JETRO Global Trade and Investment Report 2021

—The world changed by COVID-19, the outlook for sustainable international business—

Overview

Japan External Trade Organization (JETRO)

Overseas Research Department

July 29th, 2021

Outline

I. World and Japan’s economy and trade

II. Global FDI and Japan’s FDI

III. Trends in global trade rule formation

IV. Digital trade and rule

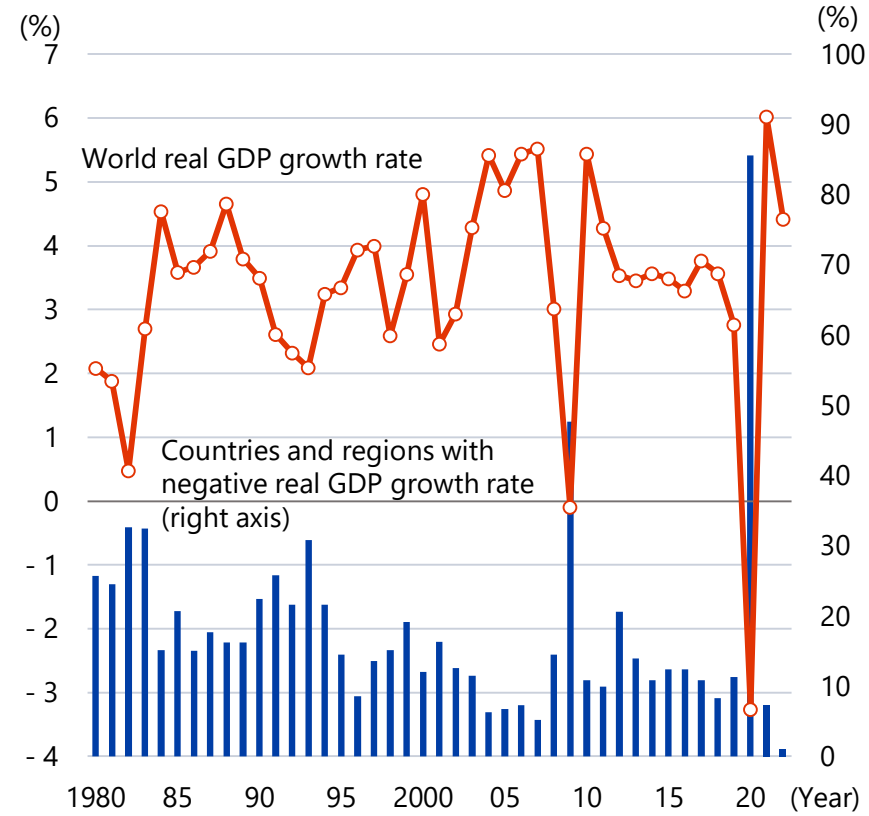
V. The world heading for green growth

I. World and Japan's Economy and Trade

1 World economic growth decelerated owing to COVID-19

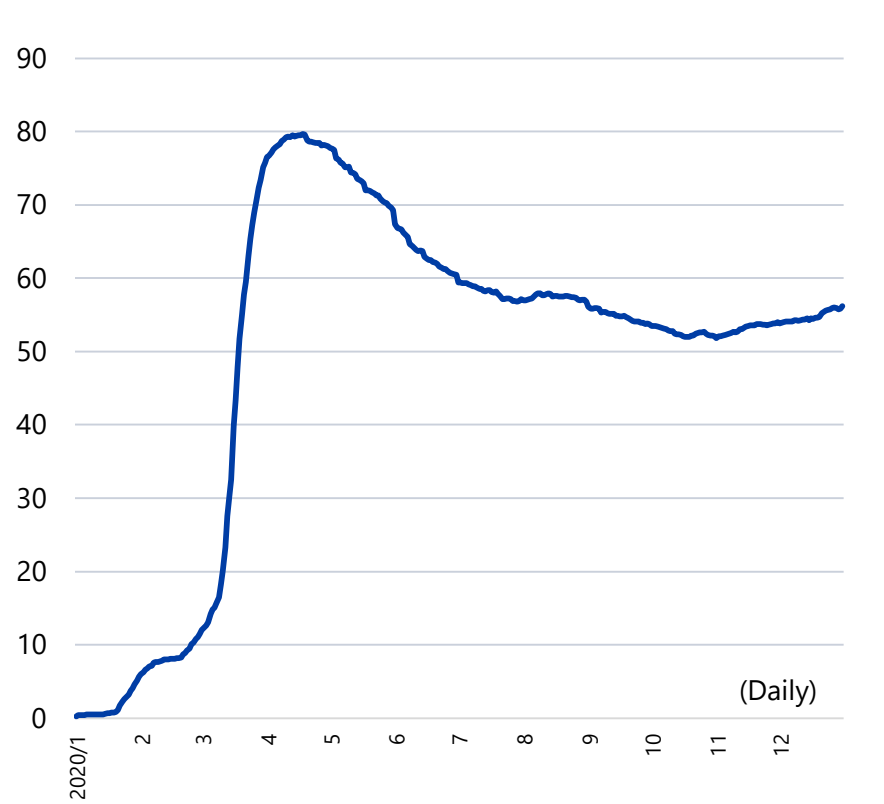
- The world's real GDP growth rate in 2020 was -3.3% year-on-year. It was the first negative growth since 2009 (-0.1%), which was affected by the global financial crisis. More than 80% of countries and regions recorded negative growth.
- As COVID-19 spread, each country imposed containment measures. It affected economic activities.

Trends in world real GDP growth rate



Note: 1)The latest data are as of 2022. 2021 and 2022 data are estimated values by IMF.
2)"Countries and regions with negative real GDP growth" is the percentage of the world. Due to data constrains, the number of samples for each year may vary.
3)Some countries/regions are based on the fiscal year.
Source: "WEO, April 2021" (IMF)

Trends in the regulatory strength index for COVID-19 prevention measures (2020)

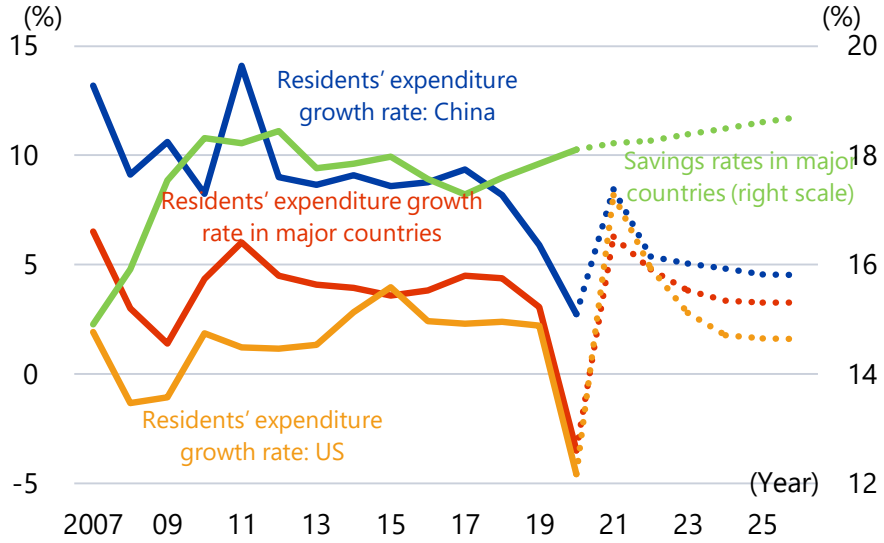


Note: 1) Index of the strength of government/authority measures to prevent the spread of COVID-19. 100 is the strictest.
2) Average of 184 countries/regions from which full-year data can be generated.
Source: University of Oxford

2 Spending on hotels and catering and transportation dropped sharply during the COVID-19 pandemic

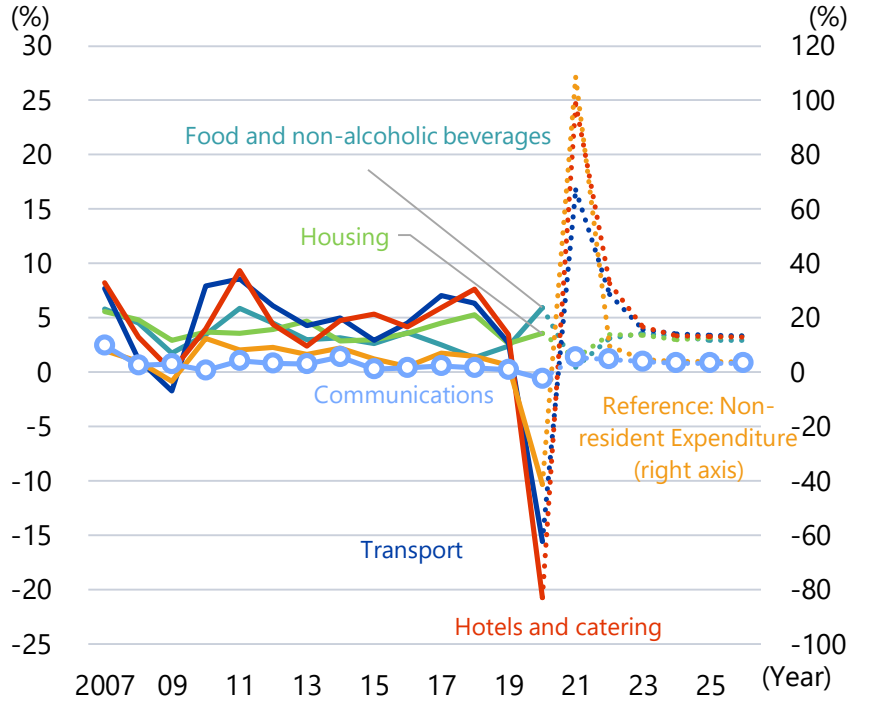
- Growth rate in consumer spending in the 27 major economies in 2020, as measured by UK-based Euromonitor International's database, was down year on year.
- "Hotels and catering" and "Transportation" decreased. Service industries involving outings and human contact were affected.

Trends in growth rate of spending and savings rate in major countries



Note: 1)"Residents' expenditure growth rate" is based on constant local currency and "Saving rate (ratio of savings to disposal income)" is based on current local currency.
2)"Major countries" are calculated using GDP (purchasing power party). "Major countries" are 27 countries: Bangladesh, China, India, Indonesia, Japan, Malaysia, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Vietnam, Russia, Brazil, Mexico, Egypt, Iran, Kenya, Nigeria, Saudi Arabia, South Africa, UAE, US, France, Germany, Turkey and the United Kingdom.
3)Data after 2021 is forecast basis.
4)Based on the data as of July 2, 2021.
Source: Euromonitor International and "WEO" (IMF)

Trends in spending by goods and services in major countries

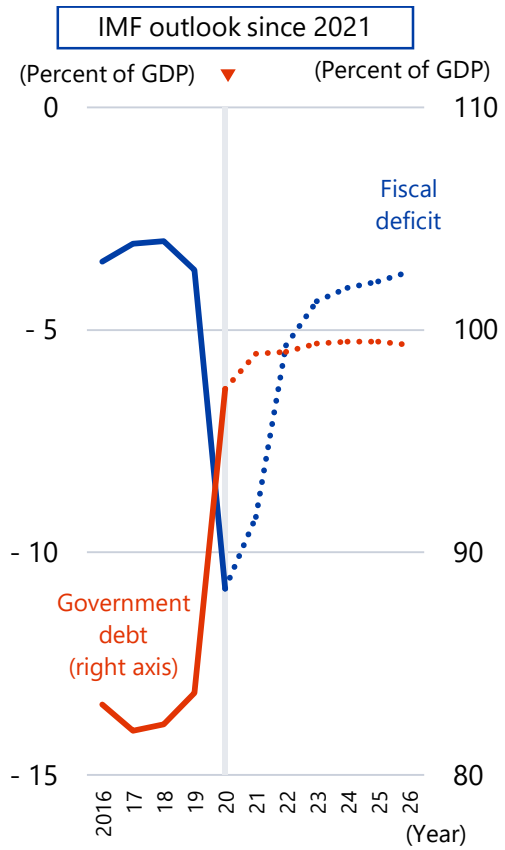


Note: 1)The growth rate in constant local currency of each 27 countries is weighted by GDP (purchasing power party.
2) Predicted value after 2021.
3) Data after 2021 is forecast basis.
Source: Euromonitor International and "WEO" (IMF)

3 Efforts by major countries and regions toward economic recovery

- Each country and region has implemented economic stimulus measures that combine financial and fiscal policies. Consequently, public debt is expected to remain high. As the pandemic progresses, the ability of a country to adapt to the limitations of their activities also poses risks.
- Major countries and regions focus on sustainable growth strategies in order to recover the economy damaged by the COVID-19 crisis.

Trends in world's public debt and fiscal balance



Source: "Fiscal Monitor" (IMF)

Main policies of major countries and regions

Country/region Main Plans (date)		Major comments and statements on climate change, green, digital, etc.
US "State of the Union Address (policy speech)" (April 2021)		"When I think "climate change," I think "jobs." (Details omitted) We have to develop and dominate the products and technologies of the future."
China "14th 5-Year Plan and 2035 Long-Range Objectives" (Adopted in March 2021)		It mentioned that the independence and self-reliance of science and technology should be a strategic support for national development. The acceleration of digital development and green development patterns are also referred.
EU	"Multiannual Financial Framework" (Adopted in December 2020)	・At least 35% of the budget for EU framework for R&D assistance "Horizon Europe" will be devoted to climate change-related R&D. ・The investment guidelines for the "Global challenges and European industrial competitiveness" (announced March 2021) indicate a policy of making investments in line with strategic orientations, such as making Europe the first digitally enabled circular, climate-neutral and sustainable economy.
	Next Generation EU, the recovery fund for Europe (Effective June 2021)	Of the 750 billion euros in reconstruction funds, 672.5 billion euros in "Recovery resilience facility" are subject to conditions such as more than 37% of the budget will be allocated to greening and more than 20% to digitization.
ASEAN "ASEAN Comprehensive Recovery Framework" (Approved in November 2020)		The plan will be driven by broad strategies, such as accelerating inclusive digital transformation (DX) and advancing towards a more sustainable and resilient future.
Japan "Action Plan of the Growth Strategy" (Cabinet approval in June 2021)		・Boldly promote a future-oriented DX as a driving force for growth, strengthen our professional staff and deliver the benefits of digitization to the entire nation. ・Implement the Green Growth Strategy to achieve the high goal of carbon neutrality by 2050.

Note: The date of the "Next Generation EU, the recovery fund for Europe" is the timing of entry into force of the Own Resources Decision necessary for the issue of the joint bond in the name of EU as the financial resources.

Source: Documents published by the governments of respective countries and regions

4 World trade in 2020 decreased in both trade value and volume

- In 2020, world trade (trade in goods, nominal export value) decreased by 7.0% (JETRO estimate) from the previous year. Both the amount and the quantity dropped drastically.
- It was the first time since the global financial crisis in 2009, that both the amount and the quantity had negative growth.

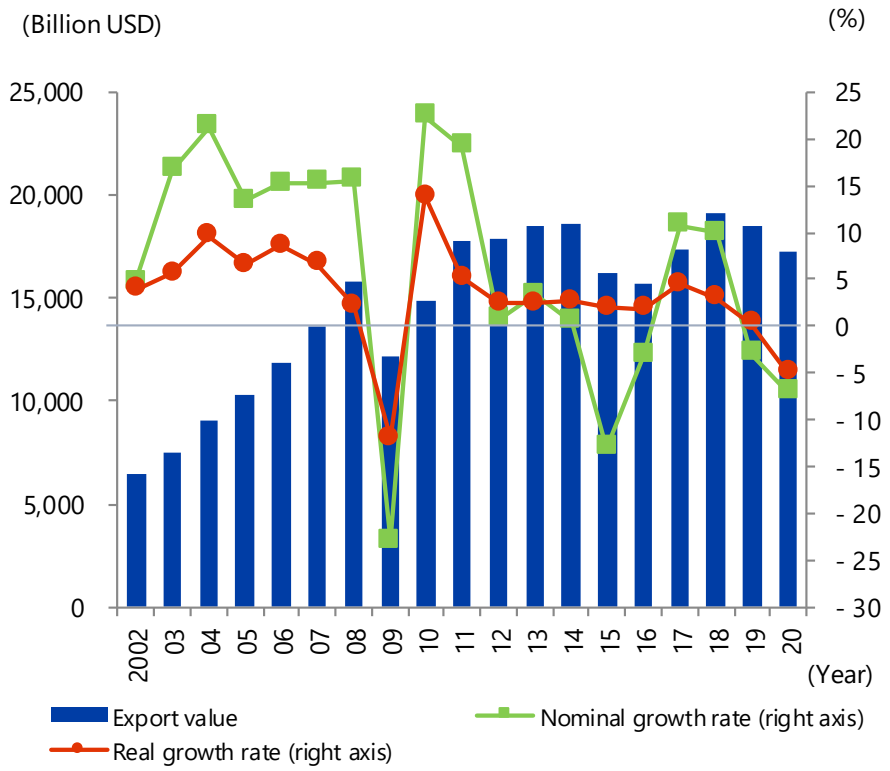
World trade-related indicators

(Unit: %)

	2016	2017	2018	2019	2020
World trade (exports) (Trillion USD)	15.7	17.4	19.0	18.5	17.2
Nominal growth rate	-3.2	10.8	9.9	-2.9	-7.0
Real growth rate	1.9	4.5	3.0	0.3	-5.0
Price growth rate	-5.0	6.0	6.7	-3.2	-2.1
World trade (import) (Trillion USD)	16.0	17.8	19.6	19.1	17.6
Nominal growth rate	-2.9	11.1	10.5	-3.0	-7.5
Real growth rate	0.9	5.3	3.5	0.0	-5.6
Price growth rate	-3.7	5.5	6.7	-3.0	-2.0
Industrial production index growth rate (OECD)	0.4	3.0	2.3	-0.3	-6.4
Rate of change in nominal effective exchange rate in dollar	0.5	-1.0	-2.4	3.4	-1.0

Note: Both trade values and nominal growth rates are estimated by JETRO. Refer to Chart I-19 of "Global Trade and Investment Report" for more details.
Source: Trade statistics of respective countries and regions

Trends in world trade

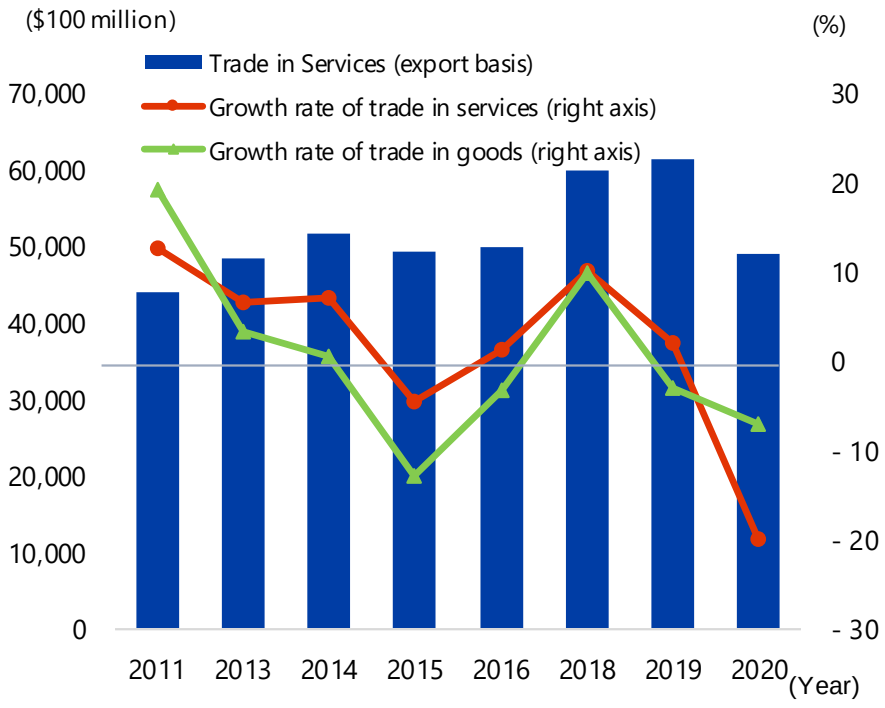


Source: JETRO's estimates and WTO data

5 "Travel" negatively impacted service-related trade

- According to the WTO, world trade in services decreased by 19.9% from the previous year to $4.910 trillion in 2020.
- In the World Tourism Barometer released in January 2021, UN World Tourism Organization (UNWTO) described 2020 as "the worst year in tourism history when the number of international visitors dropped by 1 billion."

Service-related export value of world and major countries' trade



Note: Figures for 2020 are estimates.
Source: WTO data

Export value of world trade in service by category (2020, estimates)

(Unit: 100 million USD, %)

	Value	Composition ratio	Growth rate	Contribution
Total service-related exports	49,098	100.0	-19.9	-19.9
Goods-related services	1,983	4.0	-12.9	-0.5
Logistics	8,490	17.3	-18.8	-3.2
Travel	5,326	10.8	-63.2	-14.9
Other Services	33,300	67.8	-2.3	-1.3

Source: WTO data

6 China leads world trade growth in 2021

- China's exports grew 48.6% in the 1st quarter of 2021 and imports grew 27.6%, leading the entire growth rate of world trade.
- By product, sales of electrical equipment, including integrated circuits, have been recovering since the latter half of 2020.

Quarterly change in trade values of major countries and regions (YoY)

(Unit: %)

	Exports				
	2020				2021
	I	II	III	IV	I
China	-13.4	0.1	8.8	17.1	48.6
US	-3.0	-29.8	-13.2	-5.4	1.9
Germany	-6.1	-25.2	-3.5	5.8	12.3
Japan	-4.4	-23.7	-12.0	3.3	8.8
ASEAN-5	-0.2	-15.9	-3.3	1.7	12.6

	Import				
	2020				2021
	I	II	III	IV	I
China	-2.3	-9.3	3.6	5.7	27.6
US	-4.9	-20.1	-4.8	4.3	11.7
Germany	-5.5	-19.3	-2.2	6.7	12.2
Japan	-6.2	-13.9	-18.9	-8.3	4.7
ASEAN-5	-2.8	-22.8	-13.9	-7.1	9.8

Note: 1) Growth rate of imports/exports to the world.
2) The figure for ASEAN-5 is the sum of Indonesia, Malaysia, Philippines, Singapore and Thailand.
Source: Trade statistics of respective countries and regions

Quarterly exports for 33 major countries/regions by product, on quarterly basis

(Unit: %)

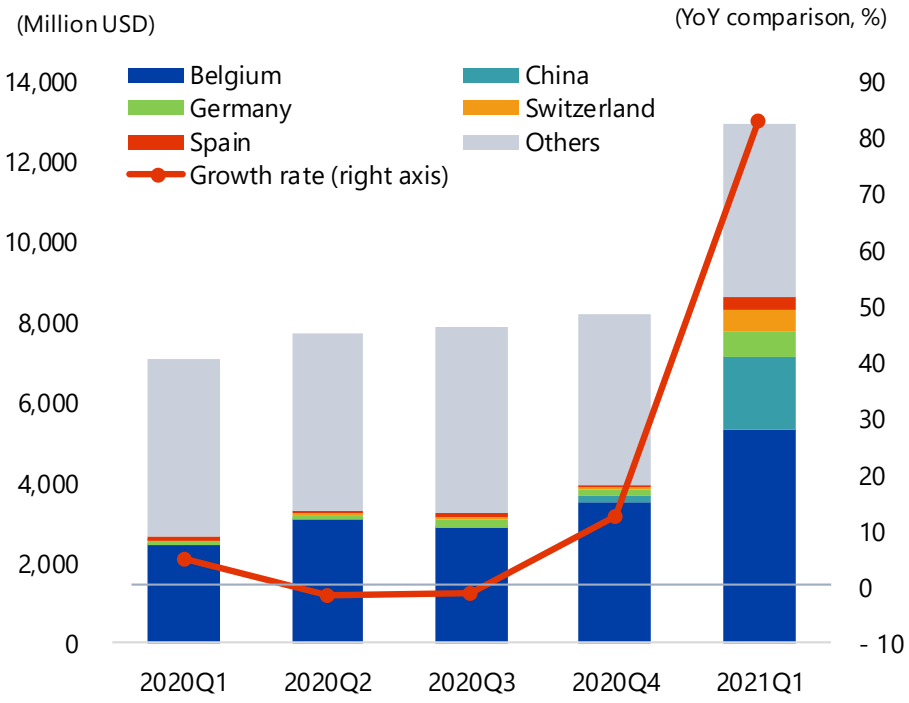
	2020				2021	Contribution *1)
	I	II	III	IV	I	
Total	-5.7	-18.3	-3.1	4.3	16.9	16.9
Machinery and equipment	-7.0	-20.5	-1.4	5.9	17.6	7.6
General machinery	-8.9	-14.8	-1.7	4.0	17.3	2.2
Computer and peripheral equipment	-13.0	4.2	12.0	12.4	31.9	1.0
Semiconductor manufacturing equipment	8.9	13.3	24.8	10.9	39.5	0.2
Industrial robots	-2.3	-17.5	-14.0	1.3	21.5	0.0
Electrical equipment	-3.2	-5.4	6.0	13.0	27.1	4.2
Communication equipment	-11.5	-6.9	-0.6	6.1	29.0	0.8
Electronic tubes/ semiconductors	-3.6	-5.1	3.8	13.5	23.6	0.2
Integrated circuits	8.1	7.0	12.6	17.1	27.4	1.4
Lithium-ion rechargeable batteries	8.9	4.2	29.3	33.9	57.8	0.1
Transport equipment	-10.8	-48.7	-12.5	-2.4	6.0	0.7
Automobiles	-10.5	-54.2	-8.9	5.6	11.6	0.6
Passenger vehicles	-9.3	-54.4	-7.6	6.6	11.1	0.5

Note: 1) 1st quarter of 2021.
2) Only 33 countries/regions with quarterly data for 2021 are included.
Source: Trade statistics of respective countries and regions

7 Vaccine is the key component for economic recovery in 2021

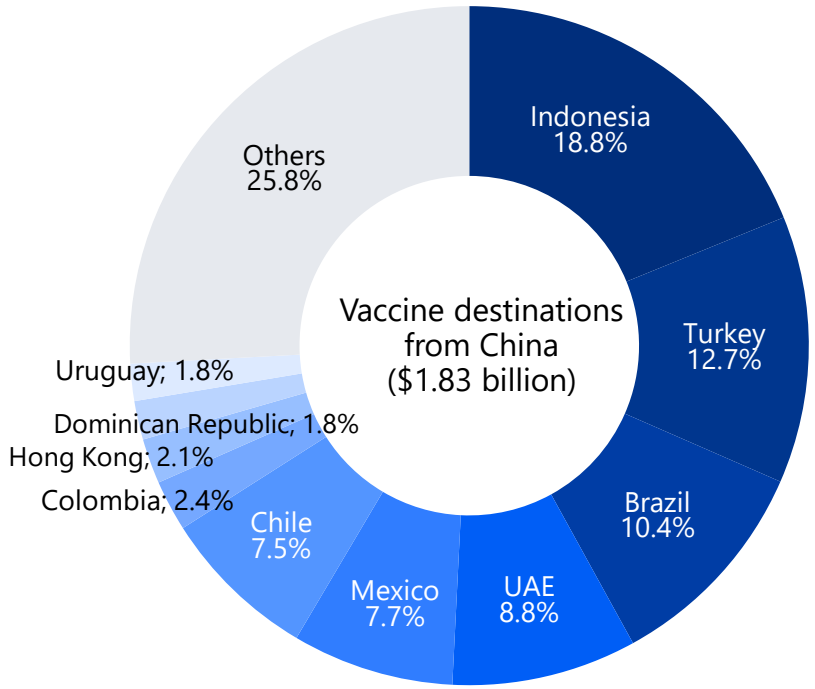
- In the first quarter of 2021, 33 major countries and regions exported vaccines worth $13 billion. The growth was led by Belgium and China, up 1.8 times year-on-year.
- Some point out that China has been actively engaged in vaccine diplomacy by spreading its own vaccines in emerging countries.

