The Future of Work

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Japan is a developed country which faces many challenges

- A declining population
- The world's most rapidly-ageing country
- The low employment rate for women in their 30s in the developed countries (M-Curve)
- Polarization of the labour market

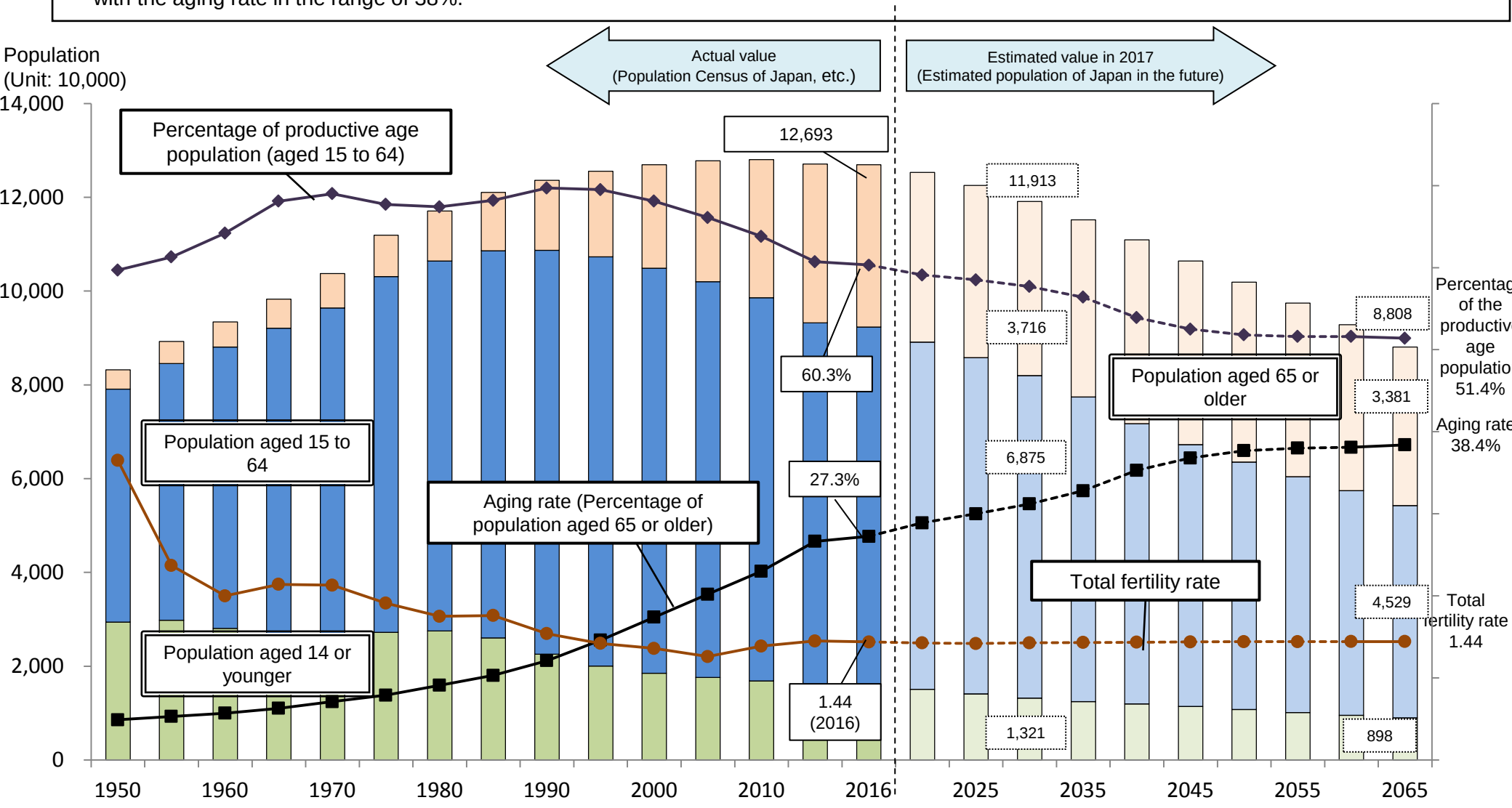
Work Style Reforms

Technological innovation represents a huge chance to realize "Society 5.0"

