



# JETRO Global Trade and Investment Report 2019

## The fluctuating international economic order and global business in the future

### Key points

- ◆ **World trade in 2018 was at a record high, however, its growth is slowing down**
  - The slowdown continues in the first quarter of 2019
- ◆ **Global trade flows changing with the tariff fight between the US and China**
  - Negative growth in trade between the US and China
- ◆ **Startups emerging as new business partners**
  - New momentum toward establishing startup ecosystems around the world

Japan External Trade Organization  
(JETRO)

Overseas Research Department

# JETRO Global Trade and Investment Report 2019

## Contents

### Chapter 1: World trade and Japan's trade

- Section 1: Current state of the world economy
- Section 2: World trade
- Section 3: Japan's trade
- Section 4: Impact of trade protectionism

### Chapter 2: Global FDI and Japan's FDI

- Section 1: Global FDI
- Section 2: Japan's outward FDI
- Section 3: Japan's inward FDI
- Section 4: Emerging companies as new business partners

### Chapter 3: Trends in global trade rule formation

- Section 1: Current situation of FTAs in the world and Japan
- Section 2: Recent trends in FTA rule formation
- Section 3: Trends of trade protectionism
- Section 4: Current status and issues of multilateral trade system

#### What is JETRO Global Trade and Investment Report?

##### ■ History

In 1956, JETRO launched “Current Situation of Overseas Markets.” Since then, it has been issued as “JETRO White paper on International Trade,” “JETRO White paper on Foreign Direct Investment” (2 volumes), “JETRO White paper on International Trade and Investment.” Since 2010, “JETRO Global Trade and Investment Report,” has been available free on our website below.

##### ■ Key features

This is an annual report analyzing the trends of the worldwide economy, trade, FDI and trade rules utilizing various data as well as reports from our overseas offices. JETRO Global Trade and Investment Report is a report in which annual trade, investment and trends in trade rules can be understood at a glance.

■ The full text of the report (in Japanese) can be downloaded from the URL below.  
<https://www.jetro.go.jp/world/gtir/>

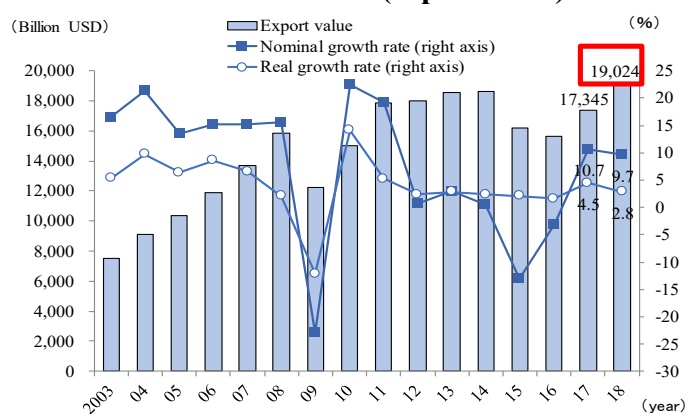
# World trade in 2018 was at a record high, however, its growth is slowing down

■ In 2018, world trade (trade in goods, nominal export value) increased by 9.7% to a record high of \$19.0 trillion (JETRO estimate). However, growth slowed compared to 2017. The reason for this slowing growth is the deceleration of the global economy due to trade disputes and rising tariffs, a decline in business confidence and heightened policy uncertainty.

■ In the same year, exports expanded in many countries and regions, but the growth rate slowed compared to the previous year. Particularly in Europe, exports slowed in the second half of the year. By product category, resource-related products supported global trade expansion on the back of rising fuel prices, while exports of electrical equipment and general machinery (such as semiconductor-related products) declined.

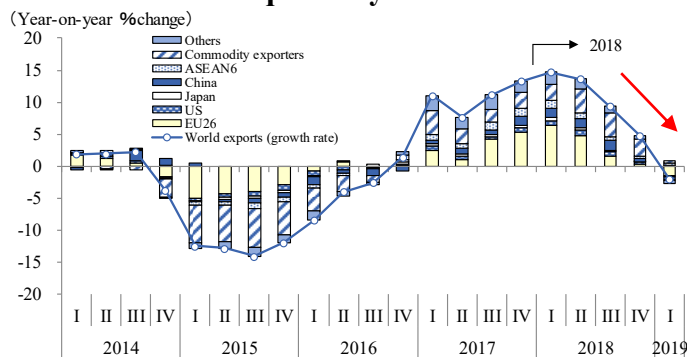
■ Adding up the total trade values of 33 major economies where data was available up to the first quarter of 2019, the total export value showed a decrease of 2.6% compared to the same period last year. Growth was negative for major items such as general machinery (2.3% decrease YoY), electrical equipment (3.4% decrease YoY), transport equipment (4.3% decrease YoY) and chemicals (0.9% decrease YoY). The decline was especially noticeable in machine tools, semiconductor manufacturing equipment and cellular phones.

## Trends in world trade (export basis)



Source: JETRO's estimates based on the trade statistics of respective countries, and WTO data

## Contribution of exports by economies, on a quarterly basis



Note: 1) World exports cover 210 economies. 2) See footnote in the main text regarding the definition of "commodity exporters." EU26 includes all EU member economies excluding two commodity exporters (Greece and Cyprus).