Major countries' export values of vaccines



Note: Only 33 countries/regions with quarterly data for 2021 are included.
Source: Trade statistics of respective countries and regions

China's vaccine export destinations (the 1st quarter of 2021)



Source: China Trade statistics

8 Japan's trade heading to recovery from the COVID-19 crisis

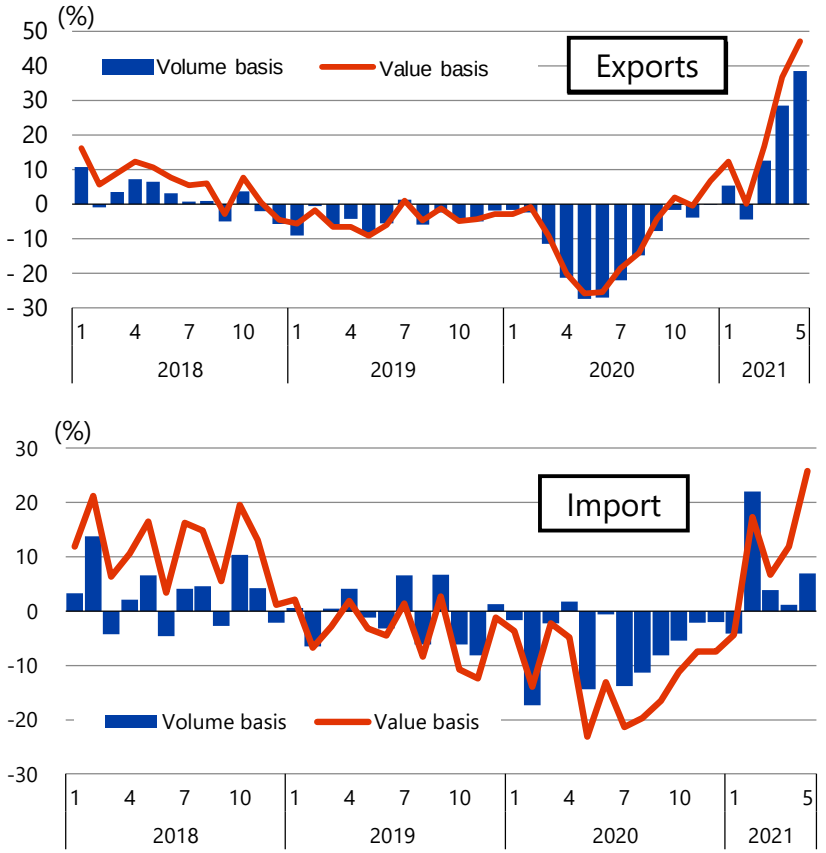
- Concerning Japan's trade (customs clearance basis) in 2020, its exports decreased by 9.3% from the previous year to $640 billion, and its imports decreased by 12.0% to $634.1 billion. Exports dropped sharply in the middle of the year, then recovered gradually. Imports also picked up in the second half of the year.
- Exports from January to May 2021 increased by more than 20% over the same period of the previous year. The figure also exceeded that of the first 5 months of 2019.

Japan's trade trends

(Million USD, %)

	2019	2020	2021 January - May
Total exports	705,682	639,963	305,456
(Rate of change)	-4.4	-9.3	20.6
Total imports	720,765	634,053	300,056
(Rate of change)	-3.7	-12.0	10.4
Balance of Trade	-15,083	5,909	5,400
(YoY difference)	-4,820	20,992	23,713
Export volume index	103.0	90.9	100.4
(Rate of change)	-4.3	-11.7	14.4
Import volume index	104.6	97.8	102.0
(Rate of change)	-1.1	-6.5	5.0

Japan's import & export growth (year-on-year change)

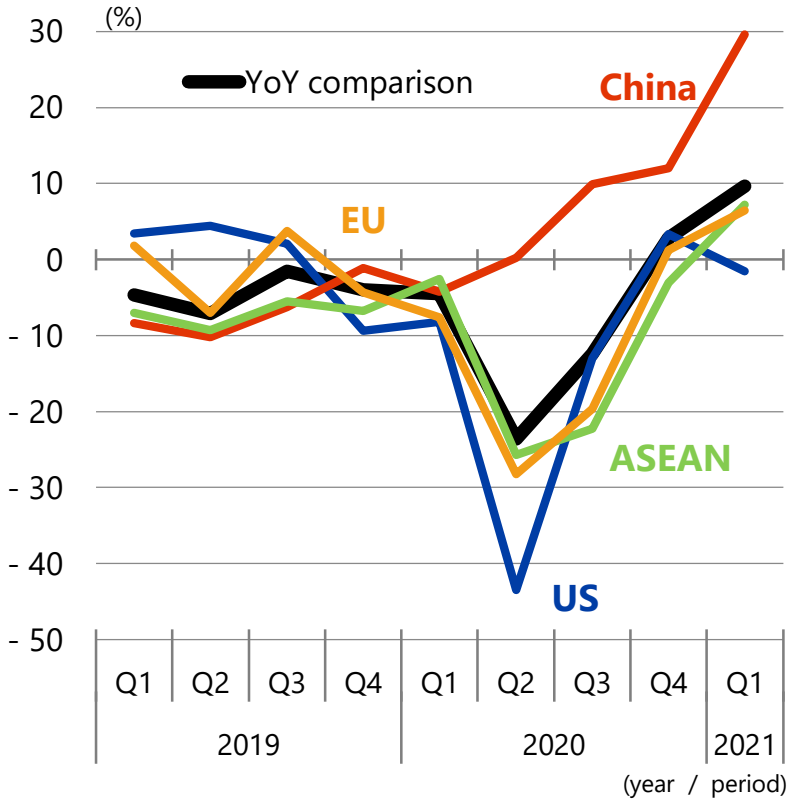


(In both of the charts)
Note: 1) JETRO converted the figures disclosed in JPY into USD.
2) The volume index is on a 2015 basis.
Source: "Trade Statistics" (Ministry of Finance), "Foreign Exchange Rate" (Bank of Japan)

9 Antecedent recovery in exports to China

- In 2020, Japan's exports to China antecedently rose 4.9% from the previous year, while its exports as a whole declined. China's share in Japan's total exports rose to 22% from 19% last year. Japan's exports to the US, the EU and ASEAN rebounded after bottoming out in the 2nd quarter of the year.
- By product, exports of semiconductor-related products were strong. In the automobile sector, environmentally compatible vehicles such as hybrid vehicles are showing steady growth.

Japan's exports and imports by major country/region (YoY)



Note: Growth rate of EU after the 1st quarter of 2020 is a comparison of 27 countries.
Source: "Trade Statistics" (Ministry of Finance)

Japan's export trends by main product

(Million USD, %)

	2020	YoY change	Jan. - May 2021	YoY change	YoY change 20. 1Q	2Q	3Q	4Q	21. 1Q
Total exports	639,963	-9.3	305,456	20.6					
Semiconductor manufacturing equipment	23,617	4.4	11,897	36.0					
Semiconductors and electronic components	38,081	3.9	16,287	9.9					
Automobiles	89,446	-18.1	41,440	24.7					
Environmentally compatible vehicles	21,212	9.8	9,854	30.3					
Automobile parts (excluding engines)	27,326	-17.3	13,717	30.7					
Iron and steel products	31,665	-13.1	16,116	13.9					

Note: Environmentally compatible vehicles: hybrid vehicles, plug-in hybrid vehicles, and electric vehicles.
Source: "Trade Statistics" (Ministry of Finance)

10 Strong exports despite of the COVID-19 crisis

- Exports of digital-related parts, semiconductor equipment and some consumer goods have helped offset the decline in Japan's overall exports due to the COVID-19 crisis. Among consumer goods, skin care products and video game equipment were particularly strong.
- In 2020, Japan ranked 3rd in the world in exports of skin care products and 2nd in exports of video game equipment.

Ranking of exports of base makeup and skin care products

(All: Million USD, %)

		2015	
		Export value	Percentage
	World	27,791	100.0
1	France	5,604	20.2
2	US	2,851	10.3
3	South Korea	2,247	8.1
4	Germany	1,934	7.0
5	UK	1,297	4.7
6	**Japan**	**1,096**	**3.9**

		2020	
		Export value	Percentage
	World	49,181	100.0
1	France	7,532	15.3
2	South Korea	5,698	11.6
3	**Japan**	**4,817**	**9.8**
4	US	3,868	7.9
5	Germany	2,474	5.0

Ranking of exports of video game equipment

		2015	
		Export value	Percentage
	World	14,099	100.0
1	China	8,400	59.6
2	US	1,175	8.3
3	Germany	818	5.8
4	Poland	500	3.5
5	**Japan**	**445**	**3.2**

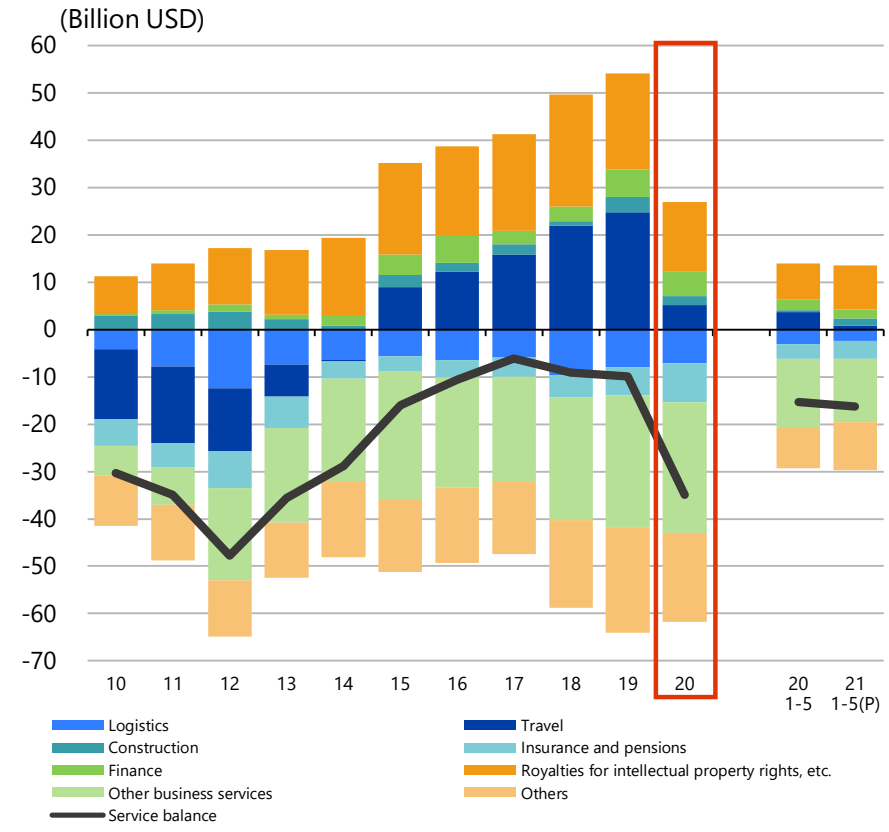
		2020	
		Export value	Percentage
	World	23,384	100.0
1	China	9,984	42.7
2	**Japan**	**2,726**	**11.7**
3	Netherlands	1,730	7.4
4	Germany	1,379	5.9
5	Poland	1,529	6.5

Note: Figures for 2020 are estimated by JETRO. *Source*: "Trade Map" (ITC) and trade statistics of respective countries.

11 Surplus of travel services shrunk significantly

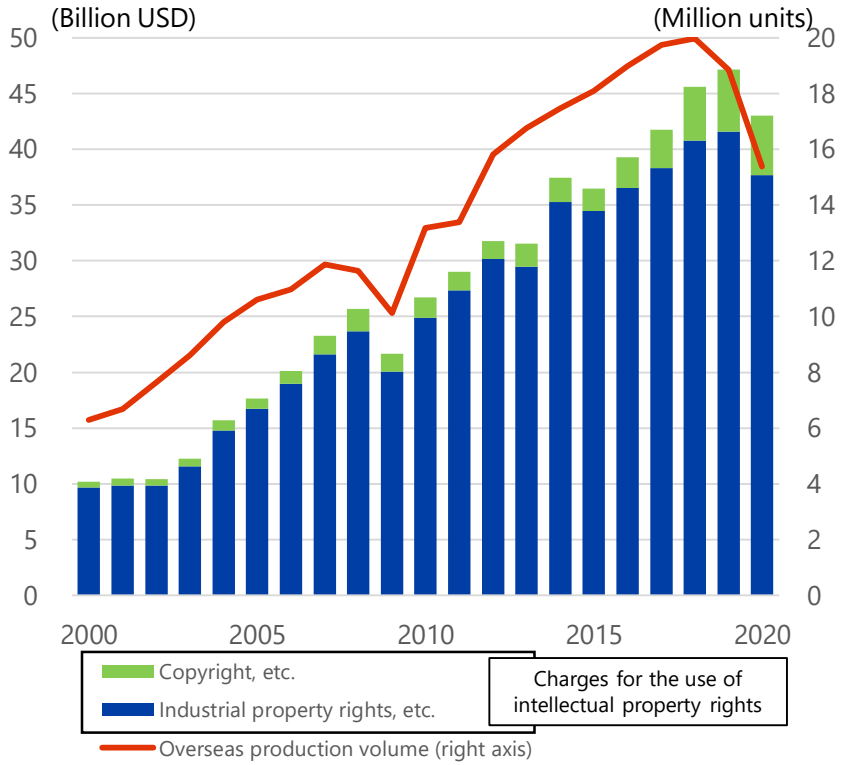
- In 2020, Japan's trade deficit in the services sector was $34.9 billion, a significant increase from the previous year. The decline reflected a drop in the receipts of travel services.
- The decline in the surplus in charges for the use of intellectual property was affected by a decrease in the charges for the use of industrial property rights, mainly in the automobile industry.

Japan's trade balance in services



Note: JETRO converted the figures disclosed in JPY into USD.
Source: "Balance of Payments Statistics" (Ministry of Finance, Bank of Japan)

Receipt of charges for the use of intellectual property rights and overseas automobile production volume

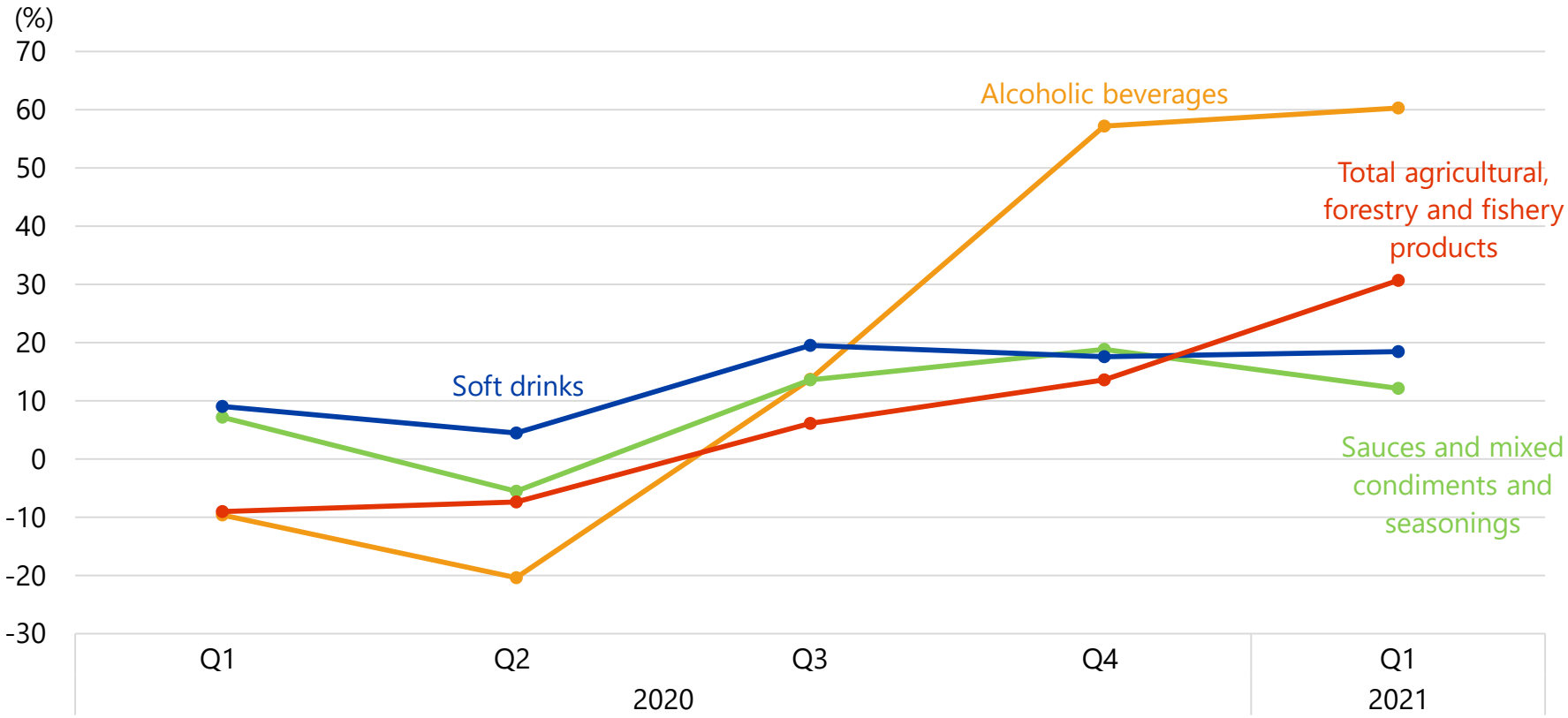


Note: 1) JETRO converted the figures disclosed in JPY into USD.
2) Overseas production volume of Japanese automobile manufacturers
Source: "Balance of Payments Statistics" (Ministry of Finance, Bank of Japan), JAMA data

12 Japan's agricultural, forestry and fishery exports show rapid recovery in second half of 2020

- In the 2nd half of 2020 (July to December), Japan's exports of agricultural, forestry and fishery products for countries and regions that experienced a rapid economic recovery from COVID-19 crisis, and processed foods suitable for stay-at-home demand, mainly contributed to 10.1% increase year-on-year.
- For the whole of 2020, it increased by 1.5% from the previous year to ¥925.7 billion, hitting a record high for 8 consecutive years.

Trends in quarterly growth rate of exports of agricultural, forestry and fishery products, and main growth items



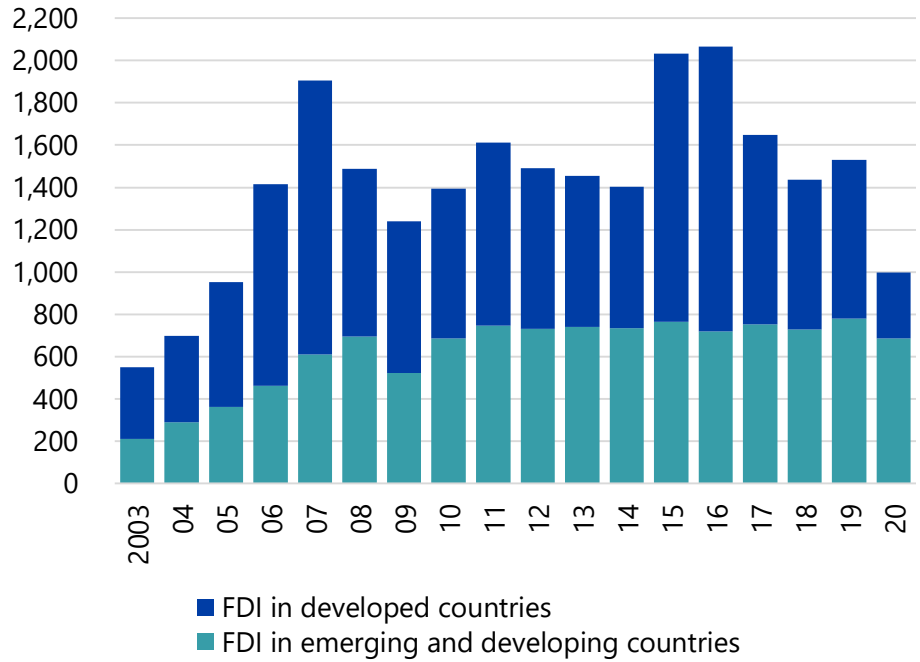
Note: 1) The figures up to 2020 are before the revision of the definition. The figures of the 1st quarter of 2021 are after revision of the definition.
2) The figures are calculated using fixed data for 2019 and detailed data for 2020 and 2021.
Source: "Trade Statistics" (Ministry of Finance) and "Overview of Foreign Trade of Agricultural, Forestry, and Fishery Products" (Ministry of Agriculture, Forestry and Fisheries)

II. Global FDI and Japan's FDI

1 Global FDI worldwide fell 34.7% in 2020

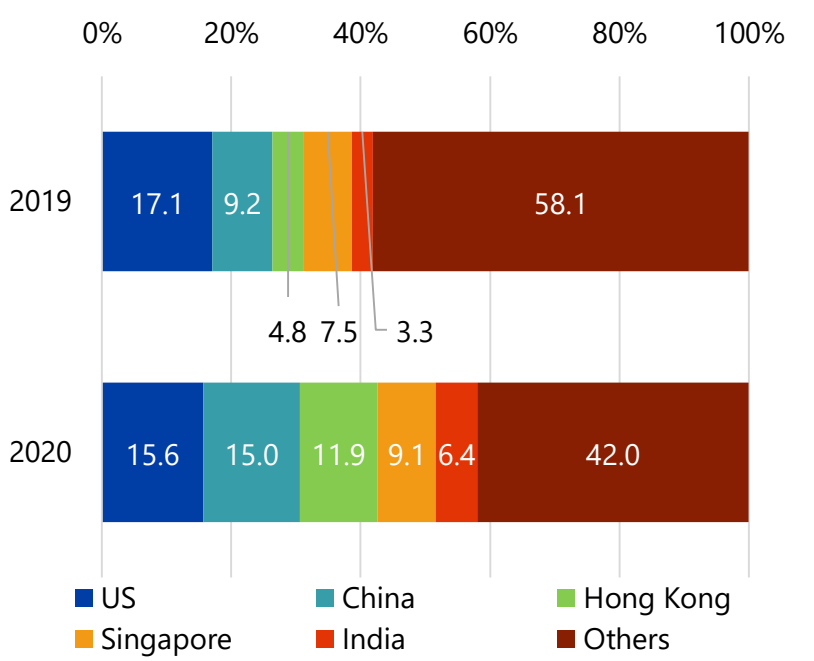
- According to the UNCTAD, global inward FDI in 2020 (on a balance of payments basis, net, flow) decreased by 34.7% from the previous year to $998.9 billion. In the wake of the COVID-19 pandemic, it dropped to the lowest level since 2005.
- By country and region, the reduction of investment in developed countries and regions was remarkable. In emerging and developing countries, investment in China, Hong Kong and India increased. China's share of global inward FDI has increased to 15.0%.

Trends in global inward FDI (net and flow)



Note: 1) The figures for developed economies are totals for 38 countries and regions based on UNCTAD category of inward FDI.
2) The figures for emerging and developing countries derived by subtracting developed countries from the world.
Source: UNCTAD

Top 10 countries/regions in the world in terms of FDI (2020)



Note: The top 5 countries of 2020 inward FDI only.
Source: UNCTAD

2 Cross-border M&A declined year on year in many industries

- Global cross-border M&As conducted in 2020 fell 9.8% from the previous year to $967 billion. By acquired country and region, the Netherlands' share increased significantly. This is because of the integration of Unilever's headquarters to the United Kingdom ($106.9 billion.)
- By industry, sales fell negative year-on-year in many sectors, except for some cases where large-scale acquisitions were carried out.

Global cross-border M&A by country/region (2020)

(Unit: Million USD, %, case)

Acquired countries/regions	Value	Growth rate	Composition ratio	No. of cases
World	**967,028**	**-9.8**	**100.0**	**9,994**
US	248,363	-9.7	25.7	1,674
EU	305,730	-25.2	31.6	3,360
Germany	65,592	11.1	6.8	517
Netherlands	135,648	449.9	14.0	364
UK	73,665	-16.3	7.6	928
Australia	36,491	-9.7	3.8	339
Japan	9,900	19.9	1.0	134
East Asia	82,707	-17.2	8.6	1,044
China	34,720	41.5	3.6	362
ASEAN-10	21,471	-44.2	2.2	449
Singapore	10,714	-31.7	1.1	186
India	39,329	45.9	4.1	310

Note: 1) As of July 2, 2021.
2) The figures for "East Asia" are the sums of China, South Korea, Taiwan, Hong Kong and ASEAN-10.
Source: Thomson ONE (Refinitiv)

Global cross-border M&A by industry (2020)

(Unit: Million USD, %)

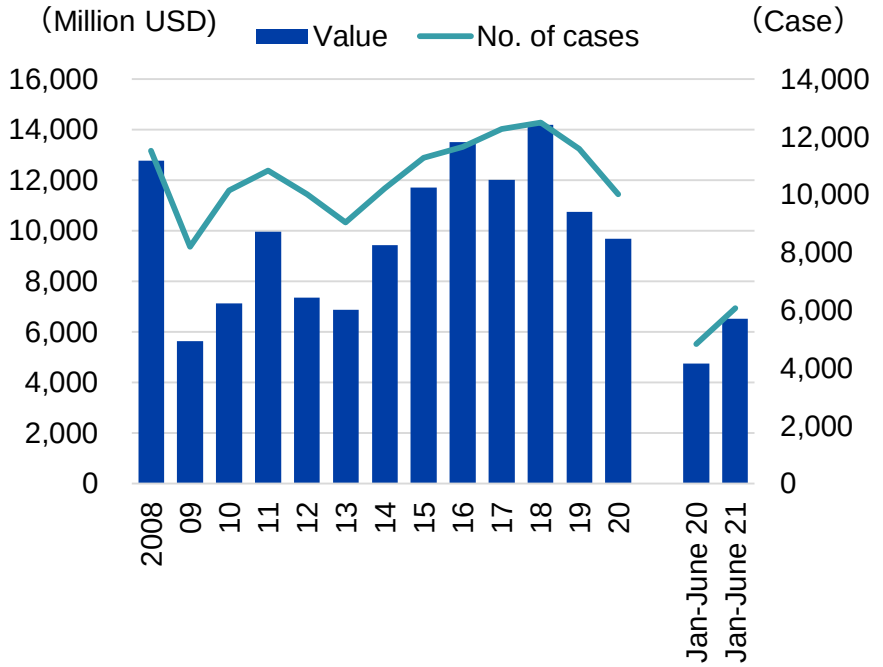
	2017-2019 Annual average	2020	Change
All industries	**1,230,246**	**967,028**	**-21.4**
Primary industries	**103,043**	**47,078**	**-54.3**
Manufacturing	**489,655**	**410,642**	**-16.1**
Food and tobacco	78,072	133,828	71.4
Chemical	196,603	88,993	-54.7
Machinery and equipment	106,578	113,361	6.4
Services	**637,548**	**509,308**	**-20.1**
Telecommunications	33,009	89,287	170.5
Finance and insurance	230,694	144,001	-37.6

Note: 1) As of July 2, 2021.
2) Based on the industry of the acquired companies. Industry classification follows Thomson Reuters.
Source: Thomson ONE (Refinitiv)

3 Cross-border M&As have been on a recovery trend since the end of 2020

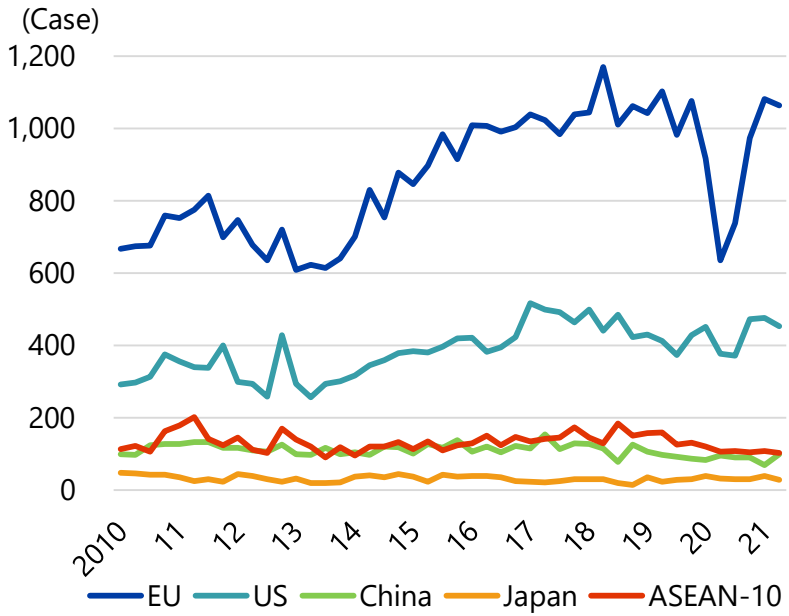
- The amount and number of cross-border M&As continued to decline until the 3rd quarter of 2020, but recovered from the 4th quarter, and from January to June 2021, they increased by 37.6% from the same period last year to $651 billion.
- By country and region, the EU and the US are leading the recovery. On the other hand, China and ASEAN countries have been on a downward trend since the latter half of 2018, with no sign of bottoming out yet.

