

Reference Materials for the Third Report of the Committee on New Direction of Economic and Industrial Policies

**June 2024
Economic and Industrial Policy Bureau,
Ministry of Economy, Trade and Industry**

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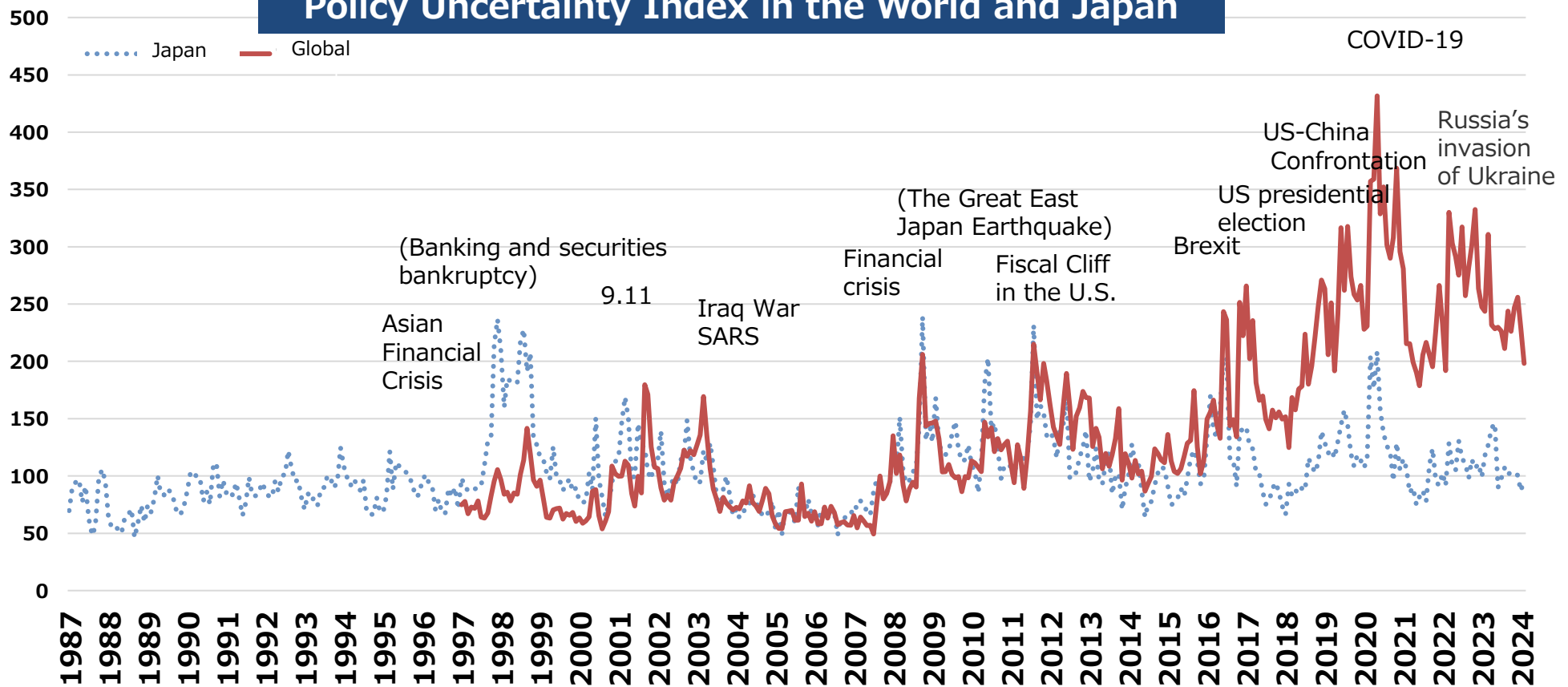
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Rising Global Uncertainty, Changes in the International Economic Order

- Globalization that has progressed since the end of World War II is at a crossroad. Widening disparities within and among nations, uneven distribution of wealth due to digital innovation, and fragmentation due to unilateral measures exist as backgrounds.
- Russia's invasion of Ukraine further puts the international economic order at a turning point as **the division between Western countries and authoritarian states deepens**.

Policy Uncertainty Index in the World and Japan



(Source) <https://www.policyuncertainty.com/> (April, 2024)

<https://www.imf.org/ja/News/Articles/2021/01/19/blog-what-the-continued-global-uncertainty-means-for-you>

Expansion of Geopolitical Risks and Increased Industrial Policy Activity around the World

- In parallel with the continued expansion of geopolitical risks, industrial policies and other measures continue to be active in various countries.

Increased Industrial Policies of Various Countries (red text : Actions after the Second Report)



【Issue】

- Widening inequality and exhaustion of the middle class
- Confrontation with China
- Inflation

【Policy Responses】

- Labor-centered trade policy Industrial
- CHIPS Act (AUG 2022): \$52.7 billion in funding as incentives for semiconductor-related investments and restrictions on establishing locations in foreign countries
- Inflation Reduction Act (AUG 2022): \$433 billion, including local assembly requirements for EV tax credits and prevailing wage requirements for hydrogen production equipment tax credits
- "Bidenomics" speech (JUN 2023)
- "invest it here and make it here" (JUL 2023)
(Tracking whether R&D support led to domestic production. Executive Order to promote domestic production through R&D support.)
- Outbound Investment restriction to China (AUG 2023)
(Restrictions on U.S. investors, including VCs, to invest in AI and semiconductors in China)
- Semiconductor Supply Chain Survey for Key Industries (Announced in DEC 2023)
(The Department of Commerce conducts survey on the use and procurement of legacy semiconductors from China in key U.S. industries.)
- Tariff hike on China (Announced in MAY 2024)
(Announced that tariffs on EVs imported from China will be raised to 100%, tariffs on solar cells and semiconductors will be raised to 50%)



【Issue】

- Leading the way in climate change mitigation
- Dependence on China/US for manufacturing and digital
- Securing quality jobs
- Inflation

【Policy Responses】

- EU Recovery Plan (about 1.8 trillion euros) for green and digital transition, etc.)
- Strategic Autonomy and Supply Chain Return to Europe (Legislation to strengthen supply chains in order to reduce dependence on specific countries for critical goods such as batteries and semiconductors)
- Green Deal Industrial Plan (FEB 2023) (Creation of an environment to support scale-up of the clean industry sector (e.g., relaxation of state aid rules, 6.9 billion euros for hydrogen infrastructure development, etc.))
- GER: Growth Opportunity Act (JUL 2023)
(Revision of the tax system to support green investment and R&D investment)
- GER: Announcement of Industrial Policy (OCT 2023)
(Planned tax incentives of 50 billion euros over the next four years)
- FRA: Changes to EV subsidies (OCT 2023)
(Preferential treatment for domestically produced EVs, such as adding the total amount of CO2 emitted in the process of production to transportation in addition to the conditions for the payment of EV purchase subsidies)
- Investigation of Chinese companies supplying wind turbines (Released in APR 2024) (European Commission investigates conditions for development of wind power generation projects in FRA and other countries)



【Issue】

- End of catch-up, export-led and high-growth economy
- Competition with U.S., Europe, etc.

【Policy Responses】

- China Manufacturing 2025 (Targeting 70% self-sufficiency in core basic components and materials in 2025)
- R&D investment growth rate of at least 7% per year on average.
- Improving the investment environment and promoting the attraction of foreign companies (AUG 2023, MAR 2024) (To improve the investment environment for foreign companies and promote investment attraction, the implementation of 24 policies in 6 sectors was established. This includes expanding the catalogue of encouraged industries for foreign investment in China, removing all entry restrictions on the manufacturing industry, and encouraging reinvestment within China, etc.)
- Expansion of export control items (JUL/OCT 2023, etc.)
- Accelerating the development of new quality productive forces (MAR 2024) (Promotion of scientific and technological innovation: AI, quantum, integrated circuits, life and health, space, low-altitude economy, etc.)
- Issuance of ultra-long-term special government bonds (MAR 2024) Issuance of 1 trillion yuan in 2024 (support for science, technology and innovation, food and energy security, etc. ※Statement by Zheng Zhajie, director of the national development and reform commission, at the APR press conference)
- Strengthening the competitiveness of the manufacturing industry (MAR 2024) (Strengthen standards and quality assurance, and establish a brand made in China)

Changes in the macro-level trends

Strategic Investment (Batteries, EVs and Semiconductors) in the US

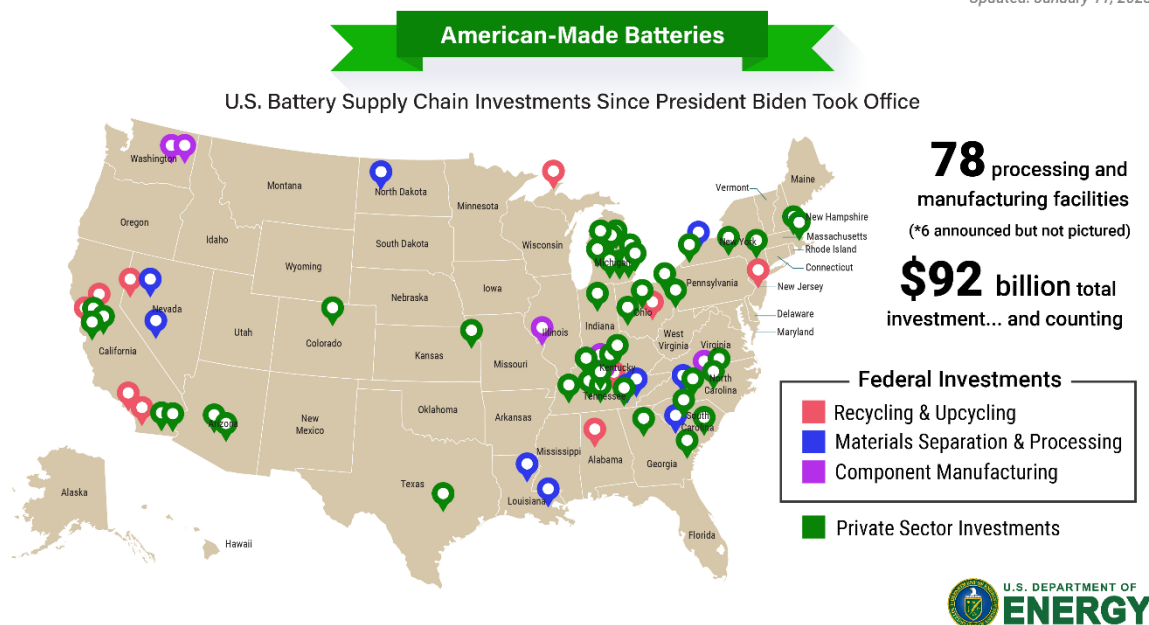
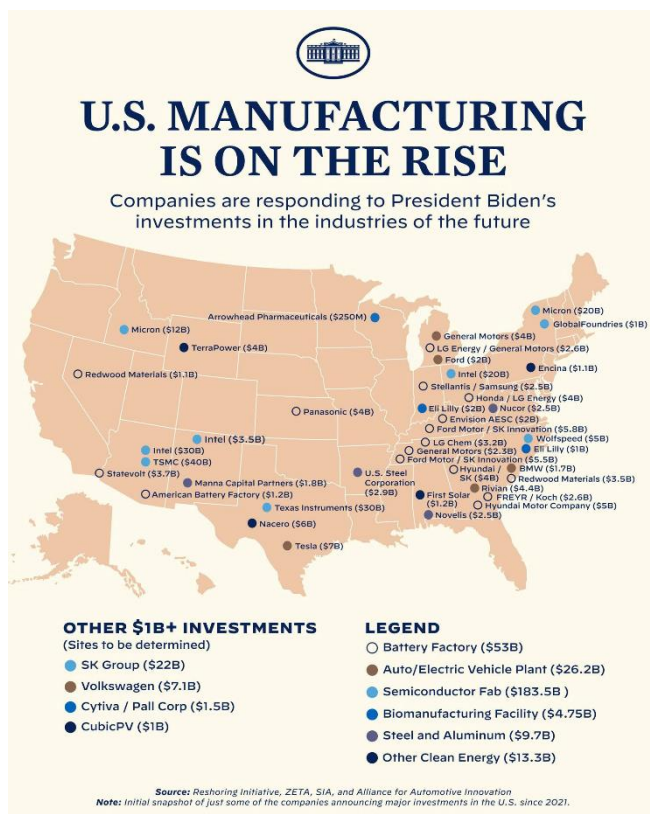
- Governments are providing large-scale, long-term and comprehensive support for strategic sectors with mid- to long-term growth potential, such as climate change and digitalization, to attract private companies to invest in domestic establishments.

Facebook post by President Biden

Major investments in storage batteries, EVs, semiconductors and bio-manufacturing, etc. after 2021

Twitter post by Energy Secretary Granholm

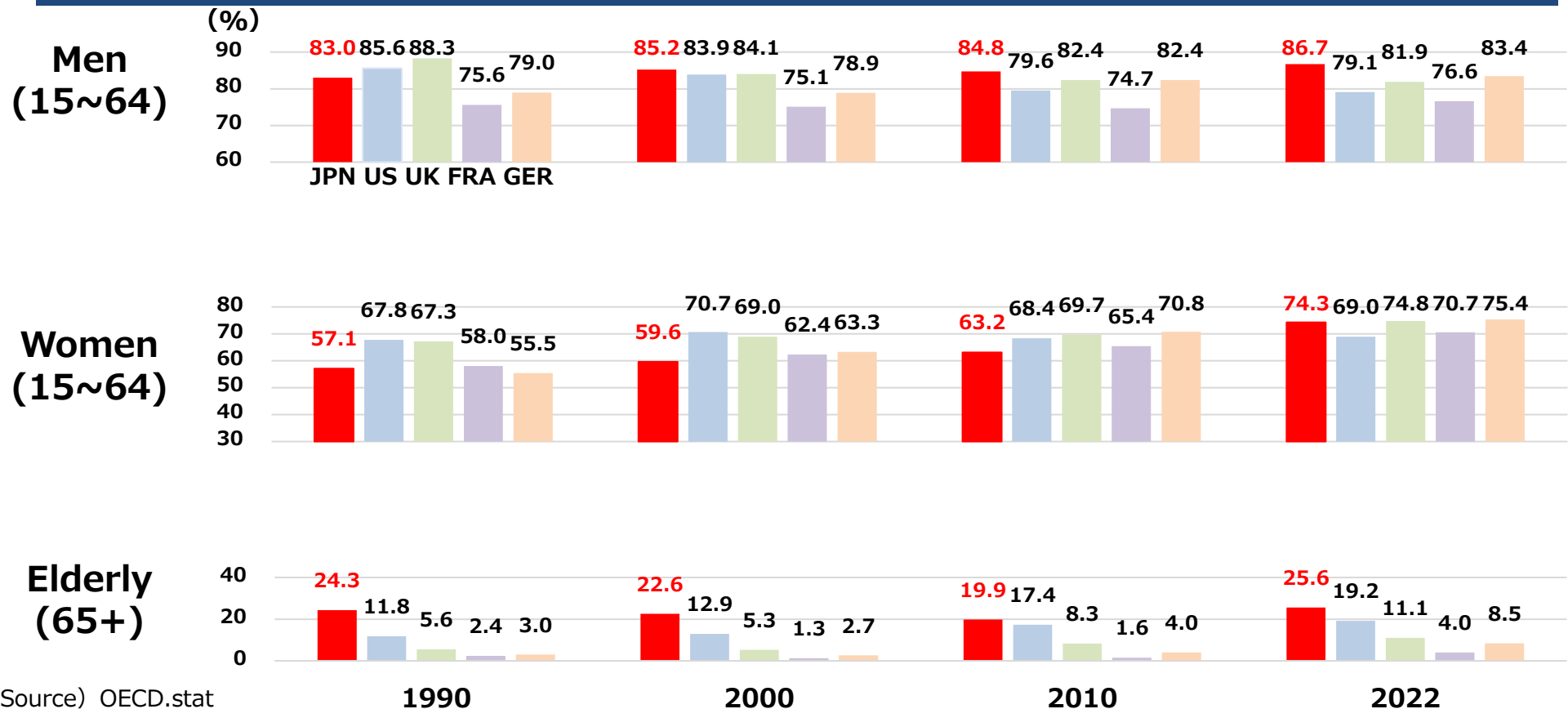
Battery supply chain investment projects since the start of Biden administration



Structural Labor Shortage

- Labor participation rates of Japan by male, female, and elderly are all among the highest in the world, and labor participation may be close to the upper limit.
- Although the per capita working hours are expected to increase due to the elimination of the “annual income barrier,” the economy and industry must be managed based on that many part-time workers are subject to time constraints and the population will continue to decline.

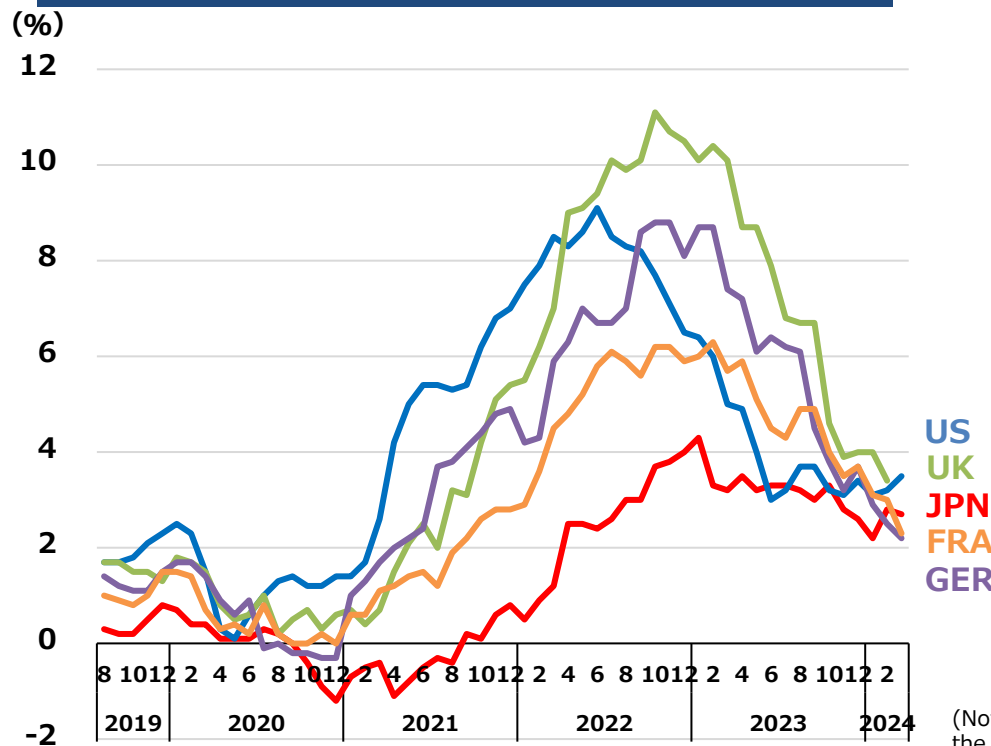
Labor participation rates (men(15~64), women(15~64), and the elderly(65+))



Continued Global Inflation (1)

- With rising energy and food prices and wages, inflation is occurring globally, albeit milder than the sharp increases seen at one time.
- Coping with this inflation, central banks raised interest rates, and in March 2024, Japan lifted its negative interest rate.

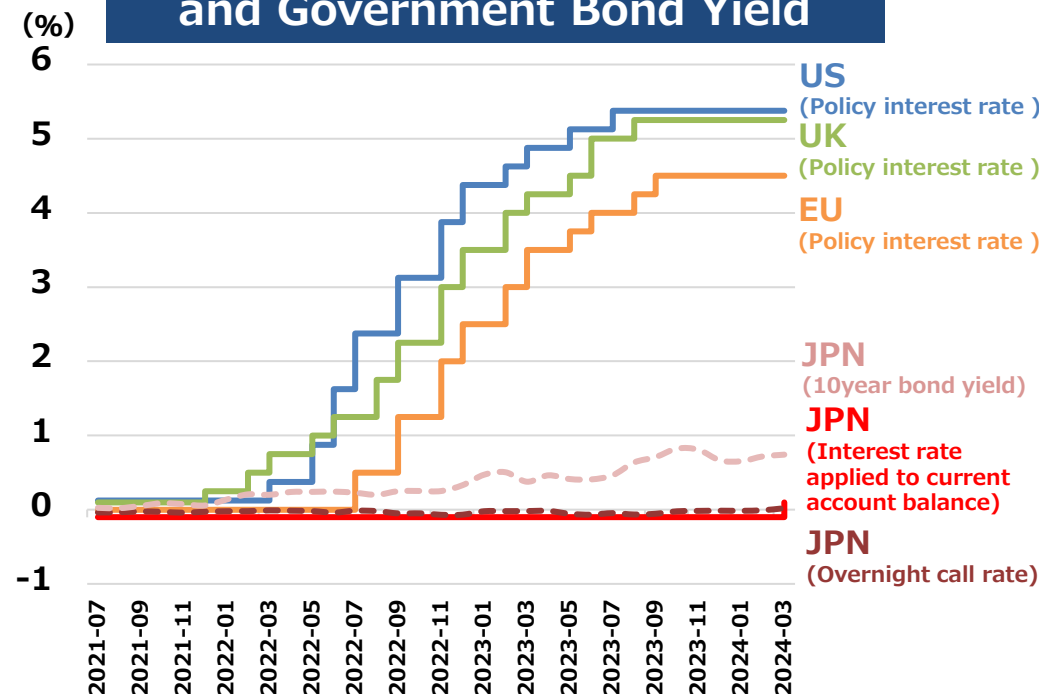
Changes in Consumer Price Index



(Note) Percent changes in CPI until Mar 2024.
(until Feb 2024 for the UK)

(Source) Ministry of Internal Affairs and Communications

Changes in Policy Interest Rate and Government Bond Yield



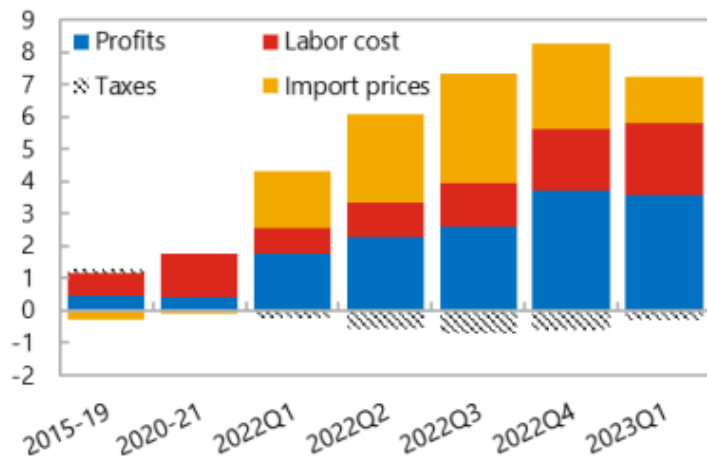
(Note) Japan's policy interest rate until Mar 2024 is the interest rate that was applied to the "policy interest rate balance", which is the current account balance minus the "basic balance" and the "macro-added balance" that are not subject to negative interest rates. By the Monetary Policy Meeting in March 2024, it was decided to revise the monetary policy framework. The main policy tool will be the manipulation of short-term interest rates, and by setting the interest rate applied to current deposits at 0.1%, it aims to keep the unsecured call rate (overnight call rate) at around 0-0.1%. Government bond of Japan rates are plotted as monthly averages.
(Source) Ministry of Foreign Affairs, Bloomberg

Continued Global inflation (2) (Structural Differences between Europe and Japan)

- In Europe and the U.S., Producer price and Consumer price have had similar trends recently because companies have been passing on import prices, including labor cost, to final consumers at the same time as import inflation due to soaring raw material and resource prices.
- On the other hand, in Japan, although Producer prices have risen due to soaring prices of imported goods, companies have not been able to fully pass on prices, mainly to consumers, resulting in a divergence between Producer prices and Consumer prices.

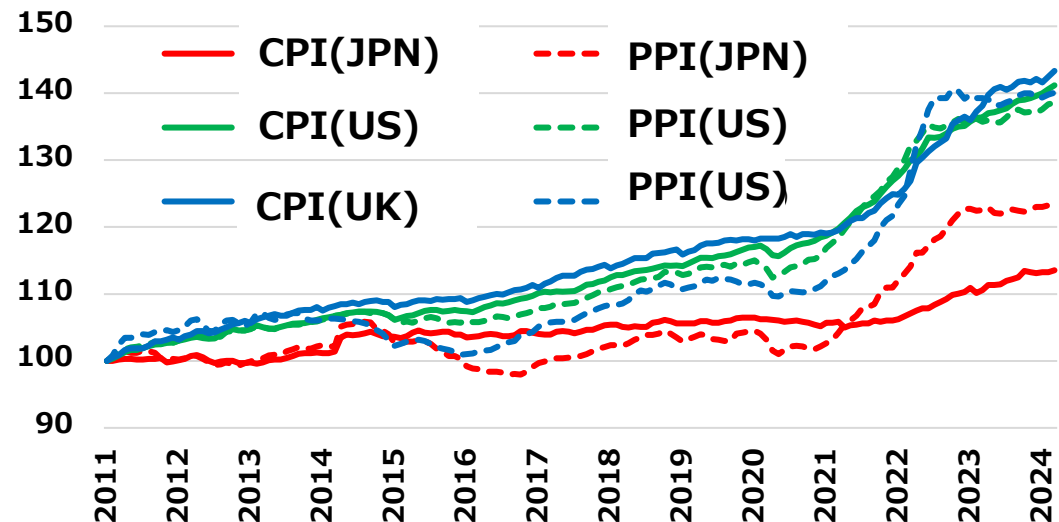
Inflation Factors in Europe

Euro Area: Consumption Deflator Inflation Decomposition
(Percentage points, yoy)



Sources: Eurostat, OECD, IMF staff calculations.

Consumer Price Index and Producer Price Index in Japan, U.S. and U.K. (Jan 2011=100)



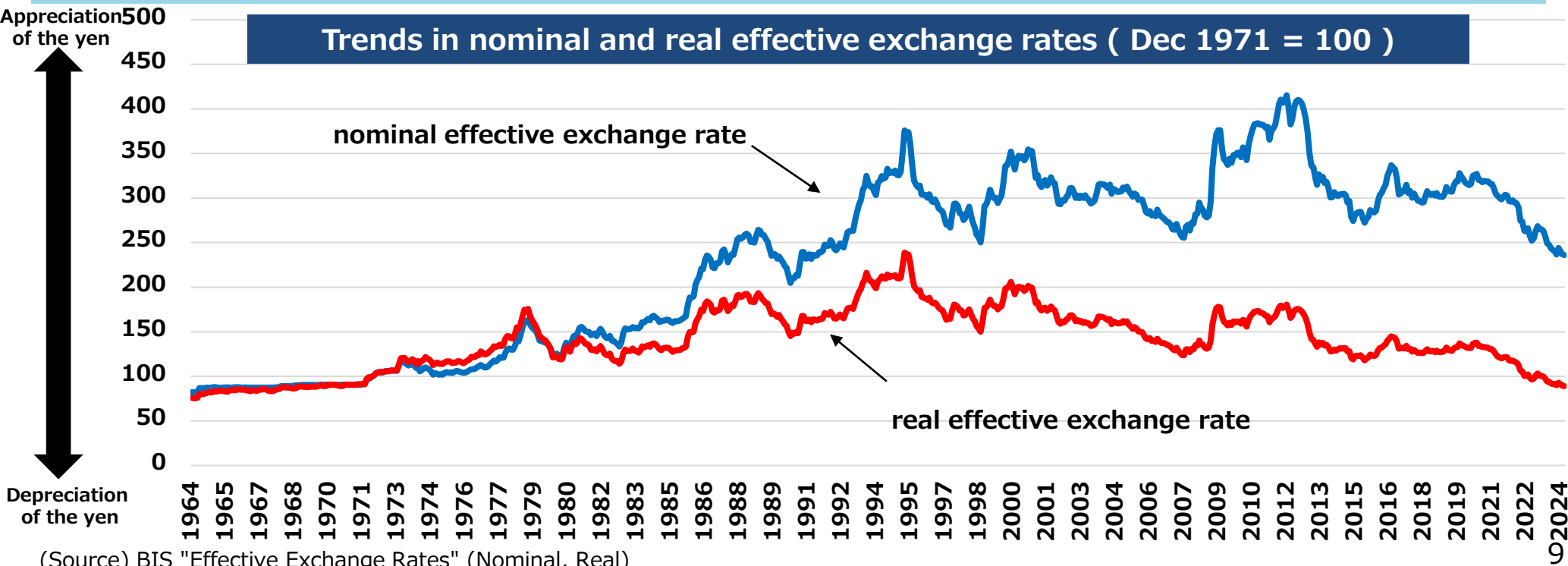
(Note) Each index is calculated with the value of Jan 2011 as 100.

(Source) Ministry of Internal Affairs and Communications, Bank of Japan, FRED and UK Statistics Office.

Changes in the macro-level trends

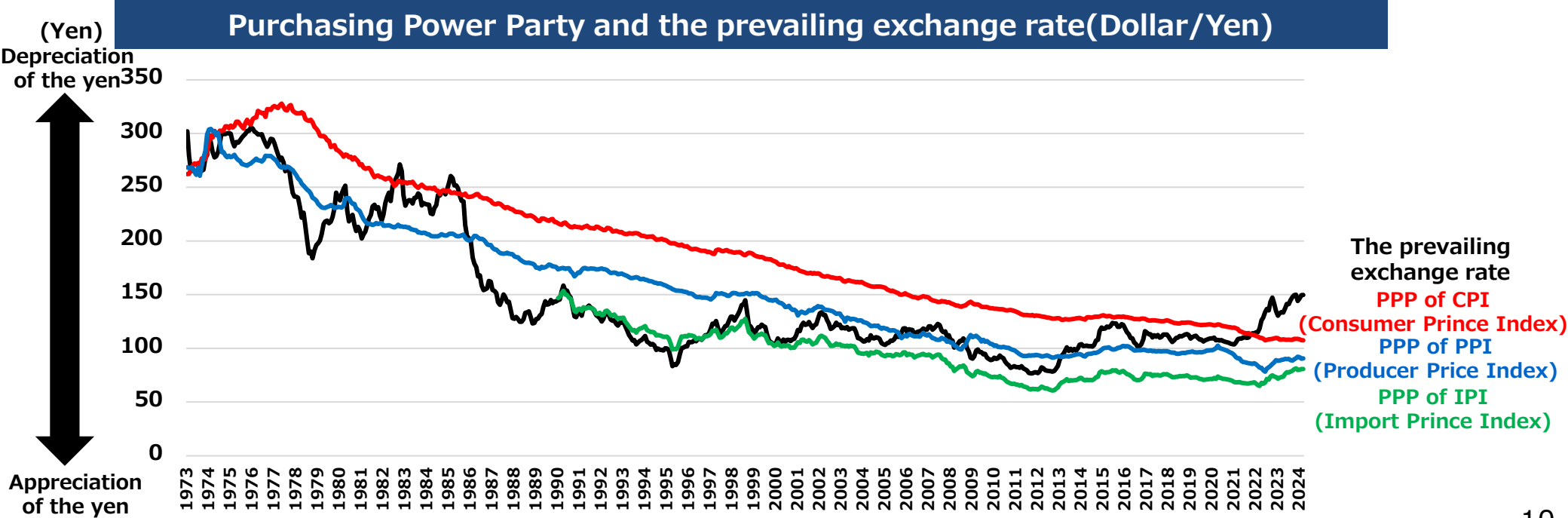
Continuation of Japan as a Country with Competitive Price Levels (1) (Real Effective Exchange Rate at its Lowest Level in 50 years)

- According to the effective exchange rate of the yen, it has been depreciating in recent years.
- In addition, the gap between nominal and real values has widened in recent years. Currently, the yen has appreciated compared to 1971, when the nominal yen was at a low level of 360 yen to the dollar, but the real value which takes into account changes in consumer prices in various countries, is the same as in 1971, that is, the lowest level in 50 years.
- This is due to a combination of two phenomena: (1) the long-term and structurally low inflation rate in Japan due to cost-cutting competition, and (2) in recent years, as inflation rates have surged and monetary policies have tightened in Western countries, Japan has maintained relatively low inflation and continued accommodative monetary policies, resulting in a widening interest rate differential.



Continuation of Japan as a Country with Competitive Price Levels (2) (Deviation between Purchasing Power Party (PPP) and Dollar/Yen market)

- For a long time, comparing the dollar/yen PPP and the prevailing exchange rates, the prevailing exchange rates have been equal to the PPP, or the yen has appreciated. However, the yen has been weaker than all kinds of PPPs recently.
- The yen's depreciation against the prevailing exchange rate relative to PPP of PPI indicates that companies can export their products at a discount. Although the environment has been undervalued for companies since the 2010s, export volumes have not increased, and the yen has not returned to its high level.
- The depreciation of the yen against the prevailing market rate relative to PPP of CPI indicates that the consumer prices are undervalued relative to overseas prices. This situation has been occurring since 2021, and the undervaluation of CPI, combined with the resumption from Covid-19, may be contributing to increased inbound consumption and higher unit prices in yen terms.



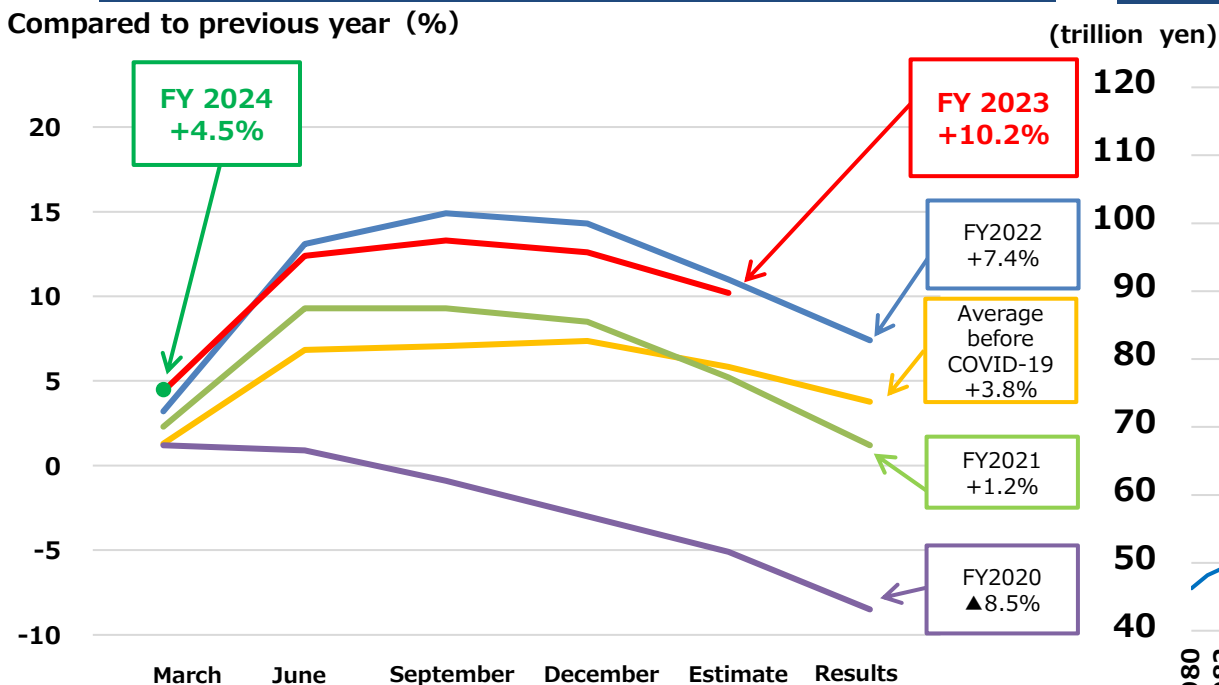
(Source) Institute for International Monetary Affairs, Ministry of Internal Affairs and Communications, Bank of Japan, FRED.

"Turning point" from the trend of past 3 decades

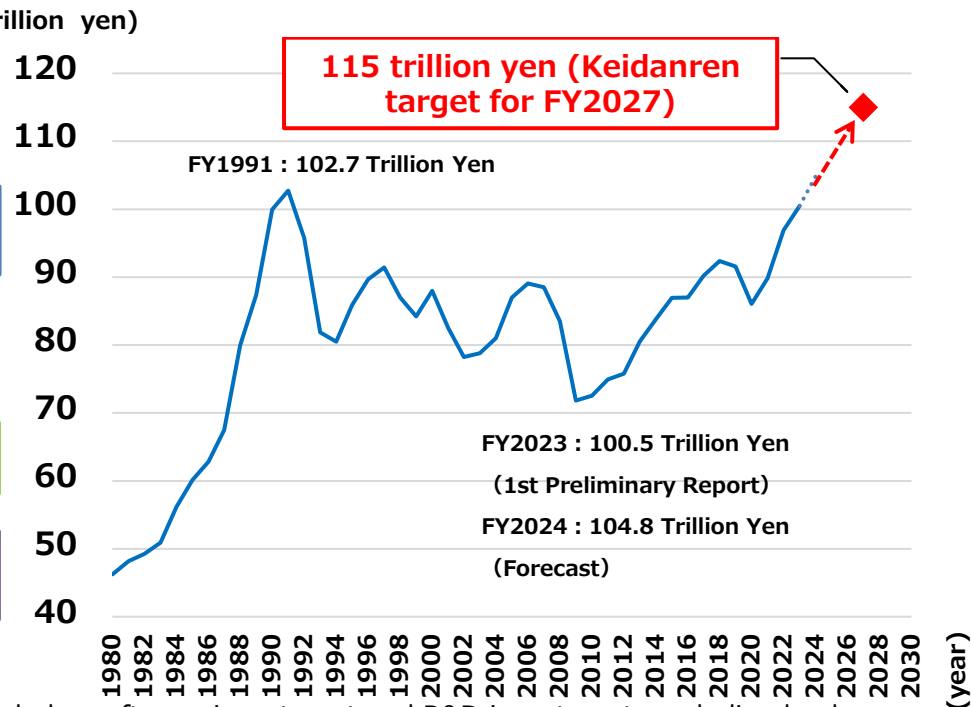
Turning point (1) -1 Domestic Investment: Capital investment will continue to increase in the current fiscal year

- The growth rate for capital investment plans for FY2023 (all industries of all sizes) are expected to increase at a second highest level to FY2022, which recorded the highest level of growth on record.
- On the other hand, the continuation of investment is essential to achieve the Keidanren's target of 115 trillion yen in capital investment (in FY2027). Last December, the government compiled a **"domestic investment promotion package"**. At the "Public-Private Partnership Forum on Increasing Domestic Investment," the Prime Minister Kishida expressed his commitment to achieving this goal through public-private partnership.

Growth rate of corporate capital investment plans



Changes in Private Capital Investment and Keidanren targets



(Note) Left: "Average before COVID-19" is the average for FY2017-FY2019. It includes software investment and R&D investment, excluding land investment. Right: For the period 1980-1993, simplified retrospective GDP series on the 2015 base expenditure side are used.

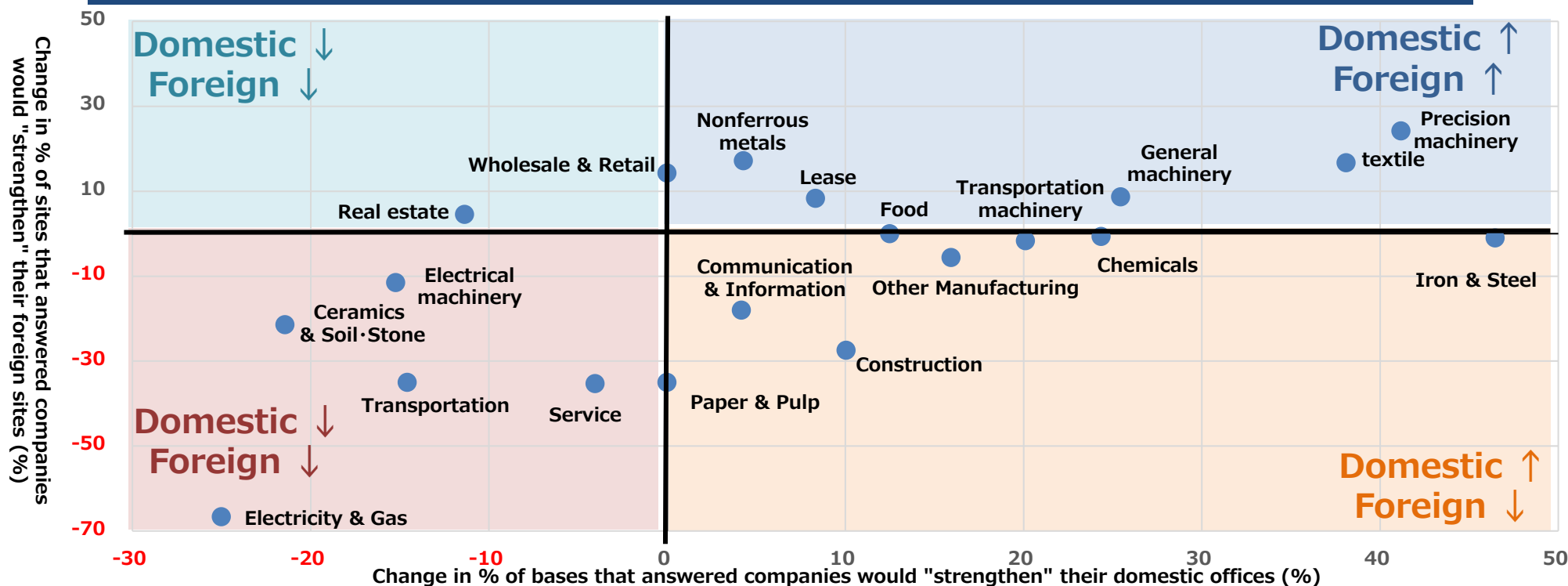
(Source) Left : Bank of Japan. Right : Cabinet Office, Public-Private Partnership Forum on Increasing Domestic Investment (April 6, 2023), submitted by Keidanren

“Turning point” from the trend of past 3 decades

Turning point (1) -2 Domestic Investment: Production Sites under Consideration (Next 10 years)

- Precision machinery, chemicals, general machinery, and textiles are tending to expand their production sites as of 2019, with a particularly high intention to strengthen their domestic production sites.

Change in the percentage of companies intending to strengthen their domestic and foreign production sites (2019 → 2023)



[Precision Machinery]
Driven by semiconductor manufacturing equipment, investment in medical equipment and measuring instruments will also increase.

[Chemicals]
Investment in pharmaceuticals, semiconductors, and battery materials for EVs will increase.

[General Machinery]
Investment will increase in a wide range of areas, including robots, aerospace-related equipment, semiconductor manufacturing equipment, boilers and prime movers.

[Textiles]
Growth in investment in membranes for batteries and materials for medical applications through conversion of existing fiber technology

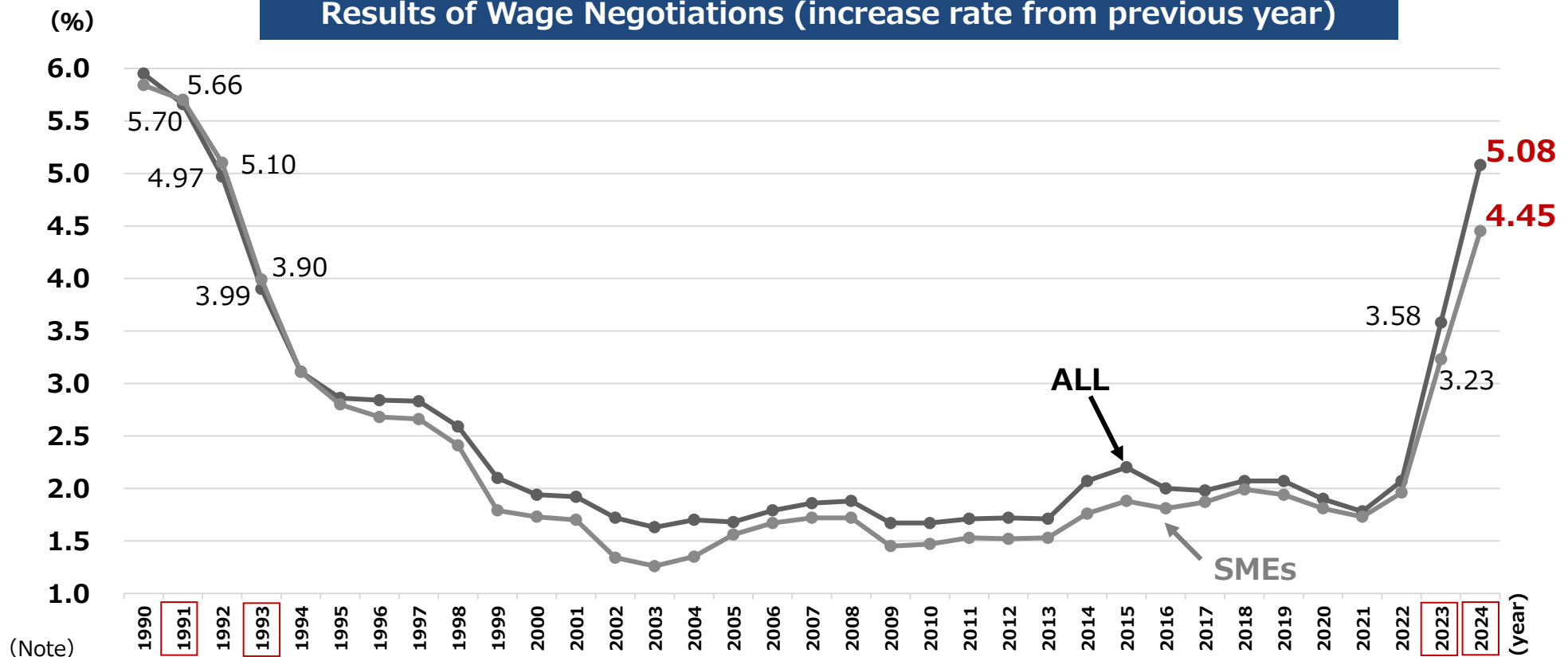
[Iron & Steel]
Sales of electromagnetic steel sheets for EVs will increase.

“Turning point” from the trend of past 3 decades

Turning point (2) : Wage Increase (Continuation of the Largest Wage Increase in 30 years)

- The wage increase rate for the 2023 spring wage negotiations (final tally) is **3.58%**, the highest increase in 30 years since 1993.
- The sixth tally (published in June **2024**) of wage increases for 2024 spring wage negotiations is **5.08%** (**4.45%** for SMEs).

