Provisional translation

Action Plan of the Growth Strategy

June 18, 2021

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Introduction

The Growth Strategy Council compiled an interim report in December 2020. This Action Plan of the Growth Strategy will be approved by the Cabinet based on the deliberations of the Council on Economic and Fiscal Policy, the Growth Strategy Council, and the ruling party. In formulating this report, the main policy items were compiled based on the opinions of experts at the Growth Strategy Council and the recommendations of the ruling party, under the broad direction of the "Basic Policy on Economic and Fiscal Management and Reform 2021 (Basic Policy)."

Going forward, this action plan will be carried out with determination.

Chapter 1: Approaches to a Growth Strategy for a New Normal Lifestyle

1. Lifting labor productivity and the labor participation rate and raising wages to realize a virtuous cycle of growth and distribution

The economic growth rate[1] is the sum of the growth rate in the "labor participation rate"[2] and the growth rate in "labor productivity."[3]

Japan's economic growth rate in the 2010s, from 2010 to 2019, was 1.1%/year, the fourth highest among the G7 countries, after the United States (1.5%/year), Germany (1.3%/year), and the United Kingdom (1.2%/year).

Breaking this down, Japan's growth rate in the labor participation rate is 0.8%/year, which is the highest among the G7 countries. This is due to the expansion of employment for women and the elderly in the 2010s. Japan's labor participation rate, as an absolute value, is 53.2%, the highest among the G7 countries.

The problem is labor productivity. Japan's growth rate for labor productivity is 0.3%/year, which is the second lowest among the G7 countries after Italy, and Japan's labor productivity, as an absolute value, is USD 75,000, the lowest among the G7 countries.

In order to increase the economic growth rate, it is necessary to increase the labor participation rate and labor productivity. In particular, increases in labor productivity are closely related to increases in workers' real wages, and improvements in this area are necessary in order to raise real wages. The key to this is innovation.

By increasing labor productivity through growth strategies and distributing the results in the

[1] GDP growth rate per capita.
[2] The number of workers divided by the population.
[3] GDP divided by the number of workers.

form of wages to working people and improving the labor participation rate, the income level of working people will be continuously increased. In this way, we will achieve growth through demand expansion, and realize a virtuous cycle of growth and distribution.

2. Increasing the markup rate of Japanese companies by creating new products and services with high added value

When we talk about improving labor productivity, we tend to focus on cost. Yet since labor productivity is based on selling price, cost, even if selling price is low, productivity will be low.

Looking at the markup rate,[4] which indicates how many times the production cost is being sold at a given price, Japan's rate is only 1.3 times, the lowest among the G7 countries (Figure 1).

In addition, the markup rates of U.S. and European companies have rapidly increased since 2010, while those of Japanese companies have remained at low levels since fiscal 2010 (Figure 2).

Furthermore, according to the OECD, the percentage of companies that has introduced new products and services is the lowest in Japan among developed countries (Figure 3).

Thus, Japanese companies have not been able to create new products and services, and have not been able to secure sufficient selling prices. It is necessary to reform the business structure in order to utilize AI and big data and strengthen brand power. The goal is to have Japanese companies create new products and services with high added value, and create added value that can secure high selling prices thereby increasing labor productivity.

Figure 1: International comparison of markup rates (2016)

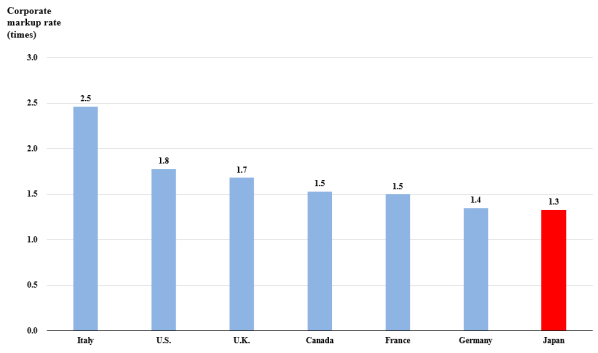
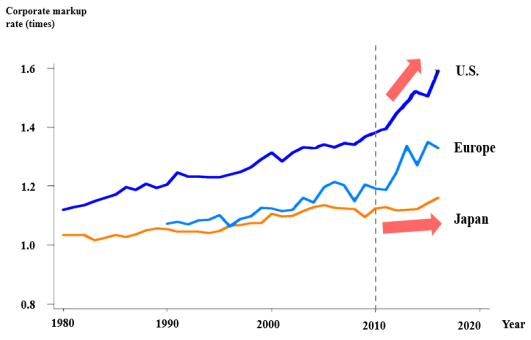
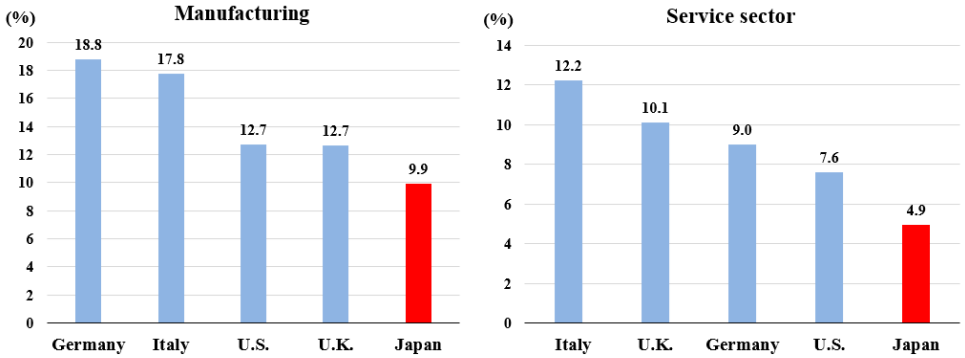


Figure 2: Trends in the corporate markup rates of developed countries



[4] A fraction in which the denominator is the cost (marginal cost) and the numerator is the selling price. When this value is 1, the selling price is just generating enough to cover the cost.

Figure 3: Percentage of companies that have introduced new products and services (2012-2014)



3. Realizing a society in which people can experience well-being

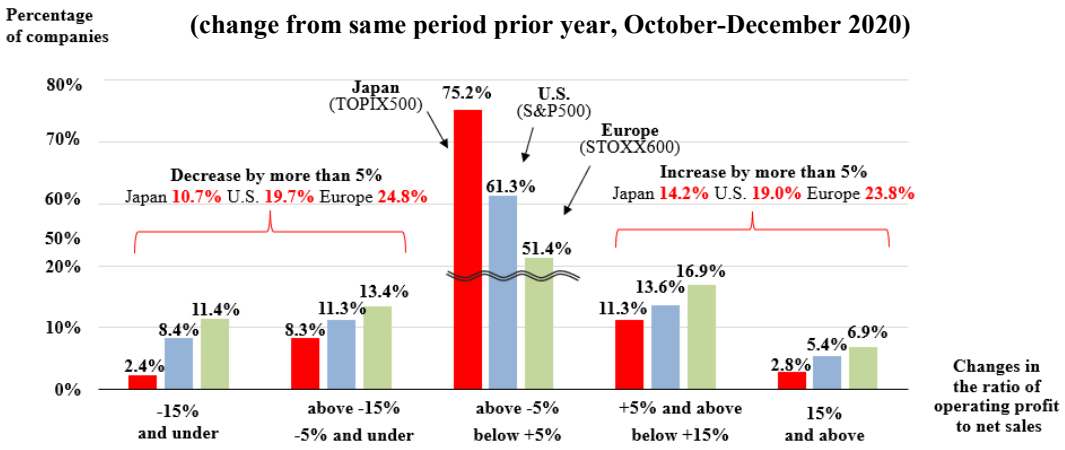
Through the expansion of a virtuous cycle of growth and distribution based on the growth strategy, we aim to realize a society in which each and every citizen can experience well-being as a result, while correcting disparities.

4. Support for business continuity and business restructuring in areas affected by the COVID-19 pandemic

Unlike past economic crises, the COVID-19 pandemic has not had a uniform impact on all industries, and while some companies have been adversely affected, others have increased their profits.

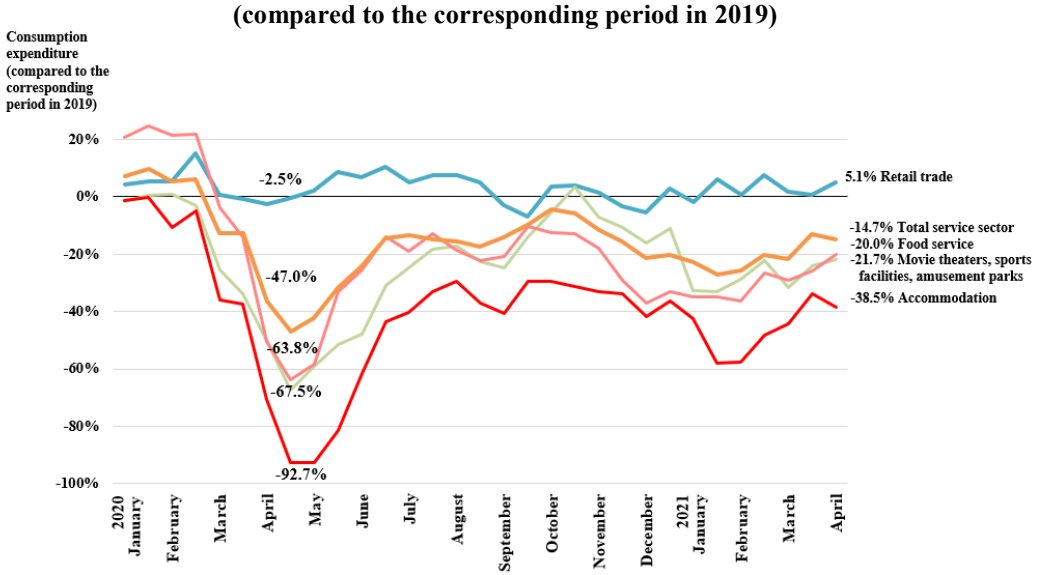
Looking at the changes in profit margins of listed companies in Japan, the United States, and Europe, there is a symmetry between companies that are deteriorating and those that are improving in Japan, the United States, and Europe. The percentage of companies that increased their profit margin by 5% or more was 14.2% in Japan, 19.0% in the United States, and 23.8% in Europe. On the other hand, 10.7% of companies in Japan, 19.7% in the United States, and 24.8% in Europe saw their profit margins decrease by 5% or more (Figure 4).

Figure 4: Distribution of changes in the ratio of operating profit to net sales of listed companies in Japan, the U.S., and Europe (change from same period prior year, October-December 2020)



According to Japanese credit card purchase data, it can be confirmed that there has been a large decline in consumption expenditure in the service sector in Japan, especially in accommodation, food service, and movie theaters, sports facilities, and amusement parks (Figure 5).

Figure 5: Trends in Japan's retail and service sector consumption expenditures (compared to the corresponding period in 2019)



Looking at the rate of change in the number of employees from March 2020 to March 2021, non-regular employment has declined significantly in accommodation (-23.3%), lifestyle-related and entertainment (-11.9%), and food service (-10.8%) (Figure 6).

Furthermore, while the number of regular employees has been increasing year-on-year even in the COVID-19 pandemic, the number of non-regular employees has been decreasing year-

on-year, with women being particularly adversely affected (Figure 7).

As a result, between March 2020 and March 2021, regular employment increased by 540,000, while non-regular employment decreased by 960,000; consequently, total employment decreased by 420,000.