## World trade by country and region (2018)

	Export				Import			
	Value	Share	Growth rate	Contribution	Value	Share	Growth rate	Contribution
US	16,640	8.7	7.6	0.7	25,427	13.0	8.6	1.1
EU	64,543	33.9	9.5	3.2	64,613	32.9	10.4	3.4
Germany	15,607	8.2	7.7	0.6	12,857	6.6	10.5	0.7
Netherlands	7,238	3.8	11.0	0.4	6,457	3.3	12.3	0.4
France	5,819	3.1	8.7	0.3	6,725	3.4	8.7	0.3
UK	4,974	2.6	11.2	0.3	6,552	3.3	5.0	0.2
Japan	7,378	3.9	5.8	0.2	7,481	3.8	11.5	0.4
Australia	2,570	1.4	11.2	0.1	2,271	1.2	2.6	0.0
East Asia	48,047	25.3	9.2	2.3	43,028	21.9	15.1	3.2
China	24,914	13.1	10.1	1.3	21,090	10.8	17.8	1.8
South Korea	6,049	3.2	5.4	0.2	5,352	2.7	11.9	0.3
ASEAN6	14,006	7.4	10.0	0.7	13,728	7.0	13.5	0.9
Vietnam	2,437	1.3	13.3	0.2	2,369	1.2	11.2	0.1
India	3,244	1.7	8.3	0.1	5,144	2.6	14.3	0.4
Brazil	2,399	1.3	10.2	0.1	1,812	0.9	20.2	0.2
Russia	4,493	2.4	25.6	0.5	2,382	1.2	4.7	0.1
<b>World</b>	<b>190,243</b>	<b>100.0</b>	<b>9.7</b>	<b>9.7</b>	<b>196,149</b>	<b>100.0</b>	<b>10.3</b>	<b>10.3</b>
Advanced economies	114,615	60.2	8.0	4.9	121,455	61.9	9.3	5.8
Emerging/developing economies	75,628	39.8	12.3	4.8	74,694	38.1	11.9	4.5
Commodity exporters	30,088	15.8	17.1	2.5	23,822	12.1	5.2	0.7

Note: Figures of "World," "EU," "Advanced economies," "Emerging/developing economies" and "Commodity exporters" were estimated by JETRO. 2) Figures of "EU" include those of intraregional trade. 3) Member countries of ASEAN 6 are Singapore, Thailand, Malaysia, Vietnam, Indonesia and the Philippines. 4) East Asia includes China, South Korea, Taiwan and ASEAN 6. 5) See footnote in the main text regarding the definition of "Commodity exporters" (40 emerging/developing economies and 7 advanced economies). Figures of small countries which were unavailable or unable to be estimated were excluded. 6) Advanced economies include 37 economies based on the definition of DOTs (IMF). Figures for "emerging/developing economies" are calculated by subtracting "advanced economies" from the "world." 7) Highlighted cells indicate countries/regions with a decreased growth rate compared to 2017. Source: Trade statistics of respective economies and WTO data

## World trade by product (export basis, 2018)

	Value	Share	Growth rate	Contribution
Total exports	190,243	100.0	9.7	9.7
Machinery and equipment	77,129	40.5	7.6	3.1
General machinery	22,744	12.0	9.9	1.2
Turbines	1,369	0.7	14.3	0.1
Computer and peripheral equipment	6,084	3.2	11.0	0.3
Semiconductor manufacturing equipment	837	0.4	9.4	0.0
Industrial robots	60	0.0	-0.5	0.0
Electrical equipment	27,560	14.5	8.6	1.3
Communication equipment	6,120	3.2	4.9	0.2
Integrated circuits	7,146	3.8	14.5	0.5
Lithium-ion storage batteries	298	0.2	32.8	0.0
Transport equipment	20,190	10.6	4.6	0.5
Automobiles	9,313	4.9	3.9	0.2
Automobile parts (excluding engines)	4,213	2.2	6.6	0.2
Precision equipment	6,634	3.5	5.4	0.2
Chemicals	26,307	13.8	11.3	1.5
Pharmaceuticals and medical supplies	6,052	3.2	12.8	0.4
Commodity-related products (total)	55,099	29.0	15.5	4.3
Fuel (mineral fuels etc.)	24,604	12.9	28.5	3.1
Non-fuel (metal, food and beverages)	30,495	16.0	6.8	1.1
Metal	15,187	8.0	10.7	0.8
Food and beverages	15,308	8.0	3.1	0.3

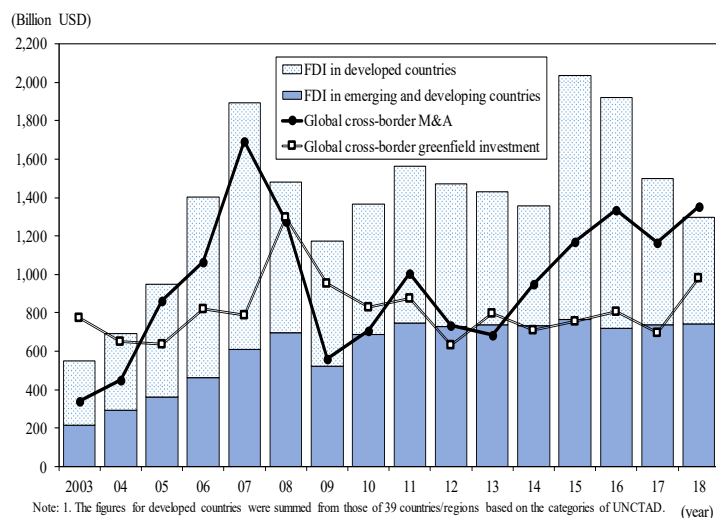
Note: 1) JETRO estimates. See Appendix Annotation II regarding the method of estimation. 2) See Appendix Annotation I regarding the product classification. 3) Highlighted cells indicate items with a decreased growth rate compared to 2017. Source: Trade statistics of respective economies