(Note) Created by Mission of Japan

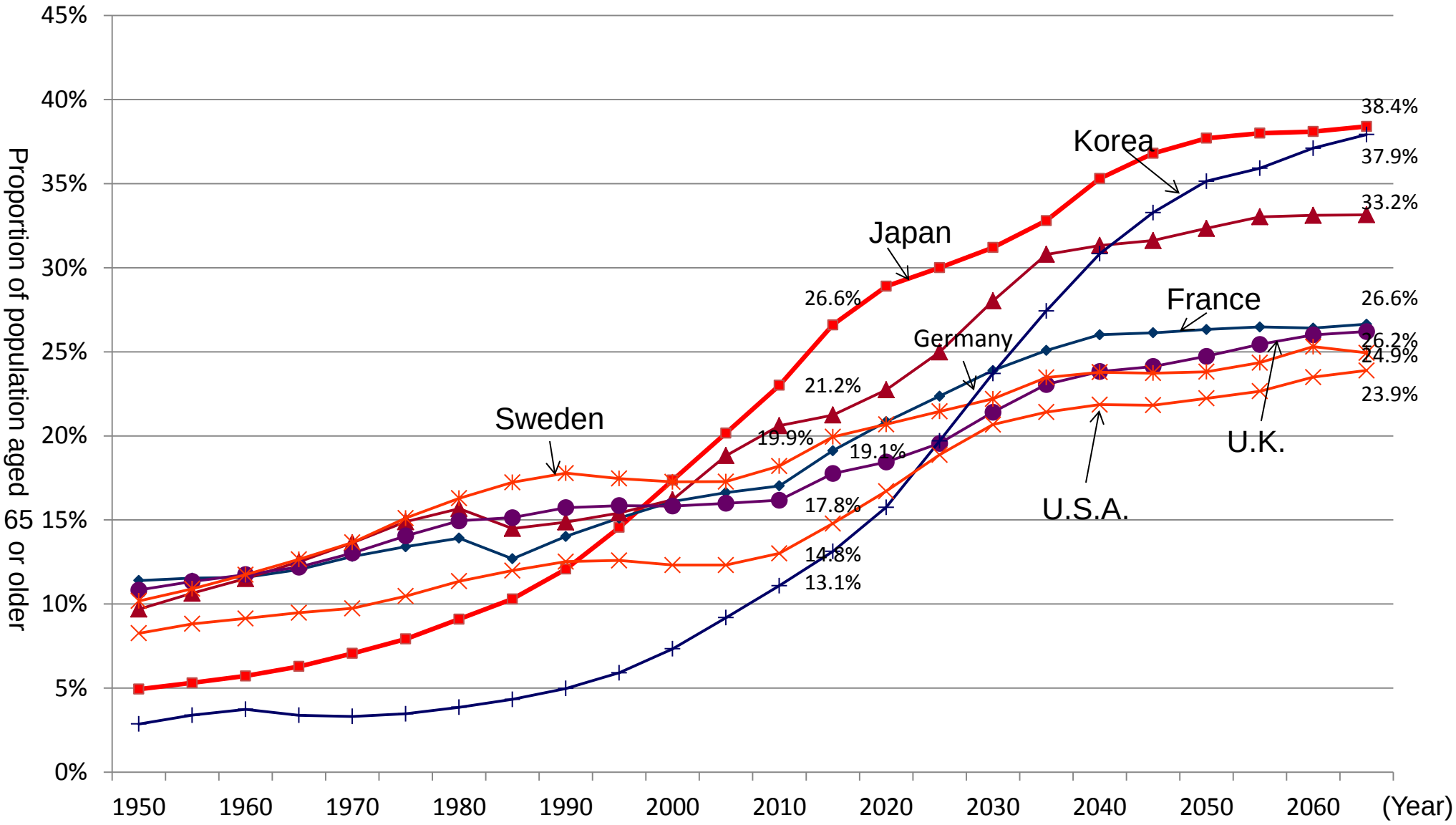
Trends in the population of Japan

○ The population of Japan is entering a declining phase in recent years. It is estimated that the total population will fall below 90 million in 2065, with the aging rate in the range of 38%.



