

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

June 2023

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

Table of Contents

I. Recognition of Current Situation

- (1) Reflection on the "Lost 3 Decades" and "New Direction"**
- (2) Trends that should be followed in industrial policy over the medium to long term
- (3) Shift in industrial policy in the world and Japan
- (4) Signs of change and turning points taking place
- (5) Necessity to carry this momentum to long-term sustainable growth

II. New Direction of Economic and Industrial Policies

III. Key Policy Tools for the Virtuous Cycle of Domestic Investment, Innovation, and Income Growth.

IV. Sector-specific measures

Decline in Expected Growth Rate

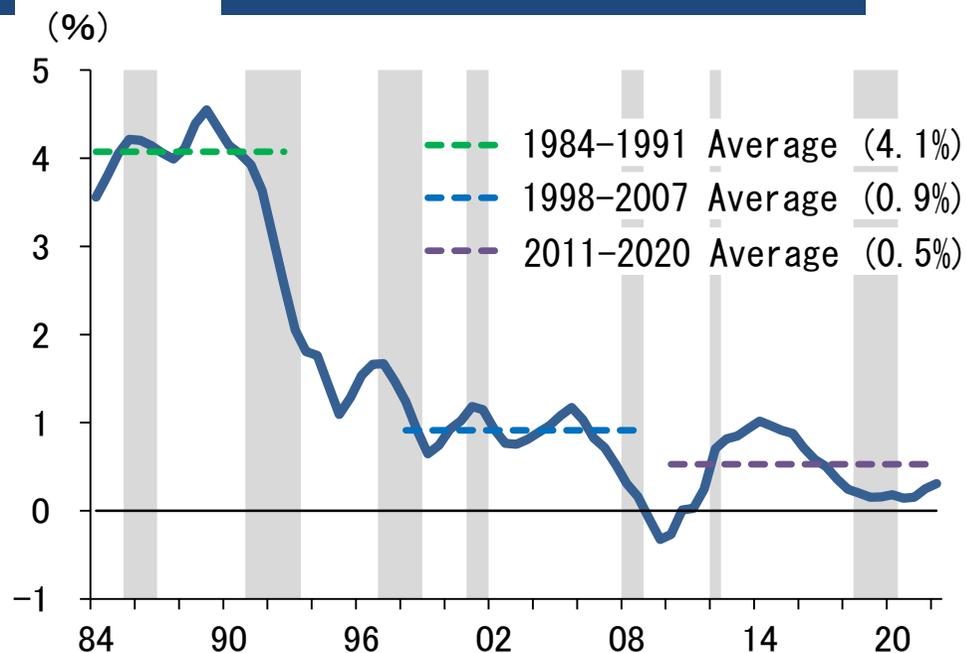
- In the "lost 3 decades", companies' mid- to long-term growth expectations declined. A widespread deflationary mindset and pessimism toward the future amidst a declining population are backgrounds that supported this trend.
- The potential growth rate, which was over 4% in the 1990s, has been declining year by year, falling to around 0.5% in the 2010s.

Expected growth rate of companies



(Source) Cabinet Office

Potential Growth Rate

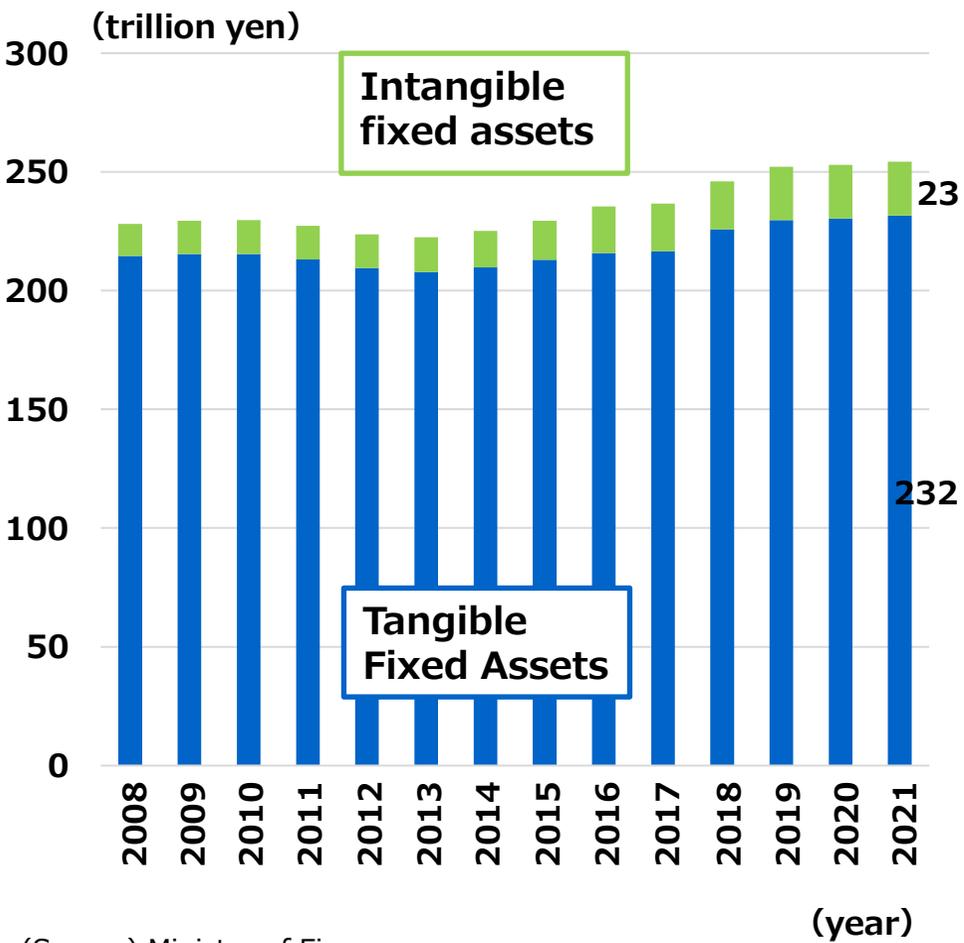


(Source) Bank of Japan

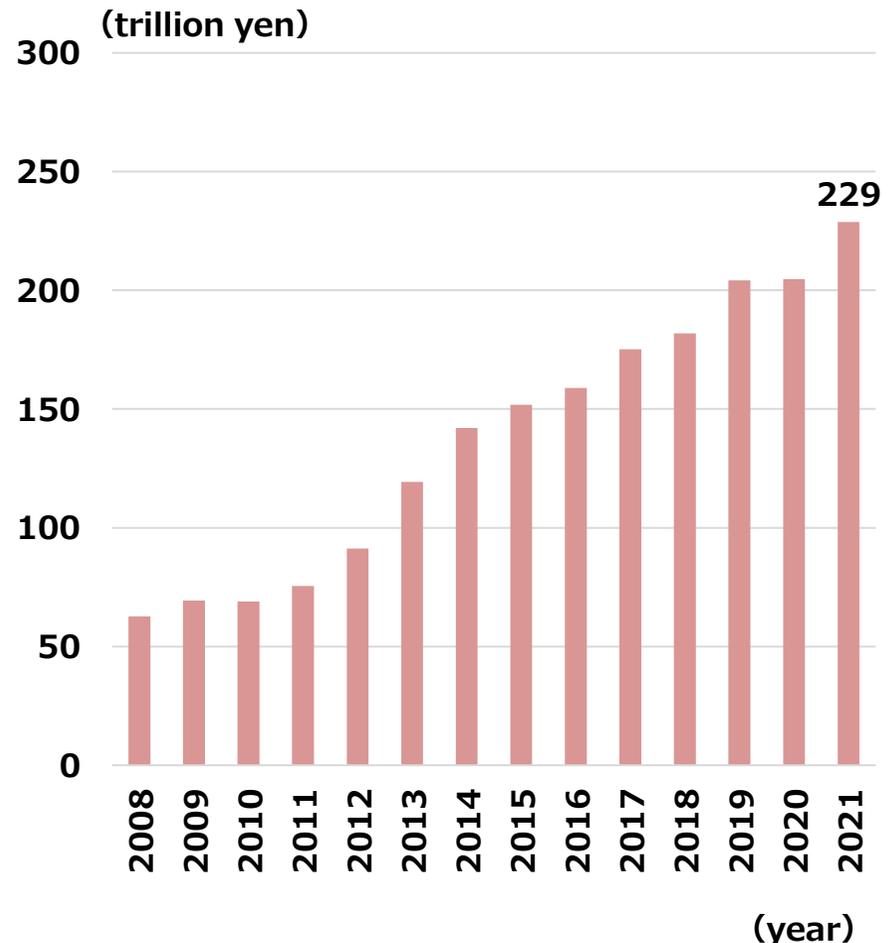
Investment Increased Overseas but Stagnated in Japan

- While investment in domestic tangible and intangible fixed assets by large companies has remained flat, outward direct investment has grown significantly.

Domestic investment of large companies
(capital over 1 billion yen)



Outward FDI of large companies
(capital over 1 billion yen)

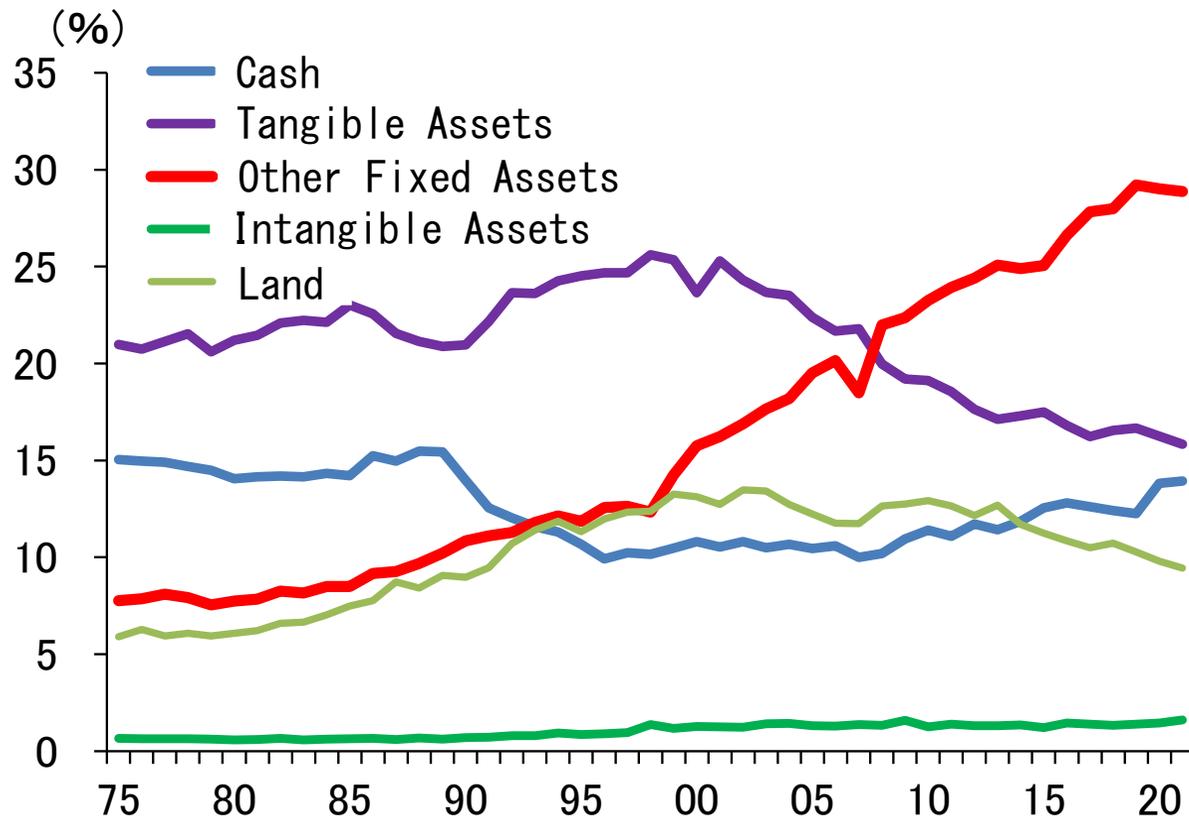


(Source) Ministry of Finance

Composition of Foreign Investment has Increased Significantly

- The composition of tangible/intangible fixed assets within companies remained low, while "other fixed assets," including foreign direct investment and M&A, increased significantly.

Composition of each item in Corporate Assets

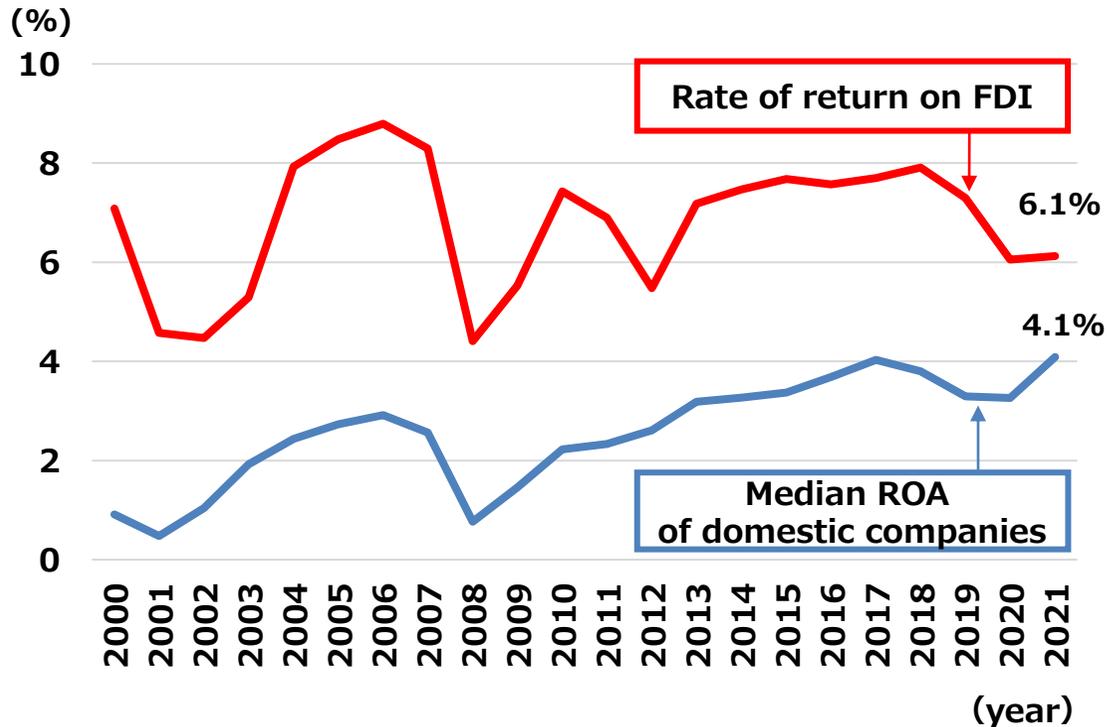


(Source) Ministry of Finance

Investments Overseas Provided Higher Rates of Return.

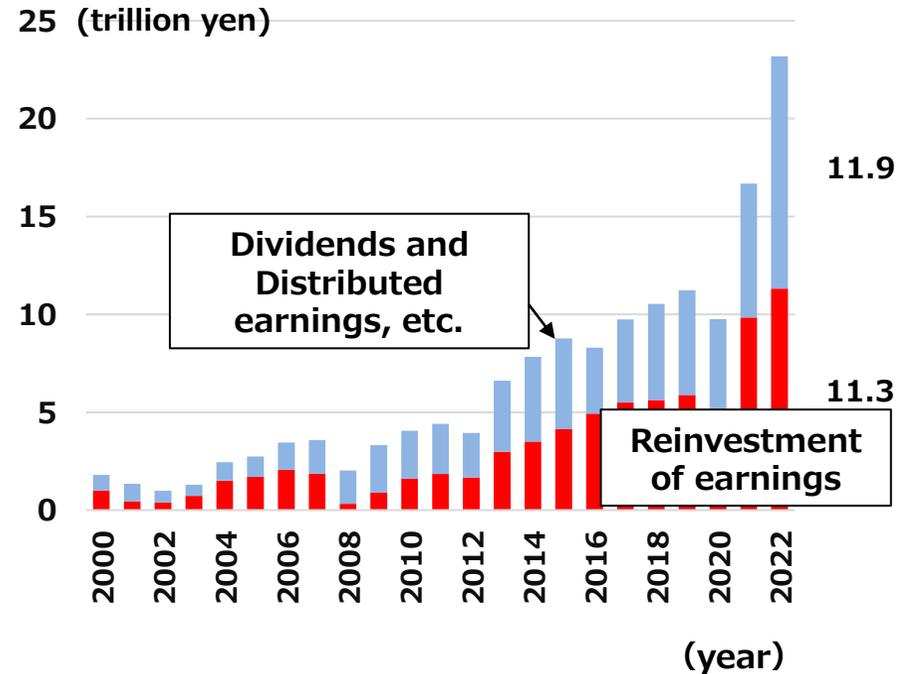
- Foreign investment was a rational choice for Japanese companies, given that domestic ROA was around 3-4% while the rate of return on outward direct investment was around 6-8%.
- However, earnings from FDI are often reinvested locally and do not necessarily lead to higher labor productivity and wages within Japan.

Return on Domestic/Foreign Investment



(Source) Bloomberg, Bank of Japan

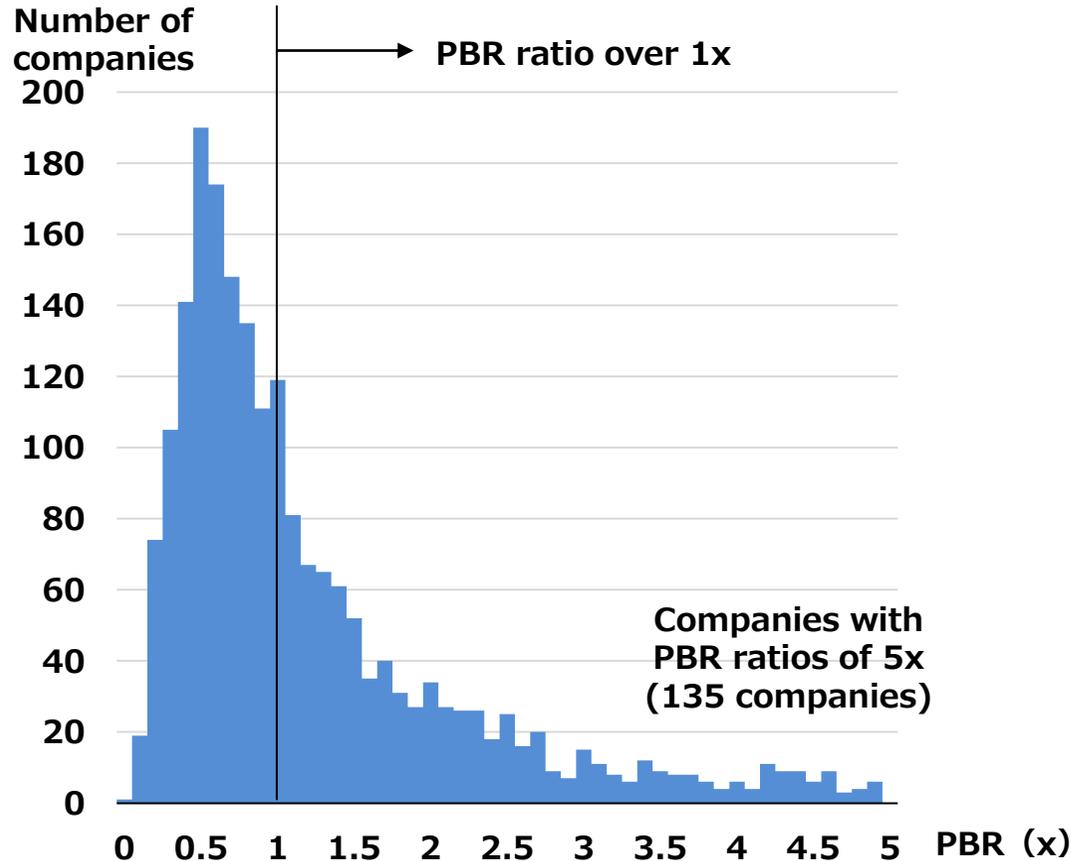
Breakdown of Income from Foreign Direct Investment (2000-2022)



(Source) Ministry of Finance

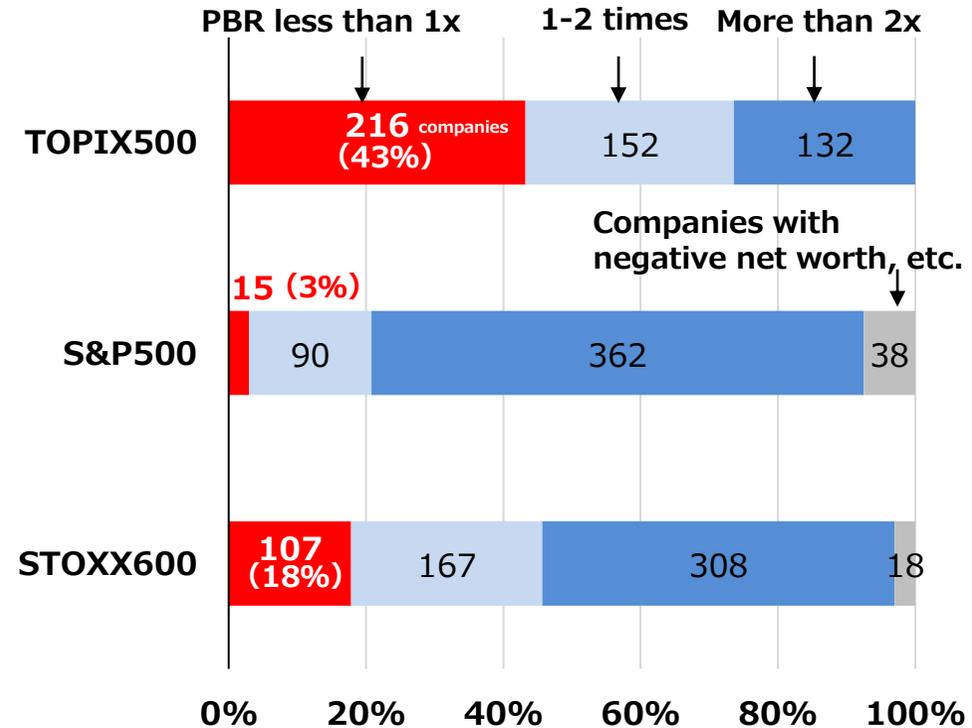
Distribution of P/B ratios for Japanese Companies (listed on the First Section of the Tokyo Stock Exchange)

**Distribution of P/B ratios for companies
(2,173 companies listed on the First Section of the
Tokyo Stock Exchange)**



(Source) Bloomberg, as of March 2, 2022

**PBR distribution of major Japanese, U.S.
and European companies
(TOPIX500, S&P500, STOXX600 companies)**



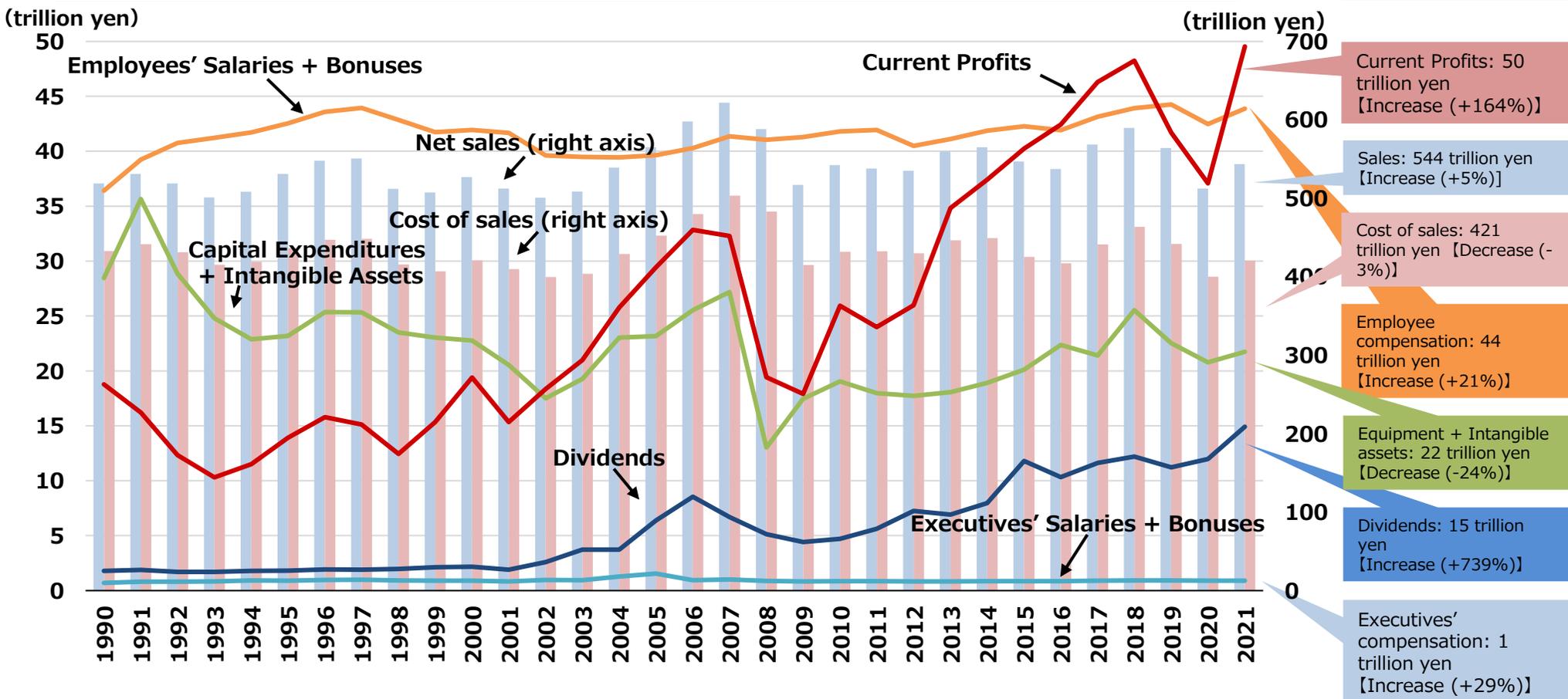
(Source) Bloomberg, as of March 7, 2022

Companies' Current Profits Have Risen but Sales Remain Flat

- Large companies' sales have increased and cost of sales decreased over 3 decades. Capital expenditures declined, labor costs increased slightly (while employees increased 12% from 6.7M to 7.5M), and dividends expanded.
- 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.