Results of Wage Negotiations (increase rate from previous year)

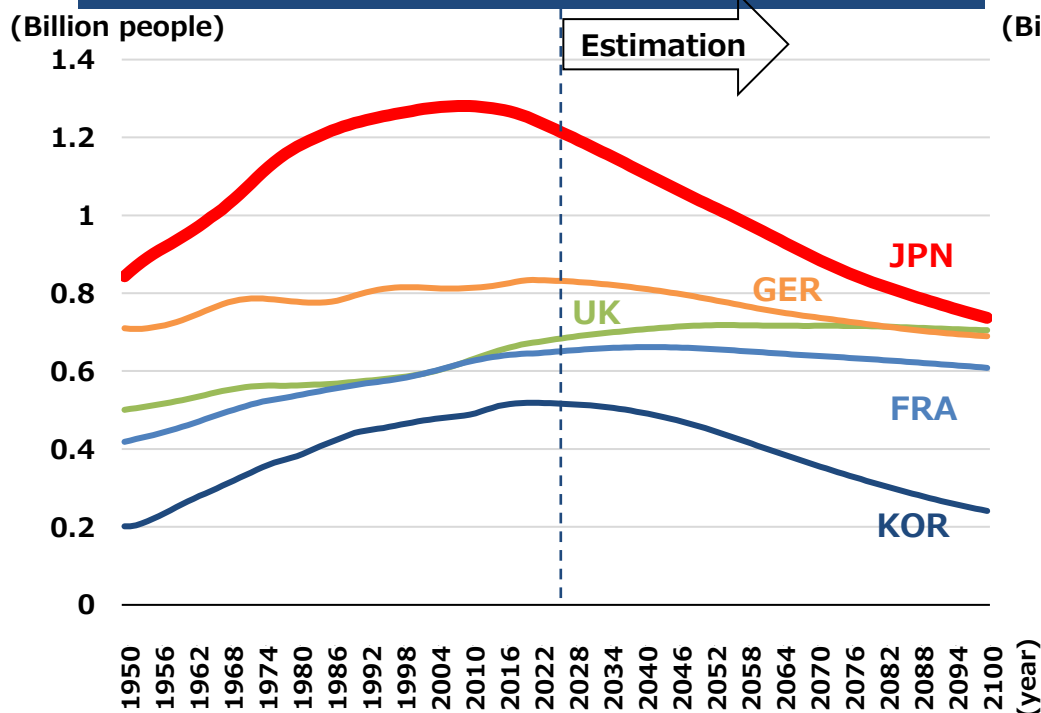


(Note)
※1: The survey covers unions of Rengo member companies. SME means unions with less than 300 members.
※2: Based on monthly wages.
※3: The figures for 1990 to 2023 are the final tally. The figure for 2024 is the sixth tally.
(Source) Rengo

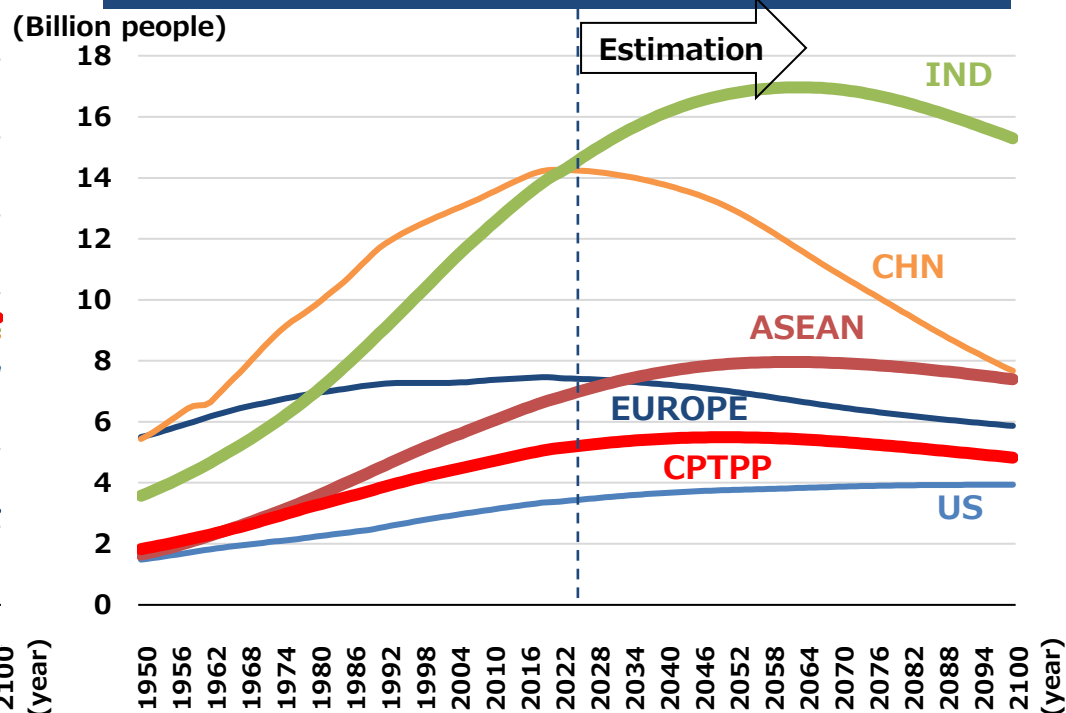
The Absolute Size of Japan's Population and the Population of the Trading Zone of Japan

- The absolute population size will continue to be larger than that of major European countries such as Germany and France throughout the 21st century, even under a declining population.
- While the population of the trading zone of Japan has already begun to decline in Europe and China, it is expected to increase by around 2050 in CPTPP member countries and by around 2060 in India and ASEAN.

Future trends in population by country



Future trends in population by trading zone



(Note) Estimates from 2022 onwards (all estimates are for the median number of births and deaths).

ASEAN includes Indonesia, Cambodia, Singapore, Thailand, Philippines, Brunei, Vietnam, Malaysia, Myanmar and Laos.

CPTPP includes Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam.

(Source) United Nations (2022). World Population Prospects 2022 (April 2024)

- The view that population decline is a deflationary factor, including the "Secular Stagnation", is gaining ground, and that Japan's economy will not grow unless its population increases because the current inflation is only transitory and will return to deflation.
- On the other hand, population decline is an inflationary trend when both declining birthrates and aging populations are combined, and the view is emerging that the start of China's population decline will end the disinflationary trend that has continued since the 2000s, and that the world, including Japan, will become an inflationary structure.

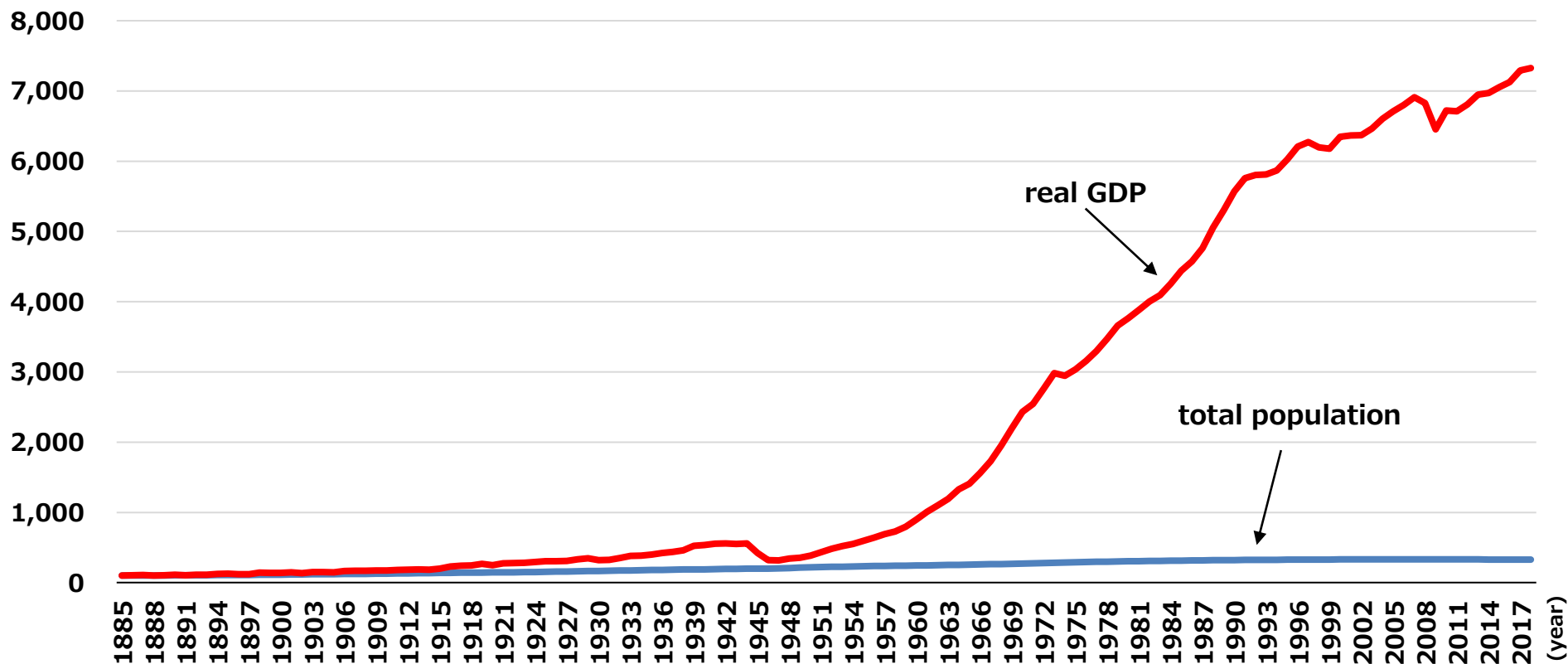
Experts' Views on the Relationship between Population Decline and the Economy

- "Secular stagnation" (A. H. Hansen 1938, L. H. Summers 2013)
 - Population decline is a deflationary and disinflationary factor.
 - The Great Depression of the 1930s was basically caused by a decline in investment demand due to lower population growth rates.
 - The "secular stagnation" in developed countries after the 2008 financial crisis was caused, like the Great Depression of 1938, by lower population growth rates and other factors.
(* Pointing to population "slowdown in growth rate" as the cause of "secular stagnation", not population decline.)
- "The Great Demographic Reversal" (C. A . E. Goodhart 2020)
 - Population decline is an inflationary factor.
 - The birthrate will decrease consumption from the current level and the labor supply in the next 20 years. The aging of the population will result in excess demand due to an increase in the number of individuals who consume but do not participate in the supply. The combination of a declining birthrate and an aging population will lead to inflationary trends due to a shortage of supply.
 - China's working population will decline, and the world will enter an inflationary age over the next 30 years
(*China's working-age population will peak in 2013, and China's total population will peak in 2022).
 - Japan, which has also experienced an aging and declining population since the 2000s, had deflation because it took advantage of cheap labor in China through foreign investment and suppressed wages by expanding non-regular employment under Japanese-style employment practices against a backdrop of price competition with China and South Korea, not because of a declining population.

A Large Gap between GDP and Population Trends over the very Long Term in our Country

- A very long-term review of real GDP and total population in Japan shows a large gap between GDP growth and population change.

Real GDP and Total Population in Japan over the very long term (1885=100)

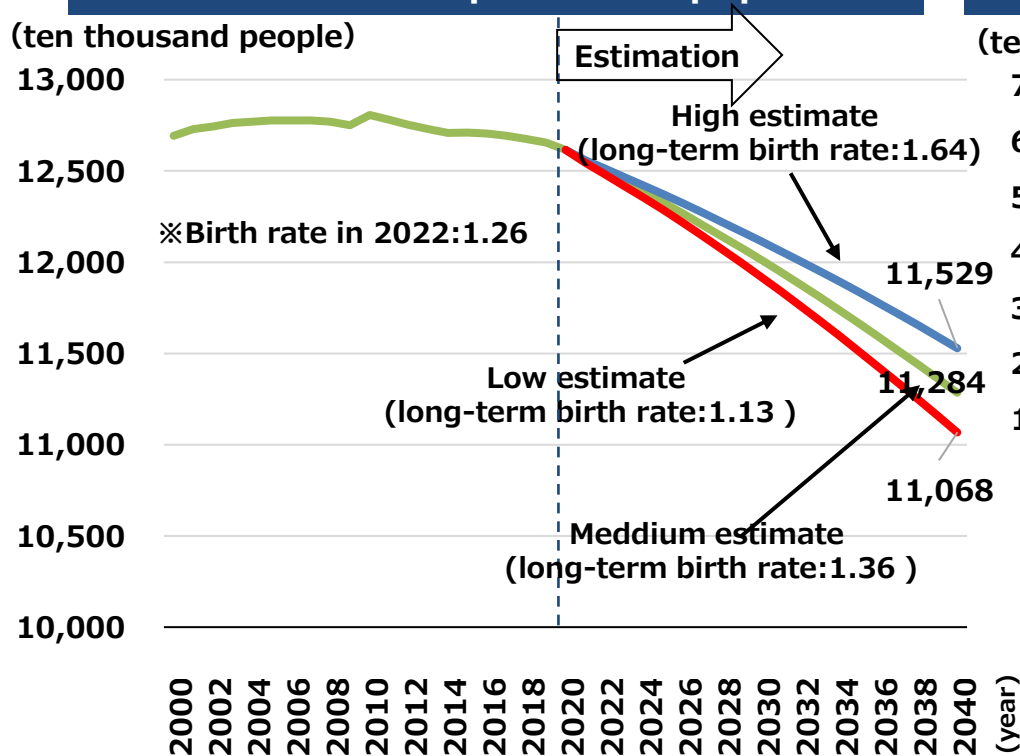


(Source) Maddison Project Database, version 2020. Bolt, Jutta and Jan Luiten van Zanden (2020), "Maddison style estimates of the evolution of the world economy. A new 2020 update".

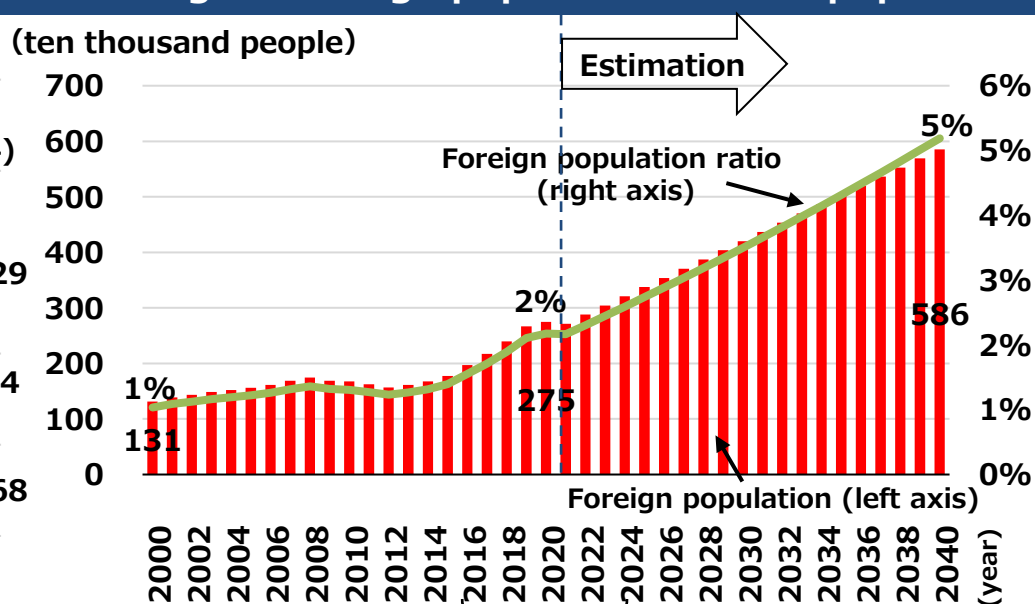
Japan's Future Population: It is Inevitable that Population Decline will continue for the Future

- Japan's total population is expected to decline even if higher birth rate.
- The foreign population is expected to increase from 2.75 million people in 2020 to 5.86 million people in 2040. The population of foreigners in the total population is expected to rise from 2 % in 2020 to 5% in 2040.

Future Trends in Japan's total population



Percentage of foreign population in total population



[The Number of highly skilled professionals among the foreign population (unit: people)]

2015	2016	2017	2018	2019	2020	2021	2022	2023
1,508	3,739	7,668	11,061	14,924	16,554	15,735	18,315	20,877

(Note) (Left) Estimation results for median mortality, (right) Estimation results for median birth and median mortality.

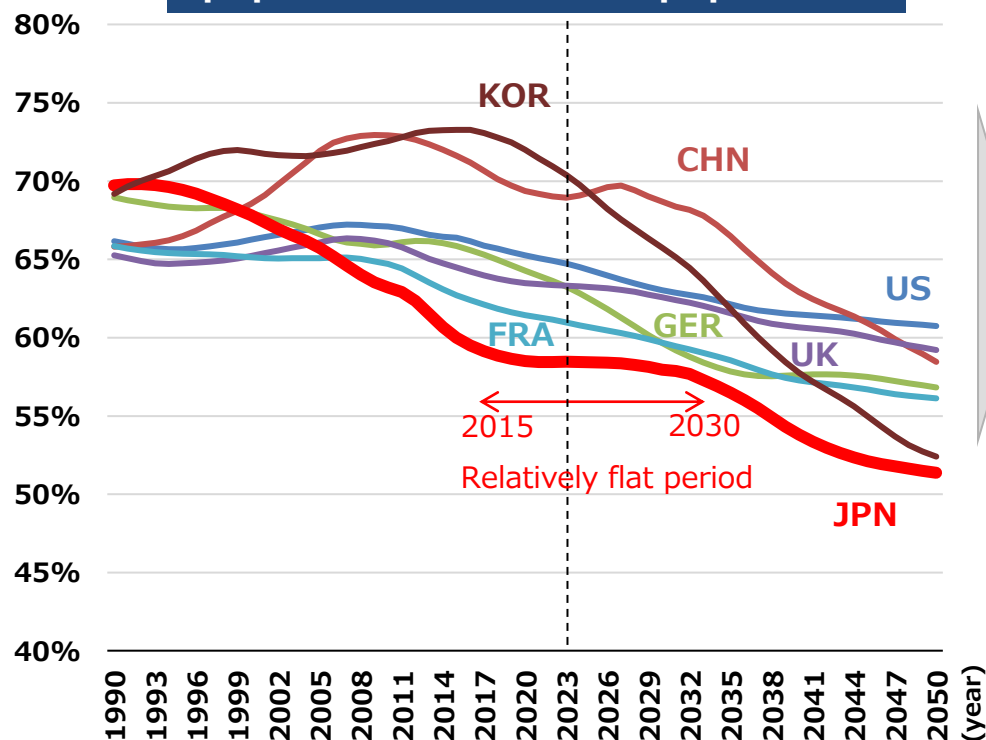
(Source) Ministry of Internal Affairs and Communications, "Population Estimates," National Institute of Population and Social Security Research, "Japan's Future Population Projections (Reiwa 5 Estimates)," Ministry of Justice, "Statistics on Foreign Residents."

Demographics of Japan

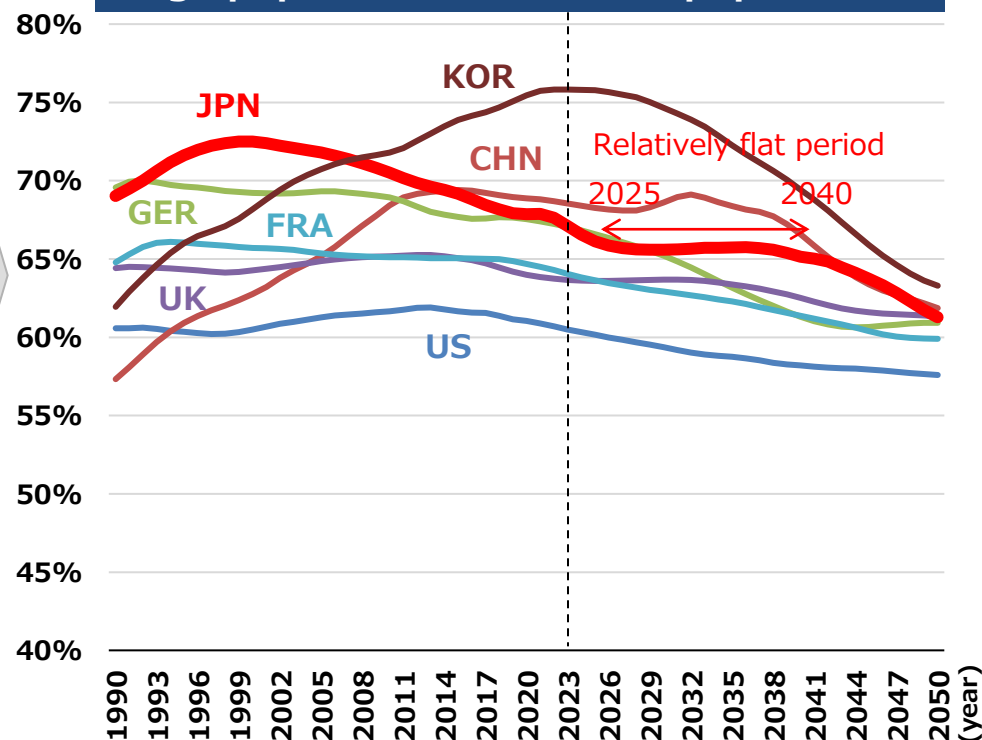
In terms of healthy life expectancy, the proportion of the working-age population will remain constant until 2040

- In terms of **the working-age population**, the proportion of the total population will **remain constant until 2030**. Furthermore, in terms of **the healthy working-age population**, its proportion of the total population will **remain constant until 2040**.

The proportion of the working-age population to the total population



The proportion of the healthy working-age population to the total population



(Note) The healthy working-age population is defined as the population over 20 years old and below the healthy life expectancy. **Healthy life expectancy** is the average number of years you can expect to live in good health, excluding periods of illness or injury. **Japan: 74 years old**, South Korea: 73 years old, France: 72 years old, Germany: 71 years old, UK 70 years old, China: 69 years old, **United States: 66 years old** (2019).

(Source) WHO (2023). [World health statistics 2023](#), United Nations (2022). [World Population Prospects 2022](#) (both downloaded in April 2024) 18

Macroeconomics and Corporate Management (Greenspan's View of a Deflationary Economy)

- Around 2000, when Alan Greenspan was the chairman of the FRB, it was said to be on the precipice of deflation, but aggressive monetary easing ultimately prevented the United States from falling into deflation. At that time, Greenspan talked about why monetary easing is necessary.
- Deflation tends to be regarded as a mere price change, in which prices decline or do not move. However, Greenspan understood that **the essence of deflation is not simply in falling prices, but in the economic disruption caused by stagnant prices, which prevents corporate vitality.**

Greenspan's View of a Deflationary Economy

Although the U.S. economy has largely escaped any deflation since World War II, there are some well-founded reasons to presume that deflation is more of a threat to economic growth than is inflation. For one, the lower bound on nominal interest rates at zero threatens ever-rising real rates if deflation intensifies. Another concern about deflation resides in labor markets. Some studies have suggested that nominal wages do not easily adjust downward. In these circumstances, the effective clearing of labor markets would be inhibited, with the consequence being higher rates of unemployment. Taken together, these considerations suggest that deflation could well be more damaging than inflation to economic growth.

In the end, capital investment will be most dependent on the outlook for profits and the resolution of the uncertainties surrounding the business outlook and the geopolitical situation. These considerations at present impose a rather formidable barrier to new investment. Profit margins have been running a little higher this year than last, aided importantly by strong growth in labor productivity. But a lack of pricing power remains evident for most corporations. A more vigorous and broad-based pickup in capital spending will almost surely require further gains in corporate profits and cash flows.

The Economic Environment of the Past 30 years

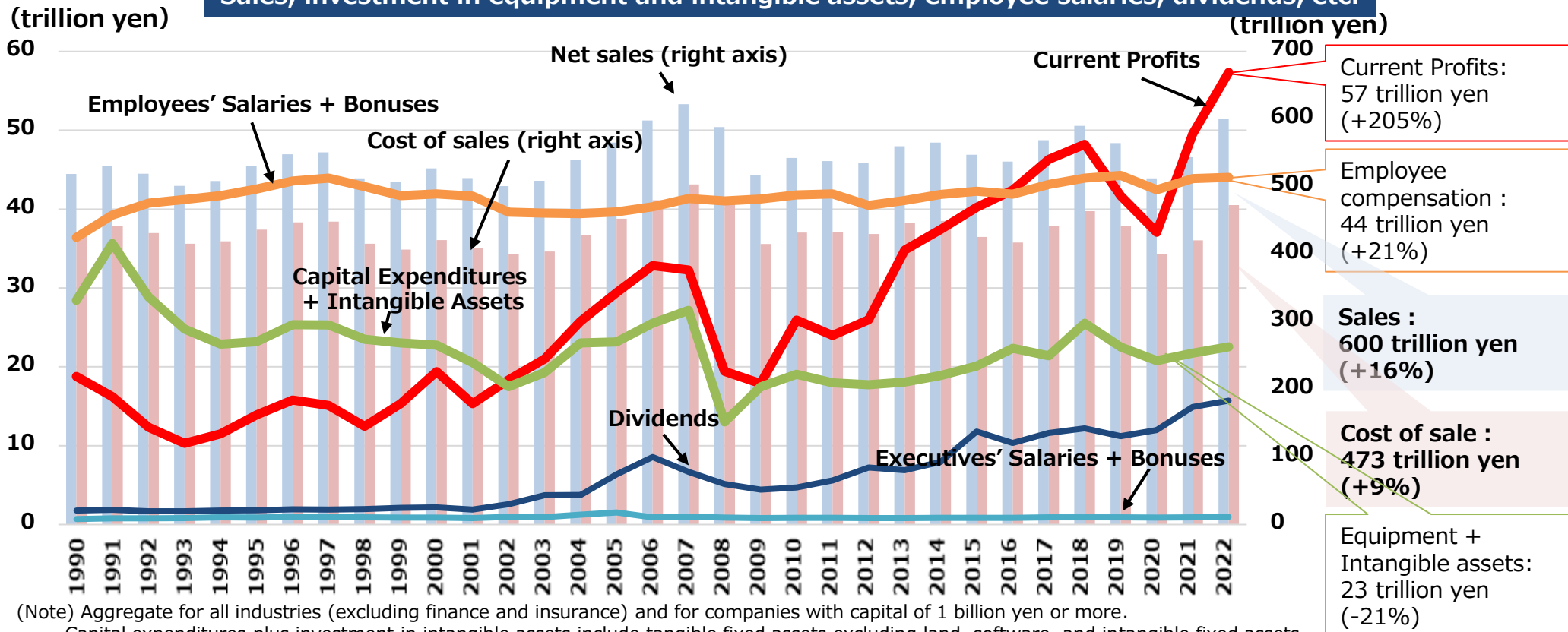
Japanese Companies' Current Profits have risen but Sales Remain Flat

- Large companies' **sales have increased, and cost of sales decreased** over 3 decades (until last year, cost of sales decreased slightly). Capital expenditures declined, labor costs* increased slightly and dividends expanded.

*Employees increased 9% from 6.7M to 7.2M

- As a result, **current profits increased over the long term and is currently the highest.**

Sales, investment in equipment and intangible assets, employee salaries, dividends, etc.



(Note) Aggregate for all industries (excluding finance and insurance) and for companies with capital of 1 billion yen or more.

Capital expenditures plus investment in intangible assets include tangible fixed assets excluding land, software, and intangible fixed assets excluding software (goodwill, patents, etc.). Intangible investment in intangible assets excluding software and software is calculated as the balance of fixed assets in the current year minus the balance of fixed assets in the previous year.

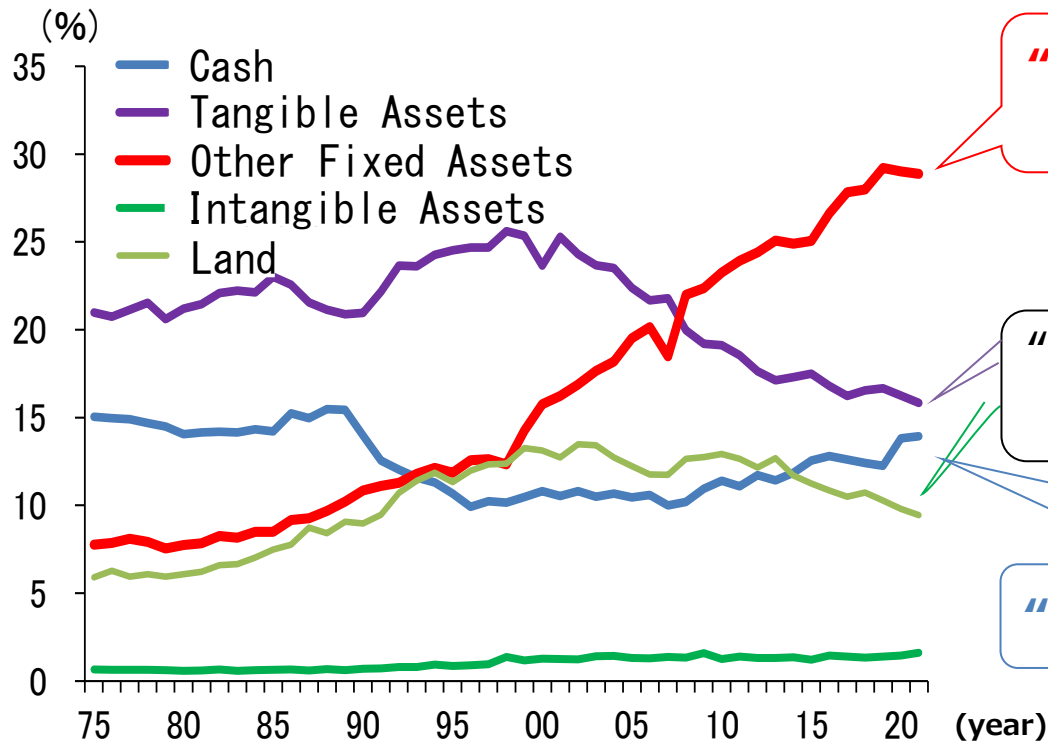
(Source) Ministry of Finance

The Economic Environment of the Past 30 years

The Companies' earning was based on cost-cutting methods with utilizing existing businesses

- Japanese companies have expanded profits by increasing overseas investment (reimporting at low production costs and horizontally expanding products and services already established in Japan to other countries) while maintaining existing facilities in Japan.
- In order to expand profits while minimizing risks, it is possible that these cost-cutting earning methods that effectively utilize existing businesses have been chosen as a rational (at least in the short term) way of earning money.

Composition of each item in Corporate Assets



= In what form is equity & debt including retained earnings utilized?

"Other fixed assets"
(≡ Foreign direct investment and M&A)

"Tangible/Intangible fixed assets"
(≡ Domestic investment)

"Cash and deposits"(≡Cash)

- Japan ranks among the world's best in the IMD World Competitiveness Ranking in such indicators as unemployment rate, students who are not low achievers - PISA, and security (homicide).

IMD World Competitiveness Ranking (Selected Livelihood Related Indicators)

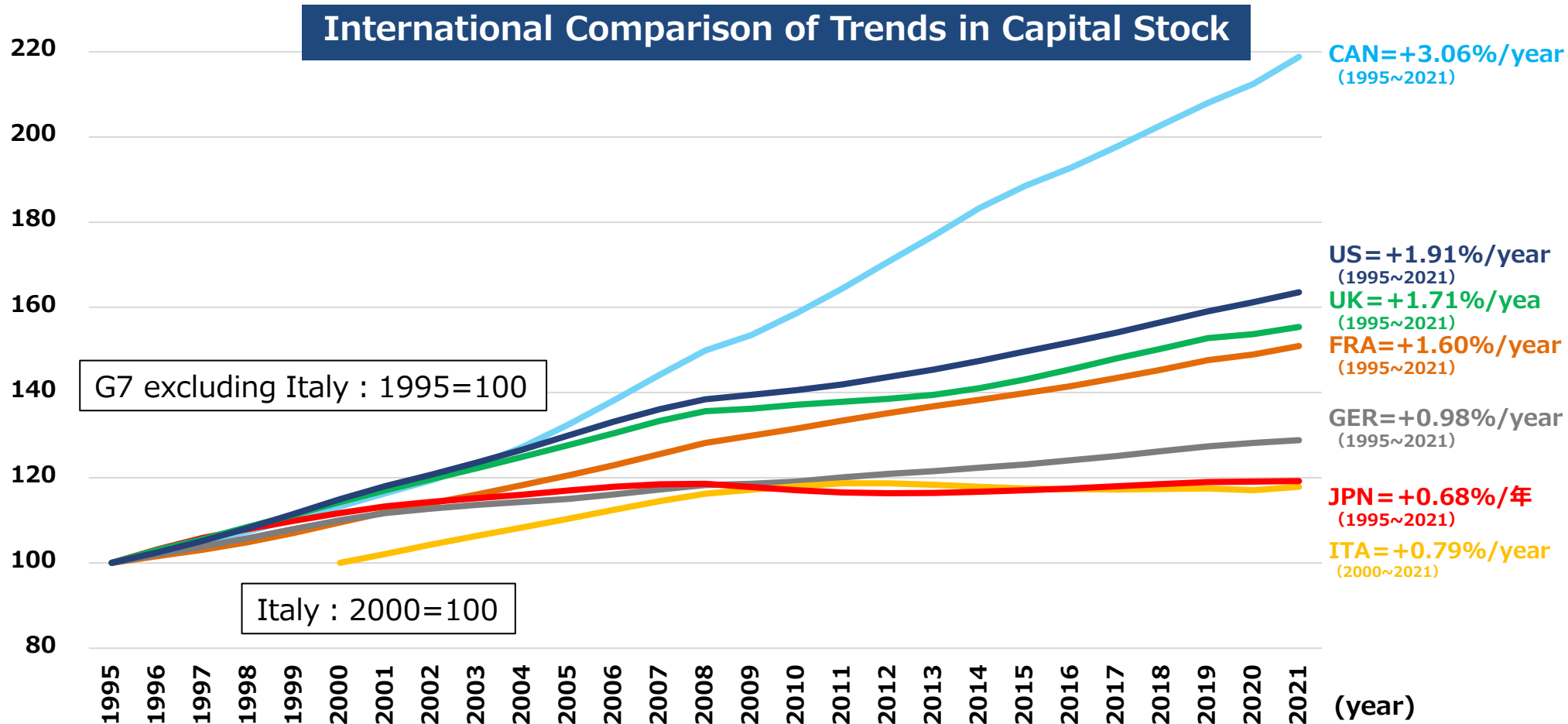
index	Japan	US	China	Germany	South Korea	Taiwan
Unemployment rate	7	32	38	13	10	15
Youth unemployment	4	13	38	8	10	33
Youth exclusion	1	33	—	12	—	51
Homicide	4	56	9	27	13	31
Pollution problems	6	22	39	8	50	28
Access to water	5	38	16	11	13	51
Life expectancy at birth	2	39	36	28	5	25
Healthy life expectancy	2	49	33	30	4	12
Infant mortality	7	40	46	22	14	31
Educational assessment - PISA	5	24	1	18	6	8
Students who are not low achievers - PISA	5	28	1	17	7	8

(Note) Created based on the IMD " JAPAN IN IMD WORLD COMPETITIVENESS RANKING 2023 " prepared by NRI

(Source) [NRI February 2024 "Dream the Future Center Research Report Vol.12](#)

International Comparison of Trends in Capital Stock

- Japan's capital has increased the least among developed countries.



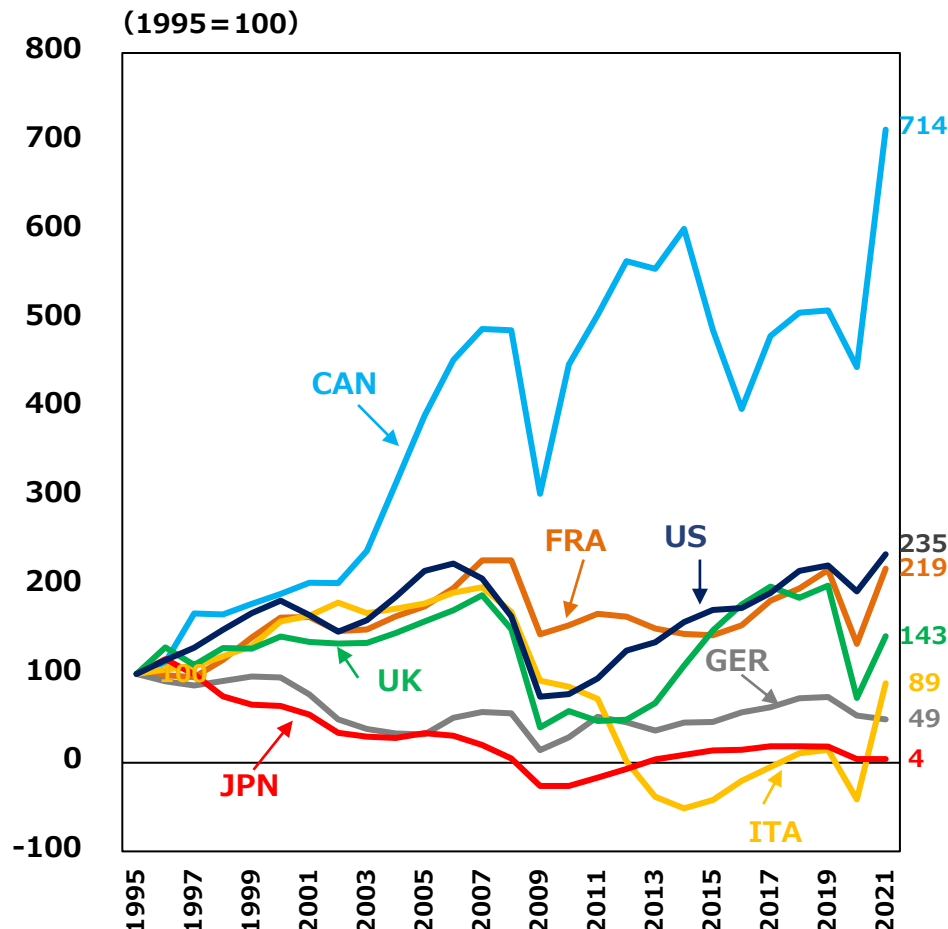
(Note) The growth rate of capital stock is calculated based on (gross fixed capital formation - fixed capital depreciation) / fixed assets with reference to Document 3 of the Ministry of Health, Labour and Welfare, "Expert Committee on Economic Assumptions in Pension Finance, Pension Subcommittee of the 2nd Social Security Council" (February 24, Reiwa 5). The capital stock is calculated by multiplying the capital stock of the previous year by the growth rate, with 1995 as 100. In Italy, there is no data on fixed assets before 2000 on OECD.stat, so the base year is calculated as 2000. All nominal values.

(Source) OECD.stat, Ministry of Health, Labour and Welfare "Expert Committee on Economic Assumptions in Pension Finance, Pension Subcommittee of the 2nd Social Security Council" (February 24, Reiwa 5).

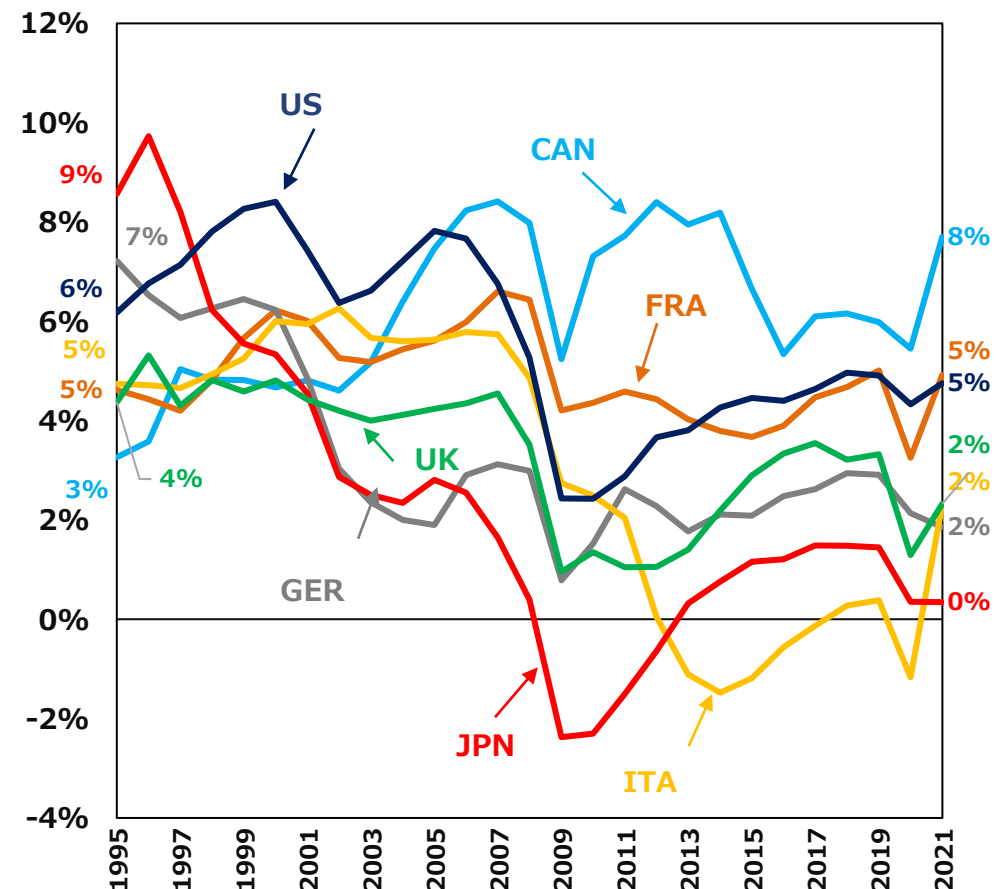
Trends in Net Investment (Flow)

- In terms of capital investment (net investment), Japan has been stagnant for a long time, even when viewed in terms of flows.
- In terms of net investment as a percentage of GDP, Japan has a low level of net investment compared to other countries.

Trends in net investment (1995=100)



Trends in net investment (% of GDP)



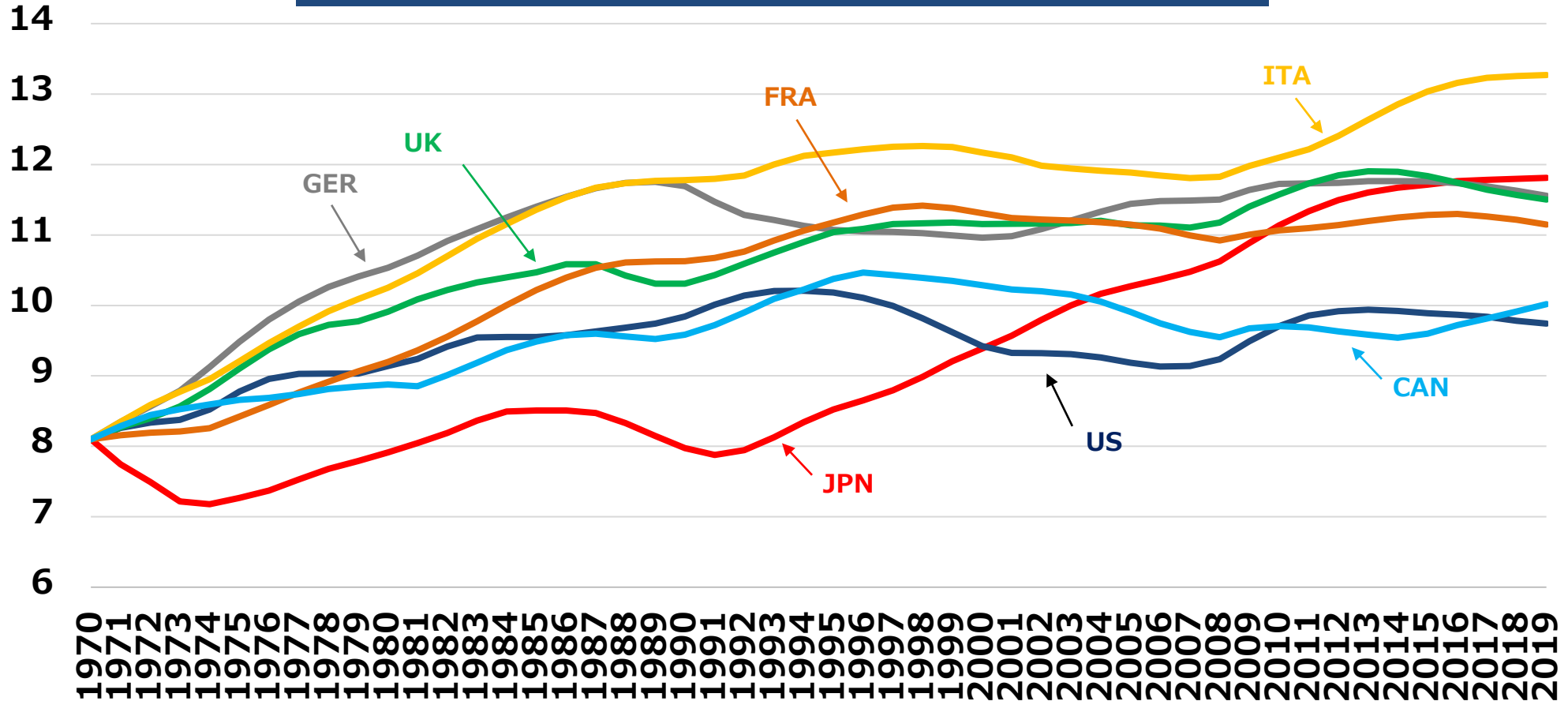
(Note) Net investment is calculated as gross fixed capital formation minus fixed capital depletion, all in nominal local currency; GDP is also in nominal local currency.
(Source) OECD.stat

Capital Vintages at Worst Level Among Major Advanced Countries

- Due to sluggish investment, capital vintages are the second oldest in the G7 after Italy.