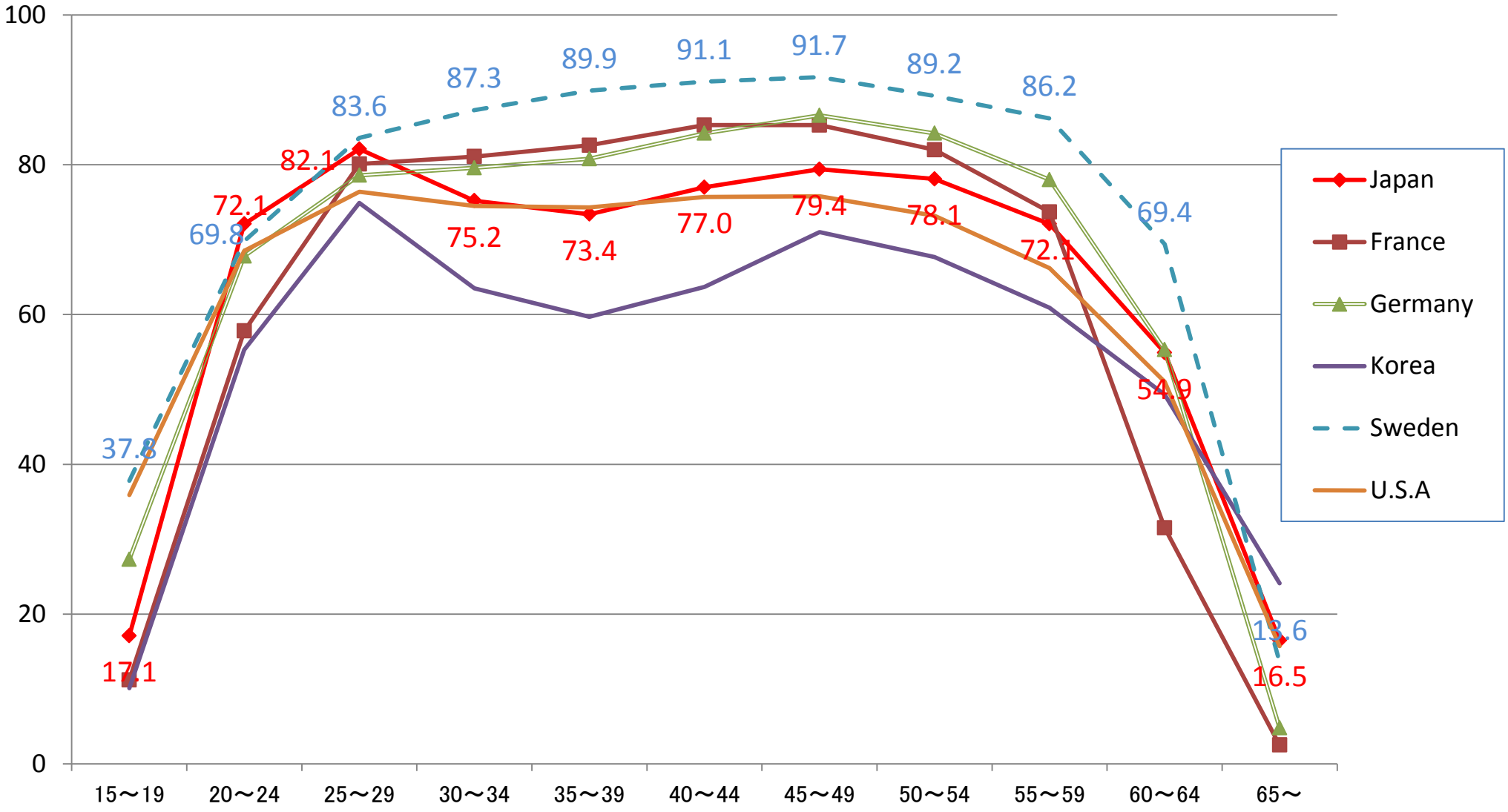
(Source) Regarding the population until 2016 (as of Oct. 1 for each year), the data was extracted from the “Population Estimates,” by MIC. As for the percentage of the productive age population, the data until 2015 was based on the "Population Census of Japan" by MIC, and of 2016 on the “Population Estimates” by MIC. The total fertility rate until 2016 is based on the "Vital Statistics" by MHLW. The data of 2017 and thereafter is from the “Population Projections for Japan (2017): Medium-Fertility/ Medium-Mortality Assumptions)” by IPSS.

International Comparison of Trends in Population Aged 65 or Older



(Source) Japan: “Population Census” by MIC, “Population Projections for Japan (2017): Medium-Fertility/ Medium-Mortality Assumptions)” by IPSS (population as of Oct. 1 each Year), Other countries: “World Population Prospects The 2015 Revision” by United Nations

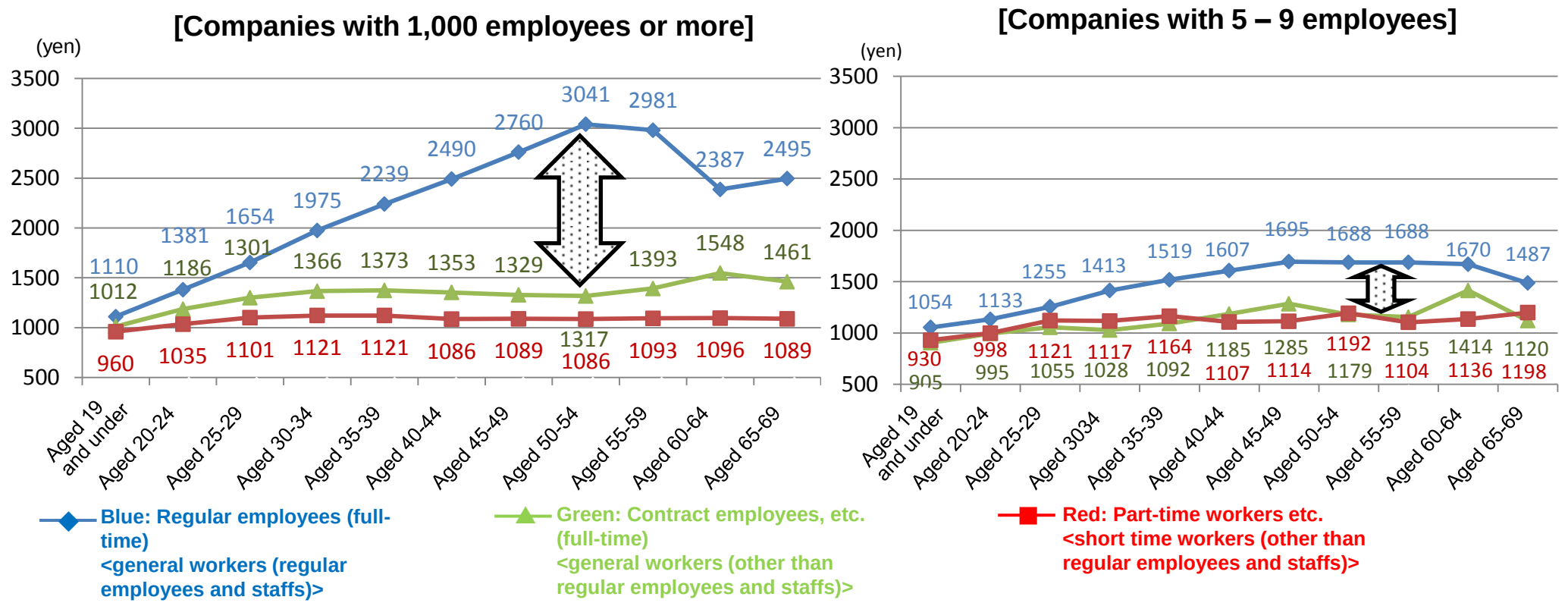
International Comparison of Female's Employment Rate By age-group