## Global direct investment decreases over 10%, affected by US tax reform

■ Global inward FDI in 2018 decreased by 13.4% from the previous year to \$1,297.2 billion (on a balance of payment basis, net, flow). Inward FDI in developed countries fell 26.7% to \$556.9 billion, remaining at its lowest level in 14 years, since 2004. Behind this is the large-scale tax system revision (a one-time tax on overseas retained earnings of US companies, etc.) in the United States which resulted in US companies going forward with the domestic repatriation of profits held overseas, for example from European affiliates.

■ The number of global cross-border greenfield investments announced in 2018 increased by 7.2% from the previous year (13,855 cases) to 14,847 cases. Among major economies, the number of investments toward ASEAN showed a remarkable increase. In the case of cross-border greenfield investment in ASEAN by companies from outside of the region, the increase in investment from the US and China is particularly noticeable.

### Trends in global inward FDI (net and flow)



### Top 10 countries/regions in the world in terms of FDI (2018)

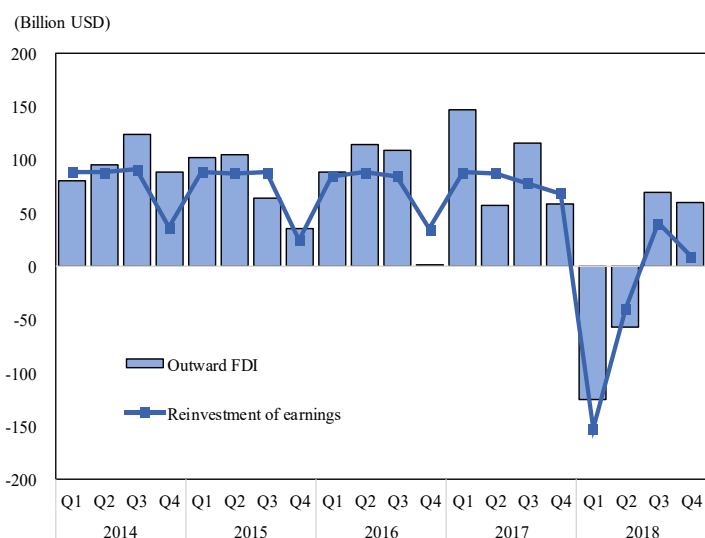
(Unit: Million USD)

Inward FDI		Outward FDI		
1	United States	251,814	Japan	143,161
2	China	139,043	China	129,830
3	Hong Kong, China	115,662	France	102,421
4	Singapore	77,646	Hong Kong, China	85,162
5	Netherlands	69,659	Germany	77,076
6	United Kingdom	64,487	Netherlands	58,983
7	Brazil	61,223	Canada	50,455
8	Australia	60,438	United Kingdom	49,880
9	Spain	43,591	Korea, Republic of	38,917
10	India	42,286	Singapore	37,143

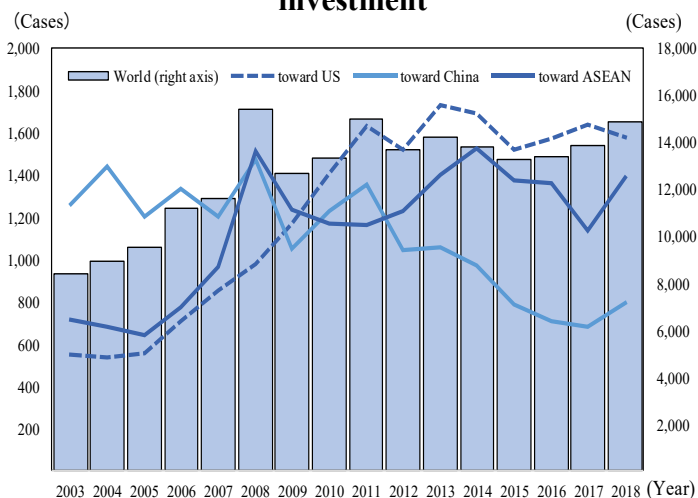
Note: Excluding financial centers in the Caribbean region

Source: Data of UNCTAD

### Change in US outward FDI (net and flow)



### Change in global cross-border greenfield investment



## FTA network expands worldwide, with widespread use by Japanese companies

The total number of free trade agreements (FTAs) in force in the world as of the end of June 2019 was 314, up from 307 in the same period of last year (including customs unions and preferential trade agreements, research by JETRO). The coverage ratio of Japan's enacted FTAs has increased significantly from 23.4% in the previous year to 36.7% with the entry into force of TPP-11 and the Japan-EU EPA. If RCEP, which is under negotiation, comes into force, the coverage ratio will increase to 63.8%.

According to JETRO surveys, the utilization rate of FTAs in the export of Japanese companies to ASEAN countries has increased in recent years. The elimination of tariffs based on FTAs can happen immediately or incrementally, and there are many items that are eliminated after 10 years or more. About 10 years have passed since the entry into force of many FTAs with Asian countries, meaning they are finally reaching their "harvesting period".