(vintage years)

International Comparison of Capital Vintages



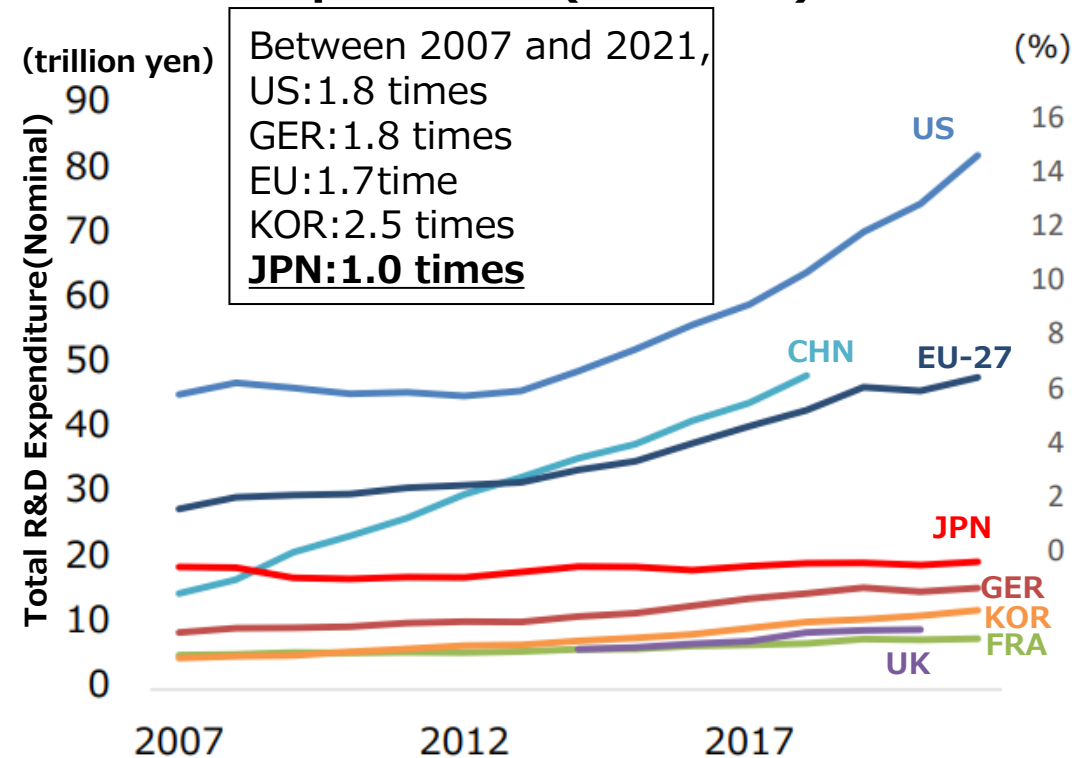
(Note) The vintage of capital is calculated by referring to the Economic Planning Agency's "National Wealth Survey" (Showa 45), assuming that the vintage at the end of 1970 is 8.1 years for each country.

(Source) Cabinet Office "Annual Economic and Fiscal Report FY2023", Economic Planning Agency "National Wealth Survey", IMF "Capital Investment and Capital Stock Dataset"

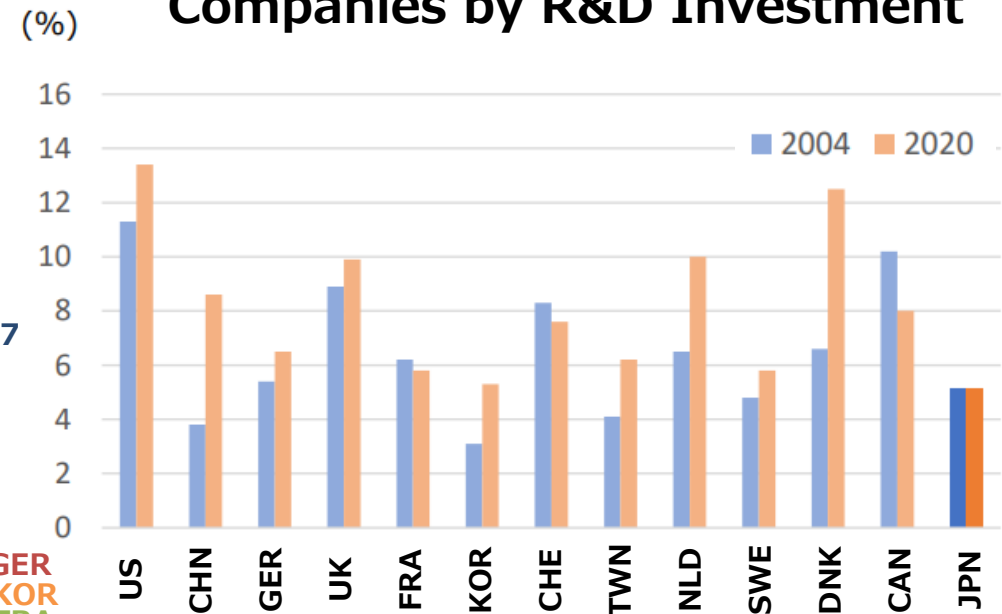
R&D in Japan has been flat until now

- R&D expenditures on a national basis have increased in other major developed countries, but those have remained flat in Japan.
- R&D expenditures on a corporate basis have also increased in other major developed countries, but those have remained flat in Japan.

Trends in Total R&D Expenditure(Nominal)



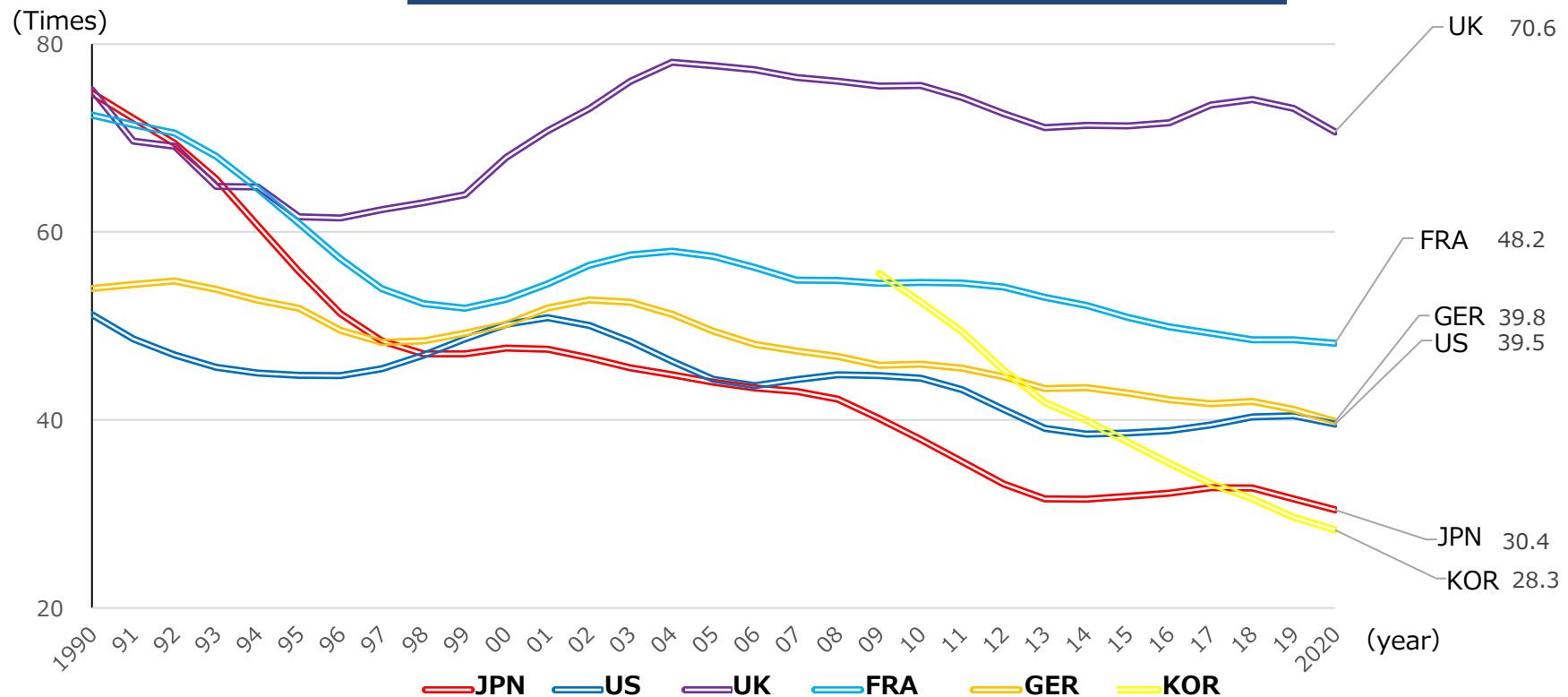
The Ratio of R&D Expenditure to Revenue for the World's Top 1,000 Companies by R&D Investment



Decline in "Quality" of R&D (Decline in Ability to Commercialize and Create Added Value)

- The R&D efficiency of Japanese companies (the value added by a company after 5 years in relation to its R&D investment) is significantly lower than that of other countries. It is necessary to improve the quality of R&D investment and fundamentally strengthen efforts for commercialization and value-added creation.

International Comparison of R&D Efficiency



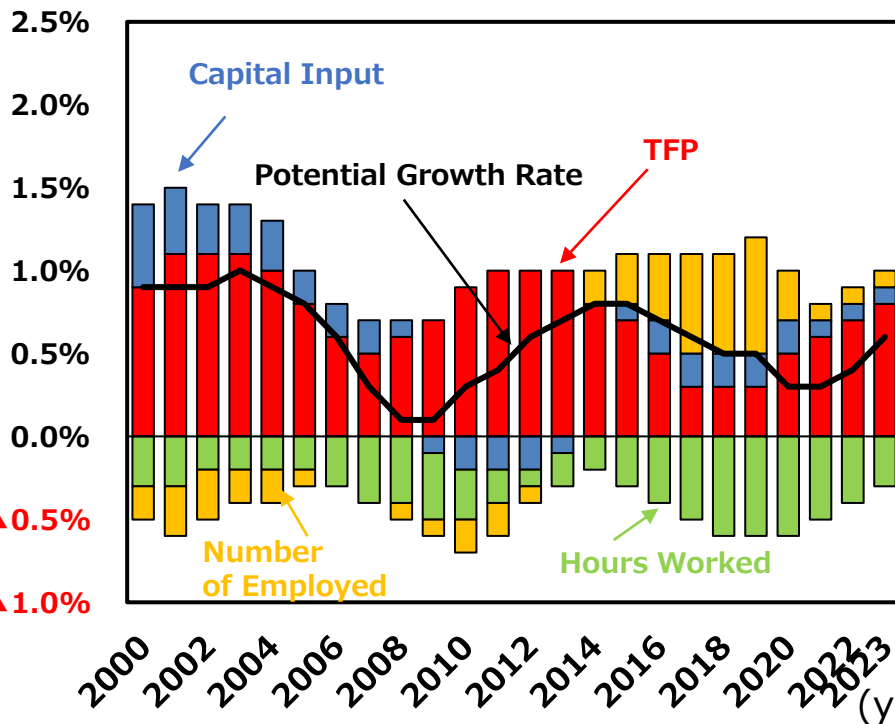
(Note) Calculated using the ratio of backward 5-year moving averages for the firm's value added and its R&D investment (in purchasing power parity terms) in the previous 5 years. (e.g., investment efficiency in 2020 = (value added in 2016-20)/(R&D investment in 2011-15))
(Source) OECD Main Science and Technology Indicators / Business Enterprise Expenditure on R&D (BERD) at current PPP \$ and Value Added of Industry (current PPP \$) (as of October 2022), compiled by METI.

Japan-Germany Comparison: Capital Input is The Key Difference

- When analyzing the components of potential growth rates, Japan and Germany show no significant difference in total factor productivity, which reflects technological progress and other factors.
- The key difference is in capital input. Germany consistently invested in and expanded its capital base, while Japan's capital accumulation has stagnated.

Decomposition of Potential Growth
Rate (Japan)

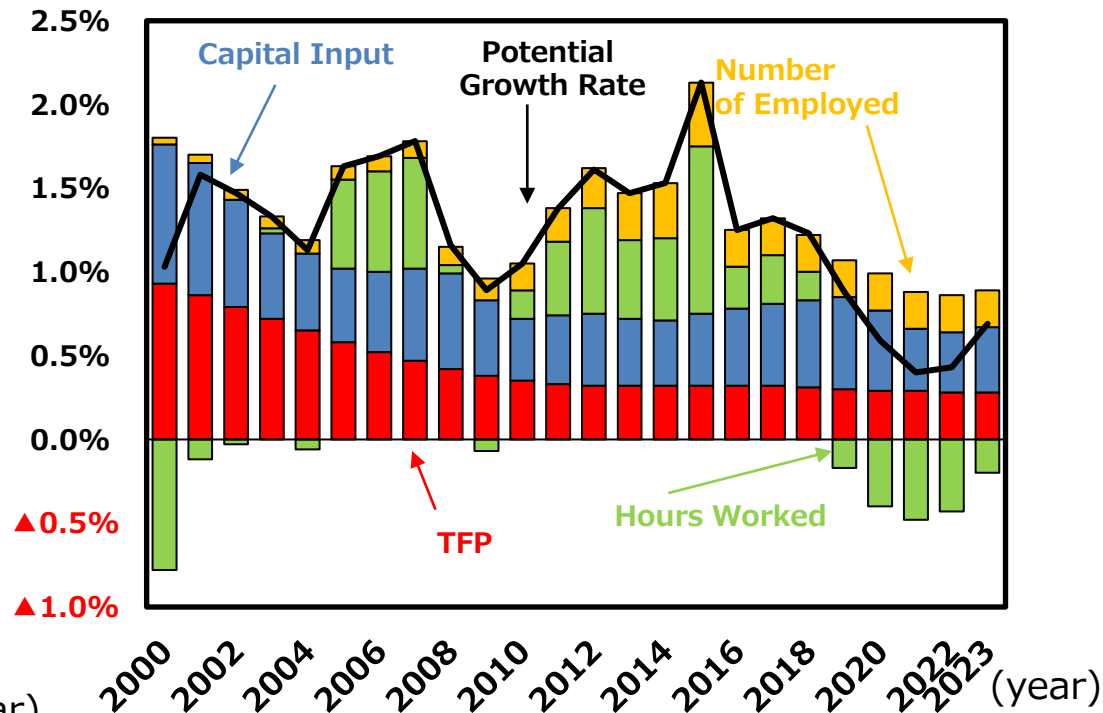
(Y/Y(%))



(Source) Cabinet Office

Decomposition of Potential Growth
Rate (Germany)

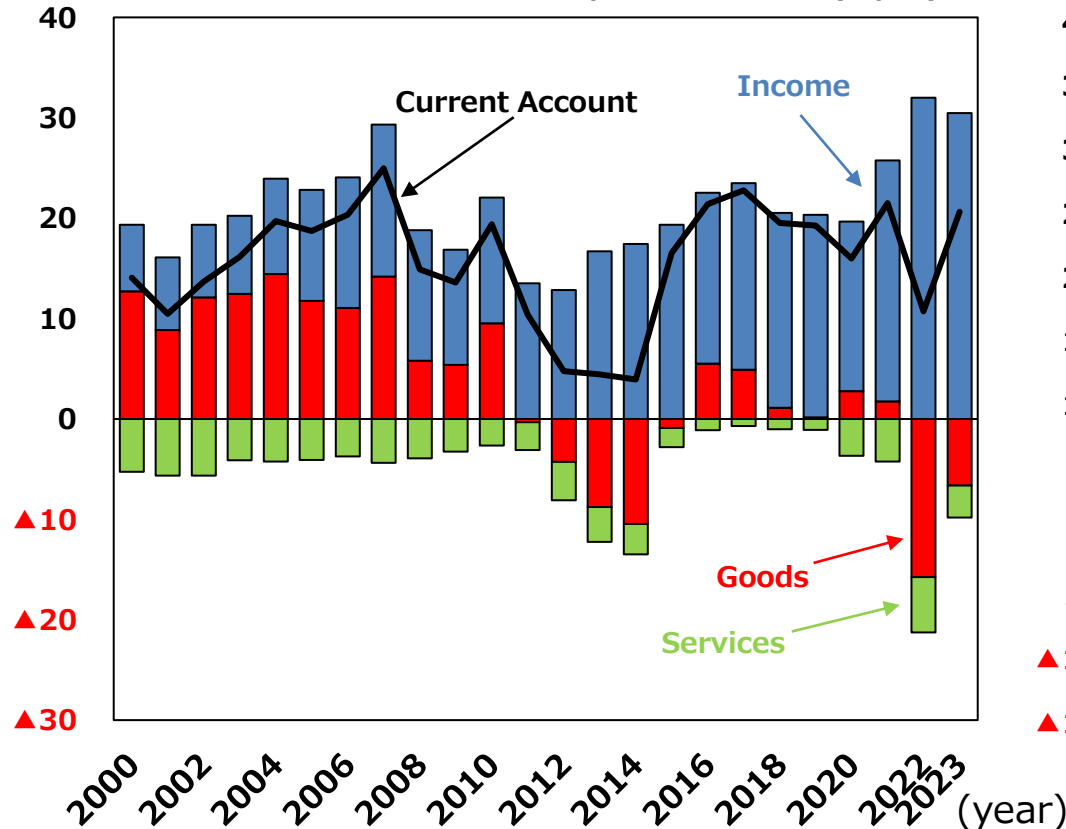
(Y/Y(%))



Japan-Germany Comparison: Japan's Current Account Surplus Shifts from Trade to Income

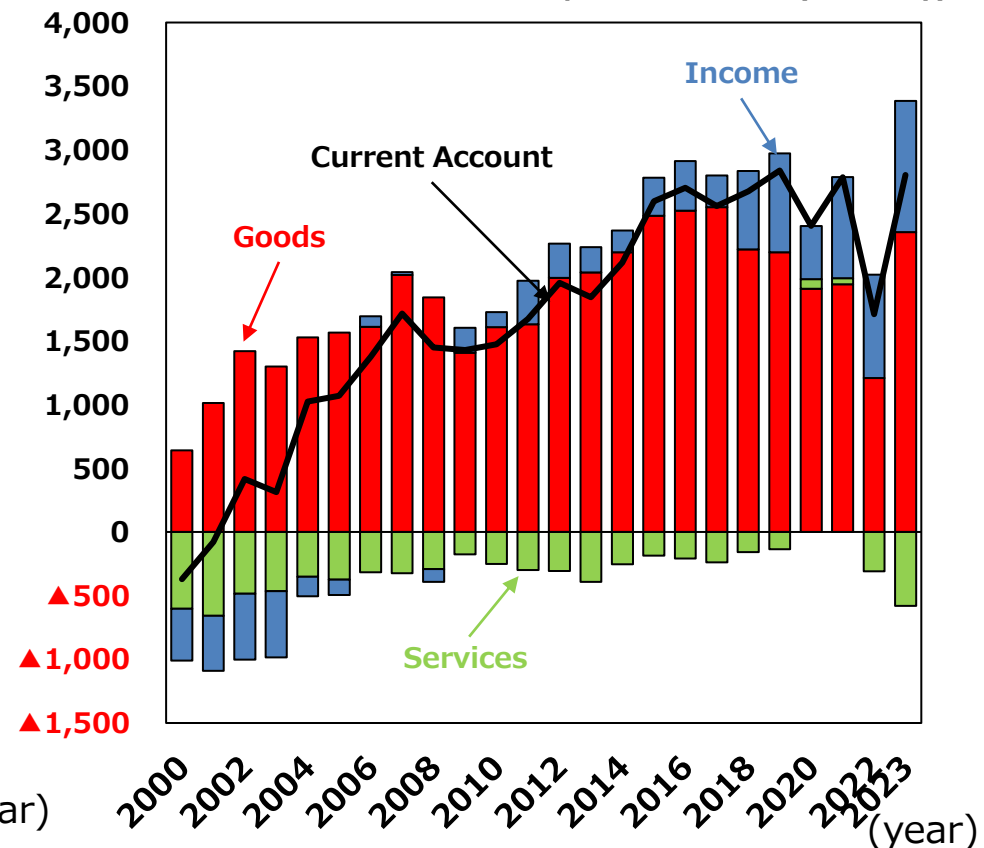
- Japan's current account balance shows a shrinking trade surplus due to increased overseas production, but a surplus is maintained through the income account. In contrast, Germany consistently achieves current account surpluses, primarily driven by trade surpluses.

(Trillion Yen) Current Account and Component Balances (Japan)



(Source) Ministry of Finance

(Billion Euros) Current Account and Component Balances (Germany)



(Source) Deutsche Bundesbank

the 3rd stage of Japan's Industrial Policy

- Reflecting global trends, **Japan's Industrial Policy has re-started since 2021**, which is not a traditional industrial policy led by the government, nor a neoliberal policy where the government is committed to remove barriers for the private sector.

	"Traditional" Industrial Policy (~1980s)		Neo-liberal Industrial Policy (1990s~)		"New Direction" of Economic and Industrial Policy (2021~)
Objective	Protecting and fostering certain industries	→	Organizing market environment	→	<ul style="list-style-type: none"> Mission-oriented approach to resolve socioeconomic issues
Theoretical Basis	Correcting market failure & protecting infant industries	→	Emphasis on market mechanism , concern toward government failure	→	<ul style="list-style-type: none"> Reducing uncertainty Market creation by government Risk taking by "Entrepreneurial State"
Policy Framework	Government-led supply side policies, avoiding excessive competition	→	Privately-led supply side policies, enhancing competition	→	<ul style="list-style-type: none"> Integration of Macro and Micro economic policy (Combination of supply side and demand side policy) Ambitious target setting Full use of supportive and regulatory tools
Fiscal Policy	Mid-scale, mid-term	→	Small-scale, one-shot, short-term	→	<ul style="list-style-type: none"> Large-scale, long-term, well-planned

Framework of New Direction of Economic and Industrial Policy

- **Macro**-economic policy: aiming the virtuous cycle of (1)domestic investment Expansion, (2) innovation Acceleration, and (3)Income growth.
- **Micro**-economic policy: "Mission-Oriented" Industrial Policy(8 sectors), and Structural Reform of Socio-economic "OS"(Operating System)(4 sectors),

"Mission-Oriented" Industrial Policies (8 sectors)

- Cultivate domestic demand, which is expected to grow over the medium to long term even with a declining population, based on global social issues. Accelerating world-class strategic investment by continuing to implement measures from both supply and demand perspectives, including overseas. Government support is "national strategic investment" to expand national wealth.

<Mission>

- ❑ **GX(green transformation)**: Over ¥150T of public-private investment over the next 10 years, with ¥20T of government support for this purpose.
- ❑ **DX(digital transformation)**: Creation of demand for new services through digitalization and increased capital investment including software. For example, by 2030, companies producing semiconductors in Japan aim to achieve related sales of over ¥15T.
- ❑ **Globalization・Economic security**: Increasing autonomy, ensuring superiority and indispensability, and maintaining international order.
- ❑ **Healthy Society**: ¥77T in services outside of public insurance in 2050.
- ❑ **Inclusive growth in the region that contributes to coping with a declining birthrate** : Restore desired fertility rate to 1.8 through higher disposable income/time, etc., and further improve hope in the future.
- ❑ **Resilience**: Adaptation market will grow to ¥70T in developing countries by 2050.
- ❑ **Bio-manufacturing**: Total market size of ¥92T in Japan and abroad by 2030.
- ❑ **Resource Autonomous Circular Economy**: ¥80T in 2030 and ¥120T yen in 2050 for the circular economy market.

Updating Socioeconomic Operating-System (4 sectors)

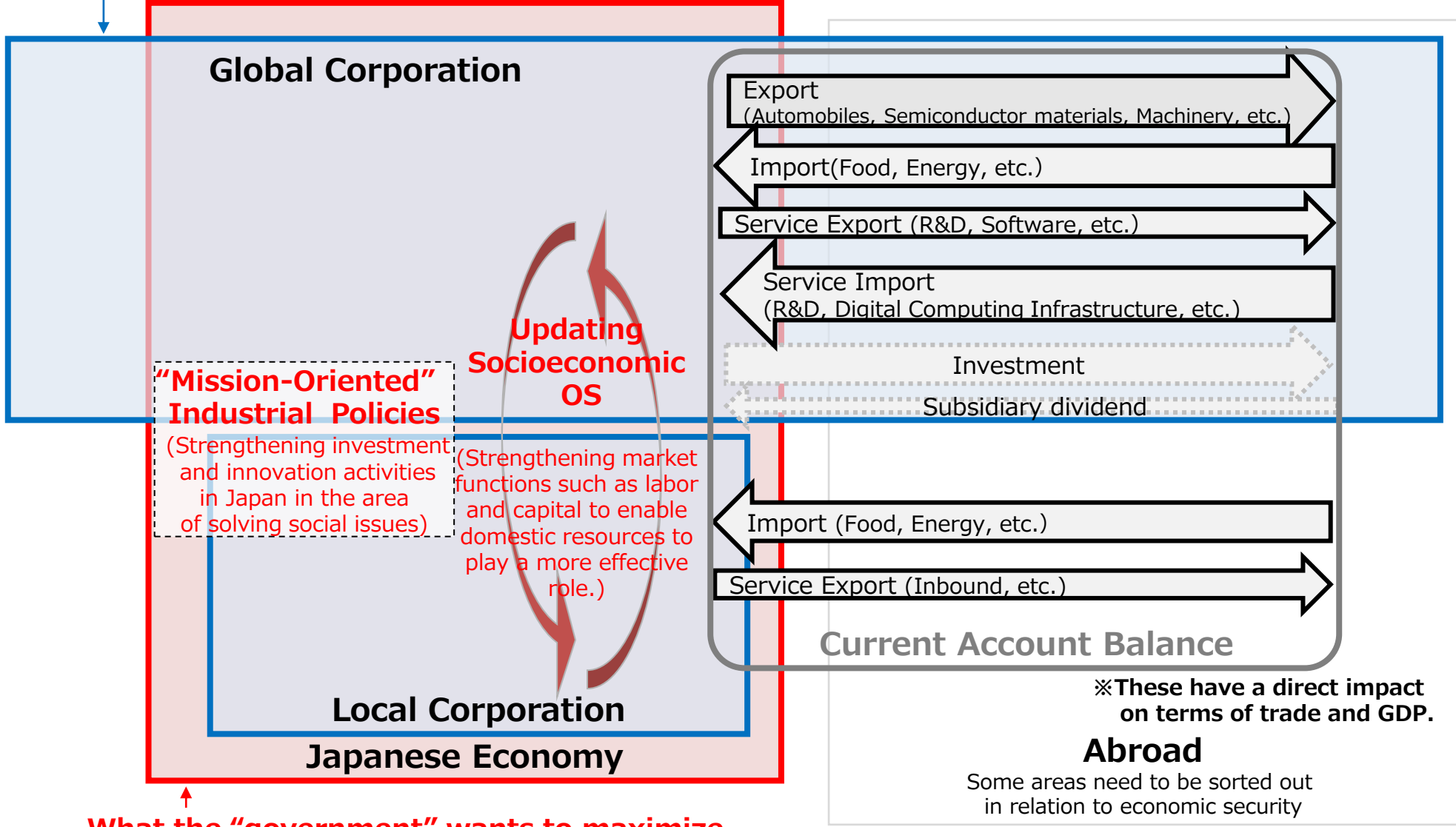
- The realization of missions also requires the development of a cross-thematic economic and social structure infrastructure as a complement to individual industrial policies. Even outside the scope of individual missions, contribute to the three positive cycles of domestic investment, innovation, and income growth.

<Socioeconomic System (OS) >

- ❑ **Human resources**: Sustained wage increases that exceed price increases
- ❑ **Startup Innovation**: 10x investment in startups in the next 5 years
- ❑ **Value Creation Management**: Increasing the percentage of leading Japanese companies with PBR over 1 to 80% by 2030.
- ❑ **EBPM and Data-Oriented Governance**

Macro-micro linkage is necessary, with an awareness of the "difference in perspective" between business and government

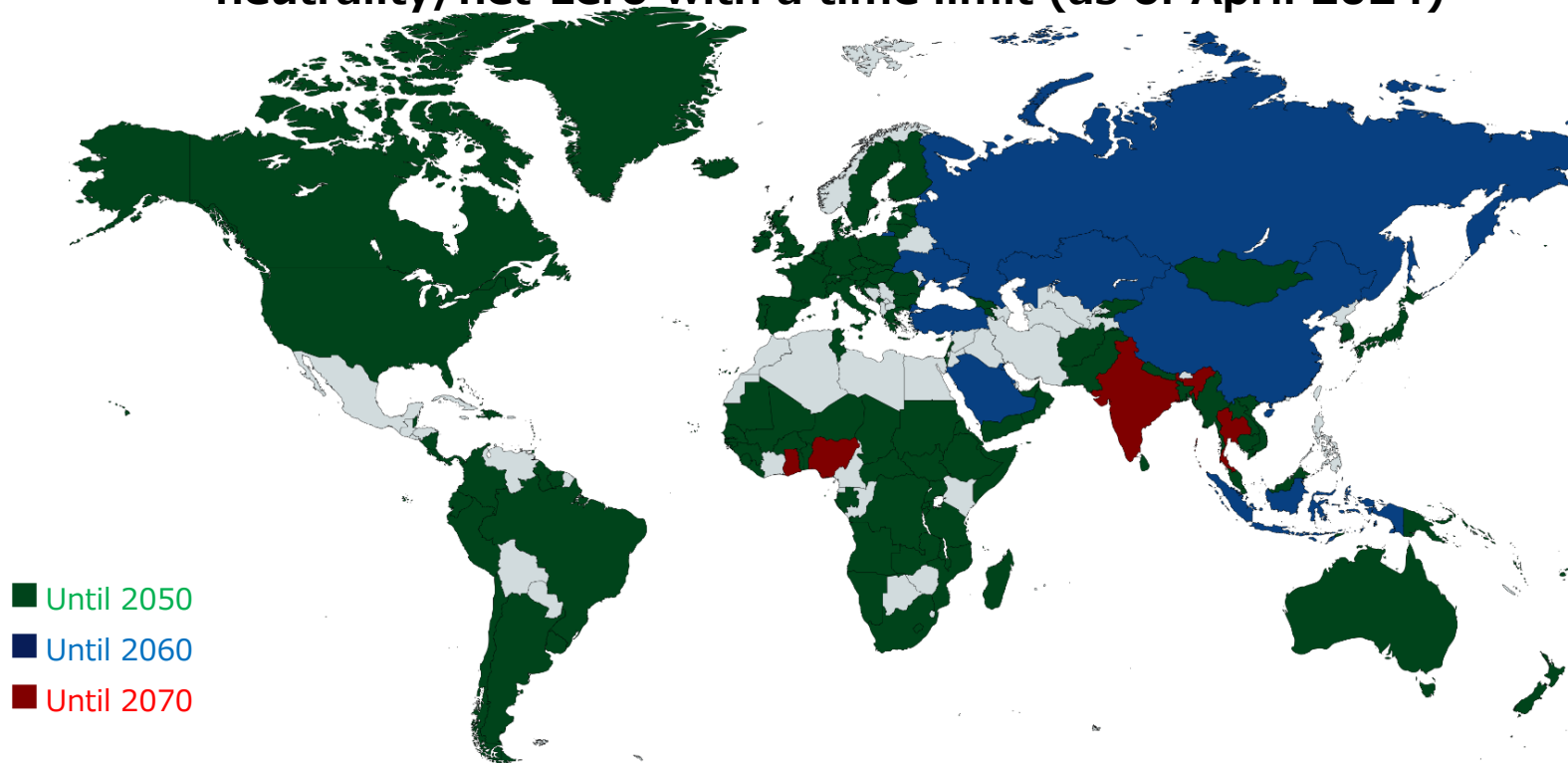
What “capital (shareholders)” wants to maximize
(= (Returns to investors from) Corporate earnings worldwide



What the “government” wants to maximize
(= the affluence of the Japanese people's lives)

- ⇒ We are entering an era in which the availability of action towards GX will directly affect the competitiveness of companies and countries.

Countries and regions that have declared to achieve carbon neutrality/net-zero with a time limit (as of April 2024)



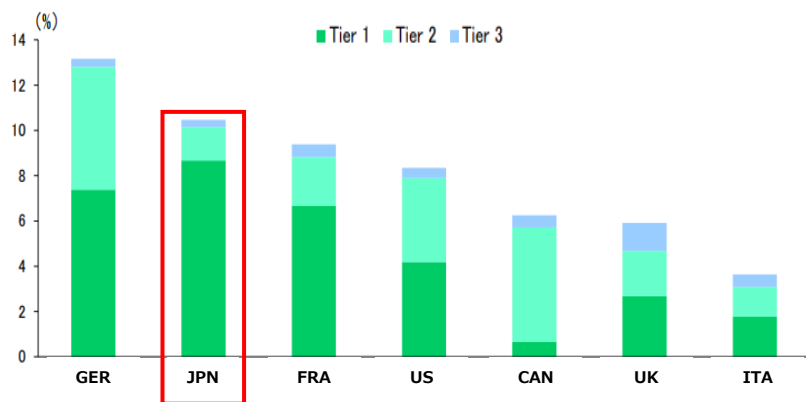
Japan's Growth Potential with GX

- Several analyses indicate that Japan has large growth potential in GX-related fields. By maximizing and developing Japan's world-class potential, it is possible to **strengthen competitiveness and reduce emissions at the same time**.
- For example, **Japan is the second largest country after Germany** in terms of GX-related revenues*¹ as a percentage of total business revenues. Japan has large revenues from automobiles, especially hybrid vehicles, followed by energy-efficient industrial products and other products.
- Japan also has significant potential for GX-related technologies**. For example, **Japan has the highest GX-related patent score***² held by companies, followed by South Korea and Germany. Looking at the breakdown of Japan, "automobiles" and "energy supply" account for a large share.

*1:Returns from 133 sectors that contribute to emission reductions, as established by ESG index developer FTSE

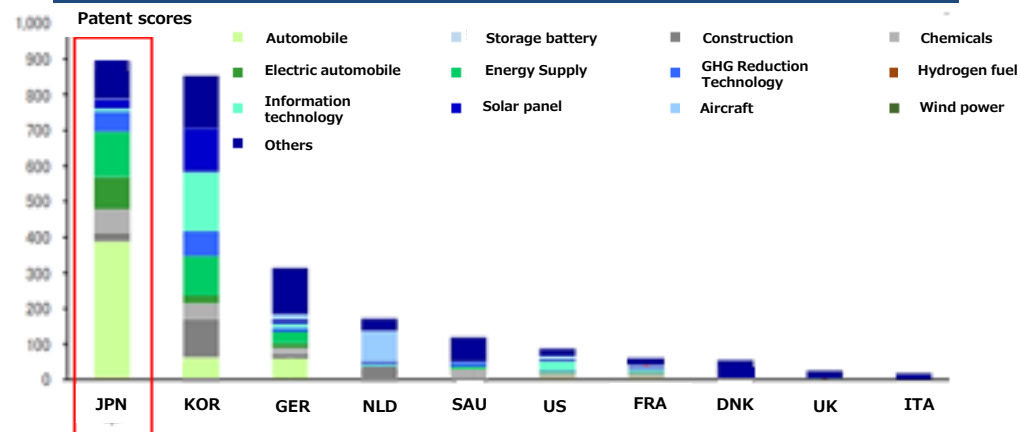
*2:Developed by the Swiss government and the ESG index developer MSCI, the number of patents is weighted by the number of citations of the patent application, its relevance to other patents, and the GDP of the country where the patent application was filed.

GX-related revenues as a percentage of total business revenues in each country



Compiled based on the GPIF Portfolio Climate Change Risk and Opportunity Analysis (ESG Activity Report Supplement). The left chart is for G7 MSCI ACWI constituent companies, and the right chart is for countries where GPIF invests in government bonds.

GX-related patent scores for companies in each country

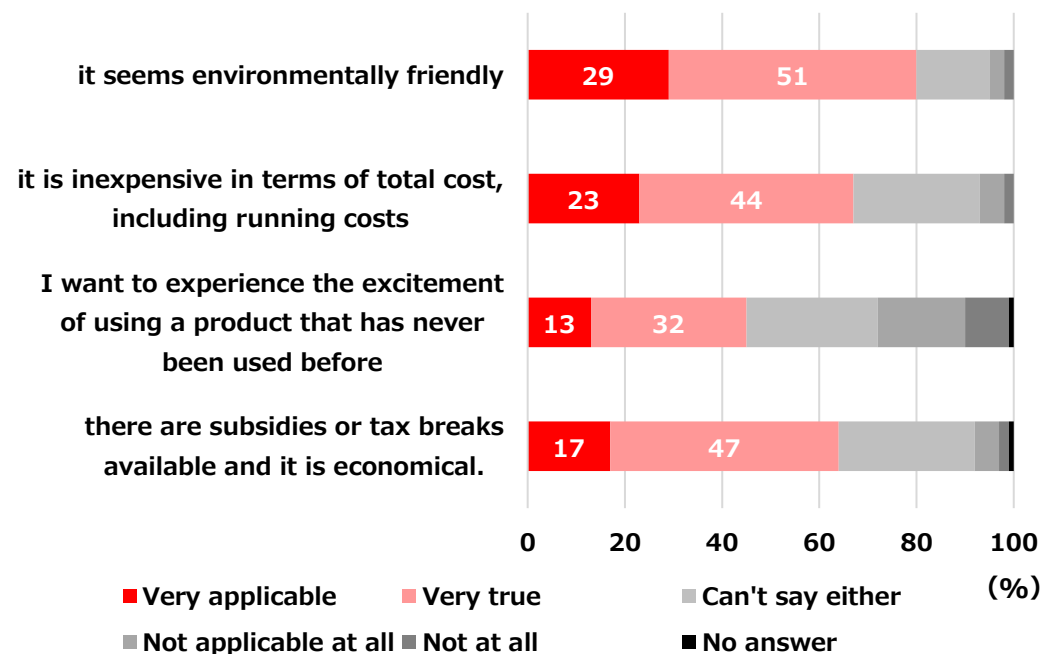


(Source)Compiled based on the GPIF Portfolio Climate Change Risk and Opportunity Analysis (ESG Activity Report Supplement). The left chart is for G7 MSCI ACWI constituent companies, and the right chart is for countries where GPIF invests in government bonds.

Consumers find Green Products Valuable

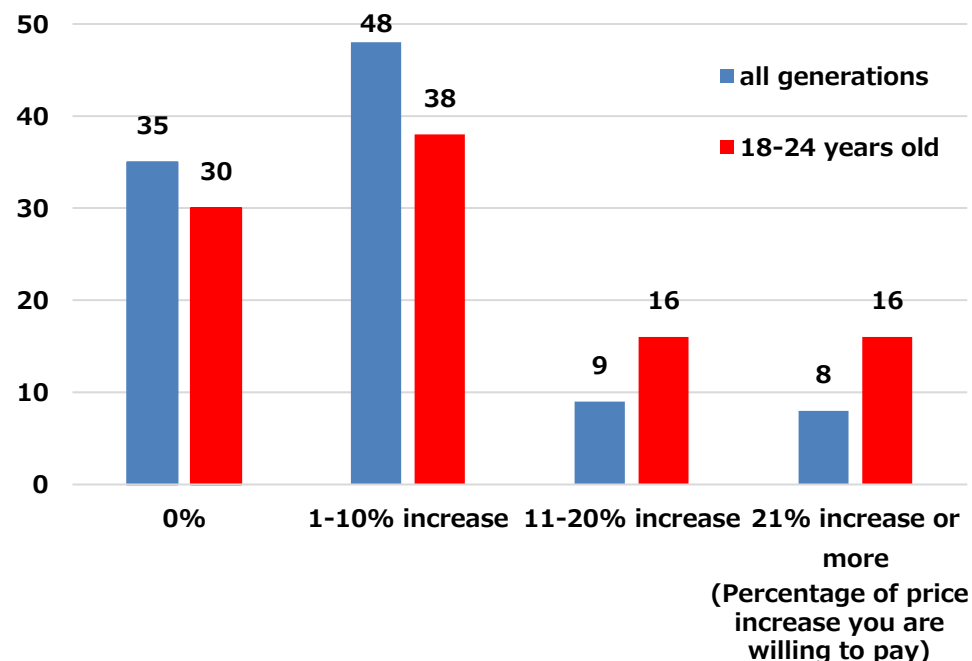
- Consumers are choosing electric and hybrid vehicles because of their environmental friendliness.
- Younger generations are willing to pay a premium to green products.

Reasons for buying/wanting to buy an electric, plug-in hybrid or hybrid vehicle



Consumer Attitudes of 1,000 Japanese (How much more would you pay for an environmentally friendly products)

(Percentage of population)



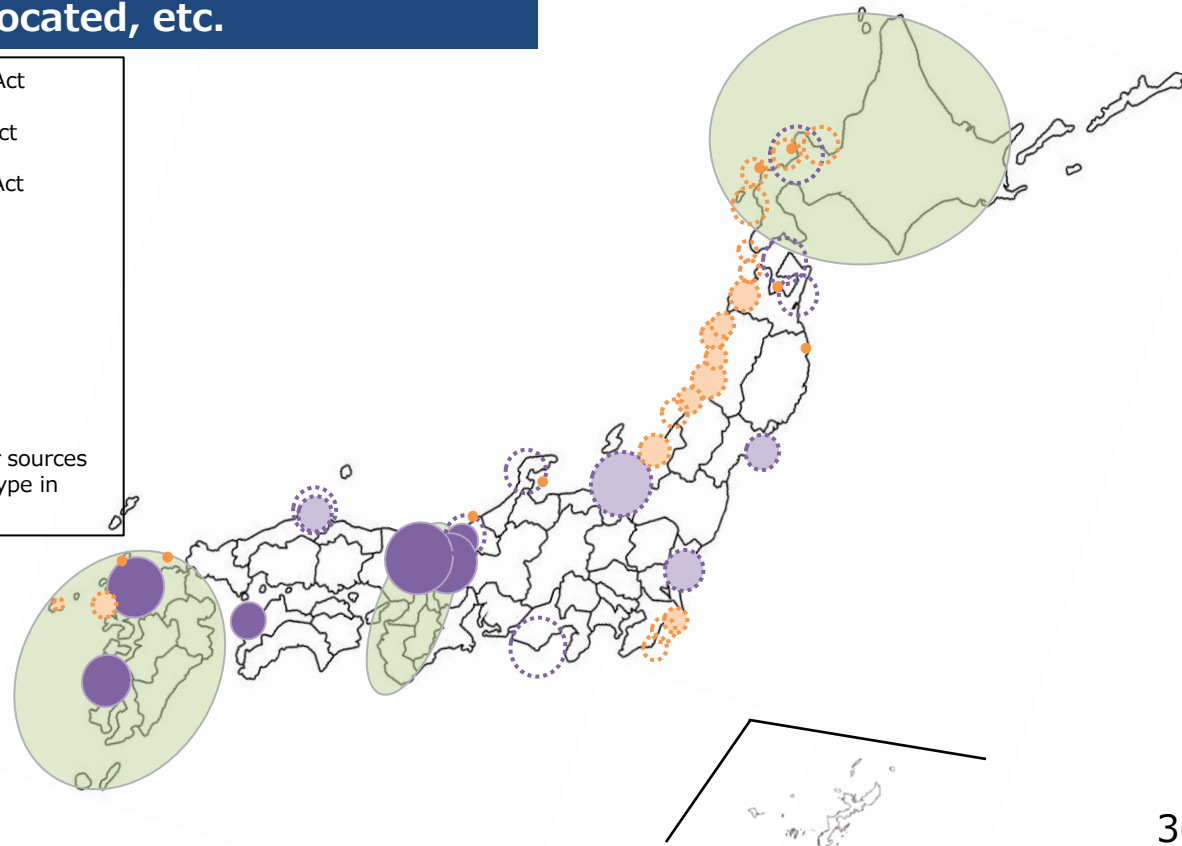
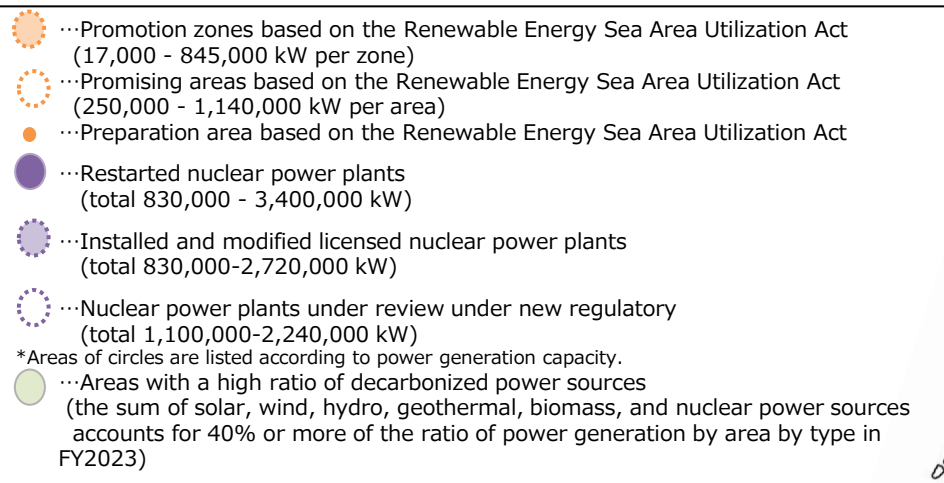
(Note) Left : Survey of consumers aged 20-69 nationwide who hold an automobile license. The results are excerpted from the responses with high percentages of "very applicable" and "applicable".

(Source) Left : based on Deloitte Tohmatsu Group's "2022 Consumer Attitudes toward Next-Generation Automobiles"; Right : taken from materials prepared by UBS Bank.

Current situation of the location of decarbonized energy sources

- In the supply of decarbonized energy in Japan, regional unevenness exists in the supply base of decarbonized energy, for example, offshore wind power is affected by wind conditions, and the suitable locations for the supply of renewable energy are unevenly distributed.
- Only Hokkaido, Kyushu, and Kansai areas have a ratio of more than 40% of decarbonized energy sources such as renewable energy and nuclear power.

Suitable sites for offshore wind power generation and areas where nuclear power plants are located, etc.



Overall Picture of the Digital Society

- The digital society that Japan should aim for is **Society 5.0**, where **cyberspace and physical space are highly integrated**. On a **digital infrastructure (technology/industrial infrastructure, digital infrastructure, and human resource infrastructure)** that incorporates rapidly evolving digital technology, we will create new added value that leads to economic growth through **the utilization of "real data"** and **solve social issues** such as GX and economic security (= Realization of Society 5.0 through DX for industry and society as a whole).
- It is **important to continue to focus on the development of digital infrastructure, including semiconductors and AI, which are indispensable for the realization of DX**, which has been the focus to date. In addition, it is also **important to make efforts to promote DX across individual companies and industries that will lead to Society 5.0**.

Realization of Society 5.0

Economic growth
(Domestic investment
/Acceleration of innovation/Income growth)

Solving social issues
(GX, economic security, etc.)

Upstream

Midstream

Downstream

- ✓ The key to creating innovative products and services that lead to new added value is the utilization of "real data" supported by a digital infrastructure.
- ✓ The key to obtaining more added value is to create an architecture that enables more companies and individuals to build a "platform" that can be utilized beyond the boundaries of individual companies and industries.