Figure 6: Percentage change in employment by industry (March 2021, compared to the same month in the prior year)

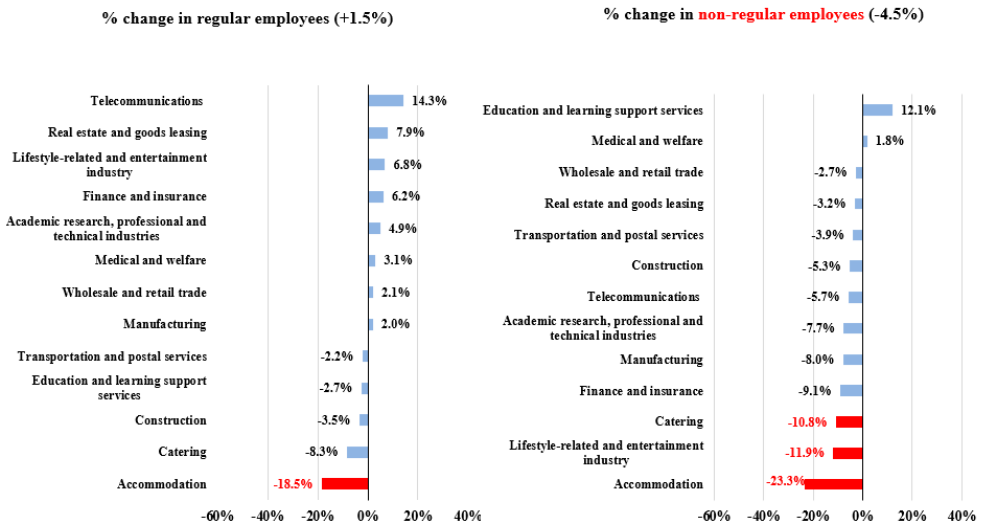
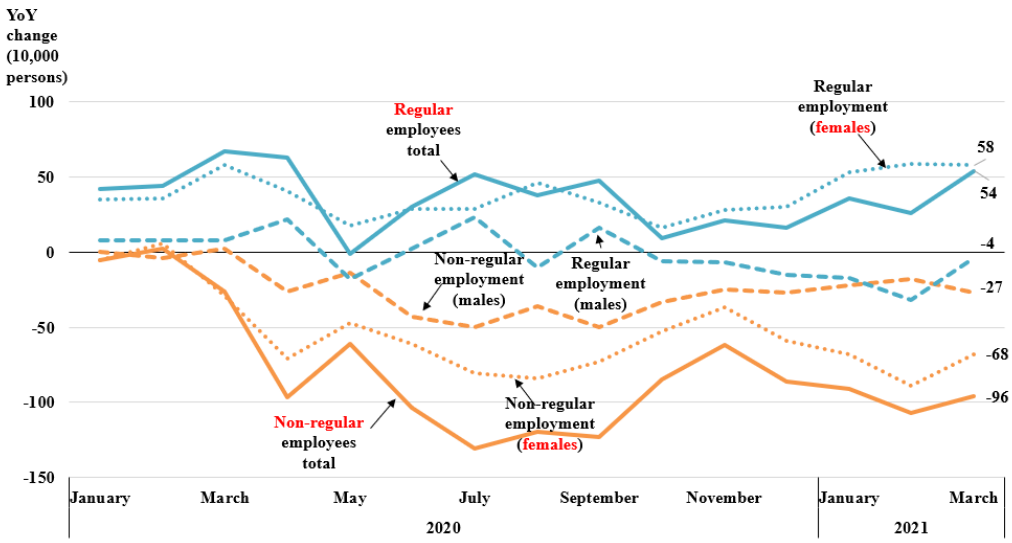


Figure 7: Trend in the number of employees (YoY change)



As mentioned above, industries such as food service, accommodation, and culture, arts, and entertainment have been severely affected by the COVID-19 pandemic. We will support the continuation of these businesses, as well as new initiatives and business restructuring for the "Post COVID-19" era.

5. Strengthening proactive growth strategies in areas with potential

On the other hand, we will pursue an aggressive growth strategy for the future in areas with growth potential, such as digital and green, which are still driving the economy in the COVID-19 pandemic.

This will encourage bold investment and innovation by the private sector and lead to a shift in socioeconomic structure to meet the needs of the post-COVID-19 era, with the aim of realizing Society 5.0.

Chapter 2: Concentrated Investment and Implementation of Digitalization as a New Growth Driver and its Environmental Arrangement

1. Promotion of digitization with a focus on the Digital Agency

We will boldly promote future-oriented digital transformation (DX) as a driving force for growth, and strengthen professional human resources to deliver the benefits of digitalization to all citizens.

To this end, the Digital Agency will play a central role in creating an environment in which national and local governments, the quasi-public sector, and the private sector can create services that ensure user-friendly design, content, etc., from a thoroughly public perspective.

(1) Promotion of digital government from the people's perspective

- Promote fundamental improvements to Mynaportal and other systems.
- Standardize and unify the design, content, etc. of the websites of each government ministry and agency.
- Establish a system to allocate the budget related to the information system to the Digital Agency in a phased manner, and to allocate the budget after examining whether it aligns with the basic policy on the development and management of information systems.
- Introduce the latest technology and agile development (a method of rapid development through repeated design and testing) in the maintenance and operation of information systems.

(2) Development of a common infrastructure for a digital society

- Aim to have My Number Cards available to almost all citizens by the end of next fiscal year.

- Develop a common infrastructure for the public and private sectors, such as a government cloud.
- Promote the unification and standardization of local government information systems, including the aim of standardizing local government core business systems by FY2025.
- Develop a base registry of basic social data held by government agencies. The location environment of the data centers established by each government ministry and agency will be optimized in stages.
- Rapidly collect real-time socioeconomic data on infectious diseases, etc., to improve analysis capabilities and promote fine-tuned policy planning.

(3) Promotion of comprehensive data strategy and development of common infrastructure in the quasi-public sector, etc.

- Promote a comprehensive data strategy, including the concretization of rules to promote data distribution and the development of a system for data transactions.
- Consider establishing a program to support the development of data standards and data collaboration infrastructure in quasi-public sectors such as healthcare, education, and disaster prevention.

(4) Development of digital human resources

From the next fiscal year onward, we will promote the recruitment and development of digital human resources in administrative agencies by actively recruiting candidates who have passed the new “digital” examination division of the National Public Employee Recruitment Examination for Comprehensive Service. We will create an environment where talented people can develop their careers while moving back and forth between the private sector, local government, and the central government.

We will also promote the development and utilization of digital human resources in the private sector. In order to share the vision of the digital human resources required by society as a whole, and to develop and secure human resources, a digital human resources platform will be established in cooperation with the business community and educational institutions to develop educational content and curricula, provide practical learning opportunities, and collaborate with private sector digital human resources development efforts in local areas. Furthermore, we will develop a system that includes cooperation with the business community

and create criteria to evaluate the skills of various digital human resources.

To promote the digitization of local governments, we will develop and secure digital human resources, including the sharing of human resources among local governments.

2. Early nationwide deployment of 5G, promotion of post-5G, and promotion of so-called 6G (Beyond 5G)

We will promote the early and intensive deployment of a safe and secure 5G infrastructure. We will also promote the research and development of 5G (including post-5G) and 6G (Beyond 5G) technologies with enhanced features for numerous connectivity and ultra-low latency, which are necessary for further expansion into industrial applications.

3. Lowering of mobile phone rates

We will strengthen the provision of information and improve the environment to help users understand and make rational choices, work on lowering switching barriers, and promote the improvement of the competitive environment, including the optimization of transactions between businesses.

4. Enforcing the Act on Improvement of Transparency and Fairness in Trading on Specified Digital Platforms and developing rules to make the digital advertising market more transparent and fairer

We will steadily enforce the Digital Platform Transaction Transparency Act. In addition, the government will promote the development of rules for transparency and fairness by adding the digital advertising market to the scope of the law.

We will conduct a competition assessment of the impact of platform providers that supply operating systems (OS) for smartphones and other devices on the competitive environment in the digital market, paying close attention to trends in Europe and the United States

5. Revisiting regulations in light of digital technology

In the fields of mobility, finance, and construction, the regulatory system will be reformed so that it is suitable for the era of the Fourth Industrial Revolution, using AI and other digital technologies. Based on the results of demonstration projects, specific institutional reforms will be compiled.

(1) Mobility field

The system will be revised by the end of this year to make it possible to use AI, etc. to replace inspections conducted by inspectors for inspection items that can be considered for inspection using AI, etc. in the completion inspection of automobiles.

(2) Finance field

Regarding regulations for financial instruments sales to elderly customers, the government will work on to reach a conclusion of regulatory reform that realize flexible financial services, including the use of AI, etc., to elderly customers depending on their capabilities in investment and their circumstances by the end of this fiscal year

(3) Construction field

Verification of the remaining issues regarding drones equipped with infrared devices to survey exterior walls will be conducted this fiscal year. After confirming that the accuracy is equivalent to or higher than that of a percussion survey by qualified persons such as a 1st-Class Kenchikushi, the system will be revised to allow its use in exterior wall surveys in periodic inspections of buildings from the next fiscal year.

6. Use of new digital technologies such as blockchain

We will study ways to use new digital technologies such as blockchain to improve the efficiency of supply chains and to link IDs (identification) between various public and private services. We will also develop the business environment for non-fungible tokens (NFTs) and security tokens.

7. Smart agriculture, forestry and fisheries

To promote the growth of the agriculture, forestry, and fisheries industries, which are at the core of regional development, through the use of digital technology and satellite information, we will promote the development of the communications environment and the training of digital human resources.

Specifically, in order to promote the development of the communication environment, guidelines will be formulated by the end of this fiscal year that outline R&D methods in rural areas. To strengthen the development of digital human resources, we will promote the use of external human resources in the field of education. In promoting smart agriculture, forestry, and fisheries projects, we will also encourage the formation of consortiums in which many people from different fields, including local universities and financial institutions, can

participate. Furthermore, we will encourage the entry into the region of businesses that provide support services such as rental and sharing of equipment necessary for smart agriculture, forestry, and fisheries.

Chapter 3: Growth of the Green Sector

1. Green Growth Strategy Through Achieving Carbon Neutrality in 2050

(1) Framework for a Green Growth Strategy based on the 2030 emission reduction target

In an effort to decarbonize, companies are increasingly selecting their supply chain partners on a global scale, and we are entering an era in which responding to global warming will determine the success or failure of growth. We need to maximize the introduction of renewable energy. In order to achieve the high goal of carbon neutrality in 2050, the Green Growth Strategy will be implemented as follows. In doing so, the benefits to each citizen on the demand side, should be communicated in an easy-to-understand manner. We will also consider measures to encourage further necessary investment with a view to the 2030 emission reduction target. In addition, we will continuously follow up on the progress of the strategy and review its contents and areas.

(2) Key cross-sectoral policy tools

① Budget

Government establishes a 2 trillion yen fund which will encourage innovation through continuous support of challenging R&D activities by companies and other organizations over a 10-year period.

② Tax Systems

The Investment Promotion Tax System will promote investment in production equipment for products with high decarbonization potential and equipment which promote decarbonization of production processes, etc.

③ Regulatory reform and standardization

We will overhaul regulations to induce green investment. In addition, we will tighten regulations to create technology demand, relax outdated regulations that do not cover new

technology, and work on international standardization that makes it easier for new technologies to be used around the world.

④ International cooperation

The goal is to strengthen the competitiveness of domestic industry by capturing not only the domestic market but also overseas markets such as emerging countries and reducing costs by taking advantage of economies of scale. In addition, through direct investment and M&A, we will bring in foreign capital, technology, sales channels, and management.

(3) Issues and responses by sector

①Offshore wind, next-generation solar, and geothermal industries

Since offshore wind power generation has the anticipated economic ripple effects, the government and the Industry will develop a competitive and resilient supply chain bycreating an attractive domestic wind power market to attract domestic and foreign investment. In addition, the government and the Industry will engage in next-generation technology development and international cooperation with an eye to expanding into Asia, and create next-generation industries that can compete on the global stage.

Specifically, the government will continue to award capacity of 10GW by 2030 and 30-45GW, including floating offshore wind, by 2040.

The government will thoroughly support the development of next-generation solar cells and accelerate research and development for performance improvement to achieve commercialization in 2030. It will develop new markets such as building walls with technical restrictions using existing photovoltaic modules.

Since geothermal power generation is expected to provide a renewable energy source that can serve as a base load power source, we will work to significantly expand its introduction through the supply of risk money, review of the operation of regulations under related laws and regulations, and technological development.

② Hydrogen and fuel ammonia industry

Hydrogen is a key carbon-neutral technology that is widely used in power generation, industry, and transportation. By positioning hydrogen as a new resource and involving a wide range of players in addition to automotive applications, we aim to introduce a maximum of 3 million tons by 2030 and expand supply to around 20 million tons by 2050. The goal is to reduce the cost of hydrogen power generation to a level that is sufficiently competitive with

fossil fuels in 2050, i.e., to reduce the cost of hydrogen power generation to less than that of gas-fired power generation (hydrogen cost: less than about 20 yen/Nm3).

Ammonia, which does not emit CO2 when burned, is an effective fuel for co-firing in thermal power plants. The goal is to establish co-firing technology early to expand to Southeast Asia and other regions, and quickly establish an international supply chain.

③ Automobile and battery industries

In the automotive sector, comprehensive support measures will be implemented to promote electrification, together with energy decarbonization, with the aim of making the entire supply chain carbon neutral. In addition to promoting the introduction of electric vehicles, fuel cell vehicles, etc., by 2030 at the latest, electrified vehicles will be as economical and convenient as gasoline-powered vehicles through the development of next-generation battery technologies and the promotion of manufacturing facilities as described below, the development of hydrogen stations, and the development of quick charging facilities for electric vehicles.

④ Industry and material industry related to Carbon Recycling

Carbon Recycling is a technology that effectively utilizes CO2 as a resource, and is an important cross-cutting field for the realization of a carbon-neutral society. Japan has a competitive edge in Carbon Recycling and aims to expand globally after cost reduction and social implementation.

Specifically, CO2 absorption type concrete will be priced at the same level as existing concrete (=30 yen/kg) in 2030 through increased demand, and the new product with rust prevention performance will be available for architectural applications in 2050. Technology development and demonstration of synthetic fuels made from CO2 and hydrogen for use in transportation equipment, etc. will be conducted intensively over the next 10 years, with the aim of achieving commercialization by 2040.

The material industry will lead the world in the development and supply of zero-carbon steel technologies, such as the blast furnace steelmaking method using hydrogen, with the aim of capturing the green steel market, which is expected to reach a maximum of 500 million tons per year, or about 40 trillion yen, by 2050.