Transition in total values of global cross-border M&A and number of deals



Source: Thomson ONE (Refinitiv)(as of July 2, 2021)

Number of cross-border M&A deals in EU, US, China and Japan (Quarterly)

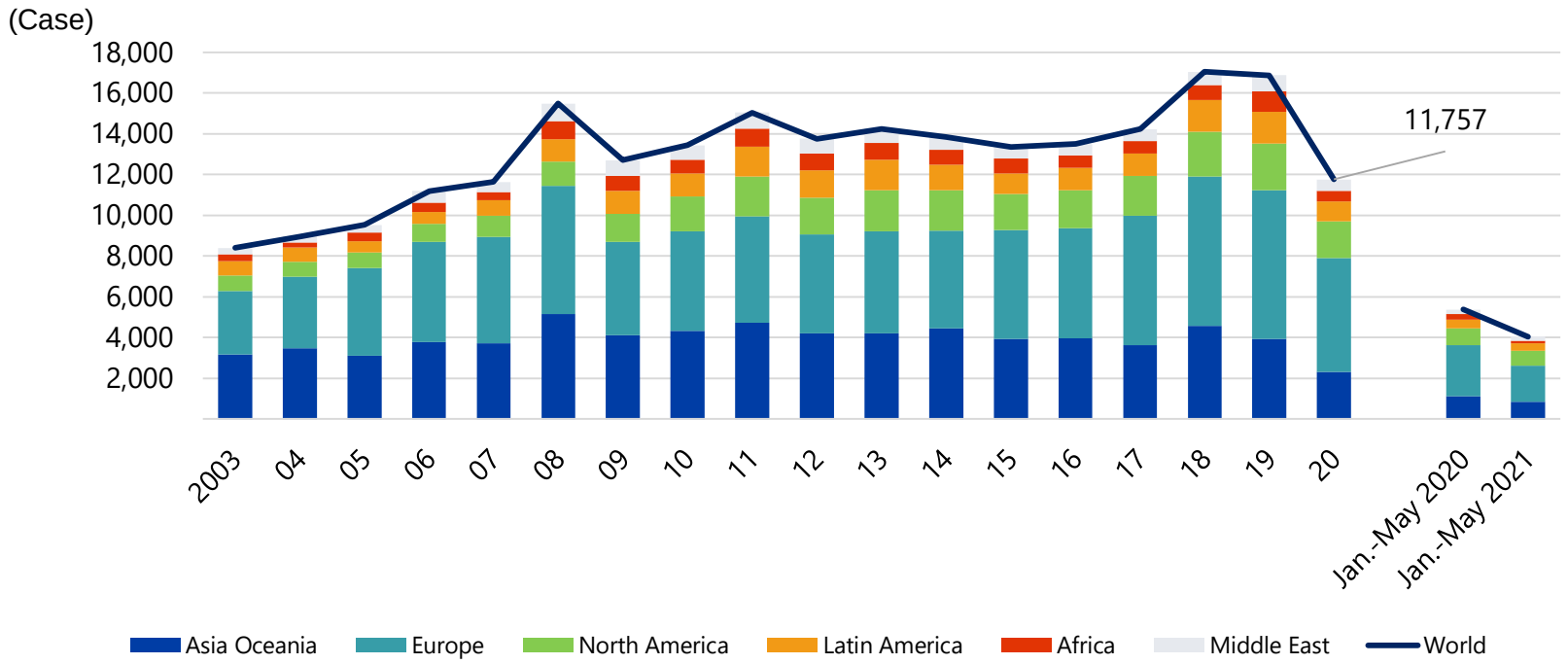


Note: Based on the nationalities of the acquired companies. 2) Data up to the second quarter of 2021.
Source: Thomson ONE (Refinitiv)(as of July 2, 2021)

4 Cross-border greenfield investments are globally declined

- Global cross-border greenfield investments in 2020 dropped by 30.3% to 11,757 cases, the lowest level since 2006. By region, the decreased number of investments in Europe and Asia Oceania contributed to the decline.
- On a monthly basis, from January to May 2021, the number of cases decreased by 24.8% from the same period last year to 4,040 and has not yet recovered to the level before the COVID-19 pandemic.

Number of outward greenfield investments worldwide (by region)



Source: fDi Markets (Financial Times)

5 Significant negative impact on accommodation & food services, and global companies

- The impact of COVID-19 on the performance of global companies varied by region and time of year, but affected a wide range of industries. Travel restrictions as part of infection control measures have had a particularly negative impact on accommodation and food services.

The impact of COVID-19 on the performance and business of companies in major countries (by industry)

	a. Chinese companies		b. Singaporean companies		c. Japanese companies in Asia/Pacific (Including China and ASEAN)		d. US companies	
Questions	Companies that answered "largely affected" by COVID-19		Companies that answered "negatively affected" by COVID-19		Companies that answered anticipating operating "deficit" (full year 2020)		Companies that answered "largely and negatively affected" by COVID-19	
Large influence	**Accommodation/food services**	63.7%	Construction/engineering (n=151)	79.0%	**Travel and entertainment business** (n=84)	78.6%	**Accommodation/food services**	63.5%
	Leasing/business services (travel, law, advertising, etc.)	61.7%	**Retail, real estate, accommodation, food services** (n=108)	73.0%	**Food services** (n=38)	65.8%	Educational services	58.2%
	Culture, sports, entertainment	60.7%	All industries average (n=1,075)	63.0%	Education and medical care (n=35)	65.7%	Arts, entertainment, recreation	55.2%
Average	All industries average (n=10,747)	50%			All industries average (n=5,623)	32.4%	All industries average (n=17,610)	29.7%
	Mining	44.5%			Chemicals, pharmaceuticals (n=211)	20.9%	Construction	15.5%
	Construction	40.7%	Logistics, transportation (n=53)	62.0%	Electric and electronic equipment (n=176)	18.8%	Finance and insurance	11.1%
Small influence	Finance	33.1%	IT, professional services (n = 108)	46.0%	Finance, insurance (n=210)	12.9%	Public utility	8.3%
Investigation period	August 25 to October 20, 2020		October 9 to November 28, 2020		August 24 to September 25, 2020		November 9 to November 15, 2020	

Note: 1) Of a., "largely affected" is the top 3 items of impact ("Faced with a bankruptcy crisis," "Inability to continue existing business," "Relatively large impact".)
2) Of d., "largely affected" refers to "very negative impact" out of the 5 of "very" or "somewhat" negative impact, no impact/slight impact, "somewhat" or "very" positive impact.

Source: China Institute of Enterprise Department Research, Singapore Business Federation (SBF,) JETRO, U.S. Department of Commerce

6 Global inward FDI to recover after 2021

- According to UNCTAD, global inward FDI in 2021 is expected to increase by 10-15% from the previous year. UNCTAD expects that the amount will hit bottom in 2021 and start to recover, but it will not yet return to the level before the COVID-19 crisis.
- In the fields of vaccines, digital goods, semiconductors, and renewable energy, where demand is growing, there are moves to expand investments. Global investments in renewable energy are expected to increase by 2.4% in 2021.

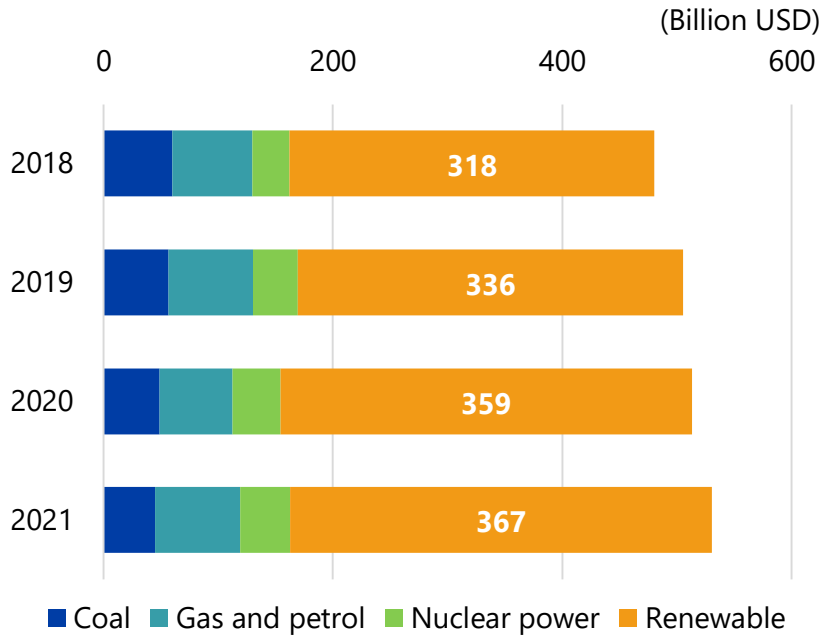
Forecast of inward FDI in 2021 (net and flow)

(Unit: %)

	2018	2019	2020	2021 (Forecast)
World	-12.8	6.5	-34.7	10 - 15
Developed countries/Regions	-20.9	5.8	-58.3	15 - 20
Europe	-31.5	5.3	-80.0	15 - 20
North America	-17.7	18.2	-41.7	10 - 20
Emerging/developing countries and regions	-1.4	4.5	-8.4	5 - 10
Africa	12.9	3.9	-15.6	0-10
Asia	-1.7	3.8	3.8	5 - 10
Latin America	-4.0	6.9	-45.4	-5 - 5
Transitional economies	-27.5	58.0	-58.2	-10 - 0

Note: 1) 2021 data are estimated values by UNCTAD.
2) Regional classification is based on UNCTAD classification.
Source: UNCTAD

Investments in power generation facilities worldwide (by source of power)



Note: 2021 data are estimates.
Source: IEA

7 Investment in semiconductors is expected to expand owing to increased demand and supply risks

- In the semiconductor field, where supply risk is expected to increase owing to the COVID-19 crisis and demand is expected to expand due to the shift to DX and the introduction of 5G, new investments and increases in investment have been announced.
- Taiwan's TSMC and South Korea's Samsung have bolstered their manufacturing capacity to meet the rising demand. Intel will launch a foundry business in the U.S. and Europe, in addition to building a new plant in the U.S.

Major semiconductor investment plans announced in 2021

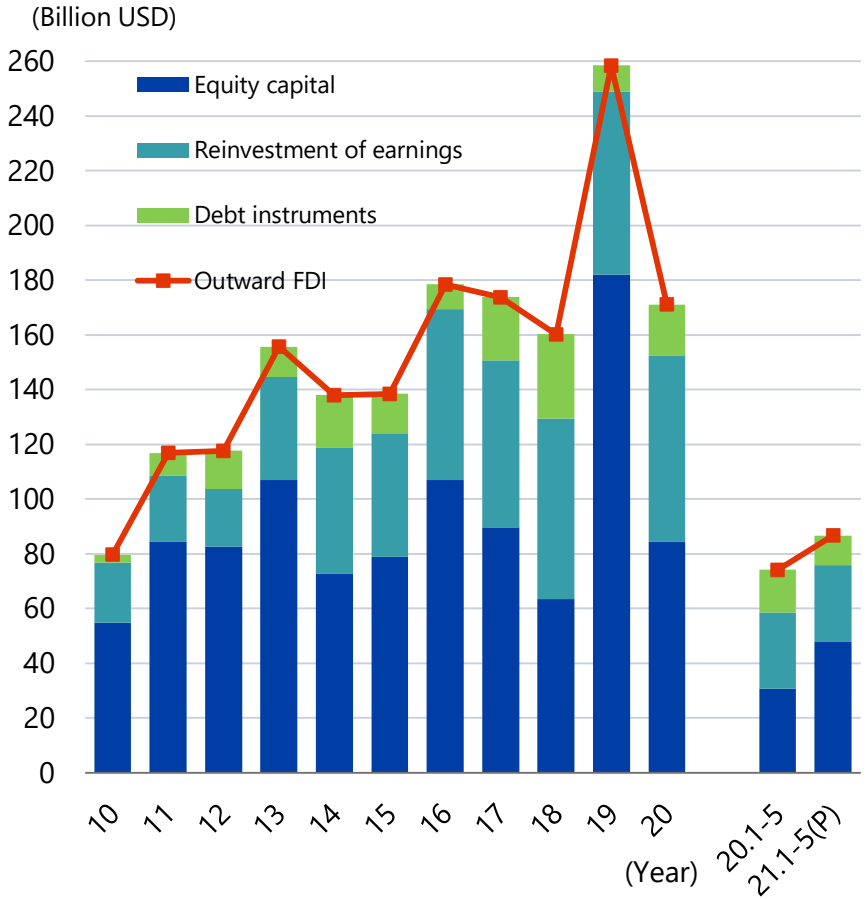
Company	Investment location	Date of publication	Description
Apple	Germany	March 10	Over the next 3 years, the company will invest more than 1 billion euros to establish a silicon design center in Munich. It is scheduled to start operations in 2022 as Europe's largest base for the development of wireless semiconductors and software. Like other plants, this center is to use 100% renewable energy.
SMIC	China	March 17	The company entered into a partnership agreement with Shenzhen Major Industry Investment Group, a Shenzhen-government-owned enterprise, and invests $2.35 billion in the production of integrated circuits and the provision of technical services. It is expected to be able to produce 40,000 12-inch wafers per month, and production will start in 2022.
Intel	US	March 23	Invested $20 billion and opened 2 new plants in Arizona. In addition, the company will launch a semiconductor foundry business (Intel Foundry Service: IFS) in the U.S. and Europe to meet growing demand for semiconductors.
TSMC	Taiwan US and other countries	April 16	Capital expenditures in 2021 are expected to be about $30 billion, with some room for adjustment (including expansion of facilities in Arizona, the U.S.) The company also plans to invest $100 billion over the next 3 years to support capital investment, and research and development to meet growing demand.
Samsung	South Korea	May 13	By 2030, investment in system LSI and foundries will be increased by 171 trillion won (approx. $150 billion) to accelerate the construction of cutting-edge semiconductor processing technology and new production plants. In addition, the company plans to build a new production line in Pyeongtaek and start operation in the second half of 2022.
Bosch	Germany	June 7	To bolster its own semiconductor production capacity, it has invested 1 billion euros (approx. $1.2 billion) in Dresden to open a semiconductor manufacturing plant combining AI and IoT. The company plans to start production of semiconductors for its power tools in July 2021 and for automobiles in September.

Source: Data from respective companies.

8 Japan's outward FDI in 2020 is $171.1 billion

- Japan's outward FDI in 2020 decreased by 33.8% from the previous year to $171.1 billion. Although the COVID-19 crisis dampened the investor appetite and caused a reactionary drop from large-scale M&As in the previous year, it surpassed the level in 2018.

Trends in Japan's outward FDI by type



Note: JETRO converted the figures disclosed in JPY into USD
Source: "Balance of Payments Statistics" (Ministry of Finance, Bank of Japan)

Japan's outward FDI by country/region

(Million USD, %)

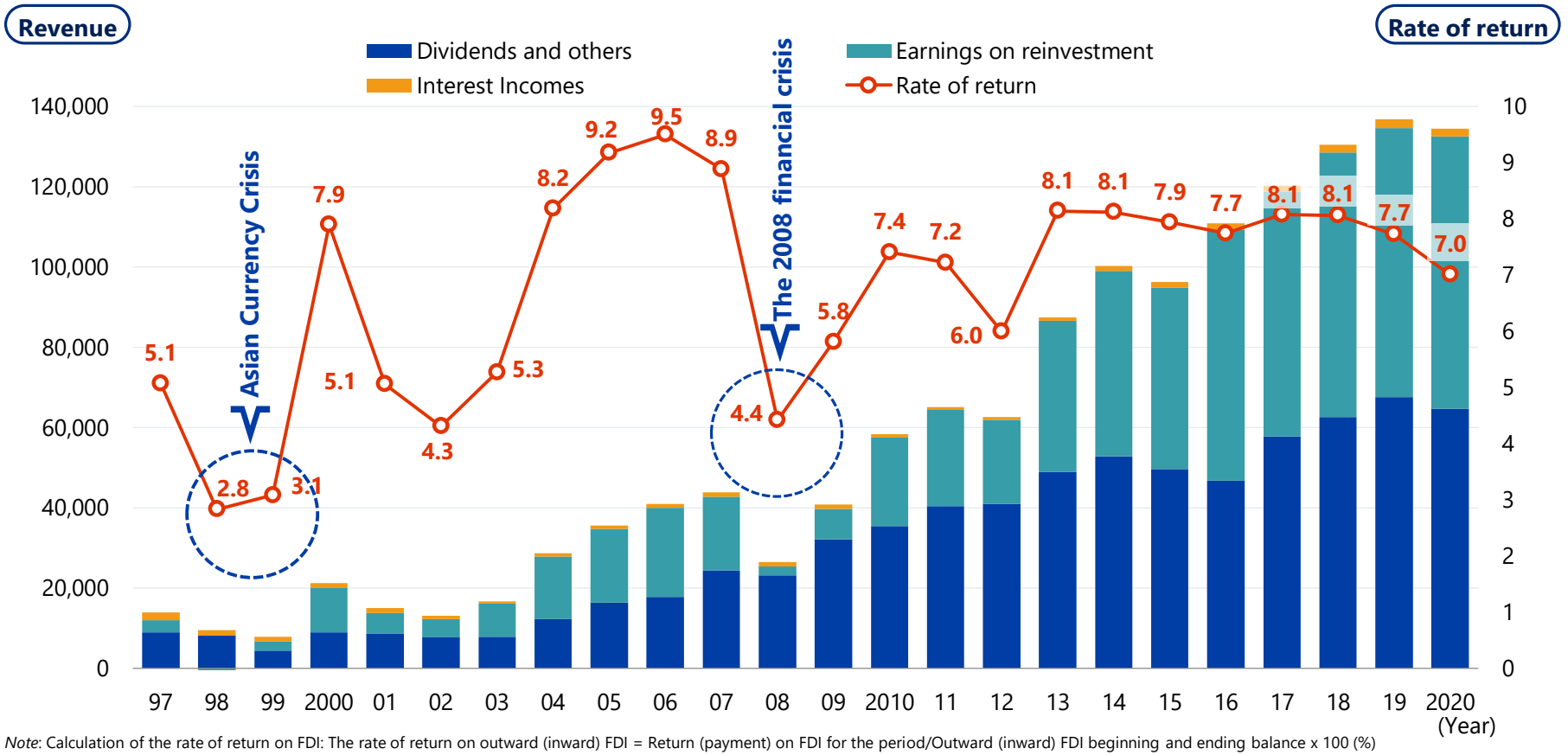
	2020	Growth rate	January-May 2021 (P)	Growth rate
Asia	41,227	-25.8	25,913	41.9
China	11,287	-7.5	3,981	-30.6
ASEAN	21,552	-34.4	16,668	83.4
Singapore	8,547	-42.2	10,263	280.0
Thailand	4,475	2.2	2,002	-14.8
Indonesia	3,231	-63.7	1,758	5.2
North America	51,681	-6.1	33,072	34.2
US	48,935	-4.3	31,991	37.8
Latin America	18,312	3.6	8,147	-13.5
Oceania	17,077	54.3	1,561	-49.1
Europe	47,845	-60.4	17,538	-4.3
UK	3,477	-63.7	2,868	315.6
Switzerland	20,464	-49.4	8,404	79.5
World	171,123	-33.8	86,648	16.9

Note: JETRO converted the figures disclosed in JPY into USD
Source: "Balance of Payments Statistics" (Ministry of Finance, Bank of Japan)

9 Japan's outward FDI return (receipt) and rate of return decreased

- Revenue from outward FDI (receipt) in 2020 decreased by 1.7% to $134.5 million. This income consists of dividends from overseas subsidiaries of Japanese companies and reinvestment income equivalent to retained earnings of local companies.
- The return on investment (revenue [receipt]/average of the beginning and end of the period FDI balance) was 7.0%, down for 2 consecutive years.

Trends in return/receipt (by item) from Japan's outward FDI and rate of return

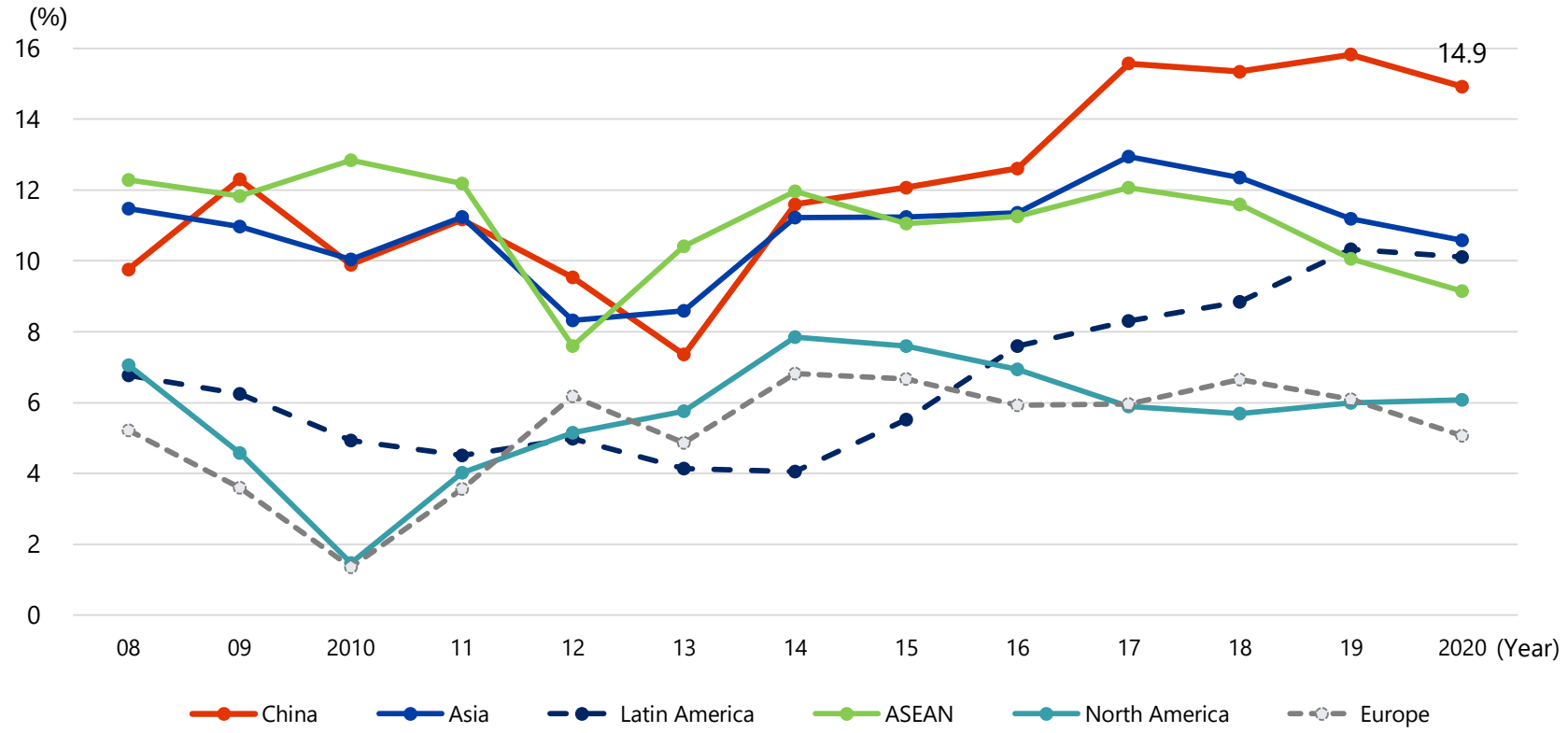


Note: Calculation of the rate of return on FDI: The rate of return on outward (inward) FDI = Return (payment) on FDI for the period/Outward (inward) FDI beginning and ending balance x 100 (%)
Source: "External Assets and Liabilities of Japan" (Ministry of Finance, Bank of Japan,) "Balance of Payments Statistics" (Ministry of Finance, Bank of Japan)

10 Keeping high return on investment in China

- The rate of return on outward FDI in China is as high as 14.9%, far exceeding other major investment destinations such as North America (6.1%,) Europe (5.1%) and ASEAN (9.1%).
- The rates of return in China are particularly high in industries such as transportation equipment, wholesale and retail, all of which exceed 20%.

The rate of return by major FDI destinations

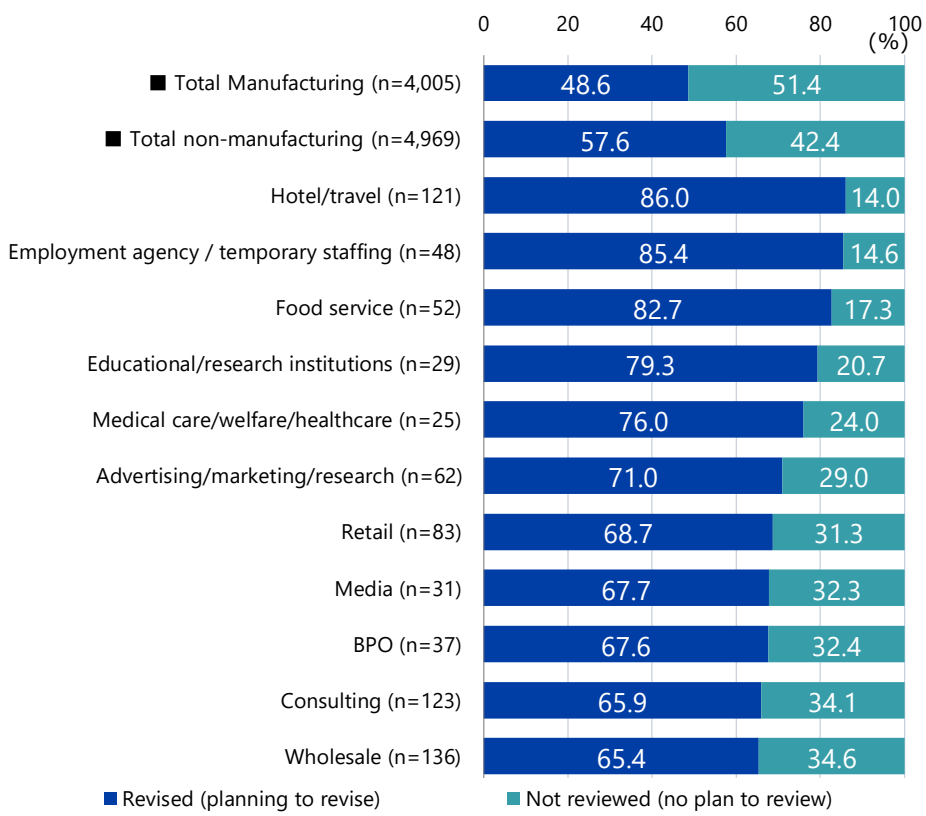


Note: Calculation of the rate of return on FDI: The rate of return on FDI by country/region = Return on FDI for the period (by region)/ FDI beginning out ending balance x 100 (%)
Source: "External Assets and Liabilities of Japan" (Ministry of Finance, Bank of Japan,) "Balance of Payments Statistics" (Ministry of Finance, Bank of Japan)

11 More than half of Japanese companies revise business strategies

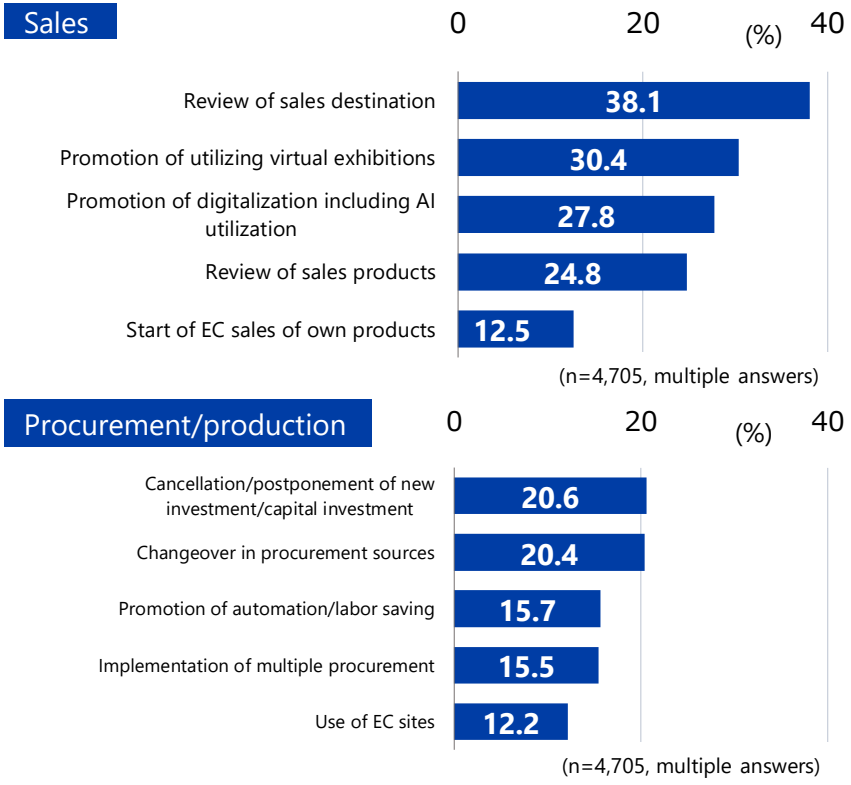
- Since 2020, global factors such as the COVID-19 pandemic and US-China friction, as well as many other events occurring in various regions, have affected the activities of Japanese companies inside and outside of Japan as well as the extensive supply chain that spans countries and regions.
- More than half of Japanese companies operating overseas have been forced to review their overseas business strategies owing to the expansion of risks, such as COVID-19.