Apps /
Services

Data
Processing/
Analysis

Data acquisition

**Cycle of
"Real data"
Utilization Cycle**

Storage
/Cooperation

Communication

Three Pillars of infrastructure

Digital Infrastructure

Rule

Certification of IDI Management Entity

Soft

Interoperable Data Infrastructure

Hard

Advanced Information and
Communication Infrastructure
Data center Base station

Cyber security

Digital Technology and Industrial Infrastructure

Software

Cloud Program

Hardware

Computing Infrastructure
(Supercomputers, AI,
Quantum Computers)

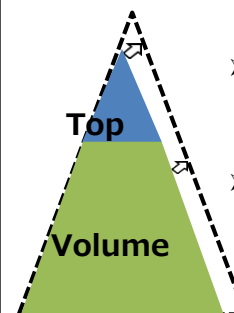
Technology of
Infrastructure

Battery

Semiconductor

Information Processing
Infrastructure

Digital Human Resource Infrastructure



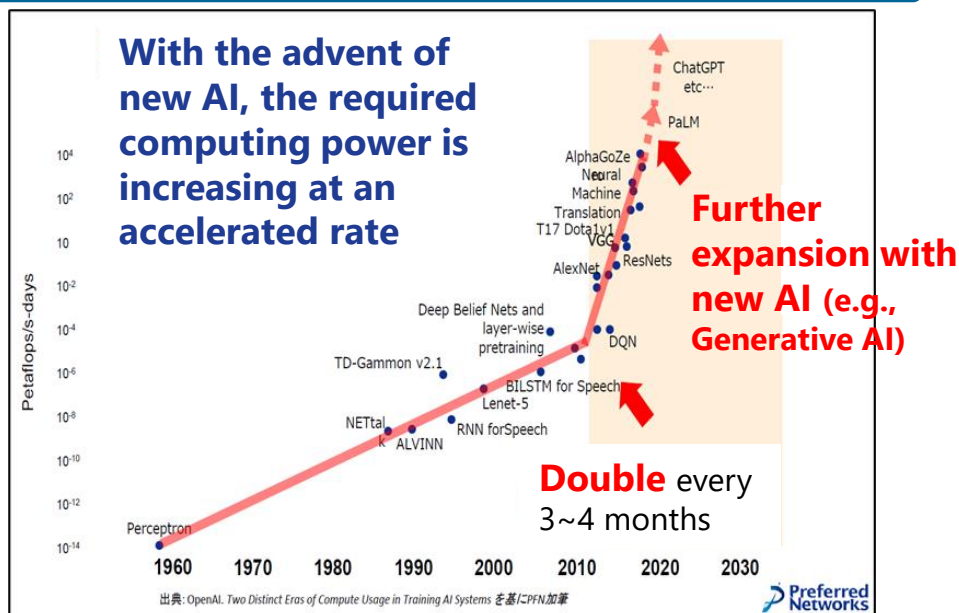
- Top-level human resources to lead the world in information DX (MITOU, etc.)
- Human resources to promote DX that supports value-added creation by utilizing digital technology

physical space

Cyber space

- Digital infrastructures, especially hardware (computers) that incorporate fundamental technologies such as cutting-edge semiconductors, and information processing infrastructures consisting of software related to the control of computing resources and cloud technology, etc., are the core of supporting the realization of a digital society. Revolutionary innovations such as generative AI and DX that creates enormous added value cannot be established without an information processing infrastructure.
- As the digitalization of all industries and society as a whole is inevitable, a dramatic increase in the amount of computing power required is inevitable. In addition, as new computational demands (optimization problems, etc.) arise that cannot be solved with current computing power, advanced computers such as AI computers and quantum computers have begun to be developed, and it is essential to improve the quality of computing power.
- Japan, which once boasted a high share of the global market for mainframes, which supported society, has an extremely small share of the rapidly expanding cloud service market, and if this situation continues, Japan is in a critical situation where it may lose its technical knowledge of information processing as a nation. From the perspective of realizing a digital society, as well as from the perspective of economic security, it is necessary to devote maximum policy resources to the development of information processing infrastructure, from hardware to software.

Increasing volume of computational demand



(Source) Preferred Networks

The emergence of advanced computational resources

Supercomputer



(Source) Fujitsu website
Fujitsu
[PRIMEHPC FX1000]

AI Computers

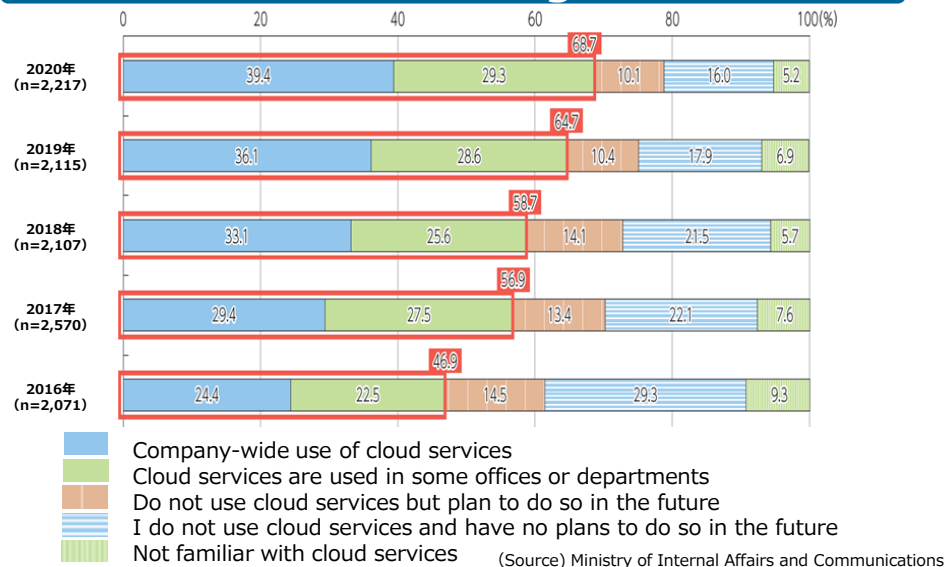
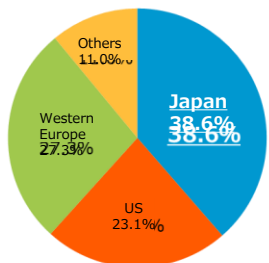
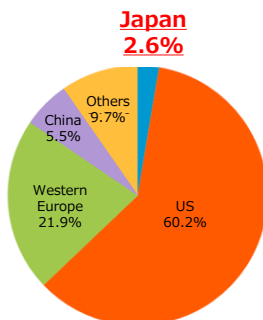


(Source) AIST website
AIST
[ABCI]



(Source) IBM Japan website
Quantum Computers

Cloud service usage status

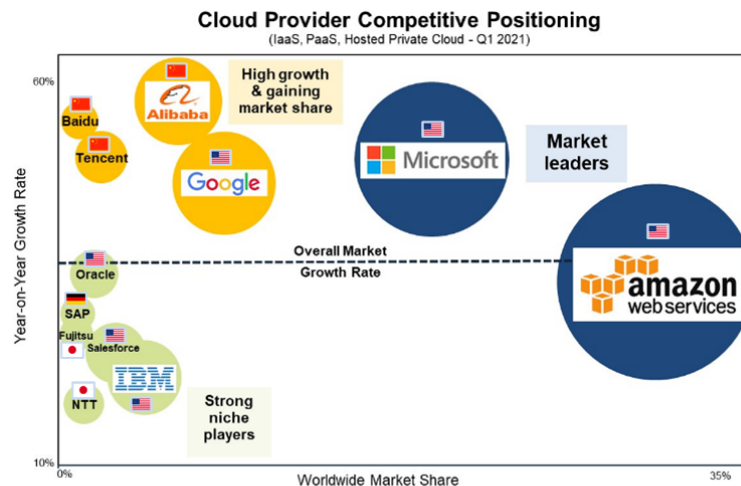
Decline in global share
(loss of technological base)FY2001
Mainframe Market Share by Region
(Worldwide / based on units shipped) *1FY2020
Cloud (IaaS/PaaS) Market Share by Region
(Global/Net Sales) *2

(Source)

※1: 「IT」 IT Market Trend Vol. 14: The Structure of the Information Systems Industry in Question (Part 1) - Can Japan Remain a Mainframe Powerhouse? Can Japan remain a mainframe powerhouse?

※2: Cloud Services Global Market Report 2021: COVID-19 Impact And Recovery To 2030 (The Business Research Company, August 2021)

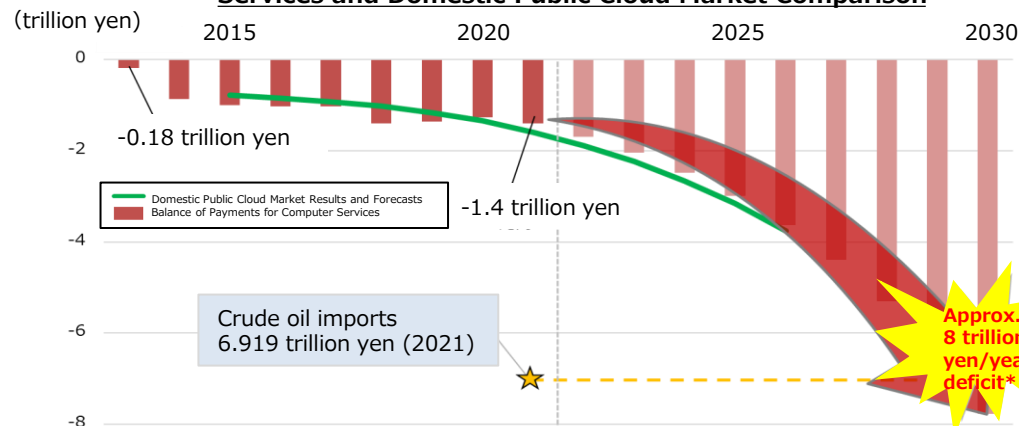
Cloud operator positioning



(Source) Synergy Research Group 2021/4

Expanding trade deficit
in computer services area

International Balance of Payments for Computer Services and Domestic Public Cloud Market Comparison



*Basis of Estimation

The amount of deficit in the balance of payments for computer services, on an actual basis, is assumed to approximate the size of the domestic public cloud market, and assuming that the domestic public cloud market will expand at the same rate as the growth rate based on private-sector forecasts, the annual deficit is estimated to be approximately 8 trillion yen by 2030.

(Source) Ministry of Finance, Bank of Japan, IDC Japan

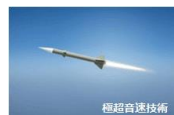
- We support development from hardware to software in an integrated manner for qualitative and quantitative expansion of information processing infrastructure. In particular, to support generative AI, the project will focus on the expansion of computational resources for AI and the development of AI foundation models.** (A total of 185.6 billion yen is budgeted in the FY2023 supplemental budget.)

【User/Customer】

biotechnology : Providing powerful computational capabilities for molecular dynamics simulations capability for molecular dynamics simulations, etc.



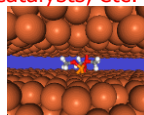
national security : Accelerating interceptor missile trajectory calculations



natural disaster : Ultra-precise weather forecasting



materials development : Reducing development time for batteries, catalysts, etc.



finance : Risk analysis and optimization of resource investment.



mobility : fully automatic operation



manufacturing : smart factory logistics : Drone Delivery



Providing advanced information processing capabilities

A positive cycle based on user feedback (Ecosystem)

Development of information processing infrastructure (hardware/software) based on user needs

【Supplier / Information Processing Infrastructure】

【AI foundation model】

(Game changer that could become a new platform in the future)

【cloud program】

(Basic software suite required to provide information processing infrastructure)

【Computing Resource Manager】

(Combines various computers and optimally controls the computing infrastructure as a whole)

- *1: Development of next-generation semiconductors (Rapidus, etc.)
- *2: Development of ultra-efficient AI computation infrastructure (accelerator chips, systems)
- *3: Development of computational resources for AI (supply security plan under the Economic Security Act)
- *4: Development of environment for use of advanced computing resources (test beds)
- *5: Quantum-classical hybrid (development of fundamental software)
- *6: Development of cloud-related technologies (automatic expansion/contraction control, etc.)
- *7: Hybrid cloud utilization infrastructure technology development (cryptographic key management, etc.)
- *8: Super-distributed computing technology development (cloud architecture support)
- *9: Development of basic models for generative AI

Ultra high-speed high-capacity optical networks 5G/Post-5G/Beyond 5G

Development of next-generation computing environment *3*4



supercomputer



AI computer



High-performance computer (quantum-classical hybrid)



gated quantum computer



annealing quantum computer



Smartphones & tablets



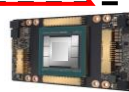
In-vehicle Computers

【Classics: general purpose, AI, science and technology, etc.】

【Quantum: Combinatorial optimization problems, etc.】

【IoT devices, etc.】

Cutting-edge semiconductor development *1*2



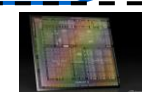
GPU AI accelerators, etc.



ultra high-performance CPU

High-Speed Semiconductors
(High-volume, high-speed processing)

Low Power Semiconductors
(Low power consumption)



AI Semiconductor

Sensors x AI Semiconductors

【Fundamental Technology】

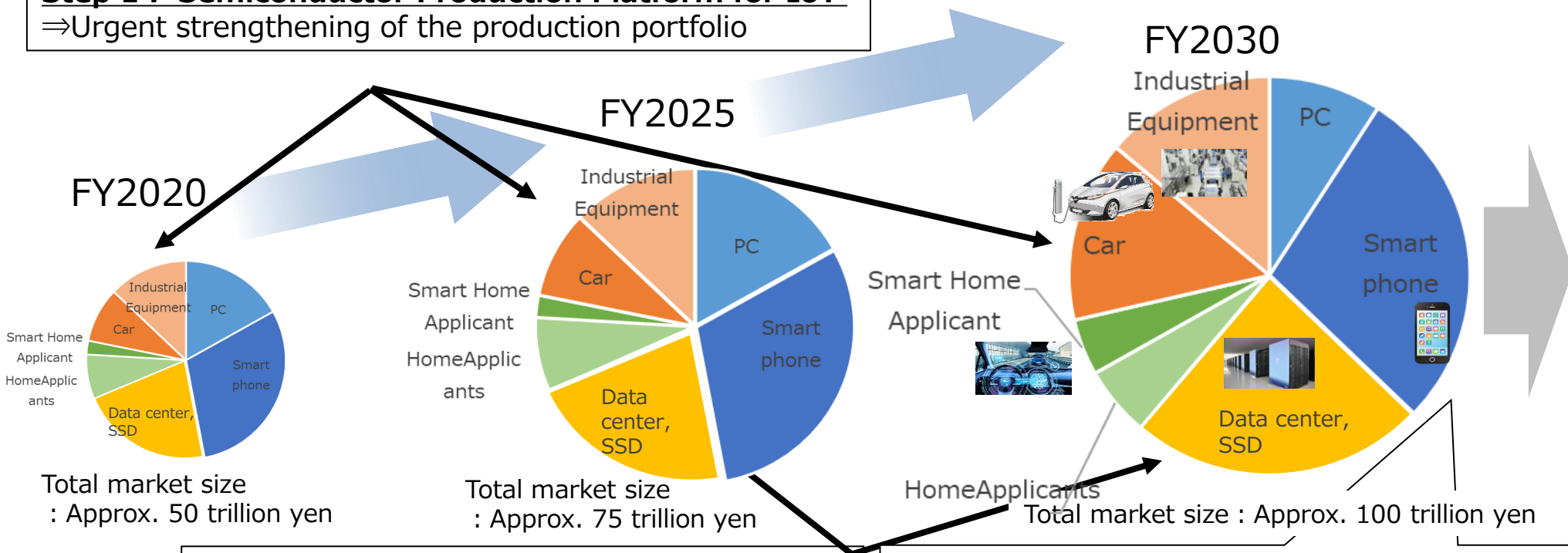
Digital technologies·Industrial Infrastructure : Basic Strategy for Revival of Japan's Semiconductor Industry

- Urgent reinforcement of semiconductor production infrastructure for IoT (Step 1)
- Next-generation semiconductor technology platform through Japan-U.S. collaboration (Step 2)
- Future technology platform through global collaboration (Step 3)

Step 1 : Semiconductor Production Platform for IoT

⇒ Urgent strengthening of the production portfolio

(Source) OMDIA



Step 2 : Strengthening Japan-U.S. Cooperation

⇒ Acquisition of next-generation semiconductor technology through Japan-U.S. collaborative projects and establishment of this technology in Japan

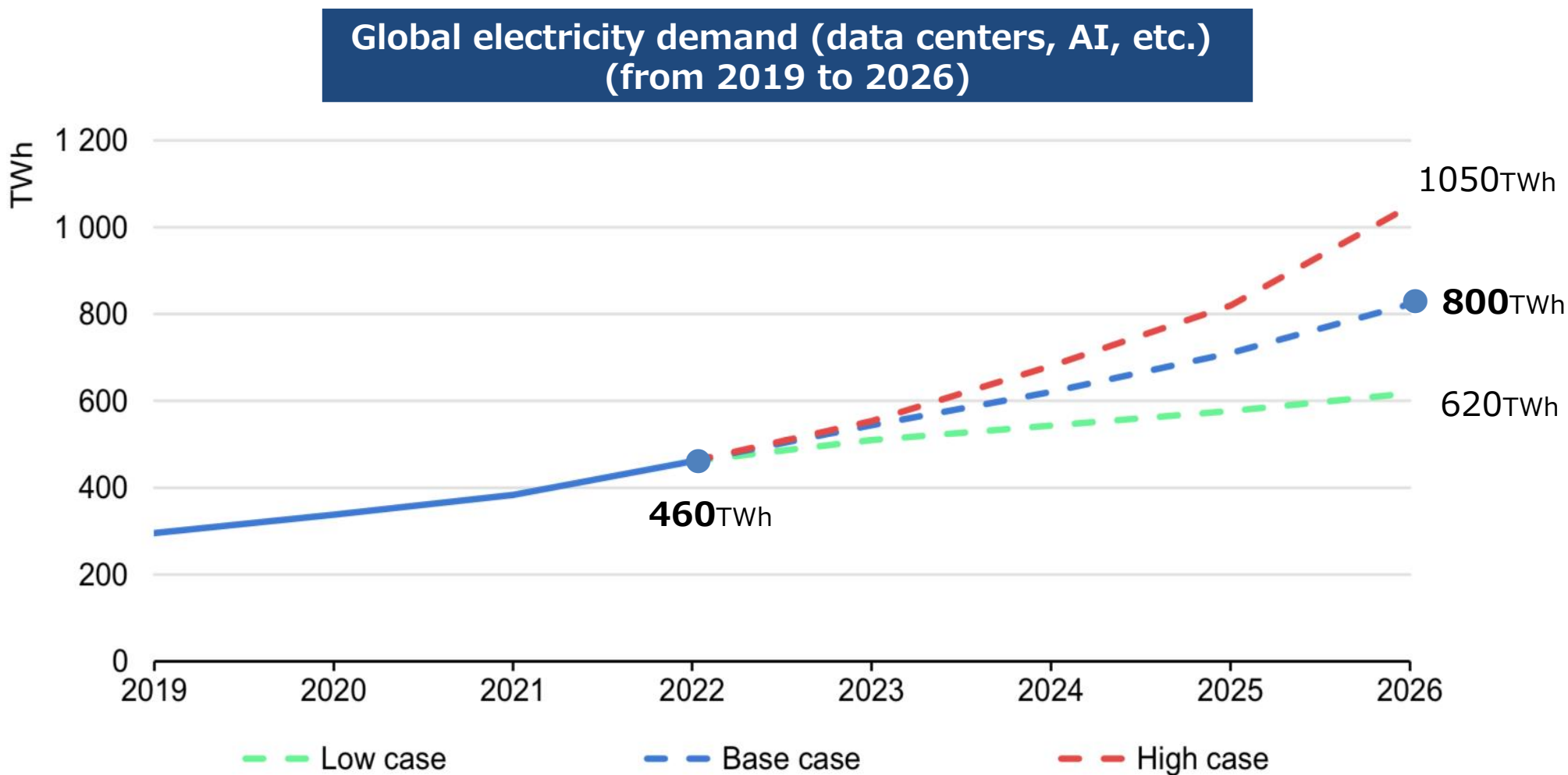
Step 3 : Global Collaboration

⇒

Accelerating the realization and implementation of future technologies such as photonics-electronics convergence technology by strengthening global collaboration

IEA's Forecast of Global Power Demand for Data Centers, AI, etc.

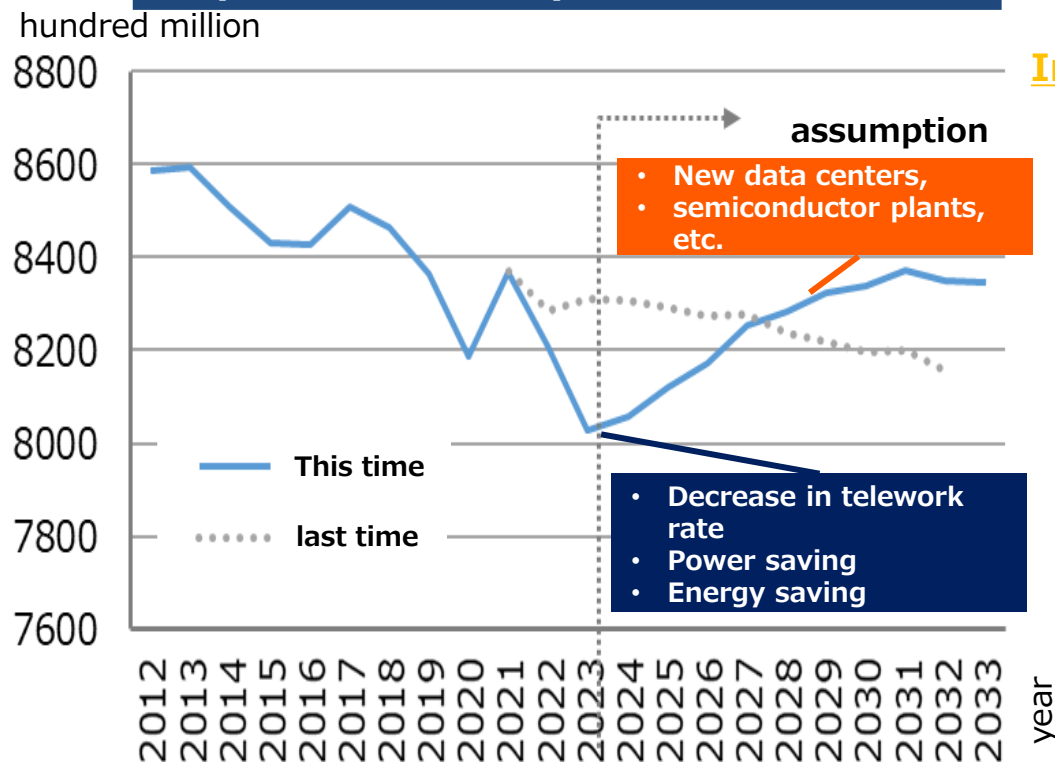
- According to the IEA, global electricity demand from data centers, AI, etc. is expected to increase from 460 TWh in 2022 to 800 TWh in the 2026 base case (as of January 2024).



Increasing Electricity Demand due to DX

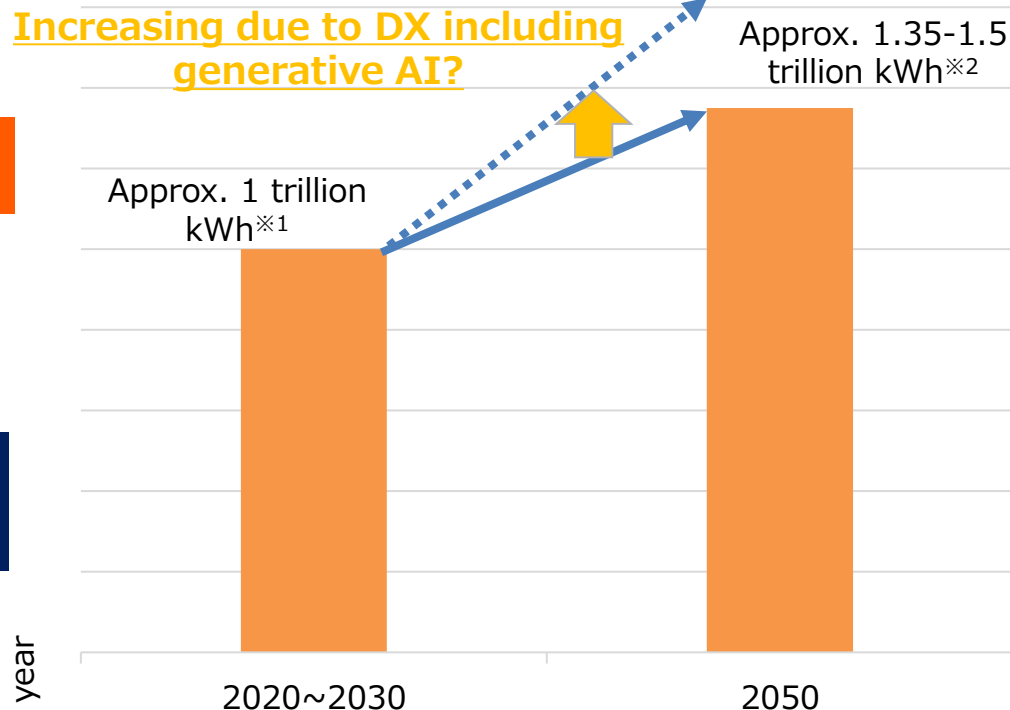
- While energy-saving performance of semiconductors improves, power consumption in computing resources may increase with the expansion of utilization of generative AI such as Chat GPT.
- While promoting the development of semiconductor technologies that contribute significantly to reducing power consumption, such as semiconductor miniaturization and photoelectric fusion, etc., it is necessary to assume a case in which power consumption will increase sharply in the future as the volume of computation increases due to the advancement of AI. (The outlook for the amount of increase varies widely, depending on the extent to which the effects of improved energy-saving performance of semiconductors, etc. can be expected.)

Japan's Electricity Demand Outlook



(Source) the Organization for Promotion of Wide-Area Electricity Utilization.
 "Demand Projections for the Entire Nation and Supply Areas (FY2024)" (January 24, 2024)

Image of Domestic Electricity Generation



※1 : Based on Comprehensive Energy Statistics and the Sixth Basic Energy Plan.

※2 : Reference values based on power generation power estimates by RITE presented at the 43rd Basic Policy Subcommittee Meeting.

Achieving continuous learning through managing digital skills information

- In the age of Generative AI, we need to be open to change and continue to learn. Those individuals who continue to improve their skills to achieve their own goals are expected to play an even more active role in the transforming society.
- To this end, METI and IPA will consider a mechanism to realize continuous learning of digital technology by managing digital skill information of individuals, and to utilize information in the labor market.

【Individuals】 Continuous learning and purpose-oriented career development through managing their own skills information

Skills Information Registration

Education・Testing programs

(IPA) Platform for Digital Skill Development and DX Promotion

- ✓ Launching personal accounts that enable individuals to manage skills information
- ✓ Promoting the use of the Digital Skills Standards (DSS)
- ✓ Managing and certifying skills information obtained through the IT Engineer Examination and reskilling services
- ✓ Expanding reskilling opportunities through analysis and sharing of skills information

Course Applications
・Activity Reports

Skill Trends

DX Certification Application
・Activity Reports

DX Support Services

【Training providers】 Expansion of reskilling market through reskilling services conforming to DSS

【Companies】 Developing and recruiting skilled workers conforming to DSS

Changes in External Economic Situation

- The future of the international economic order will continue to be highly uncertain against the backdrop of heightened tensions between different political and economic systems, such as liberalism and authoritarianism.
- **The growth of the world population, DX, and GX will be the starting point for the emergence of innovation, and the global economy is expected to grow at a stable annual rate of about 2%. Governments and companies in developed and emerging economies will continue to seek ways to capture growth in regions where income growth is expected to increase in the future** (countries of the Global South).
- **The WTO brings a certain discipline to international trade and investment**, addressing issues such as industrial policy, environmental problem, economic security, and digitalization. **The G7 and G20 have a certain significance**, but there is a possibility that each country will become more inclined to prioritize its own national interests.

< The projected state around 2040 based on current assumptions >

<Europe-Russia relations>

Security tensions remain, Russia's dependence on China deepens, and Russia-China unity strengthens

<Northeast Asia>

China becomes a superpower, geopolitical tensions persist

<Middle East>

Tensions such as religious and ethnic conflicts have become the norm, but decarbonization has greatly transformed them

<Africa>

Emerging as an economic frontier due to population growth and resource development boom

<Southwest Asia>

India is fiercely pursuing the U.S. and China in terms of market size. China and India compete for influence

<Southeast Asia>

Overcoming the "Middle-Income Trap" and Thriving

<North America>

Prospered by innovative industrial clusters and the economic integration of the USMCA. Fragmentation and inward-looking in the U.S. remain unchanged, but involvement in FOIP remains

<Central and South America>

Distance yourself from geopolitical tensions and stabilize

<Top 10 GDP Countries>

			Prediction →		
	2000	2022	2040	2050	2075
1	US	US	CHN	CHN	CHN
2	JPN	CHN	US	US	IND
3	GER	JPN	IND	IND	US
4	UK	GER	GER	IDN	IDN
5	FRA	IND	JPN	GER	NGA
6	CHN	UK	UK	JPN	PAK
7	ITA	FRA	IDN	UK	EGY
8	CAN	CAN	FRA	BRA	BRA
9	MEX	RUS	RUS	FRA	GER
10	BRA	ITA	BRA	RUS	UK

(Source) Goldman Sachs, "Global Economics Paper: The Road to 2075" (December 2022)

* The green frame is the so-called Global South

Reconstructing Integrated Domestic and International Economic and Trade Strategies in Response to Structural Changes

- In a world facing structural change, **Japan is required to form new international frameworks and rules, as well as reconstruct supply chains, in order to capture global demand.**

Changes in Supply Structure(GX, DX)

- Decarbonized energy such as renewable energy and hydrogen is supplied at a stable and reasonable price.
- The digitalization of trade procedures has been promoted, and cross-border trade in services has been revitalized.
- **GX will bring wealth concentration to suppliers of decarbonized energy and net-zero technologies, while DX will bring wealth concentration to companies that create innovations** such as generative AI.

Changes in Supply Structure (Reconstruction of Supply Chains)

- Geopolitical tensions have made it essential for business activities **to be prepared for unforeseen circumstances.**
- In response to the recognition of the risks of over-reliance on unreasonably cheap products of certain countries, there is a growing demand for the establishment of **"transparent, resilient and sustainable supply chains"** in which the market takes into account factors other than price in cooperation with like-minded countries.
- In addition to conventional economic partnership agreements and investment agreements, **there will be a growing movement to formulate sector-specific agreements among like-minded countries.**

Changes in Japan's Business Structure

[Changes in Japan's Macroeconomic Situation]

- In order to maintain the vitality of the economy and industry as the Japan becomes a medium-sized country, it is essential to capture the growing external demand not only of developed countries in Europe and the United States, but also of the countries of the Global South, and **the economic structure will be shifted to sustainable growth while capturing global demand.**
- **Improving the competitiveness of export goods and over-reliance on fossil fuels has improved the terms of trade** and contributed to a rise in real wages.

[Changes in the Competitive Strategies of Companies Based in Japan and Japan Industries as a Whole]

- Japan companies **will leverage their strengths, such as a comprehensive industrial structure and the appeal of culture and content, to compete globally.** Positioning Japan as a **"global creative base"** such as a global headquarters and a global factory, **and continually expand domestic investment including software and R&D, wage increases, and innovation,** to ensure that profits earned globally are channeled back and utilized within Japan.

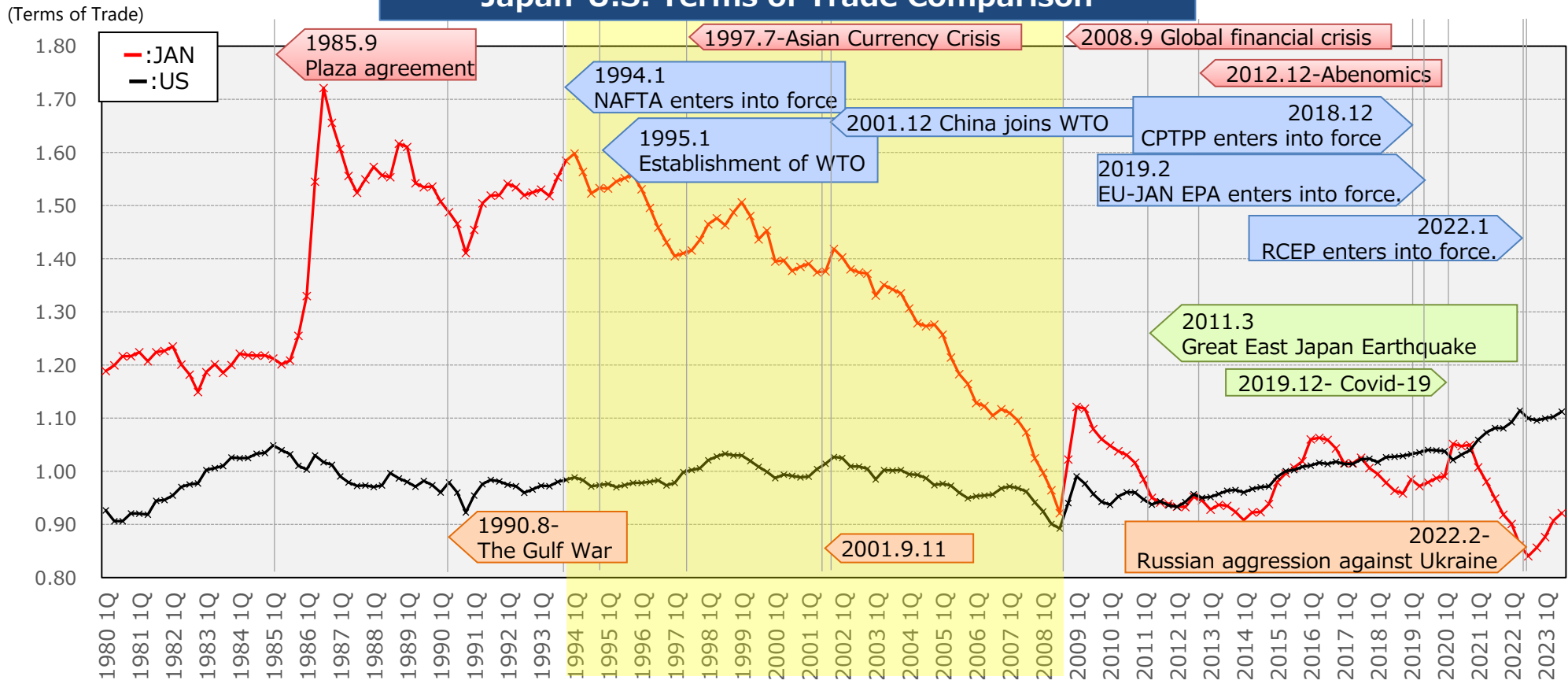
[Reconstruction of International Markets and Supply Chains]

- **Reconstructing global supply chains in cooperation with companies from allied countries** will be incorporated as an option in corporate strategies.

Trade Policy and Terms of Trade

- **Japan's terms of trade** (Note: An index of the price index of export goods and services divided by the price index of import goods and services. The smaller the value, the less favorable it is to trade) fluctuates depending on factors such as **(1) exchange rates, (2) prices of imported energy, raw materials, and commodities, and (3) the international competitiveness of export goods.**
*Exogenous shocks such as war, terrorism, pandemics, and financial crises are often triggers.
- Although liberalization of trade and investment is thought to affect the overseas expansion of firms and the competitiveness of export goods, during the period from the entry into force of NAFTA (1994), the establishment of the WTO (1995), and China's participation to the WTO (2001) to the global financial crisis (2008), **the terms of trade in the US remained stable, while Japan's terms of trade deteriorated markedly.**

Japan-U.S. Terms of Trade Comparison

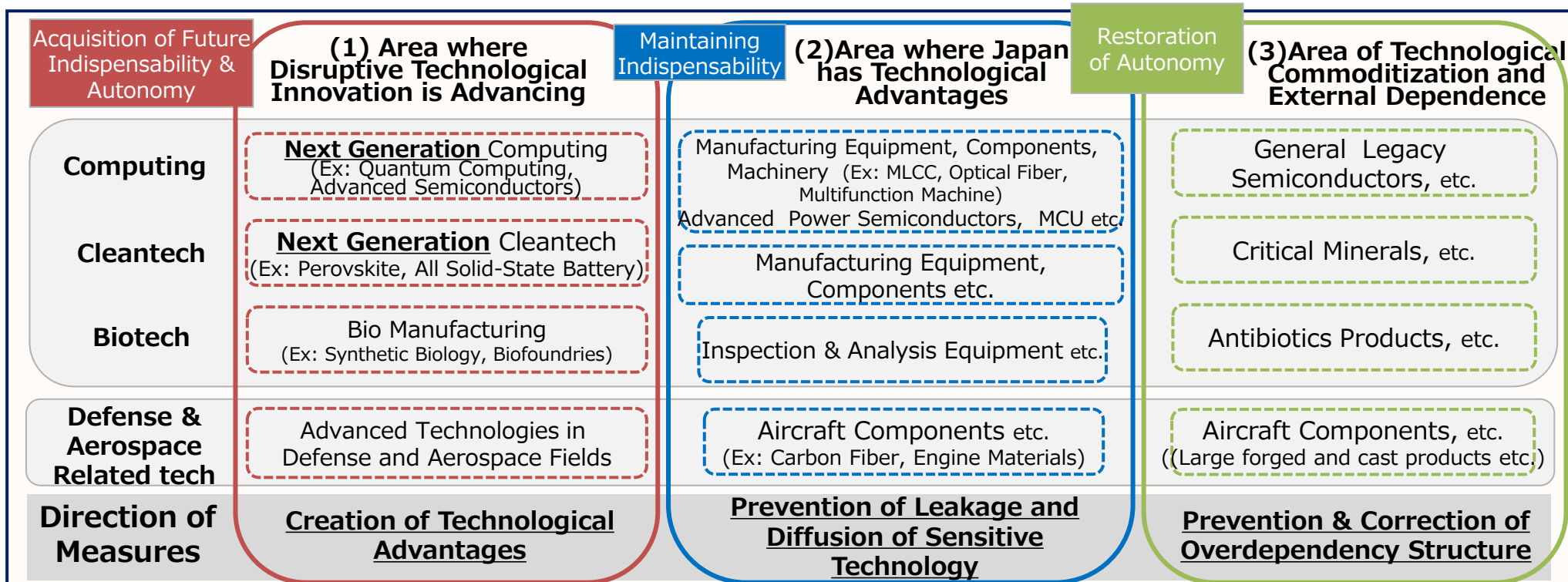


(Source) Cabinet Office, CEIC Database

Identifying Critical Products and Technologies and Policy Approaches

- Sectors such as computing, cleantech, biotech, and defense are essential as the supply chains and technological basis for the future economic security of Japan. In each of these sectors, we will pay particular **attention to key supply chains and concentrate policy resources on their maintenance and development.**
- **After identifying critical products and technologies in important supply chains for economic security,** we will analyze and understand trends in technological innovation, Japan's relative advantage, and the degree of dependence on foreign countries, and apply appropriate policy measures to strengthen these supply chains.
- **In addition, we will redefine the critical products in terms of economic security, organize appropriate policy measures in response to risks and threats, and reflect them in the "Policies on Initiatives for Ensuring Stable Supply" of the Economic Security Promotion Act.**

Products and Technologies that should be Emphasized for Economic Security



※ Specific materials and technologies shown above are examples

- By promoting measures such as PHR and KENKO Investment for Health, the company aims to build a cumulative 77 trillion yen market by 2050 in the areas of health promotion and nursing care outside of public insurance. We also aim to expand the medical device field by securing the global market.

Market Overview

Health Promotion
(Health Care Services)

※ In public uninsured services

- Market expansion and new service offerings in related industries are expected due to the progress of medical DX and KENKO Investment for Health in particular.

Nursing Care

※ In public uninsured services

- Demand is growing as the population ages.
- Lifestyle support-related services are expanding markedly in particular.

Medical
(medical devices)

※ Including some insured services

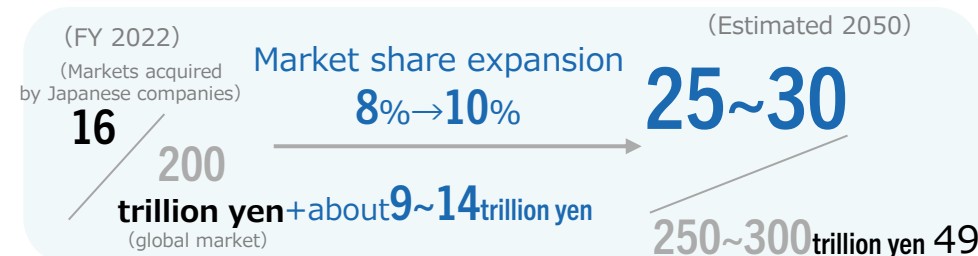
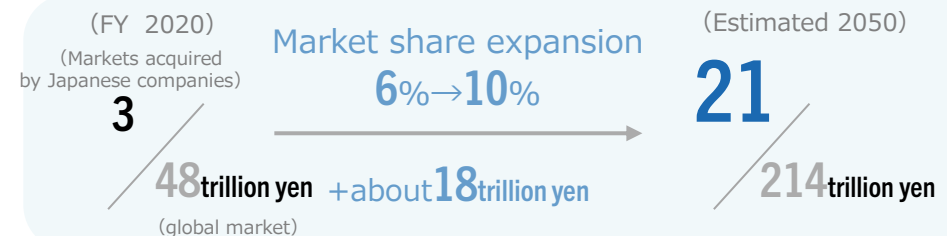
- AI medical devices and Software as a Medical Device (SaMD) are expected to become global growth industries as new medical needs expand.

Medical
(Pharmaceutical)

※ Including some insured services

- The market is expected to grow more with the aging of the world's population, the development of new drugs for intractable diseases such as cancer and Alzheimer's disease, the expansion of the market for expensive drugs such as regenerative and cellular gene therapy, and the generalization of early treatment with drugs.

