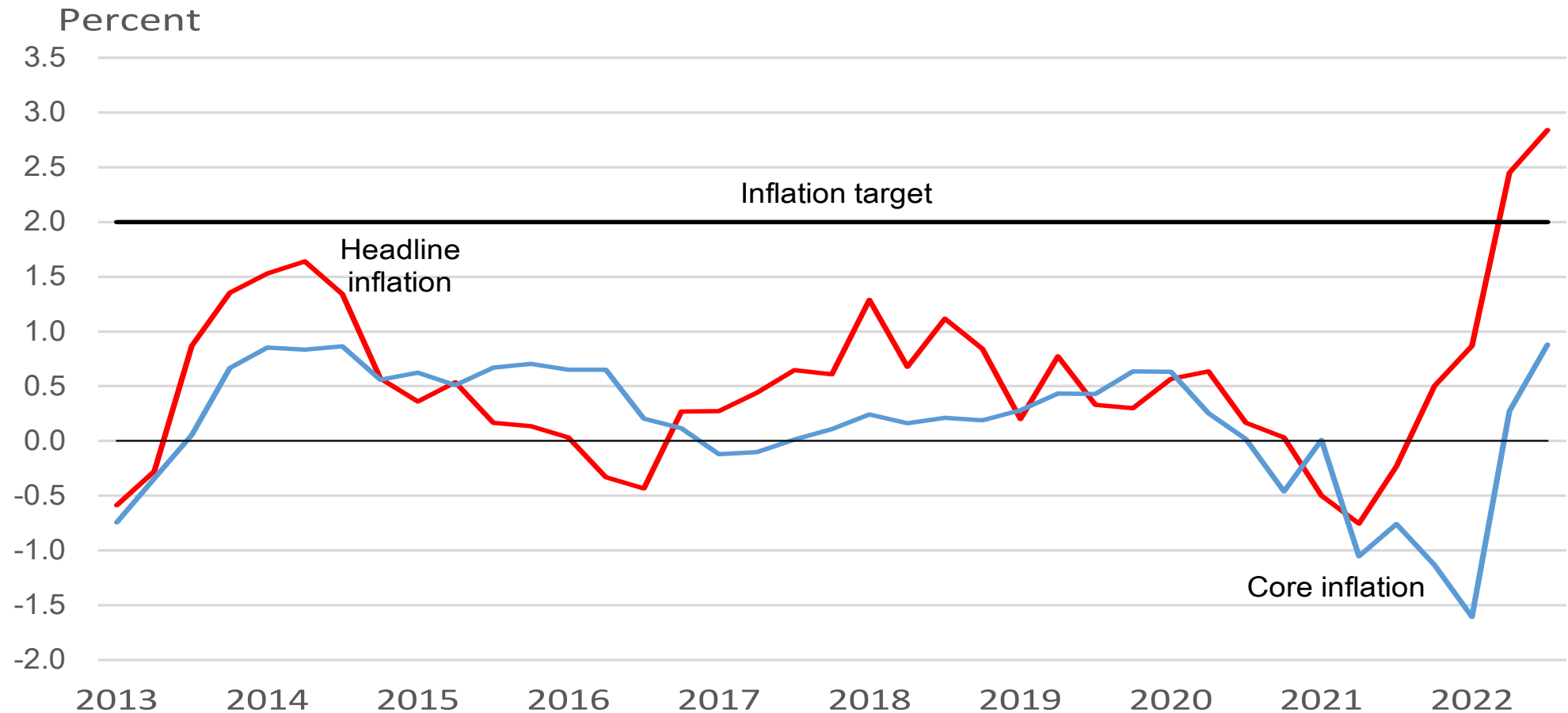
Japan's government net interest payments are low despite high debt, but we cannot count on this to continue