### FTA (in force) coverage ratio of major countries/regions

	FTA coverage ratio			FTA partner countries/regions								
	Two-way	Export	Import	1st			2nd			3rd		
Japan	36.7	34.8	38.7	ASEAN	15.2	TPP11	12.0	EU	11.5			
US	39.1	47.0	33.9	NAFTA	29.2	South Korea	3.1	Singapore	1.4			
Canada	83.3	89.2	78.0	NAFTA	66.1	EU	10.1	TPP11	7.7			
Mexico	78.1	88.9	67.5	NAFTA	63.9	EU	8.1	TPP11	6.1			
Chile	83.8	86.3	81.0	China	27.7	US	16.4	EU	13.6			
Brazil	16.3	15.7	17.1	Mercosur	10.1	CAN	3.0	Chile	2.3			
EU28	Total trade	76.3	77.3	75.3	EU	63.8	Switzerland	2.5	Turkey	1.4		
	Extra-regional	34.4	36.9	31.9	Switzerland	6.7	Turkey	3.9	EEA	3.4		
Turkey	50.2	59.0	43.6	EU	42.1	South Korea	1.9	EFTA	1.5			
China	30.6	23.2	39.2	ASEAN	12.6	South Korea	6.8	Taiwan	4.9			
South Korea	67.8	72.5	62.5	China	23.6	ASEAN	14.0	US	11.5			
ASEAN	59.6	57.2	62.0	ASEAN	22.7	China	17.3	Japan	8.4			
Singapore	78.6	74.0	81.1	ASEAN	23.8	China	13.1	TPP11	10.3			
Malaysia	62.4	61.6	63.3	ASEAN	27.2	China	16.7	Japan	7.1			
Vietnam	63.6	51.3	76.4	China	22.7	South Korea	14.0	TPP11	13.1			
Thailand	60.8	59.2	62.3	ASEAN	23.3	China	16.0	Japan	12.0			
Indonesia	66.6	64.0	69.0	ASEAN	23.9	China	19.7	Japan	10.1			
India	16.9	16.8	16.9	ASEAN	11.1	South Korea	2.5	Japan	2.1			
Australia	72.8	75.9	69.3	China	29.6	TPP11	20.8	ASEAN	13.8			
New Zealand	63.0	65.3	60.7	TPP11	26.1	China	21.9	ASEAN	12.2			

Note: 1) The subject countries include countries and regions which have established an FTA as of the end of June 2019. The figures are based upon trade values in 2018.

2) Abbreviations: Andean Community (CAN), the European Economic Area (EEA).

3) Hong Kong and Macao are excluded from the figures of China.

4) Hong Kong is excluded from the figures of ASEAN.

5) Figures for Canada and Singapore were calculated by export statistics which exclude re-exported trade.

6) TPP11 includes only ratification countries in the coverage rate.

Source: Documents and trade statistics from each country's government, "DOTS, June 29th, 2019"(IMF)

### Utilization of FTAs in exports of Japanese firms

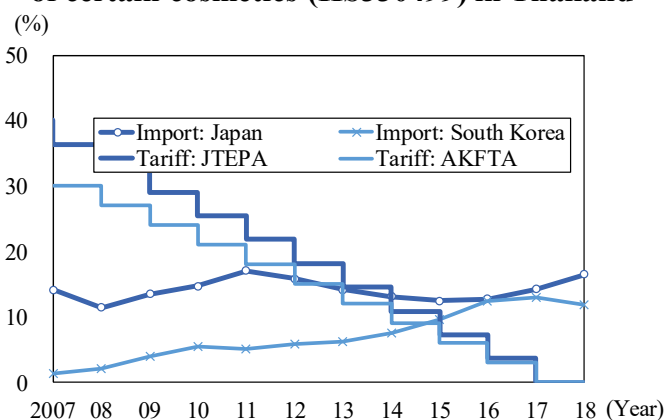
	Survey Year	Usage	FY2016→FY2018 (%)	
Total	FY2016 (n=1,234)	45.1		
	FY2017 (n=1,347)	44.9		+3.1
	FY2018 (n=1,472)	48.2		
Thailand	FY2016(n=824)	47.2		
	FY2017(n=875)	46.7		+1.8
	FY2018(n=957)	49.0		
Vietnam	FY2016(n=575)	33.7		
	FY2017(n=646)	32.8		+6.4
	FY2018(n=727)	40.2		
Indonesia	FY2016(n=554)	39.2		
	FY2017(n=579)	41.3		+5.4
	FY2018(n=597)	44.6		
Malaysia	FY2016(n=532)	31.6		
	FY2017(n=547)	29.3		+1.7
	FY2018(n=580)	33.3		
Philippines	FY2016(n=383)	26.1		
	FY2017(n=412)	26.2		+3.9
	FY2018(n=466)	30.0		
India	FY2016(n=354)	29.1		
	FY2017(n=376)	28.2		+8.3
	FY2018(n=382)	37.4		

Note: 1) The parameter for the total is the number of firms that are performing exports to one or more countries/regions for which FTAs have been implemented at the time of the survey. It does not include firms who did not answer whether they were using an FTA or whose answers were unclear.

2) List includes six countries with which FTAs have been implemented as of the time of the survey and to which many companies are exporting.

Source: FY2018 Survey on the International Operations of Japanese Firms (JETRO)

### Import value shares and tariff rates of certain cosmetics (HS330499) in Thailand



Note: 1) JTEPA stands for "Agreement between Japan and the kingdom of Thailand for an Economic Partnership", and AKFTA "ASEAN Korea Free Trade Agreement." 2) Tariff reductions are based on agreements.