Market Size and Estimates



Expansion of market size of health promotion and nursing care industry (2)

Estimated market size in 2020 and 2050

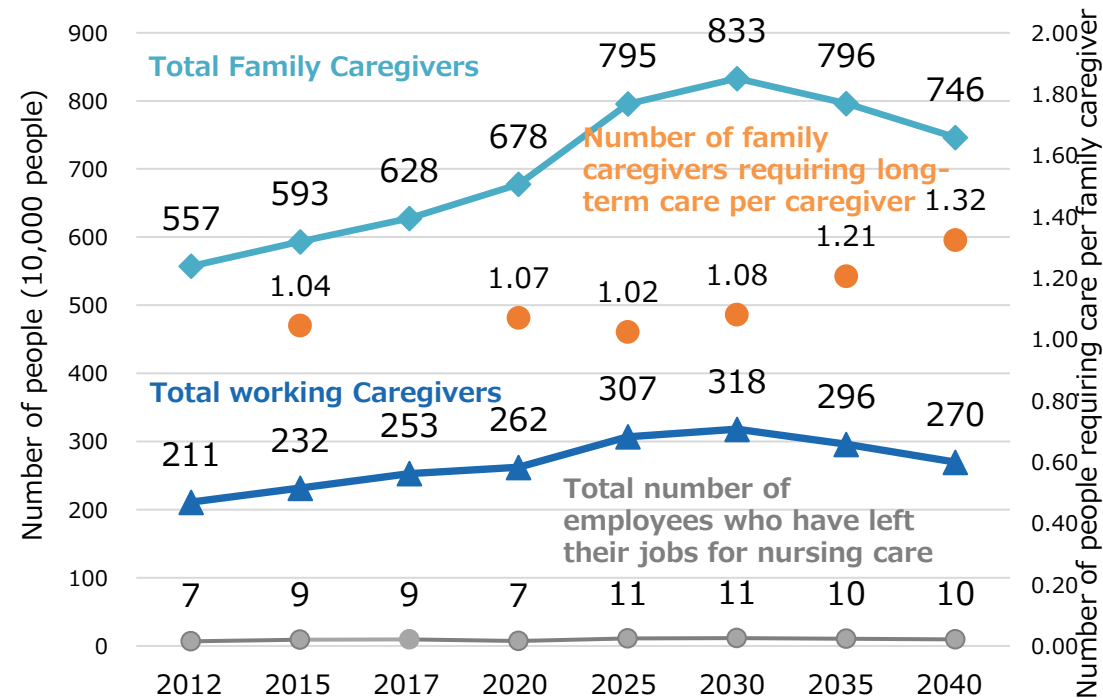
item	Examples of included products and services	Market size in * Partly quoted from	Market size in 2050
total		Total: 25 trillion yen	Total: 77 trillion yen
● Health promotion		Subtotal: 18.5 trillion yen	Subtotal: 59.9 trillion yen
knowledge	Healthcare-related books/magazines, apps/services, etc.	0.03 trillion yen	0.09 trillion yen
measurement	Testing/medical examination services, measuring equipment, etc.	1.0 trillion yen	3.7 trillion yen
KENKO Investment for Health	Medical examination services, mental health measures, etc.	0.6 trillion yen	3.7 trillion yen
food	Supplements/health foods, OTC /designated quasi-drugs, etc.	3.4 trillion yen	8.7 trillion yen
motion	Fitness clubs, fitness machines, etc.	0.6 trillion yen	2.7 trillion yen
sleep	Functional bedding etc.	0.2 trillion yen	0.2 trillion yen
prevention	Sanitary products, vaccinations, etc.	0.4 trillion yen	7.8 trillion yen
Play/Study	Health tourism (health-oriented travel)	2.9 trillion yen	12.9 trillion yen
Healing	Esthetics/relaxation services, etc.	1.1 trillion yen	2.6 trillion yen
residence	Health-oriented home appliances and equipment, etc.	0.1 trillion yen	0.4 trillion yen
Functional complementation	Glasses, contact lenses, etc.	0.3 trillion yen	1.4 trillion yen
private insurance	Third insurance etc.	7.9 trillion yen	15.7 trillion yen
● Nursing care		Subtotal: 6.4 trillion yen	Subtotal: 16.9 trillion yen
Daily life/social participation support	Housekeeping, nursing care taxi, meal delivery, nursing care travel, etc.	1 trillion yen	3.3 trillion yen
Life function maintenance and medical treatment support	Nursing facility/housing related, nursing care food, self-financed rehabilitation, etc.	4.5 trillion yen	7.8 trillion yen
Nursing care equipment, etc.	Welfare equipment, robot care equipment, etc.	0.8 trillion yen	5.6 trillion yen
Products and services for patients	Food for sick people, etc.	0.05 trillion yen	0.2 trillion yen

(Source) the Ministry of Economy, Trade and Industry's "FY2020 Healthcare Service Social Implementation Project (Survey on promoting the spread of health management in Japan and overseas)"

Increasing Burden on Family Caregivers Due to the Aging of the Population

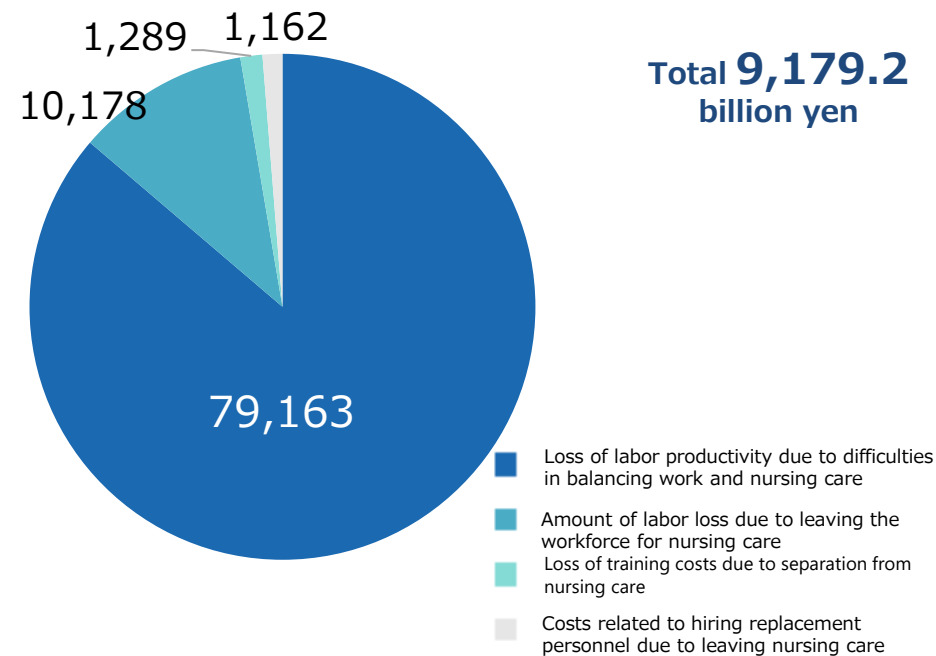
- With the aging of the population, the number of people who are engaged in caring for family members while working (called working carers) is increasing throughout Japan. **Approximately 100,000 people leave their jobs to provide care every year, and by 2030, about 40% (approximately 3.18 million) of family caregivers are expected to become working caregivers.**
- As problems related to work and nursing care are expected to become more apparent, **economic losses are expected to be about 9.1 trillion yen by 2030.** Looking at the breakdown, **labor productivity losses due to difficulties in balancing work and nursing care account for an extremely large proportion of the total.**

Trends in Indicators Related to working Caregivers



(Source) National Institute of Population and Social Security Research, "Medium Estimate of Japan's Future Population (April 29 Estimate)", Ministry of Internal Affairs and Communications Statistics Bureau "Basic Survey on Employment Structure (Heisei 24, Heisei 29)", Ministry of Health, Labor and Welfare "Employment Trend Survey (Heisei 25 ~ Reiwa 3)", Ministry of Economy, Trade and Industry "Study Group on Elderly Care System for Future Long-term Care Supply and Demand" (March 30)

Estimation of economic loss in 2030

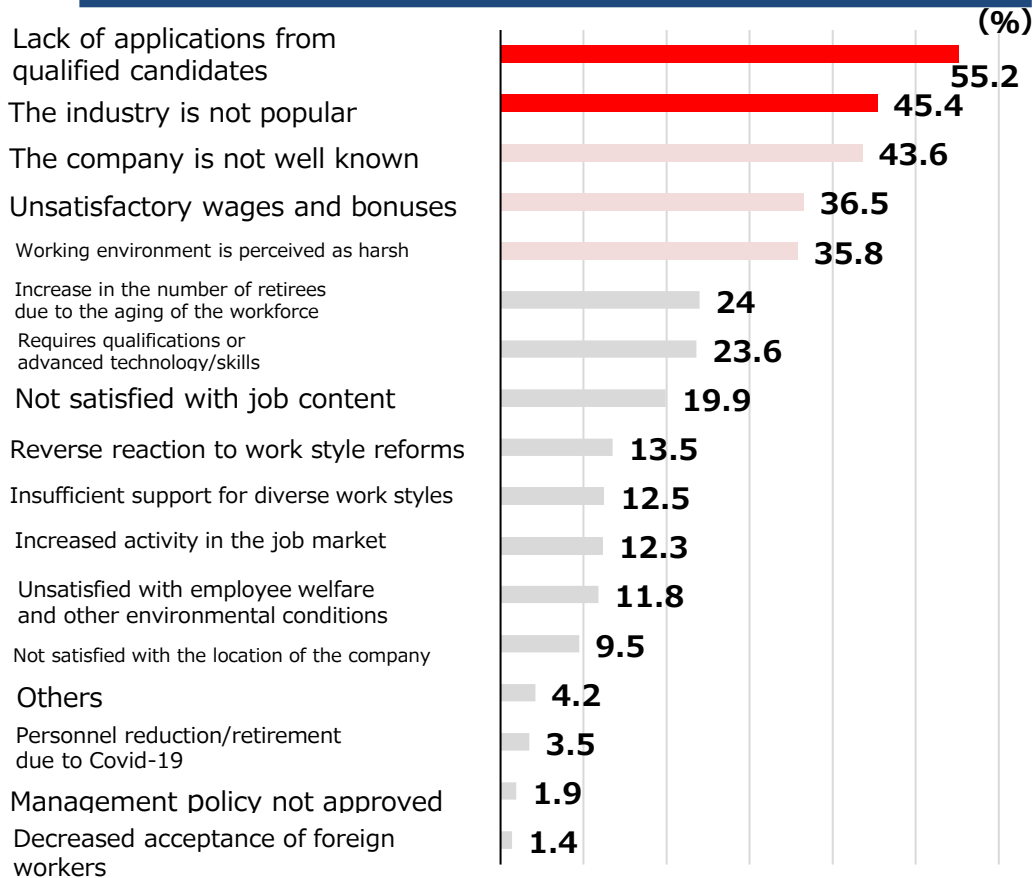


(Source) Ministry of Economy, Trade and Industry, "Summary of Survey Results of the 2022 Ministry of Economy, Trade and Industry's Basic Survey on Business Activities (FY2021 Results)", National Institute of Industrial and Labor Research, "Training Expenditure per Capita in 2017~2021 (5-year average) in the Fact-finding Survey on Education and Training Expenses", Recruit Career Employment Mirai Research Institute, Inc. "Employment White Paper 2020", prepared by Japan Research Institute

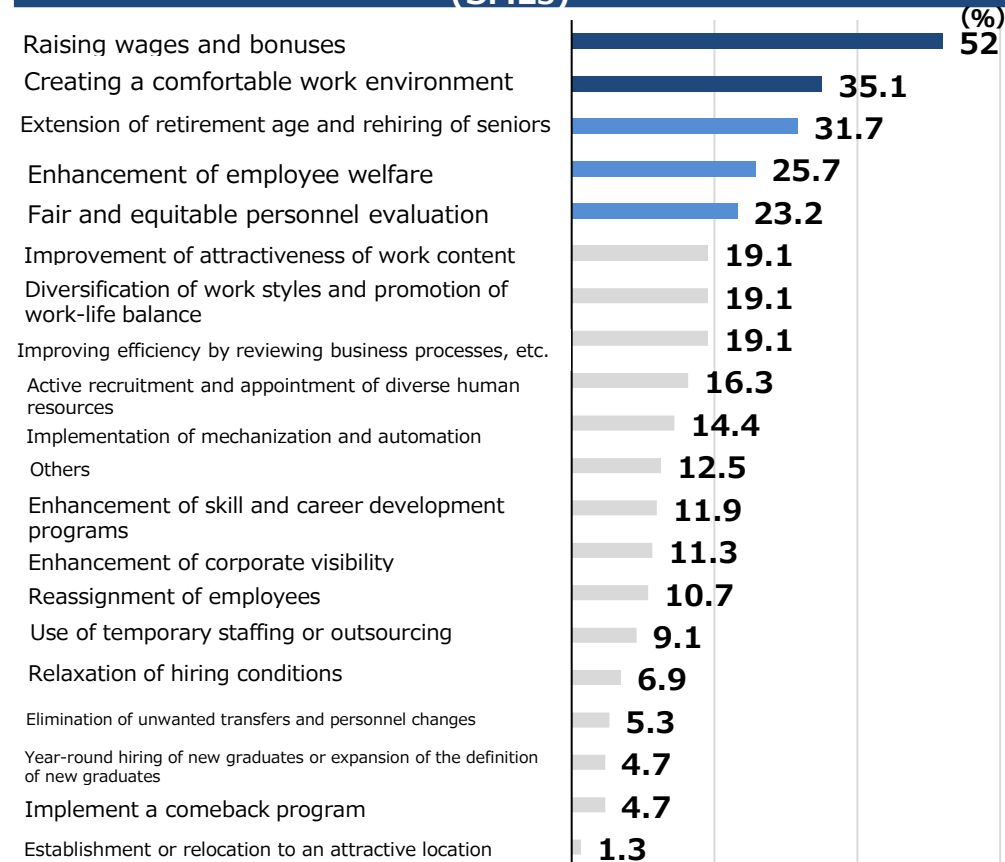
The key to resolving labor shortages is to raise wages and create a comfortable work environment

- SMEs that are short of labor perceive the lack of applications from qualified personnel and the unpopularity of their industry as the cause of the labor shortage.
- On the other hand, SMEs that do not have a labor shortage are working to raise wages and create a better working environment.

Factors contributing to labor shortages (SMEs)



Factors contributing to retain workers (SMEs)



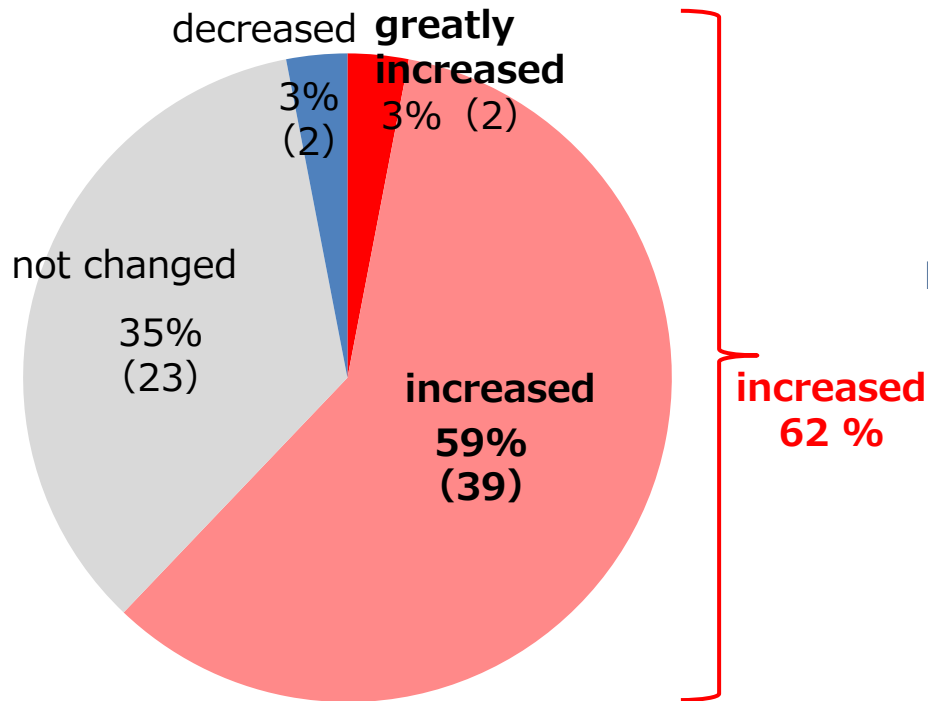
(Note) Teikoku Databank, Ltd. conducted a questionnaire survey on the factors contributing to the recruitment of human resources and labor shortages in companies. The survey period was May 12-16, 2023. Of the 1,033 companies that responded validly, those companies with labor shortages responded to the question "Factors causing labor shortages" and those without labor shortages responded to the question "Factors causing no labor shortages". The number of companies that responded "There is a labor shortage" and "There is no labor shortage" was 689 (including 592 SMEs) and 346 (including 319 SMEs), respectively. Small and medium-sized enterprises: Small and medium-sized enterprises under the Small and Medium Enterprise Basic Act.

(Source) Partially processed based on the Teikoku Databank report, "Wage hikes top the list at 51.7% as the key to resolving labor shortages" (Source: Teikoku Databank ,Ltd.).

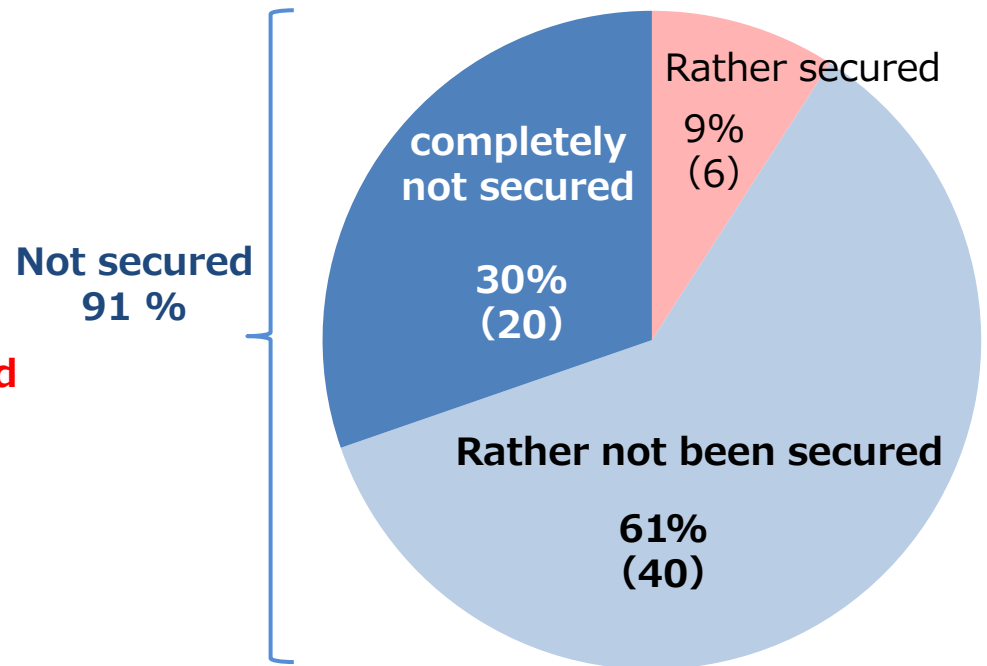
Lack of dealing with increasing location needs

- According to a questionnaire survey of prefectures in Japan, **62% of prefectures have seen an increase in inquiries from companies considering locating there during the past year.**
- On the other hand, **less than 10% of prefectures have secured industrial parks** that can meet the needs of companies.

Percentage of Prefectures and designated cities where inquiries are increasing From companies considering location (new/expansion)



Percentage of Prefectures and designated cities where have been secured Industrial parks that can meet the needs of companies, etc.



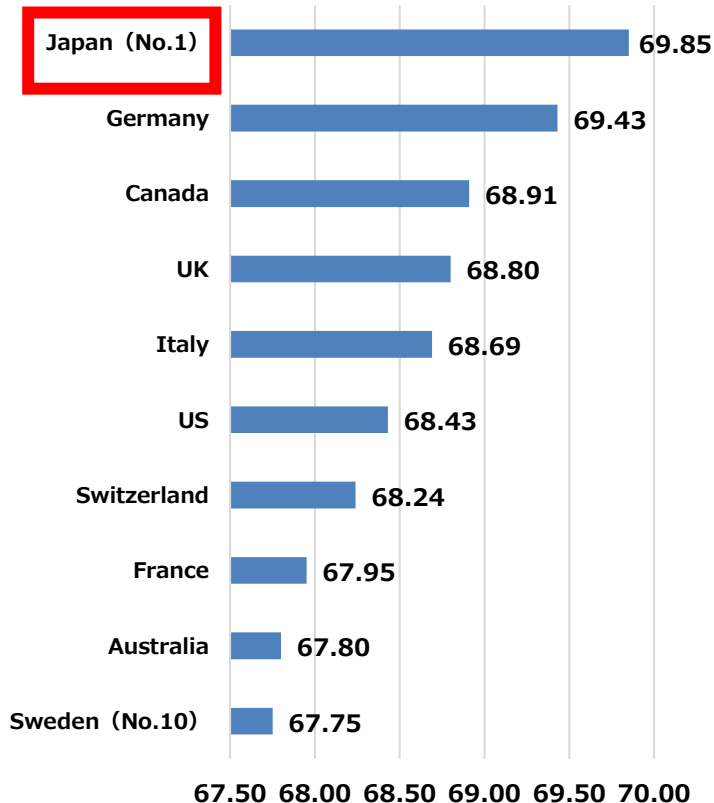
(Note) A survey conducted by the Ministry of Economy, Trade and Industry targeting prefectures and designated cities from August to September 2023. Left image: "During the past year, have you received an increase in inquiries from companies considering location (new/expansion) in your prefecture?", right image: "In your prefecture, is recognized as being able to secure industrial parks (not limited to those developed by your prefecture, etc., but also those developed by municipalities and the private sector) that can respond to inquiries (needs) from companies considering location." Compiled responses from 46 prefectures and 20 designated cities. The number in parentheses is the number of responses.

(Source) Created based on questionnaires for each prefecture and designated city.

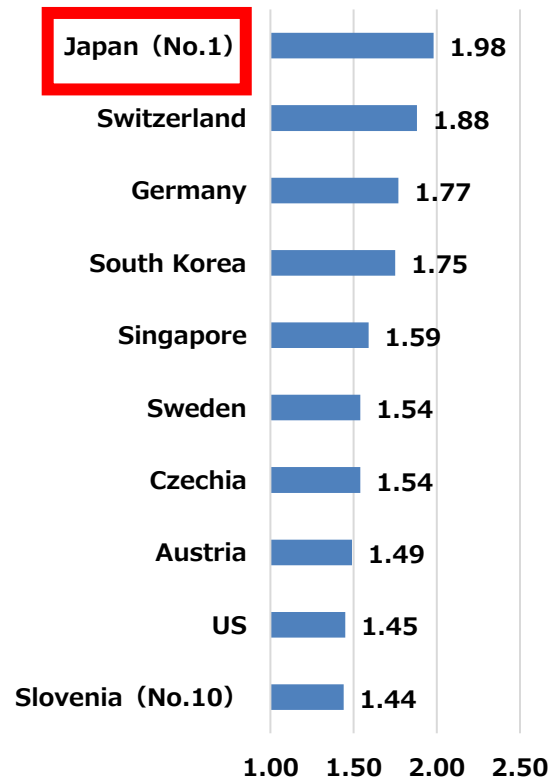
Japan's Strengths

- Japan is a society with strengths in the diversity and ubiquity of its manufacturing (i.e., network of manufacturing) and the attractiveness of its lifestyle, culture, and contents.
- For example, Japan is ranked first in the world in (1) attractiveness ranking, which is based on the country's culture and the reliability of the country's products, etc., (2) ranking that indicates the ability to produce and export complex products requiring advanced knowledge and skills, and (3) ranking based on travel and tourism resources, etc., and is internationally recognized as having these strengths.

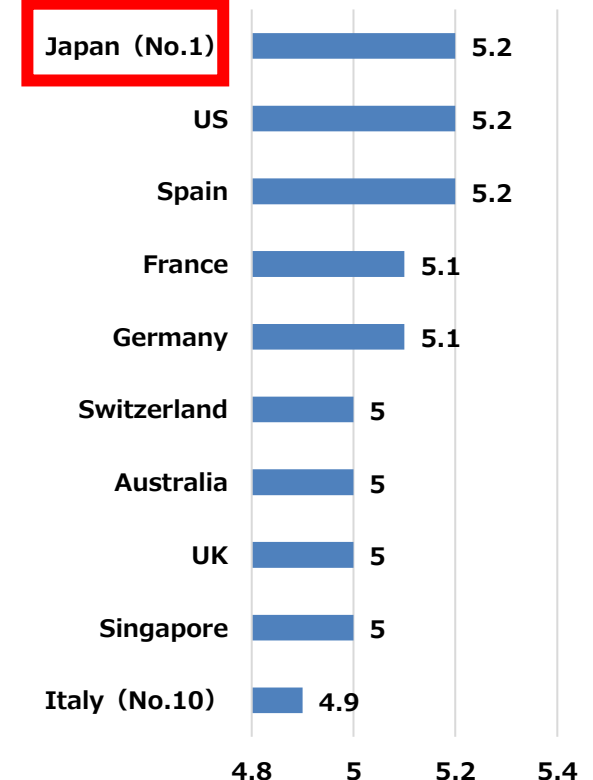
(1) Nation Brand Index



(2) Economic Complexity Index (trade)



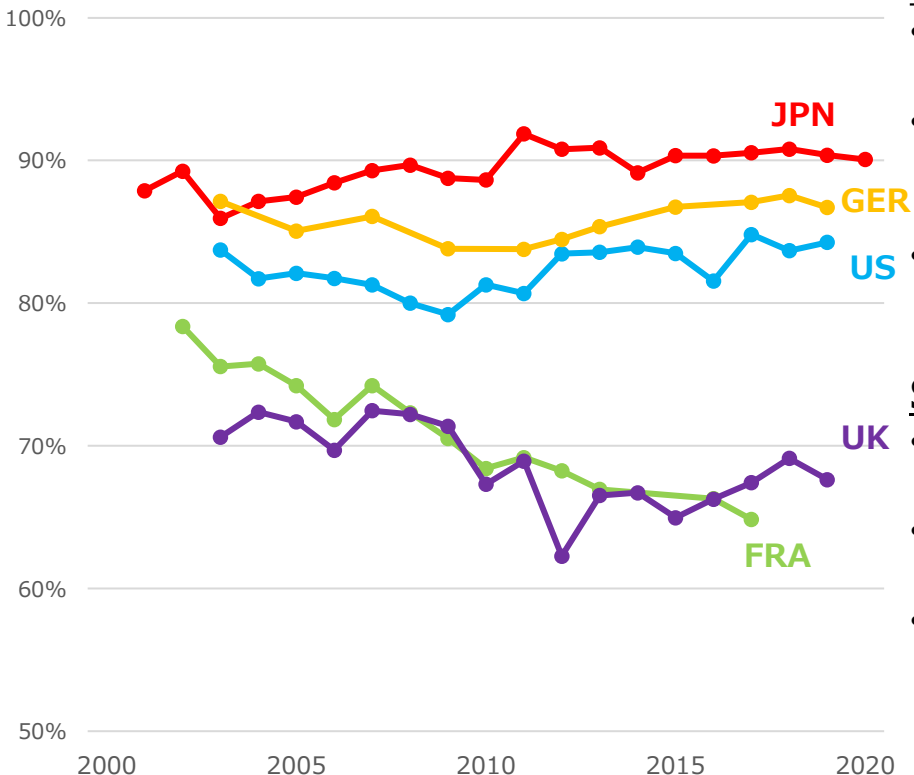
(3) Travel & Tourism Development Index



Division of roles based on the characteristics of large companies and startups

- Taking advantage of the differences in the characteristics of large companies and startups, we identify the parts that should be entrusted to startups and provide intensive support.

Percentage of large companies (500 or more employees) in domestic R&D



Characteristics of large companies and startups

Large companies:

- Large companies are particularly important in Japan, accounting for 90% of R&D investment.
- They tend to focus on improving the competitiveness of existing businesses and have difficulty in becoming a leader in highly novel R&D investment.
- On the other hand, large companies have useful resources for R&D and commercialization in new fields, such as dormant technologies, research and production facilities.

Startups:

- Startups are important as leaders in R&D investment and commercialization in highly novel fields.
- On the other hand, the possibility of investment and the scale of investment are constrained by external funding.
- After achieving a certain level of success in a new market, investors tend to demand a rapid expansion of business scale and investment in order to expand the market.

- In order to continuously create high value-added businesses, it is important to (1) create new “technologies and ideas,” (2) “create new value” through their commercialization, and (3) “implement them in society, create markets, and obtain compensation”. It is crucial that the successful innovation model realized in this way will lead to the next innovation.
- There is the challenge that R&D investment is sluggish in terms of both quantity and quality, and the monetization of the technologies created is inadequate.

(1) Expansion of quantity and quality of R&D

Technologies
• Ideas

(2) Accelerating commercialization of "technologies and ideas" into "new value"

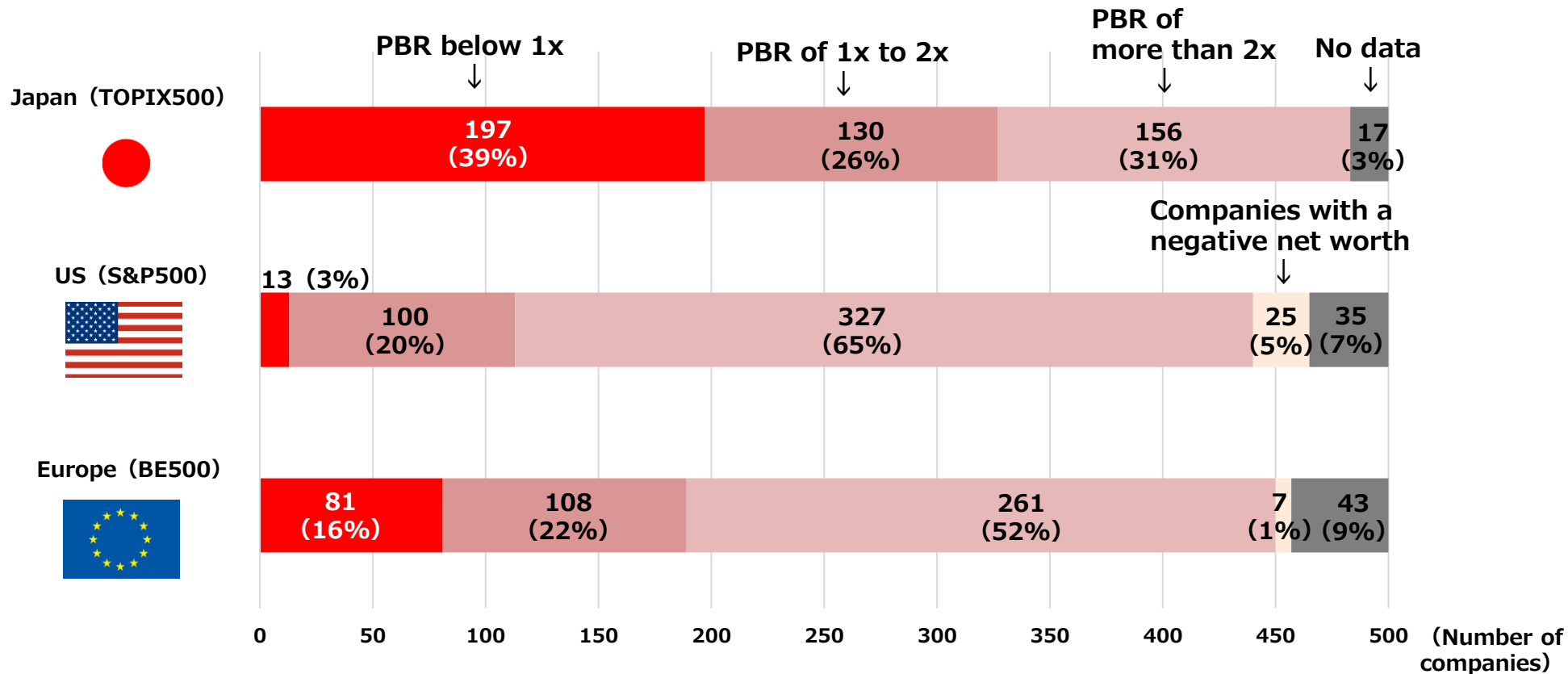
Creation of new value (Products, services, etc.)

(3) Strategic rulemaking and other initiatives with a view to "market creation and capture of value"

Social implementation
(Dissemination • penetration into society • customers)
→ Market creation • compensation acquisition

- The percentage of companies with PBR below 1x is at a very high level compared to Europe and the U.S..

PBR distribution of major Japanese, U.S. and European companies(FY2022)



(Note) Japan: TOPIX500, U.S.: S&P500, Europe: BE500

PBR = share price / net assets per share (The figure is calculated based on each company's market capitalization and net assets as of the end of fiscal year 2022 (end of March 2023 for companies with a fiscal year end in March)).

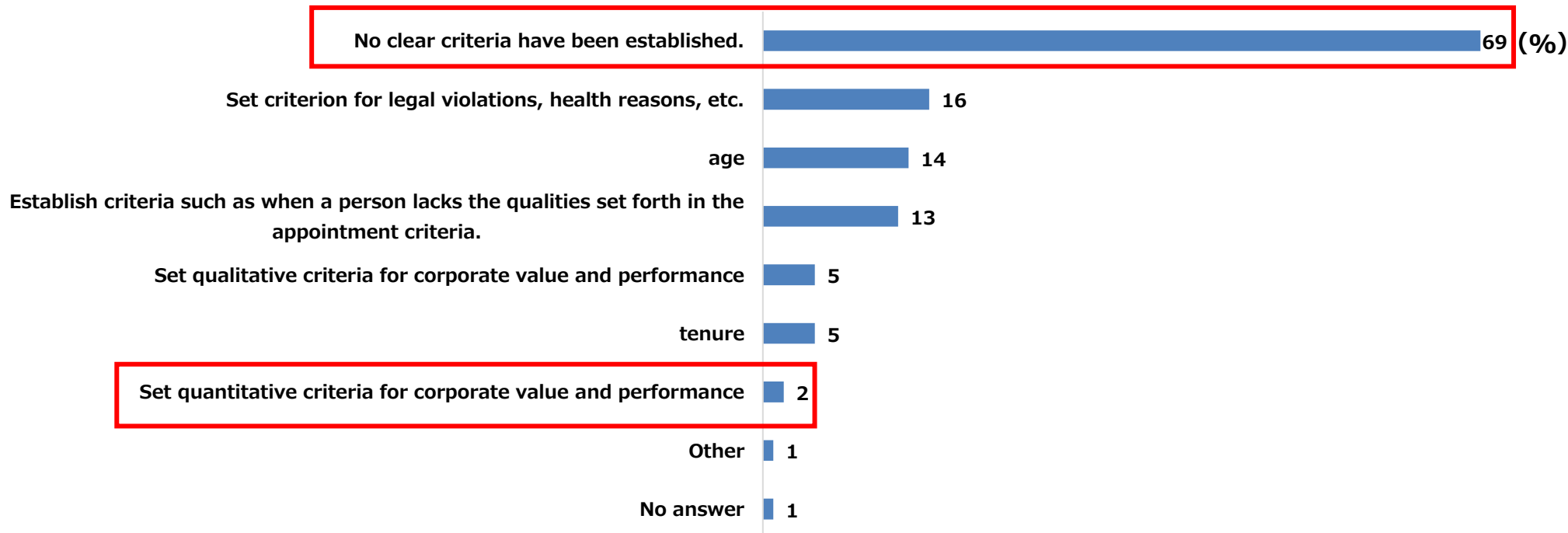
(Source) Bloomberg

- Approximately 70% of the companies do not have a non-reappointment criterion for top management on their board of directors or nominating committee, and only 2% have a quantitative criterion for corporate value or performance.

Status of Setting Criteria for Non-Reappointment of Top Management

Criteria for non-reappointment of top management

28. Do you have any criteria for non-reappointment of top management on the board of directors or nominating committee (multiple choice)?



Relationship between CEO term limits and PBR

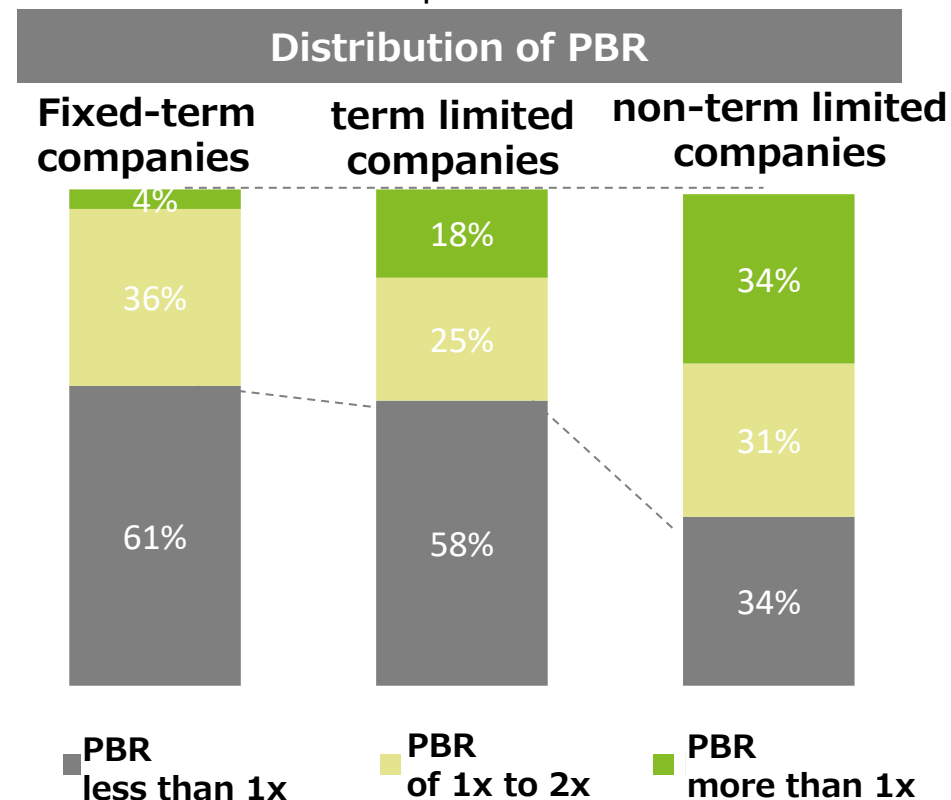
- The PBR of non-term limited companies tends to be higher than that of term limited companies.

Relationship between CEO turnover due to term limits and PBR for TOPIX 300 companies*1

Performance Indicators				
		Fixed-term companies	term limited companies	non-term limited companies
Numbers of companies		28 (9%)	57 (19%)	215 (72%)
Performance (2022)	PBR	1.03x	1.26x	2.00x
	ROE ※1	10.4%	6.9%	9.8%
	PER ※1	12.6x	17.3x	19.9x

Definitions of term limits for CEOs

- Fixed-term companies:** The last two CEOs, excluding the incumbent, had the same tenure of 3, 4, 5, or 6 years, but only if the incumbent was less than or equal to that.
- term-limited companies:** Excluding "Fixed-term companies", the average tenure of the last two CEOs*, excluding the incumbent, must be (1) at least three years but less than six years, and (2) the difference between the longest and shortest tenure must be two years or less.
*If the incumbent's tenure is more than two years longer than the longest tenure of the two CEOs, the tenure of the incumbent and his/her predecessor will be used as the basis to determine the CEO
- non-term limited companies:** Other than the above.



*1: TOPIX 300 refers to the top 300 TSE prime-listed companies by market capitalization, excluding financial institutions, as of the end of the fiscal year 2022.

Figures in the following formulas are as of the end of each company's fiscal year 2022.

PBR = Market capitalization / Total shareholders' equity

PER = Market capitalization / Net income attributable to owners of the parent company

ROE = Net income attributable to owners of parent / Total average shareholders' equity at the beginning and end of the period

All of the above are based on simple averages.

(Source) Compiled by METI based on survey data from Deloitte Tohmatsu LLC based on SPEEDA, company website information, etc.

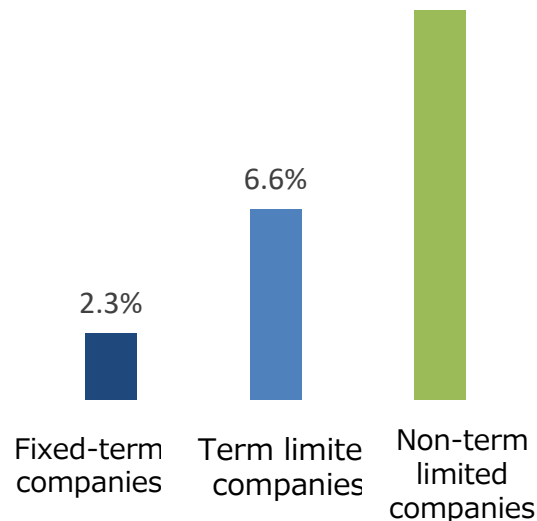
Relationship between CEO tenure and risk-taking indicators (acquisitions, divestitures, and R&D investments)

- Non-term limited companies are actively reforming their business portfolios through divestitures, acquisitions, and R&D investments.

Business Portfolio Reform

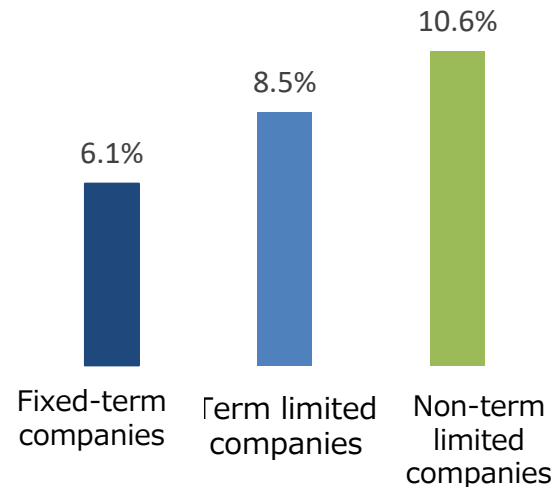
Divestiture*¹

Divestitures' amount/total assets
in the last 10 years
(average of last 10 years)



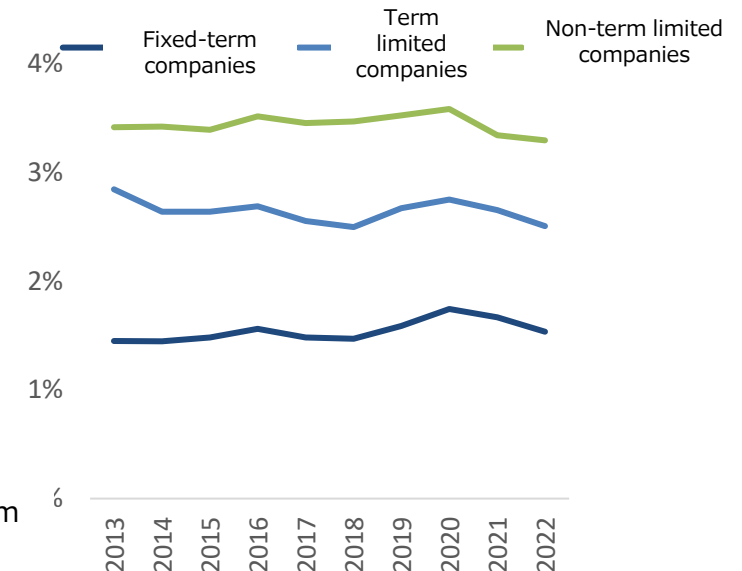
Acquisition*¹

Acquisitions' amount /total assets
in the last 10 years
(average of last 10 years)



R&D investment

R&D expenses for each year/Net sales for each year



(Note) Target companies are the top 300 companies by market capitalization excluding financial institutions as of the end of FY2022.

*1: Acquisitions and divestitures: Includes business and division divestitures, fund buyouts, MBOs, minority interest acquisitions, and joint ventures in addition to acquisitions and divestitures. The last 10 years refer to "2013" through "2022".

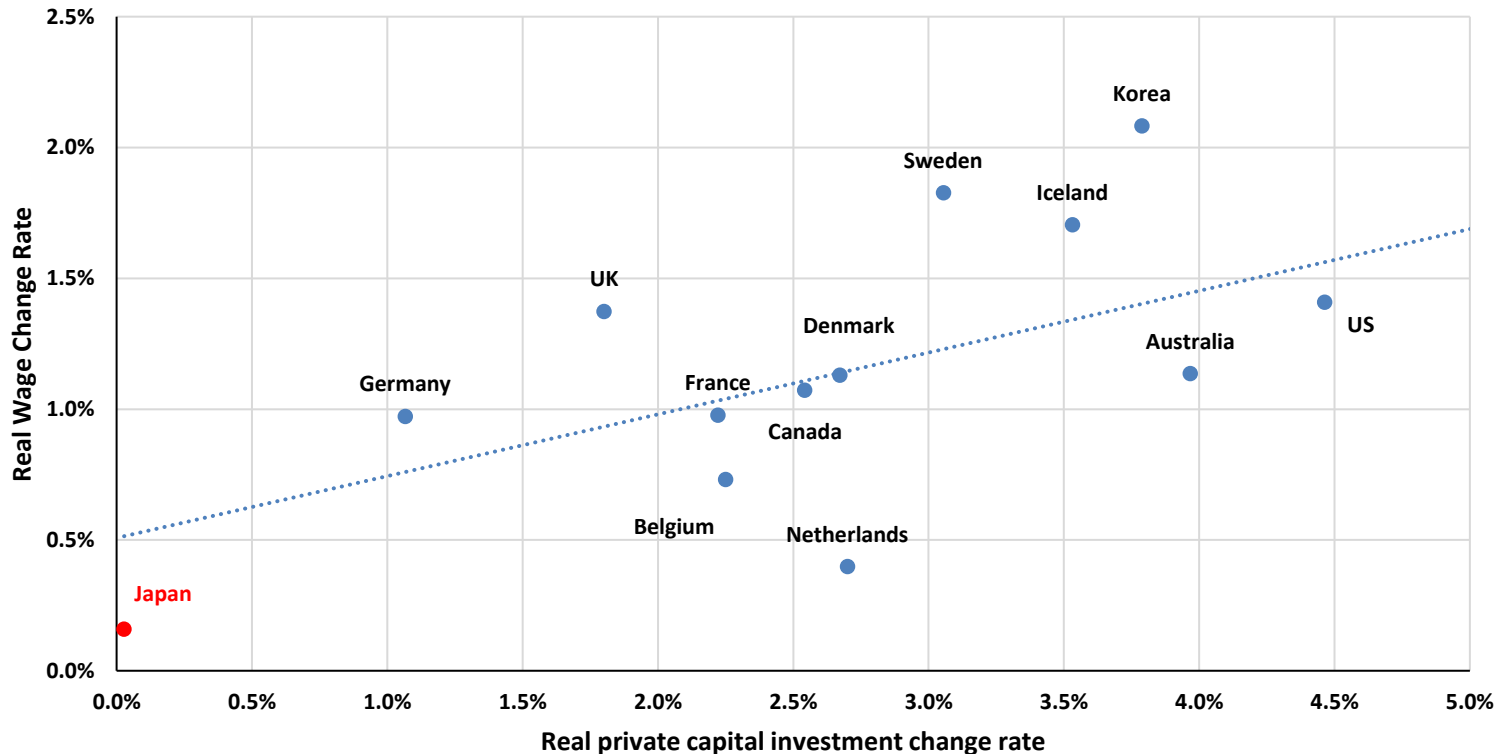
All figures above are based on simple averages

(Source) Compiled by METI based on survey data from Deloitte Tohmatsu LLC based on SPEEDA, company website information, etc.

Increased Domestic Investment Leads to Higher Wages

- Increased domestic investment leads to higher wages through higher labor productivity.
- In Japan, both capital investment and wages are rising at low rates.