As a percent of GDP, general government basis, in 2019



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

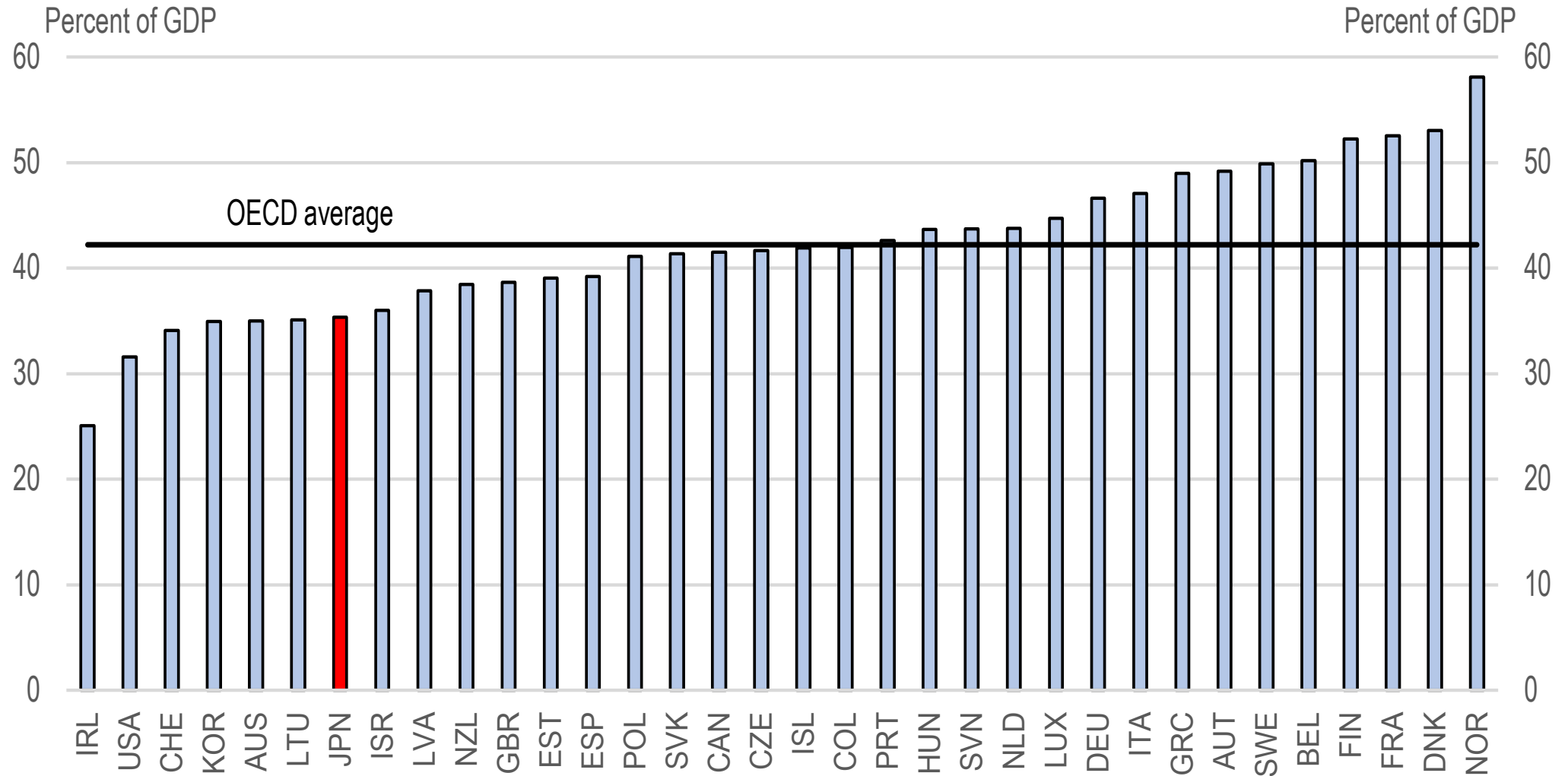
Higher inflation will eventually lead to a phasing out from QQE with yield curve control



Note: Year-on-year change in quarterly CPI indices. The base year for the CPI is 2020. The inflation series are not adjusted for the impact of the April 2014 and October 2019 consumption tax hikes. The core CPI measure excludes fresh food and energy.

Source: Statistics Bureau, Bank of Japan.