(source) Japan: "The Labour Force Survey (basic tabulation) (2017)" by MIC, Other countries: OECD Database (2017)

Wage Curve by Form of Employment (by Age) (hourly pay basis)

- ○ Wages for regular employees increase with age and the larger the company, the higher the increase.
- ○ Wages for workers other than regular employees remain almost constant, regardless of the company size and age of the worker.
- ○ The difference of the curves between regular employees and workers other than regular employees is larger, especially for large size companies.



Blue: Regular employees (full-time)
<general workers (regular employees and staffs)>

Green: Contract employees, etc. (full-time)
<general workers (other than regular employees and staffs)>

Red: Part-time workers etc.
<short time workers (other than regular employees and staffs)>

Source: "2017 Basic Survey on Wage Structure" by MHLW

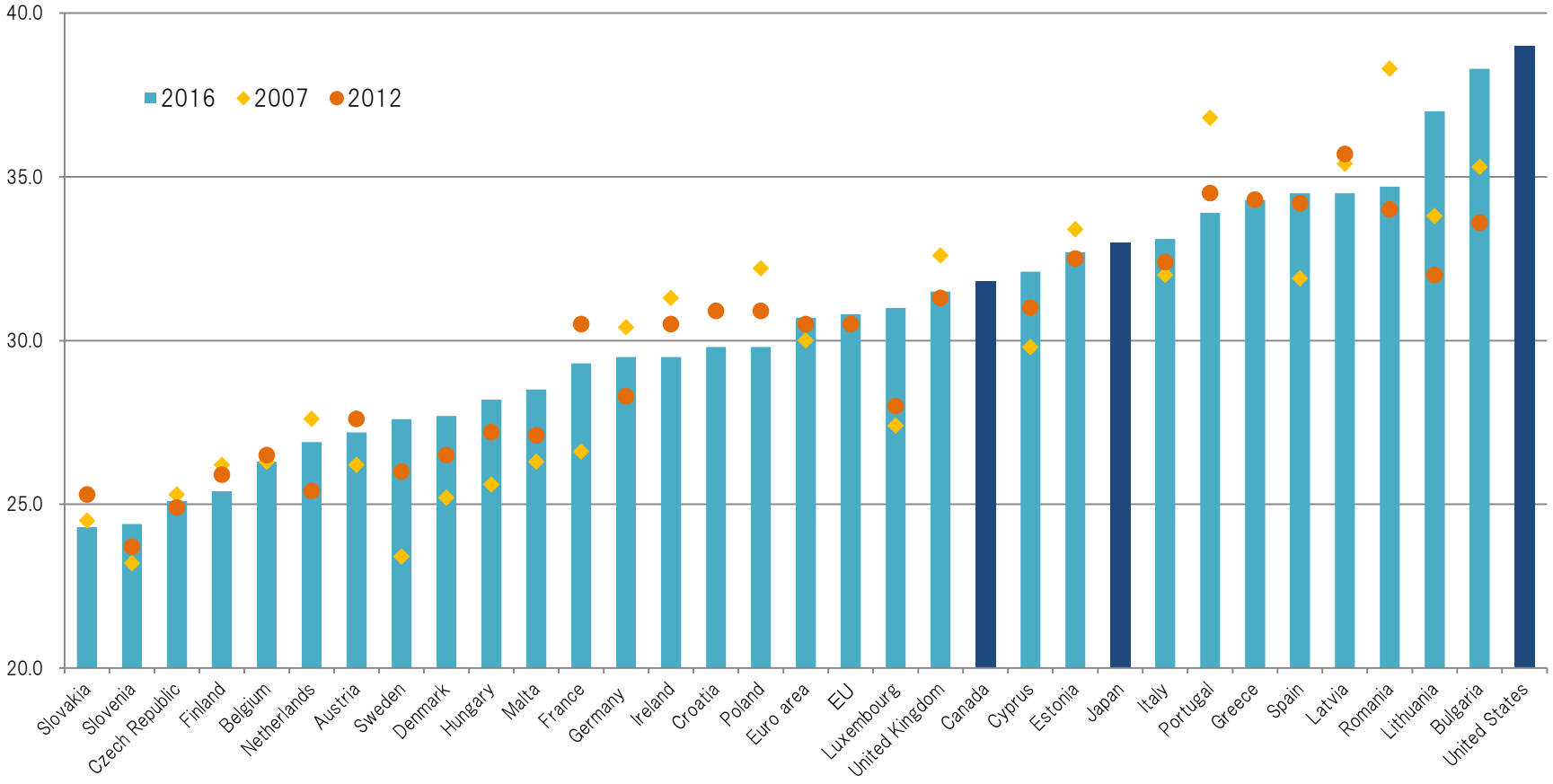
Note 1) Wages are scheduled wages for June of the surveyed year.