Review of business strategies and business models of Japanese companies operating overseas (world) (by industry)



Source: "2020 JETRO Survey on Business Conditions of Japanese Companies Operating Overseas (Global)"

Details of review of business strategies and business models of Japanese companies operating overseas (world)

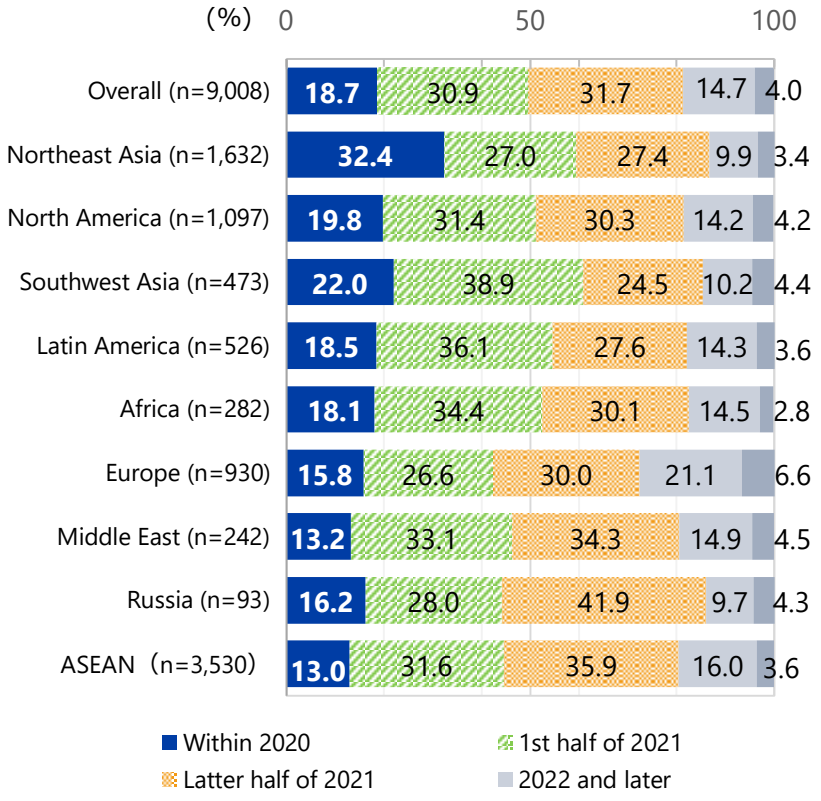


Source: "2020 JETRO Survey on Business Conditions of Japanese Companies Operating Overseas (Global)"

12 Sales of Japanese companies overseas - remarkable recovery in China

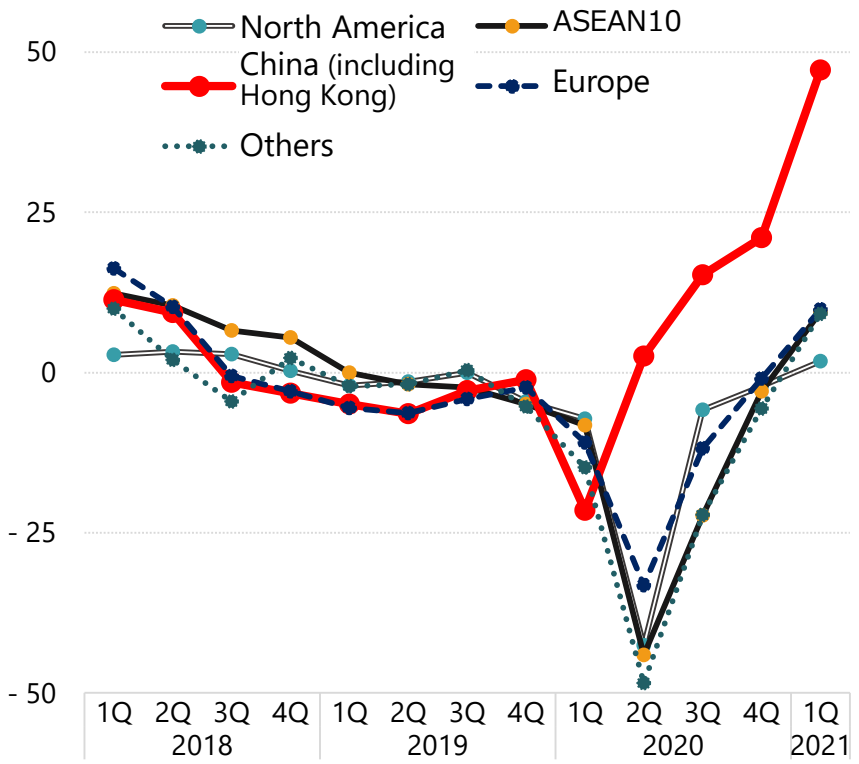
- More than 80% of about 9,000 Japanese companies operating overseas are expected to normalize their businesses in 2021.
- Sales at overseas subsidiaries by region recovered after bottoming out in the 2nd quarter of 2020 (April-June). In particular, the business recovery in China has been remarkable. Strong domestic demand in China led the growth.

Prospects for business normalization at Japanese companies (By region of operation)



Source: "2020 JETRO Survey on Business Conditions of Japanese Companies Operating Overseas (Global)"

Year-on-year sales growth rate of overseas subsidiaries of Japanese companies (manufacturing)



Source: "Quarterly Survey of Overseas Subsidiaries" (Ministry of Economy, Trade and Industry)

13 Prevalence of vaccine and progress of vaccination certificates is the key

- Japanese nationals living overseas have been gradually vaccinated in accordance with the policies of each country.
- With the introduction of vaccination certificates in major countries, progress has been made in easing epidemic prevention measures at the border and after entry to the country, on the basis of certificates. In EU, mutual recognition of certificates has been in full operation since July. Restrictions on entry from outside EU have been lifted on the basis of certificates.

Progress in vaccination (Japanese) and certification of vaccination in major countries/regions

	Commencement of vaccination	Vaccination of Japanese residents	Vaccination certificate	Relaxation of restrictions by certificates
US	December 14, 2020	All residents, including Japanese residents (Free)	CDC issues vaccine card to certify completion of vaccination (paper)	• Card holders will be exempted from preliminary screening for travel in US and for departure for travel purposes, and from voluntary quarantine inspections after domestic and overseas travel. • No common use of certificates, mutual recognition, or relaxation of entry restrictions with other countries or regions
EU	December 27, 2020	Vaccination is available in each EU member state (voluntary)	Mutual recognition of certificates issued by member states as digital COVID certificates on an EU common platform	• Each member state may, in addition to within EU, lift entry restrictions for non-EU countries upon the presentation of an EU-approved vaccination certificate. • In addition, measures were introduced to waive inspections, voluntary isolation, and the presentation of negative certificates after entry.
China	In January 2021, vaccine rollout was started by the notification of each government.	Vaccination of foreign nationals started in major cities in late March (The cost depends on each province or city.)	Issuance of vaccination certificates started on March 8 (digital certificate on smartphone app.)	• From March 15, simplification of visa application for foreign nationals who have been vaccinated with a Chinese-made vaccine and have a certificate of vaccination • The country is discussing the introduction of a mutual certification recognition system with South Korea and other countries.
Thailand	February 28, 2021	Residents are eligible for vaccination (free)	"Vaccine passport" (paper based) is issued.	• Shortening the period of isolation after entry and reducing the number of PCR tests during isolation • On July 1, under the sandbox system (Phuket), the acceptance of foreign travelers under quarantine exemption started.
South Korea	February 26, 2021	Foreign nationals staying in the county for 90 days or more are eligible for vaccination regardless of their status of residence (Free)	Digital certificates via mobile apps through government sites	• From July 1, those who have completed WHO emergency vaccinations will be exempted from two-week quarantine upon the presentation of their certificate, with limitation to entry purpose.

Source: Reports from JETRO offices in respective countries and regions

14 Progress in efforts to adapt to new normal

- Japanese companies are making progress in their efforts to adapt to a new normal. The key is a shift to "no face-to-face and no contact," "multilateralization" in the business field, and "diversification" and "visualization" in the value chain.

Trends of Japanese companies adapted to a new normal

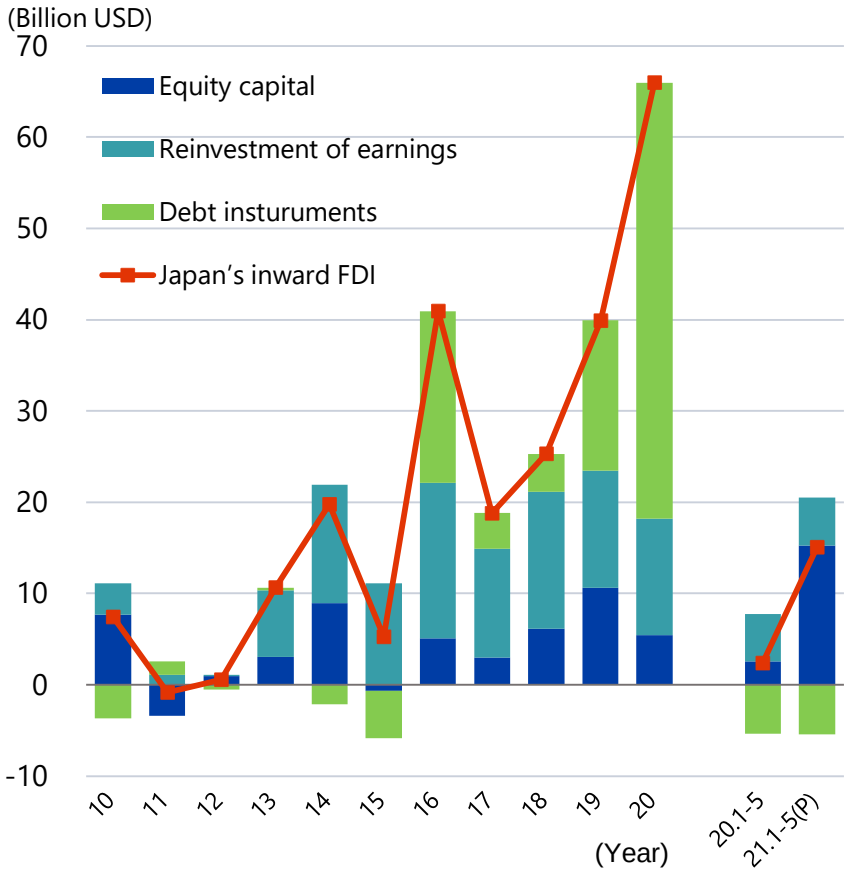
	Commitment	Company	Region	Description of commitment
No face-to-face No contact	Automation and labor-saving on site	Hitachi	Thailand	Teamed up with US Microsoft to offer IT services to manufacturers and logistics companies worldwide. Exploiting growing demands for remote and labor-saving systems due to the spread of COVID-19, including system maintenance and automation.
		YASKAWA Electric, Daifuku, etc.	China and others	Establishment of systems to meet demand for labor-saving and automation, such as industrial robot parts and in-plant transport equipment.
	Development of new technologies and services	Sense Things Japan	Canada and Japan	Jointly developed contactless-type device with Canadian AI startup using image processing technology
	Non-face-to-face service	JR East Singapore subsidiary	Singapore	In response to the non-contact needs of consumers, the company has invested in a local startup that develops and provides robots to automate serving of coffee. It is expected to be used for services at railway stations.
Multilateralization	New areas and products	Nikke Group	China	Entered manufacturing and sales of medical protective clothing and gowns to meet demand for stockpiling. Production in cooperation with Chinese companies
	Collaboration and cooperation	NTT DATA	India	Started AI medical image analysis and management efficiency improvement service for COVID-19 diagnosis with a partner in India. Together with Microsoft, the company helped improve access to TB diagnosis for approximately 100,000 people.
	Portfolio	Toray Group Malaysia	Malaysia	Focuses on expanding new use of products, such as medical wear in response to changes in demand structure due to the COVID-19 crisis.
Diversification	Decentralization	Asics	Vietnam, Indonesia, etc.	Production in Wuhan, China, was shifted to Vietnam and Indonesia after the outbreak of COVID-19. Planning to promote sharing of roles with Vietnam, Indonesia, and Cambodia as forwarding destinations.
	Procurement/supply	Komatsu (and many others)	Vietnam, Thailand, Japan	Transferring part of products manufactured in China to Vietnam, Thailand, Japan, etc., along with partner companies that can respond to "Dual Source (diversified procurement)."
	Return to Japan	Pioneer (and many others)	Thailand, Japan	Returning part of overseas manufacturing processes to Japan to flexibly respond to changes in demand after the outbreak of COVID-19.
Visualization	Regional control	Eisai	World	Formulated BCPs to cover intermediates, APIs, final products, and packaging materials in each region. The company also uses AI to forecast changes in demand considering risks. Global implementation of optimal procurement, production and shipping strategies.
	Advancement through DX	Meiji Seika Pharma	Germany, worldwide	Joint development and global deployment of DX service to upgrade supply chain with SAP, Germany. Assumes visualization of manufacturing process, distribution and sales network, as well as support for construction of COVID-19 vaccine supply network.
	Understanding business partners	TOTO	World	Inspecting the supply network on the assumption that the company and its business partners may temporary cease their economic activities, and seeking alternatives. Promotion of initiatives to expand the understanding of overseas suppliers which are currently Tier-1 suppliers, to Tier-3 suppliers

Source: Newspaper reports and press releases from respective companies

15 Japan's inward FDI in 2020 was $66 billion

- Japan's inward FDI in 2020 increased by 65.2% to $66 billion from the previous year. However, equity capital was down year-on-year, M&A activity and new investment in the Japanese market were slow.

Japan's inward FDI by type



Note: JETRO converted the figures disclosed in JPY into USD
Source: *"Balance of Payments Statistics" (Ministry of Finance, Bank of Japan)*

Japan's inward FDI by country/region

(Million USD, %)

	2020	Growth rate	January-May 2021 (P)	Growth rate
Asia	9,580	0.6	13,258	371.5
China	1,354	-29.2	-188	-
Hong Kong	1,147	-44.7	10,592	-
ASEAN	5,990	47.3	2,746	21.4
Singapore	5,119	103.6	2,835	21.6
Thailand	1,000	-4.2	-139	-
North America	21,135	22.6	5,198	187.0
US	21,058	23.0	4,859	171.0
Latin America	-1,847	-	2,807	983.8
Oceania	-1,227	-	216	-
Europe	38,262	364.3	-6,355	-
World	65,977	65.2	15,064	530.1

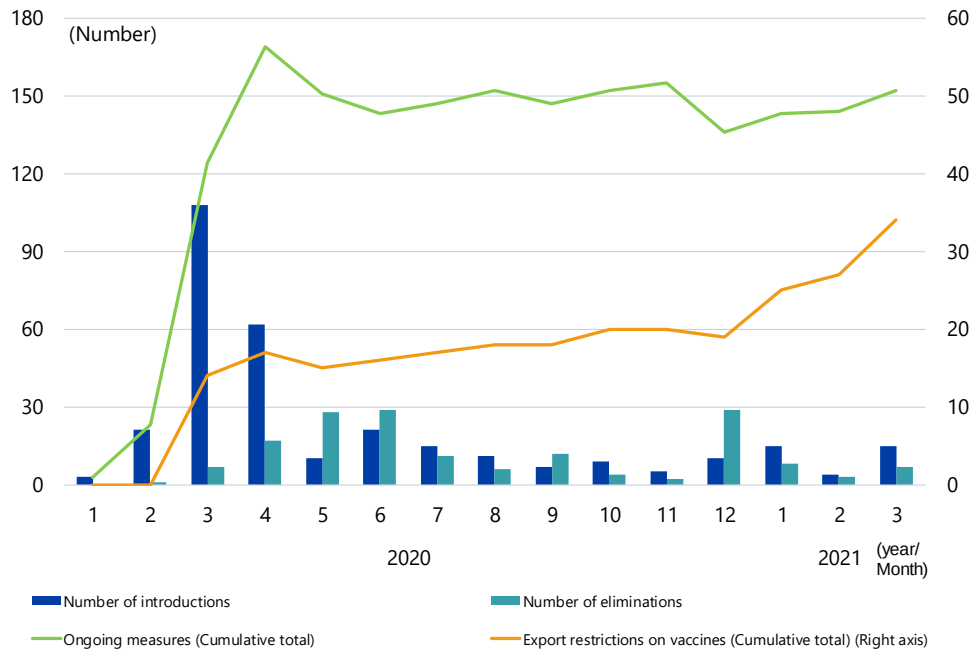
Note: JETRO converted the figures disclosed in JPY into USD
Source: "Balance of Payments Statistics" (Ministry of Finance, Bank of Japan)

III. Trends in Trade Rule Formation

1 New rule formation with COVID-19 in the context

- Countries have been introducing export restrictions to prevent the spread of COVID-19 infection. The number of newly introduced restrictions fell in the 2nd half of 2020, but the cumulative number has remained high during 2021 owing to the increasing number of vaccine-related measures, etc.
- Efforts to make temporary trade facilitation and tariff elimination in response to the COVID-19 pandemic, permanent has continued.

COVID-19 Measures related export restrictions



Note: In addition to the COVID-19 vaccine, those defined as vaccine-related measures in the source documents are counted as "export restrictions on vaccines."

Source: "21st Century Tracking of Pandemic - Era Trade and Investment Policies in Food and Medical Products" (Global Trade Alert)

Status of trade rules with COVID-19

	Relevant Rules	Outline
Tightening existing rules	Trade Facilitation Agreement (TFA), Trade Facilitation Chapter of FTA	Steady implementation of documents computerization and prompt customs clearance among the signatory countries
	Information Technology Agreement and Expanded Information Technology Agreement (ITA)	Expanding the target products list to include artificial respirators, etc., and increasing the number of participating countries
	Technical Barriers to Trade (TBT), the TBT chapter of FTAs	Clarification of rules on domestic regulations and harmonization of related rules to enable the prompt supply of essential products
	Intellectual property rights (TRIPS)	Temporary exemption from patent protection, application of compulsory license
	Control on trade restrictions stipulated in FTAs	Obligation on trade restriction control in future FTA negotiations and revisions
Establishing new rules	Temporary measures for tariff elimination and mitigation	Proposal from the Ottawa Group and others on trade facilitation in essential products, including continuing tariff reductions on medical supplies
	Electronic commerce	Based on the increased use of EC due to restrictions on movement, establishment of new rules which has been advanced among voluntary members are accelerated
	Shared standards for personal information protection and data transfer	Consideration on international rules accommodating increasing remote activities and expanding use of tracking systems

Note: Created from various sources

2 Biden administration's trade policy focuses on worker protection and environment

- The US Biden administration sets a trade policy centered on workers and the environment.
- While returning to the path of international cooperation, the administration maintains a hard-line stance toward China. It emphasizes the use of all possible means to correct China's unfair trade practices. While maintaining additional tariffs, sanctions for human rights abuses are also implemented.

Biden administration's trade policy

Field	Stance of the Administration
General	**• The key elements are workers, environment and climate, relation with China, cooperation with friendly nations.** **• For business with the US, considerations on workers and climate change are essential.**
Labor	• Based on the belief that trade should bring economic benefits to all US workers, the aim is to create a global trade structure that is meaningful to the workers and companies in the US.
Environment and Climate change	• Lead the world to a sustainable environment and climate. • New rules such as carbon border taxes are considered to address climate change issues in cooperation with friendly countries.
Supply Chain	• Flexible, diverse, and secure supply chains are essential for US economic prosperity and security. • Focus on flexible supply chains in various fields such as COVID-19 and environmental measures. Strengthen capabilities to address international emergencies in cooperation with allies with shared values.
Attitude toward China	• Recognize that China's coercive and unfair trade practices hurt US workers, threaten US advanced technologies, and harm US supply chains and national interests. • Recent policies toward China have been fragmentary and lacking a comprehensive strategy. To establish a comprehensive strategy toward China, a review of trading strategies with China is essential. • Implement all possible means to correct China's unfair trade practices.
WTO	• Priority for restoring US leadership in the international community and restoring international cooperation. • Address the challenges that the global trade system is facing, such as increasing inequality and digitization, in cooperation with the WTO, friendly countries and allies. • Work to reform the rules and procedures in cooperation with the new WTO Director-General.
FTA	• Generally cautious about entering into new trade agreements. • Include a high standard of labor rules in trade agreements, with workers attending the negotiating table. • Include systems providing companies economic incentives for promoting environmental protection.

Source: "The 2021 Trade Policy Agenda and 2020 Annual Report" (USTR) and other sources

3 EU's new trade policy focuses on openness, sustainability, and interest protection

- The EU sets sustainability as one of the strategic pillars for the first time in a new trade strategy. It also links the trade policies with environment and digital policies.
- Along with openness, such as multilateralism, the EU stresses that it will defend the EU's interests to counter unfair trade practices.

New EU trade policy (released in February 2021)

Item	Specific Policies, etc.
WTO Reform	・Promote WTO reform focusing on sustainable development ・Launch negotiations for new rules to avoid state interventions which may distort markets ・Restore dispute settlement functions
Shifting to Environment-conscious Styles and Promotion of Responsible and Sustainable Value Chain	・Promote WTO environmental agendas (e.g., develop subsidy disciplines to fossil fuels, resume negotiations on environmental commodity agreements, etc.) ・Introduce the Carbon Border Adjustment Mechanism (CBAM) ・Review policies for promoting human rights and workers' rights protection (e.g., reviewing the operation of GSP for developing countries) ・Enhance implementation of the Trade and Sustainable Development Chapter in the FTAs
Transition to Digitization and Promotion of Service Trade	・Early conclusion of the WTO electronic commerce negotiations and commencement of plurilateral negotiations for liberalization of service trades ・Bolster the cooperation on regulations in digital trade fields with other countries (e.g., promote free transfer of data with secured personal information protection)
Enhancing EU regulation Influence	・Bolster regulatory cooperation and dialogues in fields critical to ensuring EU competitiveness ・Deepen cooperation with the US in the digital and environmental fields
Bolstering Relations with Neighboring Countries, Prospective Member Countries, and Africa	・Strengthen economic relations with countries in the Western Balkans and North Africa that are geographically close to the EU ・Bolster intercontinental cooperation with Africa (e.g., propose sustainable investment initiatives)
Ensuring Fair Competing Conditions by Enhancing the Implementation and Enforcement of Trade Agreements	・Conclude trade agreement negotiations with the Asia Pacific and Latin America countries. ・Ensure implementation of existing trade agreements monitored by a Chief Trade Enforcement Officer. ・Take countermeasures unilaterally against the actions inconsistent with WTO agreements, FTAs, etc.

Source: "Trade Policy Review - An Open, Sustainable and Assertive Trade Policy" (European Commission)

4 Economic security's medium- to long-term potential impact on overseas business

- A quick overview of recent economic security policies reveals that many of them have set medium- and long-term objectives, such as strengthening industrial competitiveness and reinforcing core functions of the nation. As such, the impact of those policies on overseas businesses needs to be examined.

Examples of economic security policies and possible responses taken by businesses

Purpose	Outline	Examples of measures	Possible Responses, etc.
Enhancing Industrial Competitiveness	Enhance management and R&D of sensitive technologies including high technologies, to form an industrial foundation with international competitiveness.	Strengthen export control	Review supply chain and internal technology management
		Promote government-led R&D and capital investment	Enhance R&D by obtaining government support, etc.
		Tighten inward FDI screenings in high-tech fields	- Enhance due diligence on corporate acquisitions - Closely communicate with the government of target countries
Strengthen the Core Functions of the Nation	Overcome vulnerabilities in the supply of social and economic infrastructure and necessary materials essential for the survival and maintenance of people's lives	Tighten inward FDI screenings in critical infrastructures	
		Exclude specified companies from government procurement market	Review the use of eliminated companies' products and services
		Restructure supply chains	Review and rebuild supply chains
Influence Countries' Behavior	Achieve diplomatic objectives through economic pressure	- Additional tariff measures - Prohibit the export of rare resources and necessary materials	

Source: Various materials

5 US and china tighten export control system, attention to extraterritorial application

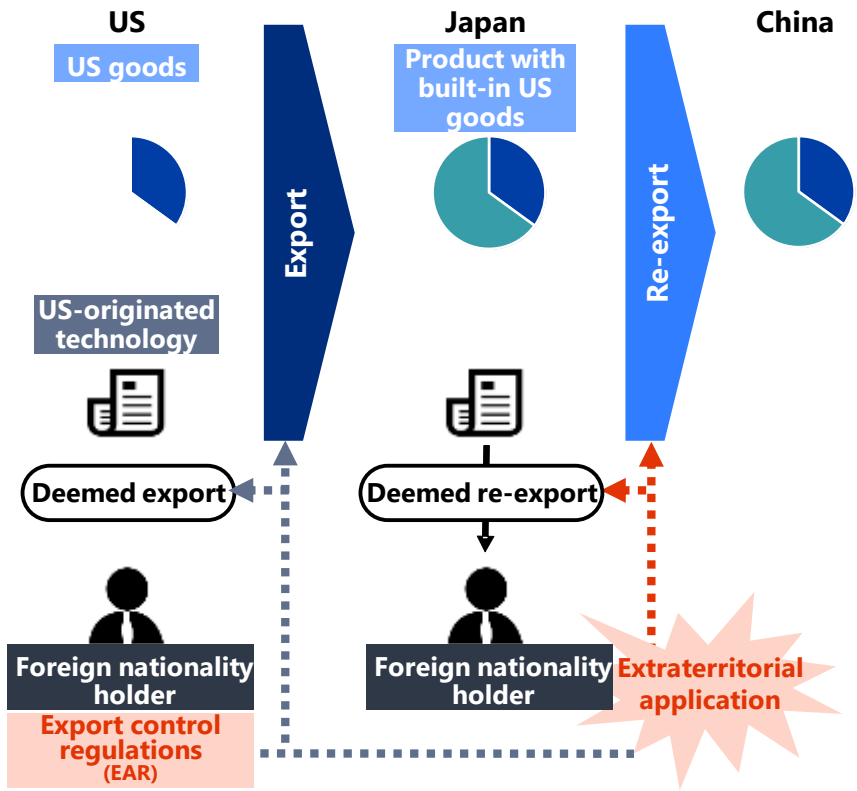
- The US and China are tightening their export control systems by revising the list of controlled items/technologies and target entities subject to the restrictions.
- The export control rules of the two countries could be extraterritorially applied to re-exports. Japanese companies, whose inputs and outputs are deeply integrated into supply chains involving the US and China, need to re-assess the supply chains and their management system of sensible technologies in order to prepare for further tightening of regulations.