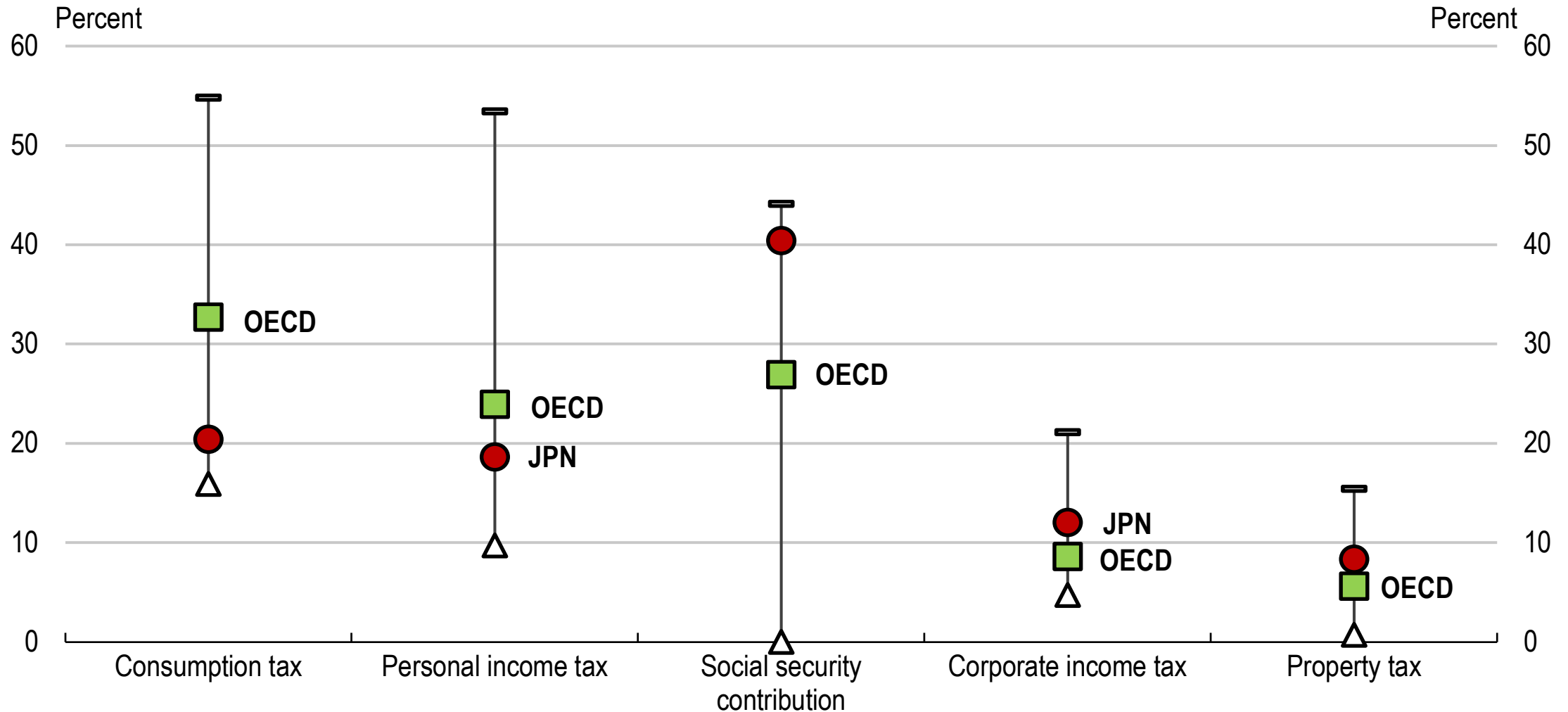
Government revenue as a share of GDP in Japan is relatively low (in 2019)