Change in
FY1990 ⇒ FY2021

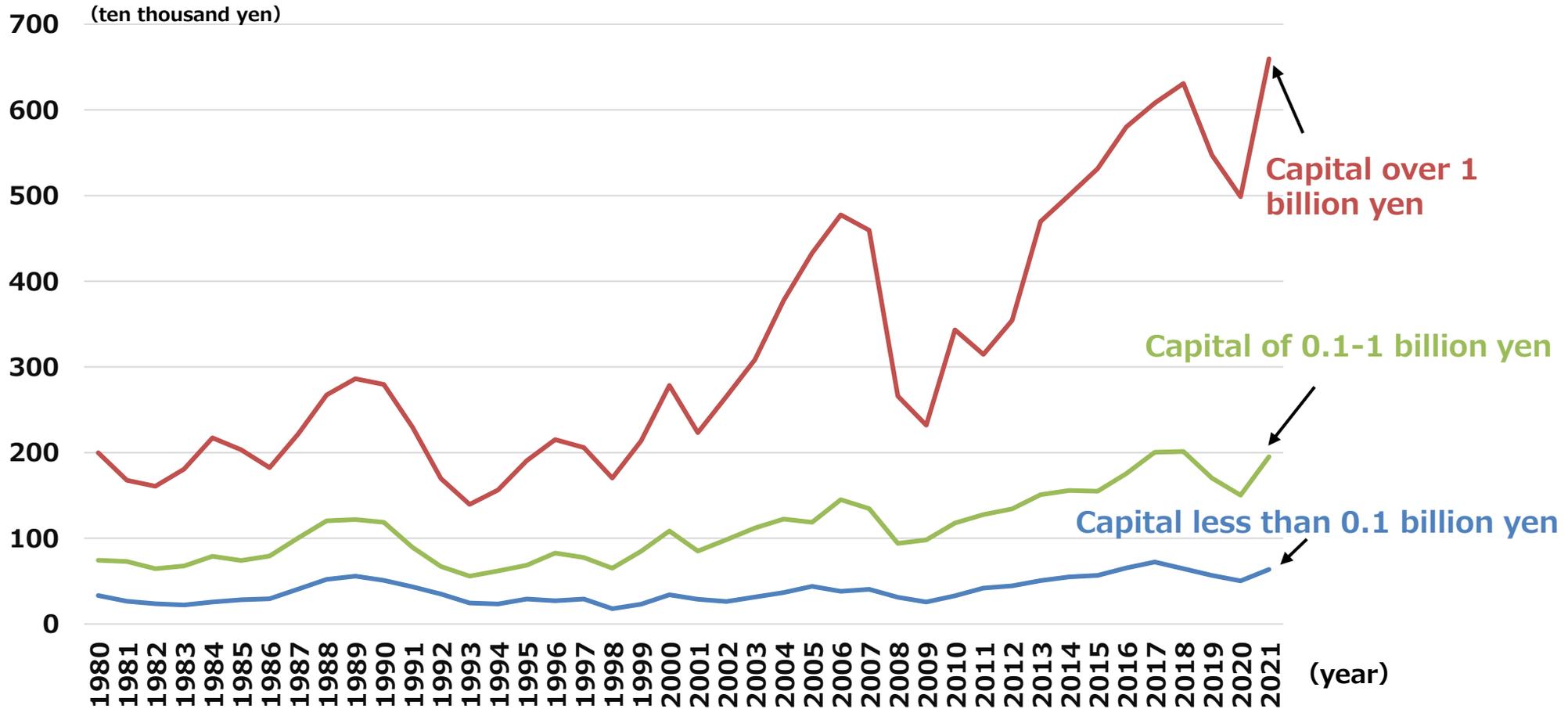


(Source) Ministry of Finance

Changes in Current Profits per Worker by Capital Size

- Current profits, which are the sources of wage increases, have increased in large companies but remain sluggish in small and medium-sized enterprises.

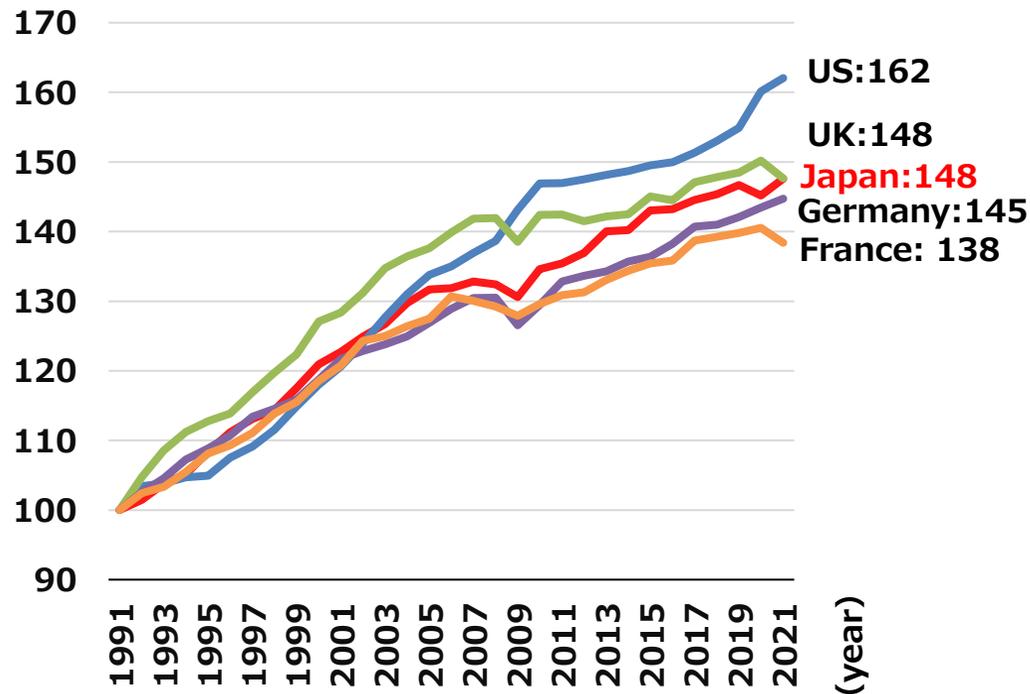
Changes in current profits of companies per worker
(Capital of more than 1 billion yen, 0.1-1 billion yen, and less than 0.1 billion yen)



Labor Productivity has Risen in Japan, but Real Wages have Not

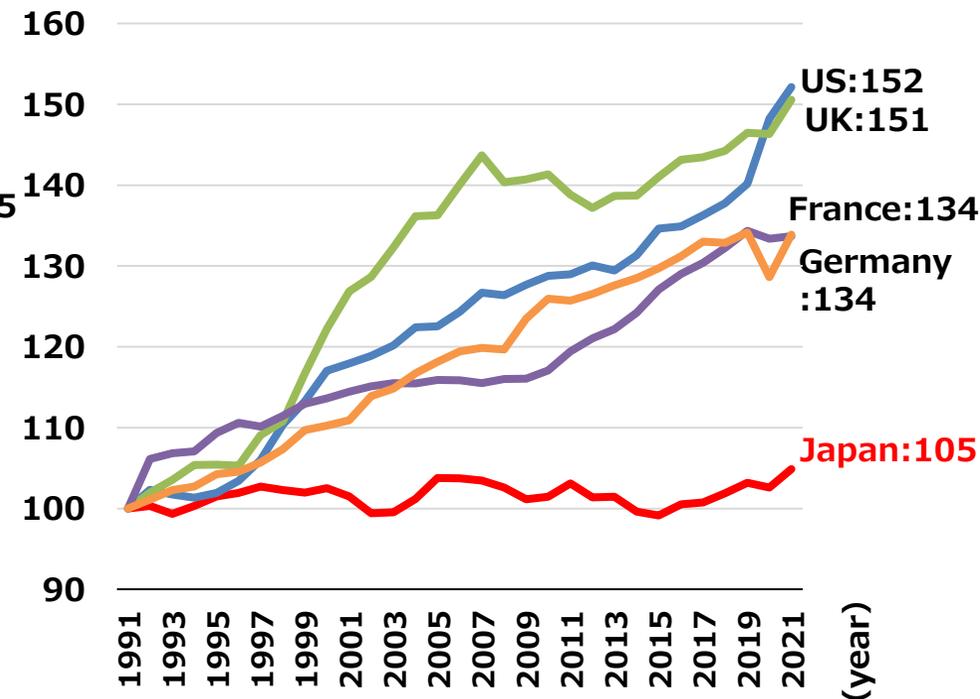
- Over the past 30 years, labor productivity (GDP per hour worked) has risen at the same level with other countries, but real wage growth has been low.
- With the declining trend of the working-age population continuing for the foreseeable future, it is important to not only continue the increase in labor productivity, but also to translate this into an increase in wages.

Labor productivity
(1991=100, 1991-2021)



(Source) OECD.stat.

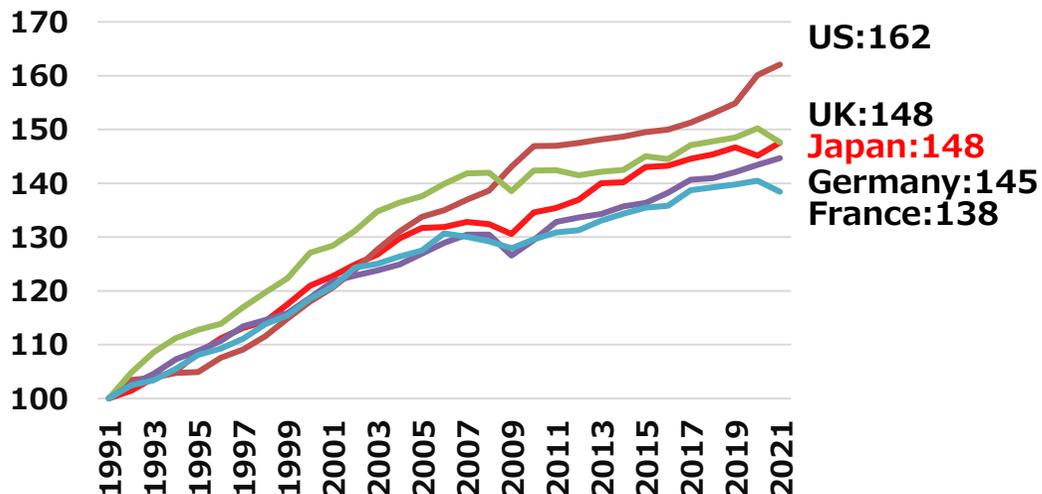
Average real annual income
(1991=100, 1991-2021)



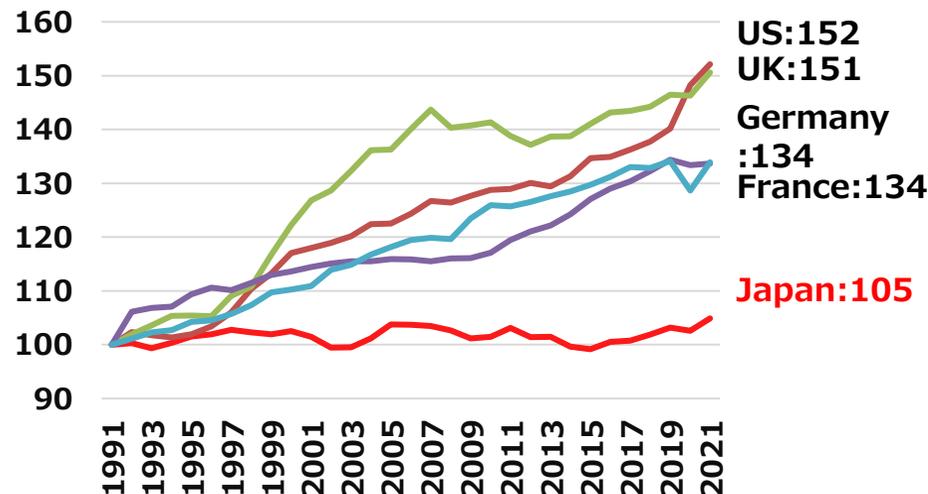
(Source) OECD.stat.

Labor Productivity and Wages (Growth Rate and Absolute Value)

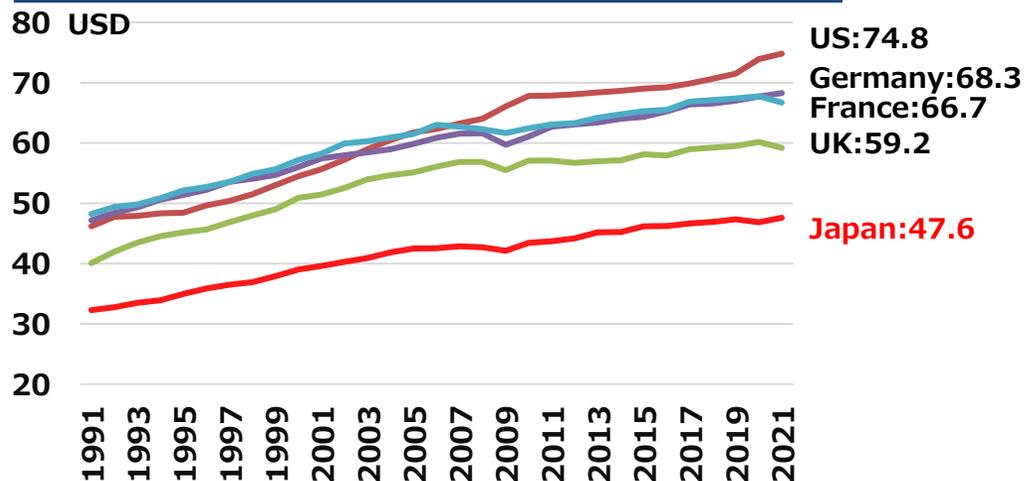
Labor productivity per hour (1991=100, 1991-2021)



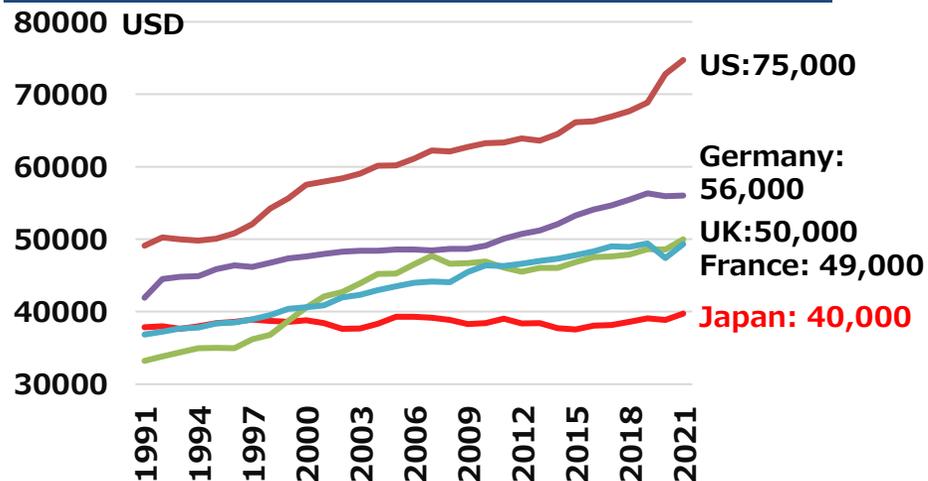
Average real annual income (1991=100, 1991-2021)



Labor productivity per hour (Absolute, 1991-2021)



Average real annual income (absolute, 1991-2021)

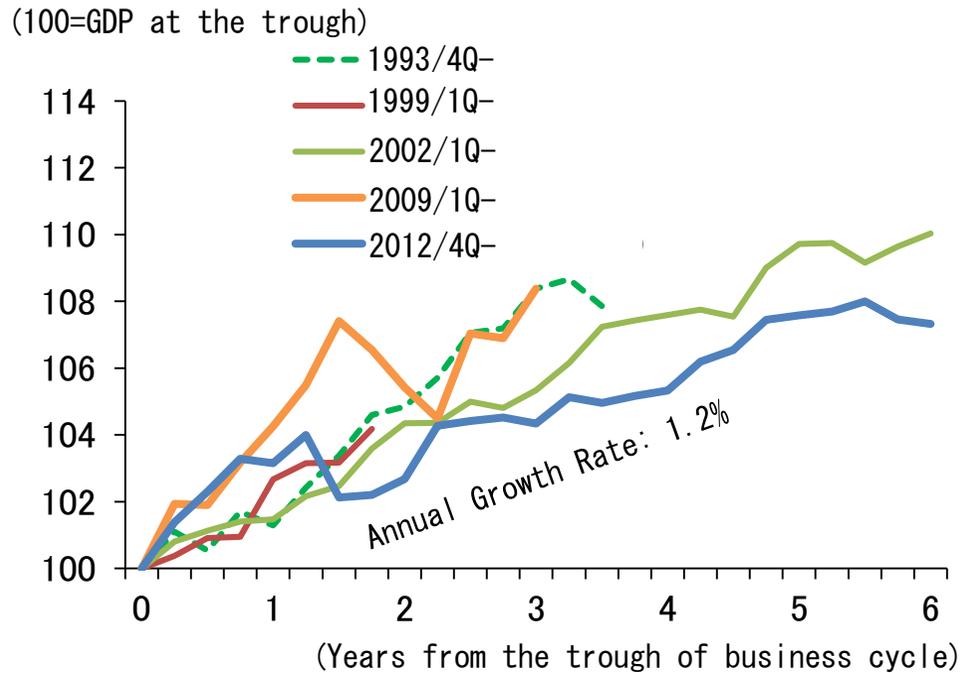


(Source) OECD.stat.

Stagnation of Economy, Especially Personal Consumption

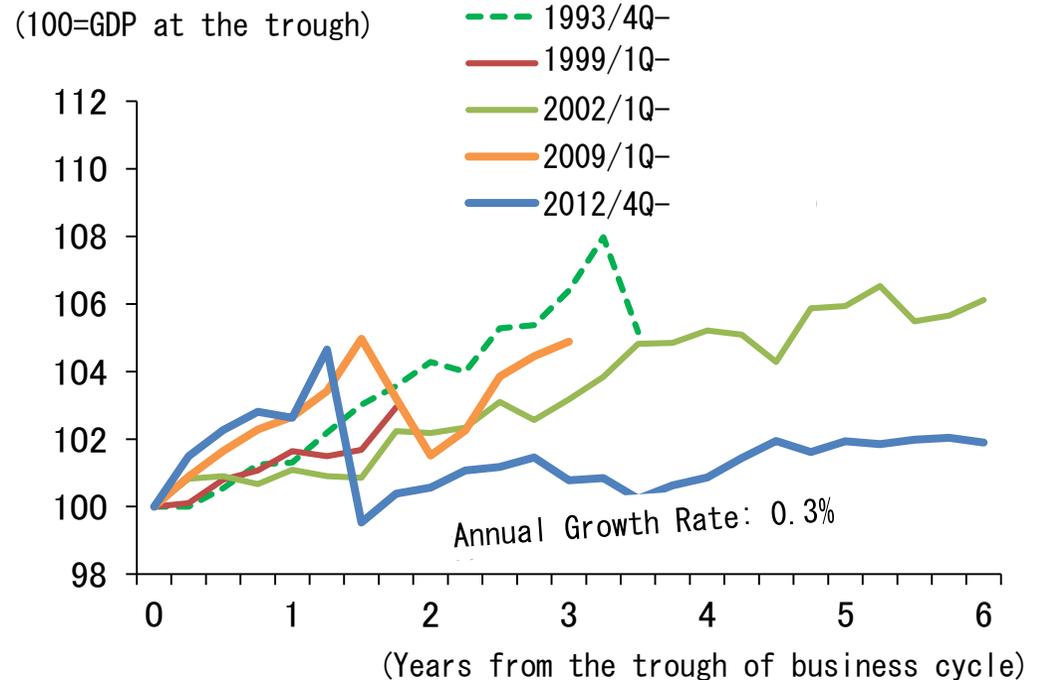
- The business cycle since 2012 was the second longest in the postwar period at 71 months (two months short of the cycle from 2002/1Q), but the growth rate was the lowest in the postwar period at an annual average of +1.2%.
- In particular, consumer spending hardly grew (only +0.3% per year on average).

Real GDP Growth in each Business Cycle



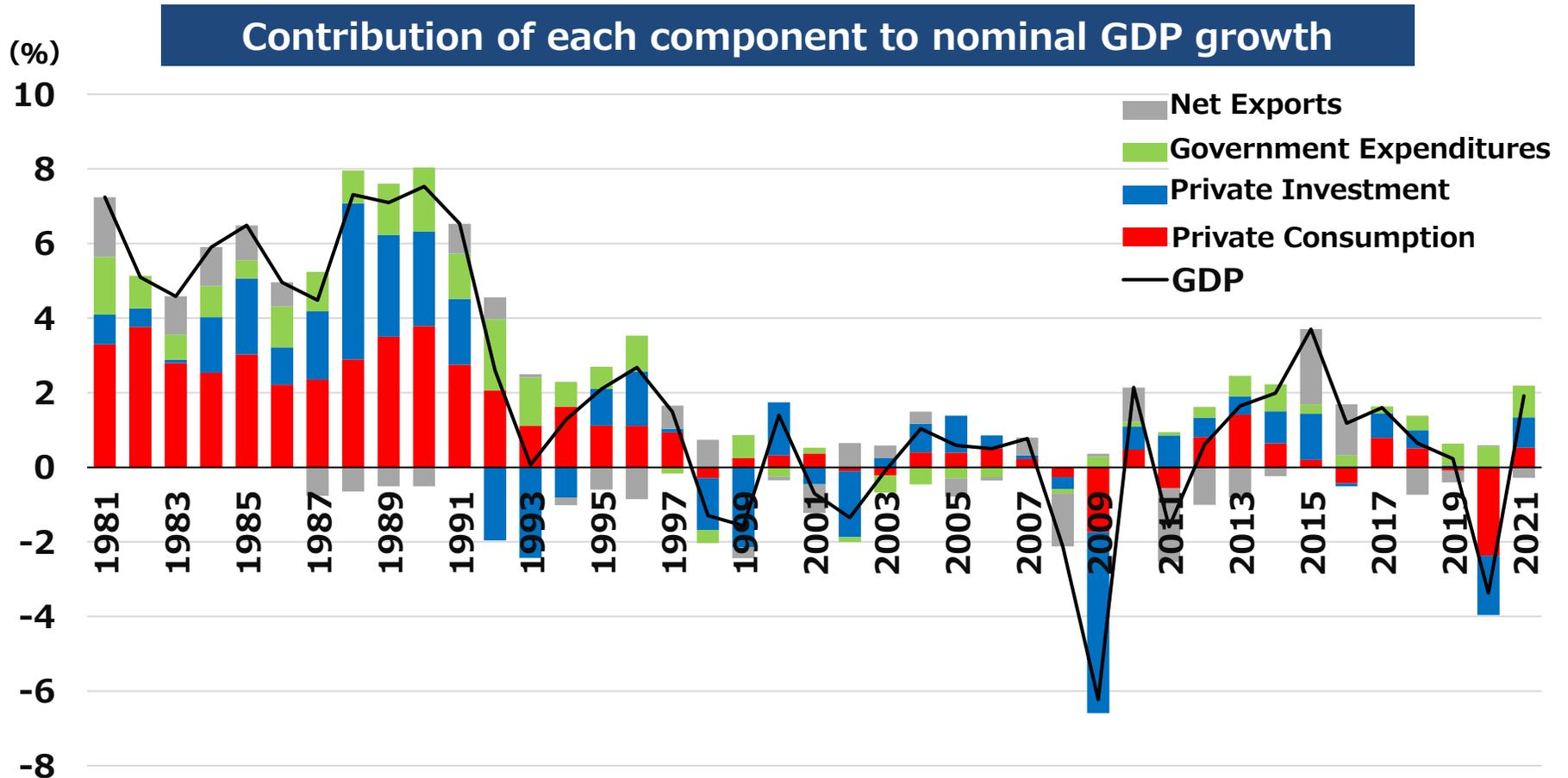
(Source) Cabinet Office

Phase comparison of personal consumption (real)



Breakdown of Nominal GDP Growth Rate

- Looking at nominal GDP growth by element, personal consumption has been sluggish since the 1990s.