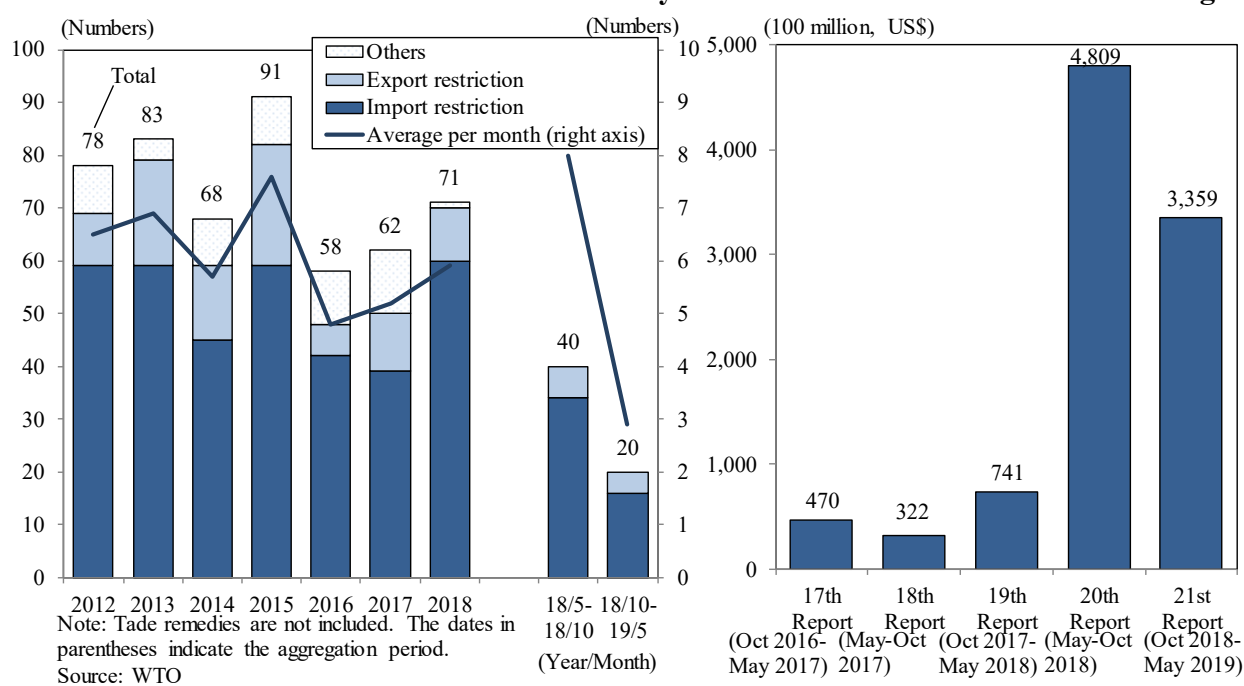
Source: Global Trade Atlas (IHS Markit), JTEPA documents (Ministry of Foreign Affairs), AKFTA documents (ASEAN Secretariat) and Thai Customs

## Growing uncertainty resulting from the expansion in trade-restrictive measures worldwide

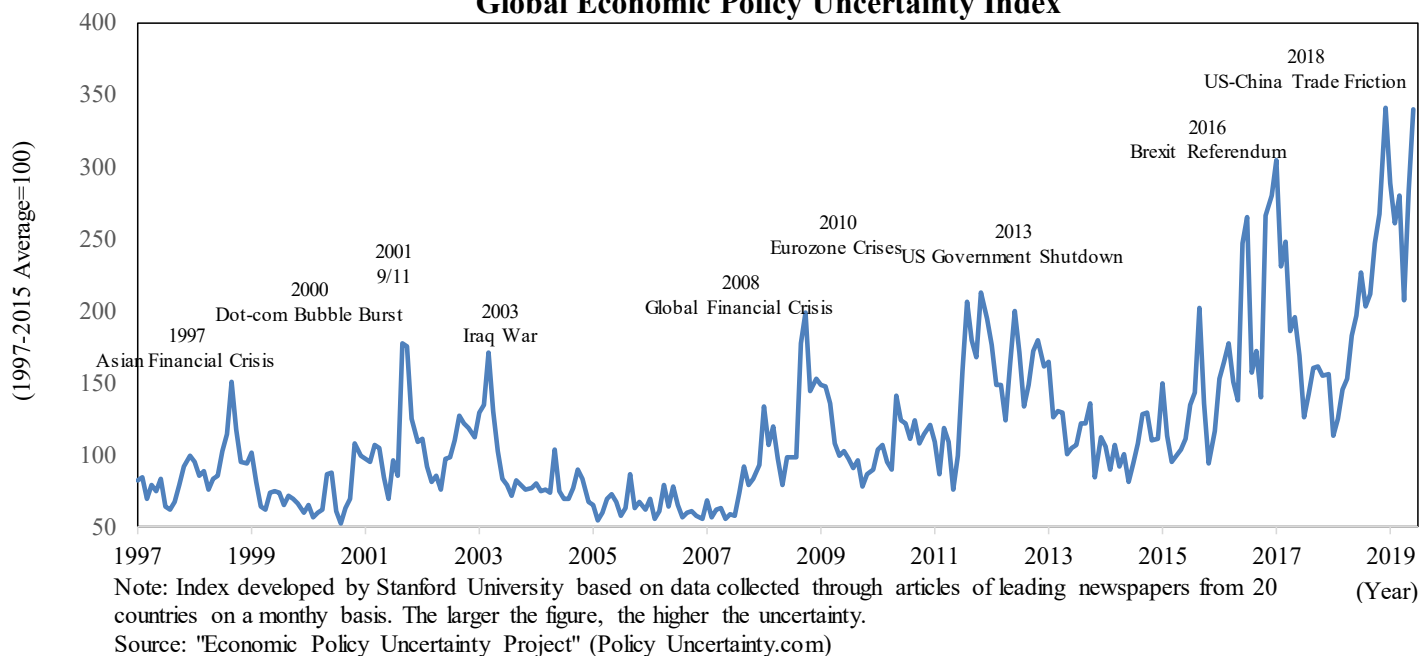
■ According to WTO, G20 economies introduced 71 trade-restrictive measures in 2018, representing an increase for two consecutive years. In addition, the trade coverage of these measures from October 2018 to May 2019 is estimated at US\$335.9 billion, the second largest volume following the previous aggregation period (US\$480.9 billion).