2) "Regular employees and staffs" are those categorized as regular employees and staffs by the employer.

3) "Other than regular employees and staffs" are those categorized as those other than regular employees and staffs by the employer.

4) Wages for general workers (regular employees and staffs)" are those obtained by dividing scheduled wage for June by scheduled hours worked for June.

International Comparison of the Gini coefficient of equivalised disposable income



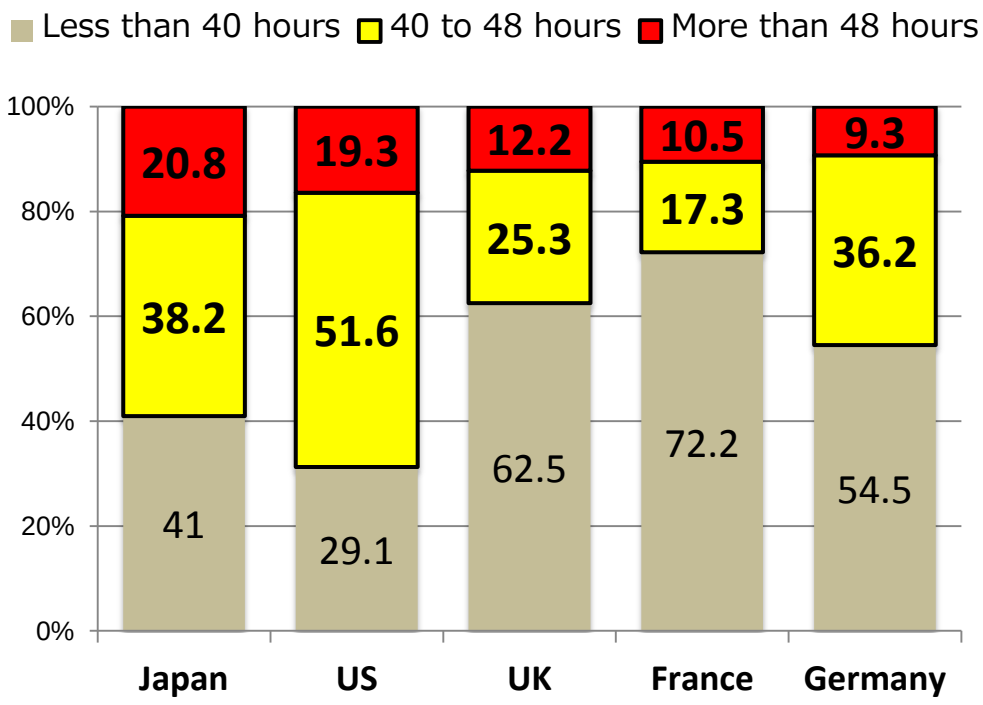
(Source) European countries: European Commission
Japan, United States, Canada: OECD

Work Style Reforms

Improvement in lengthy working hours including the introduction of a regulatory limit on overtime work

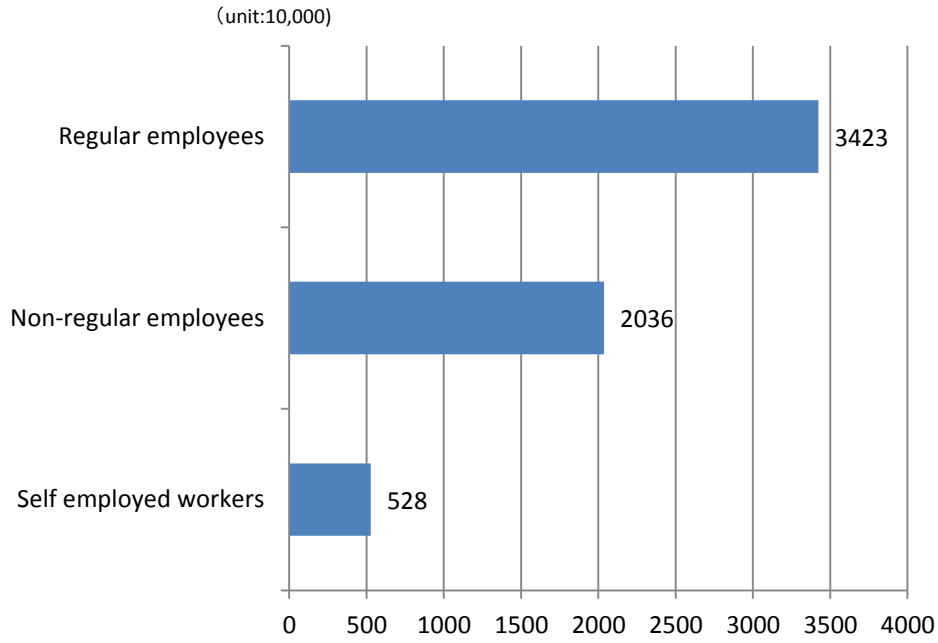
Improvement in the working conditions of non-regular workers such as through equal pay for equal work