Major trends in us-china export control regulations (since 2020)

Year	Country	Date	Major Trends
2020	US	May 19	Revised the regulations on direct products and tightened the export controls to Huawei Technologies and 114 related companies
	US	July 22	Added 11 Chinese companies in textile and other fields to the Entity List (EL)
	US	August 17	Revised the regulations on direct products and further tightened export controls to Huawei and its affiliates
	US	August 27	Added 24 entities primarily in the infrastructure field to the EL, including China Communications Construction Company (CCCC) affiliates
	China	August 28	Revised significantly the Catalogue of Technologies Prohibited or Restricted from Export, and enforced it on the same day
	China	September 19	Enforced the Provisions on the Unreliable Entity List
	China	December 1	Enforced Export Control Law
	US	December 18	Added to the EL 60 Chinese entities, including semiconductor manufacturing giant SMIC, CCCC, and drone giant DJI
	US	December 23	Announced that it would apply export control regulations to Hong Kong in the same way as it does to mainland China
2021	China	January 9	Promulgated and enforced the Rules on Counteracting Unjustified Extra-territorial Application of Foreign Legislation and Other Measures
	US	April 8	Added 7 Chinese supercomputer agencies to the EL
	China	June 10	Established Anti-Foreign Sanctions Law and enforced it on the same day

Source: JETRO "Biz news"

Examples of application of EAR



Note: 1) This table shows brief examples of EAR applications and does not cover all application patterns.
2) In China, the Export Control Law specifies that the extraterritorial application is available (Article 45). However, the definition and implementation rules of "re-export" are expected to be clarified in the future.

Source: EAR

6 Steady movements to introduction and tightening regulations on inward FDI

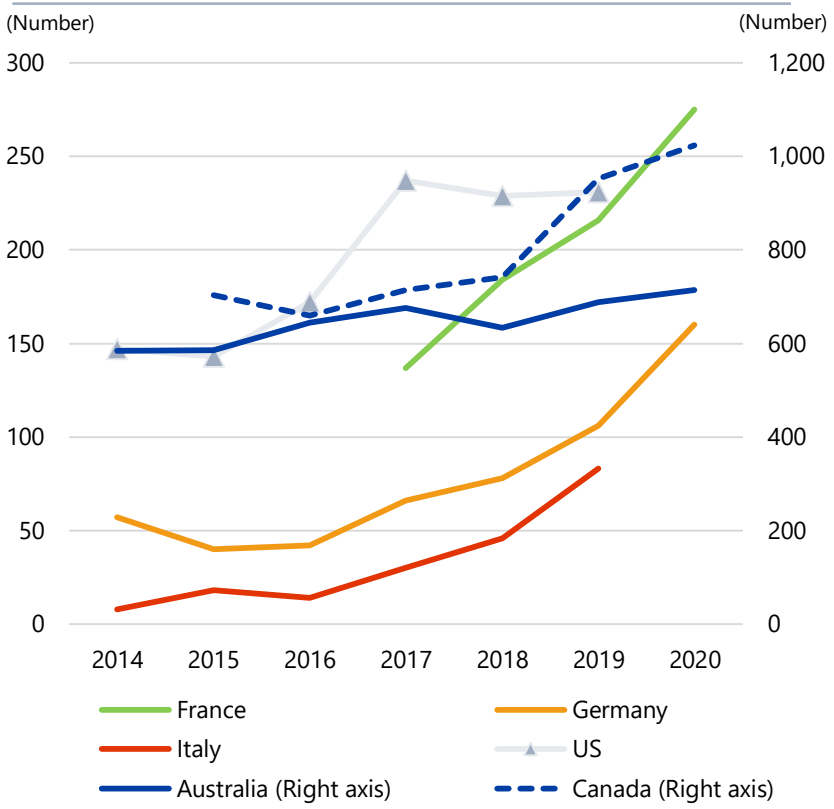
- From the perspective of preventing the leakage of critical technologies, major countries have tightened the inward FDI screening mechanism in the high-tech field, etc., and intensified its enforcement.
- As of the end of June 2021, the number of countries that introduced the system reached 34, accounting for about 70% of the world's total inward FDI stock.

Trends in major countries regarding investment screening systems (since January 2021)

Country/ Region	Major Trends
EU	With the enforcement of the **EU Investment Screening Regulation** (October 2020), EU member states, including Germany, France, Italy, and Spain, have tightened their system for inward FDI screening. The interim measures in response to COVID-19 (e.g., lowering thresholds for investments subject to screening) have also been extended. The Czech Republic and other countries introduced investment screening mechanisms , and the number of EU countries that introduced the system increased to 19 (as of the end of June 2021). The Netherlands is also preparing a new legislation to establish a comprehensive investment screening mechanism.
UK	**The National Security and Investment Act** was enacted in April 2021. It was UK's first comprehensive investment screening system. The UK says that the number of screenings is expected to increase significantly. The Act is expected to be enforced by the end of 2021.
China	**The Measures for Security Review of Foreign Investment** enforced in January 2021. The measures are the first of their kind in the country to regulate a comprehensive investment screening system and are expected to be clarified in the operation form through detailed implementation rules in the future.
Australia	**The Foreign Acquisitions and Takeovers Act** was significantly revised and enforced in January 2021. It also regulated to carry out a preliminary screening from the national security perspective. In addition, revisions to related laws continue to expand the scope of industries subject to screenings.
US	A nonpartisan group submitted a strategic competition bill to the Senate in April 2021. As transactions subject to CFIUS screenings, the bill proposed to include donations from foreign entities ($1 million or more) to US higher education institutions and arrangements (contract) for joint research with US universities that possess critical technologies.

Source: Documents from each country's government

No. of screened investment project



Note:The numbers of Italy and Canada show notifications, Australia shows approvals (excluding real estate), and others show screenings.
Source:Documents from each country's government

7 Major countries enforce regulations on inward FDI in wide-ranging industries and fields

- Screening of foreign investments is seen in a wide range of fields, including 5G, semiconductors, and access to personal information.
- Since smaller scale of foreign investments are becoming subject to scrutiny, it may affect the investment activities of small and medium-sized enterprises (SMEs).

Examples of investment screening

Date	Screening Country	Investment Origin Countries and Regions	Outline
Dec. 2019	China	Hong Kong	**[Retail]** Yonghui Superstores (Retail), with a British company in Hong Kong as the largest shareholder, announced the submission of a tender offer on Zhongbai Holdings Group (Retail). However, after being subjected to a national security screening by the authorities, the plan was withdrawn.
Mar. 2020	US	China	**[Access to personal information]** Then-President Trump ordered Beijing Shiji Information Technology (IT) to sell the US IT company StayNTouch acquired by the company in 2018. There seems to be a concern that customer information held by StayNTouch could leak in China.
Dec. 2020	Germany	China	**[Satellite and communications]** A local subsidiary of China Aerospace Science & Industry Corporation submitted the acquisition of IMST (Satellite and Radar Technology), but the acquisition was not approved owing to security concerns. In addition to handling 5G technology, IMST is believed to supply products and services to the German Federal Armed Forces.
Dec. 2020	France	US	**[Weapons-related equipment and nuclear power]** The French Ministry of Armed Forces rejected the plan of the US industrial equipment Teledyne to acquire Photonis. The aim was to protect the country's national interests and economic and industrial sovereignty. Photonis produces infrared night vision scopes for the French military and has strategic technology in the nuclear field.
Jan. 2021	Australia	China	**[Biotechnology]** China State Construction Engineering Corporation (Construction) submitted a prior notification to acquire a company in the same industry, Probuild. However, the Treasurer of Australia announced the intention to reject the bid because of security concerns. The company later withdrew its prior notification. Probuild was contracted to build the headquarters of CSL, a major pharmaceutical company that researches and produces COVID-19 vaccines.
Mar. 2021	Italy	China	**[Semiconductor]** Shenzhen Investment Holdings tried to acquire 70% stake in LPE (semiconductor manufacturing), but Prime Minister Draghi vetoed and stopped the takeover. Semiconductors are deemed of strategic importance in Italy.

Source: Various press reports, corporate press releases, and government press releases

8 Required response to business and human rights from companies

- Consideration of human rights in the business and supply chain is an essential requirement for a company's sustainable activities.
- Implementing appropriate initiatives, including human rights due diligence, and actively disclosing information on these initiatives influence the competitiveness of own products and services in the market. Risks caused by failing to respond are also exposed.

Factors Behind the Strong Demand on Companies to Respect Human Rights

Trends in obligating human rights due diligence in major countries and regions

- Movements toward obligating information disclosure under laws and regulations are increasing mainly in Western countries (below)
- Expansion of the subject companies and scope based on current law revisions and shifting provisions from voluntary to obligation also accelerate.

Country/ Region	Name of Laws and Regulations (Tentative)	Establishment
EU	Conflict Minerals Regulation	Jun. 2017 Enforcement Jan. 2021 Commencement of Operation
	Non-Financial Reporting Directive	Dec 2014 Enforcement
UK	Modern Slavery Act 2015	Jul. 2015 Enforcement (Occasional review)
Germany	Supply Chain Due Diligence Act	Jan. 2023 Enforcement Scheduled
Netherlands	Child Labour Duty of Care Act	Jan. 2022 Enforcement Scheduled
	Bill on Responsible and Sustainable International Business Conduct	Mar. 2021 Submitted to the Diet Jan. 2024 Enforcement Target
France	Law of the Duty of Care for the Parent and Ordering Parties	Mar. 2017 Enforcement
US	California Transparency in Supply Chains Act	Jan. 2012 Enforcement

Source: Reports from JETRO offices in each country and official announcements by national and regional governments

Noteworthy Trends in Recent Years

- In response to the United Nations **Guiding Principles on Business and Human Rights** (2011), each country formulated a **National Action Plan (NAP)** on business and human rights.
  → Introduced in 27 countries and regions, including Japan (October 2020)
- The EU announced **Proposal for a Corporate Sustainability Reporting Directive (CSRD)** in April 2021 as an amendment to the current Non-Financial Reporting Directive.
  → Expanded the scope of companies subject to information disclosure.
  → Revisions of national laws and regulations in each EU country are required in association with the directive enforcement.
- The movement to tighten **export and import regulations** from the perspective of human rights is increasing in the US.
  → From January 2021, the import of products, such as cotton, originated Xinjiang Uygur Autonomous Region is entirely banned (Withhold Release Order: WRO).
  → Some **cargo retainment cases by WRO with Japanese companies** also occurred.
- Primary reasons Japanese companies are promoting the initiatives (Top 4)
  1. It is becoming mainstream in international business (79%)
  2. Adopting guiding principles (65%)
  3. Movement of legislation and guidelines formulation overseas (65%)
  4. Response to investors and rating agencies (63%)

  (Japan Business Federation, Released in October 2020)

9 WTO's major challenges viewed in the new director-general speech at the time of appointment

- Director-General of the WTO, Ngozi Okonjo-Iweala, expresses a strong commitment to addressing COVID-19.
- In addition to COVID-19 measures, she also emphasizes negotiations on fisheries subsidies. Since the agreement on fisheries subsidies negotiations can be regarded as a test for evaluating the WTO's multilateral negotiation function, attention should be paid to the future of the negotiations.

Summary of the new WTO director-general speech at the time of appointment

Major Topic	Summary of Speech
COVID-19	To restore its credibility, the WTO must early success and results. A key area, where such results are possible, is assistance in controlling the COVID-19 pandemic through the nexus of trade and public health.
Fisheries Subsidies	Hoping that the fisheries subsidies negotiations are finalized, leaving the Twelfth Ministerial Conference (MC12) as the venue to conclude on modalities for implementation. (Details omitted) (The agreement on fisheries subsidies negotiations) will signal to the world that it is capable of concluding a multilateral agreement vital for current and future generations.
Dispute Settlement System	Reform of the Dispute Settlement System, which has been a central element in guaranteeing security and predictability of the multilateral trading system, is of utmost importance to the members (accession to the WTO). (Details omitted) It will be important to agree on the nature of these reforms, flesh them out, and develop a work program for implementation that can be advanced at MC12.
Joint Statement Initiative (JSI)	The WTO rulebook is outdated and lags behind some regional and bilateral trade agreements which are incorporating a lot of innovations. The rulebook must be updated to account for 21st-century realities such as e-commerce (EC) and the digital economy. (Details omitted) Plurilateral initiatives have brought new energy to the Multilateral Trading System.
Environment	The WTO should support the green and circular economy and address more broadly the nexus between trade and climate change. (Details omitted) It will be important for members (accession to the WTO) to reactivate and broaden the negotiations on environmental goods and services.

Note: Major topics were created from the content of the speech.
Source: Appointment of the Next Director-General, JOB/GC/250 (February 16, 2021)

10 New rule negotiations in WTO, results required by MC12

- In the WTO, the movement toward new rules formation accelerates in both multilateral and plurilateral frameworks, as the November 30, 2021, Twelfth WTO Ministerial Conference (MC12) approaches.
- Concerning COVID-19, discussions have been held to eliminate tariffs on medical supplies and temporarily waive the obligation on intellectual property protection.

Major rule negotiations attracting attention toward the twelfth WTO ministerial conference (MC12)

Multilateral

Disciplines on Fisheries Subsidies

- New rules to **regulate overexploitation, overfishing capacity, and government subsidies that contribute to illegal, unreported, and unrestricted fishing.**
- It will be the first WTO rule related to sustainable development.
- The negotiations have entered the final phase, and intensive negotiations continued based on the integrative negotiation texts presented by the chairman.

Exemption from Obligation to Protect Vaccine-Related Intellectual Property

- To increase the supply of necessary vaccines and medical products for COVID-19 measures, 62 WTO member countries demand a **temporary suspension of the obligation to intellectual property protection** of such products.
- Members continue to discuss whether the suspension of intellectual property protection will lead to increased production of vaccines.

Plurilateral

Investment Facilitation in e-commerce, Domestic Regulations on Services, and Development

- Triggered by the joint statement issued in MC11 (December 2017), the voluntary countries, including Japan, have begun negotiations ahead of the others.
- Negotiations continue with the aim of obtaining **substantial progress** by MC12.

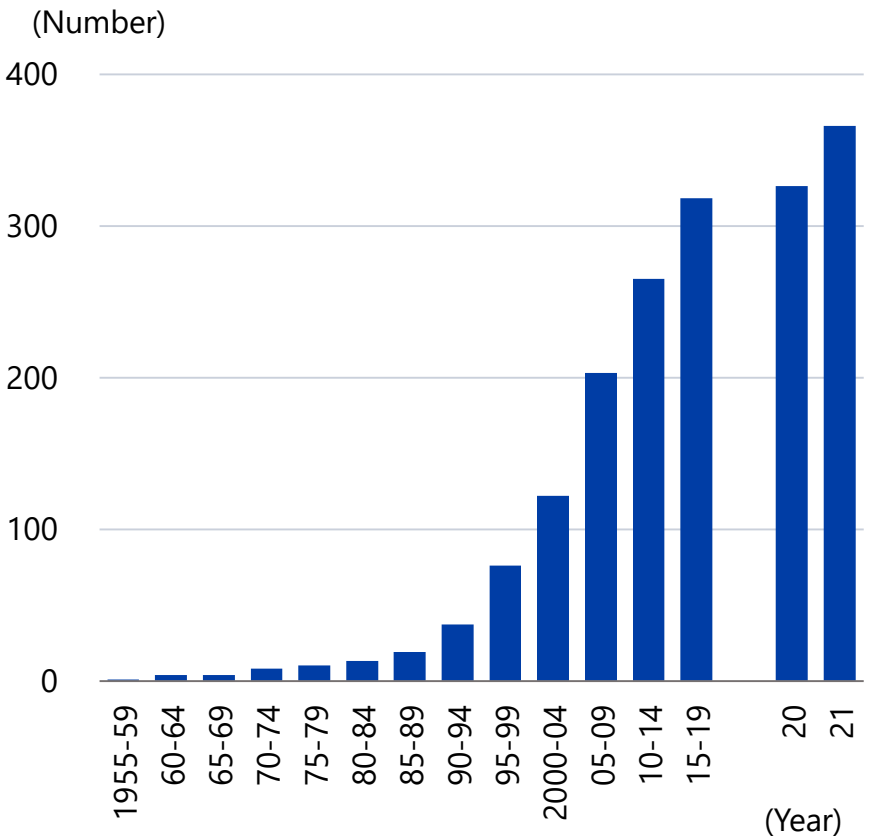
Trade and Health

- Voluntary countries, including Japan, proposed the Trade and Health Initiative **to control export regulations on medical supplies and eliminate tariffs on them**.
- Discussions continue to reach an agreement with the participation of as many members as possible by MC12.

11 Increasing movements to FTA revisions

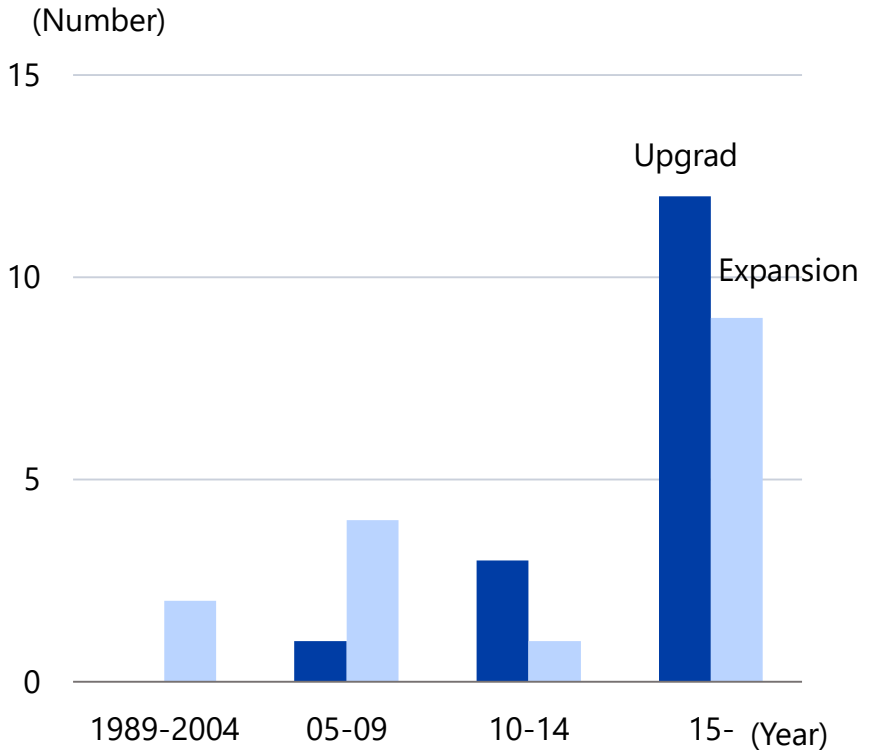
- According to JETRO survey, there were 366 effective free trade agreements (FTAs) globally as of June 30, 2021.
- Sixteen each of FTA "Upgrade" (rules added, revised, etc.) and "Expansion" (expansion of liberalization, etc.) are signed and enacted in Asia-Pacific countries and regions. Movements to revise the agreements have been increasing in recent years.

Number of effective FTAs worldwide (cumulative)



Note: As of June 30, 2021.
Source: FTA database (JETRO)

Number of revised FTAs signed and enacted by Asia-Pacific Countries and Regions



Note: Data as of June 30, 2021.
Source: Asia Regional Integration Center, Asia Development Bank (Accessed on July 2, 2021)

12 RCEP agreement signed, expectation to early enactment grows

- In November 2020, 15 countries, including Japan, signed the Regional Comprehensive Economic Partnership (RCEP).
- It is a new form of mega FTA. Various countries that have significant gaps in development stages, existing systems, and social systems and infrastructure development status, will plan the liberalization of trade and investment, the harmonization of rules and systems, and the process standardization in a wide range of fields.

RCEP Economic Scale

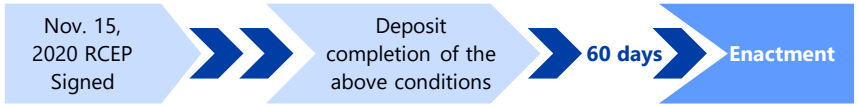
Adding Population, Economic Size, and Two-way Trade of Japan's FTA Partners to Japan (100 mil people, %)

	2015			2020		
	Population	GDP	Two-way trade	Population	GDP	Two-way trade
FTA Partners	22.7	21.3	22.7	29.4	40.0	36.1
+ RCEP	-	-	-	**44.0**	**60.1**	**65.6**

Note: GDP as a percentage of world GDP (PPP Criteria). Two-way trade indicates the ratio of the trade with partners to the total trade in Japan.
Source: WTO and IMF data

Movement to Enact the Agreement

- For the agreement enactment, 6 out of 10 ASEAN countries plus 3 non-ASEAN countries (at least 9 countries) must ratify then deposit with the Secretary General of the ASEAN.
- Deposited by Singapore, China, and Japan as of the end of June 2021



*April 2021: Deposited by Singapore and China
*June 25, 2021: **Deposited by Japan (the 3rd Country)**

Main Provisions to Access Markets

Tariff Elimination

The tariff elimination rate is 91% (based on the item numbers) in all signatory countries. The tariff elimination rates of China and Korea to Japan are 86% and 83%, respectively.

Rules of Origin

Introduced a self-certification system for certified exporters as Japan's first multilateral agreement. Importers can self-report in Japan as of the date of enactment.

Trade Facilitation

Obligation to introduce Advance Rulings on Tariff Classification, which set the customs office to respond in writing to importers regarding tariff classification, evaluation, and certification of origin on the importers' application basis. Specifying the deadline relating to acceptance permissions of incoming cargoes (within 48 hours for general cargoes to the extent possible). Establishing a moratorium for some partners (below)

Main Provisions Related to Trade Facilitation	Cambodia	Laos	Myanmar	Vietnam	Other Countries with a Moratorium
Introduction of the Advance Rulings on Tariff Classification (Article 4.10)	✓	3 yrs/5 yrs	5 yrs	End of Dec. 2021	Indonesia: End of Feb. 2022
Release of Goods (Article 4.11)	5 yrs	3 yrs/5 yrs	5 yrs	End of Dec. 2021	None

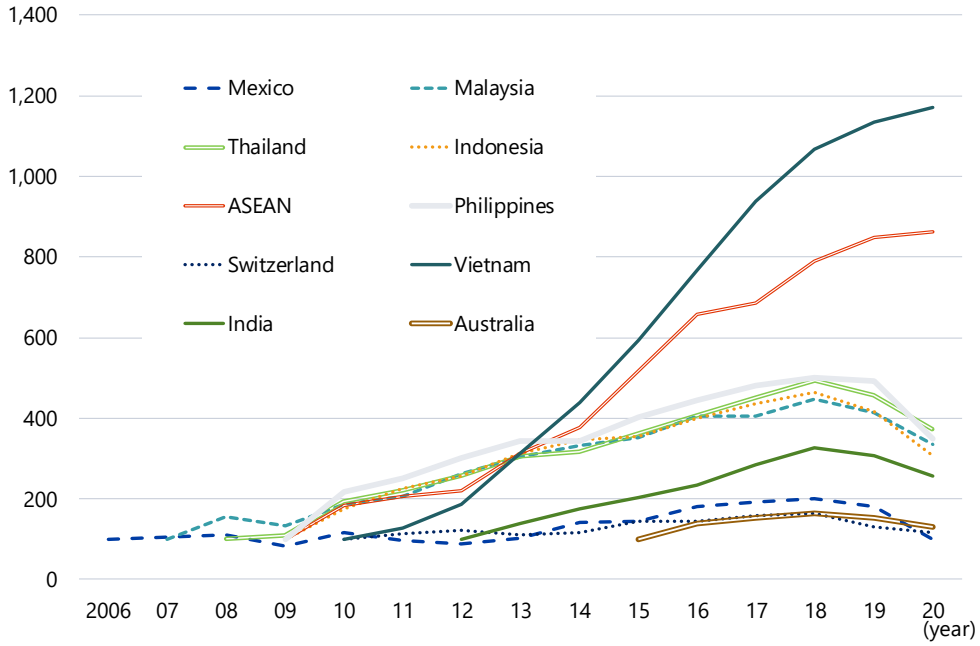
Source: Annex 4A "RCEP Agreement" (Ministry of Foreign Affairs)

13 Continuously required issue resolution in progressing FTA utilization

- Among tariff reductions in partner countries according to FTA, the number of issued Certificates of Specific Origin has increased. On the other hand, owing to the spread of the self-certification system adopted by the CPTPP and the Japan-EU EPA, the ratio of third-party certification has relatively decreased.
- The challenges of using FTAs remain, and there are some cases where FTAs are not utilized despite the benefits are recognized. The digitization of the Certificate of Specific Origin can be one of the solutions, particularly for process costs, as is often pointed out.

Number of issued certificates of specific origin

(The number for the first year when a full year value is available for each FTA = 100) *1)



Note: 1) If an FTA is enacted in the middle of a year, the number of issuances in the following year is 100. 2) Limit to the certificates issued by the Japan Chamber of Commerce and Industry. 3) Only the top 10 agreements issued in 2020 are shown.
Source: METI

Reasons why companies do not use FTAs

1. Companies that see costs outweighed benefits

- A considerable cost to gain the understanding of suppliers.
- Require cooperation from suppliers, not just own company.
- When a unit price is low, without sufficient quantity, the effect is hard to gain.
- On top of the incapability of balancing the cost and procedure for receiving benefits, only the importer gets the direct benefits.
- It is unclear whether the preference applies to end-users (currently only to intermediate distributors and trading companies).

2. Companies that see more benefits (although still not utilizing FTAs)

- In some cases, when asking for a certificate of origin from a domestic supplier, there are gaps in companies' level of understanding and it often takes time, or sometimes it is not possible to obtain the certificate.
- The FTA cannot be used without the manufacturer's cooperation, as only the manufacturer can certify its origin. Because the burden on manufacturers and the damage caused by mistakes are significant, the use of FTAs may not be worth it.

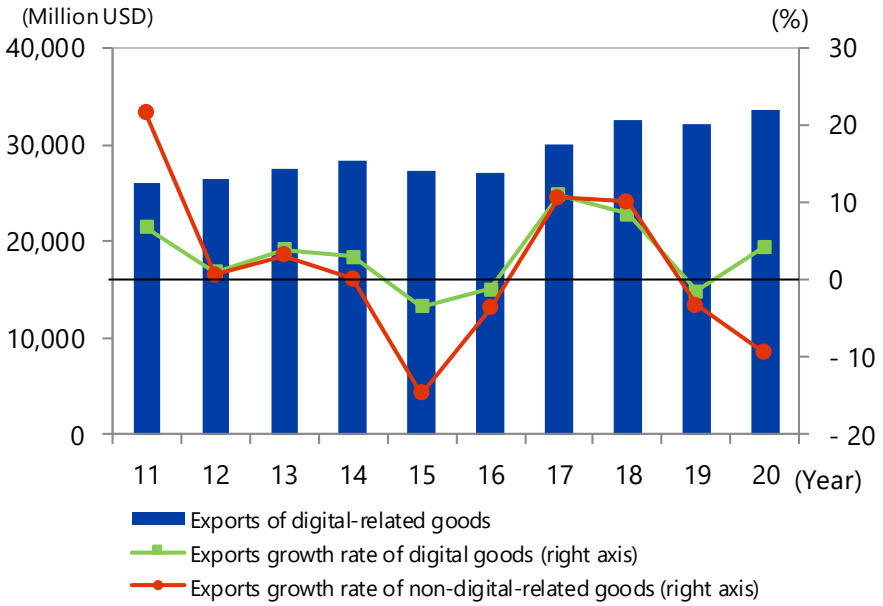
Note: Free description of companies that do not use FTAs among the surveyed companies.
Source: "FTA Survey on Exports (February 2021)" (JETRO)

IV. Digital Trade and Rule

1 Global digital trade growing during COVID-19 crisis

- In 2020, trade in digital-related goods increased by 4.3 percent year-on-year to $3.353 trillion.
- It is believed to be affected by the increase of demand for digital devices for home use due to COVID-19 and the special procurement for emerging technology applications such as the 5G mobile communication system.