⑤ Housing and Building Industry, Next Generation Power Management Industry

Housing and buildings are areas that have a significant impact on reducing energy consumption in the consumer sector. While creating a market environment to spread advanced

technologies domestically, we also expect to expand our technologies overseas.

Specifically, to strengthen energy efficiency and conservation measures, including regulatory measures, we will develop a roadmap and take other concrete steps to improve energy efficiency and conservation performance by reviewing standards for energy consumption performance of houses and buildings, certification standards for long-life quality housing and the housing performance indication system, and extending the service life of houses and buildings.

In order to eliminate congestion in the electric power system caused by the massive introduction of renewable energy sources, we will build a next-generation power grid that can perform more advanced grid operations by utilizing digital technology. In addition, digital technology will be used to promote businesses that provide services for optimizing the supply and demand of electricity by combining highly variable renewable energy sources such as solar and wind power with storage batteries, etc.

⑥ Next generation heat energy industry

Methane synthesized from hydrogen derived from renewable energy sources, etc., and CO2 can replace natural gas using existing infrastructure such as city gas pipes, and is therefore a key to decarbonizing the gas needed for heat demand.

Regarding synthetic methane, we will continue to develop the technology and aim to start using it by 2030. By 2050, the goal is to use 90% of synthetic methane in the existing gas supply infrastructure, and to achieve decarbonization of gas in combination with direct use of hydrogen and other means.

⑦Nuclear industry

Nuclear power is a decarbonization option that is in the practical stage. While lowering the dependence on nuclear energy to the extent possible, we will make steady progress in restarting nuclear power plants in Japan with the highest priority on safety. At the same time, Japanese companies with advanced manufacturing capabilities will participate in the development of next-generation innovative nuclear reactors in the United States, the United Kingdom, and other countries to accelerate innovation in various nuclear technologies. We will promote R&D, human resource development, etc. for the future, including the pursuit of reactors with superior safety, etc.

Specifically, by 2030, small modular reactor technology will be demonstrated through

international collaboration and component technologies related to hydrogen production for high-temperature gas-cooled reactor will be established, as well as R&D of nuclear fusion will be steadily promoted.

⑧ Semiconductor and information and communication industry

Carbon neutrality will be achieved by a society that is electrified and digitalized in all areas, including manufacturing, services, transportation, and infrastructure. Therefore, the two approaches of (1) improving the efficiency of energy demand through digitization and (2) energy saving and greening of digital devices and information and communication itself will be promoted as two wheels of the same cart. The goal is to make all new data centers 30% energy-efficient by 2030, to convert a portion of the electricity used at domestic data centers to renewable energy, and to make the semiconductor and telecommunications industries carbon neutral by 2040.

⑨ Ship industry

For zero-emission ships using alternative fuels such as hydrogen and ammonia, we will promote technological development and start demonstration projects by 2025, aiming to achieve commercial operation ahead of the previous target of 2028, and to further popularize the technology by 2030.

⑩ Logistics, people flow, and civil engineering infrastructure industries

We aim to achieve carbon neutrality in 2050 in the logistics, people flow, and civil engineering infrastructure industries by making comprehensive efforts to form Carbon-Neutral Ports for hydrogen import, etc., to introduce smart transportation, to promote the introduction of bicycle transportation, to promote green logistics, to make transportation networks, bases, and transportation more efficient and low-carbon, to achieve zero emissions in infrastructure and urban spaces, and to achieve carbon neutrality in construction.

⑪ Food, agriculture, forestry and fisheries

Based on the Strategy for Sustainable Food Systems, called MeaDRI (Measures for achievement of Decarbonization and Resilience with Innovation), we will promote the development and implementation of innovative technologies and production systems throughout the supply chain, from production, processing and distribution to consumption,

with the aim of achieving zero CO2 emissions from fossil fuel combustion in agriculture, forestry and fisheries sectors by 2050.

Specifically, the government will strongly promote the electrification and hydrogenation of agricultural and forestry machinery and fishing vessels, the reduction of greenhouse gases from agriculture and livestock sectors, enhancement of carbon storage in farmlands and sea areas for long-term and, large-scale, and the reduction of food loss and waste.

In addition, in order to enhance the CO2 absorption and storage functions of forests and lumber, we will promote using wood for construction of buildings s, including the establishment of technology to construct high-rise wooden buildings, while also working to rejuvenate forests through thinning and reforestation using seedlings with excellent growth.

⑫ Aviation industry

While the International Civil Aviation Organization (ICAO) has decided not to increase CO2 emissions compared to 2020, we aim to establish the technological superiority of Japan's aircraft manufacturing industry in such areas as electrification and hybrid electrification, alternative fuels such as hydrogen, and carbon fiber composite materials for airframes.

Specifically, the goal is to expand electrification technology after 2030, in line with the timing of the market introduction of future aircraft, and to establish the core technology necessary for hydrogen aircraft, etc. after 2035.

⑬ Resource circulation industries

Regarding the "reduce, reuse, recycle, and renewable" of waste, the technology development and social implementation are being encouraged through the development of laws and plans. Technologies such as waste power generation, heat utilization, and biogas utilization have already entered the commercial phase and are becoming more widespread and sophisticated. In the future, these efforts will be further promoted by upgrading technology, improving facilities, and reducing costs. While promoting the transition to a circular economy, we will reduce overall greenhouse gas emissions to zero by 2050.

⑭ Lifestyle-related industries

We will promote total management of housing and transportation by implementing a combination of ZEH (Net Zero Energy House), ZEB (Net Zero Energy Building), home appliances, hot water supply and other equipment, and electric vehicles as moving storage

batteries. We will encourage behavior change through nudging and sharing, and technological development and demonstration, etc. to verify the effects of CO2 reduction.

2. Carbon pricing

Japan will, without hesitation, tackle economic instruments such as carbon pricing, that use market mechanisms and are conducive to growth, so as to strengthen industrial competitiveness and promote innovation and investment.

In light of accelerated expansion of voluntary credit markets internationally, we will take concrete measures to increase the depth of the domestic market (credit market) in Japan in which carbon reduction value can be traded, and thereby promptly respond to the desires of companies that are pioneering climate change measures.

Specifically, in light of the growing corporate demand for credits with carbon reduction value, such as J-Credits and Non-fossil Fuel Energy Certificates, at first we will review the existing credits mechanisms and promote voluntary and market-based carbon pricing.

Furthermore, in terms of carbon taxes and emissions trading systems, we will advance professional and technical discussions on whether it is possible to design a system that will promote investment and contribute to growth in terms of both price signaling and revenue generation, while taking into account the added cost borne by companies. In doing so, we will build upon international trends and domestic circumstance, including current economic situation and the availability of alternative means, efforts of leading local governments, and possible impact on the international competitiveness of domestic industries.

In addition, Japan will fully take the lead in creating fair international rules that strike a balance between free trade and climate change policies, while demonstrating its leadership as a standard-bearer for free trade. On this occasion, we will organize Japan’s basic approach to carbon border adjustment mechanism, and then respond strategically to such mechanisms by paying attention to the trends of discussions in the EU and other countries.

3. Attracting domestic and foreign private capital to carbon-neutral markets

(1) Development of infrastructure for smooth provision of funds

Our goal is to attract domestic and foreign ESG investment funds worth more than 30 00trillion dollars. The government will formulate guidelines necessary to develop sustainable finance.

The government will formulate sector-specific roadmaps for the transition in industries with large CO2 emissions such as steel, chemicals, paper/pulp, cement, electric power, gas,

petroleum, etc., and promote transition efforts in Asia.

The government will encourage disclosure of investment strategy by corporate pension funds and other institutional investors through promoting acceptance of the Japan's Stewardship Code, signatories to the Principles for Responsible Investment (PRI) and disclosures following the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

(2) Development of ESG-related bonds market

Our goal is to develop a "Green International Financial Center" where ESG-related bonds including green bonds are actively traded. We aim to develop a platform for practical information of ESG-related bonds. The government will encourage the development of the private sector mechanism which provides certification of the eligibility of ESG-related bonds, and the development of ESG rating and data providers.

(3) Enhancement of sustainability-related disclosure

Through the Corporate Governance Code, etc., companies listed in the Prime Market (where companies with a high level of market capitalization and a high quality of corporate governance will be listed after the transition to TSE new market segments in next April) will be required to enhance the quality and quantity of climate-related disclosure based on TCFD recommendations or equivalent international frameworks. Additionally, Japan will strategically participate in the formulation of global sustainability standards.

(4) Support for lenders by financial institutions and public-private cooperation

The government will encourage active dialogue between financial institutions and businesses, and investment and lending based on the dialogue. In order to encourage financial institutions to develop risk management systems for climate change, the government will formulate supervisory guidance by the end of this fiscal year, and support regional financial institutions efforts.

4. Regional decarbonization roadmap

Based on the Regional Decarbonization Roadmap, we aim to achieve decarbonization of electricity consumption in the consumer sector by 2030 in at least 100 decarbonization leading areas. In addition, priority measures will be implemented nationwide to achieve decarbonization domino effect with leading areas as the core. In particular, we will concentrate

our efforts on the following items over the next five years.

(1) Continuous and comprehensive support for local initiatives

- Establish a scheme to provide continuous and comprehensive support for regional decarbonization efforts, including those in leading areas, in order to dispatch and train personnel, share information and technology, and secure necessary funding.

(2) Lifestyle innovation

- Develop visualization of CO2 emissions from products and services, incentives to encourage active selection of decarbonized products and services, use of local renewable energy as a homecoming gift for hometown tax payments, social implementation of nudges, and a national movement using ambassadors.

(3) Innovation in rules for decarbonization

- Establish a renewable energy promotion zone that contributes to environmental conservation and smooth regional consensus building, as well as to the foreseeability of businesses, and promote renewable energy such as solar power generation that coexists with and contributes to local communities. Consideration of the optimization of environmental assessments to promote wind power generation, etc., and institutional measures to accelerate the development of geothermal power generation in symbiosis with local communities through the implementation of scientific research.

Chapter 4: Realizing New Investments for Green Growth Strategies

1. Industrial structural transformation associated with carbon neutrality

We will support the industrial structural transformation associated with carbon neutrality in 2050. For example, engine parts suppliers will be challenged to manufacture electric parts in line with the shift to electrification of automobiles, and gas stations and maintenance bases will be transformed into new regional human flow, logistics, service bases, and EV stations. At the same time, we will support the movement of labor, without the loss of employment, associated with industrial structural transformation.

2. Electrification and the use of digital technology in conjunction with carbon neutrality

Electrified society is a prerequisite for carbon neutrality. For example, digital control of power networks is important to maximize the introduction of renewable energy. Cars, drones, airplanes, trains, and their automated driving are digitally controlled. Robots will support the workplace in both manufacturing and service. The Green Growth Strategy will be supported by a robust digital infrastructure, and green and digital are two wheels of the same cart. We will promote efficient and effective greening through digitization in environment-related fields. We will lead the world's green industry and create a virtuous cycle between the economy and the environment.

3. Development of hydrogen stations

In anticipation of the widespread use of fuel cell vehicles, fuel cell buses, and fuel cell trucks, about 1,000 hydrogen stations will be constructed by 2030, taking into account human flows and logistics in order to achieve the optimal layout. We will promote the development of hydrogen stations for commercial vehicles such as buses and trucks, including refueling facilities exclusively for business locations.

4. Development of quick charging facilities for electric vehicles

Lack of charging facilities will hinder the spread of electric vehicles. We will strongly promote the installation of 30,000 quick charging facilities to achieve the same level of convenience as gasoline vehicles by 2030 at the latest.

5. Gas conversion of coal-fired private power generation, etc.

Focusing on energy-intensive industries such as steel, chemicals, pulp and paper, and cement, we will promote the conversion of coal-fired private power generation to gas and the upgrading of low-efficiency blast furnaces, coke ovens, industrial furnaces, and other facilities to higher efficiency.

6. Development of transmission line networks to promote renewable energy

In order to accelerate the development of transmission line networks for the spread of renewable energy, we will promote feasibility studies (FS) on submarine transmission lines and capital investment for manufacturing facilities for cables.

Chapter 5: Strengthening Investment in People

1. The state of the freelance protection system

According to the actual survey, 60% of the freelancers who have experienced problems with business partners were not given written documents or e-mails in the first place, or even if they were, the terms and conditions were not sufficiently specified. In order to improve this situation and create an environment where freelancers can work with peace of mind, we will consider legislative measures such as establishing rules for written contracts for transactions between businesses and freelancers.

We will consider a safety net for freelancers.

2. Initiatives to establish telework

We will promote awareness of the guidelines regarding the application of labor standards-related laws and regulations in order to establish telework.

In addition, in order to promote high quality telework throughout the country, the active use of ICT tools and the development of satellite offices will be promoted.

We will encourage businesses to publicize the status of their telework implementation.

3. Realization of new ways of working, such as lifting the ban on second and side jobs and promoting the introduction of short-time working regular employees

Responding to the needs of those who wish to work in a variety of ways and in new ways, the goal is to provide options for second and side jobs in companies, and promote the introduction of a variety of regular employee systems, including short-time working regular employees. To facilitate the movement of labor in response to changes in the industrial structure, we will promote the reform of work styles in Phase II.