(Source) Cabinet Office

Table of Contents

I. Recognition of Current Situation

- (1) Reflection on the "Lost 3 Decades" and "New Direction"
- (2) Trends that should be followed in industrial policy over the medium to long term**
- (3) Shift in industrial policy in the world and Japan
- (4) Signs of change and turning points taking place
- (5) Necessity to carry this momentum to long-term sustainable growth

II. New Direction of Economic and Industrial Policies

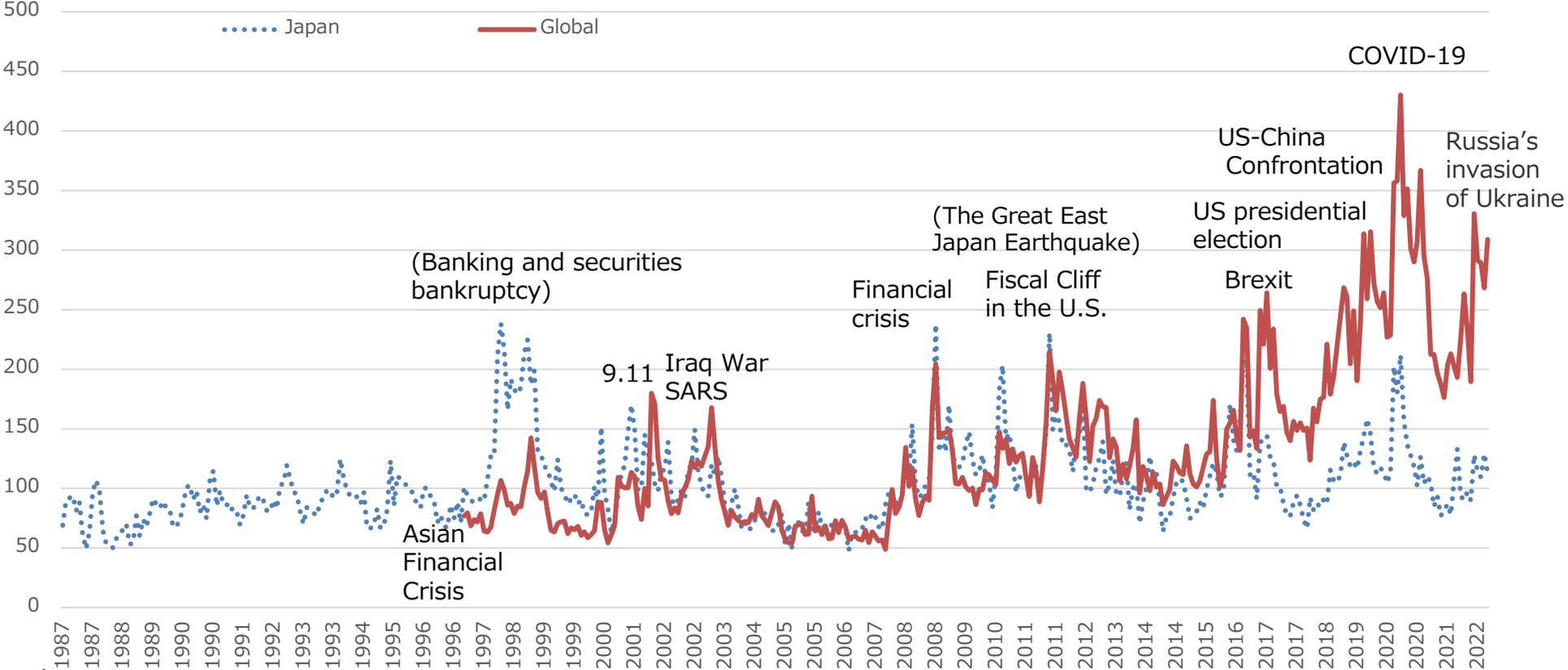
III. Key Policy Tools for the Virtuous Cycle of Domestic Investment, Innovation, and Income Growth.

IV. Sector-specific measures

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.

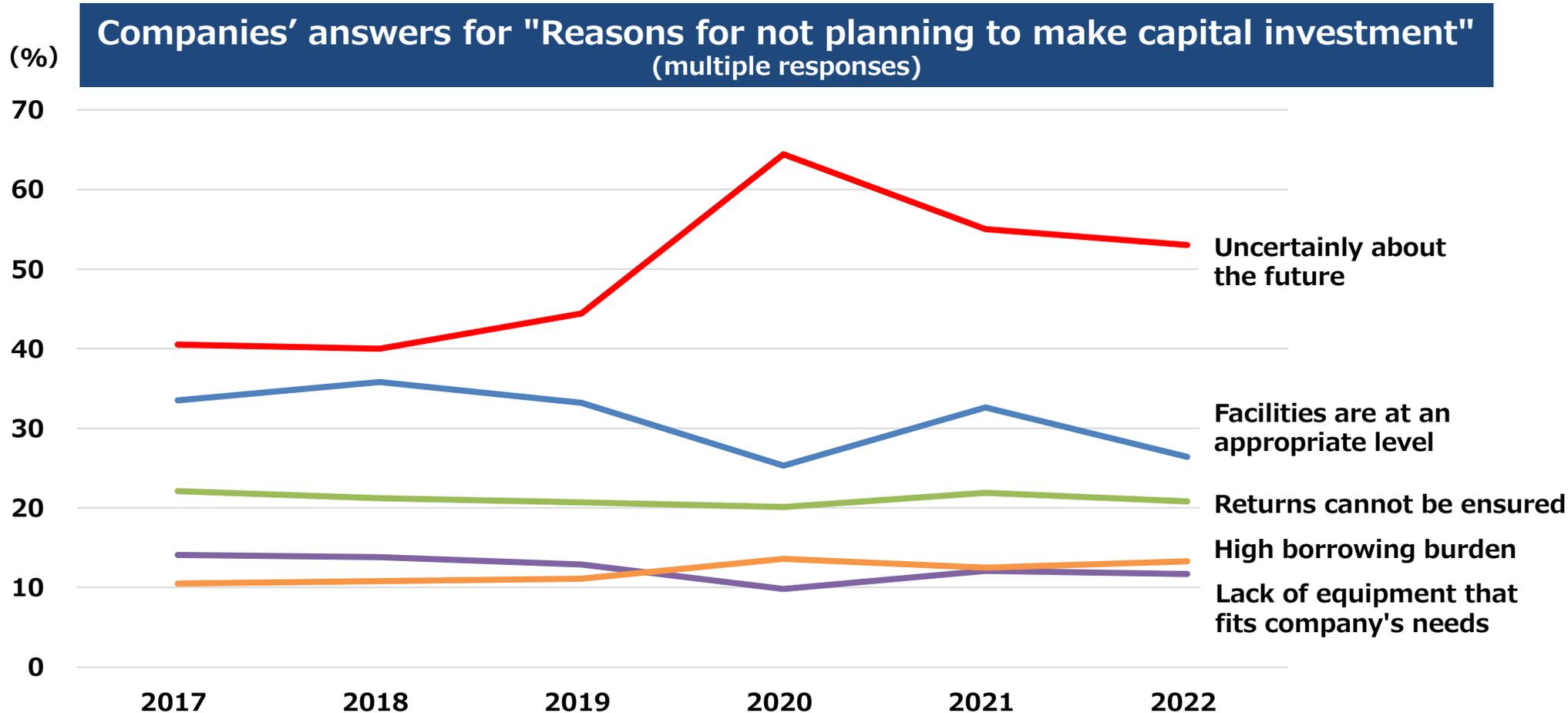
Policy Uncertainty Index in the World and Japan



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

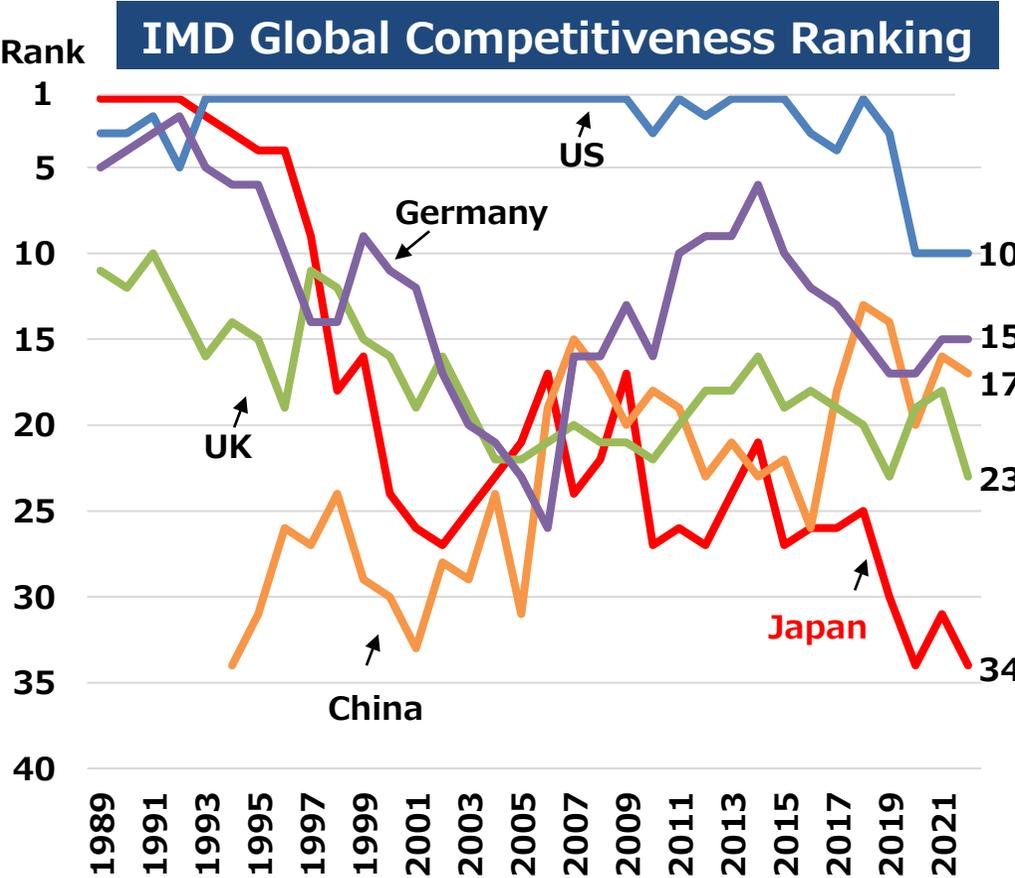
Reasons Japanese Companies Refrain from Capital Investments

- According to a survey of corporate attitudes, the most common reason for companies not investing in plant and equipment is “uncertainty about the future,” and is on an increasing trend.

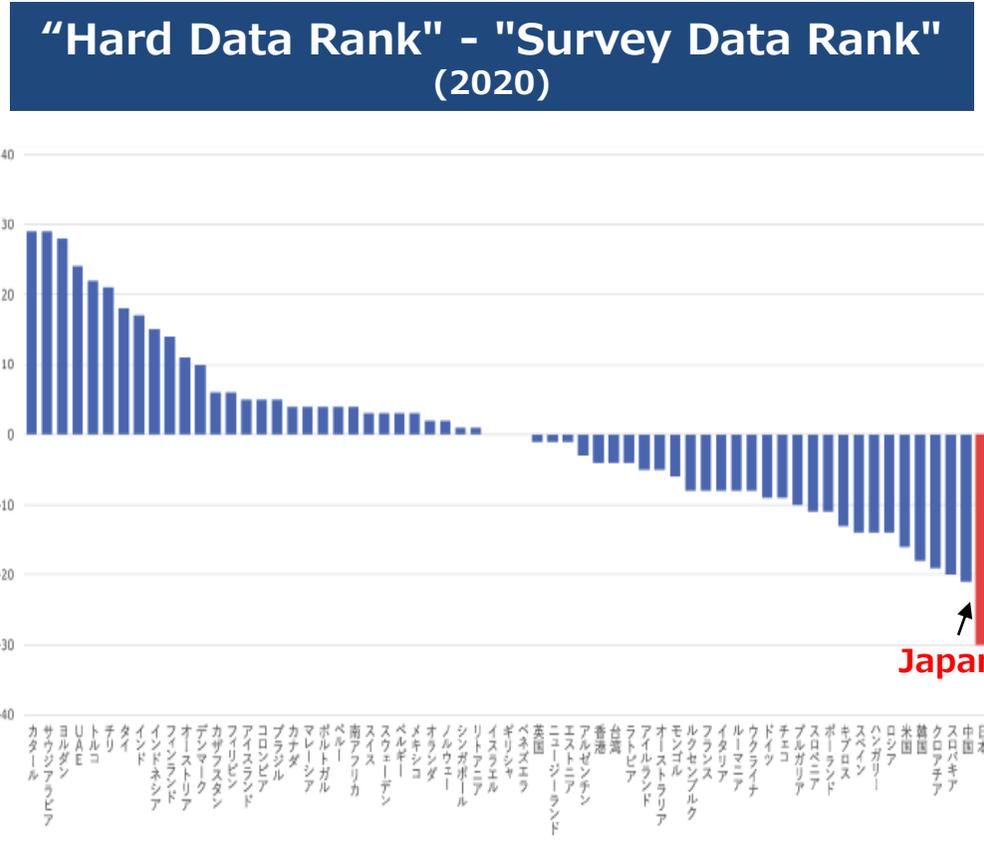


Sluggish IMD World Competitiveness Ranking (discrepancy between hard data and survey data from business managers)

- Japan was ranked 1st among the IMD Global Competitiveness Ranking until the early 1990s but has continuously declined to become 34th out of 63 countries as of 2022.
- The rankings derived from hard data and survey data are 13th and 43rd, respectively. The discrepancy between these rankings is the largest among all surveyed countries, in part reflecting the pessimistic views of Japanese business managers.



(Source) IMD "World competitiveness yearbook"

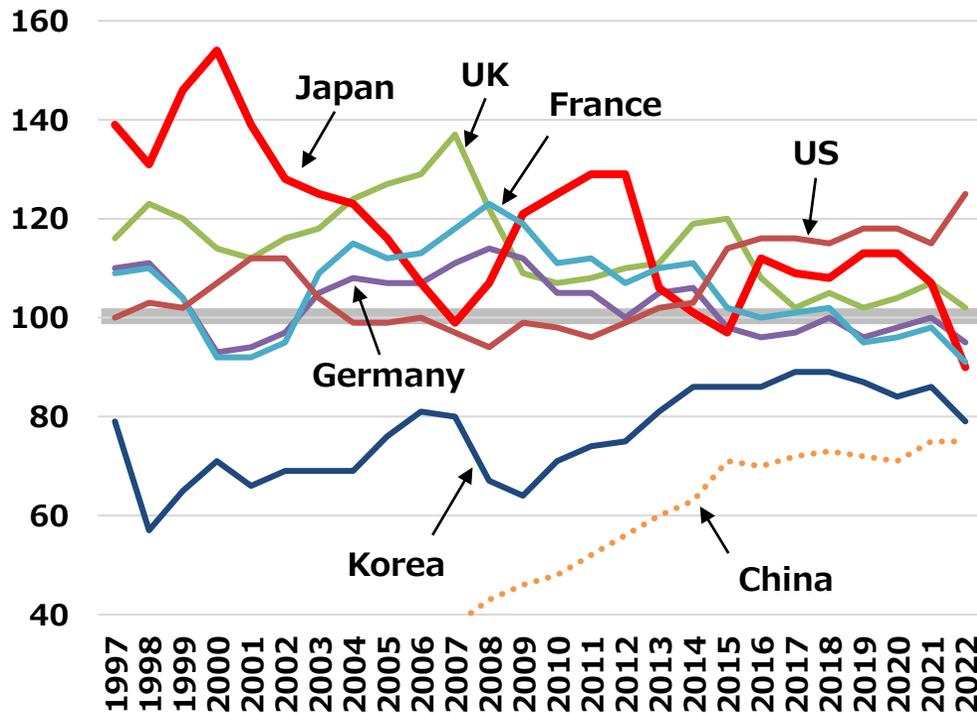


(Source) Mitsubishi Research Institute, Inc

Price Level in Japan has Declined in the Long Run

- Japan's price level was high in the 1990s (the "domestic-foreign price gap problem") but has declined over the past 30 years.
- The "reverse" domestic-foreign price gap has already occurred in some areas, and the price gap with China has narrowed over the past 20 years, making Japan cost-competitive among developed countries.

Price levels in major countries
(OECD country averages = 100)



(Source) OECD.stat.

Domestic/foreign price difference by sector
(price in Japan/price overseas times exchange rate)
(Results of surveys in 2000 and 2022)

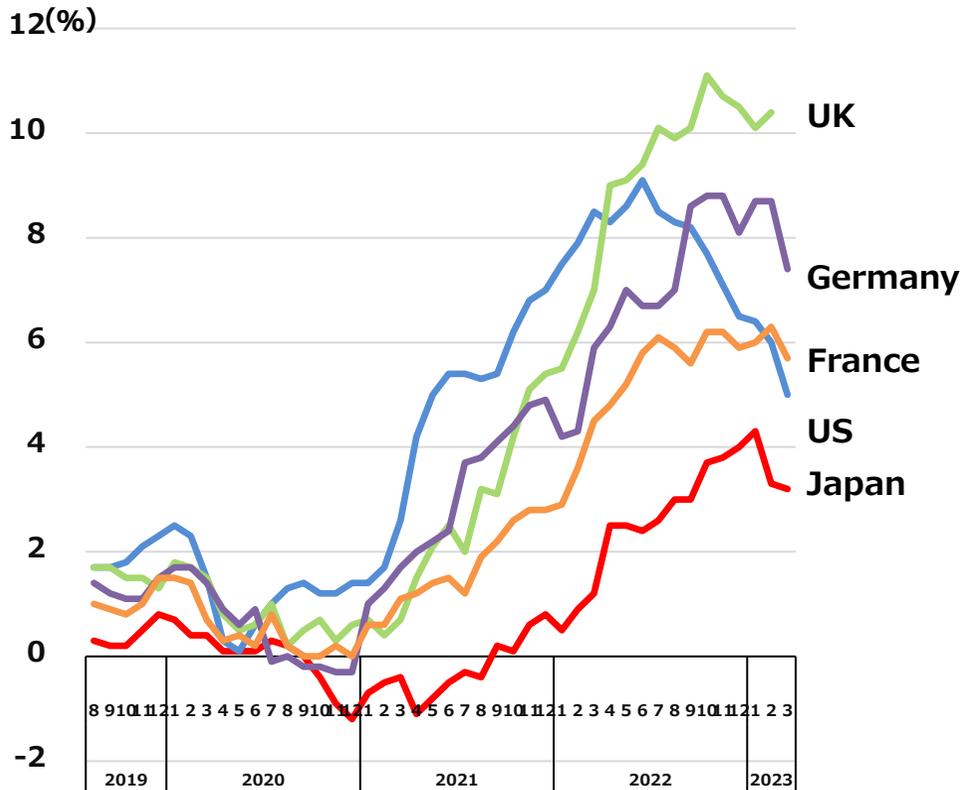
	US		China	
	2000	2022	2000	2022
Total	1.15	1.04	3.50	2.01
Industrial products	1.10	1.00	2.58	1.61
Steel	0.95	0.61	1.22	1.82
Metal Products	0.54	0.74	2.07	1.17
Transportation equipment	1.13	0.92	4.00	2.81
Energy	1.48	1.31	3.05	1.29

(Source) Ministry of Economy, Trade and Industry

Historical Inflation Throughout the World

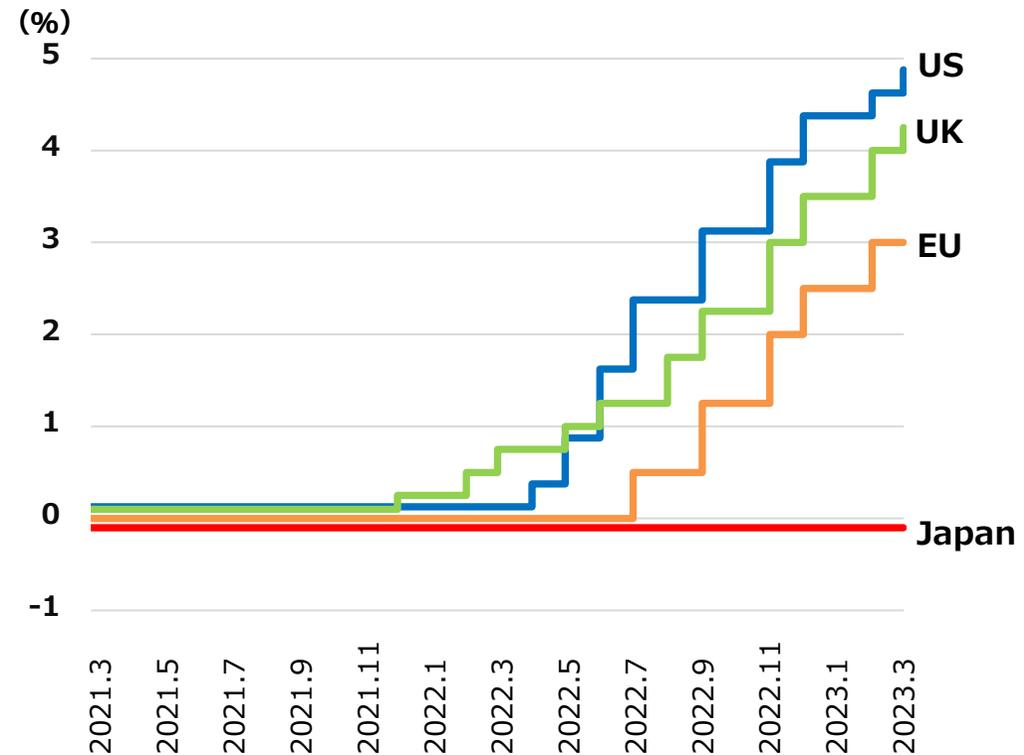
- With rising energy and food prices and wages, inflation is occurring globally. To cope with inflation, central banks in the U.S. and other countries raised interest rates.
- Some believe that a persistently high inflationary trend has been triggered by restrained labor supply (declining labor force in China, aging of the population in developed countries) and the rise of geopolitical risks.