■ In terms of the growing protectionist trend, certain countries and regions have introduced various trade-restrictive measures, such as increased tariffs and the encouragement of the use of domestic products. Within the string of retaliations that have followed the unilateral measures by the United States since 2018 include measures that are not consistent with international trade rules, leading to diminished predictability for firms.

### Numbers of trade-restrictive measures by G20 economies and their trade coverage



### Global Economic Policy Uncertainty Index





## Tariff rate rises as US administration uses all tools available

■ Immediately after the start of the Trump administration, US actively used trade remedy measures, including safeguards implemented for the first time in 16 years. Since 2018, US has also used unilateral trade measure. This includes measures that have not been used for many years. Trading partners have been quick to respond with counter measures against US's actions such as measures under Article 232 of the Trade Expansion Act of 1962 and the repeated tariff increases for Chinese products.

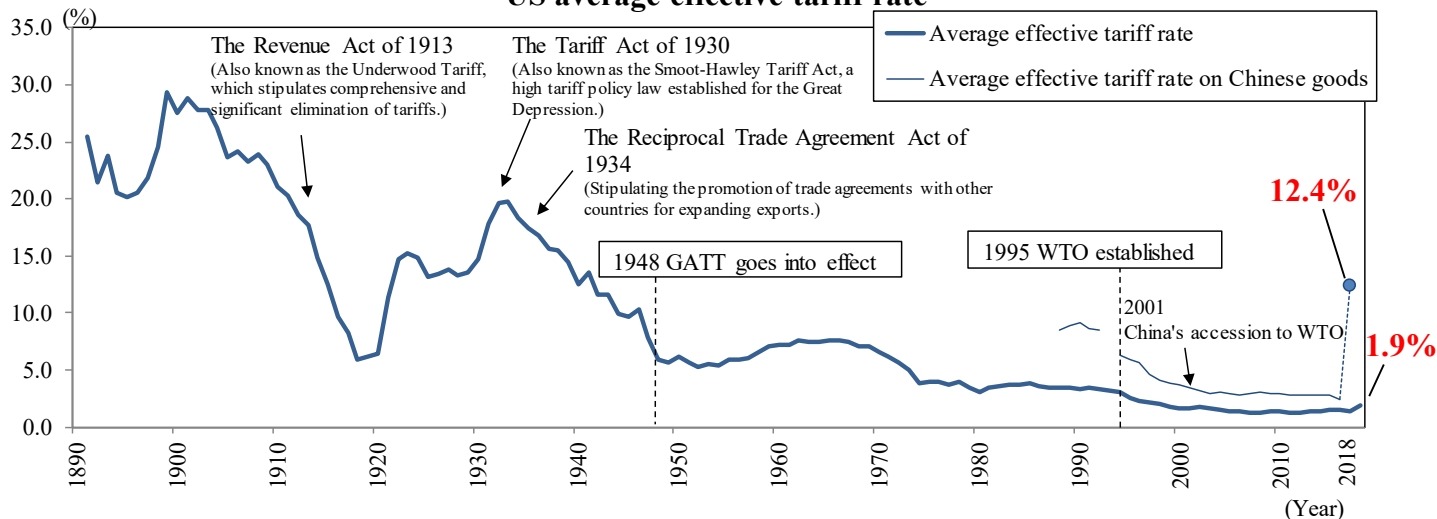
■ For the current US administration, which aims to reduce the trade deficit, there is a high priority for measures against China, with which the US has the largest trade deficit. The US has added tariffs on Chinese products three times since July 2018 under Article 301 of the 1974 Trade Act. The average effectively applied tariff rate of the US rose from around 1.4% in the 2000s to 1.9% in 2018, mainly due to the expansion of additional tariffs against Chinese goods. This is about the same rate as 1998 (2%) shortly after the WTO was established.