Trends in global trade in digital-related goods (export basis)



Note: Estimated by JETRO (See "Appendix 1 and 2" for estimation methods)
Source: Trade statistics of respective countries and regions

Global trade in digital-related goods (export basis, 2020)

(Unit: 100 million USD, %)

	Value	Composition ratio	Growth rate
Computers and peripherals (total)	5,983	17.8	4.5
Computer and peripheral equipment	3,955	11.8	8.3
Computer parts	1,326	4.0	3.3
Communication equipment	5,817	17.3	-1.3
Cellar phones	2,534	7.6	-2.7
Semiconductors and other electronic components	9,287	27.7	11.2
Electron tubes/Semiconductors, etc.	1,187	3.5	2.5
Integrated circuits	8,101	24.2	12.6
Other electrical/electronic components	4,945	14.7	3.3
Measuring equipment/instruments	2,697	8.0	-2.2
Medical electronics	1,345	4.0	4.7
Semiconductor manufacturing equipment	920	2.7	14.6
Industrial robots	52	0.2	-7.4
Drone	951	2.8	2.1
Digital Components	18,218	54.3	6.5
Digital final goods	15,306	45.7	1.9
Digital-related goods (Total)	33,530	100.0	4.3

Note: (1) Estimated by JETRO. (2) See "Appendix 1" for product classifications. (3) Shading is for products that increased in composition ratio compared to 2010.
Source: Trade statistics of respective countries and regions

2 Semiconductor supply chain to center in Asia

- China's semiconductor imports account for 30% of the world market share, and it can be seen that the semiconductor industry depends on foreign countries.
- Owing to widespread expansion, including automobile applications, added to the expectations for normalization of economic activities due to the progress of vaccinations, demand growth and price hikes due to a shortage of semiconductors are expected for the future.

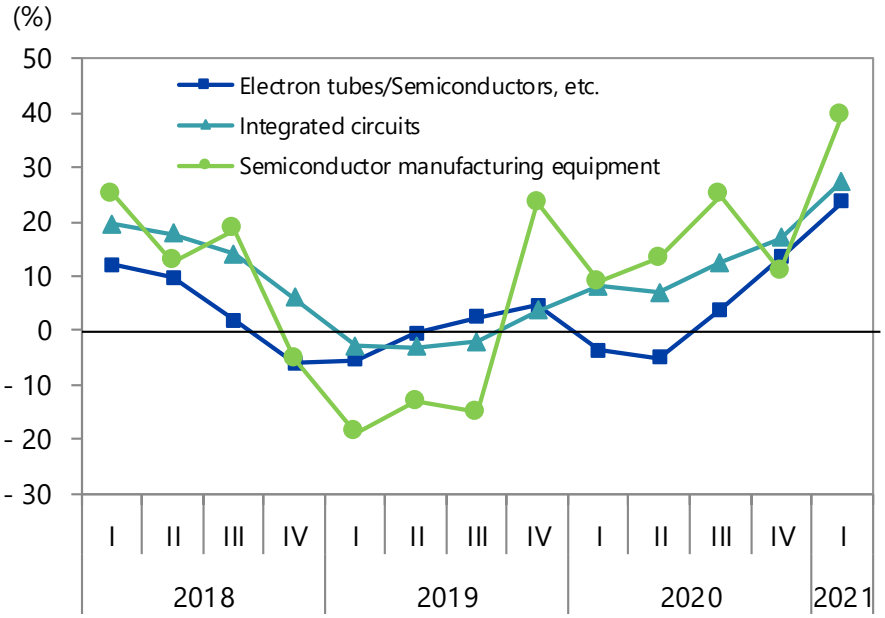
Trade matrix for semiconductors and other electronic components (2020, composition ratio based on export amount)

(%)

Export \ Import	World	Asia	Japan	China	Taiwan	ASEAN	USMCA	Europe	Other areas
World	100.0	84.5	2.4	33.3	7.1	16.4	5.5	8.5	1.5
Asia	84.5	76.6	2.2	30.2	5.6	14.7	3.3	3.6	1.0
East Asia	84.4	76.5	2.2	30.2	5.6	14.7	3.3	3.6	1.0
Japan	4.1	3.7		1.0	0.8	1.0	0.2	0.2	0.0
China	16.6	14.7	0.4		1.9	3.7	0.3	1.1	0.6
Taiwan	12.8	12.3	0.8	4.4		2.6	0.2	0.3	0.1
ASEAN	23.4	19.4	0.8	5.0	1.7	4.7	2.0	1.7	0.2
USMCA	6.4	4.1	0.1	1.5	0.4	1.0	1.7	0.4	0.2
Europe	7.6	2.5	0.0	1.2	0.2	0.7	0.5	4.4	0.2
Other areas	1.5	1.4	0.0	0.3	0.9	0.0	0.1	0.0	0.0

Note: Shading is for countries/regions with a global market share of 10% or more.
Source: Trade statistics of respective countries and regions

Export growth rate of semiconductor-related product value (year-on-year)

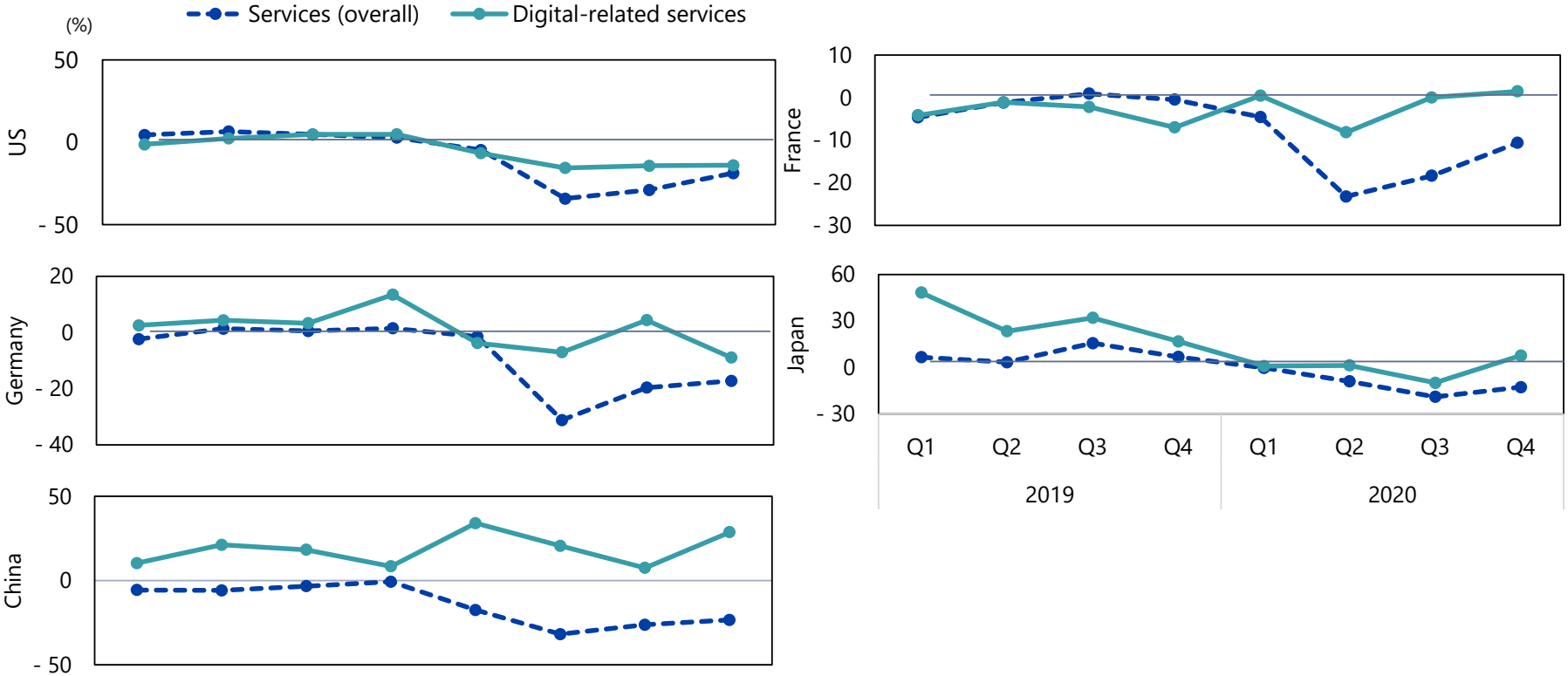


Note: Compiled based on data from 33 countries/regions.
Source: Trade statistics of respective countries and regions

3 Digital-related services are heading for recovery

- In terms of digital-related services, the decline in 2020 was limited.
- Demand for digital-related services has increased owing to the impact of COVID-19, and strong positive growth can be seen, especially in China.

Growth rate of imports of services and digital-related services in major countries

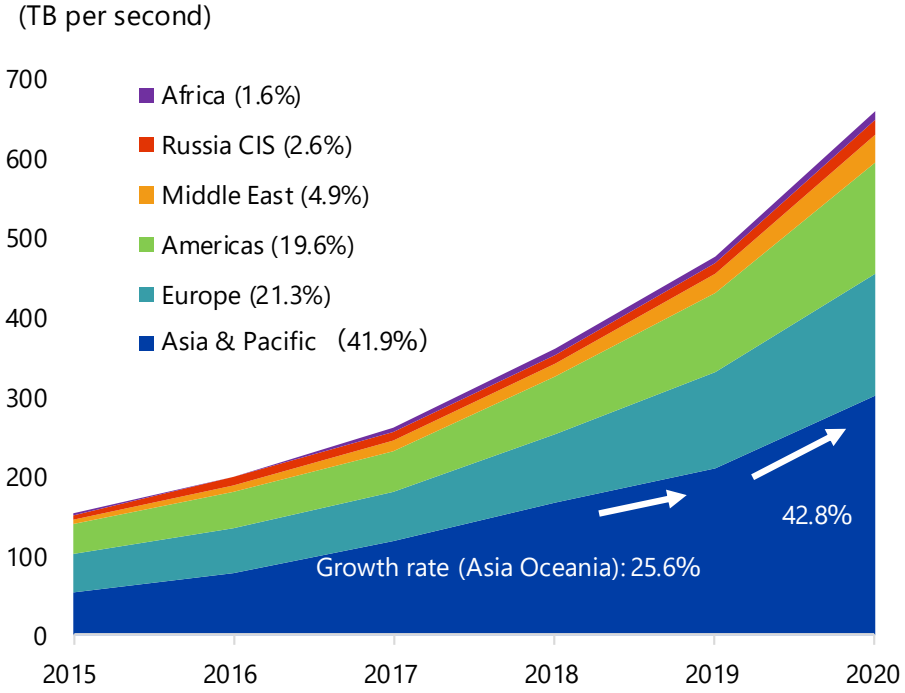


Note: Listed the top 5 import countries in 2020. Digital-related service trade is defined as "communication/computer/information service trade."
Source: Compiled from trade statistics for each country and region

4 Rapidly increasing cross-border data distribution volume

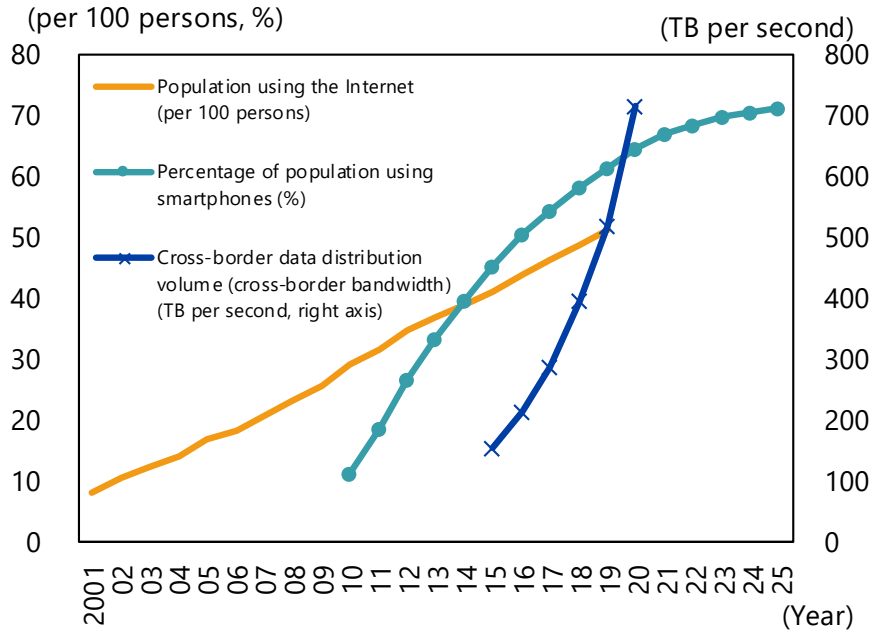
- The expansion of the data distribution volume in Asia Oceania in 2020 is remarkable, with a growth rate of 42.8% which is much higher than the growth rate in 2019 (25.6%).
- The population using smartphones has continued to grow year by year, increasing from 11.2% to 64.7% in 10 years from 2010.

Trends in cross-border data distribution volume (by region)



Note: Figures in parentheses indicate the composition ratio in 2020.
Source: Compiled from ITU (International Telecommunication Union)

Trends in Internet/smartphone and cross-border data distribution volume



Note: The value of the cross-border data distribution volume in 2020 is an estimated value.
Source: Compiled from ITU and eMarketer

5 Radically advancing COVID-19 Technology worldwide

- As COVID-19 spread, restrictions on outing and refraining from events continued to be imposed around the world, and the COVID-19 tech business developed in response to the new lifestyle.
- Sectors that realize non-contact and remote environment, including IoT, VR, and EC, are showing new expansions in business.

New business that became popular after the spread of COVID-19

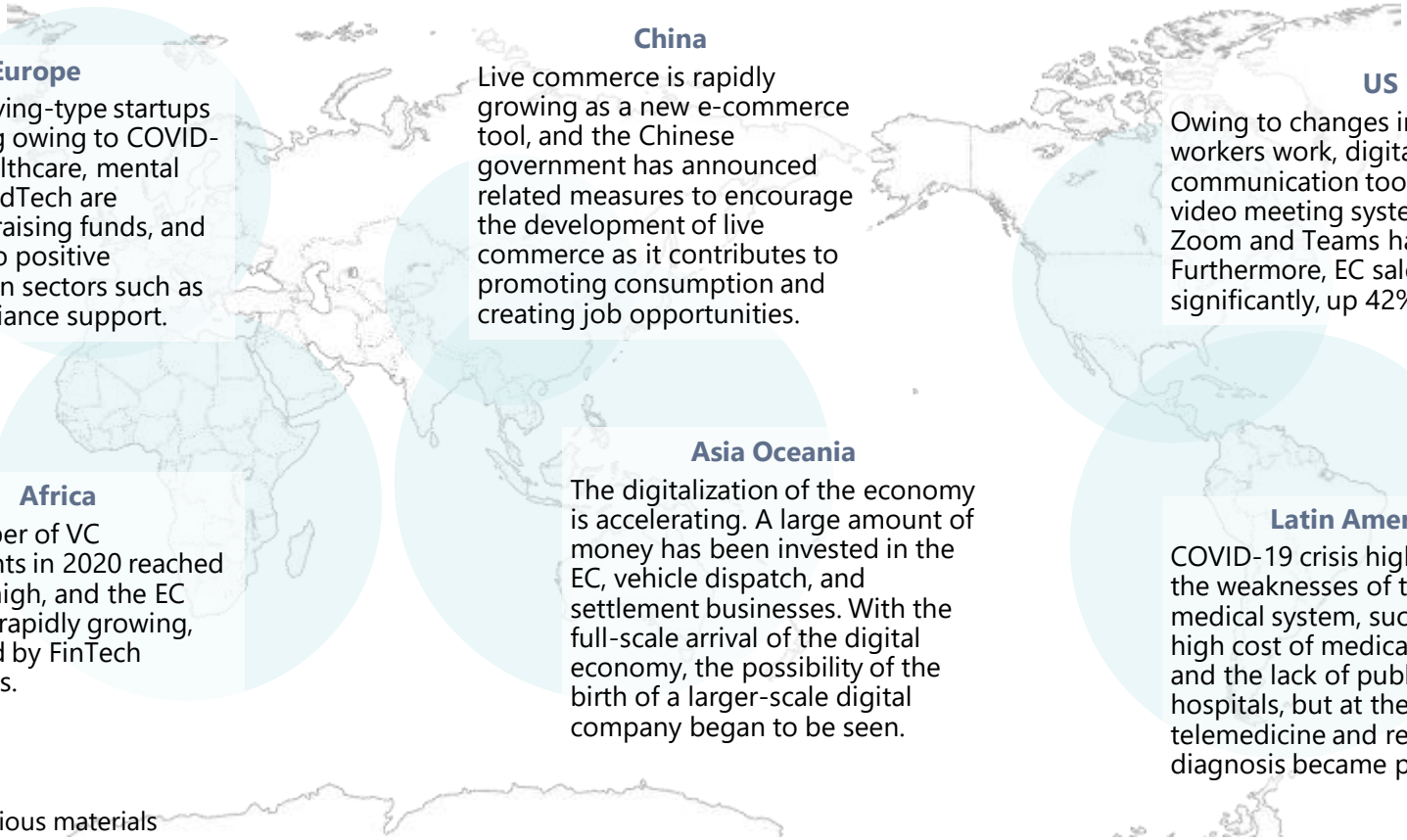
Digital Technology	Handling sectors	Responding to new business and needs under COVID-19
IoT/AI	Control of human flow, avoidance of 3 types of congestion	Understanding behavior with AI camera and sensor camera (Locarise, Owl/Japan)
	Contactless, automation	Development of technology to recognize hand movements with AI (Motion Gestures/Canada)
		Establishing an unmanned store without a cash register in partnership with restaurant operator Levy (American Express/USA)
		Popularization of cashless payment (LinkAja/Indonesia)
XR	More realistic experience	Virtual private view using VR (KE Holdings/China)
		Watching sports (KDDI/Japan, Intel/USA)
	Establishing a system for remote works	Utilize VR to check prototypes (AGC/Japan)
EC	Responding to shopping demand amid restrictions on going out	Assisting deliver of small grocery stores (Mercato/USA)
		Marketing through live commerce (Taobao Live, Wechat/China)
Cloud	Telemedicine	Providing a video clinic platform (Doctolib/France)
		Development of a terminal for sharing data measured at home with doctors (TytoCare/Israel)
	Remote work	Enhancing video conferencing capabilities stepwise to meet the needs of teleworkers (Microsoft/USA)
		Providing a platform for virtual events (Hopin/UK)
Others	Delivery	Providing home delivery service for last mile logistics (JOKR/Germany)
	DX	Providing DX promotion know-how and services for SMEs (Compre dos Pequenos/Brazil)
	Increase in stay-at-home demand	Development of instant play video games that do not require app downloads (Playco/Japan)
		Expansion of video streaming services (NETFLIX, US)

Source: Various materials

6 New post-covid-19 businesses developing around the world

- Especially after COVID-19 in various parts of the world, movements to create new businesses such as online communication and electronic settlements are gaining momentum, and VC investment has reached record highs in countries and regions such as Latin America, Europe, and Africa.
- Live commerce is rapidly developing in China and is attracting a lot of attention as a new e-commerce tool.

New businesses after COVID-19 (by region)



Europe

Problem-solving-type startups are emerging owing to COVID-19 crisis. Healthcare, mental health, and EdTech are successfully raising funds, and there are also positive movements in sectors such as GDPR compliance support.

China

Live commerce is rapidly growing as a new e-commerce tool, and the Chinese government has announced related measures to encourage the development of live commerce as it contributes to promoting consumption and creating job opportunities.

US

Owing to changes in the way workers work, digital communication tools, including video meeting systems such as Zoom and Teams have developed. Furthermore, EC sales increased significantly, up 42% year-on-year.

Africa

The number of VC investments in 2020 reached a record high, and the EC market is rapidly growing, supported by FinTech companies.

Asia Oceania

The digitalization of the economy is accelerating. A large amount of money has been invested in the EC, vehicle dispatch, and settlement businesses. With the full-scale arrival of the digital economy, the possibility of the birth of a larger-scale digital company began to be seen.

Latin America

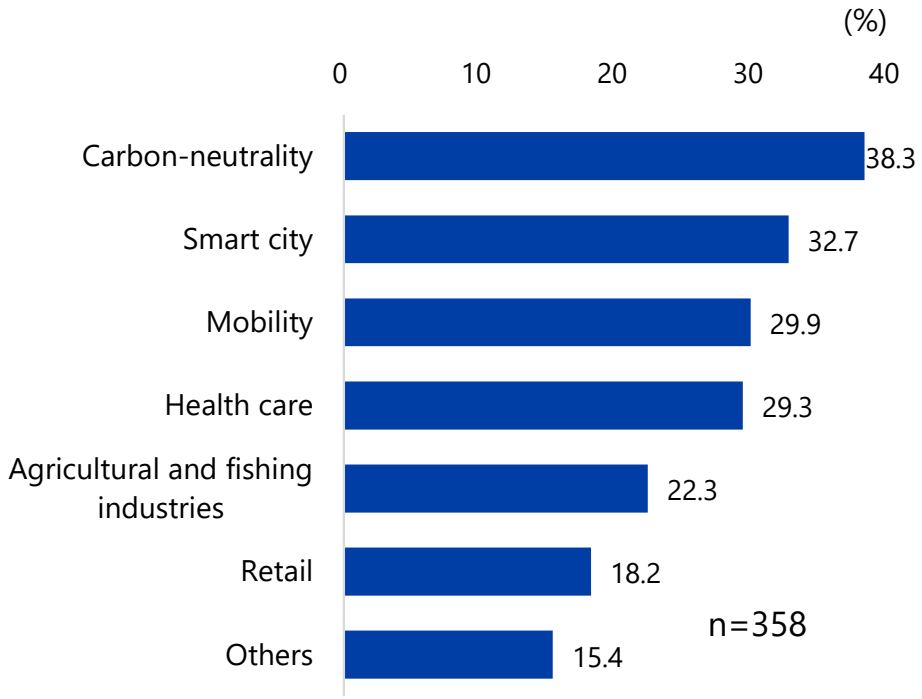
COVID-19 crisis highlighted the weaknesses of the Brazilian medical system, such as the high cost of medical insurance and the lack of public hospitals, but at the same time, telemedicine and remote diagnosis became popularized.

Source: Various materials

7 Japanese companies' strong interest in DX through overseas collaboration

- COVID-19 increases momentum for Digital Transformation (DX) and green investing.
- JETRO launched the Japan Innovation Bridge (J-Bridge) to support collaboration and cooperation with start-ups in Southeast Asia, India, Israel, Europe, and US in the DX/green sectors.

Sectors of interest in overseas collaboration/cooperation



Note: "n" refers to the number of persons in charge at J-Bridge member companies.
Source: Compiled from a questionnaire to JETRO support companies

Japan Innovation Bridge (J-Bridge)

Providing information for momentum building	Providing information on individual companies and sectors through online events
Sourcing of promising companies	Discovering overseas companies such as start-ups and introducing them to interested companies in Japan (J-Bridge members)
Matching	Support for matching processes between Japanese companies and overseas companies through experts, etc., formation of events originated overseas
Project formation	Support for joint demonstrations between Japanese and Asian companies

8 Japanese companies' strong interest in DX through overseas collaboration

- JETRO supports cooperation/collaboration between Japanese companies and overseas companies that contribute to solving social issues in the DX sector.
- In the projects selected for the demonstration project, there are precedents for business development while providing solutions to local social issues in sectors such as medicine and agriculture.

Precedents of DX by Japanese companies' collaboration/cooperation with overseas companies

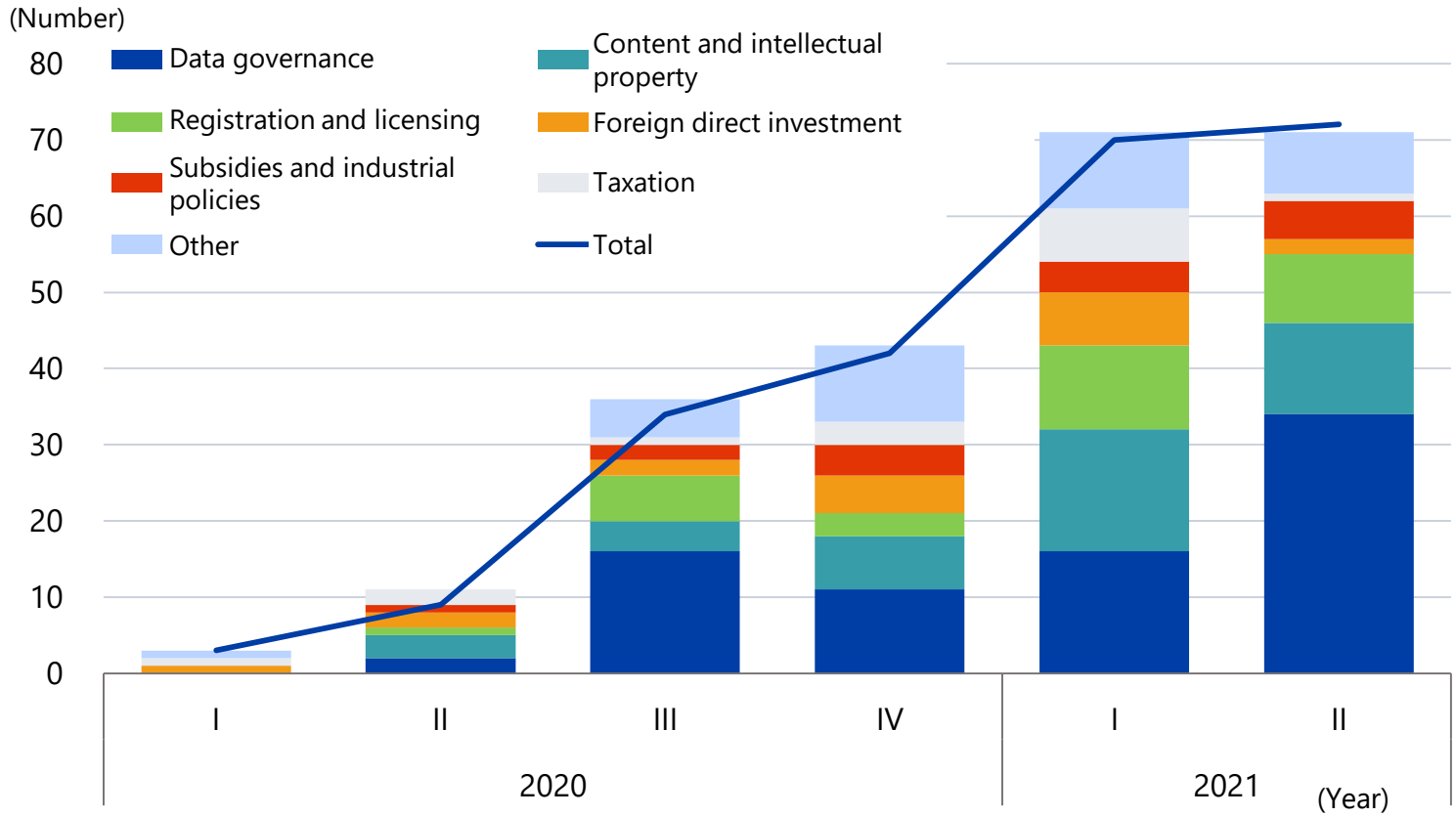
Company name (Domestic location) (Establishment year)	Target country / Target industry	Outline of the demonstration project	Pertaining local social issues	Expected effects
Fuso Machine Works (Mie) (1953)	Indonesia / Manufacture of machinery and equipment	・A system was introduced to analyze the loss of overall facility efficiency, which indicates the degree of utilization efficiency of each facility while utilizing IoT, and the effect was verified.	・Indonesia's manufacturing industry lacks the knowledge for production efficiency improvement through the use of digital technology.	・Which equipment to be improved with its productivity is accurately determined by loss analysis of total equipment efficiency.
Ubie (Tokyo) (2017)	Singapore / Medical care	・Preliminary medical interviews using AI are conducted to verify ease of use and status of usage.	・In Singapore, medical expenditure is increasing, and its reduction is an issue. ・At the medical site, there is no custom of prior interviews, and the diagnosis results are uneven.	・The burden of doctors and patients is reduced and the efficiency is improved by shortening consultation and waiting times. ・The quality of medical care is improved uniformly by collecting necessary information prior to treatment through preliminary medical interviews.
Sagri (Hyogo) (2018)	Thailand / Agriculture	・Visualizing the information of each farmland by using satellite data, machine learning, etc.	・Thailand is aiming to promote smart agriculture. However, the cost of data collection is an issue.	・Development of data infrastructure ・Contributing to the realization of smart agriculture through consultation, etc. based on data

Note: Listed in order of company establishment date.
Source: Compiled from materials related to the demonstration project conducted by JETRO

9 Increased regulations such as data governance

- The acceleration of digital transformation due to the COVID-19 pandemic is increasing the introduction of regulations on data governance and contents.
- International organizations are working to harmonize rules concerning privacy information and data transfer across country borders, while companies are required to address regulations of individual countries.