Consumer Price Index Change



(Source) Ministry of Internal Affairs and Communications

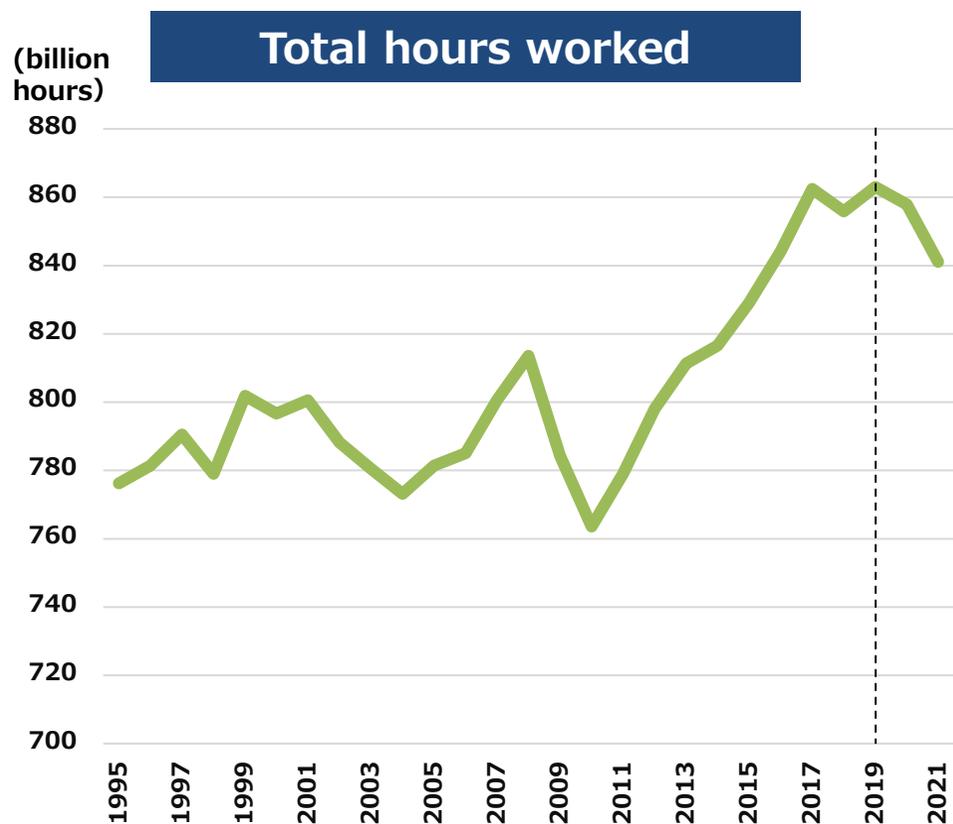
Changes in Policy Interest Rate



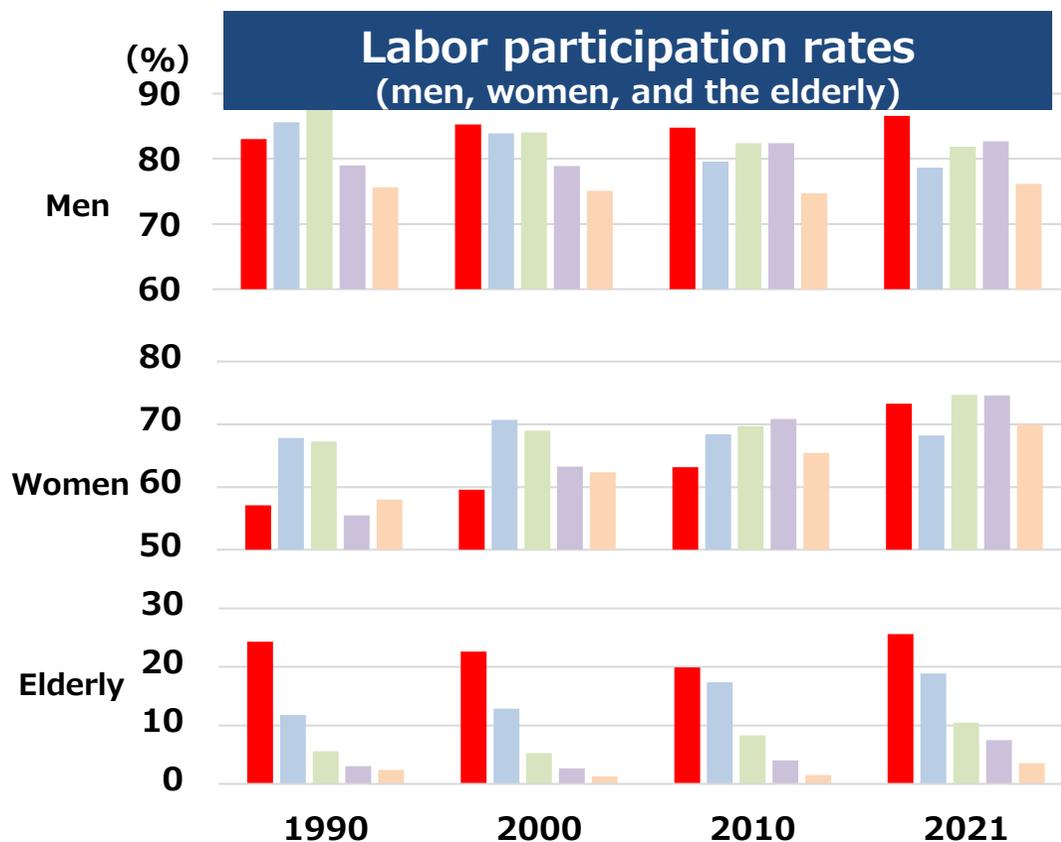
(Source) Ministry of Foreign Affairs

Possibility of Persistent Labor Shortage

- Even under the decline of working-age population, the increase in the number of women and the elderly has contributed to the overall increase in the number of hours worked since 2000. However, labor input has been declining since 2019.
- Labor participation rates by male, female, and elderly are all among the highest in the world, and labor participation may be close to the upper limit.



(Source) Ministry of Health, Labor and Welfare



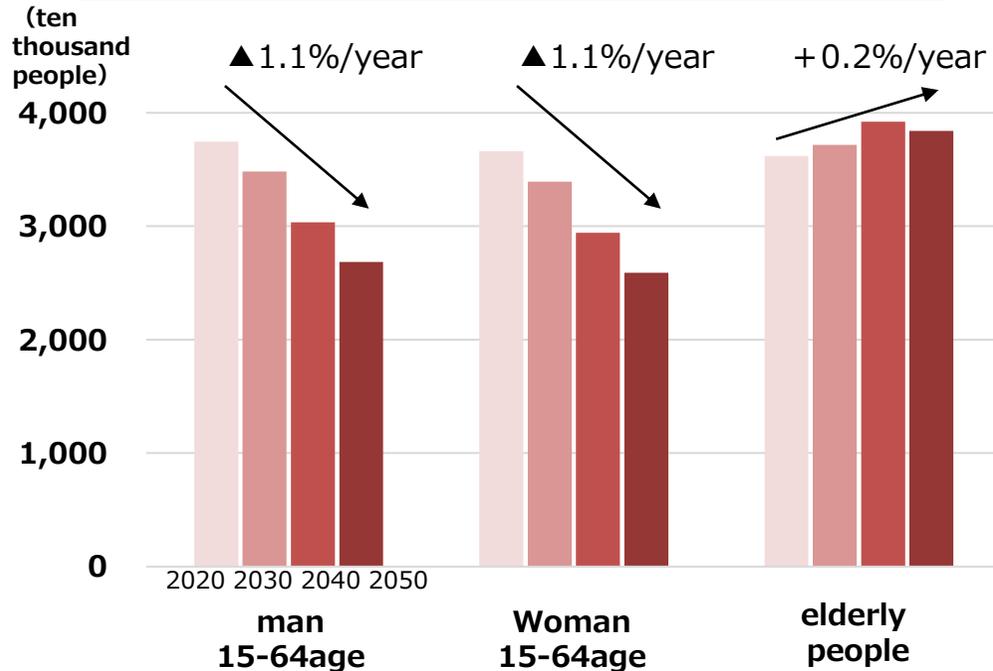
(Note) Data for Japan, US, UK, France and Germany, from the left
(Source) OECD.stat.

Future Population Projections and Labor Input Projections

- The population projection shows that the working-age (both men and women) will continue to decrease along with the population. The elderly will increase, but not as rapidly as to cover for the decline of the working-age population.
- With labor participation already at the world's highest level, it may not be possible to maintain or increase labor input under current arrangements.

Population Projections

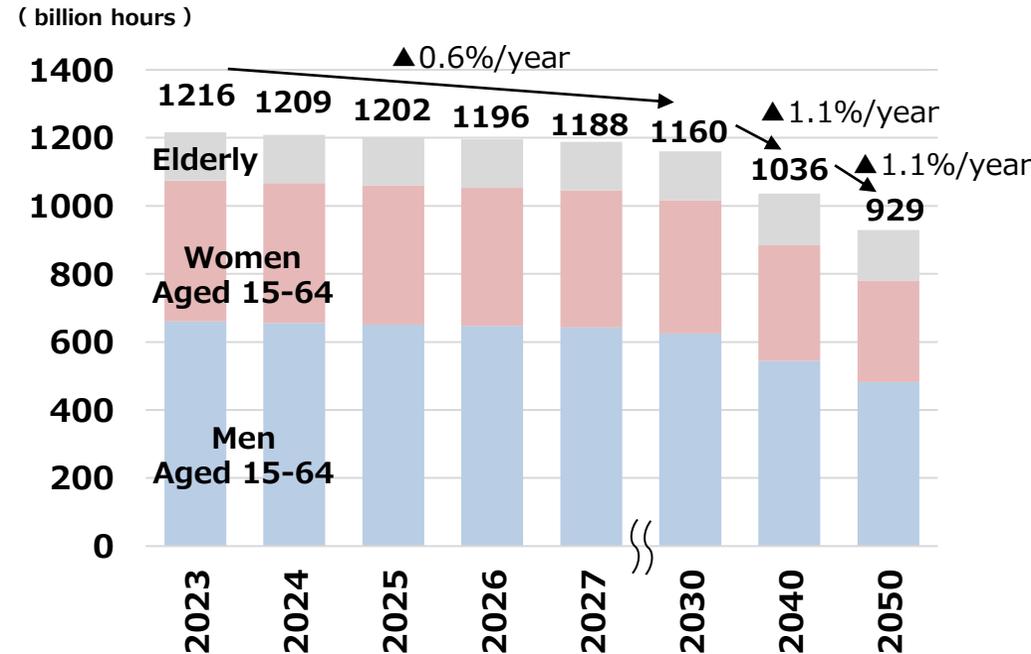
(Males and Females aged 15-64 and Elderly)
(from left to right: 2020, 2030, 2040, 2050)



(Source) Ministry of Internal Affairs and Communications

Mechanical Estimation of Future Estimates of Working Hours

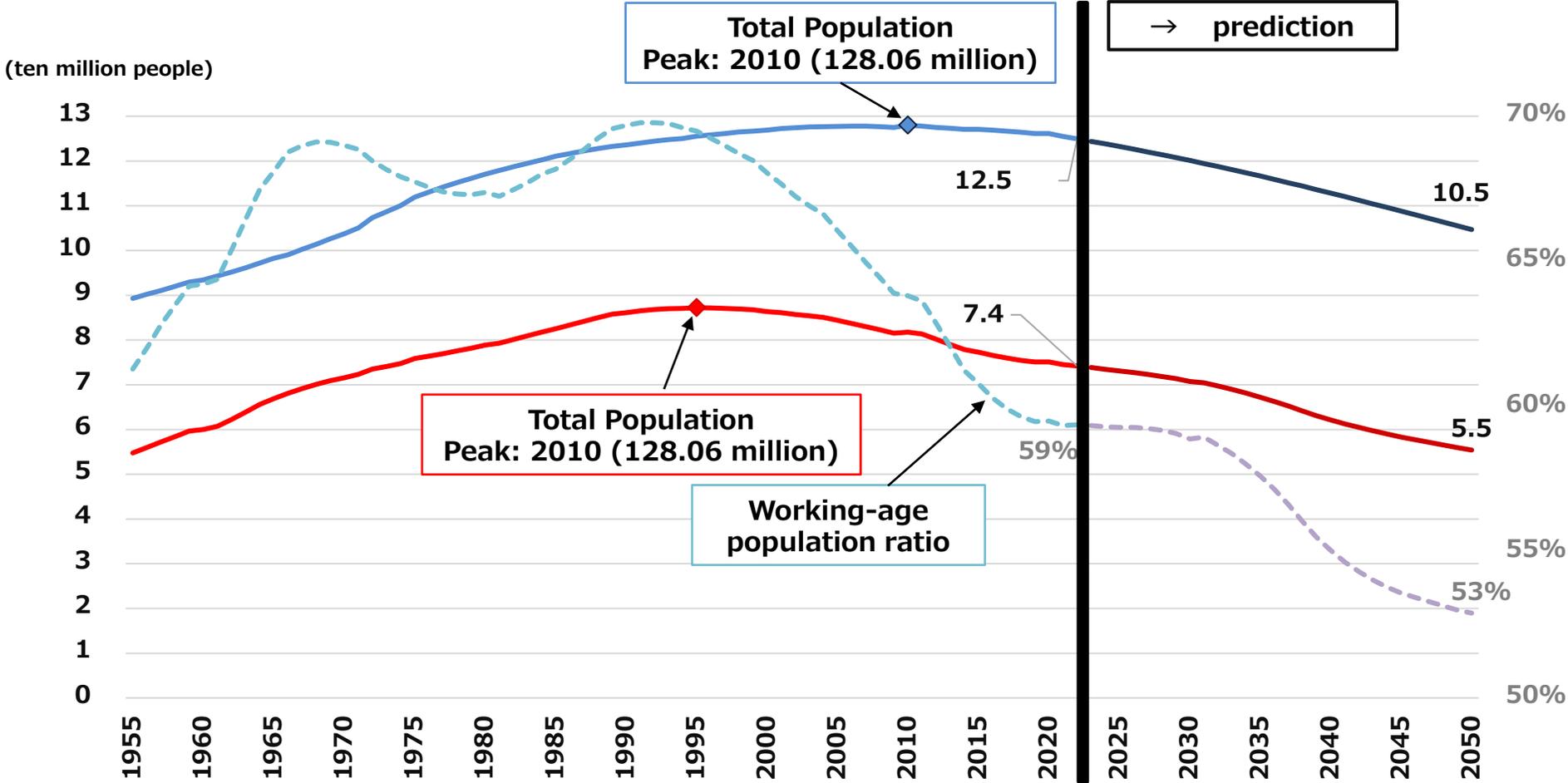
(Men and women aged 15-64 and the elderly)



(Note) Estimation by METI, using future population estimations by MHLW and the current labor participation rate and average working hours from MIC

Total Population and Working Age Population

- The decline of working-age population (age 15-64) began in 1995, and the decline of the entire population has begun since 2010.

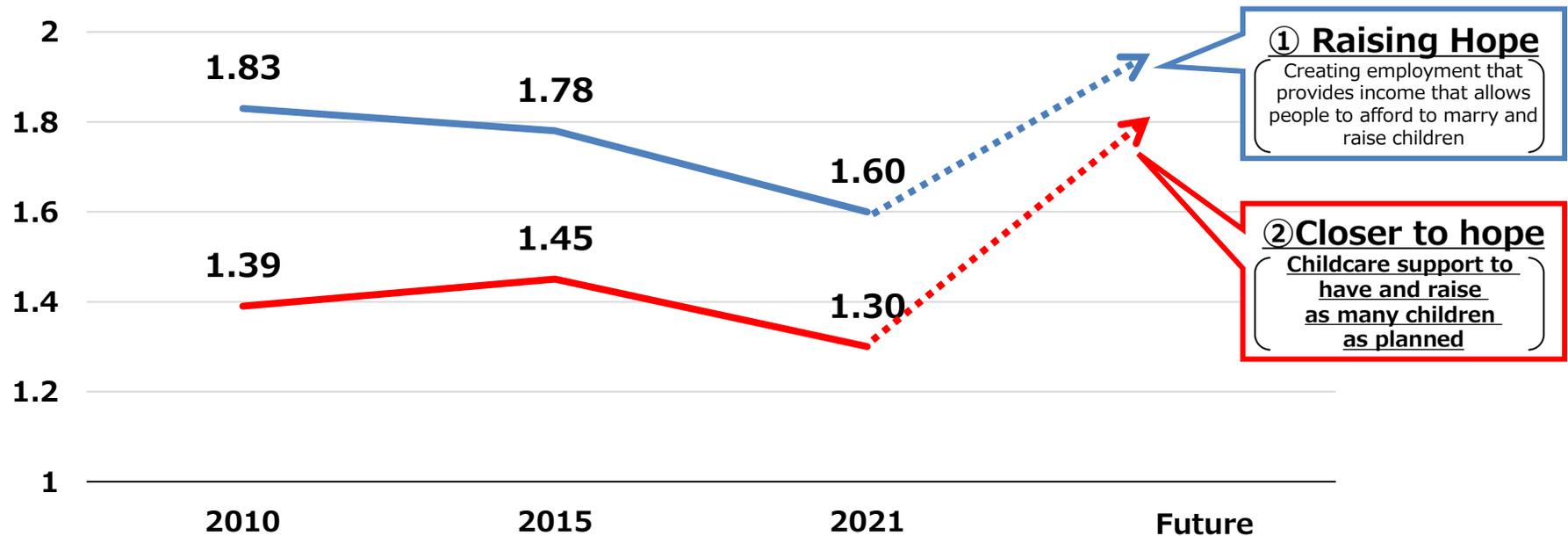


(Source) Ministry of Internal Affairs and Communications

Desired and Actual Total Fertility Rates

- The desired fertility rate, in addition to the actual fertility rate, is declining. Factors contributing to the decline include a rise in the proportion of unmarried people, a decline in the desire to marry, and a decrease in the ideal number of children.
- The underlying factor among these reasons is the low level of income.

Total Fertility Rate and Desired Fertility Rate (Estimate)



"Desired fertility rate" = { Percentage of Married × Number of children planned for the couple
+ Percentage of unmarried × Percentage of unmarried people who wish to marry
× Number of children desired } × Effects of separation

2010年	(0.34 × 2.07 + 0.66 × 0.89 × 2.12) × 0.938	= 1.828... ≈ 1.83
2015年	(0.32 × 2.01 + 0.68 × 0.89 × 2.02) × 0.955	= 1.781... ≈ 1.78
2021年	(0.30 × 2.01 + 0.70 × 0.84 × 1.79) × 0.966	= 1.599... ≈ 1.60

Marriage and Child Rearing Require Financial Resources

- The main reasons for not being able to marry despite their desire and for not having the ideal number of children are both the financial burden of raising and educating children and the lack of financial resources to cover this burden.

Necessary Circumstances for Marriage

1st	<u>Being able to afford it financially (42.4%)</u>
2nd	Having the opportunity to get to know (meet) the opposite sex (36.1%)
3rd	Being able to afford mental health (30.6%)
4th	Meeting a partner who meets their desired criteria (30.5%)
5th	Feeling the need to get married (28.4%)

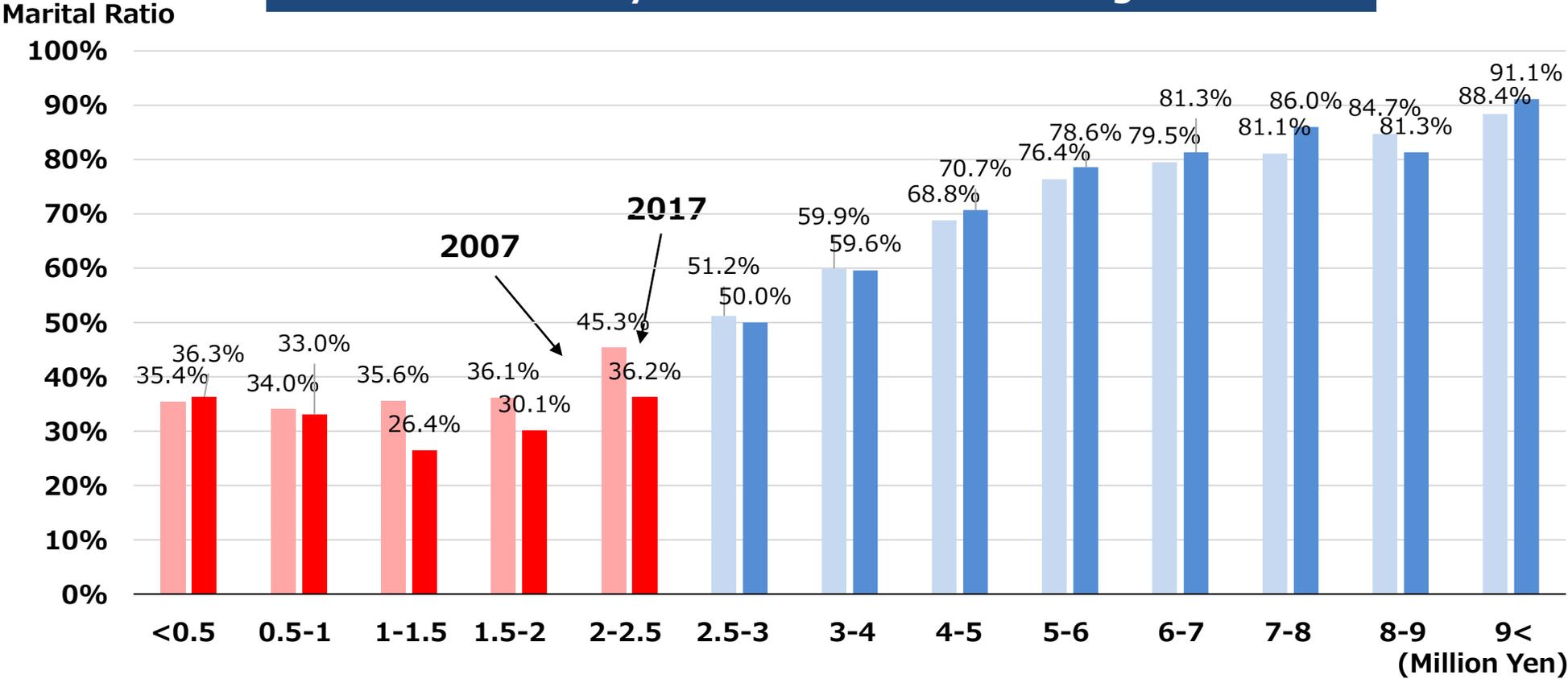
Reasons for not having the ideal number of children

1st	<u>Because it costs too much to raise and educate children (77.8%)</u>
2nd	Because they cannot bear the psychological and physical burden of child rearing any longer (23.1%)
3rd	Because the house is small (21.4%)
4th	Because it interferes with their job (work or family business) (21.4%)
5th	Because they do not want to give birth at an older age (19.7%)

Relationship between Income and Marital Ratio

- For men aged 35-39, annual income is correlated with marital ratio. In particular, the ratio is lower for those with annual incomes of less than 2.5 million yen.
- Compared to 10 years ago, the married-couple rate has declined, especially for those with annual incomes between 1 million yen and 2.5 million yen.

Marital status by annual income for men aged 35-39

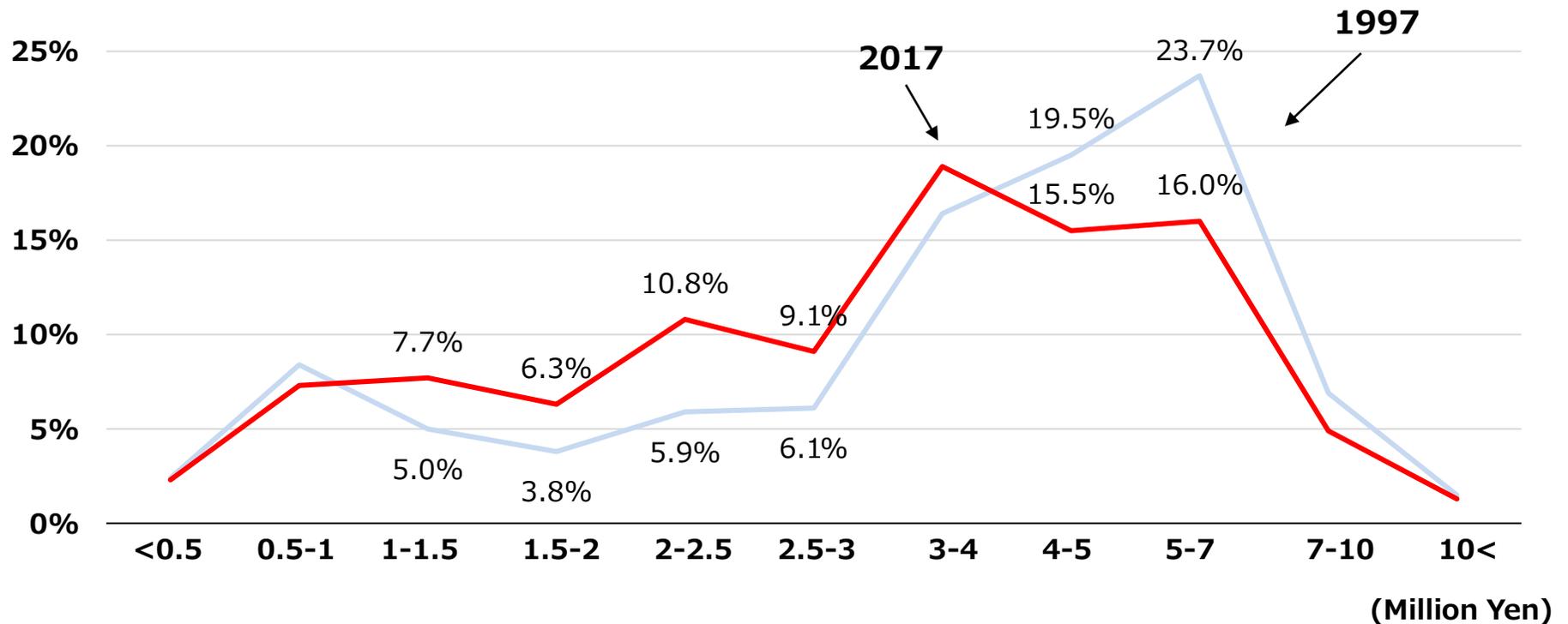


(Source) Japan Institute for Labor Policy and Training

Percentage of Low-Income Groups Increased

- The percentage of those with annual earning of more than 4 million yen has decreased from 1997 to 2017, while the percentage of those earning less than 3 million yen has increased.