### Major trade-related decisions taken by the Trump administration

	Date	Outline of measures
2018	23-Jan	President approves safeguard measures on large residential washers and crystalline silicon photovoltaic products
	8-Mar	Determination of additional import tariffs on steel and aluminum based on the investigation conducted under Section 232 of the Trade Expansion Act of 1962
	22-Mar	Determination of additional import tariffs on imports from China and strengthened investment restriction on Chinese investment in the US, based on the investigation conducted under Section 301 of the Trade Act of 1974
	27-Mar	Agreement in principle of an amended US-Korea FTA (KORUS FTA)
	23-May	Initiation of investigation under Section 232 of the Trade Expansion Act of 1962 regarding the effects of imported automobiles and parts on national security
	6-Jul	First round of additional tariffs on imports from China based on Section 301 of the US Trade Act of 1974
	13-Aug	Enactment of the National Defense Authorization Act (NDAA) for FY2019, including FIRRMA to strengthen CFIUS, ECRA to enhance export control regulations, and stipulations to prohibit government procurement of Chinese telecommunication equipment
	23-Aug	Second round of additional tariffs on imports from China
	24-Sep	Third round of additional tariffs on imports from China
	30-Nov	Signature of the US-Mexico-Canada Agreement (USMCA)
2019	17-Feb	Submission of Section 232 Investigation Report on automobiles and parts from the DOC to the President
	1-Mar	Submission of the 2019 Trade Policy Agenda and 2018 Annual Report to Congress
	15-Apr	Trade Agreement on Goods (TAG) negotiation starts with Japan
	10-May	Raising of tax rate on the third round of additional tariffs on imports from China
	13-May	Announcement of the list of products subject to the fourth round of additional tariffs on imports from China
	16-May	Addition of Huawei and its 68 affiliates to the Entity List of the DOC
	17-May	Proclamation postponing for 180 days a final decision on whether to impose Section 232 tariffs on automobiles and parts
	20-May	Agreement to remove Section 232 steel and aluminum tariffs on Canada and Mexico
	23-May	DOC proposes rulemaking to impose countervailing duties on countries that act to undervalue their currency
	30-May	Announcement of additional tariffs on products imported from Mexico based on the 1977 International Emergency Economic Powers Act → Indefinitely suspended on June 7

Sources: White House, JETRO website

### US average effective tariff rate



Note: Average effective tariff rates on Chinese products are the actual rates imposed from 1989 to 2017. Only the figure for 2018 is estimated by the Peterson Institute for International Economics, taking into account the effects of additional tariffs imposition.

Sources: United States International Trade Commission, World Integrated Trade Solution (World Bank), The Peterson Institute for International Economics

# Import value between the US and China declines after mutual imposition of additional tariff measures

■ 2018 saw a succession of large-scale trade restrictive measures enforced. Particularly since July, the exchange of additional tariff measures between the US and China has been ongoing, continuing in 2019. The scale of trade value subject to major trade restrictive measures since 2018 corresponds to around 4% of the world trade value in 2017.

■ The growth of US imports from China in 2018 slowed down after the imposition of the third round of additional tariffs against China, and since January 2019 it has continued to decline significantly compared to the same month of the previous year. At the same time, China's imports from the US have slowed in growth after the imposition of its first round of additional tariffs, and since October 2018 they have begun declining year-on-year.

## Major trade restrictive measures since 2018

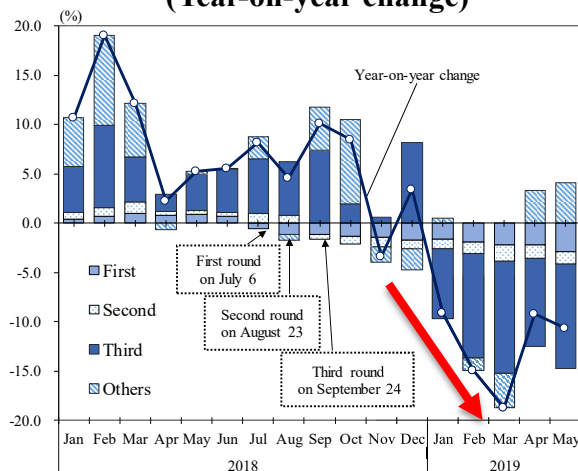
(Unit: Million USD, %)

Tariff-effective date	Countries/regions imposing the measures	Target	Outline	Trade scale (2017)	Percentage of total imports from the target country
3/23/2018	US	All trading partners*	Additional 25% tariffs on 252 steel products	29,033	1.2
3/23/2018	US	All trading partners*	Additional 10% tariffs on 9 aluminum products	17,403	0.7
4/2/2018	China	US	Additional tariffs of up to 25% on 128 products including fruits, pork, steel and aluminum	2,969	2.0
6/22/2018	EU	US	Additional tariffs of up to 25% on 182 products including steel, aluminum, engines, ships and card games	3,206	1.1
7/6/2018	US	China	<b>[First round]</b> Additional 25% tariffs on 818 products including cars, pumps and electronic parts	32,262	6.4
7/6/2018	China	US	<b>[First round]</b> Additional 25% tariffs on 545 products including agricultural products such as soy beans, livestock such as beef and pork, cars and seafood	33,834	22.6
8/23/2018	US	China	<b>[Second round]</b> Additional 25% tariffs on 279 products including plastics, semiconductors, railway cargo and tractors	13,685	2.7
8/23/2018	China	US	<b>[Second round]</b> Additional 25% tariffs on 333 products including cars, chemical products and energy products	14,108	9.4
9/24/2018	US	China	<b>[Third round]</b> Additional 10% tariffs on 5,745 products including furniture, clothes and miscellaneous goods. On May 10, 2019, the rate was raised to 25%.	189,910	37.6
9/24/2018	China	US	<b>[Third round]</b> Additional tariffs of up to 10% on 5,207 products including LNG, electronic products and food. On June 1, 2019, the rate was raised up to 25% among the 4,545 products.	53,393	35.7
Undecided	US	China	<b>[Fourth round]</b> Additional tariffs of up to 25% on 3,805 products including cellular phones, notebook computer and toys.	255,208	50.5

Note: 1) The figures for trade scale were created from the 2017 trade statistics of countries/regions imposing the measures. Target products were counted based on those which were listed at the time restrictive measures were implemented. 2) \* Some countries and regions were excluded.