Status of global digital regulations introduction



Note:1) Limit to measures implemented or introduced as of June 23, 2021, among all measures recorded in the database.
2) The total numbers of whole cases and each category do not match, as some measures are classified into multiple categories.
Source:"Digital Policy Alert" (Global Trade Alert)

10 Economy digitalization leading to review of tax system

- The introduction of digital service taxes, mainly targeting platform users, also surged around 2020.
- In response to base erosion and profit shifting (BEPS), the OECD discussed a new taxation formula focusing on introducing digital taxation and a minimum tax rate. In July 2021, 130 countries and regions reached an agreement on the outline, aiming to introduce it by the end of 2023.

Trend in digital service tax introduction (since 2019)

Year	Month	Country	Target Industry	Tax Rate (%)
2019	Jan.	France*	SNS, online advertising	3.0
	Jul.	Hungary	Online advertising	7.5
2020	Jan.	Italy	Online advertising and online marketplace	3.0
	Jan.	Austria	Online advertising	5.0
	Jan.	Tunisia	Applications and digital services sale	3.0
	Mar.	Turkey	Online advertising, content sales, etc.	7.5
	Apr.	UK	SNS, search engines, and online markets	2.0
	Apr.	India	E-commerce operator	2.0
	Jul.	Poland	Video streaming platform	1.5
2021	Jan.	Spain	Online advertising and data transfer services	3.0
	Jan.	Kenya	Online trading	1.5
	Jan.	Sierra Leone	Online trading	1.5

Note: France postponed the measure until the end of 2020 based on consultations with the US but resumed in December that year.
Source: "Taxation of Digital Economy" (KPMG), JETRO "Biz news," and the Ministry of Economy, Trade and Industry

Comparison of taxation methods for the digital economy

	Existing rules	Digital Service Taxes of Each Country	OECD Digital Taxation Draft
Characteristic of Tax	Formulary distribution of consolidated profit (direct tax)	Taxation on sales (indirect tax)	Formulary distribution of consolidated profit (direct tax)
Target	Permanent establishments (PE), such as branches or subsidiary companies	SNS, online advertising, and platform providing (limited to digital business)	Consumer related businesses, automated digital services (not limited to digital business)
Target Requirement	Income derived from the company's annual business activities	More than a certain level of sales worldwide and in own country	Sales of over 20 billion euros and profit margin of over 10%
Tax Rate	Corporate tax rate under each country's domestic law (about 20 to 30%)	About 1 to 8%	Based on corporate tax rate* under each country's domestic law
Challenge	Transfer business to lightly taxed countries	Response to each country's taxation is required	Elimination trends of each digital service taxes

Note: The tentative agreement is made under the policy of making a minimum tax rate of at least 15%.
Source: OECD and various media reports

11 Negotiations on WTO's EC rules, conclusion on some

- In December 2020, the WTO distributed an integrated negotiating text summarizing the proposals of each country for the first time. From 2021, negotiations will continue in working groups divided by discussion points based on the text.
- Negotiations on several discussion points related to facilitation and reliability are concluding at the working group level.

Overview of the integrated negotiation text

A: Enabling Digital Trade/E-Commerce	
Facilitating electronic transactions	● Electronic transaction frameworks ● **E-authentication, digital certification and e-signatures** ● **E-contracts**
Digital trade facilitation	● **Paperless trading** ● Customs warehouses/free zones ● Electronic invoicing ● Facilitation of logistics and e-payments
Custom duties	● Customs duties on electronic transmissions
B: Openness and Digital Trade/E-Commerce	
Non-discrimination and liability	● Non-discriminatory treatment of digital products ● Prior authorization ● Interactive computer services (limiting non-IP liability)
Flow of information (data)	● Cross-border transfer of information (data) ● Location of computing facilities
Access to Internet and data	● **Open government data** ● Access to the Internet ● Access to online platforms/competition
C: Trust and Digital Trade/E-Commerce	
Trust and digital trade/e-commerce	● **Online consumer protection** ● **Spam**
Privacy	● Protection of personal information/privacy
Business trust	● Source code ● ICT products that use cryptography
D: Cross-cutting issues	
Transparency	● Publication and accessibility of laws and regulations ● Opportunities to comment ● Mechanisms for reporting and notifications
Cybersecurity	● Cybersecurity
Capacity building	● Options for capacity building and technical assistance ● Cooperation between stakeholders, agencies and international organizations
E: Telecommunications	
F: Market access	

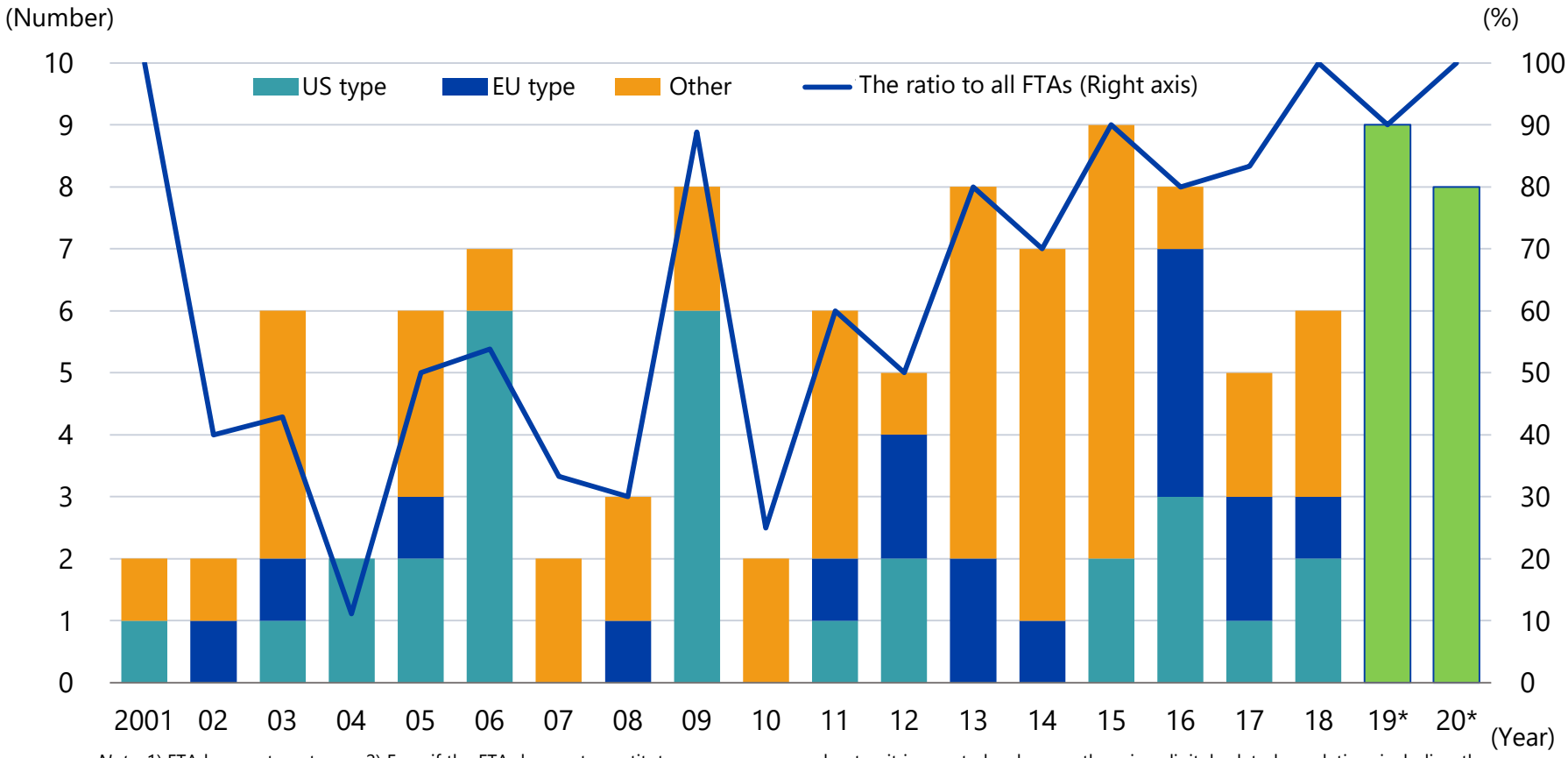
Note: Negotiating members have (almost) finalised negotiating texts for items highlighted with red.

Source: UNCTAD, based on Joint Statement on Electronic Commerce: Facilitator's Reports (INF/ECOM/R/1-7)

12 Many recent FTAs constituting digital trade rules

- FTAs constituting digital trade rules increased particularly in the late 2010s. The ratio of FTAs constituting digital trade rules to all FTAs is also rising.
- In the early days, the US-type FTAs, constituting an e-commerce-specific chapter, took a large part but recently types are more diverse.

FTA including digital trade rules



Note: 1) FTA by enactment year. 2) Even if the FTA does not constitute an e-commerce chapter, it is counted as long as there is a digital-related regulation, including the digitization of trade documents. 3) It also includes field-specific agreements such as the US-Japan Digital Trade Agreement. 4) Created based on source data with supplementing agreements concluded since 2019.

Source: "The TAPED (Trade Agreements Provision on Electronic-commerce and Data)" (University of Lucerne)

13 Sophistication of regulation contents as digital market grows

- Recently, the digital trade rules in FTAs have been expanding both in quality and quantity.
- Since 2015, high-standard rules have spread, such as the TPP Three Principles (free data flow, general restriction on data localization, and prohibition of obligatory source code disclosure).

Development status of digital trade items in FTAs

(Unit: %)

Type	Item	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2018
Facilitation	Domestic electronic trading framework	50.0	68.2	68.6	58.6
	Electronic authentication and electronic signatures	27.8	59.1	65.7	79.3
	Digitization of trade documents	33.3	54.5	54.3	51.7
	Internet interconnection charge sharing	0.0	0.0	0.0	10.3
	No custom duties on electronic transmission	50.0	68.2	74.3	79.3
Liberalization	Non-discriminatory treatment of digital products	16.7	45.5	22.9	34.5
	Liability on a supplier or user of an interactive computer service	0.0	0.0	0.0	6.9
	* Cross-border transfer of information by electronic means	0.0	0.0	8.6	17.2
	* Prohibition of requirements for location of comping facilities	0.0	0.0	0.0	37.9
	Prohibition of requirements for location of computing facilities in financial services	0.0	0.0	0.0	6.9
	Expansion of access to and use of public government data	0.0	0.0	0.0	6.9
Reliability	Online consumer protection	38.9	63.6	74.3	82.8
	Measures against unsolicited commercial messages	0.0	13.6	40.0	72.4
	Personal information protection	27.8	13.6	31.4	48.3
	* Prohibition of requests for source code disclosure	0.0	0.0	0.0	24.1
	Prohibition of requests for algorithm disclosure	0.0	0.0	0.0	3.4
Crossover Matter	Cooperation on cybersecurity matters	16.7	36.4	34.3	55.2
	Reference: Average number of languages used	426	647	666	1,304

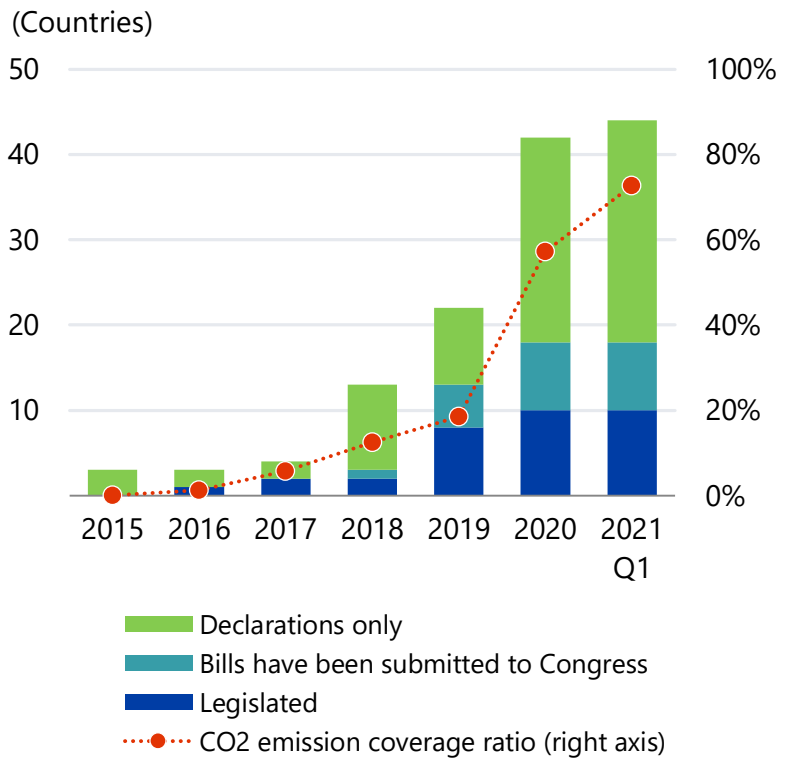
Note: 1) Shaded area represents the ratio of FTAs constituting each item to all FTAs constituting digital trade-related provisions. The higher the ratio, the darker the color. 2) * indicates the TPP Three Principles. 3) After 2019, not all FTAs are covered, and only the agreements listed in the source are categorized.
Source: "The TAPED" (University of Lucerne)

V. The World Heading for Green Growth

1 Major countries competing for GHG reduction targets

- The movement toward carbon neutrality, which balances greenhouse gas (hereinafter referred to as GHG) emissions and absorption, is accelerating worldwide. Countries and regions that account for about 70% of the world's total emissions have declared the goal of carbon neutrality.
- Major countries are raising their GHG reduction targets under the Paris Agreement.

Number of national net zero pledges and share of global CO2 emissions covered



Source: "Net Zero by 2050" (IEA)

GHG reduction targets of major countries

	GHG reduction targets		Percentage of CO_2 emissions in the world
	Medium-term goals	Time of CN achievement	
US	-26% to -28% in 2025 (compared to 2005) → **-50% to -52% in 2030 (compared to 2005)**	2050	14.7%
EU	-40% in 2030 (compared to 1990) → **-55% in 2030 (compared to 1990)**		9.4%
UK	-68% in 2030 (compared to 1990) → **-78% in 2035 (compared to 1990)**		1.1%
Japan	-26% in FY2030 (compared to 2013) → **-46% in FY2030 (compared to 2013)**		3.2%
China	• -65% for CO_2 emissions per GDP in 2030 (compared to 2005) • Commence reduction of emissions by 2030.	2060	28.4%

Note: (1) Red characters are the increase in the numerical targets announced at the Leaders Summit on Climate in April 2021 (but EU announcement was made in December 2020). EU emissions include the UK.
(2) CN stands for Carbon Neutrality.
Source: Compiled by the materials from UN, Ministry of Foreign Affairs, and IEA.

2 Making green growth a pillar of economic recovery

- In addition to responding to the Paris Agreement, an increasing number of countries and regions are advocating green growth strategies to achieve sustainable societies and economies through climate change countermeasures.
- EU, US, South Korea, Thailand, and other countries have made green growth a pillar of economic recovery from COVID-19.

Green growth strategies of major countries

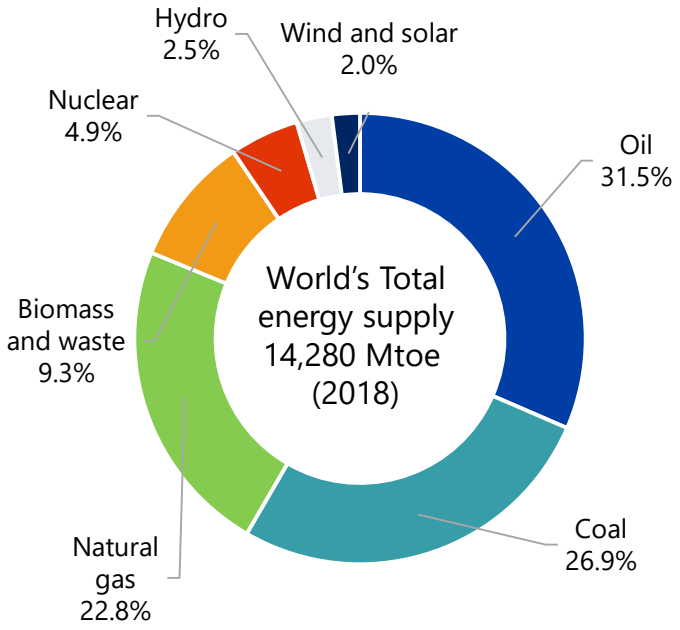
Country/ Region	Growth strategy	Overview
EU	European Green Deal	A growth strategy for realizing a sustainable EU economy. In addition, the Recovery Fund and the Recovery Package will be used to induce investment.
US	U.S. Jobs Plan, etc.	Implementing climate change countermeasures such as subsidies for the installation of EV facilities, electrification of ports, waterways and airport facilities, and sustainable housing construction and renovation.
UK	The 10-point plan for a green industrial revolution, etc.	The plan to support up to 250,000 jobs by 2030 and mobilize £12 billion in public investment and more than 3 times as much from the private sector through enhanced climate change countermeasures.
Japan	Green growth strategies associated with carbon neutrality in 2050	Formulating an action plan that addresses 14 sectors as growth industries that are necessary to achieve carbon neutrality, including the offshore wind power industry, the automobile and rechargeable battery industries, and the housing and building industries. Creating a 2 trillion-yen Green Innovation Fund.
South Korea	South Korea's Green New Deal, 2050 Carbon Neutral Strategy, etc.	Among the South Korean version of the New Deal policies, the Green New Deal aims to supply new and renewable energy sources and to popularize the use of environment-friendly automobiles.
Thailand	Bio-Circular-Green (BCG) Economy	A concept to drive new sustainable growth by simultaneously promoting economic recovery from the damage caused by COVID-19 crisis, progress in environment-friendly technologies such as biotechnology, renewable resources and energy, and improvements in production efficiency.

Note: Targets for contribution to the Paris Agreement (NDCs and INDCs) and measures focused on GHG reduction are not included in this table.
Source: Compiled based on data from various countries and regions

3 About 80% of the world's energy supply comes from fossil fuels

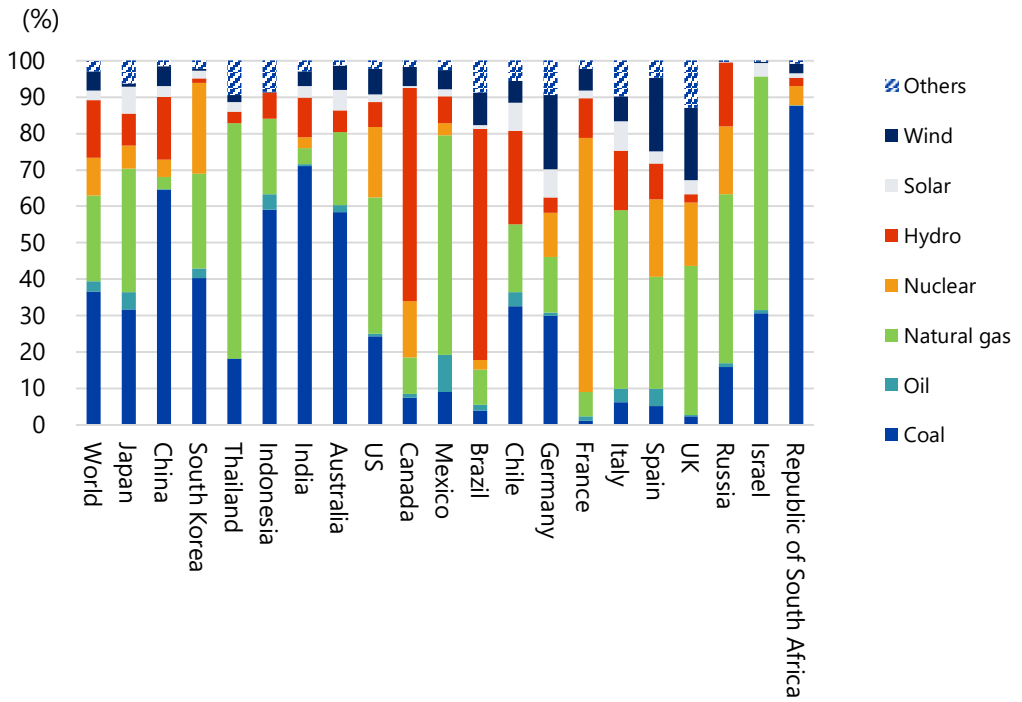
- The world's energy supply is largely derived from fossil fuels, and oil, coal, and natural gas accounted for more than 80% in 2018. Much of this energy was consumed in the form of petroleum products, electricity, etc.
- The composition of power sources in the world and major countries (2019) shows that more than 60% of total power generation is from fossil fuels such as coal, oil, and natural gas. The percentage of electricity generated by hydraulic, solar and wind power was 23.7%.

Breakdown of the world's energy supply (2018)



Note: Mtoe = 1 million tonnes of petrol equivalent. Toe stands for tonne of oil equivalent. 1 toe is the approximate amount of energy that can be obtained from 1 tonne of petrol.
Source: International Energy Agency (IEA)

Composition of electricity generation by power source in the world and major countries (2019)

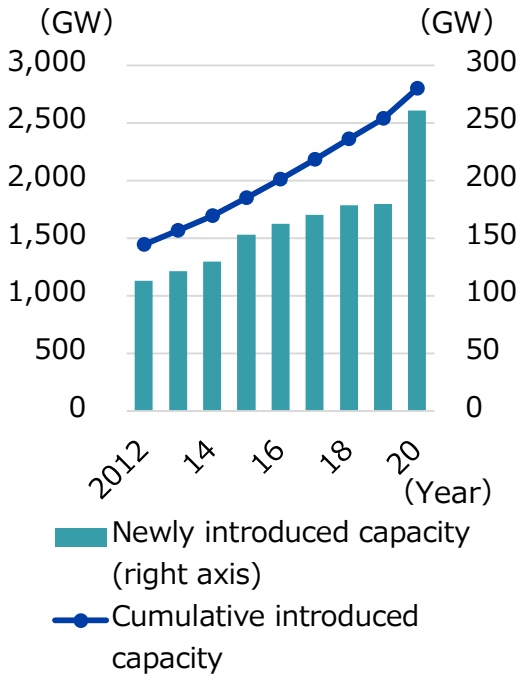


Note: Others include solar thermal, biofuel, waste, tidal power, geothermal, etc.
Source: Compiled based on "World Energy Outlook 2020" (IEA) and "Data and Statistics" (IEA)

4 Renewable energy introduced at a rapid pace

- The world's introduced capacity of renewable energy is growing. The world's newly introduced renewable energy capacity in 2020 reached a record high of 261 GW, up 45.1% year-on-year, centered around China and US.
- The usage of renewable energy as a power generation source is one of the keys to achieving carbon neutrality. Many countries and regions are taking measures to introduce renewable energy. A reduction in the power generation cost by renewable energy is also behind the expansion of its use.

Global installed capacity of renewable energy



Source: "Renewable Capacity Statistics 2021" (International Renewable Energy Agency: IRENA)

Support measures and targets for the introduction and expansion of renewable energy in major countries

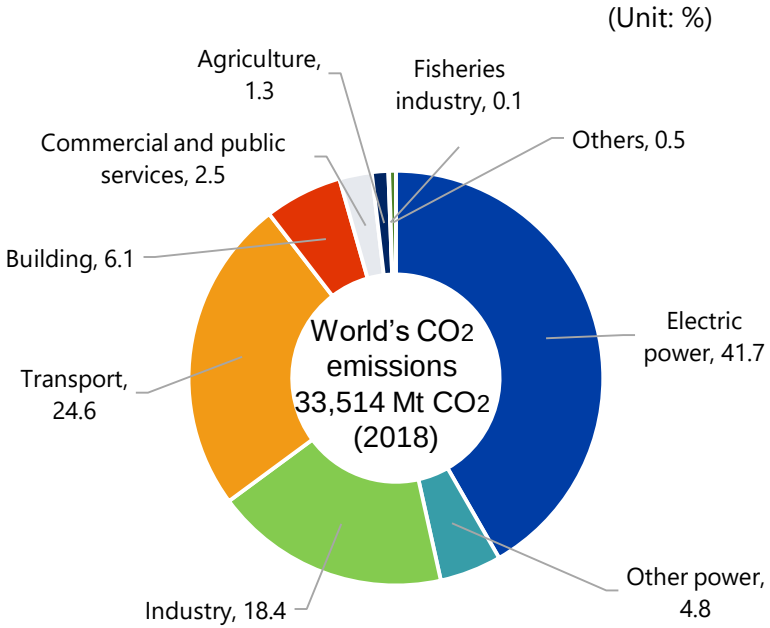
Country/ Region	Strategy, plan	Outline/Objectives
EU	European Green Deal, etc.	Increase the share of renewable energy in EU to 38-40% by 2030.
UK	The 10-point plan for a green industrial revolution, etc.	Quadruple the current amount of offshore wind power to 40 GW by 2030.
US	New NDCs, etc.	Aim to increase offshore wind power to generate 30 GW of electricity by 2030.
Brazil	2050 National Energy Plan (NEP 2050)	Set renewable energy as one of the priority investment sectors and expand solar power generation and wind power generation to break away from excessive dependence on hydropower.
Japan	Strategic Energy Plan (Draft)	Increase the share of renewable energy in total electricity generation to 36-38% by FY2030.
China	Statement at the UN Climate Ambition Summit (December 2020)	Raise the share of non-fossil fuels in primary energy consumption to around 25% by 2030 and increase the installed capacity of wind and solar power to more than 1.2 billion kW.
South Korea	The Third Energy Master Plan	Raise the share of new and renewable energy to 30-35% by 2040.
Indonesia	Medium-Term National Development Plan (RPJMN) 2020-2024	Increase the share of new and renewable energy to 23% by 2024.
Malaysia	Green Technology Master Plan (2017-2030)	Raise the share of power generation capacity from renewable energies such as biomass, biogas, solar power, and small hydropower to 20% of the total installation capacity and operational capacity by 2025.
Saudi Arabia	National Transformation Program "Vision 2030"	Raise the amount of renewable energy generated to be 58.7 GW (including 40 GW from solar power and 16 GW from wind power) by 2030.