Annual income distribution of workers aged 30-39



(Source) Ministry of Internal Affairs and Communications

Insufficient Desirable Jobs in Rural Areas

- Many people choose to move to the Tokyo area instead of staying in their hometowns because they cannot find a job that offers the type of work they want, or jobs that offer good wages.

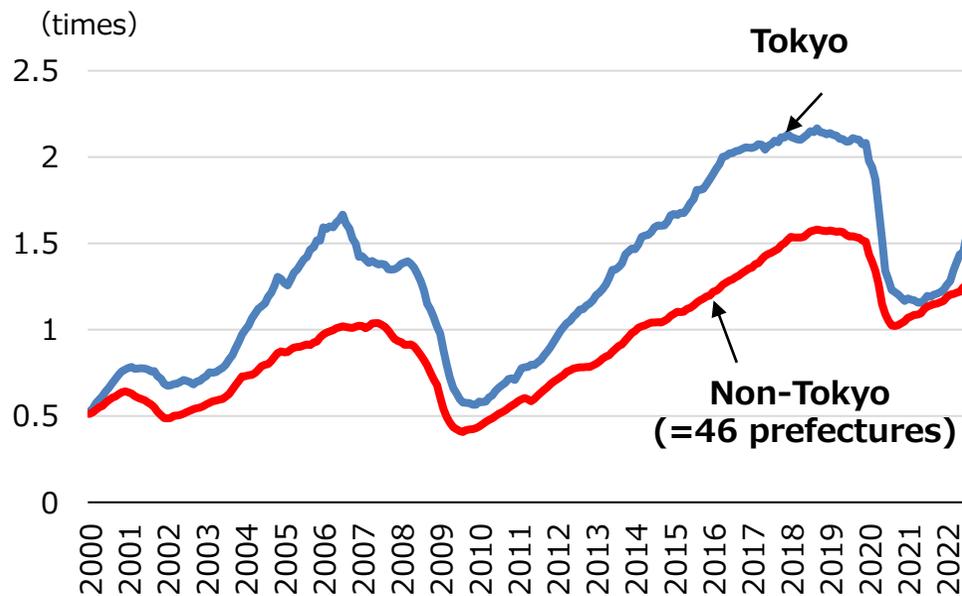
Background of migration of those who moved to the Tokyo area (survey among Tokyo area residents who were born outside the Tokyo area)

1st	<u>Not being able to find a job in the type of work they want</u> (Overall: 25.6%) Men : 28.4%、 Women : 22.9%
2nd	<u>Inability to find a job that offers good wages and other benefits</u> (Overall: 19.5%) Men : 23.4%、 Women : 15.5%
3rd	Lack of higher education where they can learn what they want (Overall: 15.2%) Men : 15.3%、 Women : 15.1%
4th	<u>Not being able to find a job that makes use of their abilities</u> (Overall: 14.8%) Men : 18.8%、 Women : 10.9%
5th	Inconvenience of daily life (Overall: 11.9%) Men : 10.0%、 Women : 14.0%

Possibility of Employment Mismatch in Rural Areas

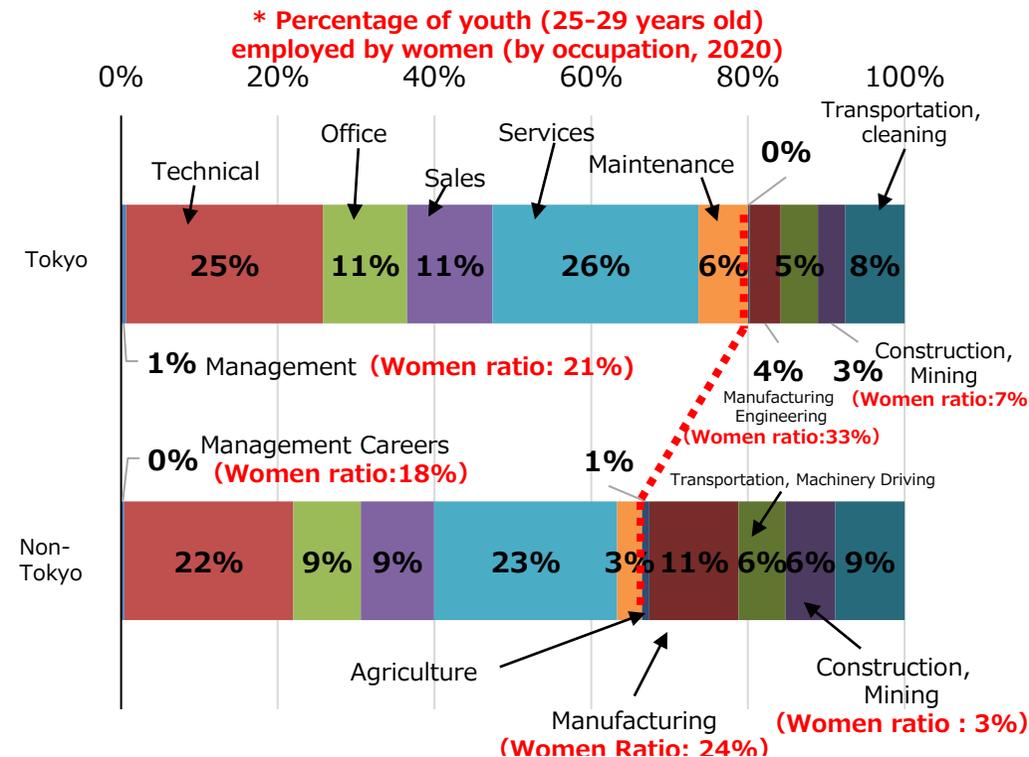
- The ratio of effective job offers to job seekers is currently above 1 nationwide. The issue of employment in rural areas may not be a simple question of quantity.
- For example, more effective job openings exist in rural areas, while the percentage of young women among them is lower in the regions. Women's empowerment in occupations that are in demand in regional areas may be insufficient.

Effective Job Openings Ratio



(Source) Small and Medium Enterprise Agency

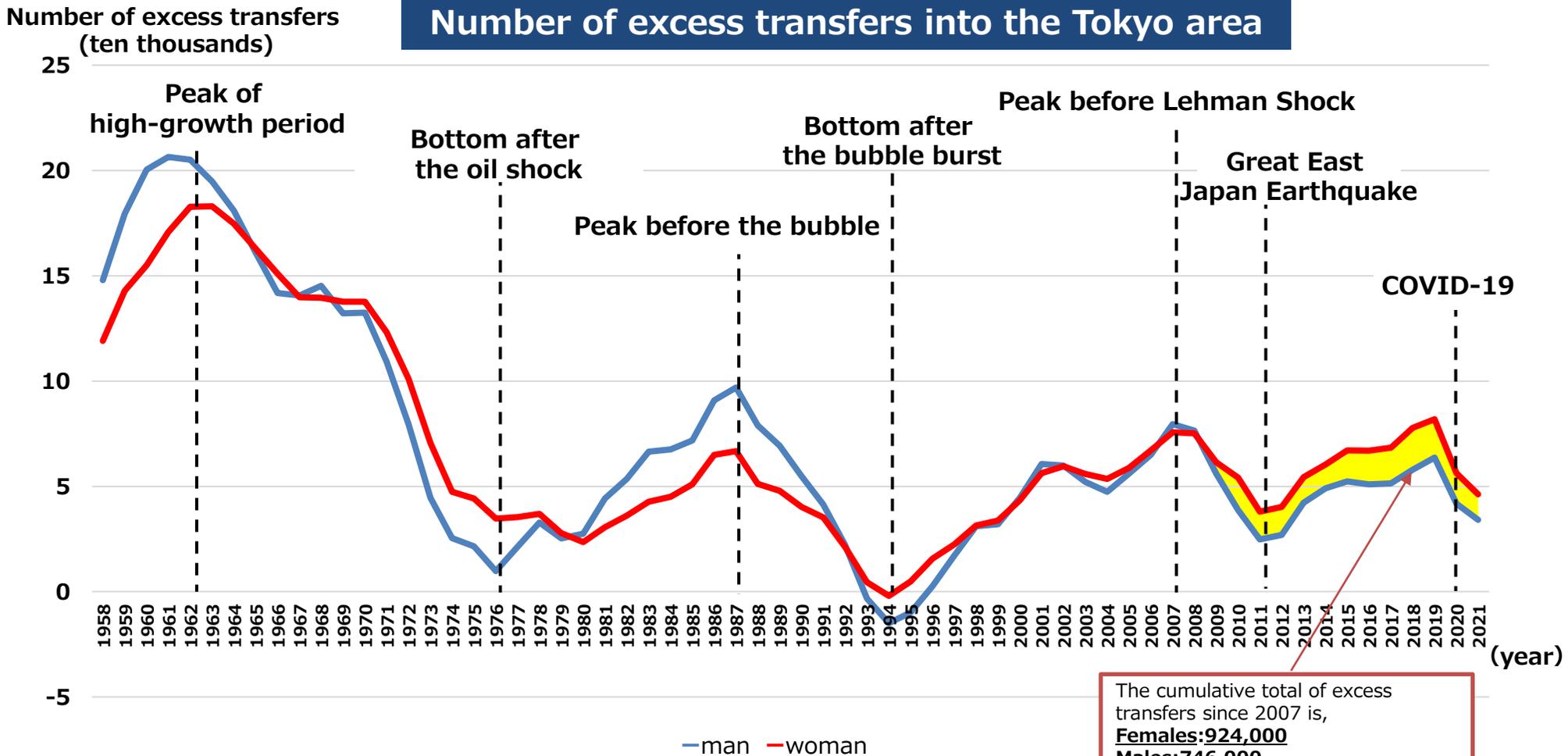
Occupational Composition of Effective Job Openings in Tokyo and Non-Tokyo (FY2021)



(Source) Ministry of Health, Labor and Welfare, Ministry of Internal Affairs and Communications

The Concentration of Young People (especially women) in Tokyo

- The number of females moving into the Tokyo area has remained higher than males for the past 15 years. The same trend has been observed since COVID-19.



The cumulative total of excess transfers since 2007 is,
Females: 924,000
Males: 746,000
 ⇒ **The cumulative total for the 15 years since 2007 is 178,000 more women moving in than men.**

*The Tokyo metropolitan area refers to Saitama, Chiba, Tokyo, and Kanagawa prefectures.
 (Source) Ministry of Internal Affairs and Communications

Importance of Midsize Companies as Quality Employers in Rural Areas①

		Smaller companies		Larger companies	
		Small-scale business (Common number of employees: ~19)	Mid-Size Company (20~299 employees)	Medium-sized to large companies (300~4,999 employees)	Super large corporation (5,000 people~)
Tokyo area (43%)	【Number of permanent employees】 <ul style="list-style-type: none"> ● 1.6 million (Male: 60%, Female: 40%) ● 4% among total 	【Number of permanent employees】 <ul style="list-style-type: none"> ● 3.8 million (Male: 63%, Female: 37%) ● 10% among total 	【Number of permanent employees】 <ul style="list-style-type: none"> ● 5.7 million (Male: 62%, Female: 38%) ● 15% among total 	【Number of permanent employees】 <ul style="list-style-type: none"> ● 4.8 million (Male: 54%, Female: 46%) ● 13% among total 	
	【Wages】 (10-99workers) 4.7 million yen	【Wages】 (100-999workers) 5.3 million yen	【Wages】 (1,000-workers) 6.1million yen		
Local area (57%)	【Number of permanent employees】 <ul style="list-style-type: none"> ● 4.3 million (Male: 60%, Female: 40%) ● 12% among total 	【Number of permanent employees】 <ul style="list-style-type: none"> ● 9.0 million (Male: 61%, Female: 39%) ● 24% of total 	【Number of permanent employees】 <ul style="list-style-type: none"> ● 5.8 million (Male: 60%, Female: 40%) ● 16% of total 	【Number of permanent employees】 <ul style="list-style-type: none"> ● 2.1 million (Male: 54%, Female: 46%) ● 6% of total 	
	【Wages】 (10-99 workers) 4.0 million yen	【Wages】 (100-999 workers) 4.5 million yen	【Wages】 (1,000-workers) 5.4million yen		

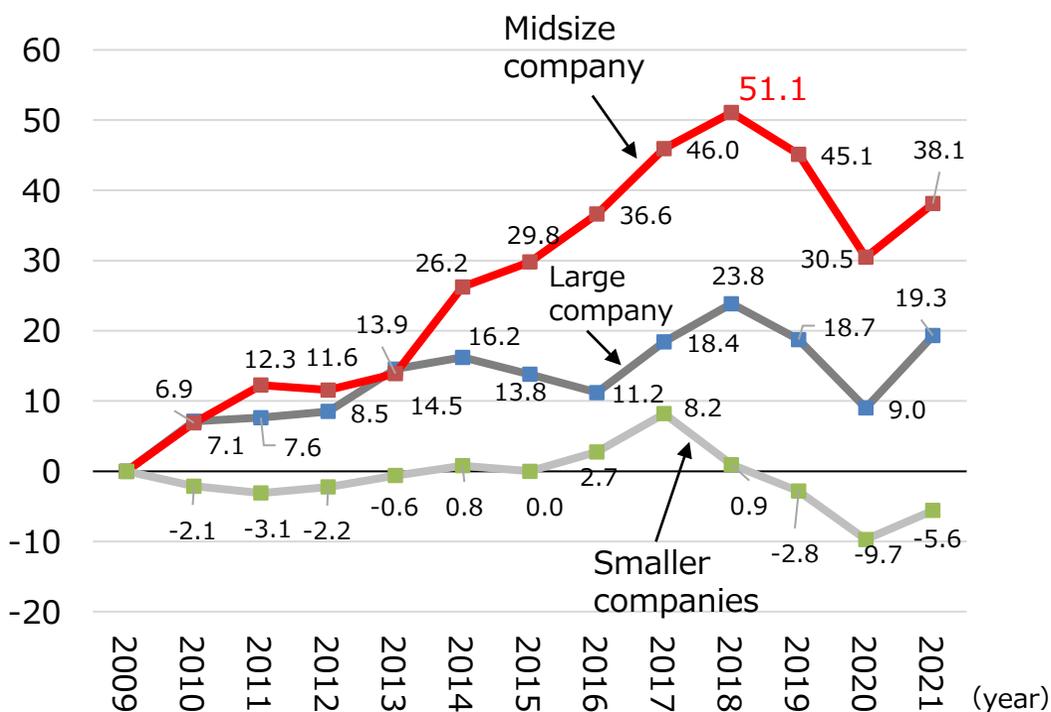
*The Tokyo metropolitan area refers to Saitama, Chiba, Tokyo, and Kanagawa prefectures.

(Source) Ministry of Internal Affairs and Communications, Ministry of Economy, Trade and Industry, Ministry of Health, Labour and Welfare

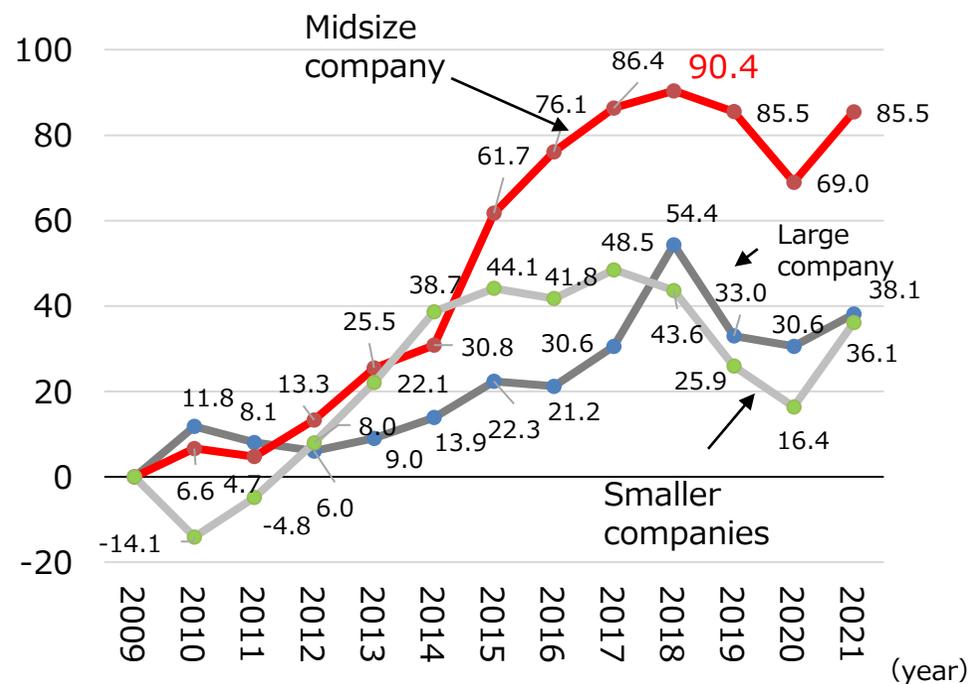
Importance of Midsize Companies as Quality Employers in Rural Areas①

- Compared to large and small firms, midsize firms have a higher growth rate in sales per firm, increasing 1.5 times in FY2018 from the base year of FY2009.
- In addition, the growth rate of capital investment per firm is also higher for midsize firms, increasing 1.9 times in FY2018 from the FY2009 level.

Trends in sales per company
(by company size, growth rate based on FY2009)



Trends in Capital Investment per Company
(by company size, growth rate based on FY2009)

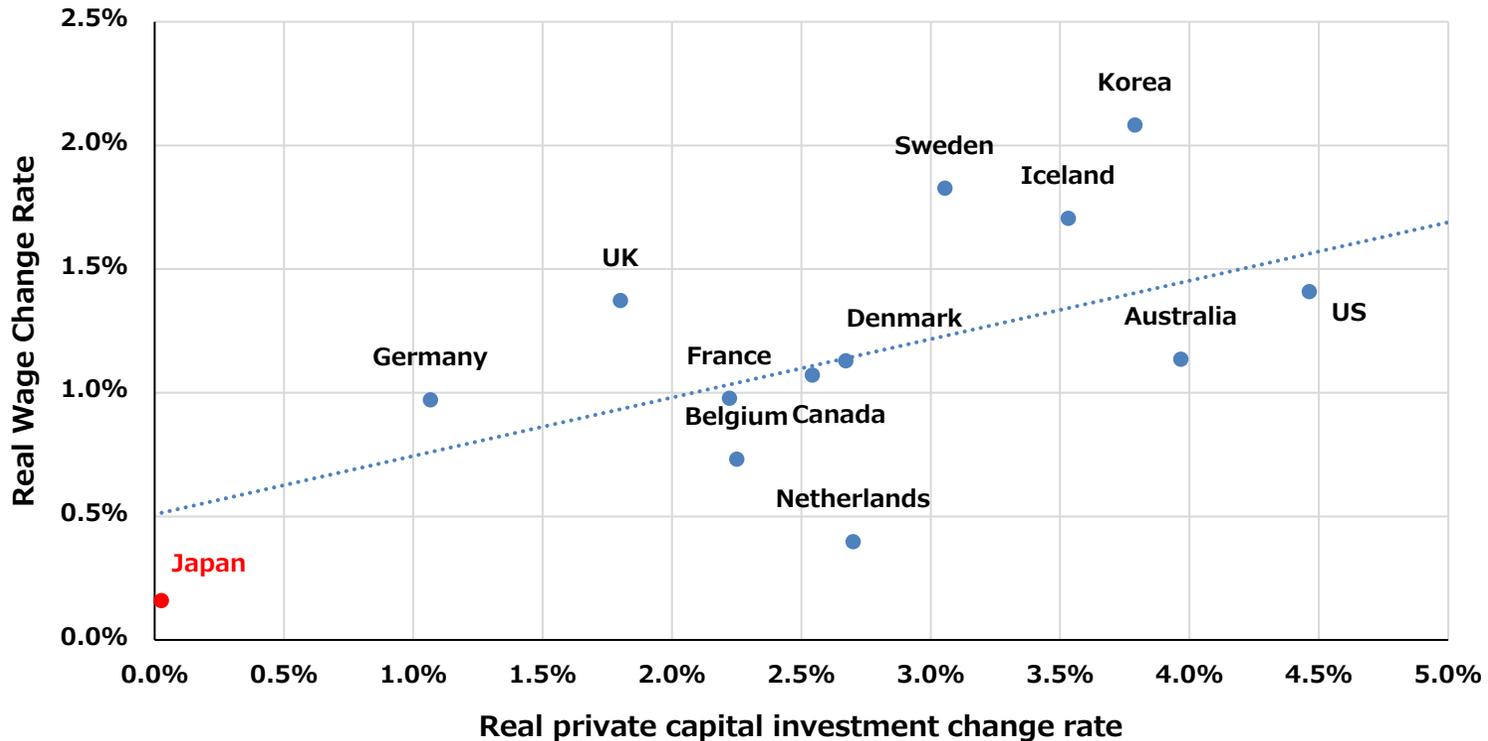


*Small and medium-sized enterprises: capital less than 100 million yen; medium-sized enterprises: capital between 100 million yen and 1 billion yen; large enterprises: capital of 1 billion yen or more.
(Source) Ministry of Finance

Increased Domestic Investment Leads to Higher Wages

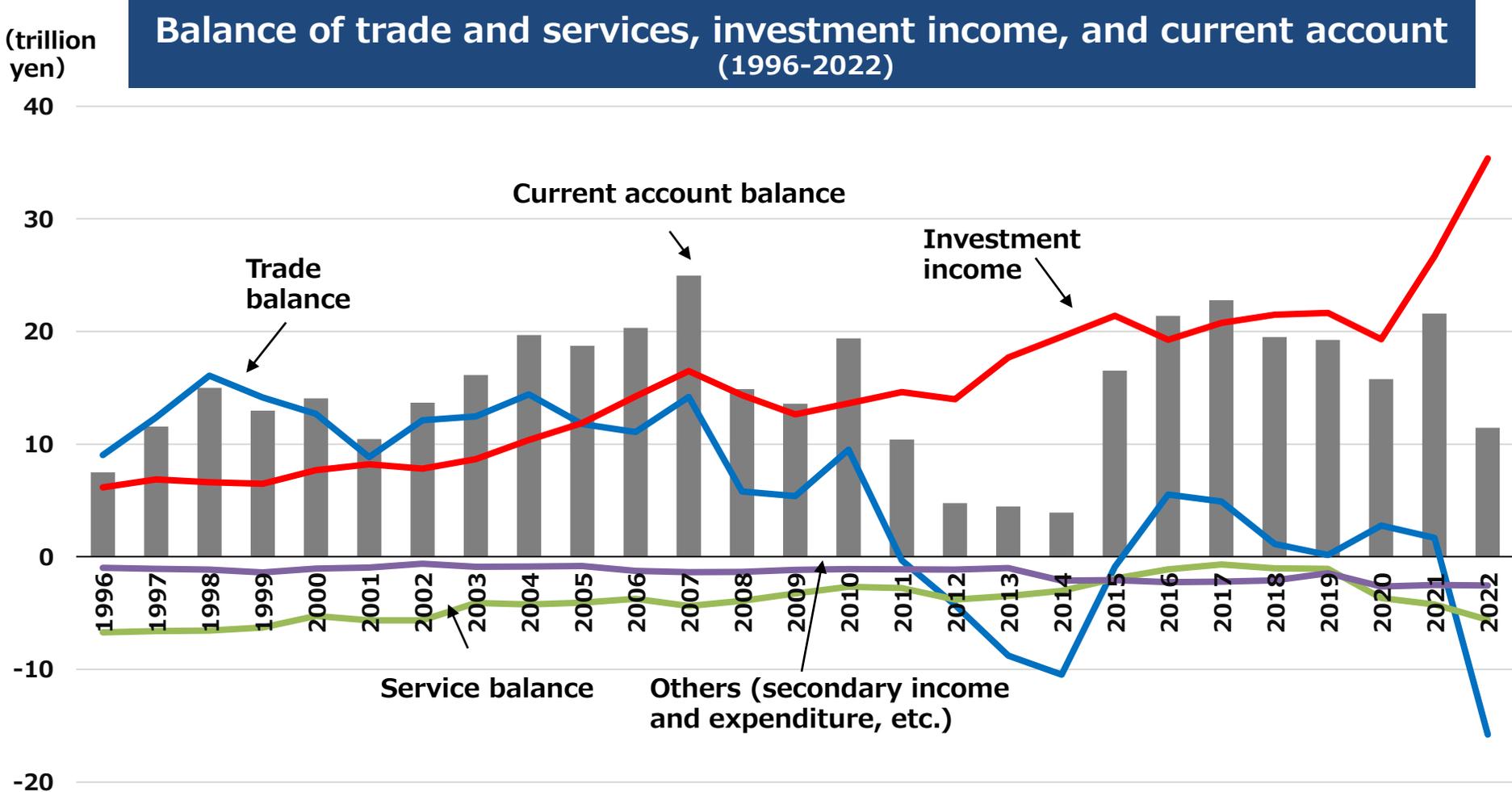
- Increased domestic investment leads to higher wages through higher labor productivity.
- In Japan, both capital investment and wages are rising at low rates.