We will encourage companies to adopt and promote the selective three-day workweek system by collecting and providing good examples.

4. Promoting diversity, including the appointment of women, non-Japanese, and mid-career hires

To further strengthen the growth potential of Japanese companies, we will encourage them to transform themselves into organizations that are inclusive of diversity so that women, foreigners, and mid-career workers can play an active role.

We will expand opportunities for people who have studied abroad, worked for international organizations, and experienced different cultures.

5. Stabilizing the employment environment for the younger generation by reviewing the personnel evaluation system

The goal is to improve and stabilize the income of child-rearing generations, and stabilize the employment environment for younger generations by reviewing the personnel evaluation systems of companies.

6. Facilitating labor mobility

At the same time, we will support the movement of labor, without the loss of employment, associated with industrial structural transformation, including the promotion of recurrent education.

In particular, those whose employment has become precarious due to the COVID-19 pandemic are, as mentioned earlier, non-regular employees in the food service, accommodation, cultural arts, and entertainment industries. Especially, the impact on female non-regular employees in their 20s to 40s is significant (Figure 8).

On the other hand, when female non-regular employees were asked why they chose non-regular employment, 10.3% said that it was because there was no work in regular employment available, and their priority was to work convenient hours (39.9%) and to balance work with housework, childrearing, and nursing care (19.7%) (Figure 9). In many cases, labor migration to full-time occupations is difficult.

For these people, we will provide options for labor mobility to regular employment, which are currently increasing, and to jobs with fewer time constraints.

For this reason, we will consider a system that allows non-regular employees to move their labor without loss of employment to clerical and other positions with fewer time constraints, and with simple training. At the same time, companies are also urged to allow a variety of work styles, such as the spread of divided work hours and shifts, and the introduction of shorter regular work hours.

Figure 8: Percentage change in the number of employees by age (Mar. 2021, YoY change, females)

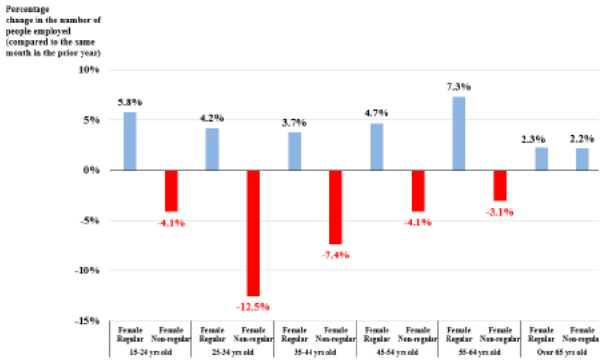
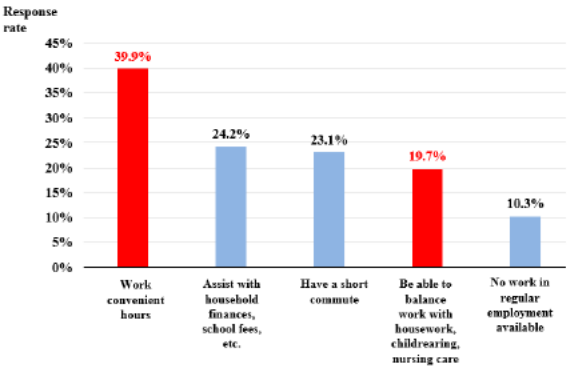


Figure 9: Reasons for choosing non-regular employment (Oct-Dec 2020, females)



7. Enhancing individualized and collaborative learning by promoting the Giga School concept

The goal is to promote the development of a learning environment for a new era that integrates hardware, software, and human resources (e.g., the Giga School concept), and to promote the transformation of learning through a shift to data-driven education in order to enhance individually optimized learning and collaborative learning according to the stage of development and the situation of students.

8. Implementation of the Policy for Reform of Social Security for All Generations

We will steadily implement the "Policy for Reform of Social Security for All Generations," which was approved by the Cabinet at the end of last year.

Chapter 6: Ensuring Economic Security and Concentrated Investment

1. Promoting economic security policy

As the struggle for technological hegemony intensifies, there is growing interest in dual-use technologies (civilian technologies that can be converted to military use) such as semiconductors, AI, quantum, and 5G, which have great potential for both economic growth and security.

Against this backdrop, the COVID-19 pandemic and the prolonged and structural antagonisms between the United States and China have revealed the vulnerability of global supply chains and the risk of interdependence among nations and regions.

In response to changes in the international environment, countries are investing unprecedented amounts of national funds and developing policies to retain important production bases in their countries from the perspective of economic security.

In order to cope with such discontinuous changes, to protect universal values such as freedom, democracy, and respect for fundamental human rights, and to realize a free and open international order based on the rule of law in cooperation with like-minded countries and partners, Japan needs to identify strategic technologies and materials that support the country's economic growth and security, and then take measures to protect the technologies. At the same time as appropriately protecting them, we need to take measures that are distinct from those taken in the past to ensure autonomy and achieve superiority. To this end, the following measures related to economic security will be promoted comprehensively.

As for the following urgent issues, we will sequentially establish policies to deal with them and take necessary actions while coordinating with existing projects.

(1) Ensuring technological superiority from the perspective of economic security

① Identification of technology

In order to strengthen the think tank function to conduct research and analysis to contribute to the identification of important technologies, we will set up the function in this fiscal year and develop a promotion system.

② Technology development

New projects will be created to provide strong support for the practical application of advanced technologies that are important from the perspective of strengthening economic security in the fields of space, quantum, AI, supercomputers/semiconductors, nuclear power, advanced materials, biotechnology, and oceans, through cooperation among relevant ministries and agencies.

We will establish a system to preserve, share, and utilize important technical information from the perspective of smoothly promoting international joint research and securing and maintaining Japan's technological superiority.

③ Preservation of technology

(a) Review of export controls

- Promptly implement a new security trade control framework that complements the existing international export control regime.

(b) Review of inward direct investment

- In cooperation with like-minded countries, strengthen the enforcement system by utilizing the resources of the local ministries and agencies, while promoting the strengthening of cooperation among the relevant ministries and agencies for pre-screening and post-screening monitoring. In addition, a study on the nature of designated industries will be promoted.

(c) Strengthen management of technical information at border

- Strengthen the screening process for accepting international students and researchers, and promote the development of a system for this purpose.

(d) Clarification of the scope of "deemed export" control

- The provision of information to residents will be subject to control if it is considered to be virtually the same as the provision of technical information to non-residents, with the aim of implementation within the next fiscal year.

(e) Strengthen intelligence capabilities

- Strengthen the system necessary for collecting, analyzing, consolidating, and sharing information related to economic security.

(f) Ensuring the soundness and fairness of research

- Formulate guidelines for universities and research institutions to promote autonomous efforts to enhance the soundness and fairness of research. In addition, for applicants applying for competitive research funds, gradually require disclosure of the status of receipt of foreign funds, etc., starting this fiscal year, and expanding the scope of disclosure in the next fiscal year.

(g) The state of the patent disclosure system

- With regard to the public disclosure system of patents, study measures to make patents private from the perspective of security while being compatible with the promotion of innovation, keeping in mind the patent systems of other countries.

(2) Reduction of threats and improvement of autonomy related to core infrastructure and supply chains

In order to ensure safety and reliability in maintaining the functions of key infrastructure industries, such as telecommunications, energy, finance, transportation, and medical care, the current systems and operations will be inspected from the perspective of addressing risks through the use of equipment and systems, business alliances, and outsourcing, and necessary measures will be considered.

The supply chain will be analyzed for essential materials and technologies in key infrastructure industries, in addition to the prioritized items such as semiconductors, pharmaceuticals, batteries, and critical minerals including rare earths. The necessary measures to strengthen the resilience of supply chain will be considered, including securing and strengthening domestic production capacity and diversifying procurement.

(3) Consideration of a framework for securing medium- to long-term financial contributions to promote the strengthening of economic security

In order to promote the strengthening of Japan's economic security, Japan will strengthen its R&D capabilities for advanced key technologies and secure a strategic domestic industrial basis, including the ability to produce and supply key technologies and goods in the supply chain. Japan will study the ways to support it, including a framework for securing medium- to long-term financial contributions, keeping in mind the trends in major countries, and aims to establish such support at an early stage.

2. Development of advanced semiconductor technologies and promotion of manufacturing locations

The global semiconductor market had been expected to expand to 45 trillion yen by 2019, with further growth projected in the future. On the other hand, the share of sales of semiconductors by Japanese companies declined from 50.3% in 1988 to 10.0% in 2019 (Figure 10).

Of Japan's semiconductor demand, 35.8% is domestically produced, and 64.2% is dependent on imports. Dependence on Taiwan (26.8%) and China (8.9%) as import

destinations is high (Figure 11).

According to the U.S. Semiconductor Industry Association, Taiwan has 92% of the manufacturing capacity for advanced semiconductors of less than 10 nanometers, while Japan has a 5% share for 28-45 nanometers and a 13% share for over 45 nanometers, but does not have the capacity to manufacture advanced semiconductors of 22 nanometers or less (Figure 12).

Japan has the largest number of semiconductor plants in the world, but the majority of them are low-end semiconductor plants (Figure 13).

The goal is to actively support the design of advanced semiconductors that support the digital society and the development of their manufacturing technologies with R&D funds and other resources. In addition, since there is a high concentration of production bases for advanced semiconductors internationally, we will urgently promote initiatives comparable to those in other countries and promote the location of production bases for advanced semiconductors in Japan to build a reliable supply system.

Figure 10: Medium- to long-term trends in the semiconductor market

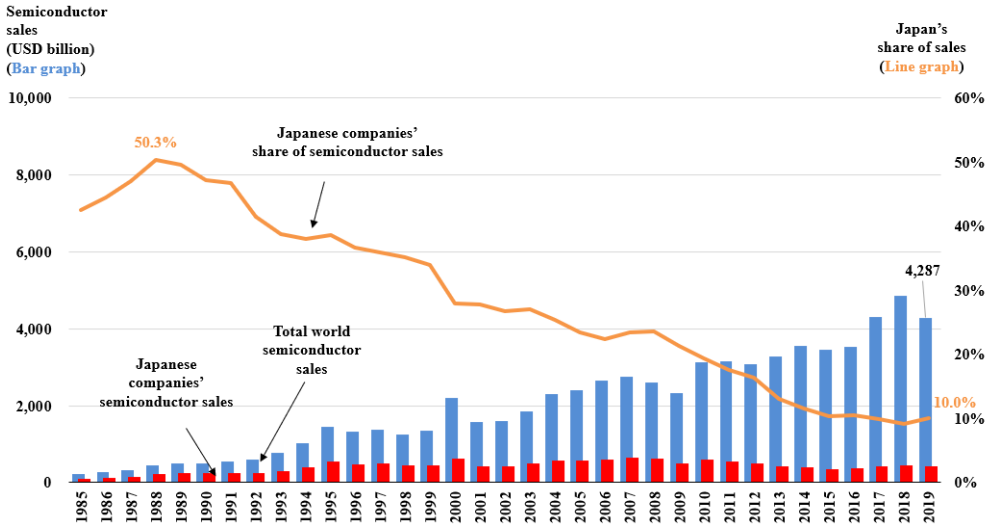


Figure 11: Ratio of imports to domestic demand for semiconductors in Japan (2017)

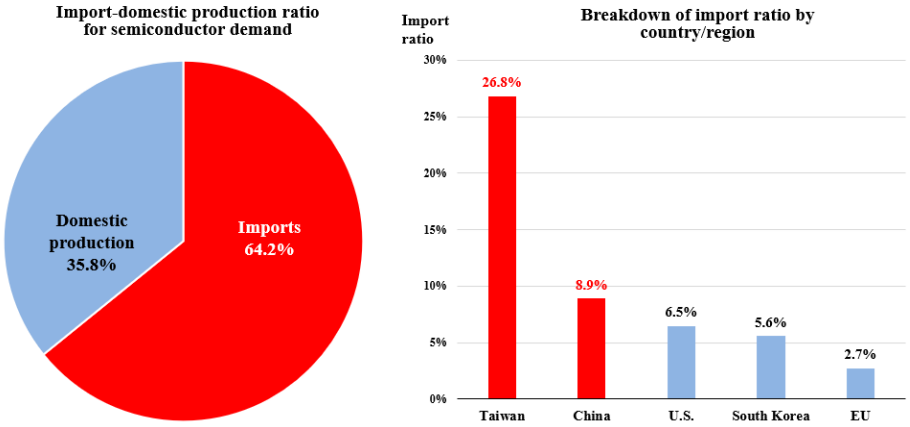


Figure 12: Percentage of semiconductor manufacturing capacity by size (December 2019)