Percentage of employees working Lengthy hours (working hours per week)



(Source) ILO「ILOSTAT Database」

Labour force size



(Source) Labour Force Survey (2017)

(Note) Created by Mission of Japan based on Work Style Reform Action Plan (2017)

Technological innovation and its Impact on Labour | Society in 2035

(Source) : Created by MHLW based on "Future of Work 2035 -For Everyone to Shine- "report (MHLW)

Technological innovation 2035

VR（Virtual Reality), AR（Augmented Reality）, MR（Mixed Reality）

○ VR and AR are currently in their practical stages and are being utilized in medical field, educational field, and also in the business world to share design images, explain products and to try on clothing. Further development will make them compact and easier to use.

○ MR advancement will greatly change meetings to the extent that colleagues far away will feel like in the same meeting room, and with limitation in telework gone, users won't be able to tell the difference from real communication.

Sensors

○ It is said that society will come to utilize trillions of sensors annually as connective devices someday.

○ Biometric sensors for brain waves and smell will also bring innovation in medical fields and other areas.

Transportation technology

○ Traffic congestions will likely decrease through automatic driving and optimal guidance, with transportation and logistics productivity dramatically improved.

○ Speeding up of bullet trains and airplanes and linear trains will widen options for places to live and work.

Processing speed and communication technology

○ Mobile communication has improved by 10,000 times in the 30 years since 1985, and is predicted that it will be faster than 10Gbps for 5G, and over 100Gbps by 2035.

○ Most of the world's population will be connected through high-speed mobile communication.

AI (Artificial Intelligence)

○ AI today is focused on data-based machine learning and deep learning technologies following the development of Big Data and accelerated calculation technology. AI will have further impact on industry, employment and working style and so on.

○ Routine operations where some levels of error are tolerated will replace human. New types of jobs that only humans are capable of are sure to be created, and these are likely to be jobs that are grounded on human nature.

WHAT is SOCIETY 5.0?

- SOCIETY 5.0 is **a new concept** of "economic society" that the Abe administration has initiated: **a super-smart society** representing the next stage in societal evolution following on from the hunter-gatherer society, the agrarian society, the industrial society and the information society.

- SOCIETY 5.0 is **a human-centered economic society** that can foster societal development and solve social challenges **by integrating of cyberspace and the physical world.**

- The population of Japan is entering a phase of decline. Technological advancement will enable us to improve **productivity** and to solve **labour shortage**.

- SOCIETY 5.0 will boost **the potential growth of Japan**, and raise national incomes, the quality of life and international competitiveness.

- SOCIETY 5.0 will also contribute to the attainment of **SDGs**.

Inevitable consequences on Work Style

(Note) Created by Mission of Japan based on "Growth Strategy 2018" and "5th Science and Technology Basic Plan"

The Future of Work

＜Changes in the working environment＞

No restrictions on place and time

Shift to the virtual workplace

Many jobs will become doable at any time and place

＜Changes in Work Style＞

Exploitation of untapped human resources

⇒Opportunities where women, the elderly, the disabled and foreigners can be dramatically expanded.

⇒Maximization of Individual productivity according to their lifestyle and life stage.

Expansion of new forms of employment that are different to conventional jobs

⇒Teleworking, side jobs, multiple jobs, increase in forms of work that are similar to employment.