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



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 shrunk and the current account surplus is currently supported by investment income.

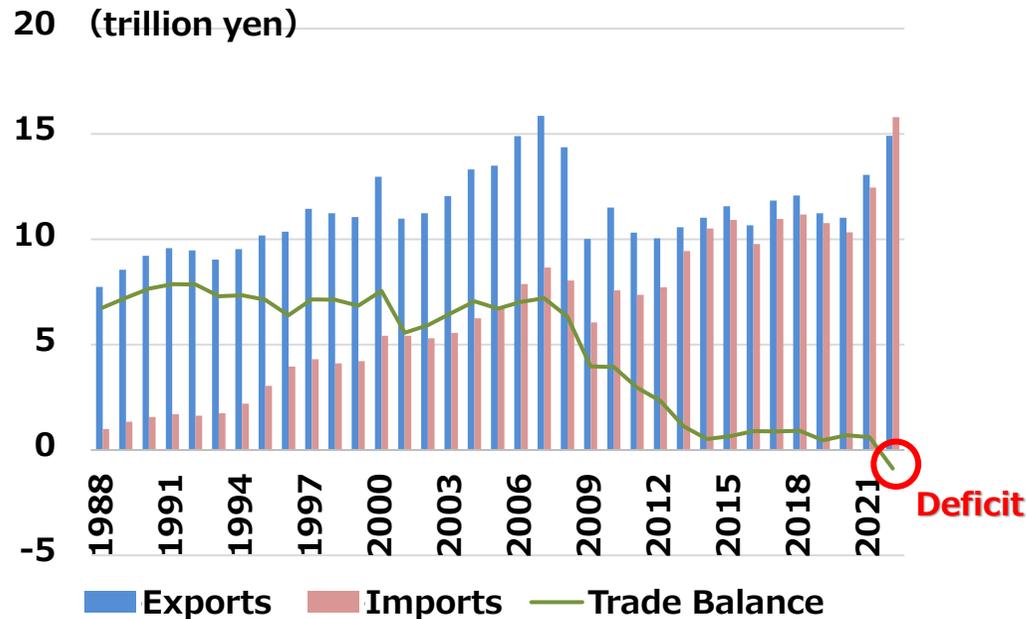


(Source) Ministry of Finance

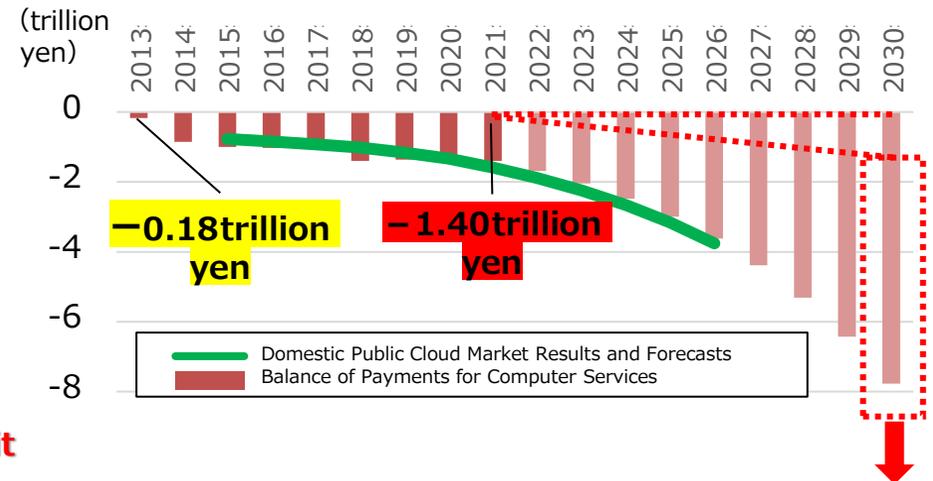
Growing Trade Deficit in the Digital Sector

- The trade deficit in 2022 was the largest ever. Electrical and electronics equipment, which used to have a trade surplus, has also fallen into a trade deficit in 2022.
- The deficit may further expand along with the progress of digitalization.

Balance of Trade in Electrical Equipment and Components



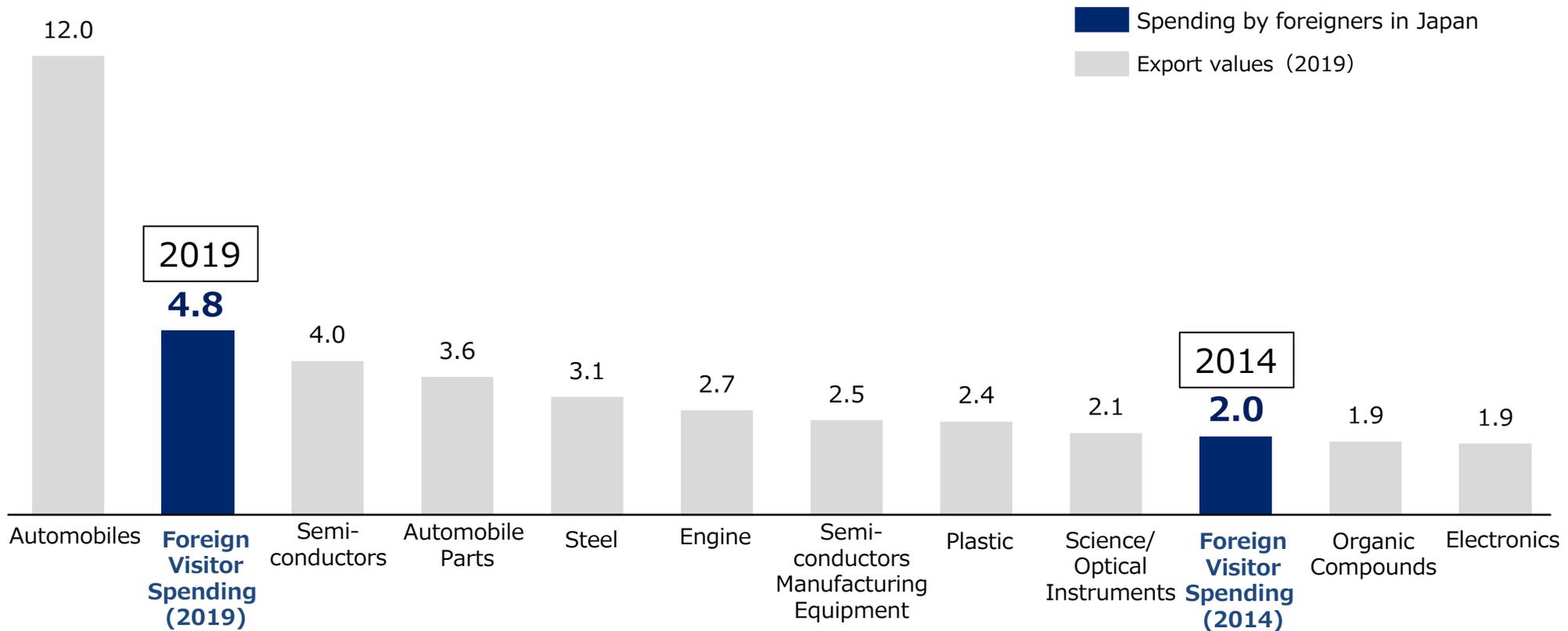
Projected Changes in Balance of Payments for Computer Services



Foreign Visitor Spending in Japan as a Source of Income

- Foreign visitor spending in Japan surged from about 2 trillion yen (2014) to 4.8 trillion yen (2019). This is equivalent to the second largest after automobile exports, contributing to foreign currency earnings.

(Trillion yen) Spending by Foreigners in Japan and Exports by Category (2019)

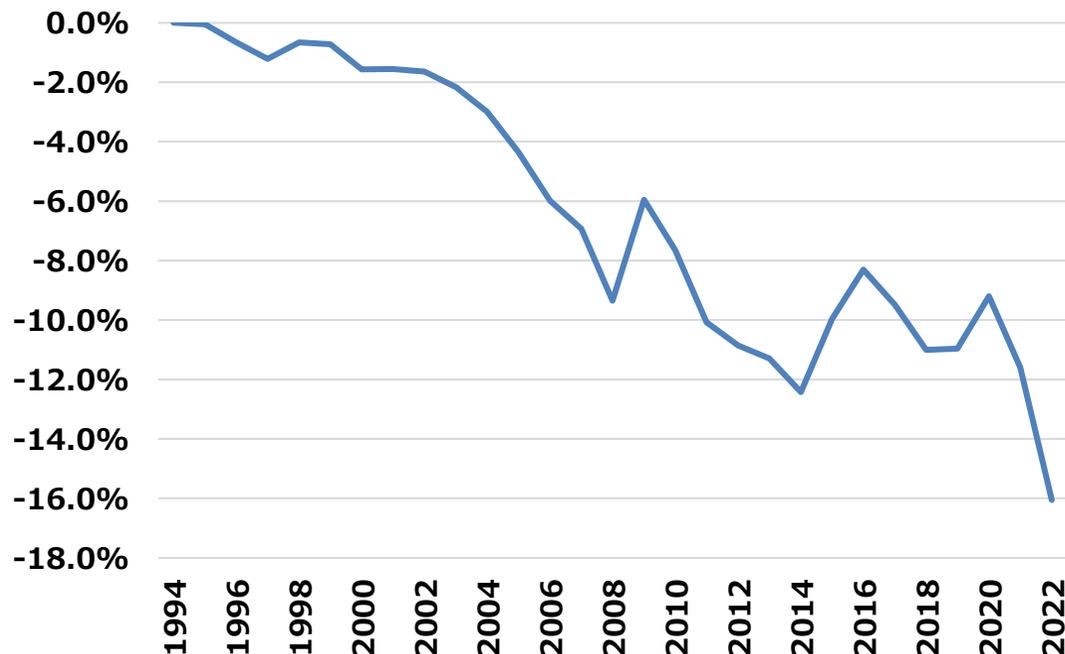


(Source) Ministry of Finance, Japan Tourism Agency

Worsening in Terms of Trade

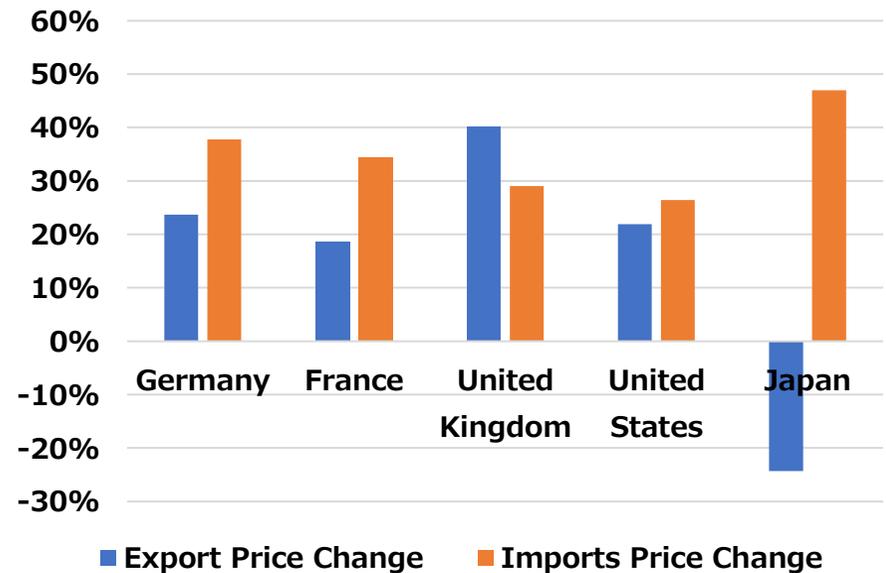
- The outflow of real income due to worsening terms increased in the 3 decades, especially in the early 2000s and the 2020s.
- This suggests that imports prices are high and export prices are low for Japan. Japan faces a particular situation where, unlike other countries, export prices have declined.

**Trading gains·losses / real GDP
(1994 = 0)**



(Source) Cabinet Office

**Changes in Export and Import Price Levels in Major Countries
(1991-2019)**



(Source) OECD.stat.

Table of Contents

I. Recognition of Current Situation

- (1) Reflection on the "Lost 3 Decades" and "New Direction"
- (2) Trends that should be followed in industrial policy over the medium to long term
- (3) Shift in industrial policy in the world and Japan**
- (4) Signs of change and turning points taking place
- (5) Necessity to carry this momentum to long-term sustainable growth

II. New Direction of Economic and Industrial Policies

III. Key Policy Tools for the Virtuous Cycle of Domestic Investment, Innovation, and Income Growth.

IV. Sector-specific measures

Industrial Policy is Back Worldwide

- Although circumstances differ from country to country, both the public and private sectors are stepping forward and making bold domestic and intra-regional investments.



【Issue】

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



【Policy Responses】

- **Labor-centered trade policy Industrial**
- CHIPS Act (August 2022): \$52.7 billion in funding, including a **10-year foreign investment restriction** upon receiving support
- Inflation Reduction Act (August 2022): \$433 billion (approx. 58.5 trillion yen), including **local assembly requirements** for EV tax credits and **and prevailing wage requirements** for hydrogen production equipment tax credits



【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 <February 2023(Creation of an environment to support scale-up of the clean industry sector (e.g., relaxation of state aid rules), etc.)



【Issue】

- **End of catch-up, export-led and high-growth economy**
- Competition with U.S., Europe, etc.
- **Rapidly declining birthrate and aging population (population decline from 2023)**



【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.
- National Science and Technology Projects(AI, quantum information, integrated circuits, life and health, space, etc.).
- Strengthening the competitiveness of the manufacturing industry(new materials, key technology equipment, smart manufacturing, robotics, aviation, etc.)

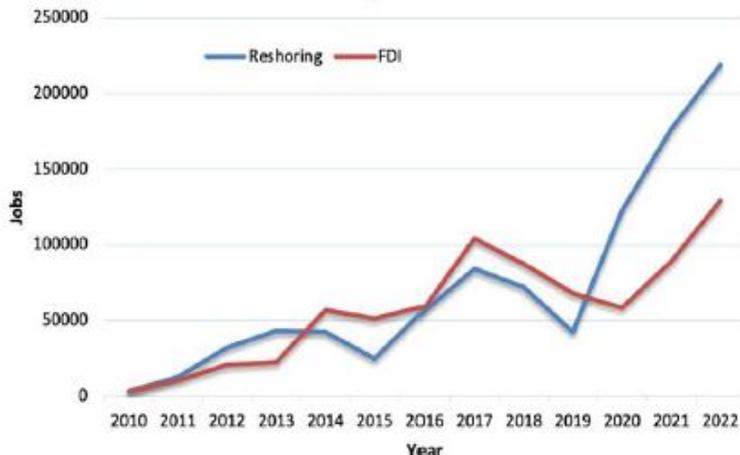
Review of Global Supply Chains

- Direct investment in China is being reassessed in light of the slowdown in the Chinese economy and geopolitical risks.
 - Reshoring to the U.S. has increased significantly. Friend-shoring, including Apple Inc. announcing manufacturing latest models in India, has also become apparent.
 - Investment from OECD countries into China has been declining since 2018.

Apple's announcement (September 2022)

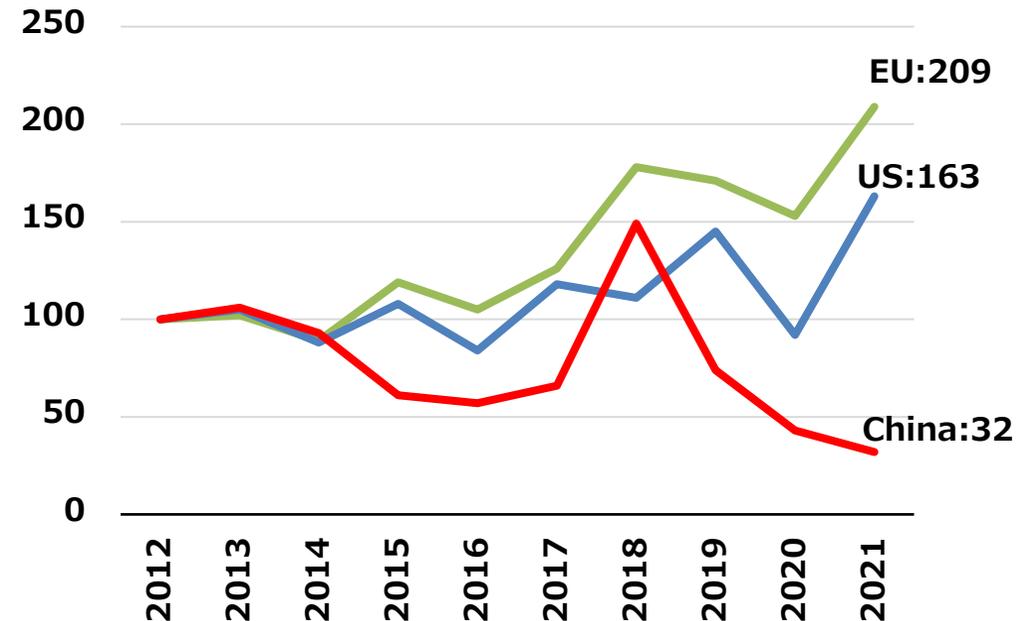
"The new iPhone 14 lineup introduces groundbreaking new technologies and important safety capabilities. We're excited to be manufacturing iPhone 14 in India."

Increase in U.S. employment due to reshoring



(Source) Reshoring Initiative® IH 2022 Data Report

Outward direct investment from OECD countries to various regions (2012=100)



(Source) FDI Intelligence, "Xi's China in six FDI charts" (October 17, 2022)

Competition among Industrial Policies in the U.S. and EU

- Countries are moving supply chains to home, neighboring and like-minded countries against the backdrop of rising geopolitical risk.
- The Inflation Reduction Act (IRA) passed in the U.S. in August 2022 provides for \$369 billion in climate change-related investments. Accordingly, the EU also announced in February 2023 a plan to promote investments in the European region.

IRA(Inflation Reduction Act) announced August 2022

<Summary>

- Investing a record \$369 billion to combat climate change.
- Aiming to promote domestic investment through tax credits and subsidies for renewable energy, EVs, clean hydrogen, etc.



(Source) The White House

<Aim: (President Biden's speech in August 2022)>

- IRAs will create tens of thousands of good-paying jobs and clean energy manufacturing jobs in the United States.



<Returning to the U.S. by IRA> (CSIS report, March 2023)

- Since the passage of the IRA, about 20 companies, including European giants such as Volkswagen, BMW, Enel (an Italian energy company), and Frail (a Norwegian battery company), have announced new or expanded clean energy production facilities. More than 100,000 new jobs are expected to be created in the U.S.

EU Green Deal Industrial Plan announced February 2023

<Summary>

- **Multi-year fund totaling €270 billion plus a European Sovereignty Fund to be announced in the future.** (Source) European Commission
- Aim to secure clean technology in the region through the development of a regulatory environment etc.
- Specific measures announced include the TCTF for easing state subsidy rules to prevent investment transfers outside the region, the Critical Raw Materials Law, and the Net Zero Industry Law.



(Source) European Commission

<Aims (Speech by Chairman von der Leyen in January)>

- (In order to compete (in the clean energy technology market), we need to continue to invest in strengthening our industrial base and make Europe a better place for investment and innovation.

<Member States' Own Responses> (from press)

- The German government has invested more than 500 million euros in subsidies to help U.S. semiconductor giant Wolfspeed build a new factory and R&D facility.

Support for Investment in U.S. Hydrogen Production Throughout the Life Cycle (supply-side support)

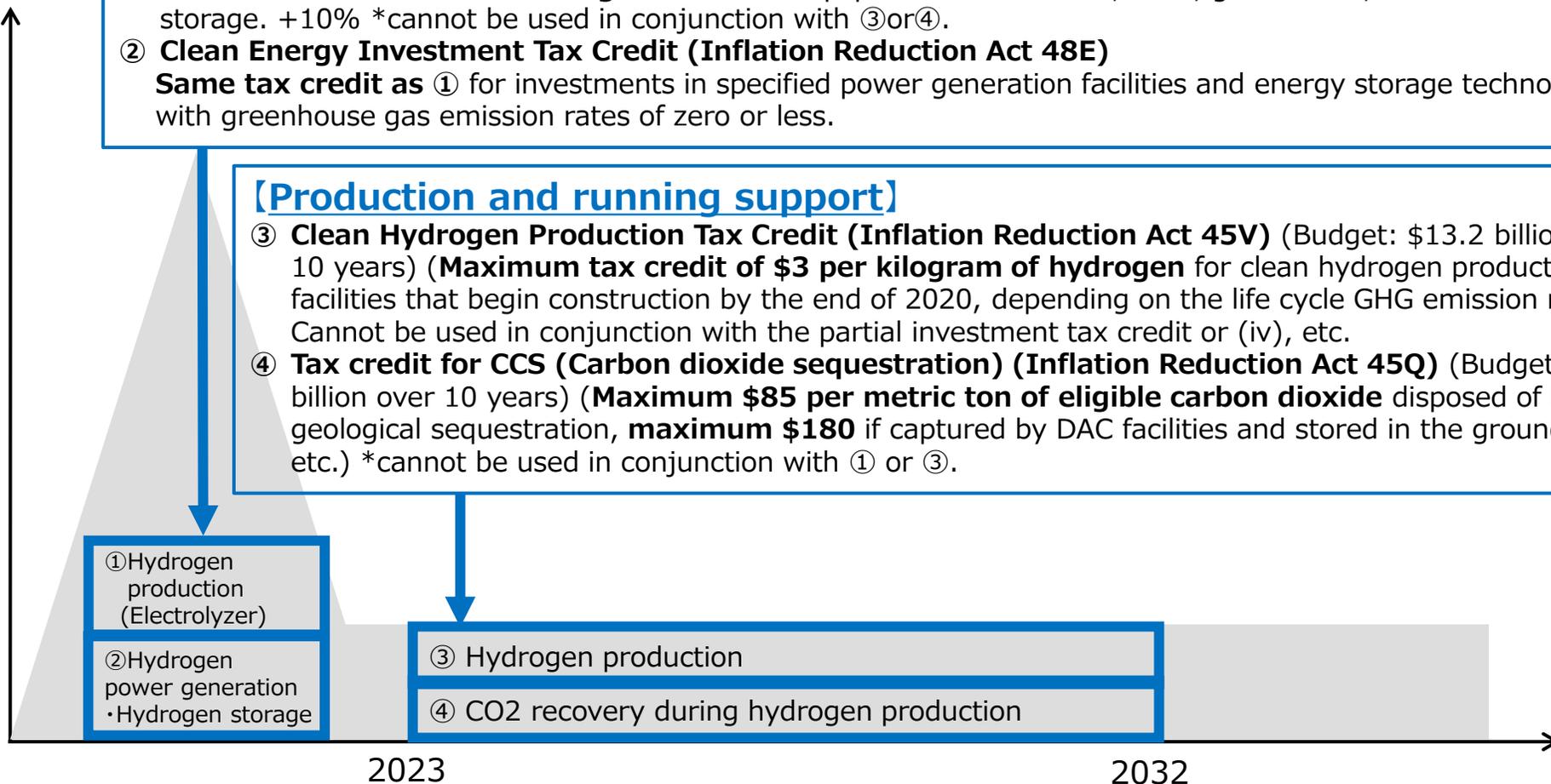
Cash out

[Initial investment and initial support]

- ① **Tax Credit for Investment in Clean Technology Manufacturing Facilities (Inflation Reduction Act 48C)** (Budget: Approx. \$6.3 billion (approx. ¥819 billion) including non-hydrogen): **Tax credit for up to 30% of investment in manufacturing facilities** for equipment used in solar, wind, geothermal, CCUS and energy storage. +10% *cannot be used in conjunction with ③ or ④.
- ② **Clean Energy Investment Tax Credit (Inflation Reduction Act 48E)**
Same tax credit as ① for investments in specified power generation facilities and energy storage technologies with greenhouse gas emission rates of zero or less.