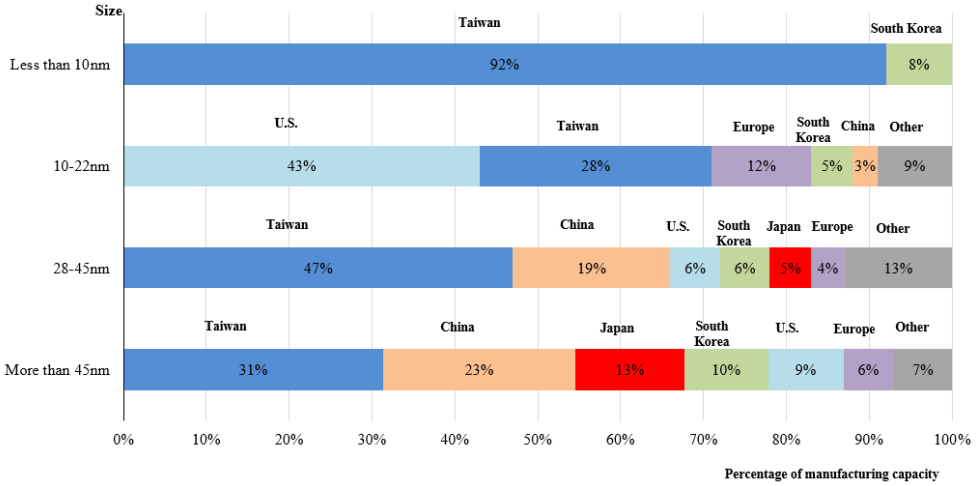
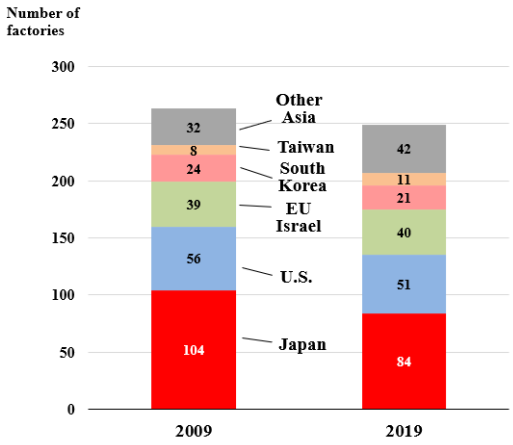


Figure 13: Number of semiconductor factories in the world



3. Promoting optimal deployment of next-generation data centers

The location of a data center (a facility that installs a large number of computers and

provides Internet connection services and data management and operation services), which is the core of the digital infrastructure, is important from the following perspectives.

First, it has been pointed out that it is not desirable to depend on data centers in other countries for critical data from a security perspective.

Second, the location has a significant impact on the data transmission delay. For example, for a user located in Tokyo, the transmission delay is 0.001 seconds when the data center is in Tokyo, compared to 0.069 seconds when the data center is in Singapore (Figure 14). This kind of transmission delay is a problem in ensuring the safety of automobiles in autonomous driving.

Looking at the location of data centers in Japan, 71% of them are located in the Kanto region, with Tokyo alone accounting for 49% (Figure 15).

In order to cope with the future rapid increase in digital demand and data communication volume, as well as to enhance data protection and disaster resilience, we will promote the development of up to five new core data centers with high performance and low power consumption, and up to ten regional data centers, taking into account demand, for optimal allocation in Japan.

Figure 14. Average transmission delay (latency) from each city to Tokyo

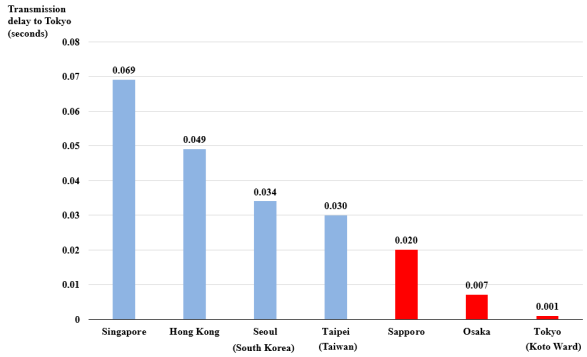
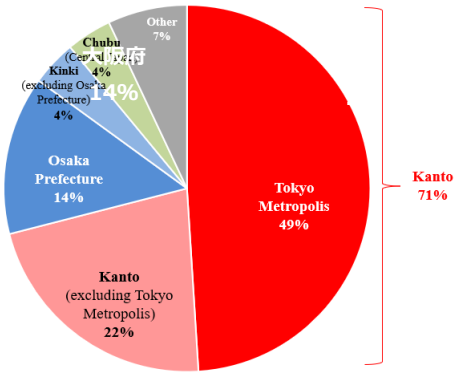


Figure 15: Location of data centers in Japan (Server room area, 2019)



4. Development of next-generation battery technologies and promotion of manufacturing locations

With the growing importance of electric vehicles, batteries, the key component of these vehicles, will determine the future competitiveness of the automotive industry. From the perspective of strengthening the supply chain, R&D of next-generation batteries and the location of large-scale production bases for batteries and components that are larger than a certain scale will be promoted.

5. Strengthening Supply chain of key technologies and commodities such as rare earths

We will promote the development and diversification of production bases of important minerals, including rare earths. We will strengthen the supply chain for pharmaceuticals and other products that are essential for the healthy lives of the people.

6. Strengthening manufacturing infrastructure

We will strengthen the domestic manufacturing base so that it can respond flexibly and swiftly to unforeseen events in the supply chain amid the COVID-19 pandemic and the antagonism between U.S. and China. We will also promote R&D in the fields of materials and nanotechnology.

Chapter 7: Reviving the Dynamism of Japanese Firms in a "With COVID-19" and a "Post COVID-19" World: Creating an Environment that Both Creates and Scales Up Startups

Although the number of startups in Japan has been on the rise in recent years, the percentage of firms with a company age of 0-2 years in the total number of firms is only 13.9%, which is lower than in the United States (20.5%), the United Kingdom (22.4%), and France (22.8%) (Figure 16).

The largest number of listed companies in Japan, 119, were founded between 1945 and 1954, including Sony and Honda Motor, while the largest number of listed companies in the United States, 124, were founded between 1995 and 2004, including Amazon and Facebook (Figure 17).

Furthermore, there are few growing startups in Japan, and the number of unicorns (private companies with a market capitalization of over $1 billion) is 274 in the United States, 123 in China, and 67 in Europe as of March 1, 2021, compared to only 4 in Japan (Figure 18).

With an eye on the world "With COVID-19" and "Post COVID-19," Japan needs to create an environment that encourages companies to enter untapped fields and become leaders in growth.

Figure 16: International comparison of the distribution of companies by age

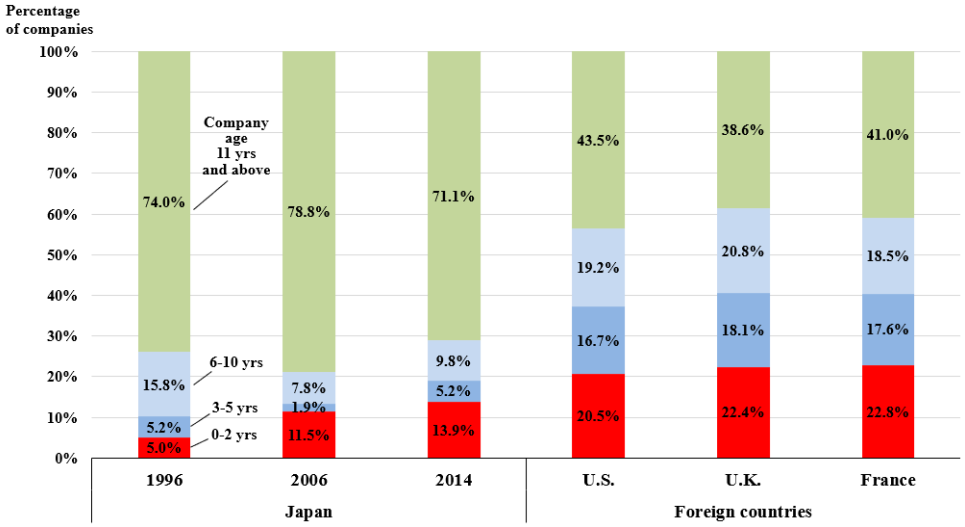


Figure 17: Comparison of the year of establishment of Japanese and U.S. listed companies

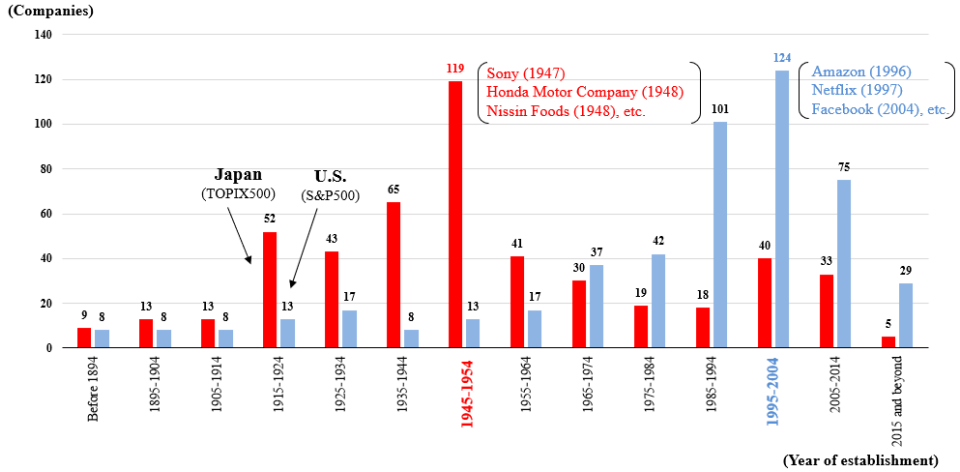
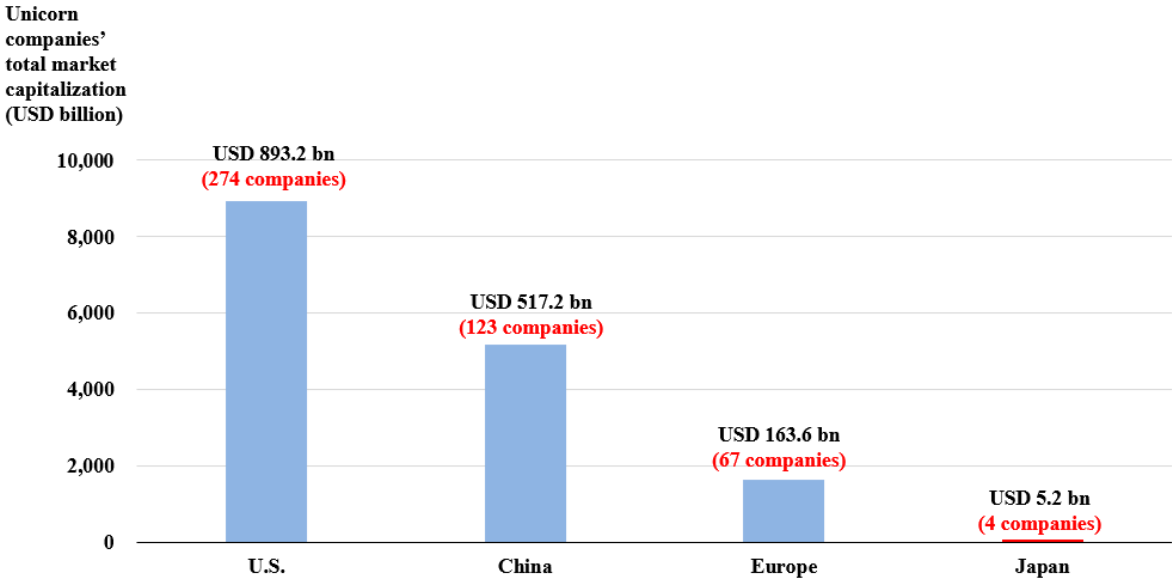


Figure 18: International comparison of the number of unicorn companies (March 1, 2021)



1. Reform of IPO pricing process

The amount of proceeds per IPO in Japan had been smaller than in the United States, Asia, and Europe and had decreased from 2019 to 2020, even though those in other areas had increased during the period (Figure 19).

Studies show that in IPOs in Japan, the price at which shares begin to be traded in the market (opening price) is much higher (+48.8%) than the price at which startups sell their shares to investors (offering price). This rate is significantly higher than those in other countries such as the United States (+17.2%) and the United Kingdom (+15.8%) (Figure 20). As a result, the amount of startup's proceeds from IPO has been small.

In addition, in IPOs in the United States, 77% of shares are allocated to institutional investors like pension funds, while in Japan, 70% of shares are allocated to individual investors, which implies insufficient investments from pension funds (Figure 21).