⇒Tailoring of work-life balance according to preferences and needs

(Note) Created by Mission of Japan based on "Growth Strategy 2018" and "Future of Work 2035 -For Everyone to Shine-" report

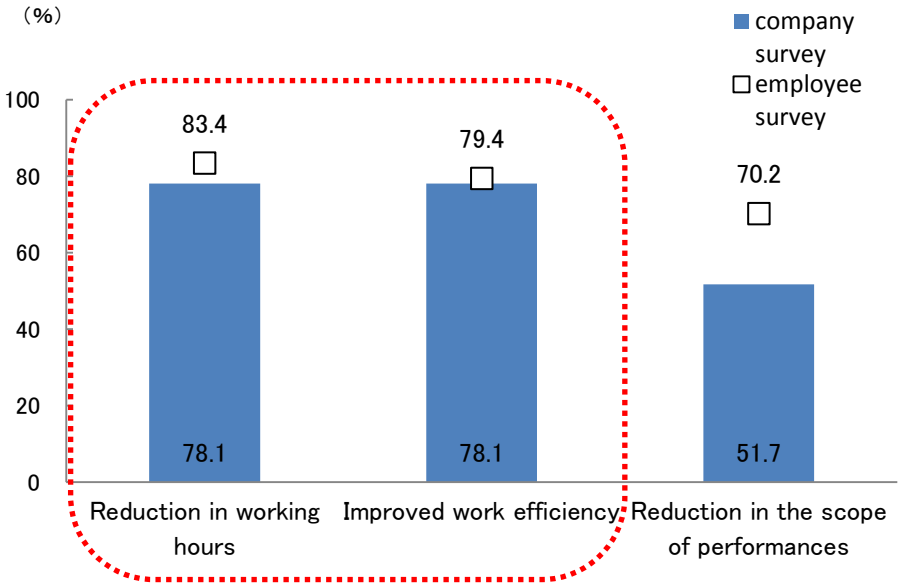
What are the challenges? (1)

Understanding and analysis of the impact of technological innovation such as AI on the labour market.

⇒ AI is expected to have a positive impact on reducing working hours and improving business efficiency.

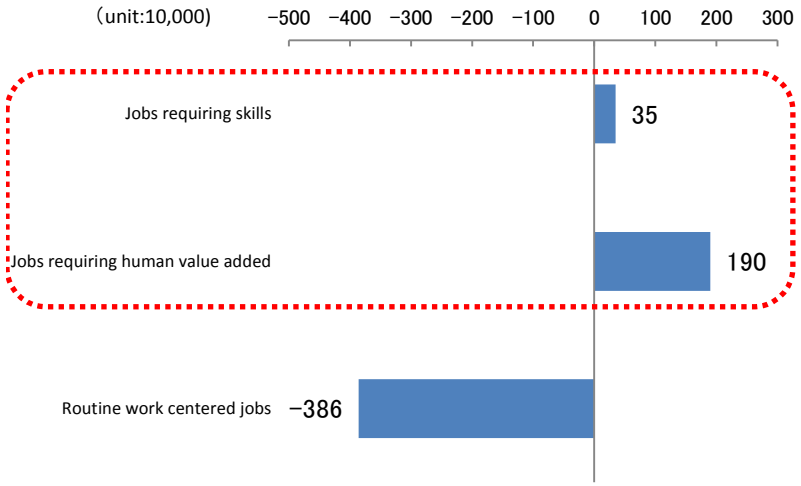
⇒ On the other hand, it is necessary to understand and analyze the actual effect as the impact of AI on employment is assumed to vary depending on the types of job.

Impact on the workplace of the introduction of AI



(Source) White paper on the labour economy (2017) (MHLW)

Changes in the labour forces by job skill



(Source) White paper on the labour economy (2017) (MHLW)

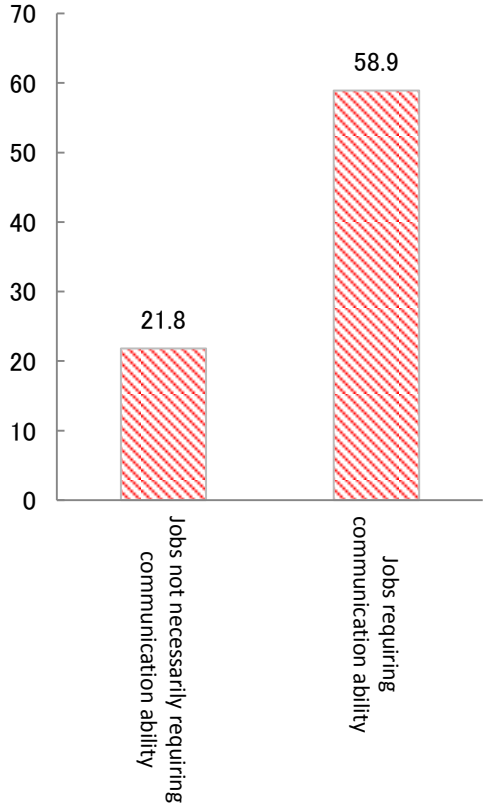
(Note) Created by Mission of Japan based on White paper on the labour economy (2017) (MHLW)

What are the challenges? (2)