[Production and running support]

- ③ **Clean Hydrogen Production Tax Credit (Inflation Reduction Act 45V)** (Budget: \$13.2 billion over 10 years) (**Maximum tax credit of \$3 per kilogram of hydrogen** for clean hydrogen production facilities that begin construction by the end of 2020, depending on the life cycle GHG emission rate. Cannot be used in conjunction with the partial investment tax credit or (iv), etc.
- ④ **Tax credit for CCS (Carbon dioxide sequestration) (Inflation Reduction Act 45Q)** (Budget: \$3.2 billion over 10 years) (**Maximum \$85 per metric ton of eligible carbon dioxide** disposed of by geological sequestration, **maximum \$180** if captured by DAC facilities and stored in the ground, etc.) *cannot be used in conjunction with ① or ③.



***All must meet prevailing wage and apprenticeship requirements to receive the maximum credit.**

[Remarks] Support for hydrogen supply facilities: Additional Clean Hydrogen Program (Bipartisan Infrastructure Act) (Budget: US\$8 billion (about 1 trillion yen), 2022-26)

Subsidy program to strategically introduce electric vehicle charging facilities, hydrogen fueling facilities, propane fueling facilities, and natural gas fueling facilities in the country.

(Source) Sources: Congress.gov (2022), Central Research Institute of Electric Power Industry (2022), DOE EERE Funding Opportunity Exchange (2022), etc.

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

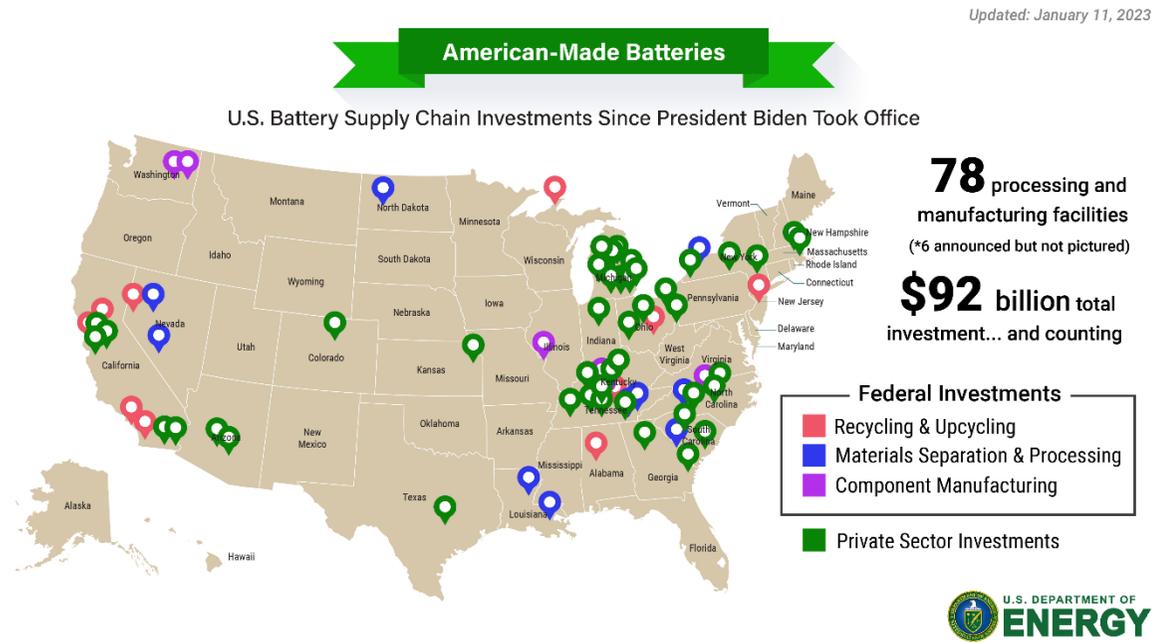
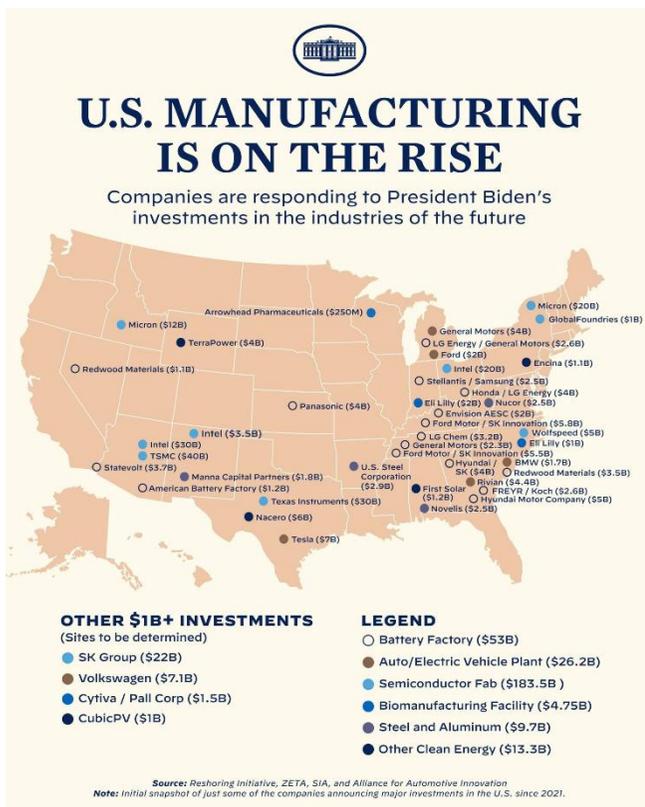
- Governments are providing large-scale, long-term and comprehensive support for strategic sectors with mid- to long-term growth potential, such as climate change and digitization, to attract private companies to invest in domestic establishments.

Facebook post by President Biden

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

Twitter post by Energy Secretary Granholm

Battery storage supply chain investment projects since the Biden administration



The “New Direction” of Economic and Industrial Policy in Japan

- Reflecting global trends, it is necessary to consider industrial policy that 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.
- A new industrial policy where both the government and the private sector step forward and mobilize all policies to solve social and economic issues is necessary.

	“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"> • 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

Example of Japanese Government Initiatives (Green Transformation)

- Japan aims to attract investment from the private sector and achieve public-private investment of over 150 trillion yen through regulatory and supportive measures.
- In the midst of the global competition for GX investment, Japan will provide government support of sufficient scale and duration. The 20 trillion yen of support will be reviewed as necessary in light of the progress of specific projects.

Image of amount of government support over the next 10 years

Approximately 20 trillion yen

Overall public and private investment over the next 10 years

Over 150 trillion yen

Promotion of non-fossil energy

About 6-8 trillion yen

Image
Support for Expanding Demand for Hydrogen and Ammonia
Research and development of new technologies
etc.

**Supply and demand in unison
Industrial structural transformation
Fundamental Promotion of energy conservation**

About 9-12 trillion yen

Image
Structural Reform and Profitability Improvement in the Manufacturing Industry
Energy conservation and raw material/fuel conversion to realize
Achieve drastic energy savings
Nationwide domestic demand measures
Research and development of new technologies
etc.

**Resource Recycling
Carbon fixation technology
etc.**

About 2-4 trillion yen

Image
R&D and social implementation of new technologies
etc.



Regulations, etc.
Integral Withdrawal

About 60 trillion yen or more

About 80 trillion yen or more

About 10 trillion yen or more

- Massive introduction of renewable energy
- Nuclear energy (R&D on innovative reactors, etc.)
- Hydrogen, ammonia etc
- Energy conservation and fuel conversion in the manufacturing industry(Examples . Steel, chemicals, cement, paper, automobiles)
- Digital Investment for Decarbonization Purposes
- Establishment of storage battery industry
- Structural Transformation of the Ship & Aircraft Industry
- next-generation automobile
- Housing & Buildings etc
- Resources Recycling Industry
- Biotech Manufacturing
- CCS etc

Various Effects of JASM's Investment in Kumamoto

Economic Ripple Effect Estimates

(Estimate by Kyushu Financial Group)

- ✓ Estimated economic ripple effect for 2 years from 2024, when the plant starts operation, is 1.8 trillion yen.
- ✓ Economic ripple effect over 10 years from 2022 to 2031 is estimated to be 4.29 trillion yen.
 - Approximately 80 companies have expanded their base facilities and factories in Kumamoto Prefecture.
 - Capital investment ripple effect of new factories: 930 billion yen, daily consumption effect of production and workers in related industries for 5 years after operation: 2 trillion yen, development of industrial parks for related industries: 35.9 billion yen, housing-related investment: 71.3 billion yen, etc.
 - Employment effects: approximately 7,500 people in total, including 1,700 direct employees of JASM

Wages

- ✓ TSMC's monthly salary is 280,000 yen for an undergraduate degree, 320,000 yen for a master's degree, and 360,000 yen for a doctoral degree.
- ✓ The average salary for new university graduates is approximately 225,000 yen, and 253,000 yen for graduate students. More than 50,000 yen higher than the national average.

(Source) Ministry of Health, Labour and Welfare

[Reference] Construction site of TSMC in Kikuyo Town (April 2023)



◆ Nihon Keizai Shimbun (October 2022)

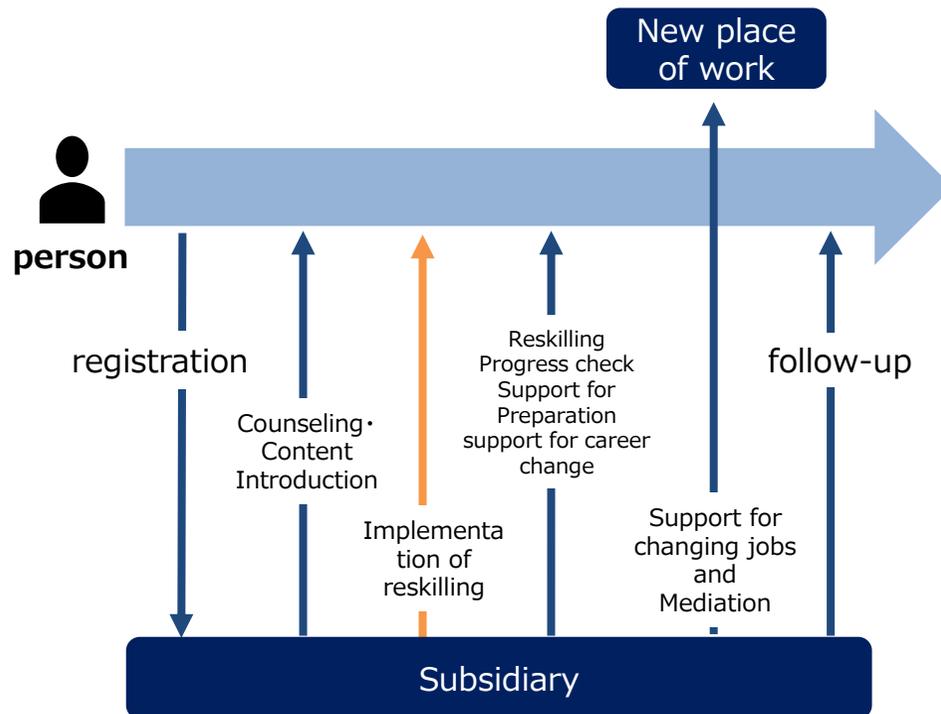
Yuichi Hotta, president of JASM (Kumamoto City), a TSMC subsidiary and operator of the new plant, said, "The foundation work is almost finished, and we are progressing at a speed never seen before in Japan."

Promote Reskilling and Labor Mobility in an Integrated Manner

- The government is increasing support toward investment in human capital to 1 trillion yen through 5 years to promote individual reskilling and other activities.
- METI will also allocate 75.3 billion yen in the second supplementary budget for FY2022 to promote reskilling and labor migration in an integrated manner by providing career counseling, reskilling, and job change support.

Career development support business through reskilling

< Flow of support from an individual's point of view >



< Release of special website >



The Startup Development Five-Year Plan

- The "Five-Year Plan for Startup Development" was decided last November as an overall vision of startup development measures by the public and private sectors.
- The goal is to increase the amount of investment in startups by more than 10 times (10 trillion yen) in five years, to the fiscal year 2027.

Pillar 1 **Building human resources** **and networks** **for startup creation**

- Expansion and lateral development of support business by mentors
- Creation of a base for entrepreneurship development overseas ("Dejima" project)
- Strengthen entrepreneurship education, including the establishment of entrepreneurship training programs for Japan at U.S. universities
- One university, one exit movement
- Support for startup creation at universities, elementary, junior high and high schools
- Global Startup Campus Initiative, etc.

Pillar 2 **Strengthening** **the supply** **of funding** **for startups** **and diversifying** **exit strategies**

- Strengthening the Functions of the Organization for Small & Medium Enterprises and Regional Innovation, JAPAN (Organization for Small & Medium Enterprises and Regional Innovation, JAPAN) to Invest in Venture Capital
- Reinforcement of the investment function of the Innovation Network Corporation of Japan
- Reinforcement of support measures for R&D start-ups by the New Energy and Industrial Technology Development Organization (NEDO)
- Strengthening support for drug discovery ventures by the Japan Agency for Medical Research and Development
- Measures to encourage investment in startups
- Improvement of stock option environment
- Overhaul the SBIR (Small Business Innovation Research) system and promote public procurement
- Revision of the system to eliminate the need for personal guarantees by management
- Consideration of SPAC (Special Purpose Acquisition Company)
- Establishment of a secondary market for unlisted stocks
- Tax measures such as departure tax to encourage overseas expansion, etc.

Pillar 3 **Promoting** **Open Innovation**

- Tax measures to promote open innovation, etc.
- Establishment of private liquidation legislation for business restructuring, etc.

Table of Contents

I. Recognition of Current Situation

- (1) Reflection on the "Lost 3 Decades" and "New Direction"
- (2) Trends that should be followed in industrial policy over the medium to long term
- (3) Shift in industrial policy in the world and Japan
- (4) Signs of change and turning points taking place**
- (5) Necessity to carry this momentum to long-term sustainable growth

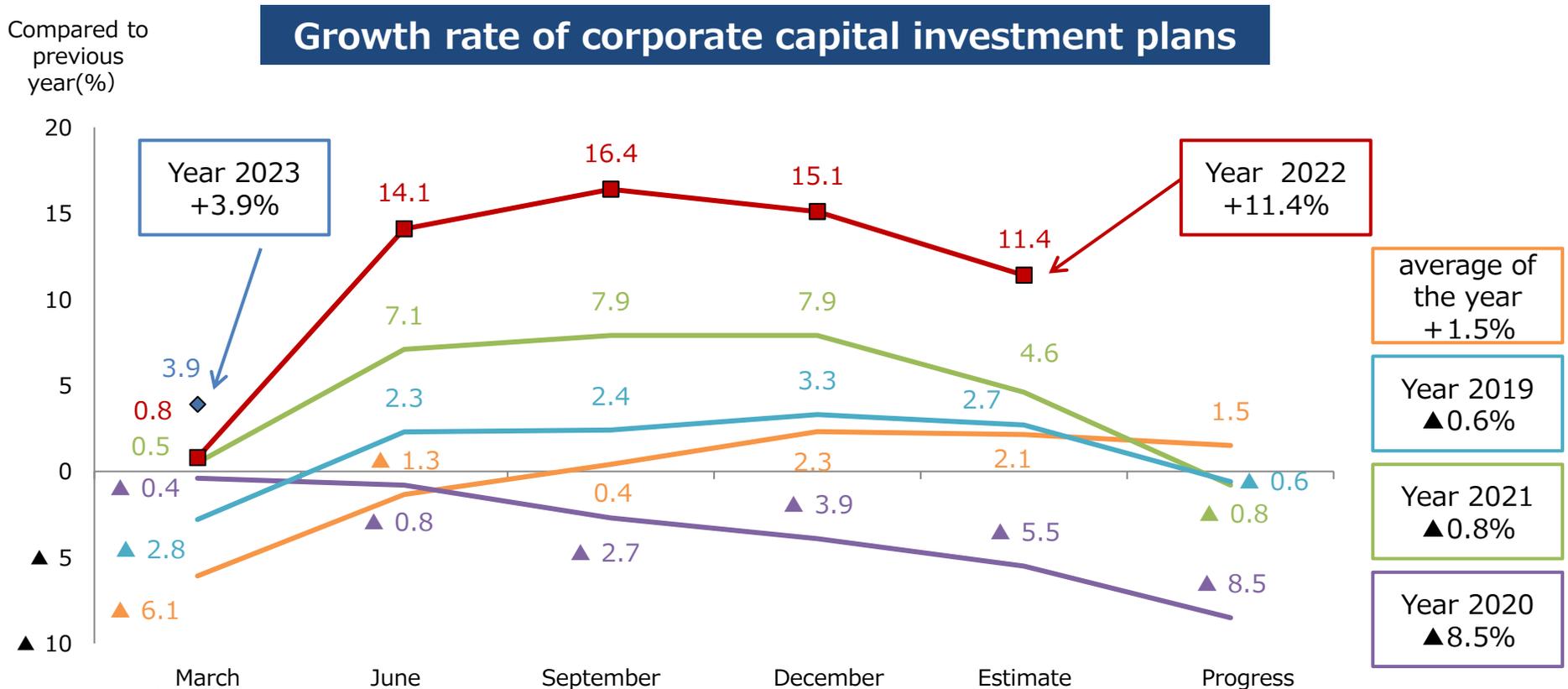
II. New Direction of Economic and Industrial Policies

III. Key Policy Tools for the Virtuous Cycle of Domestic Investment, Innovation, and Income Growth.

IV. Sector-specific measures

Companies' Rising Willingness to Make Domestic Investment

- The growth rate for capital investment plans for FY2022 (all industries of all sizes) were at historically highest levels since this survey (conducted by the Bank of Japan) started in 1983.
- The growth rate for FY2023 is +3.9% over the previous year, which is also the highest ever as of the March period.

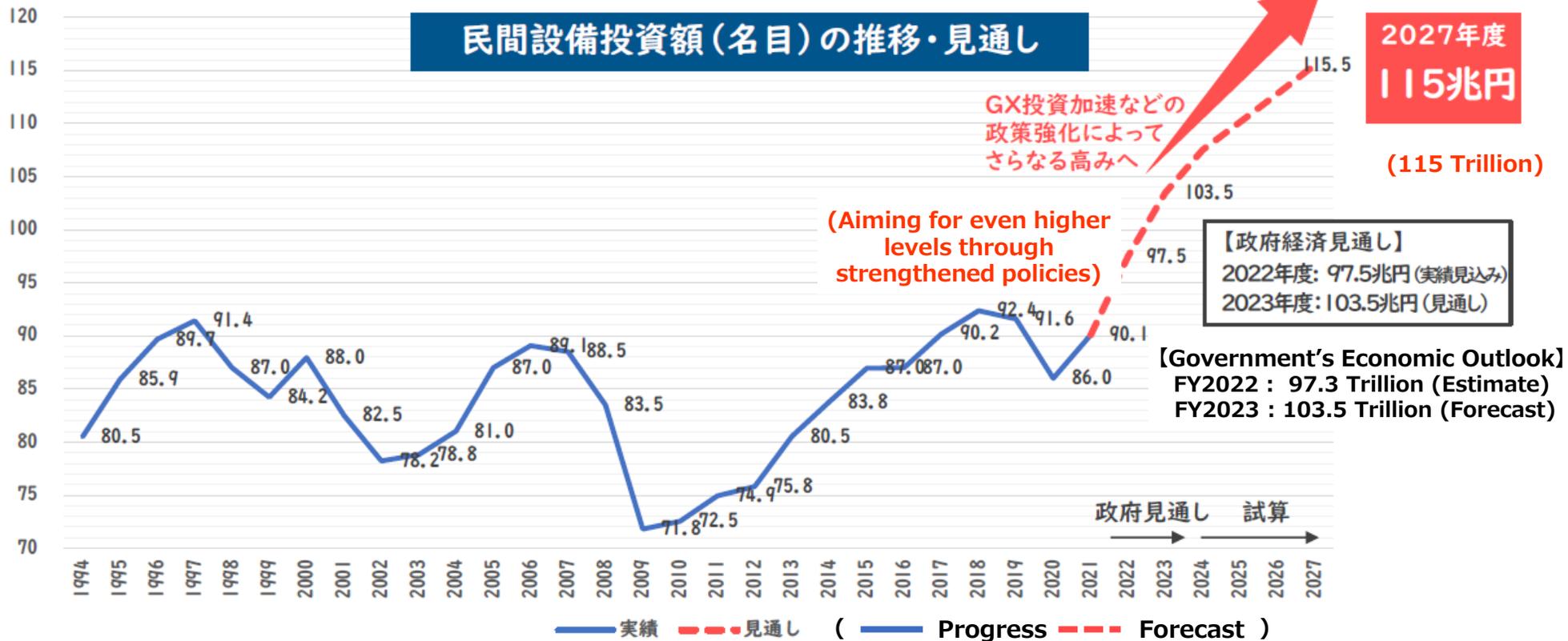


(Source) Bank of Japan

Future Outlook for Domestic Investment is Also Strong

- The Government's "Economic Outlook" estimates that private-sector capital investment in FY2023 will surpass that of the 1990s and reach a record high of 103.5 trillion yen.
- At the "Public-Private Partnership Forum on Increasing Domestic Investment" held in April 2023, Keidanren expressed the goal of achieving 115 trillion yen in capital investment in FY2027 and aiming for even higher levels through strengthened policies.

(Progress and Forecast of Private Capital Investment)



(Source) Public-Private Partnership Forum on Increasing Domestic Investment (April 6, 2023), submitted by Keidanren

Major Domestic Investments Underway with Government Support

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>

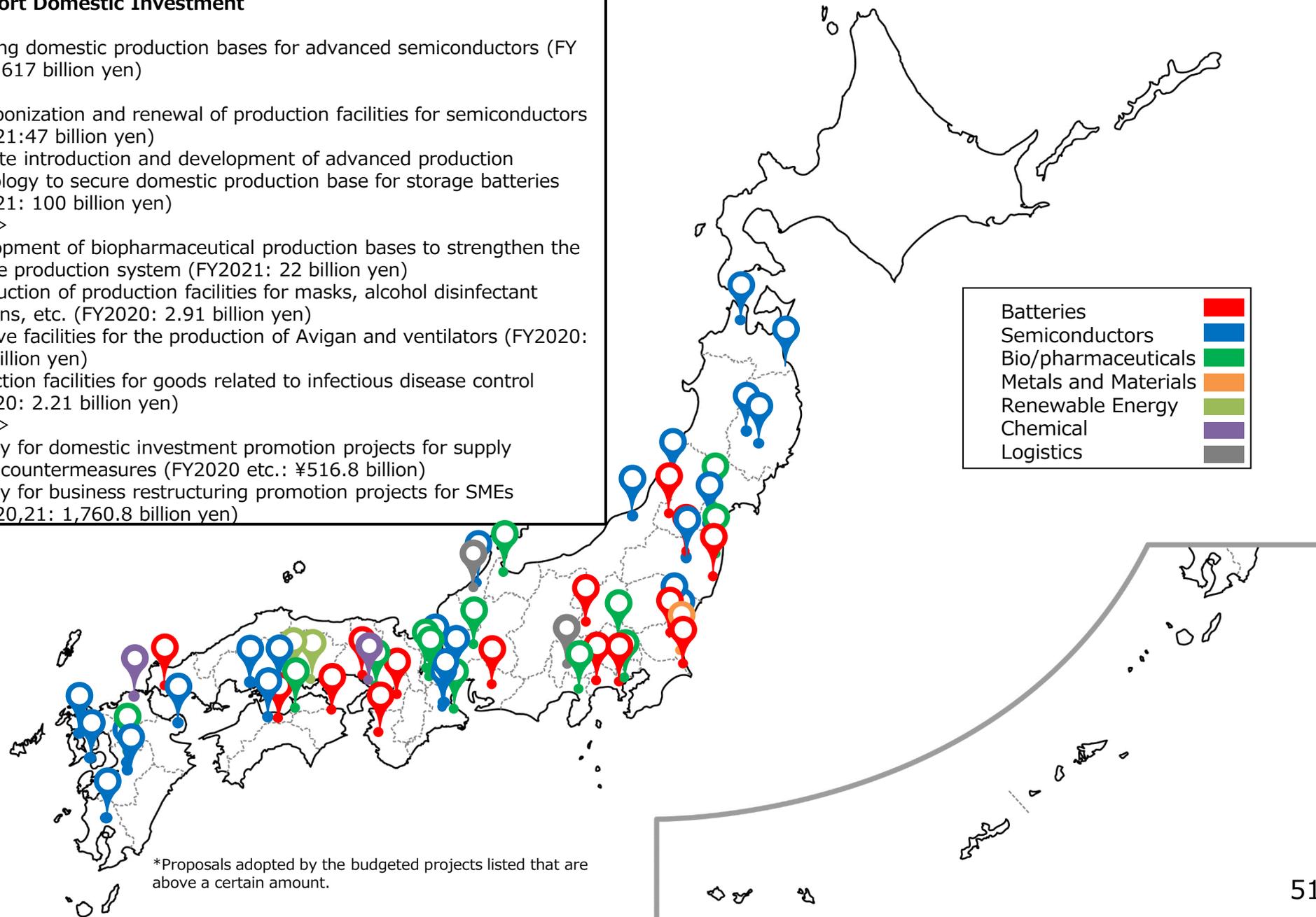
- Decarbonization and renewal of production facilities for semiconductors (FY2021:47 billion yen)
- Promote introduction and development of advanced production technology to secure domestic production base for storage batteries (FY2021: 100 billion yen)

<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.