Figure 19: International comparison of proceeds per IPO

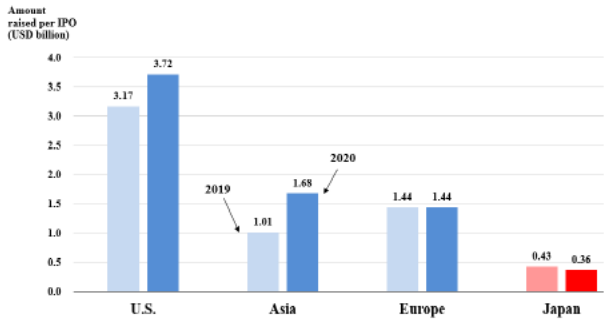


Figure 20: International comparison of the IPO underpricing rate

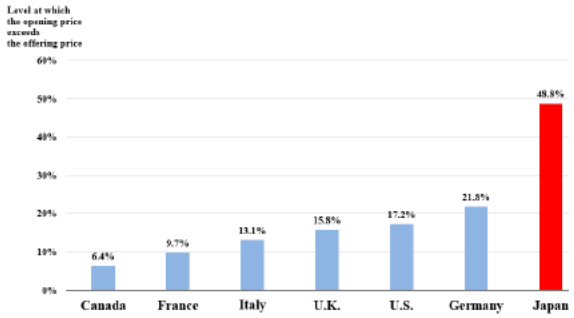
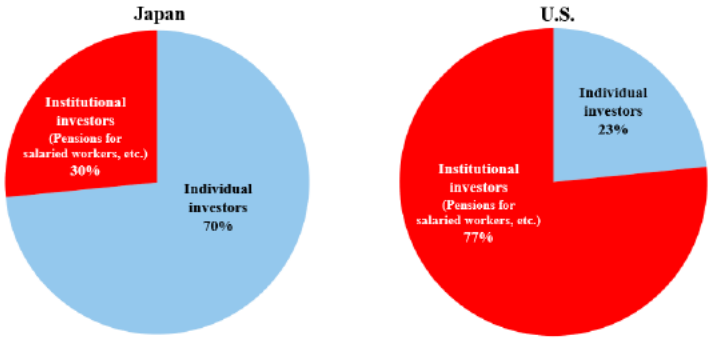


Figure 21: Allocation of shares at the time of listing in an IPO



Moreover, in IPOs in Japan, underwriters can allot 90% of share issued at offering price at their own discretion.

In this process, startups receive the total amount of new shares issued at offering price, deducting the compensation for the underwriters. This means that there is no benefit for

startups if the opening price exceeds the offering price, though investors who acquired new shares issued at offering price immediately gain marginal profits. It has been pointed out that startups could have raised more proceeds with the same number of new shares.

In light of this, the government will investigate issues regarding IPO pricing process and reform it.

2. Consideration of introducing regulations to allow the listing SPACs

In the United States, SPACs (Special Purpose Acquisition Companies) which allow startups to go public immediately after their foundation are utilized as well as traditional IPOs (Figure 22). In addition, SPACs have been introduced and utilized by major exchanges not only in the United States but also in other countries overseas (Fig. 23).

Figure 22: Number and Proceeds of SPAC IPOs (left) and traditional IPOs(right) in the U.S.

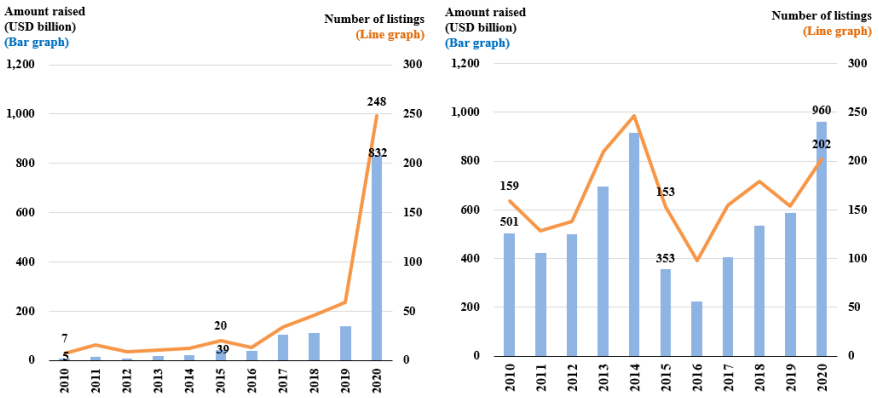


Figure 23: Possibility of SPAC listings in major exchanges

	U.K.	Germany	France	Canada	Italy	South Korea
Main exchanges	London Stock Exchange	Frankfurt Stock Exchange	Euronext Paris	Toronto Stock Exchange	Italian Bourse	Korea Exchange
Availability of SPAC listing on major exchanges	☑	☑	☑	☑	☑	☑

Specifically, startups go public through mergers with SPACs by the following process.

① A sponsor with expertise in assessing businesses potential found a SPAC.

② A SPAC goes public to raise funds.

③ After SPAC IPO, a sponsor searches for merger targets (startups) and conducts merger negotiations.

④ A merger is proposed by a sponsor and approved by shareholders (including public

shareholders) at SPAC's shareholder meeting.

⑤ SPACs must meet investor protection requirements, such as deposit of the proceeds from the SPAC's IPO and any concurrent sale of the SPAC's equity securities in a trust account, and redemption right (the right to convert shares of common stock into a pro rata share of the aggregate amount on deposit in the trust account) for public shareholders voting against the merger. SPACs often raise additional funds by making private placement investments when they complete the merger.

⑥ A Startup goes public through a merger with a SPAC.

It has been pointed out by startups in Japan that SPACs have the potential to solve the current problem of traditional IPOs that the amount of proceeds is small due to underpricing problem as SPACs allow startups to sell their shares at reasonable price that both startups and SPAC's investors agreed on through the merger negotiation and shareholder's meeting. On the other hand, some point out the need for investor protection.

The government will consider the development of regulations to allow the listing of SPACs, such as criteria for listing (formal requirements and disclosure standards) and redemption right exercised by shareholders in case of voting against a merger or no voting until the deadline, from the perspective of investor protection measures, U.S. and other overseas regulatory authorities movements, market trends regarding SPACs and enhancement of Japan's international competitiveness.

3. Improvement of regulation to activate private placement financing

In Japan's capital market, individual investors have limited means of investing in unlisted startups, and as a result, there are few investors other than venture capitalists providing capital to unlisted startups. From the perspective of increasing the flow of risk money to unlisted startups, the scope of professional investors (accredited investors) will be expanded by making it more flexible based on their professional knowledge, experience and certifications, to make the professional investor system available and useful for a wider range of individuals.

4. Promoting competition policy to optimize transactions between startups and large companies

We have just formulated guidelines that outline problematic cases of collaboration between startups and large companies and specific directions for improvement, as well as our approach to the Antimonopoly Act. In addition to ensuring thorough awareness, law enforcement by the Japan Fair Trade Commission will be strengthened.

In addition, new guidelines will be formulated to ensure proper contracts between startups and investors.

5. Comprehensive support for the formation of startup ecosystems

In order to form a startup ecosystem, comprehensive support measures will be developed, including increased government procurement from startups based on the new SBIR system, financial and other support for startups that increase employment, review of management guarantee guidelines, and promotion of second and side jobs. At this time, we will seek to increase the mobility of human resources by asking industries to expand the range of options available to new graduates and those changing jobs. In addition, we will continue to work on reviewing the system to facilitate flexible management and later stage funding of startups.

Chapter 8: Creating an Environment for Business Restructuring and Revitalization

During the COVID-19 pandemic, the outstanding debt of Japanese companies increased by 52.0 trillion yen, from 570.5 trillion yen at the end of December 2019 to 622.5 trillion yen at the end of December 2020 (Figure 24).

In line with this, 14.5% of large firms and 34.5% of SMEs indicate a sense of excessive debt in the COVID-19 pandemic in April 2021 (Figure 25).

In order to proceed with business restructuring, we will improve the environment for business restructuring and revitalization, taking into account that the issue of debt disposal cannot be avoided.

Figure 24: Trends in outstanding debt of Japanese non-financial corporations

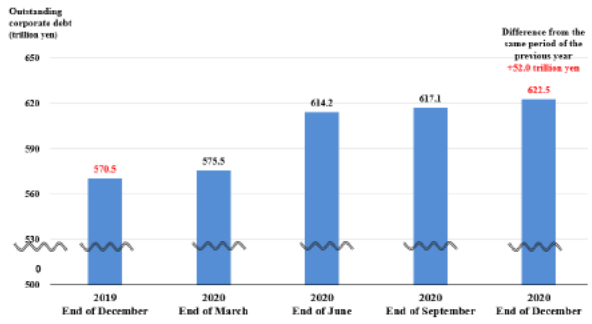
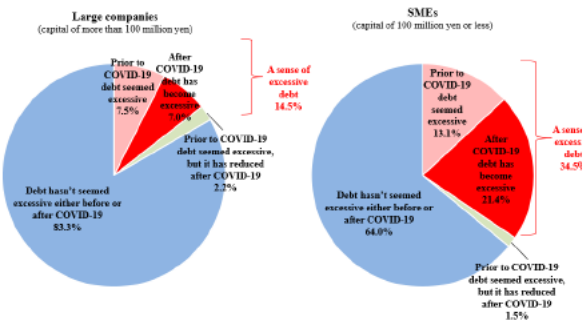


Figure 25: Excessive debt among companies (April 2021)



1. Improving the environment for business restructuring and revitalization of large and medium-sized companies

(1) Strengthening the supply of capital funds and promoting the subscription of preferred stock

In order to strengthen the financial base of companies, in the COVID-19 pandemic, we have taken measures such as suspending the principal of private-sector syndicated loans by government financial institutions and lowering the interest rate level of capital subordinated loans to about 1% for the first three years through interest subsidies, etc. We will further promote the supply of capital funds and the underwriting of preferred shares as necessary.

(2) Consideration of legislative aspects to expand the convenience of private arrangements (out-of-court workouts), etc.

Unlike legal liquidation, private arrangements (out-of-court workouts) can prevent damage to business and profitability. In order to facilitate the revitalization of businesses through such private arrangements (out-of-court workouts), we will examine the legal aspects of expanding their convenience, while taking into consideration the protection of creditors.

As for legal liquidation, we will promote a smooth transition from ADR, which is a private arrangement (out-of-court workout), to simplified rehabilitation proceedings, which is a legal liquidation.

2. Improving the environment for business restructuring and revitalization of SMEs

(1) Guidelines for private arrangements (out-of-court workouts) of SMEs

We will study the formulation of guidelines for private arrangements (out-of-court workouts) for business revitalization based on the actual situation of SMEs.

(2) Dealing with personal bankruptcy

It has been pointed out that in the event of bankruptcy of SMEs, the fact that many entrepreneurs who provide personal guarantees become personally bankrupt is a major disincentive for SME managers to make early decisions on business restructuring. We will consider countermeasures while giving consideration to ensuring management discipline.

(3) Initiatives by financial institutions, etc.

We will consider measures to encourage financial institutions to engage in private arrangements (out-of-court workouts) for business restructuring.

3. Recovery of corporate profitability

There are various methods for business restructuring and revitalization. Debt restructuring is one of those options, and improving intrinsic profitability is essential. In promoting business restructuring and revitalization, it is assumed that companies will work to improve their profitability for self-sustaining and sustainable growth.

Chapter 9: Competition Policy and Other Measures for New Growth

1. Promoting regulatory reform

We will further promote regulatory reform to maximize the vitality of the private sector. To this end, we will further promote the use of systems such as National Strategic Special Zones and regulatory sandboxes, and promote the nationwide expansion of the results of these systems.

2. Redesigning competition policy

The key to the growth strategy is to strengthen competition policy to improve the competitive environment, along with the promotion of regulatory reform. Competition policy needs to be redesigned in light of the changing times. For this reason, we will work in the following directions.

(1) Strengthening of the Japan Fair Trade Commission's advocacy

In Europe and the United States, competition authorities have been actively advocating to other government agencies to improve competition, and the competitive environment has been steadily improved. In Japan, too, the effectiveness of the advocacy function of the Japan Fair Trade Commission should be strengthened, including the promotion of the entry of startups and SMEs, and in infrastructure fields such as the digital market (e.g., telecommunications) and the energy market (e.g., electricity), while utilizing highly specialized external personnel.

(2) Strengthening of the structure and enforcement of the Japan Fair Trade Commission

To strengthen the structure and enforcement of the Japan Fair Trade Commission, the human resources aspect will be enhanced quantitatively and qualitatively.

Chapter 10: Building Strong SMEs

1. Support for business continuity and business restructuring of SMEs

We will continue to take all possible measures to support the business continuity of SMEs affected by the COVID-19 pandemic, and to support SMEs that are actively engaged in business restructuring we will constantly review the business restructuring subsidies.

2. Increasing labor productivity through the growth of SMEs

In order to increase the number of companies that can grow into medium-sized companies and compete overseas, we will strengthen our support for companies to expand overseas in cooperation with private sector support organizations.

The goal is to encourage smooth business succession of SMEs and create an environment in which SMEs can properly utilize support for M&A. Specifically, the government will ① strengthen business succession and succession support centers, ② develop a simple corporate value assessment tool, and ③ establish a system to encourage appropriate efforts by support organizations, such as a registration system for M&A support organizations and the establishment of a self-regulatory organization.

Taking a cue from the Fraunhofer-Gesellschaft model for creating a strong SME cluster, we will consider support systems for ambitious SMEs, including consideration of strengthening the functions of existing R&D institutions.

3. Appropriate transactions between large companies and SMEs

(1) Appropriate subcontracting transactions

We will strengthen the supervisory system to prevent adversely distorting transaction prices for subcontractors. In addition, we will accelerate the formulation of voluntary action plans by the industry, and promote the strengthening of initiatives not only by the industry but also by individual companies as part of the improvement of corporate governance.