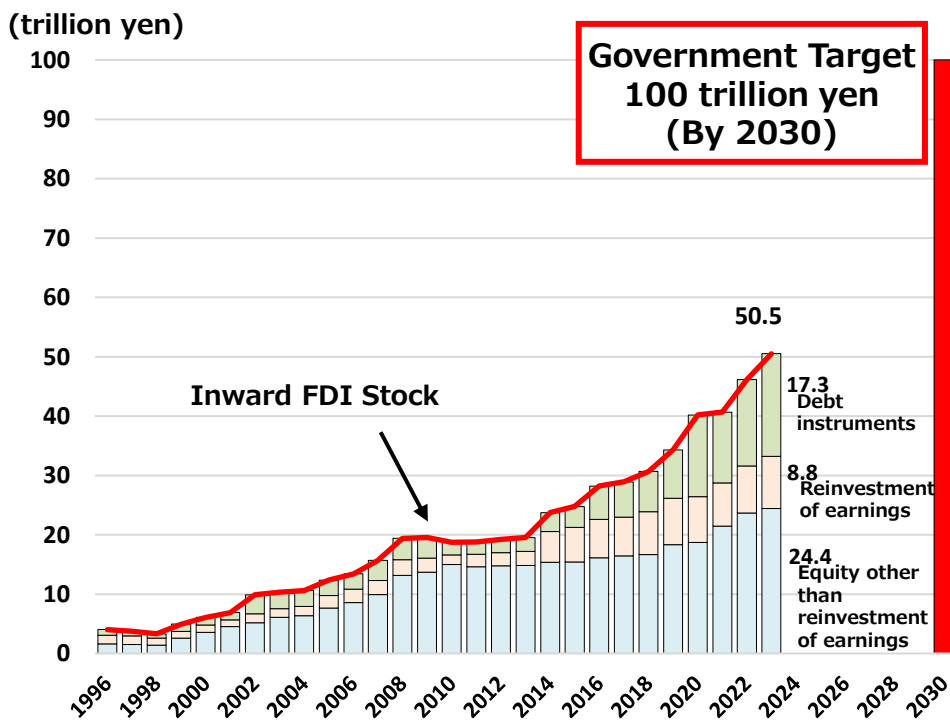
Correlation between wages and private capital investment
(1991-2021 average annual percentage change)



Current Status of Inward FDI in Japan

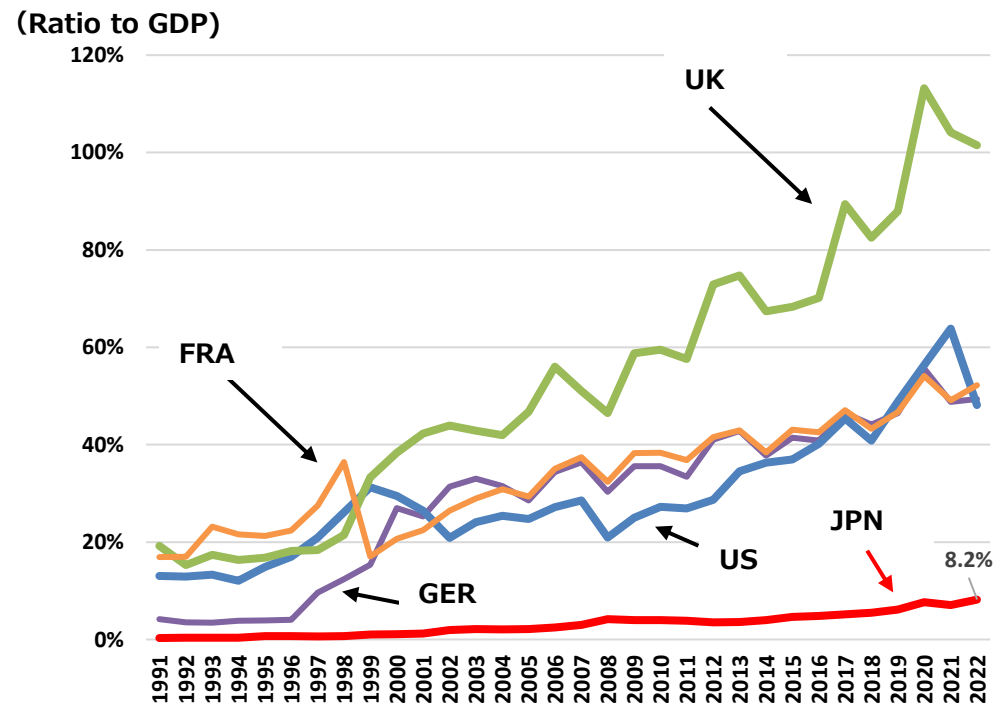
- Japan's inward FDI stock stood at 50.5 trillion yen as of the end of CY2023, which is a small percentage of GDP compared to other countries.
 - In order to **achieve the government's target of 100 trillion yen in 2030**, the **government is making concerted efforts**, including the steady implementation of the "Prioritized Policies Program for Attracting Foreign Direct Investment"*
- *Adopted by the Council for Promotion of Foreign Direct Investment in Japan in May 2024

Trends in Japan's Inward FDI Stock



(Source) Ministry of Finance, Bank of Japan

Ratio of Inward FDI Stock to GDP

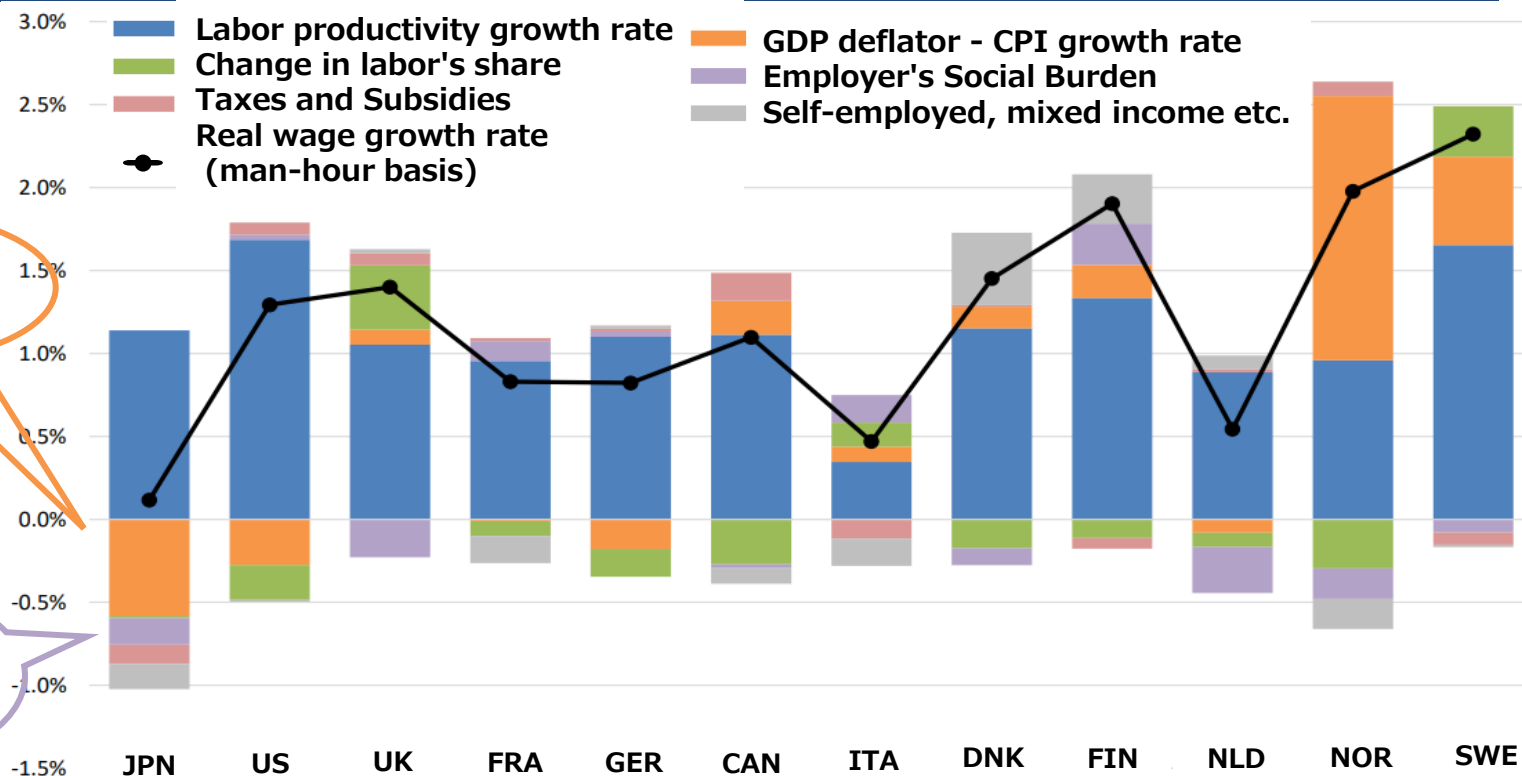


(Source) Gian Maria Milesi-Ferretti "The External Wealth of Nations Database" Brookings Institution

Factor Decomposition of Real Wage Growth (Man-Hour Basis)

- Although labor productivity rose as a positive factor, real wages in Japan grew almost zero due to deteriorating terms of trade and increased social security burdens on employers as negative factors.
- For sustained wage growth in the future, efforts to (1) increase labor productivity and (2) improve the terms of trade are necessary.

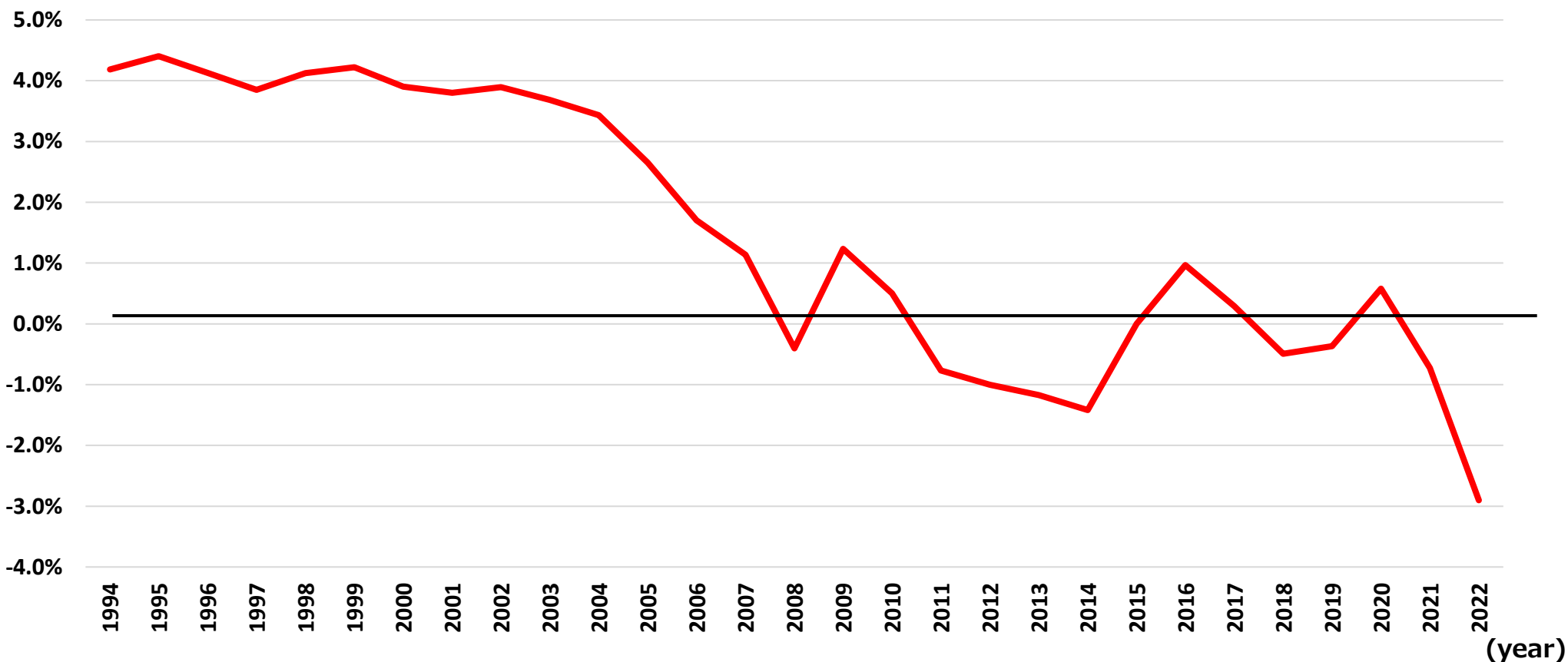
International Comparison of Factor Decomposition of Real Wage Growth
(26-year average from 1995 to 2021)



Trading gains & losses

- Trade gain/loss (= real gross domestic income - real gross domestic product) shows how much the inflow and outflow of income between Japan and overseas has changed compared to the base year due to changes in import and export prices (changes in terms of trade), the outflow of income accelerated in the first half of the 2000s and worsened significantly in the 2020s.

Changes in trading gains & losses / real GDP

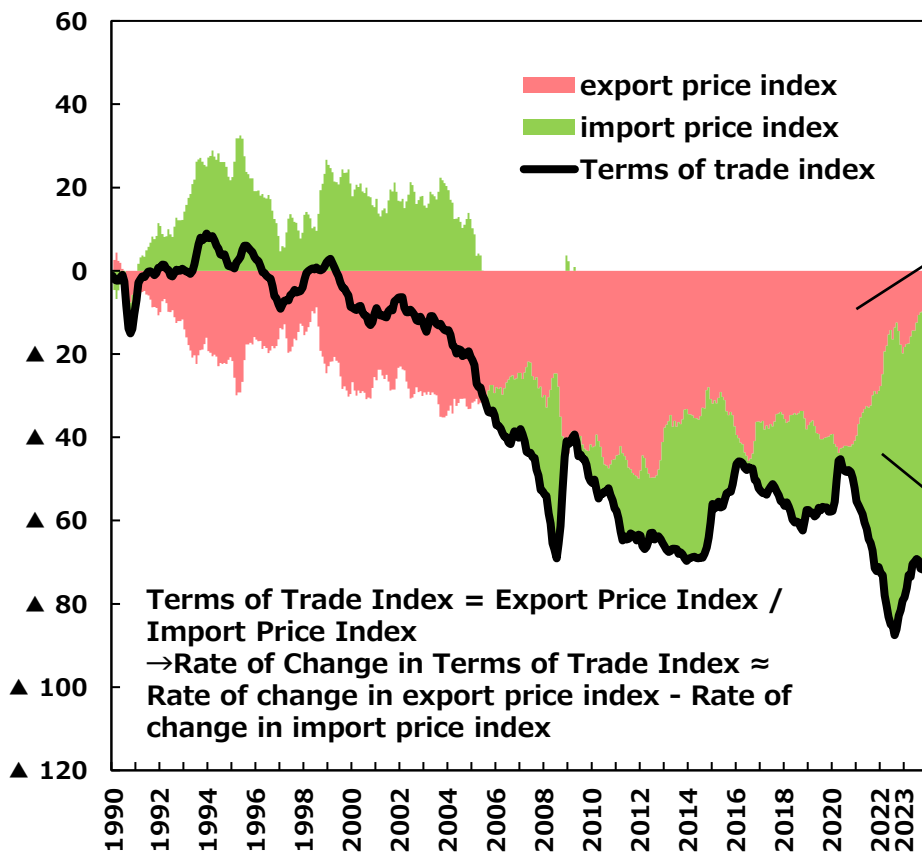


- A factor breakdown of the terms of trade index by category shows that **the majority of the decline in export prices was due to electrical and electronic equipment**, but electrical and electronic equipment also experienced a decline in import prices, indicating that this is **a highly price-competitive industry**. **The main source of the increase in import prices is mineral fuels**, the impact of which has been increasing in trend over the past decade.

*Note that the GDP deflator included imports and exports of services, but the price index does not include services.

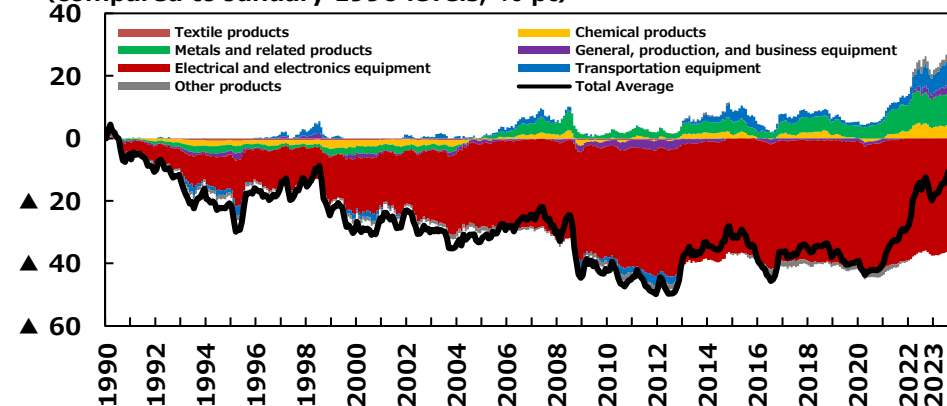
Factor Decomposition of the Terms of Trade Index

(compared to January 1990 levels, % pt)



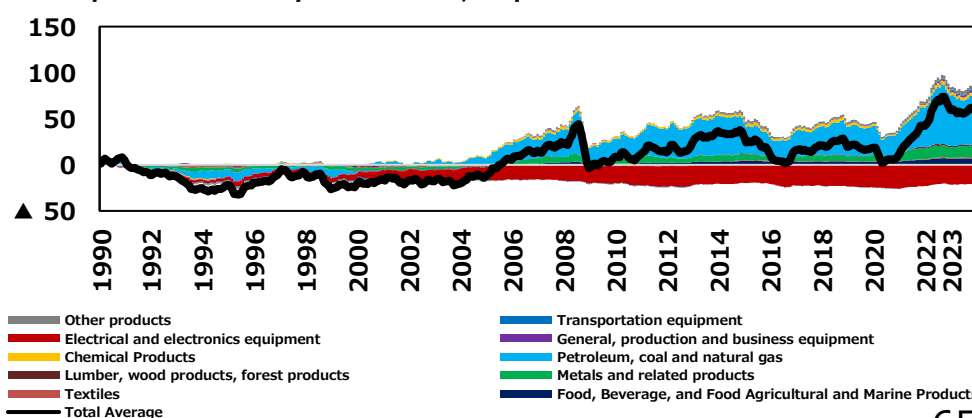
Factor Decomposition of Export Prices by category

(compared to January 1990 levels, % pt)



Factor Decomposition of Import Prices by category

(compared to January 1990 levels, % pt)

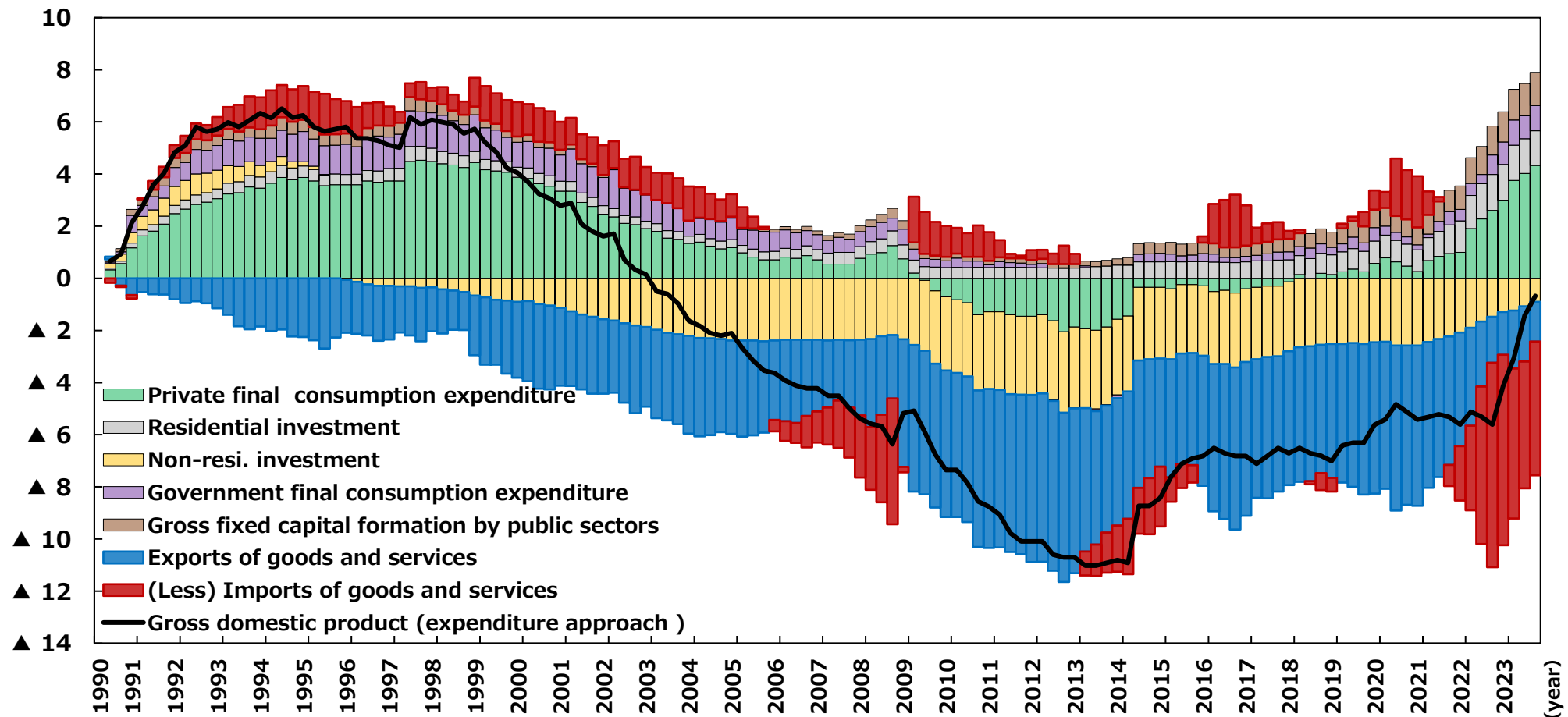


Decomposition of fluctuation factors of GDP deflator by demand item

- If we break down the contribution of changes in the GDP deflator, which is an indicator of price fluctuations, by demand item, we can see that in addition to the trending decline in the export deflator, there has been an increase in trade due to the rise in the import deflator since the 2000s (contributing negatively to the overall total). The deterioration of conditions has pushed down the GDP deflator significantly.

(Comparison with the level for January - March 1990, %pt)

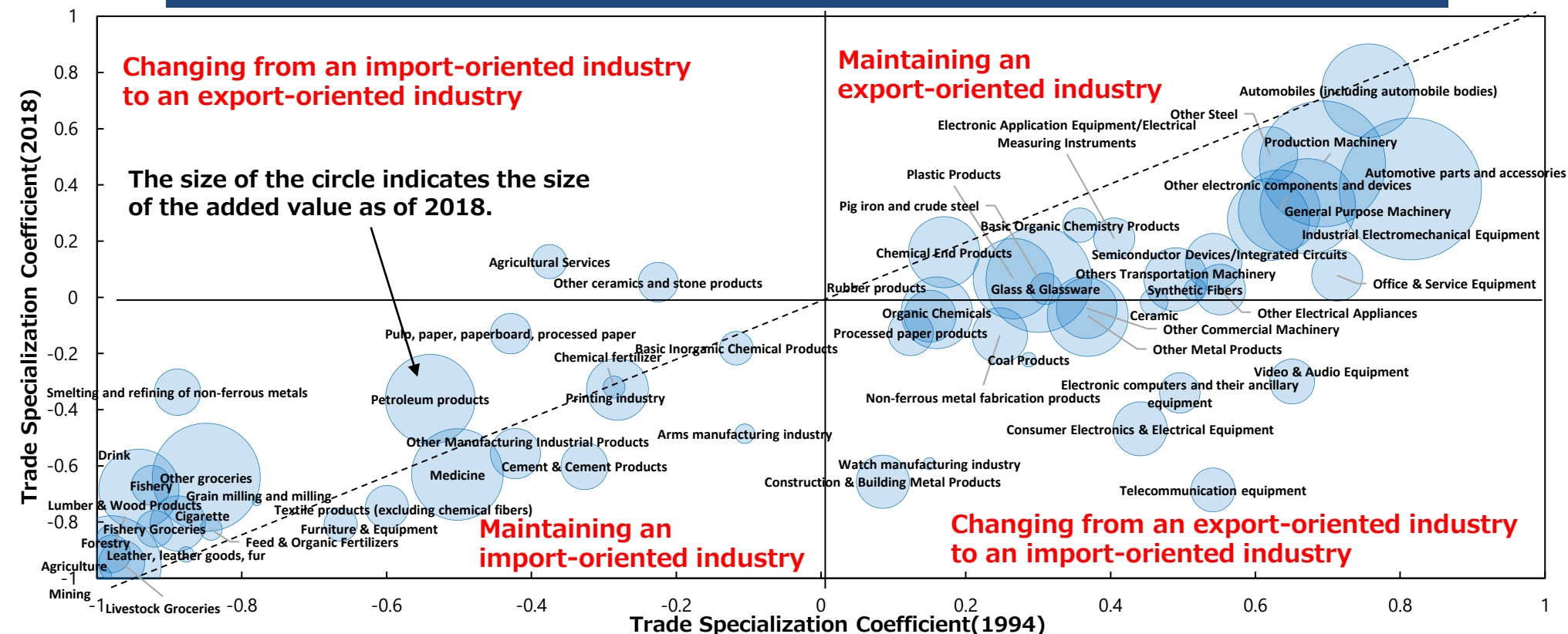
Decomposition of fluctuation factors of GDP deflator by demand item



(Source) Created based on the Cabinet Office's "National Accounts."

- The trade specialization coefficient indicates that the closer it is to -1, the less competitive an industry is, and the closer it is to 1, the more it is specialized in exports and competitive.
- Transportation machinery, general-purpose/production/industrial machinery, and steel have remained export-oriented industries, and the added value produced domestically is also large. Electrical machinery and information and communication equipment used to be export-oriented industries, but now they have changed to import-oriented industries, while electronic parts and devices continue to be export-oriented industries.

Changes in Trade Specialization Coefficient by Industry (1994→2018)

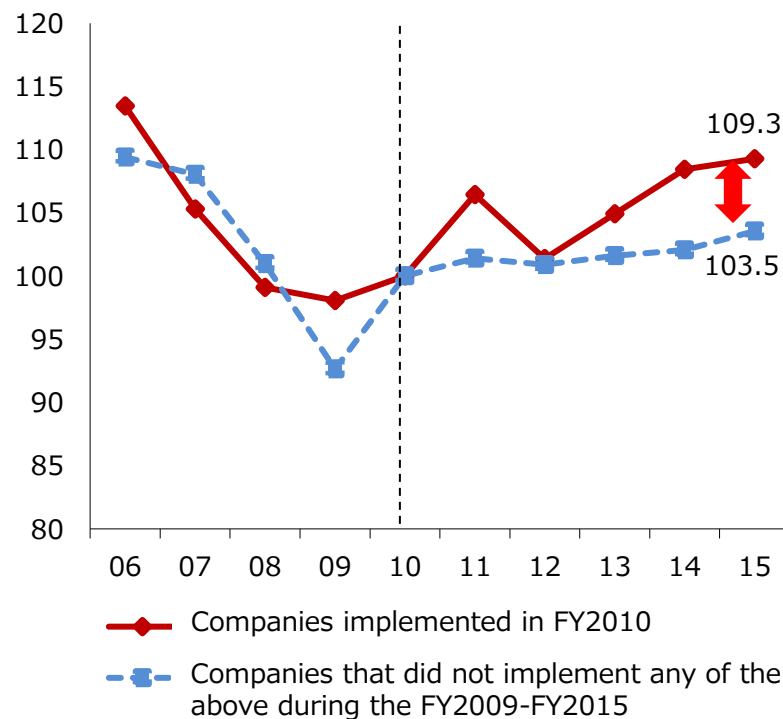


(Note) Trade specialization coefficient = (export value - import value) / (export value + import value)

(Source) Research Institute of Economy, Trade and Industry " JIP Database 2021 "

- It is important for Leading Medium Enterprises with strong management capabilities to conduct M&A of SMEs, so that firms with excellent management know-how can consolidate their management resources and improve their own growth as well as the profitability and wages of the merged & acquired firms.
- Particularly **for Local companies, sales growth is remarkable in proportion to the number of M&As and is an effective means of growth.**

Labor productivity of M&A-implementing and non-implementing enterprises

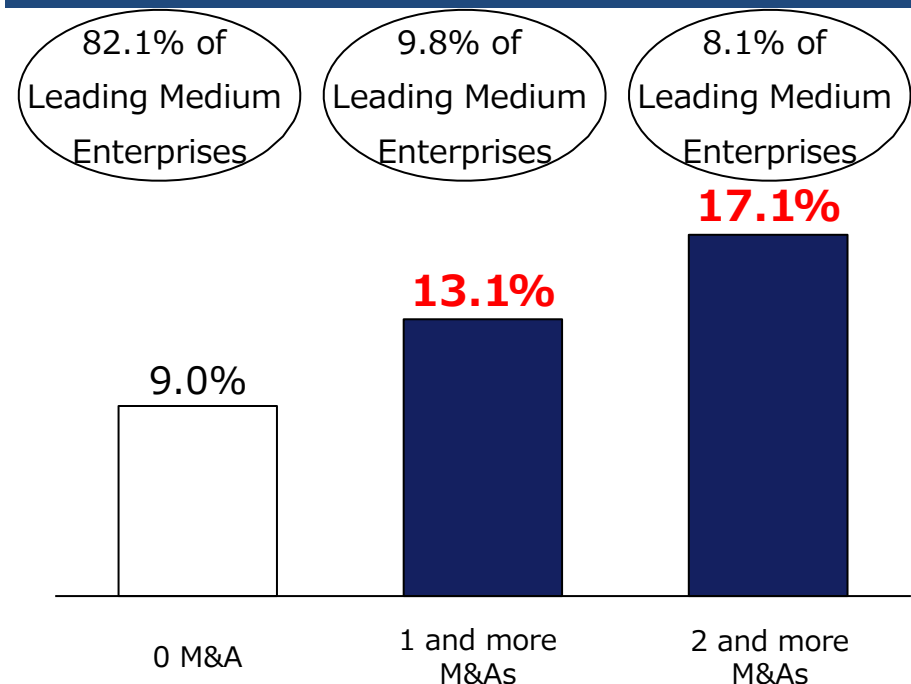


(Note) Indexed as FY2010=100

(Source) Ministry of Economy, Trade and Industry, "Basic Survey on Business Activities" (FY2007-FY2016 survey), rearranged and processed.

Survey targets: Industries with 50 or more employees and capital of 30 million yen or more, mainly under the jurisdiction of METI.

Number of M&As in Local Leading Medium Enterprises and Average sales growth rate over the past 10 years



*1 Leading Medium Enterprises: companies with 2,000 or fewer employees (excluding small and medium-sized enterprises under the Small and Medium Enterprise Basic Act)*2 Number of M&As is the number of acquisitions (made into subsidiaries) made from FY2011 to FY2020*3 Sales growth rate is the rate of change in sales in FY2021 compared to FY 2011.

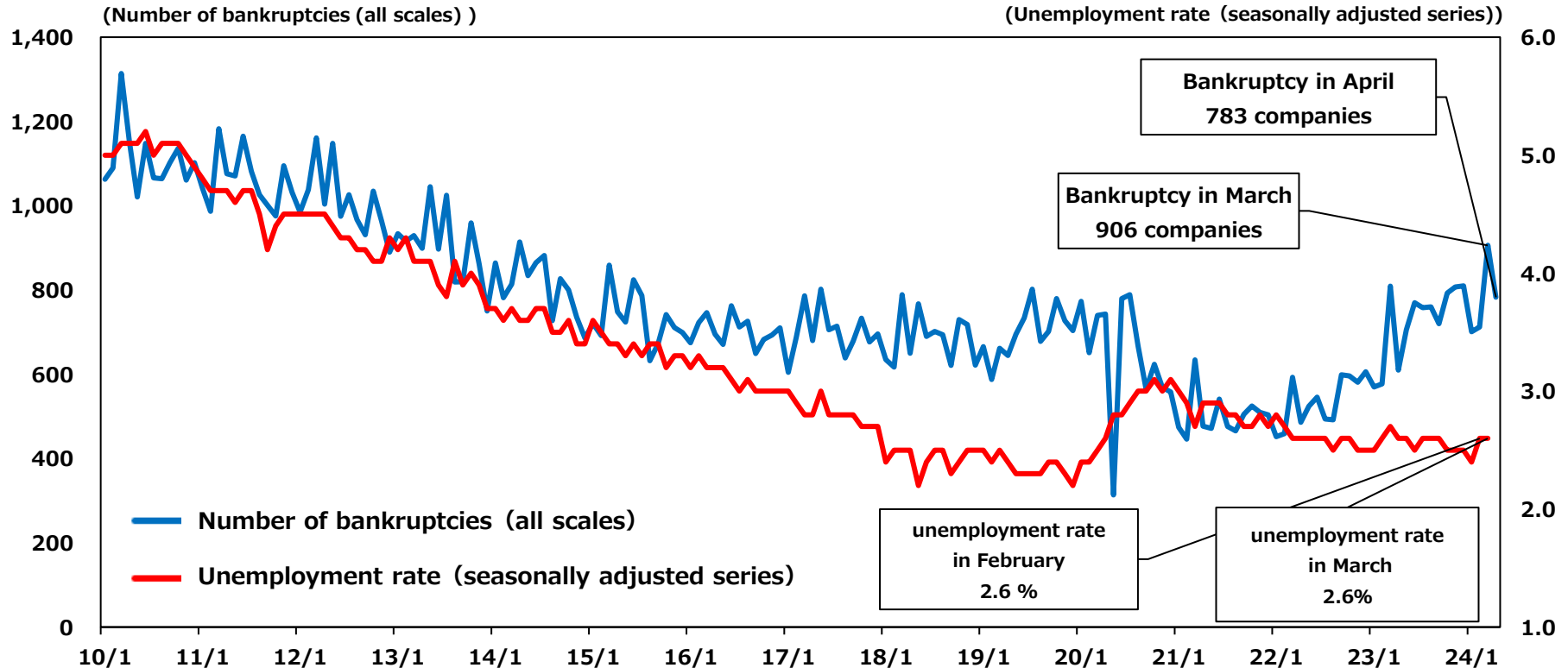
(Source: Ministry of Economy, Trade and Industry, "Basic Survey of Business Activities" (survey conducted from FY2012 to FY2022), rearranged and processed. Survey targets: Industries with 50 or more employees and capital of 30 million yen or more, mainly under the jurisdiction of METI.

Challenges

Changes in the number of bankruptcies and the unemployment rate

- From 2017 to 2019 and in 2023, the unemployment rate declined and remained at a low level without a decrease in the number of bankruptcies.
- The number of bankruptcies is currently increasing, the unemployment rate remains at a low level as labor shortages make more use of the workforce.

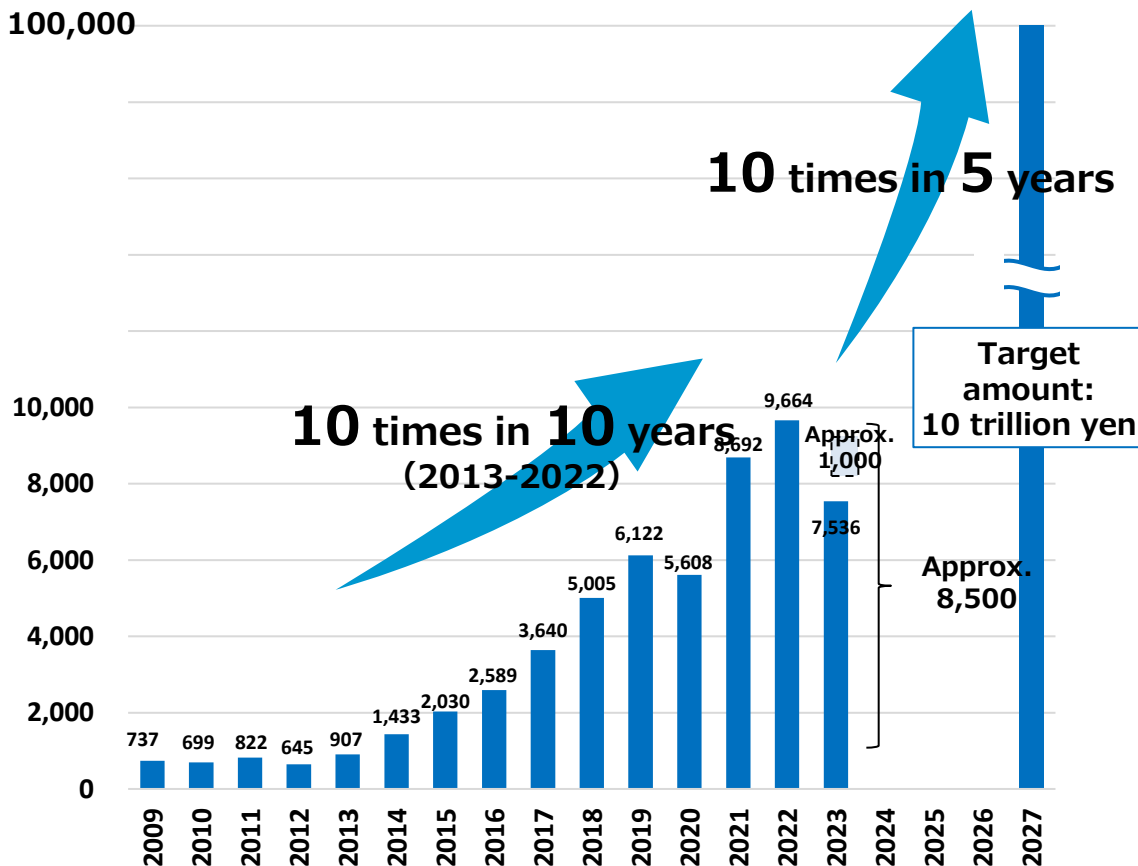
Trends in bankruptcies and unemployment rate



- The amount of funding for domestic startups **increased steadily** until 2022. Due to the increasingly severe global funding situation, the amount raised in 2023 decreased to 753.6 billion yen from the previous fiscal year.

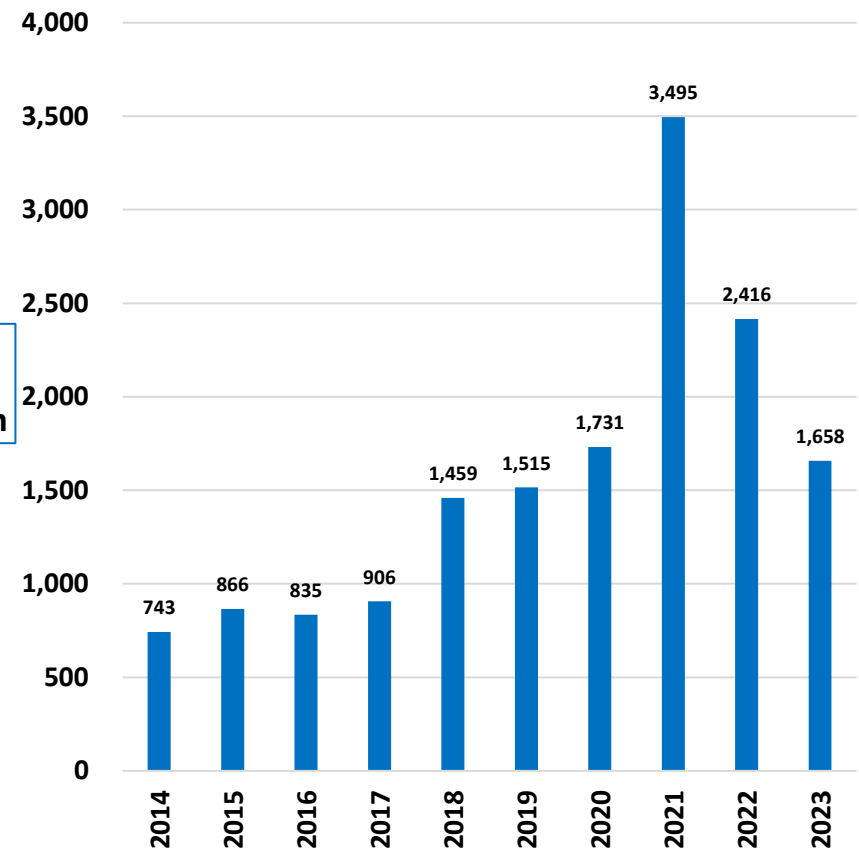
Trends in the amount of funding by domestic startups

(100 million yen)
100,000



Trends in investment in Startups by US VCs

(100 million dollars)



(Note) The values for each year are those observed up to the time of aggregation.

(Source) Left: INITIAL, "2023 Japan Startup Funding Trends in Japan" (as of January 23, 2024)

Right: PitchBook-NVCA Venture Monitor (as of March 31, 2024)

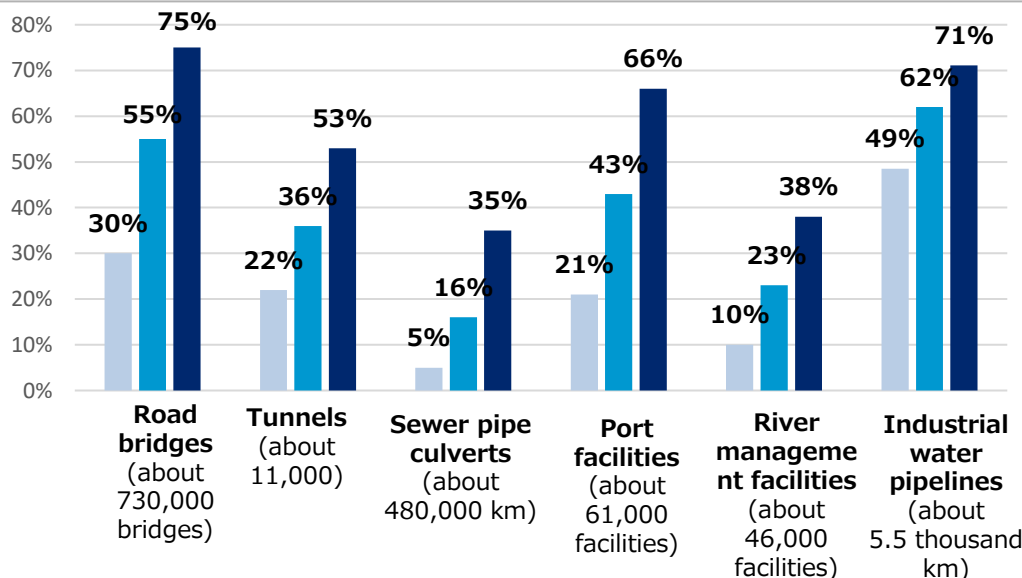
Aging infrastructure

- Infrastructure such as road bridges, tunnels, industrial water supply, and power transmission and distribution facilities that were built after the period of rapid economic growth will account for an **increasing proportion of facilities that are more than 40-50 years old from the time of construction**. As they continue to become older, the need for reconstruction and large-scale repair will increase.

Percentage of old infrastructure

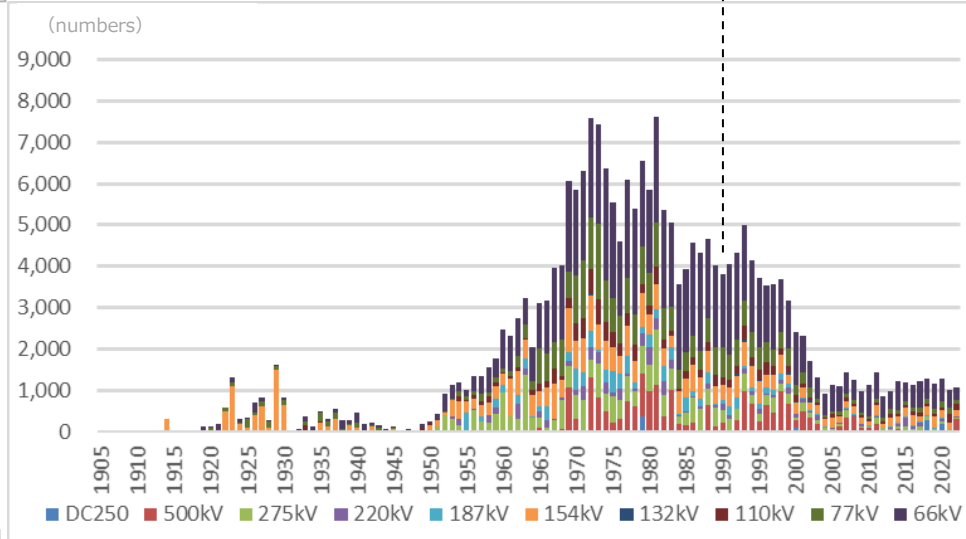
Road bridges, tunnels, river management facilities, sewerage pipelines, port facilities, industrial water pipelines

March2020 March2030 March2040
March2023 March2033



Breakdown of transmission towers in Japan by year of construction

Transmission towers that will be more than 50 years old as of 2040



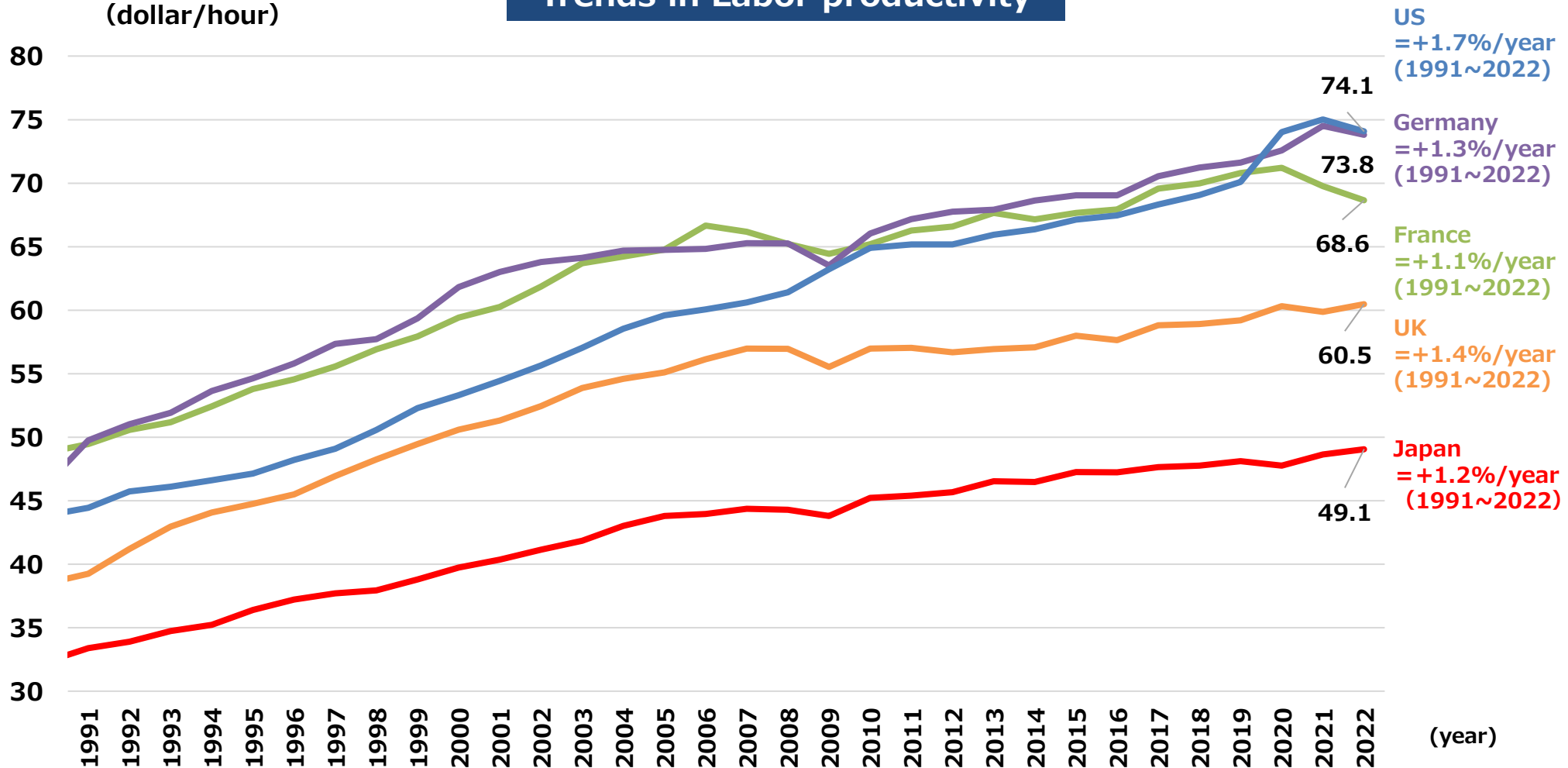
(Note) Left: Road bridges, tunnels, river management facilities, sewerage pipes and culverts, and port and harbor facilities are calculated for 50 years after construction. The percentage of facilities that are more than 50 years old is calculated excluding those of unknown construction year. Road bridges are those with a bridge length of 2 m or longer. Port facilities include water area facilities, outer facilities, mooring facilities, and waterfront transportation facilities. Industrial water is calculated for facilities with a statutory service life of more than 40 years. The total length of pipelines as of March 31, 2023, and the length of pipelines that have passed their legal service life by 30 years were calculated for the 163 projects that responded to the survey. Right: Breakdown of transmission towers as of the end of FY2022.