Main Requests from Businesses in Expanding Domestic Investment ①

Creation of a world-class investment and business environment

- Strong incentives to encourage domestic investment
- It is important to focus financial support on solving social issues, without falling behind the industrial policies of major countries. Long-term, large-scale support and multi-year government commitment are essential to enable companies to make predictable and sustainable investments (Keidanren, NCCI).
- In addition to increasing predictability, we would like to see government funds, tax breaks, and other incentives increased (Doyukai).

<GX>

- Support for R&D and demonstration bases for hydrogen ammonia, offshore wind power, etc., and promotion of international standardization to capture future markets (commercial transactions, contracts, etc., technologies for carrier-related equipment, combustion utilization equipment specifications, etc.) (Hokkaido, Tohoku, Chubu, Chugoku)
- Flexible handling of anti-monopoly law regarding joint procurement of hydrogen ammonia and joint use of data by multiple companies in industrial complexes (China)

<DX>

- Strong support for the construction and operation of next-generation semiconductor plants and the development of related businesses such as R&D and human resource development (Hokkaido)
- Construction of next-generation computing infrastructure is essential, and active investment in related fields is important (Japan Association of Corporate Executives)

<Others>

- Creation of a common platform for vehicles, roads, and communications to realize next-generation mobility, and establishment of innovative industry-academia-government collaboration (Chubu)
- Support for high value-added and productivity improvement in the tourism sector (Chugoku)

● **Thorough investment in industrial infrastructure**

- **Financial support for municipalities, etc. promoting industrial water supply, strengthening of transportation networks such as trunk roads (Hokuriku, Chubu, Kyushu)**
- Support for localization of private data centers (Hokkaido)

● **Environmental Improvement and Deregulation to Facilitate Domestic Investment**

- **Facilitation of land use adjustment for agricultural land and urbanization control areas (Chubu/Kyushu)**

Main Requests from Businesses in Expanding Domestic Investment ②

Creation of an innovation environment that is competitive in the international acquisition of strategic industries

- Promoting the location of R&D centers and commercialization of innovations
 - Tax measures to encourage investment in intangible assets comparable to those overseas, such as patent box taxation (Keidanren, NCCI)
 - Further support for private sector R&D investment, particularly in advanced industrial sectors (Kansai)
- Creation of a startup ecosystem
 - Creation of a start Expansion of support for collaborative projects between local governments and startups (Shikoku)
 - Support for startup creation, including extension of the open innovation promotion tax credit (Shikoku)

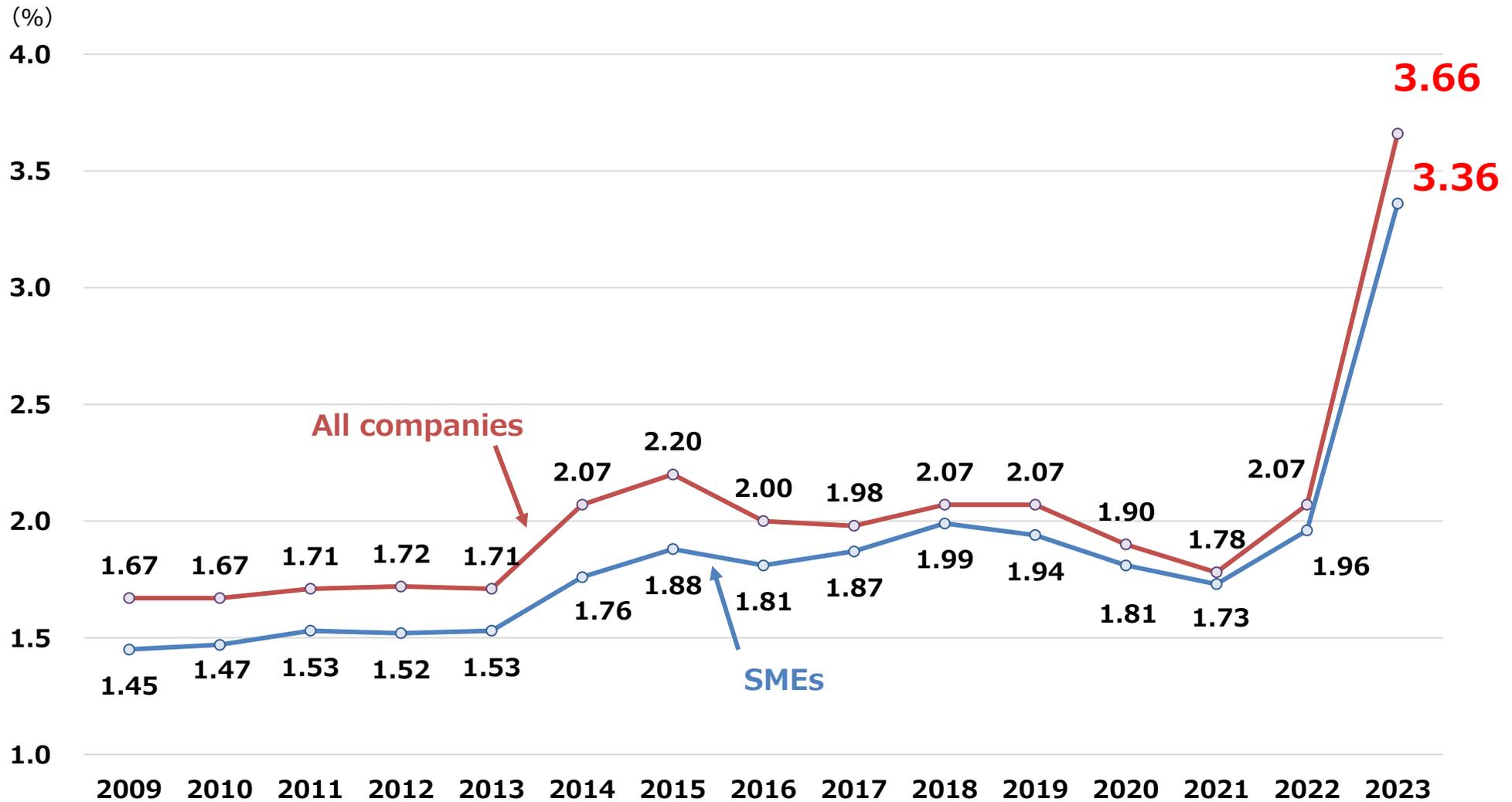
Securing excellent human resources and responding to labor shortages

- Investment in People and Labor Mobility to Growth Fields
 - Expansion of incentives to promote human resource development in cutting-edge industrial fields and labor mobility to local growth industries (Kansai, Kyushu)
 - Improvement of international educational and child-rearing environment to attract foreign human resources (Kyushu)
- Expansion of workplaces for young people and women in rural areas, leading to measures to combat the declining birthrate
 - Support for medium- and small-sized enterprises to take on the challenge of self-improvement as recipients of quality local employment, and make the business succession tax system permanent (Nissho)
 - Expansion of support systems that contribute to the local retention of young people, who continue to flow out to metropolitan areas, and effective birthrate reduction measures (Hokuriku)
 - Strengthen the functions of local universities and technical colleges (Shikoku)
- Promotion of labor-saving and automation investments to address labor shortages
 - Expansion of support for labor-saving and rationalization investments through digitalization (Keidanren, Nissho)
 - Promotion of investment related to the promotion of machinery and equipment, logistics materials, and software development for the construction of next-generation logistics systems (Chugoku)

Securing resources by curbing public burdens

- Tax credit carry-forward for wage increase promotion for small and medium-sized enterprises (Nissho)
- Prudent response to corporate tax hikes and increased social insurance premiums so as not to dampen positive investment and wage increases (Nissho)

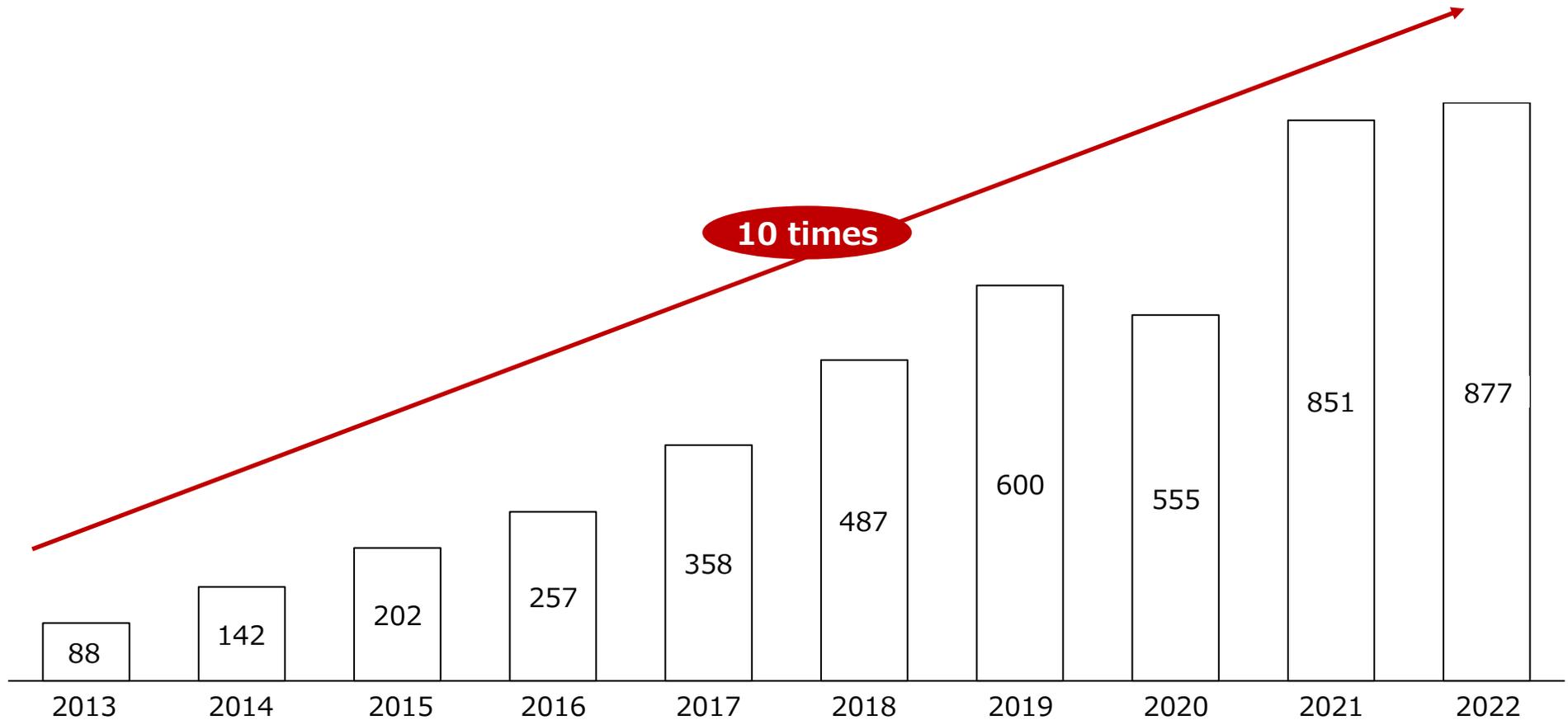
Results of Wage Negotiations (increase rate from previous year)



Expansion of Investments toward Startups

Amount of Investment toward Startups in Japan

Unit: Billions of yen

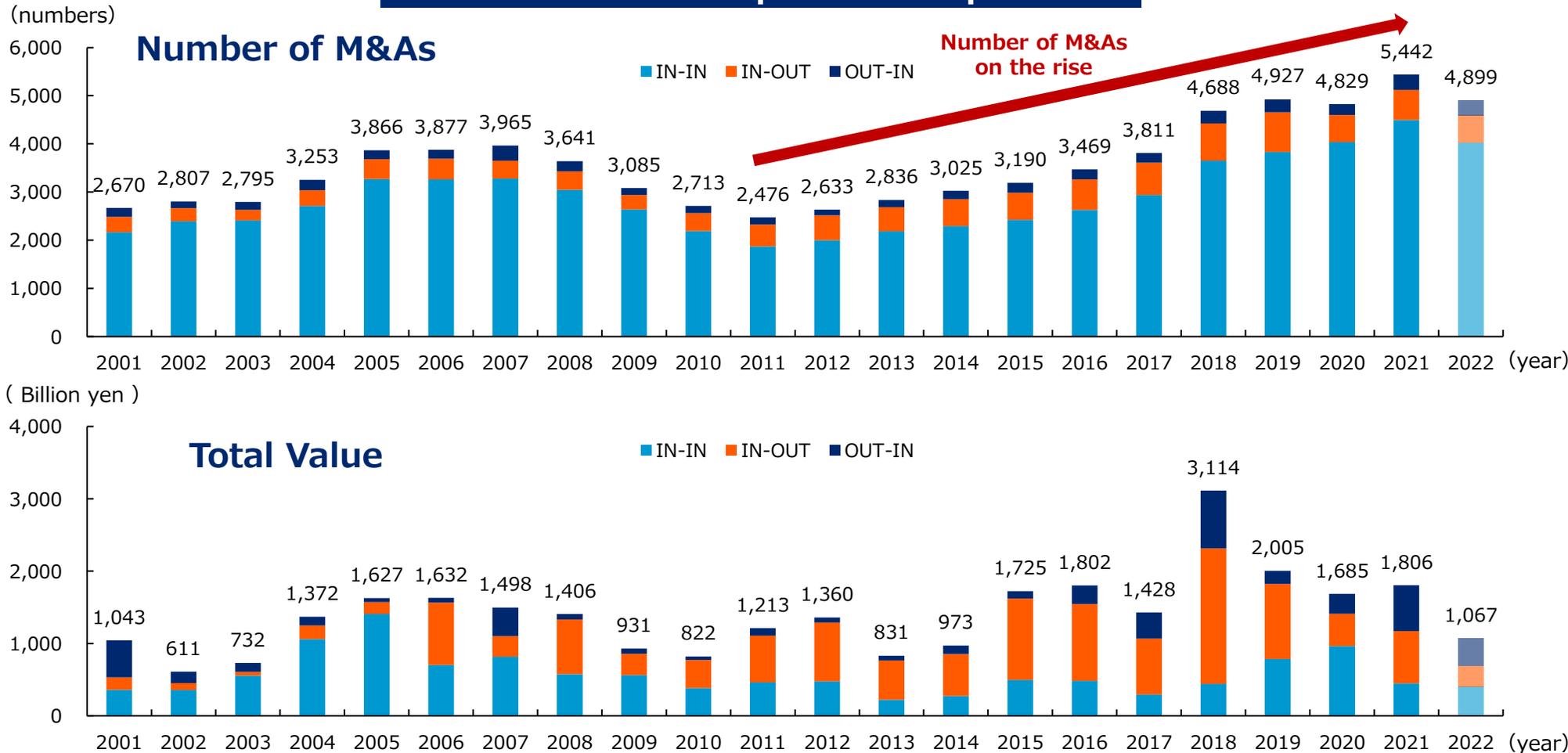


(Source) INITIAL "Japan startup finance"

Number and Value of M&A transactions

- The number of M&A transactions involving Japanese companies has been on the rise since declining during the global financial crisis.

M&A related to Japanese companies

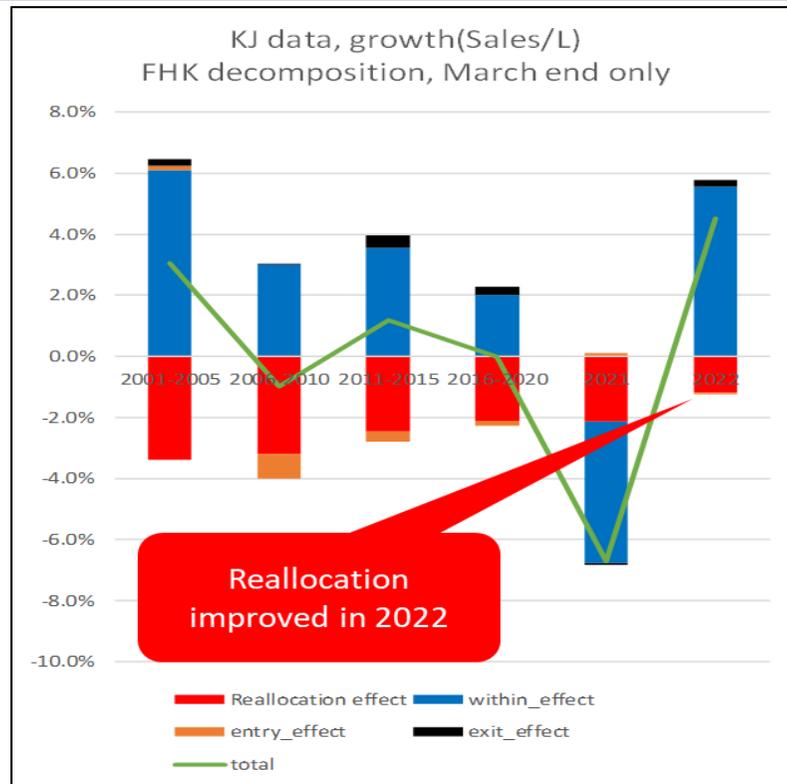


(Source) RECOF DATA Corporation

Reallocation to High-Productivity Areas, Improved Market Concentration

- The effect of resource reallocation (expansion/decline of high/low productive firms) is weak, but there have been signs of a change in this trend in recent years.
- In addition, it has been pointed out that Japan's low market concentration has led to low markups, which has been a factor in economic stagnation, but after the Corona Disaster, there have been changes in market concentration that have expanded.

Decomposition of Economic Growth Factors by Factor



Change in market concentration

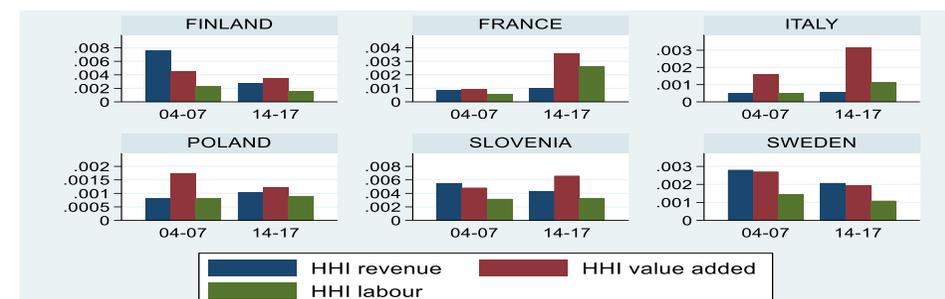
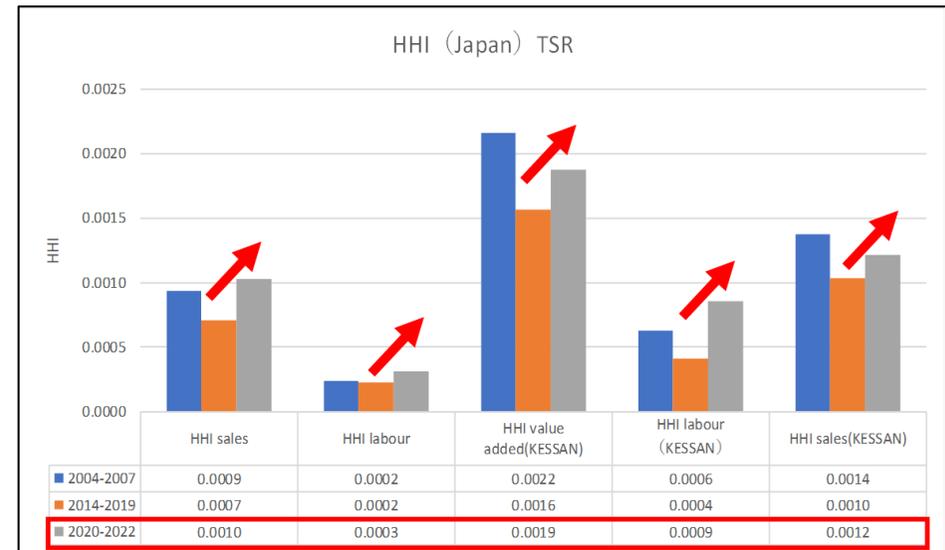


Table of Contents

I. Recognition of Current Situation

- (1) Reflection on the "Lost 3 Decades" and "New Direction"
- (2) Trends that should be followed in industrial policy over the medium to long term
- (3) Shift in industrial policy in the world and Japan
- (4) Signs of change and turning points taking place
- (5) Necessity to carry this momentum to long-term sustainable growth

II. New Direction of Economic and Industrial Policies

III. Key Policy Tools for the Virtuous Cycle of Domestic Investment, Innovation, and Income Growth.

IV. Sector-specific measures

Reorganization of 14 Themes of "New Direction" ("Mission 6 + OS6 + New Fields 2" → "Mission 8 + OS5")

1. "Mission-Oriented" Industrial Policies

Cultivate domestic demand expected to grow over the mid- to long-term even with a declining population, based on global social issues. Accelerate world-class strategic investment through policy support.

- ① Carbon Neutral Society
- ② Digital Society
- ③ Economically Secure Society
- ④ New Health Society
- ⑤ Disaster-Resilient Society
- ⑥ Biomanufacturing
- ⑦ Growth-Oriented, Resource-Autonomous Circular Economy
- ⑧ Inclusive growth in the region that contributes to coping with a declining birthrate

2. Updating Socioeconomic System (OS)

Reform economic and social structure to increase mission effectiveness

- ① Human Resources
- ② Startups/Innovation
- ③ Value-Creating Management
- ④ Globalization of Japanese Society
- ⑤ Inclusive Growth
- ⑤ EBPM/Data-Oriented Governance

Areas to be addressed in a period of economic order upheaval

① Growth-Oriented, Resource-Autonomous Circular Economy

② Web 3.0

Positive Economic Effects Related to Advanced Semiconductors Projects

- Conducted economic impact analysis for TSMC in Kumamoto and Kioxia in Mie.
 - ① Direct evaluation model: Tax revenue effect equivalent to maximum subsidy amount.
 - ② Input-Output Analysis: Positive impact on GDP is approximately 4.2 trillion yen.
 - ③ CGE model: Positive impact on GDP is about 3.1 trillion yen.

subject of analysis	entrepreneur	Business production target	Location	Capital Investment	Maximum subsidy
	TSMC・JASM	Advanced Logic	Kikuyo Town, Kikuyo-gun, Kumamoto Prefecture	86billion dollar	476 billion yen
	Kioxia, etc.	Memory (NAND)	Yokkaichi City, Mie Prefecture	278.8 billion yen	92.93 billion yen

< Result Summary >

(※) Eligible period: Project implementation period
(capital investment period + continuous production period (10 years))

economy model	GDP Impact	Employment effects (total)	Tax revenue effects, etc.
① Direct evaluation model	-	About 36,000 people	About 600 billion yen
② Industry Input-Output Analysis	Approx. 4.2 trillion yen Economic ripple effect is 9.2 trillion yen	About 463,000 people	About 760 billion yen
③ CGE model	Approx. 3.1 trillion yen	About 124,000 people	Approx. 585.5 billion yen Approx. 979.3 billion yen (including social security burden)

(※) Note that this analysis is based on the current Japanese economy and actual economic ripple effects may vary depending on future market conditions, etc.

[Reference] Trial calculation of the economic ripple effect of investment in Kumamoto by JASM (survey conducted by Kyushu Financial Group)

- ✓ **Economic ripple effect for 2 years from 2024 when the plant starts operation: 1.8 trillion yen**
- ✓ **Economic ripple effect for 10 years from 2022 to 2031: 4.29 trillion yen**
- ✓ **Employment effect: about 7,500 people in total, including 1,700 direct employees of JASM**