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

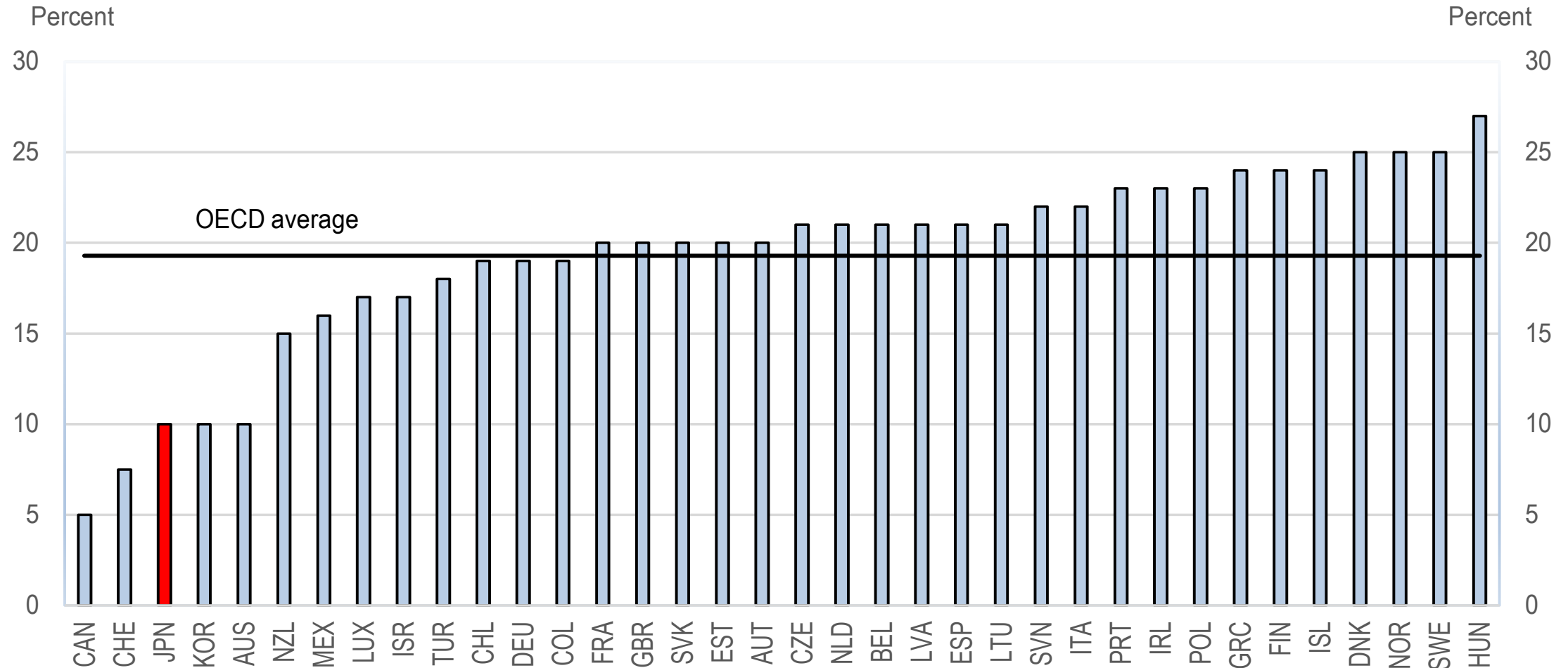
Which type of taxes should be increased?

Percent of government tax revenue (including social security contributions) in 2017 or latest year