(Source) Left: Created based on the Ministry of Land, Infrastructure, Transport and Tourism's "White Paper on Land, Infrastructure, Transport and Tourism 2022" and a questionnaire survey of industrial water supply companies (December 2023). Right: data compiled by the Electric Power Transmission and Distribution Network Council.

- As in other countries, Japan's labor productivity has grown at an annual rate of more than 1%.

Labor productivity per hour
(dollar/hour)

Trends in Labor productivity



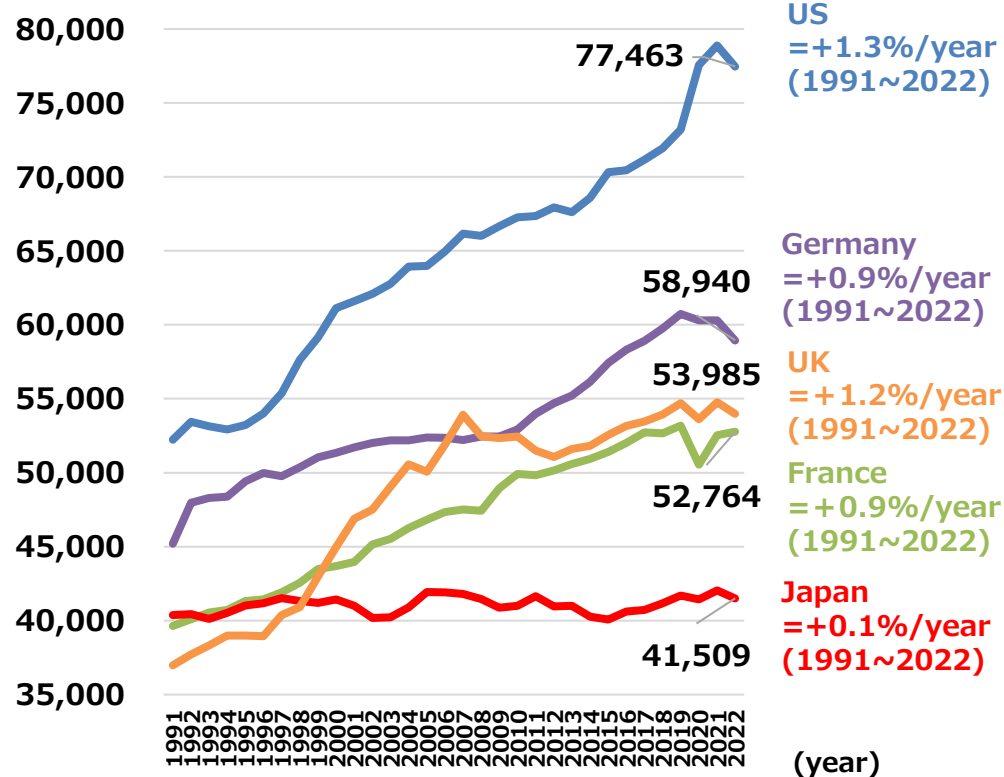
(note) GDP realized in 2015 U.S. dollars (purchasing power parity basis) divided by total hours worked (number of workers x average hours worked per year).

(Source) OECD.stat

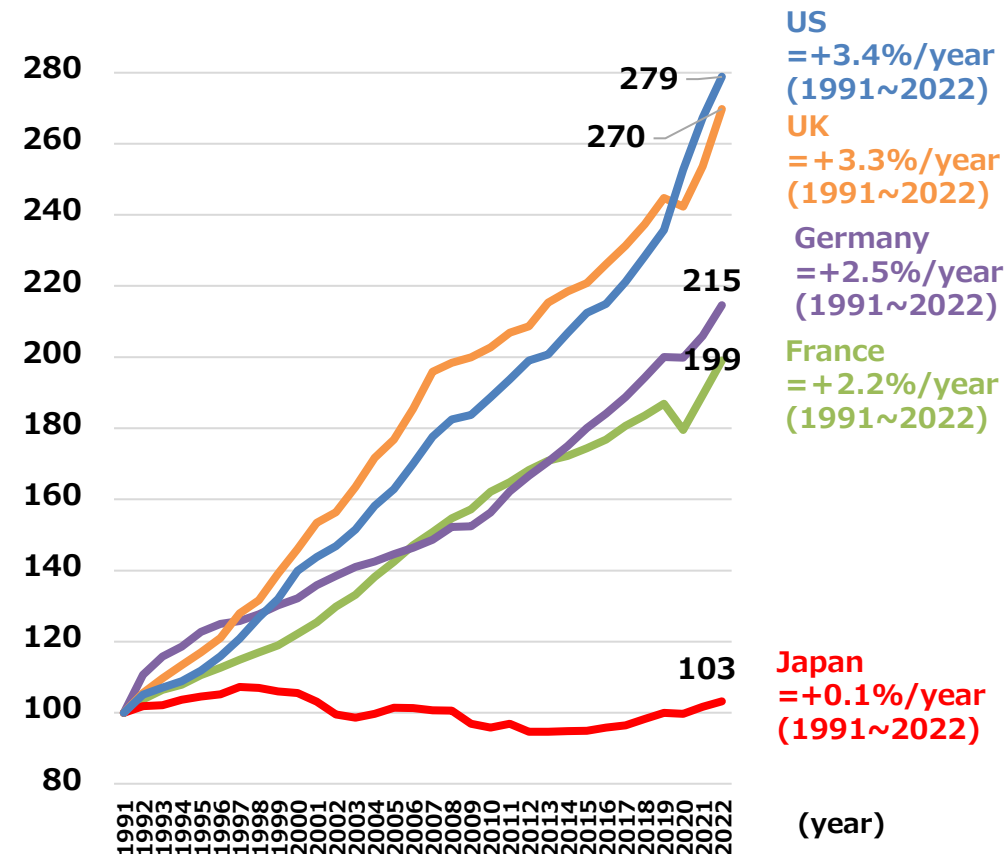
- Real wages have been flat for the past 30 years.
- Nominal wages have also remained flat for the past 30 years. On the other hand, the Cabinet Office's "Economic and Fiscal Projections for Medium to Long Term Analysis" projects **nominal wage growth of 2.4% to 2.5% in 2023 and 2024** under both the Economic Growth Achieved case and the Baseline case, which is **on par with growth rates in major developed countries over the past 30 years.**

Trends in real wages (absolute values)

Real wages per capita (\$)



Trends in nominal wages (1991 = 100)



(note) Left: Realized value in U.S. dollars (purchasing power parity) in 2022.

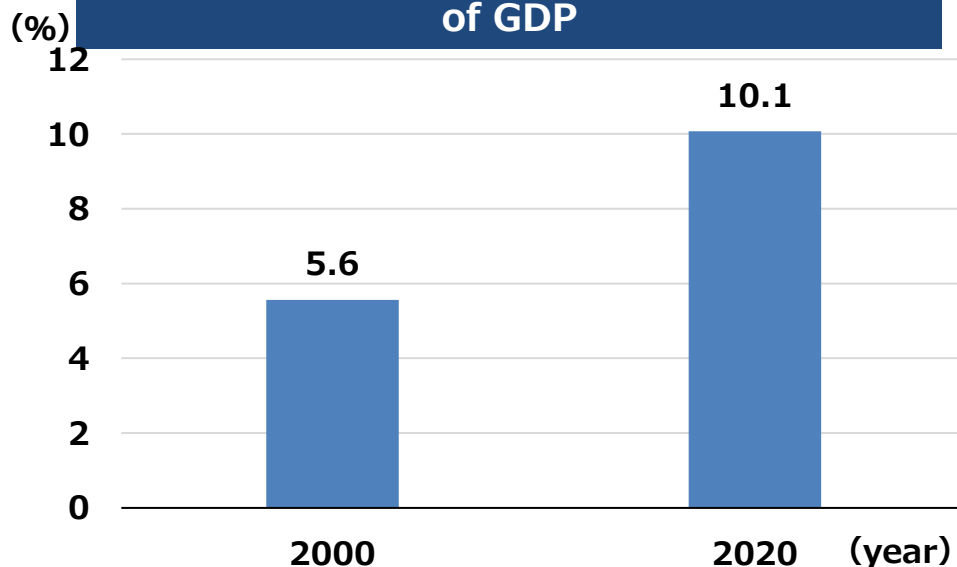
Right: Nominal wages (in local currency) for each country, indexed with 1991 as 100.

(Source) OECD.stat, Cabinet Office

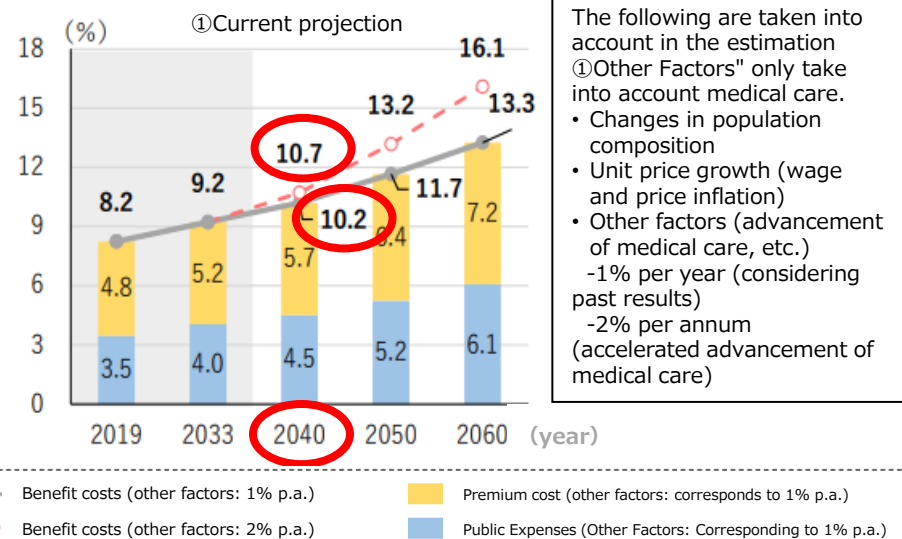
Trends and Future Estimates of Social Security Benefits

- The ratio of medical and long-term care benefit costs to GDP increased from 5.6% in 2000 to 10.1% in 2020.
- **According to the Cabinet Office**, this is expected to continue to increase over the next 20 years, but at a slower pace than over the past two decades.

Changes in Social security benefits (medical and long-term care only) as % of GDP



Future projection of social security benefits (medical and long-term care only) as a percentage of GDP



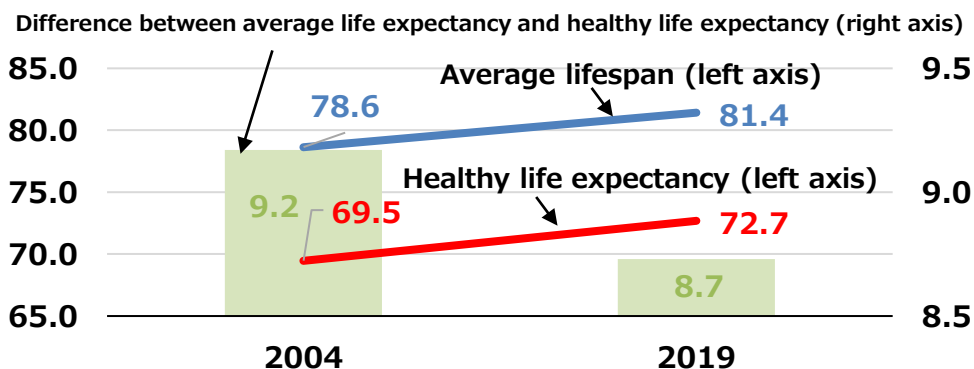
(Note) that the scope of benefits covered by the left chart (Social Security Cost Statistics) and the right chart (estimates by the Cabinet Office) differ. In addition, the economic assumptions in the right chart are based on the current projected scenario (TFP rising at 0.5%, labor participation increasing to a certain degree until FY2045, and fertility rate rising to about 1.36). Estimated results are based on the Ministry of Health, Labour and Welfare's "Basic Data on Medical Insurance," "Survey of Nursing Care Benefit Expenses," and the National Institute of Social Security and Human Population Research's "Social Security Cost Statistics," etc. FY 2019 is actual. After that, growth in medical expenses per capita per age group: 0.5 x consumer price inflation rate + 0.5 x wage inflation rate + other factors; growth in nursing care expenses per capita: 0.35 x consumer price inflation rate + 0.65 x wage inflation rate. For the rate of increase in wages after the extension of the medium-term estimates, the growth rate of nominal GDP per worker is used. Benefits include insurance benefits and do not include public benefits such as medical and nursing care assistance and local government benefits. The public expense burden is calculated using the burden rate of each system in effect, and the insurance premium burden is calculated as the residual. (*For details of the calculations and methods, please refer to the Cabinet Office.)

(Source) "Statistics on Social Security Expenses," National Institute of Population and Social Security Research, left; "Document 5, Third Meeting of the Council on Economic and Fiscal Policy, 2024," Cabinet Office, right.

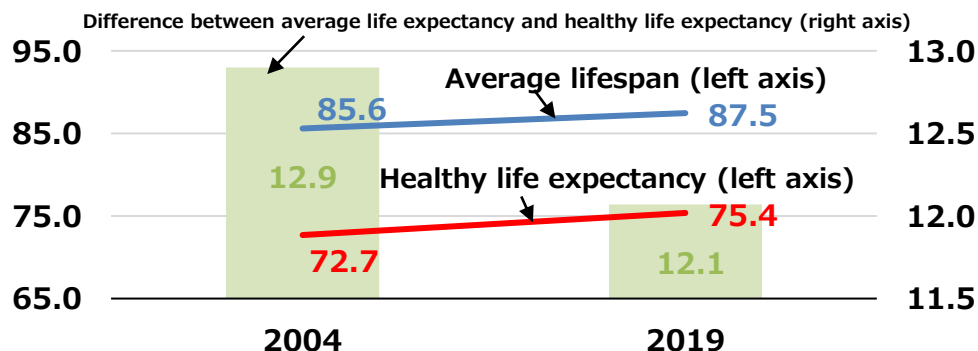
Working in old age

- Over the past 15 years, both average life expectancy and healthy life expectancy have increased, and the gap between average life expectancy and healthy life expectancy has remained flat or slightly decreased.
- According to a public opinion poll, 42.6 % of people aged 66 and over said they wanted to work (had a job), an increase of 5 points from 37.6 % in the previous survey (FY2018).

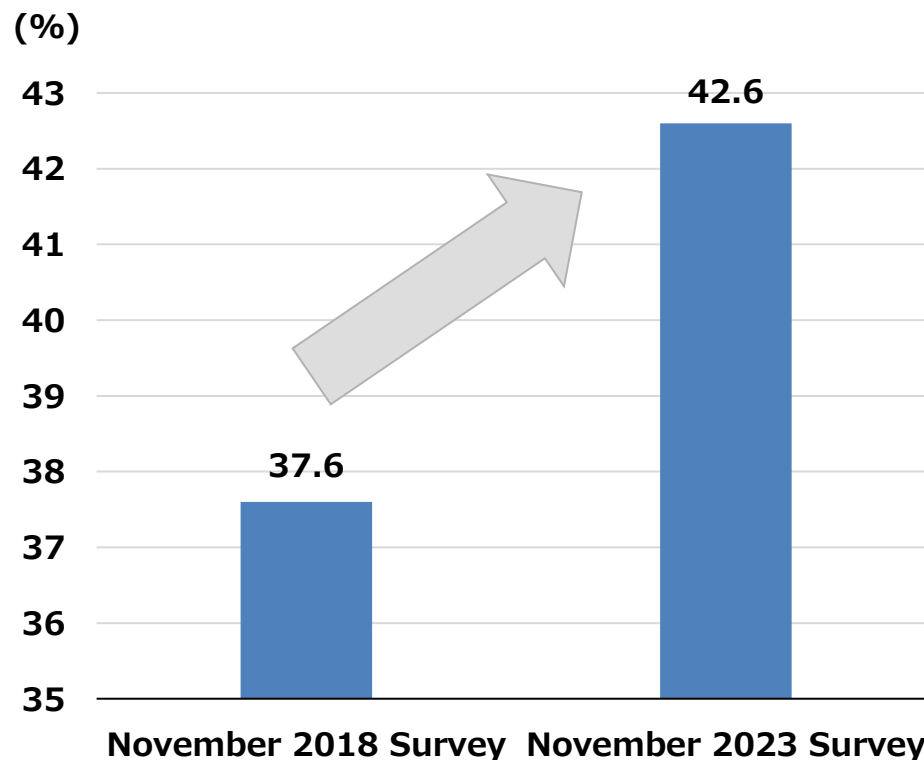
Trends in average life expectancy and healthy life expectancy (men)



Trends in average life expectancy and healthy life expectancy (women)



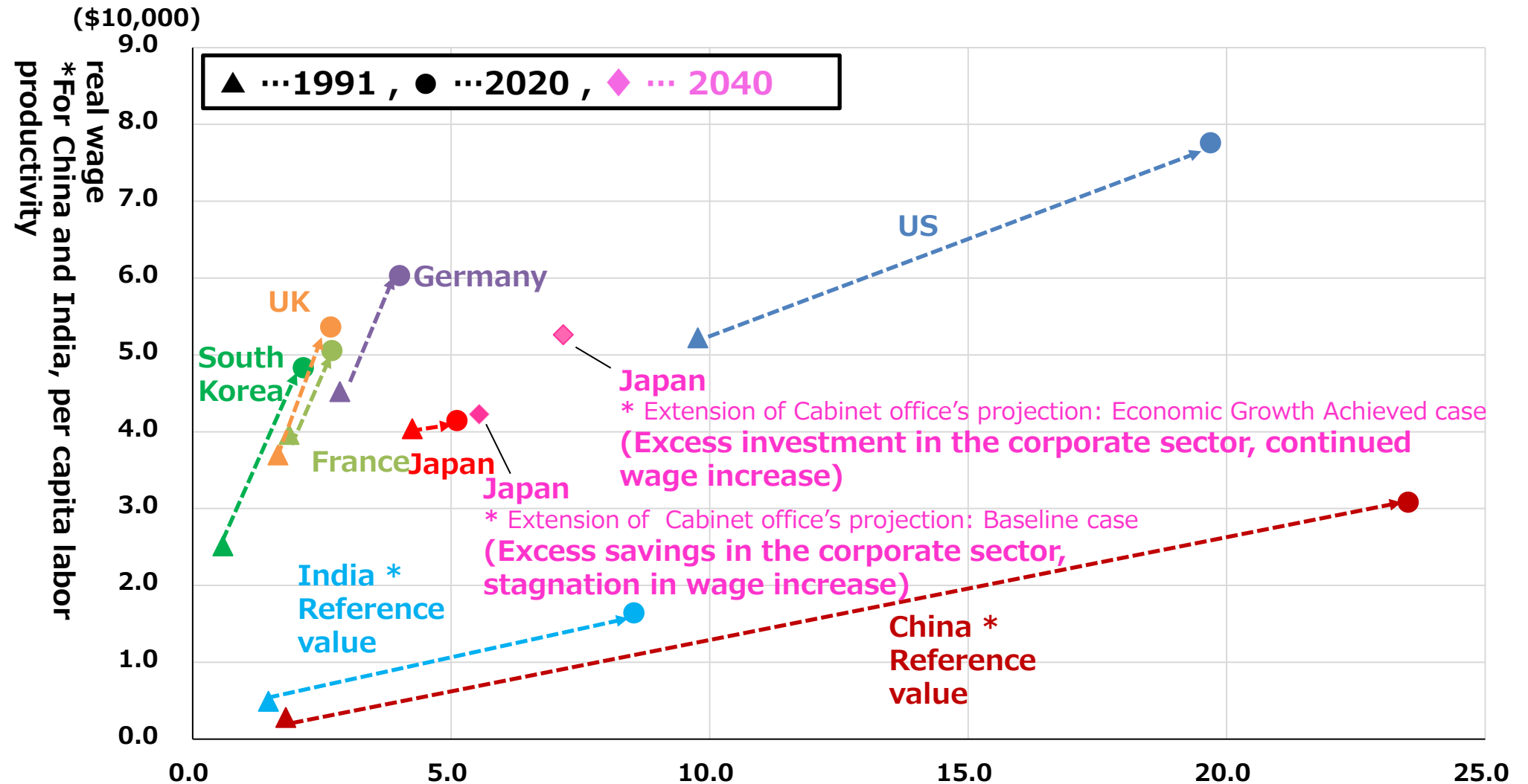
Percentage of people who want to work after age 66 (opinion poll)



(Note) Right: The November 2018 survey was conducted by individual interviews by surveyors, while the November 2023 survey was conducted by mail.

(Source) Left: "Simple Life Chart," Ministry of Health, Labour and Welfare; "Data from the 16th Expert Committee on the Promotion of Healthy Japan 21 (Second Stage)," Ministry of Health, Labour and Welfare; Right: "Public Opinion Survey on Lifestyle Planning and Pensions," Cabinet Office

Real GDP and real wages in each economy



(Note) Vertical axis: Average wage in real terms in 2022 US dollars (purchasing power parity basis)

Horizontal axis: GDP in real terms in 2015 US dollars (purchasing power parity basis)

* As real wages are not listed in OECD.stat for China and India , per capita labor productivity was used as a reference value. Per capita labor productivity is expressed in 2015 US dollars (purchasing power parity basis).

Real GDP is divided by the labor force population (World Bank).

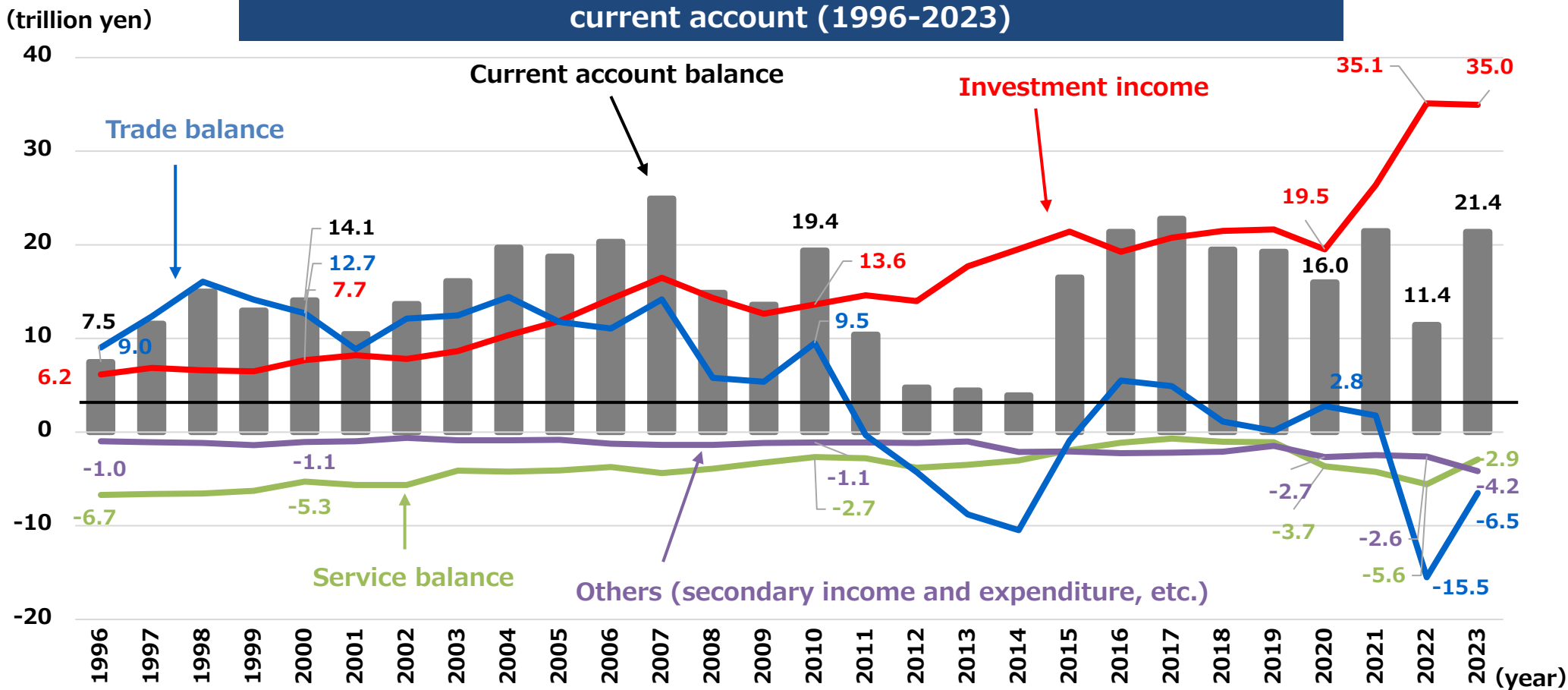
* METI estimated Japan's real GDP and real wages in 2040 are calculated using the real GDP growth rate, wage increase rate (consumer prices) , and price increase rate for 2033 from the Cabinet Office's "Economic and Fiscal Projections for Medium to Long Term Analysis".

(Source) OECD.stat , World Bank, Cabinet Office

Breakdown of Japan's Current Account Balance

- Japan has transitioned from a domestic production and export economy to an overseas expansion through FDI economy. As a result, trade balance surplus has been shrunk and the current account surplus is currently supported by investment income.

Trends in Balance of trade and services, investment income, and current account (1996-2023)



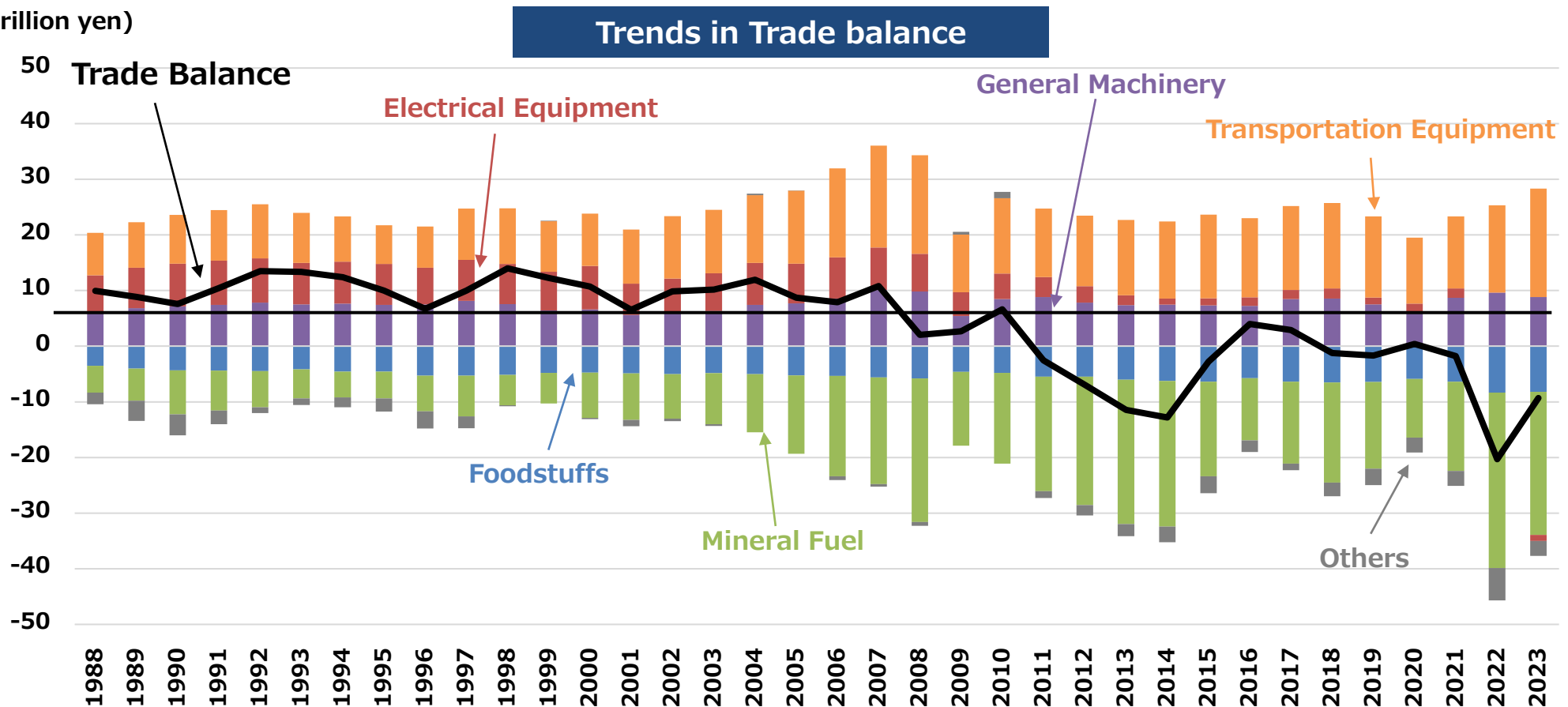
(Note) "Investment income" is included in the primary income and corresponds to the sum of direct investment income + portfolio investment income + other investment income.

(Source) Ministry of Finance 33

Trends in Trade Balance

- **The trade balance** has been **trending towards a deficit in recent years**. Exports are driven by transportation equipment such as **automobiles** and general machinery such as **semiconductor manufacturing equipment**, but mineral fuels such as **oil, coal, and natural gas**, which are susceptible to fluctuations in resource prices, foodstuffs, and electrical equipment, are in the red.

(trillion yen)



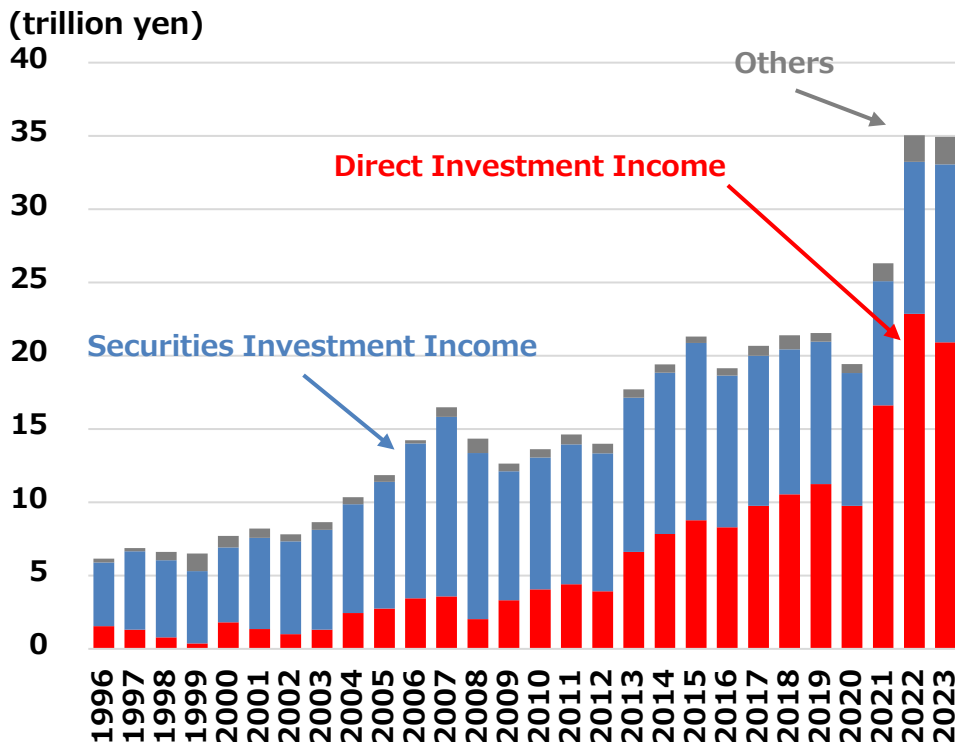
(Note) Trade balance by major products. Other is the total of "Raw materials," "Chemical products," "Products by raw material," and "Others."

(Source) Ministry of Finance "Trade Statistics"

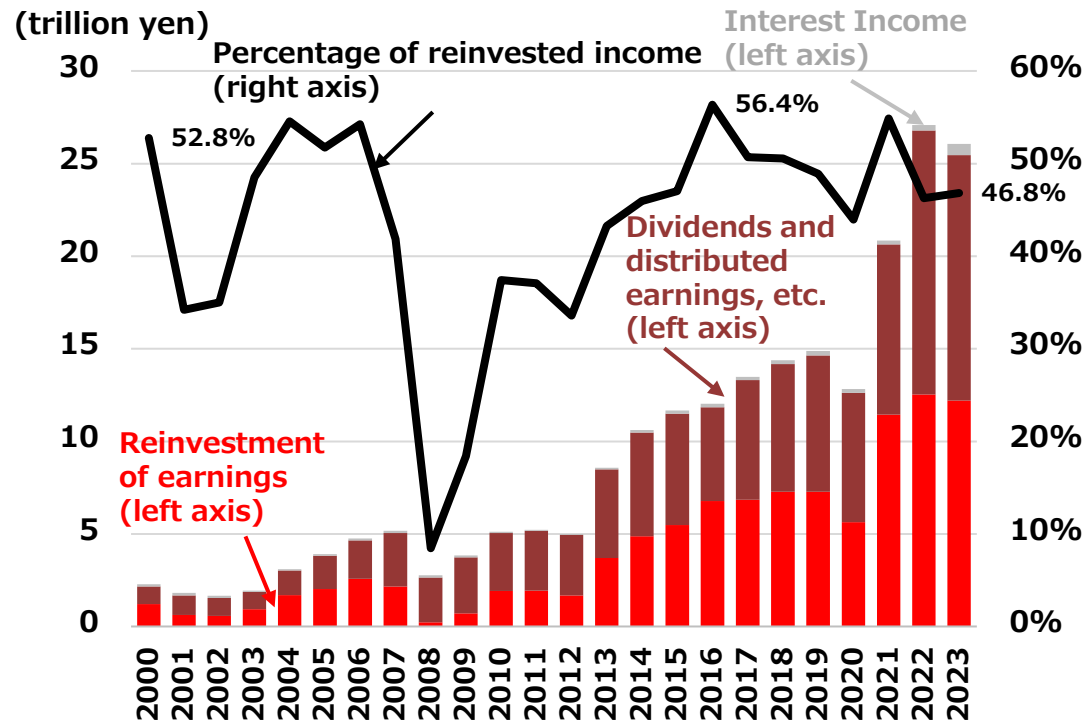
Primary income balance

- Japan's primary income balance has been on an **increasing trend mainly due to direct investment income**. On the other hand, about **half** of the direct investment income is **reinvested overseas and not returned to Japan**.

Changes in primary income balance



Percentage of reinvested income in direct investment income

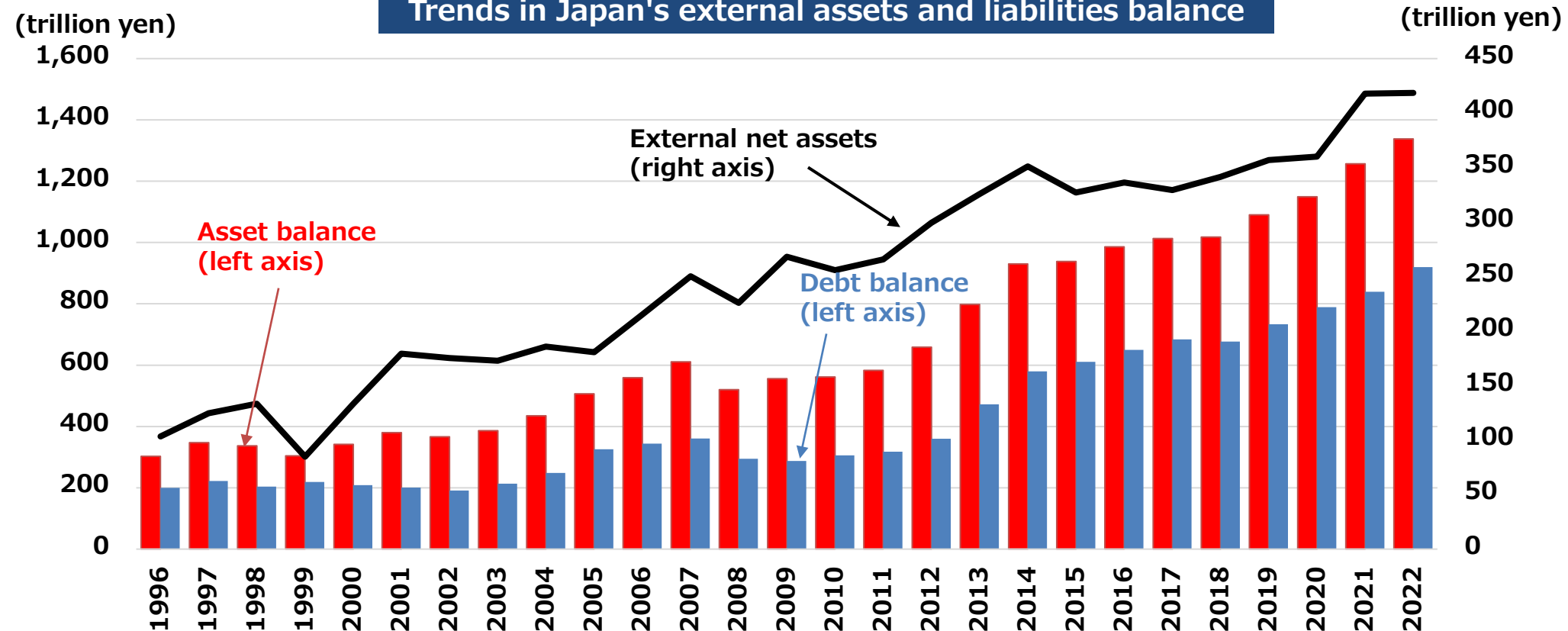


(Note) Left: Using the "net" frame. The other figures are the sum of "employee compensation," "other investment income," and "other primary income."
 Right: Reinvestment income, dividends and dividend branch income, and interest income are all used in the amount of "received".
 (Source) Bank of Japan "Balance of Payments Statistics"

Changes in Japan's Net External Assets and Liabilities

- **The external net asset balance, which is calculated by subtracting liabilities from foreign assets owned** by Japanese companies, individuals, and the government, has increased by 720.4 billion yen from the previous year to 418 trillion yen, **increasing for five consecutive years**, making **Japan the world's largest external net asset for the 32nd consecutive year**.

Trends in Japan's external assets and liabilities balance



(Note) Asset balance refers to assets held by residents of Japan to non-residents that can be valued in monetary value and can be requested for performance by payment of money. Outstanding debt refers to the debt that a resident of Japan has to a non-resident that can be valued in monetary value and can be fulfilled by payment of money.

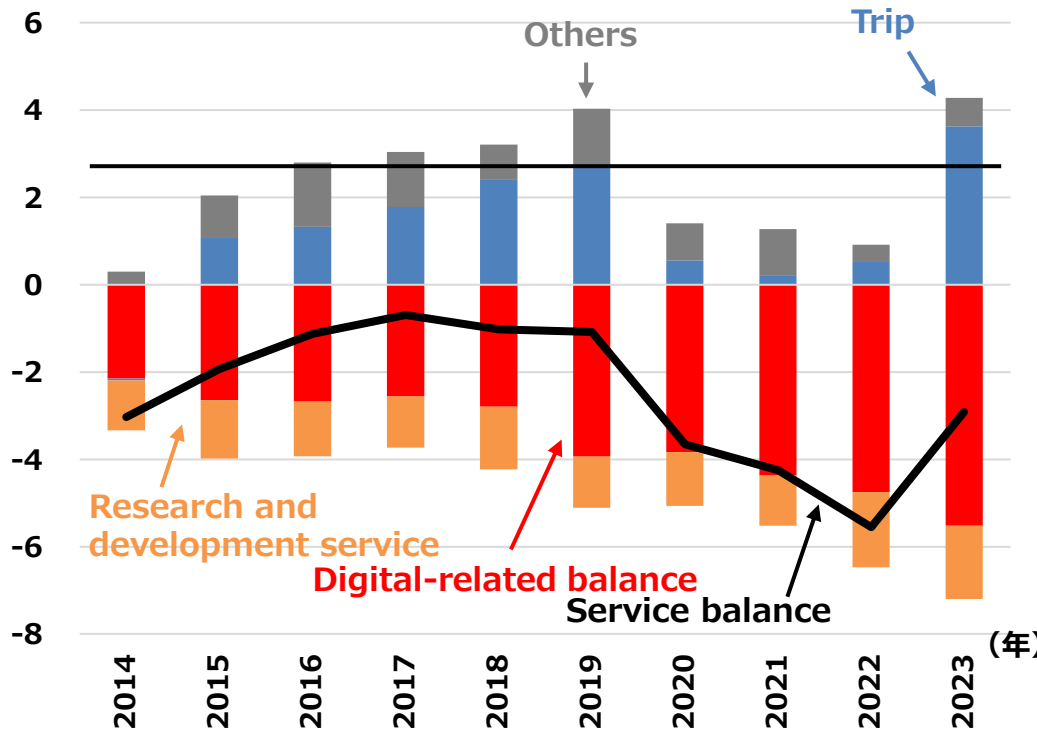
(Source) Ministry of Finance "Japan's External Assets and Liabilities"

Trends in Japan's service balance and international comparison

- Regarding the services balance, although the travel balance is currently increasing due to inbound tourism, the overall deficit is high compared to other countries due to the large deficit in digital-related fields.

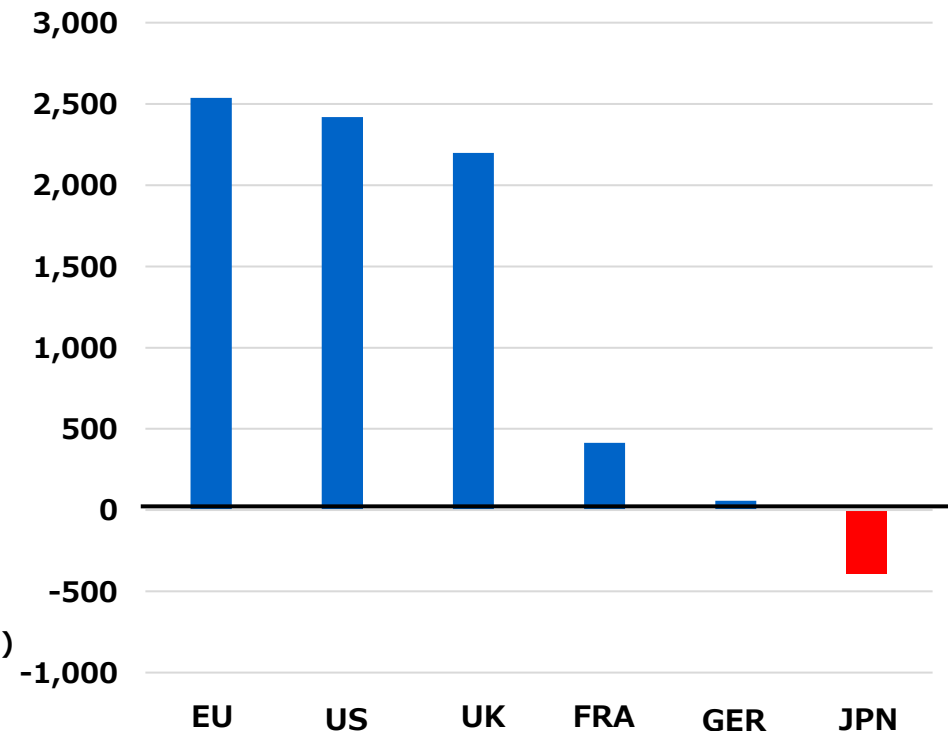
Trends in Japan's service balance

(trillion yen)



International comparison of service balance(2021)

(100 million dollars)



(Note) Digital-related balances are calculated as the sum of telecommunications, computer and information services, professional and management consulting services, and royalties such as copyrights, based on the classification of the Bank of Japan Review.

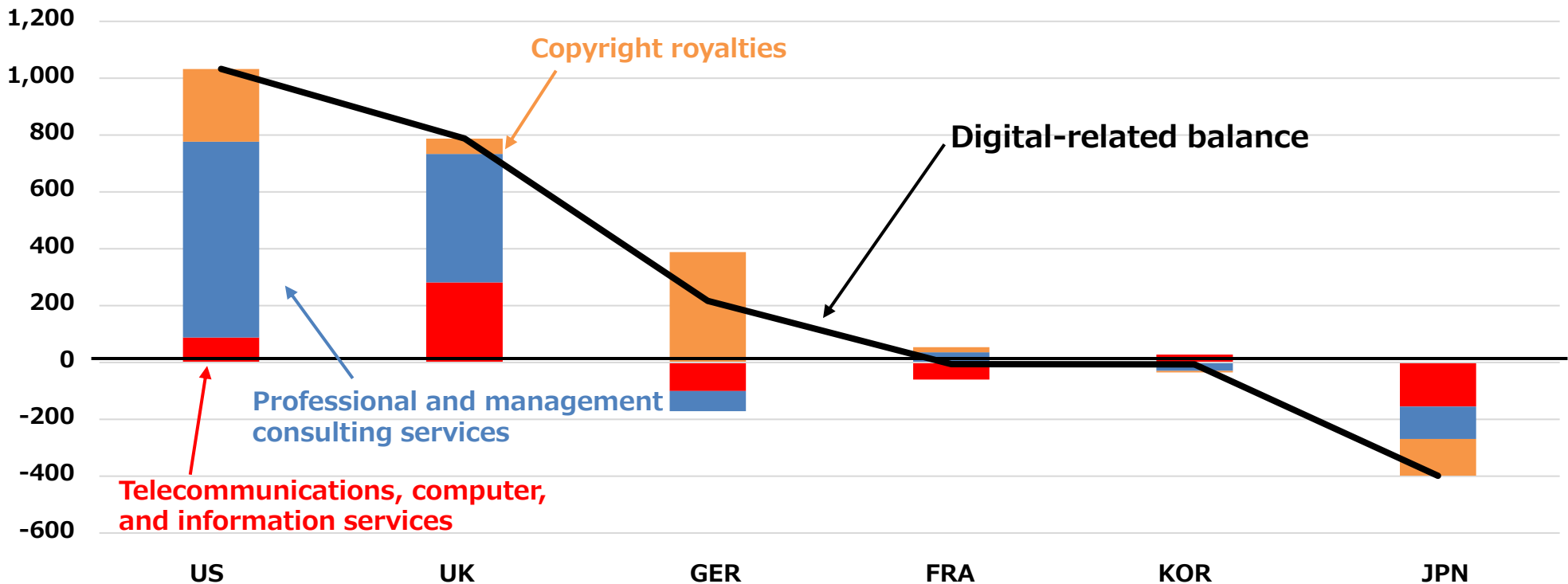
(Source) Left: Compiled based on the Bank of Japan's "Balance of Payments Statistics" and the Bank of Japan's Review "Globalization of Services Transactions from the Perspective of Balance of Payments Statistics." Right: OECD.stat

International Comparison of Digital-Related Balance

- Japan stands out for its deficit in the digital-related balance consisting of computer-related services, consulting fees, and royalties such as copyrights.