(2) Promotion of cooperation between large businesses and SMEs

With regard to "Partnership Construction Declaration", which aims for co-existence and co-prosperity between large enterprises and SMEs, the public and private sectors will work together to publicize and encourage the declaration, aiming to have 2,000 companies issue their declarations by the end of this fiscal year, and to strengthen cooperation between large enterprises and SMEs by expanding the number of declarations.

(3) Abolition of the use of promissory notes

We will promote efforts to abolish the use of promissory notes in five years by requesting

the formulation of a voluntary action plan by the industrial and financial sectors by this summer. First of all, we will promote the shortening of the payment terms for promissory notes related to the payment of subcontract proceeds to 60 days or less. In addition, checks will be fully computerized.

(4) Expansion of transactions beyond corporate affiliates

Through the standardization of electronic ordering, receiving and other systems, we will promote the use of such systems not only by SMEs but also by ordering companies, etc., and encourage SMEs and small businesses to expand transactions beyond their affiliations.

4. Support for local SMEs and small businesses, etc.

Local SMEs and small businesses play an important role not only in local employment, but also in supporting the local community, especially in a community where the population is declining. In order to improve the productivity of these businesses while securing functions essential to their daily lives, local and national governments will work together to create leaders in community building and strengthen efforts to support local communities through SMEs and other businesses.

5. Enhancement of management support through public-private cooperation

In order for businesses trying to recover from the COVID-19 pandemic to receive appropriate management support, a network of support organizations, including those in the private sector, will be established in each region, and the expertise of individual support organizations will be made visible. As part of this effort, we will promote the visualization of the areas of expertise required of SME Management Consultants as familiar providers of support.

Chapter 11: Strengthening Investment in Innovation

As stated above, Japan will make concentrated investments in innovation in the digital and green fields. In addition to the above, the following initiatives will be implemented.

1. Promoting reverse innovation

Reverse innovation is accelerating, where new products and services are created and reimported to developed countries by utilizing cutting-edge technologies to overcome challenges unique to emerging countries. It is important to promote this in Japan as well, and

to link it to changes in the corporate culture of Japanese companies and to structural reforms in Japan. To this end, we will strongly promote joint projects undertaken by Japanese and other Asian companies.

2. Promoting the integration of the humanities and sciences

Through faculty reforms and other measures, we will overcome the barriers between science, humanities, and other disciplines to transform society through the results of our R&D, and greatly enhance our investment in the development of research personnel.

3. Accelerating R&D of cutting-edge technologies such as quantum technologies

By accelerating cutting-edge R&D in areas such as AI and quantum technology, we will be able to respond to the threats we face, such as infectious diseases and increasingly severe disasters, and use this as a driving force for our next phase of growth. The goal is to dramatically strengthen moonshot R&D in order to promote innovative R&D. We will strategically promote R&D, social implementation, and human resource development in priority fields such as innovative environmental technology, AI technology, biotechnology, quantum technology, material technology, and space development and utilization.

To this end, we will work toward achieving the government's investment targets of 30 trillion yen in R&D and 120 trillion yen in public and private sector investment over the next five years, and lead the international competition in R&D.

4. University reform through the creation of the University Endowment Fund, etc.

Aiming to create world-class research universities that attract outstanding human resources and abundant funds, we will set a goal of expanding the University Endowment Fund to a scale of 10 trillion yen by the end of this fiscal year. A new legal framework for university reform will be considered as soon as possible and submitted to the next ordinary Diet session.

In addition, support for doctoral students will be steadily implemented, and support measures to promote regional universities will be strengthened.

5. Promoting intellectual property strategy

We will accelerate efforts to strategically utilize international standards, focusing on key areas such as smart cities and Beyond 5G.

We will also promote investment in intellectual property and other intangible assets. In order for investors and financial institutions to properly evaluate corporate investment in intellectual

property and strategies for its utilization, guidelines for its disclosure will be formulated this year and disclosure will be encouraged.

In order to create an environment for the sustainable development of the content industry, the copyright system will be reviewed, and efforts will be made to increase productivity at production sites and improve the trading environment.

6. The 2025 World Exposition in Japan as a testing ground for the society of the future

The public and private sectors will work together to accelerate preparations to make the Expo 2025 Osaka, Kansai, Japan, a place to present the state of "Post COVID-19" society. The event will showcase new technologies and systems, including technologies to promote green innovation, and be a people`s Living Lab where people can experience Society 5.0.

7. Creating new industries in Fukushima

We will promote the Fukushima Innovation Coast Framework, Fukushima Plan for a New Energy Society, etc.

Chapter 12: Corporate Governance Reform

Seeking sustainable corporate growth and increased corporate value over the mid- to long-term, the government will promote the following initiatives based on the revised Corporate Governance Code.

To make the board more effective, increase in the number of independent directors from at least two to at least one-third of the board for Prime Market listed companies.

To promote diversity in core human resources, disclose a policy and voluntary measurable targets in respect of promoting diversity in senior management by appointing females, non-Japanese and mid- career professionals.

Chapter 13: Initiatives in Important Fields

1. Development and production of vaccines in Japan

Based on the "Strategy for Strengthening Vaccine Development and Production System" (approved by the Cabinet on June 1, 2021), in order to build a research, development and production system that can develop and produce vaccines domestically and supply them promptly, the following measures will be taken:

- establishment of a world-class R&D base,

- strengthening of the funding function for strategic research expenses,
- development and expansion of the clinical trial environment,
- development of a system and standards to speed up the pharmaceutical approval process, development of a vaccine manufacturing base, and
- fostering and promotion of the vaccine development and manufacturing industry.

In addition, financial resources for the initiatives necessary for this purpose will be secured in a stable manner.

2. Growth strategies for the pharmaceutical industry

Life science is a key strategic area along with digital and green, and is also an important area for security.

In order to create an innovation environment in which pharmaceutical companies that create innovative new drugs can grow, the government will

- strengthen R&D support,
- support drug discovery ventures,
- promote international joint clinical trials,
- strengthen the domestic biopharmaceutical industry,
- promote the implementation plan for whole genome analysis and the roadmap based on this plan, and
- establish a system that enables a wide range of analysis and utilization by parties involved in industry, government, and academia.

In addition, the following measures will be taken:

- establishment of a system that enables a wide range of analysis and utilization by industry, government, and academia;
- development of an environment that facilitates the utilization of medical information;
- examination of the evaluation of new drug innovation and long-term listed products in the National Health Insurance (NHI) drug pricing system;
- development of a data bank for infectious diseases;
- examination of the rationalization of research procedures based on the Clinical Research Law, including legal amendments; and
- support for the consolidation of pharmaceutical companies.

For high-priority drugs that are essential for medical care, widely used, and for which

special consideration must be given to ensuring a stable supply, we will consider setting NHI prices, supporting the domestic production of raw materials for drugs such as antibacterial agents that require stable supplies, stockpiling systems, and introducing emergency purchases, from the perspective of supporting a continuous stable supply for the entire nation. In addition, we will promote measures against drug resistance (AMR) through a One Health approach (i.e., cooperation among related parties to solve cross-cutting issues related to human and animal health and the environment).

To establish a system in which generic drug manufacturers are responsible for ensuring quality, stable supply, and reliability of data, we will ensure appropriate manufacturing and quality control systems by manufacturers and distributors. Even in the case of co-development, confirmation regarding the assurance of data reliability should be conducted at the time of approval review.

To promote the development and use of biosimilars (drugs with the same quality, etc., as domestically approved biopharmaceuticals), a conclusion on future government targets should be reached promptly. Specific measures to promote the use of biosimilars will be discussed.

The ban on online medical treatment will be lifted in principle from the first visit for family doctors, based on safety and reliability.

To promote the use of OTC diagnostic pharmaceuticals sold over the counter at pharmacies, it is necessary to ensure their safety, etc., and self-care and self-medication will be promoted by promoting studies on the conversion of individual items to OTC.

In the distribution structure of ethical pharmaceuticals, there are business practices in which the prices sold by pharmaceutical manufacturers to wholesalers exceed the prices sold by wholesalers to medical institutions and pharmacies, and business practices in which prices and discount rates for all items purchased by medical institutions and pharmacies are negotiated together. In order to improve these practices, measures including a review of the distribution improvement guidelines will be considered.

Given new health issues have arisen due to the COVID-19 pandemic, we will promote support for the prevention of onset and progression of serious illness, and health promotion based on the insurer support system and funding to further strengthen insurer functions for the Long-Term Care Insurance (LTCI) program.

Results of demonstration projects to confirm and accumulate evidence on the health-promoting effects for the prevention of the onset and progression of serious illness, and health promotion will be utilized in preventive health projects by insurers and local governments,

such as the review of specified health checkups and specified health guidance.

We will promote data health reform and improve the environment for the utilization of personal health and medical information. In addition, we will enhance the National Database of Health Insurance Claims and Specific Health Checkups of Japan (NDB) to improve its convenience for research use.

The review system in general will be reviewed tirelessly to promote the development and commercialization of programmed medical devices, such as therapeutic applications, and to contribute to the improvement of predictability for developing companies.

We will promote the international standardization of Kampo medicines, which will contribute to the domestic production of crude drugs and the strengthening of the competitiveness of domestic industries.

We will also establish a government headquarters function to establish an ecosystem for the pharmaceutical industry.

3. Oceans

From the perspective of economic security and the development of marine-related industries into a growth industry, we will strengthen Maritime Domain Awareness (MDA) capacity and strengthen ocean initiatives for carbon neutrality and resource development.

Specifically, we will utilize and share oceanographic data such as sea surface temperature, ocean currents, and vessel traffic among the public and private sectors, as well as accelerate research in the Arctic region, including secure construction of the Arctic research vessel. In addition to promoting the introduction of offshore wind power generation and the development of marine resources such as rare earth mud and methane hydrate, which are world leading, we will also develop unmanned oceanographic observation technology and enhance our observation systems.

4. Space

Space development and utilization will be strongly promoted from the viewpoint that space is a growth industry and is indispensable for security, disaster prevention, and achievement of the SDGs.

The goal is to build a small satellite constellation under public-private cooperation by promoting anchor tenancy (guaranteed procurement by government), etc. We will also promote the demonstration of next-generation technologies such as on-orbit data processing and optical communications. We will respond to social issues by building an integrated G-

space disaster prevention and mitigation system using quasi-zenith satellites and observation satellites, observing greenhouse gases, and R&D for the Space Solar Power Systems, etc. In addition to promoting space exploration, such as the Artemis Project and sample collection from the Martian atmosphere, Japan aims to become a core base for space business in Asia, including the development of a spaceport, with a view to Japan-US space industry cooperation.

We will work towards completion of the H3 rocket and R&D of future space transportation systems.

5. Strengthening promotion of PPP/PFI

We will follow up on past growth strategies and consider new issues related to the promotion of the use of PPP/PFI.

6. Realizing an International Financial Center

Taking advantage of business potential with household assets worth more than 18 trillion dollars, the government will strategically reform financial and capital markets to make them more attractive for foreign businesses and highly skilled professionals. The firewall regulations (restrictions of sharing client's information between banks and securities entity within the same financial group without customer consent) concerning domestic corporate clients will be reviewed from the perspectives of interests of clients, proper management of conflicts of interest and prevention of abuse of superior bargaining position, in order to promote the better-functioning of Japan's capital markets, improving the attractiveness of the markets as an International Financial Center and the provision of better financial services. The government work on to make English communication available in supporting newly entering foreign banks and securities companies in terms of pre-application consultation, registration and supervision, facilitate and expedite the procedures for awarding preferential immigration treatment points to highly-skilled foreign professionals depending on their features, and strategically offer information assumed to be important for foreign financial businesses, including the investment strategies of major domestic asset owners such as pension funds.

7. Promoting direct investment in Japan

Based on the new medium- to long-term strategy, we will mobilize all our policies and efforts to promote direct investment in Japan, while taking all possible measures from the security perspective. By doing so, we aim to increase the balance of FDI in Japan to 80 trillion yen by 2030, or 12% of GDP.

8. Institutional reform in individual fields

(1) Development of system for automated delivery robots

In order to provide non-contact automated delivery services that will improve the safety of users and employees as the period of "With COVID-19" continues for a certain period of time, the government plans to submit the bills to revise relevant laws and regulations to the Diet as early as possible by the end of this fiscal year on the premise of encouraging industry to consider creating a voluntary standard and a certification scheme to improve the safety and the reliability of the robots.

The main contents of those bills will be the following:

- excluding low-speed and small-sized automated delivery robots from the category of road transport vehicles
- requiring service providers to notify their contact details, service areas, and other information in advance
- enabling administrative agencies to take legal action when the providers violate safety management obligations

(2) Establishment of a system for electric scooters

We will review the relevant systems for the use of electric scooters on road, based on the results of demonstration businesses Specifically, we will study the revision of the system regarding traffic rules, including the establishment of new vehicle categories based on maximum speed, etc., place to drive, and the necessity of helmets and licenses, etc. Based on the results of the study, we will submit the relevant bills as early as possible this fiscal year.