Note: NDCs are contributions to the Paris Agreement determined by the country; INDCs are drafts of NDCs.
Source: Compiled based on country and regional data, business briefs, and regional analysis reports.

5 Expected business opportunities creation by significant investment demand

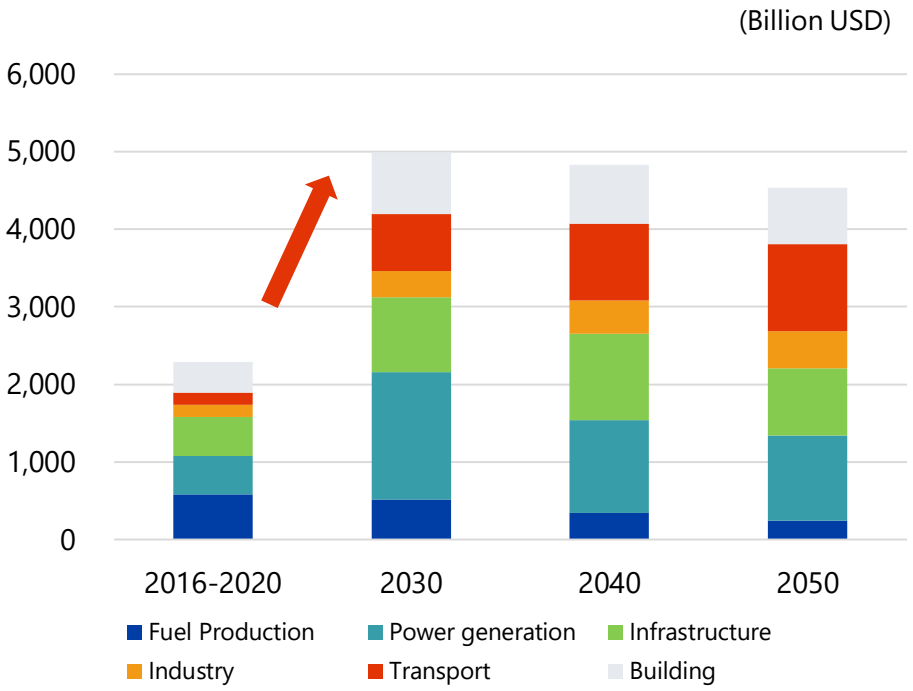
- In 2018, the power generation and heat generation sector accounted for over 40%, which was the largest amount of worldwide carbon dioxide emissions by sector. While the transportation and industrial sectors also account for around 20% each. It is necessary for all sectors to take action to realize carbon neutrality.
- The amount of investment required to realize carbon neutrality by 2050 is expected to augment to $5 trillion per year (as of 2030), which is expected to create business opportunities.

Global carbon dioxide emissions by sector (2018)



Note: Sector definitions are based on IEA.
Source: International Energy Agency (IEA)

Amount of investment required to realize carbon neutrality in 2050



Source: "Net Zero by 2050" (IEA)

6 Carbon pricing being introduced, covering 20% of global emissions

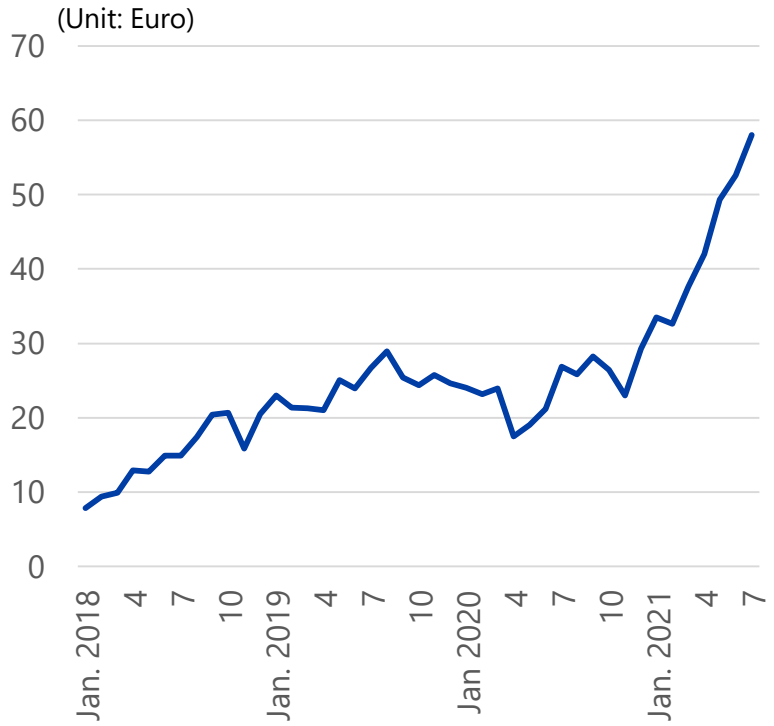
- Countries and regions which introduce carbon pricing (carbon tax and emissions trading system (ETS)) to reduce GHG emissions, are expanding. The number of introductions has at least tripled in the past 10 years to 64. It covers about 20% of worldwide emissions.
- Since December 2020, when EU agreed to raise its GHG reduction target, the EU-ETS price has been on an upward trend, and as of July 2021, it reached the level of above 50 euros per ton of CO2.

Classification and overview of carbon pricing

Description	Carbon tax	Emissions trading system
Pricing	The price (tax per ton of CO_2 emissions) is set by the government.	The price is determined as a result of trade in the market of emission allowances distributed to each entity.
Emissions	The amount of emissions is determined as a result of the actions of each emitting entity based on the tax level.	The government sets an upper limit on emissions. Each entity determines its own emissions and the amount of emission allowances it will buy and sell while watching the market price.
Features	Price is fixed, but there is uncertainty about emission reductions.	The total amount of emissions is fixed, but the price varies.
Number of introducing countries/regions worldwide	35	29
Major introducing countries/regions (carbon price in parentheses, dollars)	Sweden (137), Switzerland (101), France (52), UK (25), Japan (3)	EU (50), California (18), South Korea (16), Tokyo (5), China (n.a.)

Note: Number of introductions and carbon prices are from World Bank data (as of April 2021). Carbon price is the price per ton of CO2 emissions.
Source: Compiled from the materials of Ministry of the Environment, World Bank, etc.

Trend in trading prices in the EU-ETS

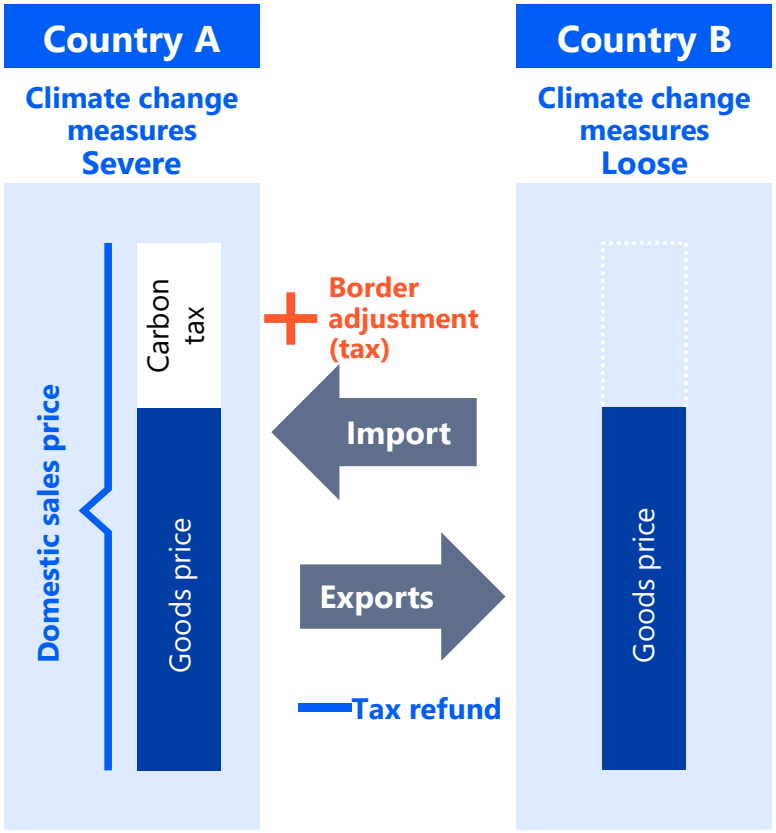


Source: European Energy Exchange

7 Carbon border adjustment considered ahead in EU

- Discussions on carbon border adjustment have begun to make progress mainly in Western countries owing to concerns about carbon leakage (increased imports from countries with lax emission regulations and outflow of production bases).
- There are numerous institutional design issues to be addressed. Consistency with WTO rules is also unprecedented and seems to depend on institutional design. EU released a draft regulation linked to the EU-ETS in July 2021. It is planned to be introduced on a trial basis in January 2023.

Image of carbon border adjustment (from the perspective of country A)



Source: Compiled by JETRO based on various data

Elements of institutional design for carbon border adjustment

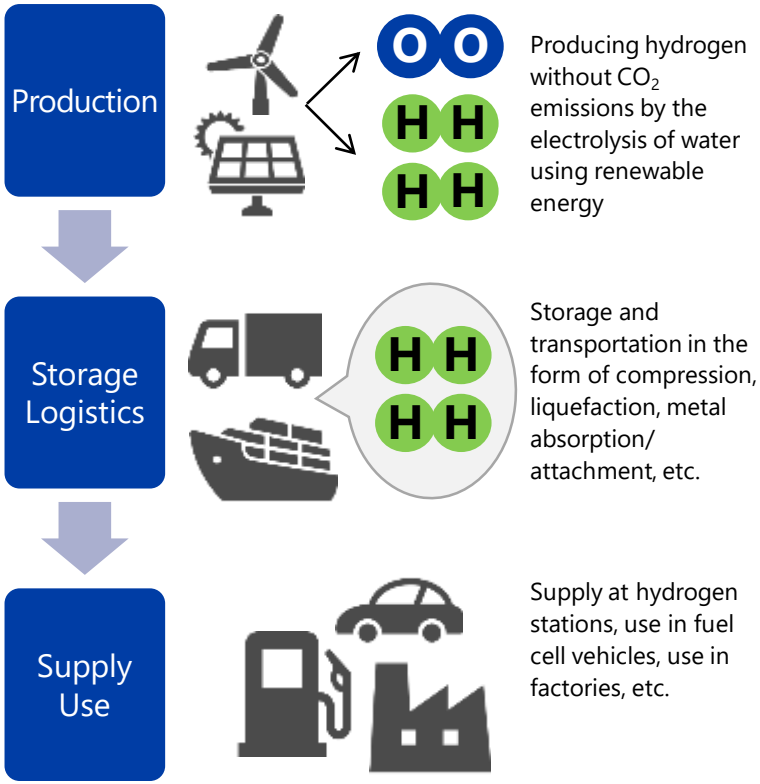
Element	Issues for consideration
Target country	Consideration for developing countries, and consideration of climate change countermeasures in the target countries.
Scope of target sectors	Should it be limited to energy-intensive industries such as steel, aluminum, and cement? Or all import products?
Scope of emissions to be targeted	Include only direct emissions from the factory or also indirect emissions (purchased electricity, raw materials, and parts)?
Calculation method of emissions per product unit	Apply the actual emissions of each factory? Use benchmarks such as international standards?
Carbon price for adjustment calculation	Should it be equivalent to the domestic carbon price (carbon tax, auction price of the emissions trading system)?
Concomitant use of other domestic measures	Treatment of load reduction measures (such as free quotas under the emissions trading system) for domestic products
Use of income	Are they domestic climate change countermeasures? Aid to developing countries?

Source: Compiled from materials of the Ministry of Economy, Trade and Industry, Ministry of the Environment, etc.

8 Hydrogen expected to be used as clean energy

- Hydrogen, which can be stored and transported energy, along with storage batteries, is expected as a new energy source.
- In Europe, measures to promote the production and use of hydrogen have been put forward by EU and other countries. Projects and corporate affiliation to promote the production, transportation, and use of hydrogen can also be seen in countries other than Europe.

The process from production to use of hydrogen



Source: Compiled based on "White Paper on Hydrogen Energy" (NEDO), the Ministry of the Environment

Major hydrogen-related projects and support measures in major countries

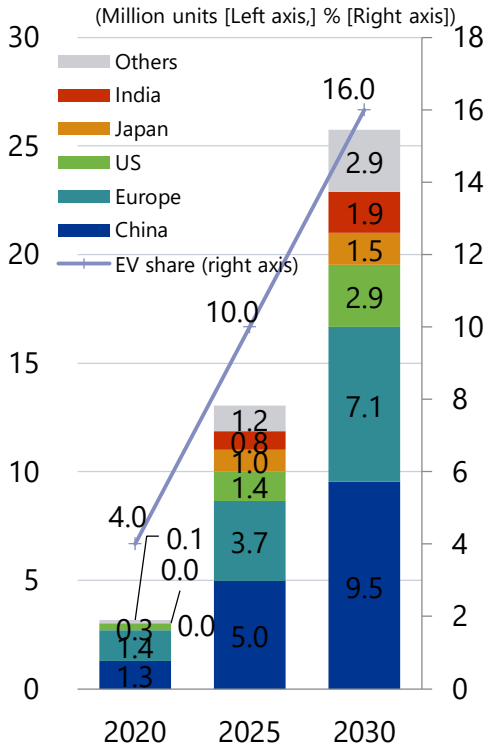
Country	Major projects and support measures
Germany	Implementation of various projects backed by investments from the National Innovation Programme Hydrogen and Fuel Cell Technology (NIP) and the Energy and Climate Fund (EKF), and support measures "Decarbonising in Industry."
France	Projects to popularize fuel cell vehicles, projects related to CO_2-free hydrogen production for industrial use, etc.
Italy	Hydrogen train project by FMN and Trenord, which operate rail transit
Austria	Green hydrogen production and decarbonized steel production project at the steel giant Voestalpine's plant
China	Implementation of various projects based on taxation and subsidies for the development of fuel cell vehicles and hydrogen fuel, and the fosterage of hydrogen-related industries led by local governments
South Korea	A green industrial park was built in Saemangeum in the southwest of the country, and renewable energy and green hydrogen demonstration projects will be promoted.
Australia	Hydrogen Energy Supply Chain (HESC) Project
Saudi Arabia	Green hydrogen and green ammonia production facility is built in NEOM
Chile	Leading Chilean major energy corporation Andes Mining and Energy and German and Italian companies collaborate to establish the country's first green hydrogen plant

Source: Compiled based on each company's website and regional analysis reports

9 The electric vehicle (EV) market expected to expand rapidly in China, Europe and US

- China, Europe and US account for 95% of the worldwide EV new car market (2020). In 2030, the worldwide EV market will be 25.76 million units per year, with China, Europe, and US accounting for nearly 80% of the total, and the 3 regions will continue to lead the EV market for the next 10 years (IEA forecast).
- Major countries are strengthening regulations and support for the expansion of EVs, including China, which aims to expand new energy vehicles by cost reduction through enhanced competitiveness; EU, which aims to create a market by tightening regulations and securing resources; and US, where California is leading the way with stricter fuel efficiency standards than the federal government.

Worldwide annual new car (automobile) sales forecast for EVs (BEVs, PHEVs)



Note: (1) Baseline scenario only for 2025 and 2030
(2) EVs include BEVs and PHEVs.
Source: Compiled by the International Energy Agency (IEA)

EV-related targets, key regulations, and incentives in major countries

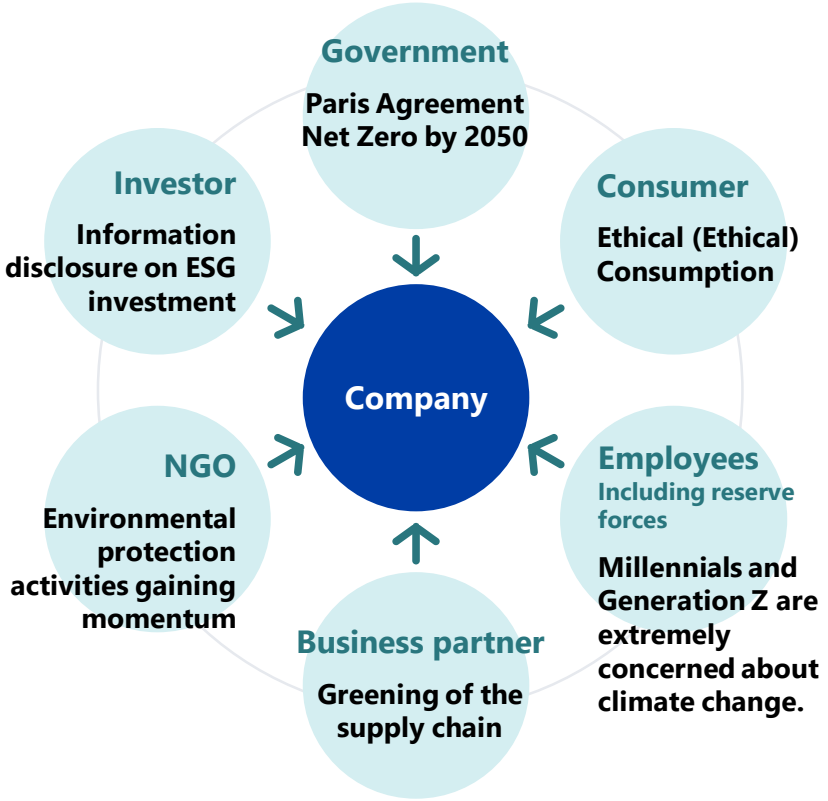
Region/ Country/State	Medium- and long-term goals	Major regulations (governing laws), etc.	Major incentives, etc. (for consumers)
U.S. (Federation)	• 100% Shifting to EV of small and medium-sized vehicles based on new fuel efficiency standards • 500,000 EV charging facilities by 2030 • Shift to renewable fuels (new NDC)	• GHG emission standards (Clean Air Act) • Fuel efficiency standards (Energy Policy and Conservation Act (EPCA))	• Tax credit for certified EVs
US (California)	• All new passenger car and truck sales to be Zero-Emission Vehicles (ZEV) by 2035	• Low-Emission Vehicle (LEV) regulation • Zero-Emission Vehicles (ZEV) regulation	• Clean Vehicle Rebate Program (CVRP)
EU	• All new passenger cars and new light commercial vehicles sales to be Zero-Emission Vehicles (ZEVs) by 2035 • About 3.5 million EV chargers by 2030	• Revised CO_2 emission regulations (EU Regulation 2019/631)	–
Germany	• Introduce 7-10 million EVs by 2030.		• Green car subsidy
China	• Increase the share of new energy vehicles to total new vehicle sales to 50% or more by 2035.	• New energy vehicle credit • Fuel efficiency credit	• Purchase subsidies available (for BEVs with a cruising range of 250 km or more)
Japan	• EV share to new car sales (passenger cars) to be 100% by the mid-2030s. • 30,000 quick chargers (for public use) by 2030	• Energy Conservation Act	• Subsidy for clean energy vehicle introduction project

Source: Compiled from the IEA and other information

10 Stakeholders demand green-related investments from companies

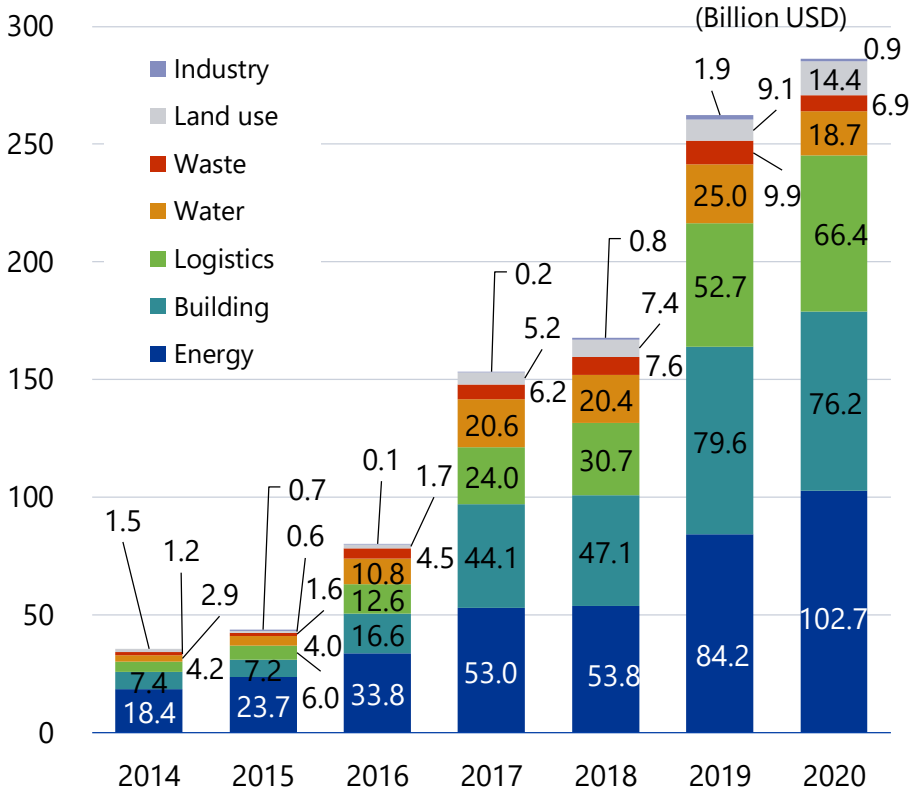
- Pressure on companies to respond to climate change by citizens, employees, investors, and other stakeholders has intensified in recent years and is one of the reasons why companies are making green-related investments.
- The market for environmental bonds (green bonds), which is one of the financing means for the public and private sectors, increase by 11.3% year-on-year to $297 billion in 2020, even during COVID-19 crisis, owing to the recovery in the 2nd half of the year. Energy, buildings, and transportation account for 85% of the total.

Companies that are required by their stakeholders to take action on climate change



Source: Compiled from various sources

Worldwide environmental bond issuance (time series, by usage)



Source: Compiled from CBI

11 Promotion of climate change response by companies through international initiatives

- Global companies are taking the lead in the climate-change response, setting targets, and disclosing information throughout their supply chains by participating in and endorsing international initiatives.
- Efforts to encourage companies to take action throughout whole supply chain include requiring suppliers to disclose information through CDP and setting GHG reduction targets, including Scope 3 of the SBT initiative.

Major international initiatives on climate change

Classification	Name	Overview	Size of participating companies and institutions worldwide
Information Disclosure	CDP	The CDP Climate Change Questionnaire is sent to companies with high market capitalization, companies are rated at their information disclosure and environmental activities based on the responses, and the results are announced to the public.	More than 9,600 companies disclosed information through CDP in 2020.
Information Disclosure	TCFD	It is recommended that companies perform analysis using a 2°C scenario and disclose their governance, strategies, risk management, indicators and targets related to the risks and opportunities to business caused by climate change through financial reports, etc.	More than 2,300 companies have expressed their assent.
GHG reduction	SBT Initiative	Encourage companies to set GHG-reduction targets that are consistent with the Paris Agreement and the scientific evidence. Companies are required to reduce GHG throughout their supply chain, including not only their own direct GHG emissions and indirect emissions from the use of electricity, heat and steam supplied by other companies, but also the emissions of other companies related to their own activities.	The number of participating companies is 1,577, of which 796 are SBT-certified companies whose goal setting has been deemed appropriate.
Use of renewable energy	RE100	An initiative that aims to have 100% of its operations powered by renewable electricity by 2050. One of the WMB's initiatives.	319 companies
Transition to EVs and infrastructure facilities including charging	EV100	Efforts to increase the number of companies making their effort toward transition to electric vehicles or the expansion of infrastructure development by 2030.	110 companies
Energy efficiency improvement	EP100	Efforts to reduce GHG emissions by doubling energy efficiency in business, developing energy management systems, and implementing Net Zero Carbon Buildings.	128 companies
Others	We Mean Business (WMB)	A platform for 10 different initiatives, including SBT, RE100, EP100, EV100, and carbon pricing, in a coordinated manner.	1,965 companies

Note: The scale of participating companies and institutions other than CDP is as of July 5, 2021. The number of companies disclosing information through CDP is based on the CDP's annual report (announced in April 2021).
Source: Compiled based on the Ministry of the Environment, annual reports of each initiative, websites, etc.

12 Startups turn climate change response into a business opportunity

- Global companies and start-ups are aggressively offensive, seeing this as an opportunity to expand their business. Startups that have strengths in technology such as data utilization will work with wisdom toward decarbonization.

Startups active in the green sector

Sector	Company name	Country	Summary of business	Issues to be addressed
Building	vilisto	Germany	Installed sensors recognize when a room is unoccupied and automatically adjust the temperature. Saves 20% of energy for central heating. For corporate customers including those who have offices with fewer workers due to COVID-19 crisis.	Energy conservation in buildings (leads to CO_2 reduction)
Building	tado°	Germany	By connecting the heating and cooling system to the Internet, the temperature, etc., can be controlled for each room via a smartphone. The system senses the opening and closing of windows and the return/departure of residents to/from their homes and adjusts the temperature efficiently. Saves up to 31% in energy consumption. For individual customers.	Energy conservation in buildings (leads to CO_2 reduction)
Buildings (building materials)	Carbon Cure Technologies	Canada	The company has carbon recycling technology that injects CO_2 into concrete building materials. Reduce the usage of cement, which is a source of CO_2 emissions, by immobilizing and effectively using CO_2 during the production of ready-mixed concrete. Investment by Mitsubishi Corporation (announced in January 2021).	Use of CO_2 in the atmosphere (leads to CO_2 reduction)
Food waste	Winnow Solutions	UK	At the time of food disposal, AI ascertains food items and their weight by using cameras and scales. By visualizing food waste, the system users (i.e., restaurants, hotels, etc.) will strive to reduce the amount of waste, achieving CO_2 reduction as well as savings.	Reduction of incineration (landfill) of waste (leads to CO_2 (methane gas) reduction)

Source: Compiled from each company's website, etc.

13 Response toward the goals of global companies and in their supply chain

- Global companies promote climate-change countermeasures for themselves and their entire supply chain by (1) ascertaining the current situation, (2) setting medium- and long-term goals, (3) "success model" in small units, and (4) requesting suppliers for cooperation.
- The content and speed of efforts differ depending on the company and industry, but SMEs with which they have a business relationship will eventually be required to respond. Regardless of the size of the company, it should be regarded as one of the important management issues over the medium to long term.

Global companies' goals and initiatives toward climate-change response

Company (sector)	Medium- and long-term goals	Policies, investment plans, etc.	Specific projects, etc.
Unilever (Food, daily necessities)	• Reduce CO_2 emissions in the supply chain to virtually zero by 2039. • Achieve "carbon positive" by 2030.	• Halve GHG load generated from product life cycles by 2030. • Replace fossil fuel-derived carbon with renewable or recycled carbon in all detergent and clothing products by 2030.	• Achieved 100% renewable energy at Japanese base of the company (November 2015). • Launched the initiative Renewable Carbon with other companies (September 2020). • Participated in "1.5°C Supply Chain Leaders" (September 2020).
Apple (Technology)	• Reduce CO_2 emissions in the supply chain to virtually zero by 2030.	• Established the China Clean Energy Fund with 10 Chinese suppliers and will invest $300 million by 2022.	• Achieved 100% renewable electric power at our own sites in 43 countries (April 2018). • Launched the Supplier Clean Energy Program (October 2015).
Microsoft (Technology)	• "Carbon negative" by 2030 • Completely compensate for all past emissions (direct and indirect) by 2050.	• All electricity to be used will be converted to clean energy by 2025. • Reduce Scope 3 emissions by half by 2030. • Developing and deploying digital technologies to enable suppliers and customers to reduce their carbon footprint.	• Achieved conversion of 100% energy consumption at the company's base in Sweden to renewable energy (November 2020). • Started providing analytical information on CO_2 emissions data (January 2020).
Starbucks (Coffee chain)	• Reduce GHG emissions from direct business operations and supply chain by 50% by 2030 (achieve "Resource-Positive").	• Convert 10,000 stores around the world to eco-friendly stores by 2025.	• Purchase electricity from solar or power storage projects in US (December 2020). • Announced support for the dairy industry's Dairy Net Zero initiative (December 2020).

Source: Compiled from each company's website

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