The VAT (consumption tax) should be the major source of additional revenue

Standard VAT rate in 2020



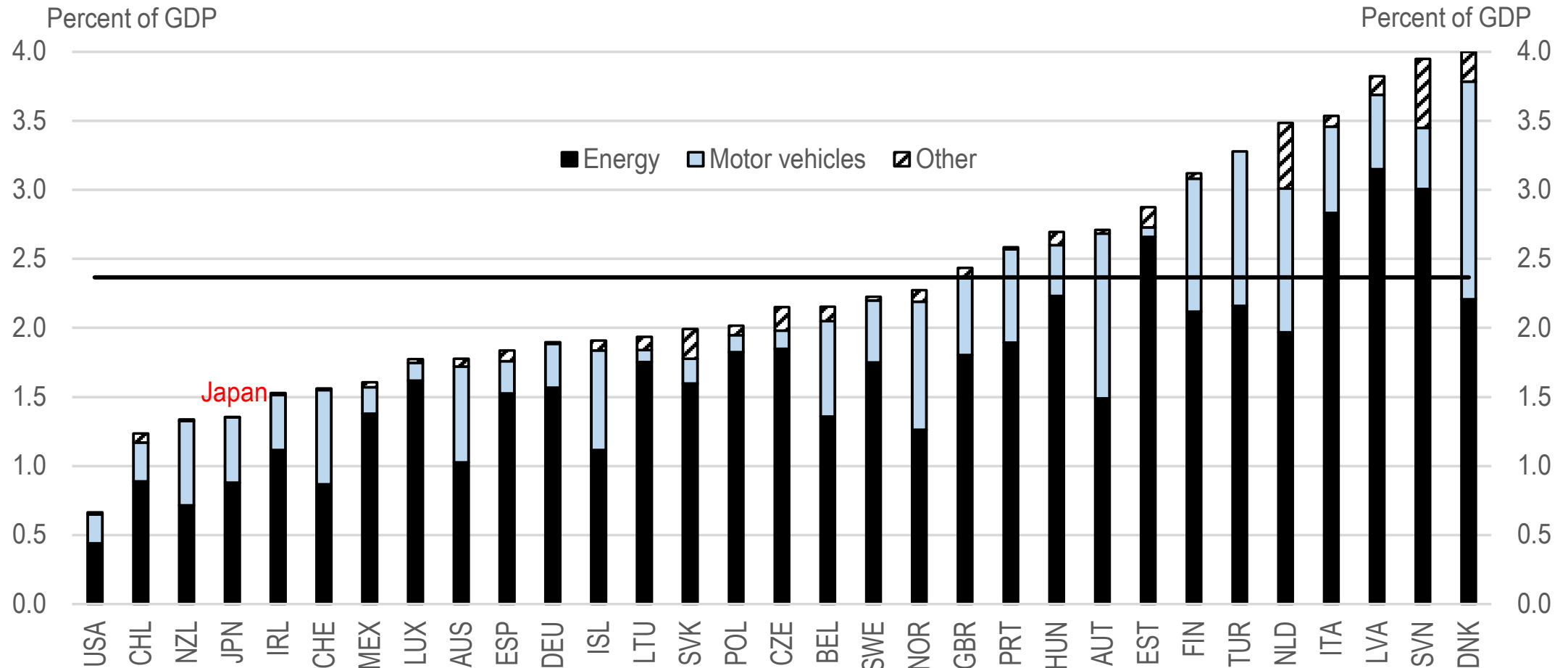
Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

Japan's personal income tax deductions are very generous – scope to broaden the base

A. Married household with two children and one worker earning the average wage							
	Basic deduction	Spousal deduction	Child-rearing deduction	Deductions for social security contributions and income taxes	Wage income deduction	Other	Total deductions
Japan	7.3	7.3	0.0	14.4	30.4	0.0	59.4
OECD	6.0	1.7	4.9	7.0	1.9	1.7	23.2
B. Single household earning the average wage							
	Basic deduction	Spousal deduction	Child-rearing deduction	Deductions for social security contributions and income taxes	Wage income deduction	Other	Total deductions
Japan	7.3	0.0	0.0	14.4	30.4	0.0	52.1
OECD	4.6	0.0	0.0	7.0	1.9	1.3	14.7

Raising environmentally-related taxes from their current low level would raise revenue while helping achieve Japan's climate goals

Environmentally-related taxes as a percent of GDP in 2016



Source: Jones (2022), *The Japanese Economy: Strategies to Cope with a Shrinking and Ageing Population*, London: Routledge Press.

EUROPA ECONOMIC PERSPECTIVES



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1 February 2023

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Randall S. Jones

Professional Fellow, Center on Japanese Economy and Business
Adjunct Professor, Johns Hopkins University

Distinguished Non-resident Fellow, Korea Economic Institute
Former Senior Counselor - East Asia and Head of Japan/Korea
Desk, Organisation for Economic Cooperation and Development
(OECD)