(3) System development for drones, etc.

With the aim of overcoming the various challenges facing Japan, such as the declining birthrate, aging population, depopulation, and lack of human resources, we will proceed with the detailed design of a system to certify the safety of drones and the skills of the pilot in order to achieve drones flights beyond line of sight in populated areas within the next fiscal year. In addition, with regard to flying cars, the government will promote the development of a system for safety standards for such vehicles and their operation, as well as standards for certifying the skills of pilots, with the aim of related business activity launching in 2023.

(4) Development of Cashless Payment

In Japan, it is pointed out that the high cost of credit card merchant fees has been one of the obstacles to the expansion of cashless payments. According to the interviews with businesses, interchange fees (fees paid from acquirer to issuer with every credit card transaction) account for about 70% of merchant fees. In light of this, an investigation by the Japan Fair Trade Commission and further studies for increasing market transparency by the relevant ministries and agencies will be conducted.

Chapter 14: Regional Development

The spread of COVID-19 has triggered a growing interest in rural areas. By encouraging changes such as the expansion of teleworking and digitalization, we will create a large flow of people to the regions, which will lead to rebalancing of the concentration of people in Tokyo and the creation of vibrant regions.

1. Realizing a tourism-oriented country

Tourism is a trump card for local development, and we will work to restore domestic demand while supporting the continuation of business and the maintenance of employment, and taking thorough measures to prevent the spread of COVID-19 infection. We will also promote the development of attractive tourist areas and contents. Furthermore, we will work on the gradual revival of inbound tourism while monitoring the COVID-19 infection situation in Japan and abroad.

2. Creation of vibrant communities in agricultural and/or mountainous areas and fishing villages through the development of growth industries in agriculture, forestry and fisheries

In order to achieve the export value targets of 2 trillion yen in 2025 and 5 trillion yen in 2030 for agricultural, forestry, fishery and food products, the government will promote reforms to make the industries related to these products leading growth industries in the rural areas. This will be done by providing priority support for 27 priority products and more than 1,200 communities and businesses who are specializing in the export of these products. In this way, the government aims to increase incomes and create vibrant communities in agricultural and/or mountainous areas and fishing villages. In addition, in light of the tight international supply and high demand for lumber, the establishment of a stable supply system for domestic lumber

will be promoted.

3. Strengthening the business foundations of regional banks

To strengthen the business foundations of regional banks, which play a vital role in local economies, the government will support regional banks that aim to reform their business. The government will also accelerate the efforts of regional banks toward revitalization of local economies by promoting sharing the know-how to support local businesses among them.

4. Promoting the matching between management personnel and local companies

In order to create a flow of human resources from large companies to regional SMEs and to help regional companies in securing management personnel, the government will work on to expand the list of human resources maintained by the government fund aiming to list about 10,000 people as early as possible. In addition, a subsidy will be offered to local companies that have secured management personnel from the list.

5. Expanding the flow of people from urban areas to rural areas by promoting telework and other measures that contribute to regional development

In order to further promote telework that contributes to regional development, we will promote the development and use of satellite offices and encourage the development of businesses by companies that have advanced into the regions to solve regional issues. In addition, we will promote the establishment of satellite campuses in regional areas for universities and other institutions in the Tokyo area. Moreover, we will also encourage the dispatch and migration of human resources and the relocation of corporate headquarters functions to the regions.

6. Revitalizing local public transportation

In order to maintain and revitalize public transportation, which supports the local economy, we will support operators who are working to improve their profitability through the use of digital technology, etc., and promote initiatives to improve convenience for users, such as joint management.

7. Promoting the Super City Initiative, etc.

In order to formulate Smart Cities, we will promote the creation of city cases driven by the Data Linkage Platform, etc. throughout the country, focusing on priority development areas.

We will strongly promote the Super City Initiative. We will work toward early realization

of the initiative by promptly designating zones and concentrating investment by relevant ministries and agencies.

8. Securing human resources for community development

In accordance with the Law for the Promotion of Regional Development in Areas with Rapidly Declining Populations, we aim to secure local economic leaders in areas with rapidly declining populations.

9. Land policy

In order to promote rapid social infrastructure development in the regions, the government will improve the system for smooth utilization and management of land with unknown owners.

Chapter 15: Realizing a Vibrant Japanese Economy in a New Environment of Global Competition

1. Leading the free, fair and rule-based international economic system

In the new international competitive environment brought about by the COVID-19 pandemic, Japan will continue to lead the free, fair and rule-based international economic system.

In order to ensure a level playing field, we will work to correct market-distorting measures such as industrial subsidies and formulate rules for electronic commerce, etc.

We will promote the early entry into force of the Regional Comprehensive Economic Partnership Agreement (RCEP) and ensure its implementation by each country. The government will strategically promote the digitization of trade-related procedures and pursue the negotiation of other economic partnership and investment agreements.

We will lead the discussion for the steady implementation and expansion of the Trans-Pacific Partnership Agreement.

We will also promote policy discussion toward international rule-making for “Data Free Flow with Trust (DFFT)” agreed at the G20 Osaka Summit in June 2019.

2. Expanding cooperation with like-minded countries that share our fundamental values

We will maintain and strengthen the international order based on fundamental values and rules, including climate change and human rights, taking into account the perspective of economic security.

We will also concretize cooperation for regional supply chain resilience to realize a free and

open Indo-Pacific.

Through dialogues with the United States or the European countries, and other frameworks such as the G7, we will promote discussions with the countries and regions which share fundamental values, and strengthen cooperation in the fields such as supply of vaccine, production of semiconductors and other critical goods, cooperation on emerging technology, and response to the climate change.

Chapter 16: Follow-up

In promoting growth strategies, appropriate KPIs should be set, progress should be monitored and analyzed, and the effectiveness of policies should be verified continuously, and necessary follow-up should be conducted, including the addition and revision of policies.

Source list:

Figure 1: Prepared based on Jan De Loecker and Jan Eeckhout (2018), "Global Market Power," NBER Working Paper No. 24768.

Figure 2: Adapted from Diez Leigh, and Tambunlertchai (2018), "Global Market Power and its Macroeconomic Implications," IMF Working Paper No. 18/137. Analysis using 465,000 data points (80,000 for Japanese companies and 130,000 for U.S. companies) from 1980 to 2016 in Thomson Reuters' database of listed companies.

Figure 3: Prepared based on OECD (2017), OECD Science, Technology, and Industry Scoreboard 2017. In a survey of companies, the percentage of companies that responded, "Introduced a new product or service (including the addition of new functions or significant improvements in usage) in 2012-14.

Figure 4: Prepared based on Bloomberg. The TOPIX 500 consists of the top 500 companies listed on the First Section of the Tokyo Stock Exchange in terms of stock trading volume and market capitalization. The S&P 500 consists of the top 500 companies listed on U.S. stock exchanges (New York Stock Exchange, NASDAQ, etc.) with the largest stock trading volume and market capitalization. The STOXX 600 consists of the top 600 companies with the largest stock trading volume among companies listed on stock exchanges in 17 European countries (UK, Germany, France, etc.). Samples of constituent stocks as of the end of March 2021 for which data was available (Japan: 459 companies, U.S.: 442 companies, Europe: 290 companies).

Figure 5: Prepared based on "JCB Consumption NOW" by Nowcast Corporation and JCB Corporation. A consumption index created by using credit card payment data from 1 million randomly selected JCB Group Card members in various regions of Japan. The service industry includes food services, accommodation, travel, medical care, communications, transportation, entertainment, and content distribution. The figures incorporate both changes in per capita consumption and changes in the number of consumers.

Figure 6:Prepared based on the Labor Force Survey (Basic Tabulation), Statistics Bureau, Ministry of Internal Affairs and Communications, released on April 30, 2021.

Figure 7: Prepared based on the Labor Force Survey (Basic Tabulation), Statistics Bureau, Ministry of Internal Affairs and Communications (released April 30, 2021).

Figure 8: Prepared based on the Labor Force Survey (Basic Aggregate), Statistics Bureau, Ministry of Internal Affairs and Communications (released April 30, 2021).

Figure 9:Prepared based on the Labor Force Survey (Detailed Tabulation), Statistics Bureau, Ministry of Internal Affairs and Communications (released on February 16, 2021). Average of responses at the end of each month. Multiple responses. Results of responses to the question "Why are you in your current employment type?" (question for non-regular employees)

Figure 10: Prepared based on data from the Ministry of Economy, Trade and Industry (original data from Omdia).

Figure 11: Prepared based on "2017 Extended Input-Output Table (2015 Base)" by Ministry of Economy, Trade and Industry and "Trade Statistics of Japan" by Ministry of Finance. The total value of semiconductor devices and integrated circuits. For the import value of Taiwan and South Korea, the value in the trade statistics is used because the integrated value is published in the extended Input-Output table. EU: the combined total includes Sweden, Denmark, the UK, Ireland, the Netherlands, Belgium, Luxembourg, France, Germany, Portugal, Spain, Italy, Malta, Finland, Poland, Austria, Hungary, Greece, Romania, Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Slovenia, Czech Republic, and Slovakia.

Figure 12: Prepared based on Semiconductor Industry Association, Boston Consulting Group "Strengthening the Global Semiconductor Supply Chain in an Uncertain Era" (published in April 2021). Manufacturing capacity for logic semiconductors (semiconductors that perform control, processing, and arithmetic operations).

Figure 13: Prepared based on data from the Ministry of Economy, Trade and Industry (original data from Omdia). Number of semiconductor plants in the front-end process (the process of forming circuits on silicon wafers until IC chips are made).

Figure 14:Prepared based on WonderNetwork "Global Ping Statistics." The "ping value" (the time it takes to send and receive data) between each city and Tokyo as of April 2021.

Figure 15:Prepared based on "FY2019 Data Center Survey" by Japan Data Center Council. Results of a survey of 78 data center operators in Japan conducted between December 2019 and February 2020. Ratio of server room area of each regional data center to the total server room area.

Figure 16:Prepared based on Kenta Ikeuchi, Keiko Ito, Kyoji Fukao, and Hyeok Gong, "The Dynamics of Employment and Productivity in Japan: Contributions to the OECD Dynemp/MultiProd Project and International Comparisons," RIETI Discussion Paper (November 2019). Target companies are those with less than 50 employees. U.K. and U.S. are annual averages of figures from 2001-2011. France is the annual average of the figures for 2001-2007.

Figure 17: Prepared based on Bloomberg. Plot of constituents by year of establishment as at the end of March 2020, based on Bloomberg data.

Figure 18: Prepared based on CB Insights "The Complete List of Unicorn Companies." Breakdown by country of the number of unicorn companies (private companies with a market capitalization of over $1 billion) as of March 1, 2021 (528 companies in total). Note that market capitalization is an estimate by CB Insights. Europe: the combined total of U.K. (26 companies), Germany (15), France (7), Switzerland (5), Sweden (3), Netherlands (3), Spain (2), Luxembourg (1), Lithuania (1), Ireland (1), Estonia (1), Croatia (1), Belgium (1).

Figure 19: Prepared based on Dealogic data. Figures are calculated based on the country where the company is listed (including SPAC listings).

Figure 20: Prepared based on Tim Loughran, Jay R. Ritter, and Kristian Rydqvist (1994, data updated February 25, 2021), "Initial Public Offerings: International Insights," Pacific-Basin Finance Journal. Japan, 3,849, 1970-2020; Canada, 758, 1971-2017; France, 834, 1983-2017; Italy, 413, 1985-2018; UK, 5,185, 1959-2016; US, 13,409, 1960-2020; Germany, 840, 1978-2020. The value obtained by dividing the opening price by the offering price and then subtracting one (average opening price return).

Figure 21: Prepared based on Kaneko, T. (2019), "Economic Analysis of IPOs: Solving the Mystery of Underpricing," and Boehmer et al. (2006), "Do Institutions Receive Favorable Allocations in IPOs with Better Long-Run Returns?" For the U.S., the survey covered IPOs in the U.S. between 1997 and 2001(sample size: 441). For Japan, the survey covered IPOs in Japan between 2006 and 2017 (sample size: 761).

Figure 22: Prepared based on SPAC Analytics data. Figures for the U.S. are for IPOs of $40 million or more (excluding IPOs that are not publicly offered at the time of listing). A SPAC (Special Purpose Acquisition Company) is a special purpose company for the purpose of acquiring unlisted companies, which is listed immediately after its creation and raises funds from general investors.

Figure 23: Prepared based on the regulations and websites of stock exchanges in each country.

Figure 24: Prepared based on the Bank of Japan's "Flow of Funds Statistics" (released on March 17, 2021). Changes in the total amount of debt (loans to financial institutions and bonds issued) for private non-financial corporations and public non-financial corporations (NTT, JR, NEXCO companies, local road authorities, etc.).

Figure 25: Prepared based on "Survey on Excessive Debt," Tokyo Shoko Research, April 15, 2021. Results of a questionnaire survey conducted from April 1 to April 12, 2021 among large companies and SMEs nationwide. Which of the following is the status of your company's debt? (Number of responses: 8,473 companies)