International Comparison of Digital-Related Balance(2021)

(100 million dollars)

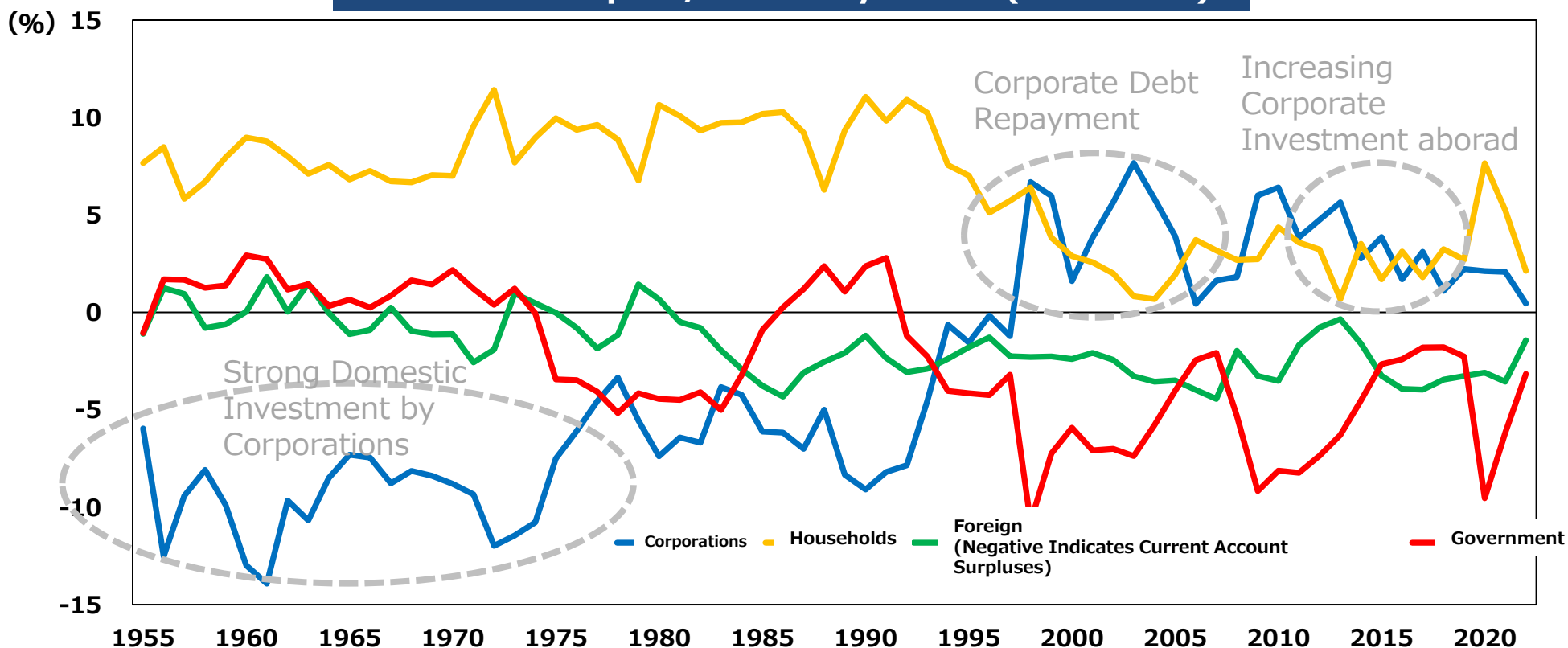


(Note) Digital-related balances are calculated as the sum of telecommunications, computer and information services, professional and management consulting services, and royalties such as copyrights, based on the classification of the Bank of Japan Review. Copyright royalties in Germany and France are calculated for both copyright royalties and industrial property royalties, since the EU does not disclose the breakdown of intellectual property royalties. (Source) BUSSINES INSIDER (Daisuke Karakama, Chief Market Economist, Mizuho Bank, April 2024), Japan Bank's "Balance of Payments Statistics", Bank of Japan Review "Globalization of Services Transactions from the Perspective of Balance of Payments Statistics", OECD.stat

Saving-investment balance: Dynamics of Households, Corporations, Government

- The household sector has consistently maintained a financial surplus. Since the late 1990s, non-financial corporations have also been in surplus, while the government has consistently run a financial deficit since the 1990s.
- Before the 1990s, the corporate sector faced a financial deficit due to strong domestic investment. However, in the late 1990s, corporations turned to a financial surplus due to debt repayment. They have continued to maintain a surplus by increasing their investment abroad since the 2000s.

Financial Surplus/Deficit by Sector(% of GDP)



(Note) 68SNA (from 1955 to 1979), 93SNA (from 1980 to 1993), 08SNA (since 1994).

(Source) Cabinet Office

"Domestic Investment Promotion Package"

- "Public-Private Partnership Forum on Increasing Domestic Investment"* was held last December, where the government (11 ministries and agencies) released "Domestic Investment Promotion Package" that will enable Japan to compete with the world by means of budgets, taxes, and regulations.
* "Public-Private Partnership Forum on Increasing Domestic Investment"
:Government officials (the Prime Minister, relevant cabinet ministers, and the Bank of Japan Governor) and the heads of Keidanren, JCCI, Doyukai, Shinkeiren, Zenginkyo, and regional economic federations participated in the forum.
- Through the business community also expressed its determination to continue expanding domestic investment, the momentum for the government and business community to work together to move the economy to a new stage was created.

Transitioning the current economy to "Growth Economy"
through realization of the target of over 115 trillion yen in FY2027

by continuing to expand from the record high level of current private investment (about 100 trillion yen)

"Cost-cutting Economy"

Domestic Investment ↓

Wage·Income ↓

Price level ↓

"Prices and wages
will not rise."

→ Negative Cycle of
sluggish consumption
and investment

Domestic Investment Promotion Package

A wide range of budgets, taxes, regulations and other measures of to promote domestic investment, including about 200 projects of 11 ministries and agencies

Strategic Investment

- ✓ GX·DX etc
- ✓ Infrastructure
- ✓ Inbound·Health

Cross-cutting Initiatives

- ✓ Investment in People
- ✓ Leading Medium Enterprises & SMEs, SU
- ✓ R&D and Innovation

Globalization

- ✓ Export Promotion
- ✓ Acceleration of inward direct investment

"Growth Economy"

Domestic Investment ↑

Wage·Income ↑

Price level ↑

"Prices and wages
will rise."

→ Positive Cycle of
sluggish consumption
and investment

Past and ongoing Measures

Major Domestic Investments Underway with Government Support (FY2020&FY2021)

METI's FY2020 and FY2021 Supplementary Budget Measures to Support Domestic Investment

<DX>

- Securing domestic production bases for advanced semiconductors (FY 2021: 617 billion yen)

<GX>

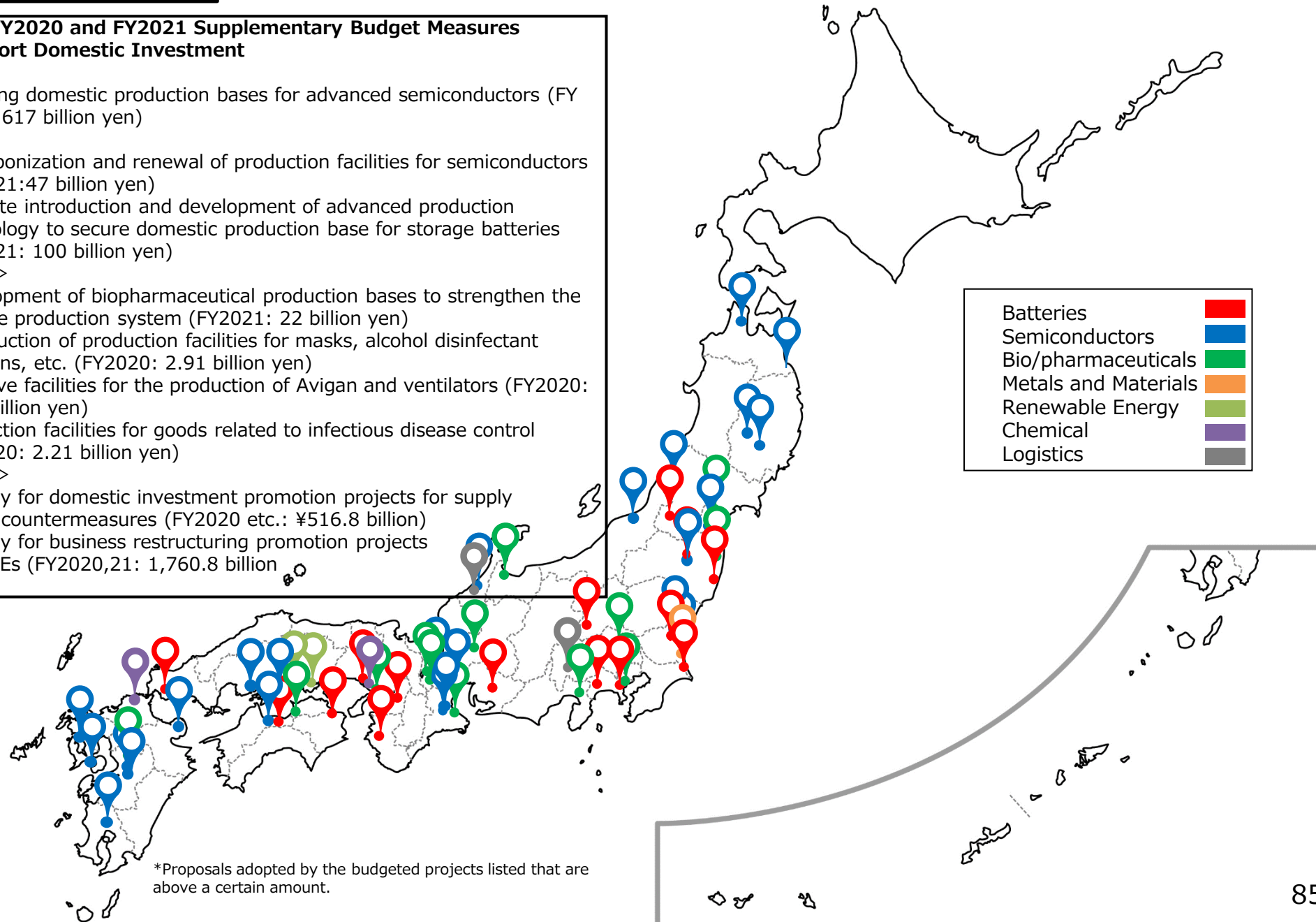
- Decarbonization and renewal of production facilities for semiconductors (FY2021:47 billion yen)
- Promote introduction and development of advanced production technology to secure domestic production base for storage batteries (FY2021: 100 billion yen)

<Health>

- Development of biopharmaceutical production bases to strengthen the vaccine production system (FY2021: 22 billion yen)
- Introduction of production facilities for masks, alcohol disinfectant solutions, etc. (FY2020: 2.91 billion yen)
- Improve facilities for the production of Avigan and ventilators (FY2020: 8.77 billion yen)
- Production facilities for goods related to infectious disease control (FY2020: 2.21 billion yen)

<Others>

- Subsidy for domestic investment promotion projects for supply chain countermeasures (FY2020 etc.: ¥516.8 billion)
- Subsidy for business restructuring promotion projects for SMEs (FY2020,21: 1,760.8 billion yen)



*Proposals adopted by the budgeted projects listed that are above a certain amount.

Past and ongoing Measures

METI's FY2022 Supplementary Budget Measures to Support Domestic Investment

<DX>

- Securing domestic production bases for advanced semiconductors (FY 2022: 450 billion yen)
- Post-5G Information and Communication Systems Infrastructure Enhancement R&D Project (FY2022 : 485 billion yen)

<Economic Security>

- Project to Support the Strengthening of Supply Chains for Critical Goods in Response to Changes in the Economic Environment (FY2022 : 958.2 billion yen)

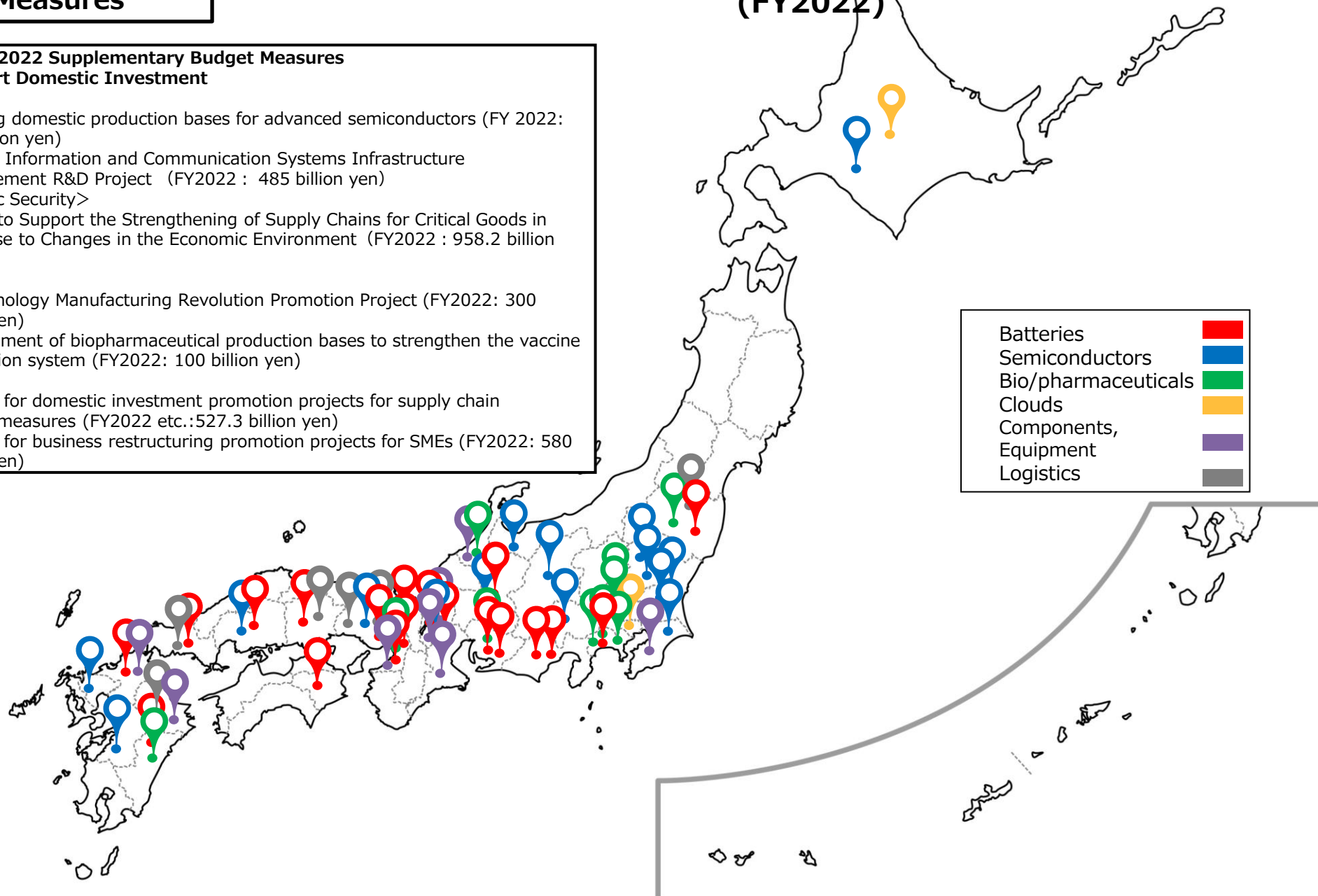
<Health>

- Biotechnology Manufacturing Revolution Promotion Project (FY2022: 300 billion yen)
- Development of biopharmaceutical production bases to strengthen the vaccine production system (FY2022: 100 billion yen)

<Others>

- Subsidy for domestic investment promotion projects for supply chain countermeasures (FY2022 etc.:527.3 billion yen)
- Subsidy for business restructuring promotion projects for SMEs (FY2022: 580 billion yen)

Major Domestic Investments Underway with Government Support (FY2022)



(Note) Proposals adopted by the budgeted projects listed that are above a certain amount. Mapping is by prefecture and does not reflect locations below the municipality.

(Source) Document 2, "Public-Private Partnership Forum on Increasing Domestic Investment," October 4, 2023.

Past and ongoing Measures		Measures to Promote Investment through GX Economy Transition Bonds					Excerpts from Investment Strategy by Sector (published December 2023)	
		Amount of investment	Major Investment Promotion Measures	Actioned	Estimated amount of support *2024FY budget	remarks	*currency: yen	
Manufacturing Industry	Steel	3 trillion	•Capital Investment Support for Manufacturing Process Transformation (Innovative electric arc furnace, etc.)		5 years: 480 bill (32.7 bill)	•Total support for capital investment in the four fields (iron, chemicals, paper, and cement) is on the order of 1.3 trillion yen over 10 years		
	Chemicals	3 trillion						
	Paper and Pulp	1 trillion						
	Cement	1 trillion						
Transport	Automobiles	34 trillion	•Support for the introduction of electrified vehicles	273.6 bill		•Tax deductions based on production volumes of EVs, etc.		
	Batteries	7 trillion	•Support for the introduction of production equipment	597.4 bill	230.0 bill (230.0 bill)	•R&D support for all-solid batteries, etc		
			•Support for the introduction of stationary storage batteries		3 years: 40 bill (8.5 bill)			
	Aircraft	4 trillion	•Technological development of next-generation aircraft			•Consideration based on the "Next-Generation Aircraft Strategy" to be formulated by the end of the fiscal year		
	SAF	1 trillion	•Support for SAF manufacturing and supply chain development		5 years: 340 bill (27.6 bill)			
	Ships	3 trillion	•Support for the introduction of production facilities for zero-emission vessels, etc.		5 years: 60 bill (9.4 bill)	•Measures to support R&D for ammonia carriers, etc.		
Lifestyle, etc.	Life-related Industry	14 trillion	•Renovation to insulated windows in the home •Introduction of high-efficiency water heaters •Renovation support for educational facilities, etc	235 billion 58 billion 33.9 billion		•Support measures on the scale of 2 trillion yen during 3 years		
	Resource Circulation	2 trillion	•Support for building a recycling-oriented business model		3 years: 30 bill (8.5 bill)	•Including R&D on pyrolysis technology, etc.		
	Semiconductors	2 trillion	•Support for the introduction of power semiconductor production facilities •AI semiconductors, optoelectronic fusion, etc	432.9 billion 103.1 billion		•Including R&D support for power semiconductors, etc.		
Energy	Hydrogen and its derivatives	7 trillion	•Support focusing on the price difference between raw materials and fuels		5 years: 460 bill (8.9 bill)	•Price differential support is on the scale of 3 trillion yen over 15 years •R&D support for supply chains ,etc		
	Next-Generation Renewable Energy	31 trillion	•Establishment of hydrogen supply bases			•Facility investment, etc., 1 trillion yen in 10 years •Including R&D support for perovskites		
			•Support for the construction of supply chains such as floating offshore wind farms and support for the introduction of perovskites		5 years: 420 bill (54.8 bill)			
	Nuclear Power	1 trillion	•Development and construction of next-generation innovative reactors	89.1 billion	3 years: 160 bill (56.3 bill)			
CCS	4 trillion	•CCS Value Chain Construction Support			•Examination based on the results of business surveys			
	Cross-Sectoral Measures		•Energy-saving subsidies, etc.	340 billion		•700 billion yen over 3 years		
			•Support for fostering deep tech startups		40 bill	•Assistance on the scale of 200 billion yen over 5 years		
			•R&D through GI Fund, etc.	806 billion		•2 trillion yen measures in 2021		
			•Financial support by the GX Organization		120 bill	•Assuming financing support through debt guarantees		
			•Regional Decarbonization Grants	3 billion	6 bill			
	Tax Measures		•Establishment of new tax credits based on production volumes of green steel, green chemicals, SAF, EVs, etc.					
Amount of support since R6FY:Approx. 2.4 trillion yen (2024FY budget: 604 bill) [including blue figure: Approx. 13 trillion]								

Support for the Establishment of Domestic Semiconductor Production Facilities

- Support for the establishment of domestic production facilities and R&D of advanced and next-generation semiconductor.
- Through the accumulation and development of local related businesses and human resources, it will also lead to the revitalization of the local economy.

Effort

- Support for the establishment of large-scale domestic production facilities and related initiatives**



TSMC
Kumamoto No. 1 Plant



Rapidus
Hokkaido

- Environmental preparation for locating domestic production facilities**

Support for the development of related infrastructure such as industrial water supply

- Support for related businesses and the accumulation and development of human resources**

Effect

Effect on Kumamoto Prefecture due to the accumulation of electronic device-related industries, including TSMC(2022-2031)

Economic Ripple Effect	+ Approximately 6.9 trillion yen (10-years cumulative)
GDP Impact Effect	+ 3.4 trillion yen(10-years cumulative) (FY 2020 Prefecture GDP: 6.1 trillion yen)
Employment Including Related Industries	+ 10,700 people (compared to 2022) (FY2021 number of employees in the prefecture:710,000)

(Source) Estimated by Kyushu Financial Group

(Note) Includes investment by JASM's No. 1 plant and Sony and Mitsubishi Electric. JASM Plant No. 2 is not included.

Related Laws and Budget

- Securing domestic production bases for cutting-edge semiconductors (Budget / Ministry of Economy, Trade and Industry)
- Post 5 G information system infrastructure reinforcement research and development project (Budget / Ministry of Economy, Trade and Industry)
- Regional industrial structure transformation infrastructure development promotion subsidy (Budget / Cabinet Office), etc.

Leading Medium Enterprises Growth Promotion Package

- Based on the four priority pillars of the policy compiled at the 6th meeting of Working Group for Leading Medium Enterprises, a **total of 190 measures from 12 ministries and agencies** were summarized. **18 measures that particularly effective** in promoting the growth of leading medium enterprises.

1. Expansion of domestic investment and promotion of innovation

1. Support for corporate location and investment

- LMEs and SMEs Subsidies for Large Scale Growth Investment with the target of raising wages.

2. Capital Investment and Productivity Improvement

- Expansion of the Regional Future Investment Promotion Tax System to Promote Large-Scale Investment

3. Solving Regional Issues

- Local 10,000 Projects

4. Investment in GX, DX, etc.

- Automation and labor-saving of logistics operations, transportation efficiency, and digitalization

2. Realization of high-quality employment

1. Wage increases for Leading Medium Enterprises and SMEs

- Career Advancement Subsidy
- Establishment of a Quota for Leading Medium Enterprises in the Wage Increase Promotion Tax System

2. Supporting Skill Improvement through Re-skilling

- Human Resource Development Support Subsidy

3. Promoting the development and acquisition of human resources and internships in the local community

- Professional Human Resources Business, Leading Human Resource Matching Business
- Regional Corporate Management Human Resource Matching Promotion Project
- Promotion of action plans to attract human resources and funds from overseas**
- Promoting the use of the Specified Skilled Worker System through matching events, etc.

3. Support for the acquisition of external demand

1. Support for overseas sales channel development

- Establishment of efficient export logistics and development of HACCP-compliant facilities for exports
- Agriculture, Forestry and Fisheries Products and Food Export Project (GFP)
- Support for the overseas expansion of Leading Medium and small and medium-sized construction enterprise

2. Support for Overseas Expansion

- Support for Problem-Solving Business Development in Developing Countries
- Support for HACCP, etc.

3. Developing an inbound strategy

- Projects to expand quantity and improve the quality of inbound consumption by providing special experiences, etc.

4. Strengthening and Improving the Management Base

1. Improvement of management capabilities

- Intensive support for new business development

2. Management Improvement and Business Revitalization

- Tax system for leading medium enterprises and SMEs



Click here for other measures
[PR Measures: Prime Minister's Office HP](#)

Past and ongoing Measures

Summary of the Act on Partially Amending the Act on Strengthening Industrial Competitiveness and Other Acts* to Create New Business and Encourage Investment in Industries

*The Act on Strengthening Industrial Competitiveness, the Limited Partnership Act for Investment, the Act on the National Center for Industrial Property Information and Training, Independent Administrative Agency, and the Act on the New Energy and Industrial Technology Development Organization

Background

- ✓ A **“turning point”** is **emerging the Japanese economy, where the highest levels of wage increase and domestic investment in 30 years**, driven by changes in the macroeconomic environment, including the increase in geopolitical risks and the implementation of the “New Direction of Economic and Industrial Policies”, that provides large-scale, long-term, and consistent support to addressing issues that all humankind and society confront, including climate change and digitalization.
- ✓ Japan’s recent inflation has been centered on rising import prices, but it is important to **strengthen the supply capacity through domestic investment and put the Japanese economy on a growth trajectory so that such dynamism can be sustained, resulting in inflation accompanied by a wage increase and economic revitalization**. To this end, Japan needs to achieve a structural reform of its economy **through strengthened initiatives for the New Directions, including “expanding strategic domestic investment” and “promoting innovation and the reorganization of industries in order to expand domestic investment”**.

Outline of the Act

1. The bill is to stipulate provisions for **large-scale and long-term tax deductions for investment and production in strategic areas** and **tax deductions for strengthening Japan’s competitiveness in locations used as research and development bases**, both of which are initiatives for **expanding strategic domestic investment**.
2. The bill is to stipulate provisions for **measures for intensively supporting Leading Medium Enterprises and startups**, which are the driving force of the Japanese economy, as initiatives for **promoting innovation and replacement of industries that contribute to expanding domestic investment**.

1. Expanding strategic domestic investment

- [i] **Defining products with particular significance to gain domestic and international markets** amidst international competition (i.e., clean vehicles, green steel, green chemicals, sustainable aviation fuels (SAF), and semiconductors); and taking the following measures provided that **the competent minister approves the plans** submitted by the companies **for production and sales of the aforementioned products**:
- **Tax deductions that are proportionate to domestic production and sales in the strategic areas**
 - Financial support for large-scale and long-term financing offered by the Japan Finance Corporation (two-step loan)

- [ii] Taking the following measures provided that **the government confirms that companies are utilizing IP to a certain level** pursuant to **the provisions to be newly established by the government for its investigation of such companies’ current utilization of IP and other related activities**:

- **Tax deductions for innovation bases** (innovation box tax regime)
 - Eligible IP: Patent right granted to a product or copyright granted to AI-related software for which a company has conducted R&D and created the product in Japan
 - Eligible income: Income from the licensing of target IP and income from the transfer thereof
 - Income deductions by 30% (reducing 29.74% on the basis of the effective tax rates for companies to the equivalent of around 20%)

2. Promoting innovation and replacement of industries that contribute to expanding domestic investment

(1) Measures related to Leading Medium Enterprises

- [iii] **Defining companies that have 2,000 or fewer full-time employees, excluding SMEs, as “Leading Medium Enterprises”** and, in particular, defining **Leading Medium Enterprises that pay higher wages and are proactively engaging in domestic investment as “Specified Leading Medium Enterprises”**.

Taking the following measures regarding the Specified Leading Medium Enterprises provided that the competent minister approves the plans for business reconstruction with the potential for growth submitted by the enterprises:

- **Tax benefit for Specified Leading Medium Enterprises and SMEs that have formed group companies through conducting multiple M&As**
 - Allowing these enterprises to declare up to 100% of the share acquisition value for 10 years as a reserves for losses.
- Financial support for large-scale and long-term financing offered by the Japan Finance Corporation (two-step loan)
- Subsidies and advice concerning IP management from the National Center for Industrial Property Information and Training(INPIT), etc.

Note: Apart from these measures, if **Specified Leading Medium Enterprises** receive approval on their plans under the **Regional Future Investment Promotion Act**, an **additional tax reduction for business investment are applied to these enterprises** (tax reduction up to 6% from the current tax brake up to 5%).

(2) Measures related to startups

- [iv] Extension of the period for which **Japan Investment Corporation (JIC)** can hold securities, etc. **to the end of March 2050** (the current limit is the end of March 2034)
- [v] Enhancing the function of the New Energy and Industrial Technology Development Organization (NEDO) to provide subsidies **to support activities by deep-tech startups for business development**
- [vi] **Adding crypto assets as one form of asset** that an **investment limited partnership (LPS)** is allowed to acquire and hold, etc.
- [vii] **Establishing special measures (so-called stock option pools)** that allows startups **to issue stock options in a flexible and agile manner** (expanding the scope of matters and the period of delegations those are allowed to be delegated from the general shareholders’ meeting to the board of directors)

(3) Inter-company measure

- [viii] **Allowing companies to receive consultations from INPIT and NEDO provided that the competent minister approves the plans submitted by the companies for creating new markets by taking advantage of standardization and IP** focusing on joint research and development between the companies and universities, etc.

Notes: 1. In addition, the bill is to stipulate provisions for other measures, including the abolition of the measures for business adaptation for development and growth under the business adaptation plan and the abolition of measures for the plans for specified investment program for developing new business.
2. The bill is to revise the wording of the Act on Strengthening Industrial Competitiveness to more appropriate wording concerning Article 23(5)(iv) of the Act, which was stipulated at the time of the establishment of the Act in 2013, and Article 107(1), which was revised at the time of the revision in 2018.

Tax deductions that are proportionate to domestic production and sales in the strategic areas

- In the midst of the global policy competition to promote domestic investment in strategic sectors, the government should take into account Japan's industrial structure and other factors and implement investment promotion taxation based on production and sales volumes for sectors with large total project costs, especially those with high costs at the production stage.

Background/Issues

Industrial policy competition in the world

- International industrial policy competition to direct investments related to strategic sectors within their own countries, such as the IRA and CHIPS laws in the U.S. and the Green Deal Industrial Plan in Europe is .
- In this context, Japan needs to take measures to promote investment in strategic sectors that will drive mid- to long-term economic growth and enable it to compete on a par with the rest of the world.

Investments with high production stage costs

- Some of the investments in strategic sectors have large total project costs, especially in the production stage, making it difficult to make domestic investment decisions based on initial investment promotion measures alone.

Revision details

- (1) Products that are particularly required to capture domestic and overseas markets, etc. are **legally positioned as products for strengthening the foundation of industrial competitiveness***. Electric vehicles, etc. (EV, FCV, PHEV), green steel, green chemicals, SAF, semiconductors (microcomputers, analog)
- (2) **A system to approve production and sales plans (business adaptation plans) for products that enhance the industrial competitiveness of companies will be stipulated**, and if approved, the following measures will be taken.
 - Tax measures based on the production and sales volume of products that strengthen the foundation of industrial competitiveness (Tax deductions that are proportionate to domestic production and sales in the strategic areas)
 - Financial support for large-scale and long-term financing offered by the Japan Finance Corporation (two-step loan)

Outline of Production-Proportionate Tax Deduction for Strategic Investment

Measures to make it a bold domestic investment promotion measure

- **Tax deduction measures based on the production and sales volume of each target commodity**
 - Targeted goods are **legally designated** in the Industrial Competitiveness Enhancement Law as areas to be strategically addressed.
 - GX sector is one of the areas covered by this taxation program and it is **financed by the GX Economic Transition Bonds**. (electric vehicles, etc., green steel, green chemicals, SAF)
- **10-year period from the approval of the business plan** based on the Act on Strengthening Industrial Competitiveness
+ **maximum carry-over period of 4 years***.
- **Appropriate caps, such as allowing a maximum of 40%* of corporate taxes to be deducted.**

* For semiconductors, carryover period is 3 years and up to 20% of corporate tax can be deducted.

Deduction per unit for each eligible commodity

Goods		Deduction	Goods			Deduction
Electric Vehicles, etc.	EV・FCV	400,000 yen/car	Semiconductors	Micro computer	About 28-45nm	16,000 yen /wafer
	Light-EV・PHEV	200,000 yen/car			About 45-65nm	13,000 yen/wafer
About 65-90nm					11,000 yen/wafer	
More than 90nm					7,000 yen/wafer	
Green Steel		20,000 yen/t		Analog Semiconductors (including power semiconductors)	Power (Si)	6,000 yen/wafer
Green Chemicals		50,000 yen/t			Power (SiC, GaN)	29,000 yen/wafer
SAF		30 yen/L			Image Sensors	18,000 yen/wafer
					Others	4,000 yen/wafer
(Note): In the latter years when competitiveness is expected to increase, the deduction will be reduced in stages. (Reduced to 75% in the 8th year, 50% in the 9th year, and 25% in the 10th year from the start of production) For semiconductors, deduction amount per unit is based on 200mm wafer equivalent.						

(Note): In the latter years when competitiveness is expected to increase, the deduction will be reduced in stages. (Reduced to 75% in the 8th year, 50% in the 9th year, and 25% in the 10th year from the start of production) For semiconductors, deduction amount per unit is based on 200mm wafer equivalent.

Tax deductions for innovation bases (innovation box tax regime)

- Tax deductions for innovation bases is a system that applies tax breaks to income derived from patents and other intellectual property, focusing on output derived from intangible assets created as a result of research and development.
- It was newly established in Japan from the viewpoints of enhancing continuous innovation through commercialization of research and development, improving the R&D environment comparable to that of overseas countries, and encouraging the creation of software and other intellectual property and investment in R&D.

Background and Issues

Continuous innovation enhancement

- Competition to create innovations is intensifying internationally.
- Growth in R&D expenditures by Japanese companies is sluggish compared to that of other countries. It is necessary to promote the commercialization of R&D and to expand the source of funds for R&D.

Establishment of R&D environment comparable to overseas

- As corporate activities expand overseas, it is important to improve the business environment, including the taxation system, in selecting R&D bases.
- While other countries have introduced an innovation box tax regime in addition to the R&D tax incentive, it is necessary to develop a system that is comparable to those in other countries.



Software Development Support

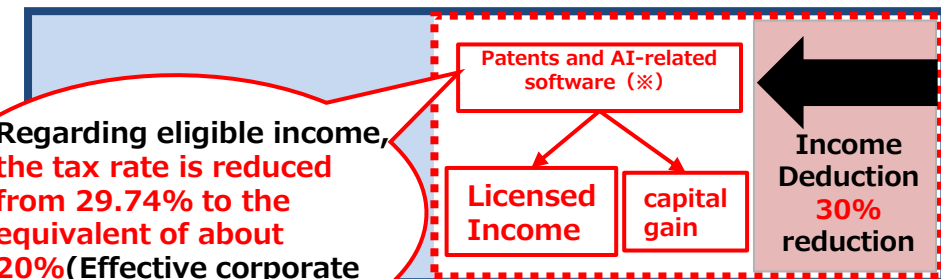
- Boosting software research and development as software becomes increasingly important.

Details of Revision

- (1) Establish a new provision that allows the government to investigate the status of utilization of IP by companies, etc.
- (2) Based on this investigation rule, METI confirms whether the company itself has created the IP, such as licenses, in Japan and so on. The Innovation Hub Tax Credit will be applied to those that have been verified.

Image of the Tax deductions for innovation bases

 : Total taxable income ※ Only those developed primarily "in Japan" and "by themselves" by the company.
 : Income subject to this tax regime



Past and ongoing Measures

Overview of the Tax deductions for innovation bases (innovation box tax regime)

- ❑ Measure period : 7 years (The date of introduction: April 1st, 2025)
- ❑ Income Deduction Rate: 30%
- ❑ Tax Calculation Formula

$$\text{Income Deduction Amount} = \text{Qualifying Income Overall income from IP asset} \times \frac{\text{Qualifying expenditures incurred to develop IP asset}}{\text{Overall expenditures incurred to develop IP asset}} \times \text{Income Deduction Rate (30\%)}$$

(1) Qualifying IP:

- Patents rights
- Copyrighted software related to Artificial Intelligence

*Only patents registered by patent office after April 2024, and only software copyrighted after April 2024

(2) Qualifying IP Income:

- License fee income
- Income from sales of IP assets

*Royalties exclude those to related parties

*Capital gains and other income from the sale of an IP asset exclude those to overseas parties and those to related parties

(3) Nexus ratio formula:

- Ratio of R&D mainly conducted in-country by taxpayers itself

According to "Outline 2024 Tax Reform Proposals," the scope of this tax system will be reviewed based on various factors such as the administrative burden on the public and private sectors and the enforceability of the tax authorities

Past and ongoing Measures

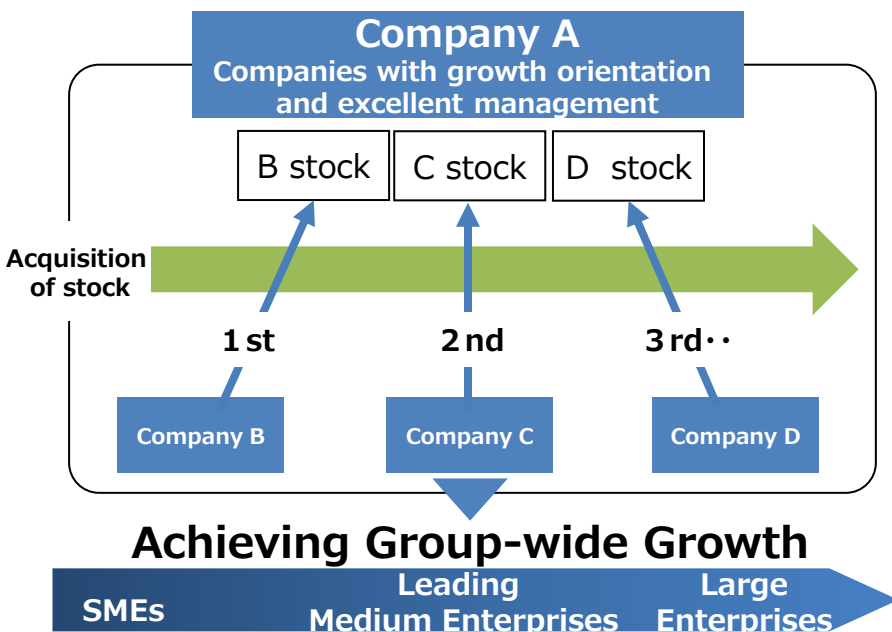
Expansion and extension of the reserve for loss on investment in restructuring of SMEs (tax benefit for grouping LMEs and SMEs)

- While Leading Medium Enterprises and small and medium-sized companies with growth aspirations are expected to achieve dramatic growth as a unified group by making multiple SMEs into subsidiaries, horizontally deploying the parent company's strengths and improving management efficiency, when **multiple M&As are conducted to form a group, impairment risks such as off-balance sheet debt risk and management integration risk are issues.**
- In light of these risks, the current Reserve for Investment Losses on Business Restructuring of Small and Medium Enterprises will be expanded and **extended to cover specific Leading Medium Enterprises, and incentives will be strengthened to encourage multiple M&As in a concentrated manner.**

Revision Summary

※ Revisions are in red. 【Applicable period : **End of March 2027**】

<Multiple mergers and acquisitions for grouping>



【inclusion in profit】

【including in expenses】

【current system^{※1,2}】

(1) Reserves up to 70% of the cost of share acquisitions by SMEs

(2) Deferment period (5 years)

Equal reversal for 5 years

Reversed after the deferral period

【expansion frame】

Encouraging multiple mergers and acquisitions of specified LMEs and SMEs ※3,4

(1) Increase in the maximum reserve ratio (90% for the second round and 100% for the third and subsequent rounds)

(2) Significantly lengthened deferment period of 10 years

※1 Revised the plan approval process to shorten the period between approval and M&A implementation.

※2 Reserve is reversed in the event of impairment due to the discovery of off-balance-sheet liabilities, etc., or in the event of the sale of acquired shares, etc.

※3 Requirement to obtain an approval to be newly established under the Industrial Competitiveness Enhancement Law (expanded frame requires a track record of M&A within the past five years).

※4 Leading Medium Enterprises can use the reserve from their second or subsequent M&A.

Extension of the Operational Period for the Japan Investment Corporation (JIC)

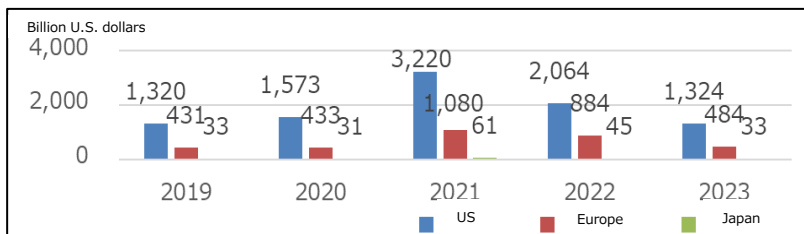
- Japan Investment Corporation (JIC) was established in September 2018 under the Act on Strengthening Industrial Competitiveness. JIC aims to generate a virtuous cycle of risk capital to support next-generation industries in Japan. To achieve this vision, JIC promotes open innovation as a means of supporting growth and enhancing international competitiveness of businesses. JIC approaches these challenges by stimulating private sector investments in open innovation together with JIC's own investment while fostering investment professionals.
- On the other hand, the amount of investment in domestic startups is still far below that of Europe and the U.S.. In particular, there is a lack of risk money supply for the deep tech sector and growth stage companies.
- The JIC's investment period will be expired at the end of March 2034, but in taking general fund investment period (10 years) into consideration,, with the JIC's investment period will be extended to the end of March 2050 to allow new investment in the fund after April 2024 less than 10 years remaining, and to provide sufficient support for startups, including those in deep-tech fields that require longer time until commercialization and those with a carbon neutral goal in mind.

Background and Issues

money supply shortage

The amount of investment in domestic start-ups is significantly inferior to that of foreign countries (1/50th of the U.S. and about 1/10th of Europe).

VC Investment in the U.S., Europe, and Japan



Details of Revision

In order to allow new investment decisions to be made in the fund after April 2024, when less than 10 years remain until the investment deadline, **JIC's investment period will be extended as follows.**

Period for JIC to dispose of securities and receivables held by JIC through its investment activities.

<present>

End of March 2034



<after revision>

End of March 2050

Amendment to the LPS Law (Limited Partnership Act for Investment)

- Amend the LPS Law to revise the scope of foreign corporations limited to less than 50% of the total capital contribution with respect to LPS, and to add the acquisition of crypto assets and limited liability company interests, etc. to the investment target business.

Current Regulations

LPS Law (Businesses eligible for LPS funding and LPS projects)

Article 2 (Definitions)

The term “enterprise” as used in this Act means a corporation (excluding foreign corporation) an individual carrying on business.

Article 3 (Limited Enumeration of Scope of Business)

(1) Acquisition and holding of shares or subscription rights in a stock company or equity interest in a enterprise cooperatives

(2) Acquisition and holding of securities (bonds, etc.) specified by

Cabinet Order among securities specified in the FIEA

(3) Acquisition and holding of monetary claims against an enterprise or monetary claims possessed by an enterprise

(4) Acquisition and holding of shares, subscription rights or designated securities, etc. issued by a foreign corporation (less than 50% of the amount already contributed)



Amendment details

(1) Excluded from the scope of foreign corporations for which the total amount of shares, etc. acquired or held by the LPS is limited to less than 50% of its total capital contribution, foreign corporations in which **a domestic business operator substantially controls its management or exerts a significant influence on its management.**

(2) Addition of the acquisition and **holding of crypto assets and limited liability company interests for projects** that LPSs can conduct.

etc.



- Facilitates funding for **overseas** expansion of domestic businesses
- Enable funding for **Web 3.0 startups** by investing in crypto assets
- Enable funding for **startups starting up as a limited liability company**

⇒ Restrictions on acquiring and holding crypto asset, shares of foreign corporations, etc.

Past and ongoing Measures

Strengthening the tax system for raising wages

- (1) For **large companies**, a requirement for higher wage increases (**5% and 7%**) was established to **strengthen incentives for higher wage increases**.
- (2) For **small and medium-sized enterprises**, an **unprecedentedly long five-year carry-over tax credit** was established to encourage companies with losses to raise wages.
- (3) **A new quota for medium-sized enterprises**, which were expected to play a leading role in raising wages and creating a virtuous economic cycle in the region, was established.
- (4) To promote wage increases in a way that also raises **the "quality" of employment**,
 - requirements for additional measures for companies that **increase training expenses** were eased.
 - the additional measures for companies that are proactive in supporting **a better balance between work and child rearing**, and support for **the active participation of women** in the workforce were established.
- (5) The period of the measures were extended from 2 years to **3 years**.

after revision [Measure period : 3 years] ⑤

Large	raising wages for employees who work for 2 years (compared to the previous fiscal year)	Tax credits exclusion rate	training expenses (compared to the previous fiscal year)	Tax credits exclusion rate	④ Support for balancing childcare · women's activities	Tax credits exclusion rate	Maximum removal rate
	+ 3 %	1 0 %	+ 1 0 %	5 % additional	Platinum Kurumin or Platinum Eruboshi	5 % additional	3 5 %
	+ 4 %	1 5 %					
	① + 5 %	2 0 %					
	+ 7 %	2 5 %					
Leading Medium	+ 3 %	1 0 %	+ 1 0 %	5 % additional	Platinum Kurumin or Eruboshi (3rd level or higher)	5 % additional	3 5 %
	+ 4 %	2 5 %					
Small and medium	raising wages for all employees (compared to the previous fiscal year)	Tax credits exclusion rate	training expenses (compared to the previous fiscal year)	Tax credits exclusion rate	Support for balancing childcare · women's activities	Tax credits exclusion rate	Maximum removal rate
	+ 1 . 5 %	1 5 %	+ 5 %	1 0 % additional	Kurumin or eruboshi (2nd level or higher)	5 % additional	4 5 %
	+ 2 . 5 %	3 0 %					

before revision [Measure period : 2years]

raising wages for employees who work for 2 years (compared to the previous fiscal year)	Tax credits exclusion rate	training expenses (compared to the previous fiscal year)	Tax credits exclusion rate	Maximum removal rate
+ 3 %	1 5 %	+ 2 0 %	5 % additional	3 0 %
+ 4 %	2 5 %			
—	—			

raising wages for all employees (compared to the previous fiscal year)	Tax credits exclusion rate	training expenses (compared to the previous fiscal year)	Tax credits exclusion rate	Maximum removal rate
+ 1 . 5 %	1 5 %	+ 1 0 %	1 0 % additional	4 0 %
+ 2 . 5 %	3 0 %			

- ② Small and medium-sized enterprises (SMEs) **can carry over for five years** any amount not fully deducted in the year in which the wage increase is implemented.

※ For more details, please refer to [the pamphlet on the tax system for raising wages](#) (in Japanese)