Ensuring an adequate supply of skills required in the era of AI

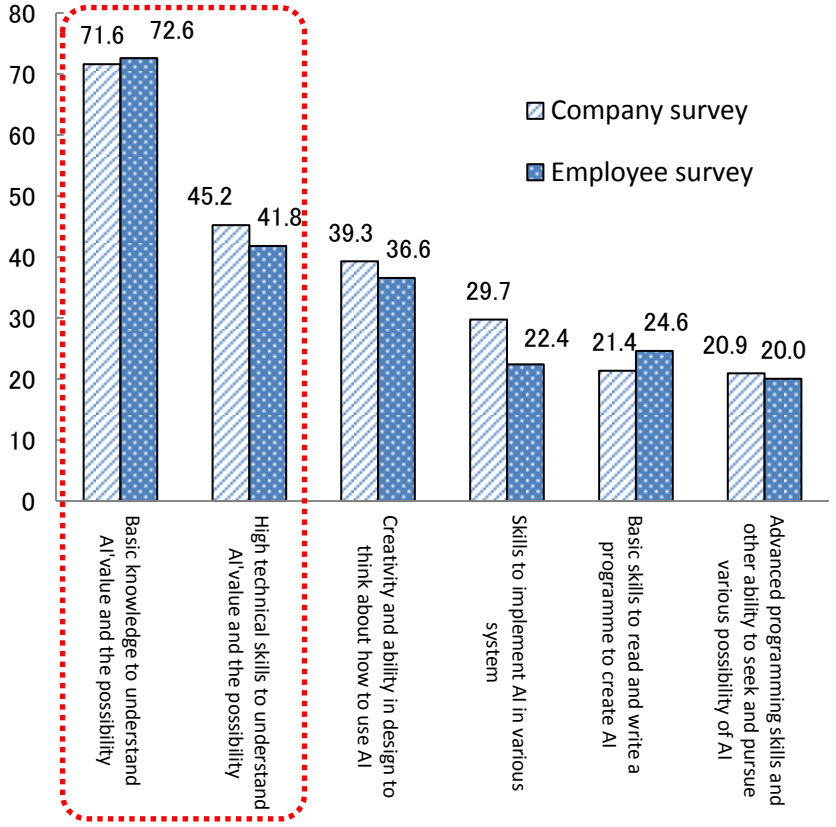
⇒ In the era of AI, the ability to understand and master AI and those skills which are difficult to replace with AI will be required. It will be important to improve such skills.

Jobs to be done by humans



(Source) White paper on the labour economy (2017) (MHLW)

Skills required in the era of AI



(Source) White paper on the labour economy (2017) (MHLW)

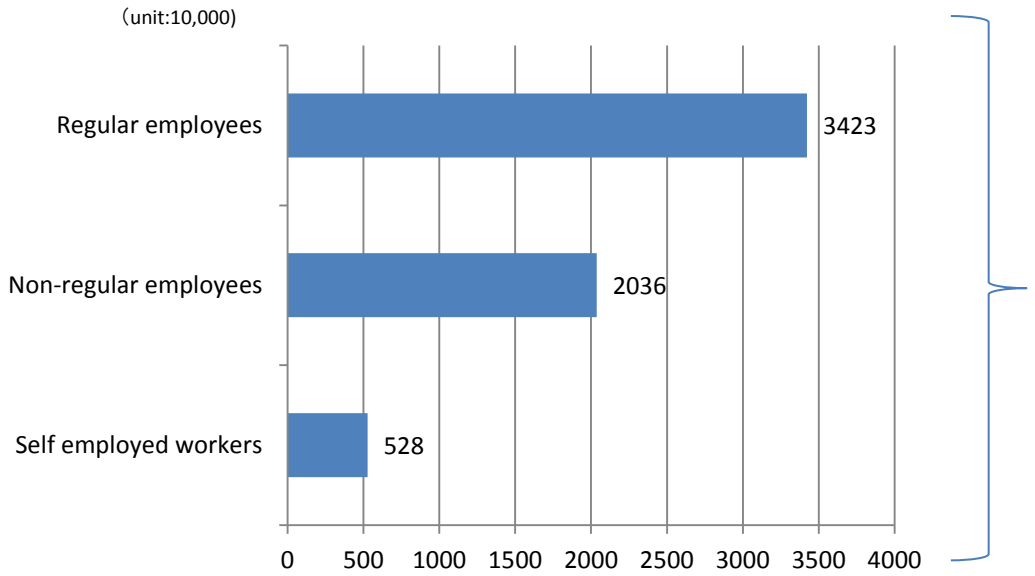
(Note) Created by Mission of Japan based on White paper on the labour economy (2017) (MHLW)

What are the challenges? (3)

Protecting forms of work that are similar to employment

⇒ It is necessary to understand the actual status of workers and consider how best to protect forms of work that are similar to employment in the medium to long term.

Labour force size



(Source) Labour Force Survey (2017)

The border between regular employees and non-regular employees will become increasingly nebulous, and there is a possibility that forms of work that are similar to employment such as freelancing and crowd work will further increase.

⇒Firstly, we need to understand the actual status of the various forms of work that are similar to employment.

⇒On top of that, we need to consider the importance and contents of protection of various forms of work that are similar to employment and how to protect them (various options are available such as preparing guidelines, extending protection of relevant labour law and so on) .

(Note) Created by Mission of Japan based on "Future of Work 2035 –For Everyone to Shine– "report and "Investigative Commission on Work Style Similar to Employment (MHLW)" report