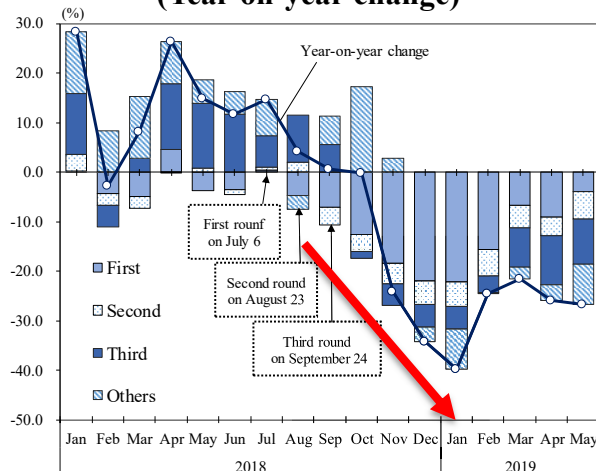
Source: "Biznews" by JETRO, "World Economic Trends II (The 2018 Autumn/Winter Report)" by the Cabinet Office, and trade statistics from each country.

## Trends in import of the US from China (Year-on-year change)



Source: "Trade statistics" by the DOC, "Biznews" by JETRO

## Trends in import of China from the US (Year-on-year change)



Source: "Trade statistics" by China Customs, "Biznews" by JETRO



# Shift in US procurement of computer parts and accessories

■ When comparing China's share of import subject to additional tariff measures in the US before and after imposition of the additional tariffs, China's share declined in many items such as computer parts and digital processing units after imposition.

■ Considering the import of computer parts and accessories, such as printed circuit boards, the imports from China decreased by nearly 60% compared to before additional tariff measures. Meanwhile, the import from Korea increased 2.3 times, and that from Taiwan 2.7 times. Regarding digital processing units (excluding notebook computer), the import from China dropped to about half, while imports from Mexico and Taiwan expanded by 16.4% and 5.8 times respectively.

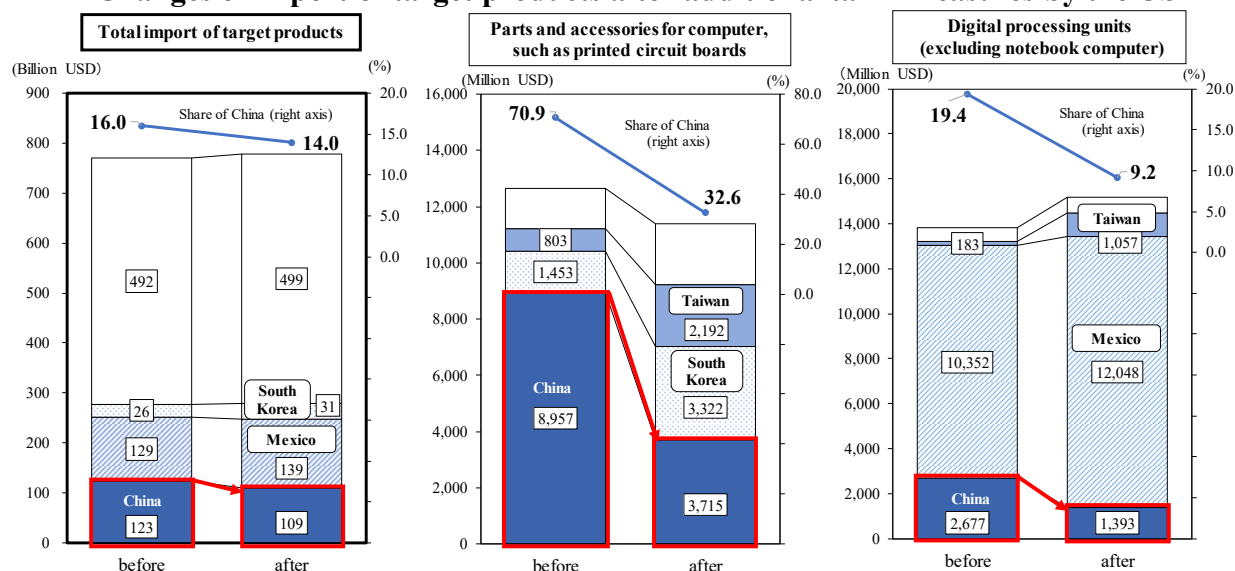
## Changes of China's share of the US imports before and after additional tariff measures by the US

(Unit: Million USD, %)

Target Products					Imports from China (2017)	China's share of US's imports of target products		
						Before (Oct. 2017 - Mar. 2018)	After (Oct. 2018 - Mar. 2019)	Change of share
Total import of target products (3,434 products, counted based on the 6-digit HS code)					235,857	16.0	14.0	- 2.0
1	851762*	Third	Voice, image data transmission / reception devices (switching, routers, etc.)	22,935	51.2	50.2	- 0.9	
2	847330	Third	Parts and accessories for computer, such as printed circuit boards	15,009	70.9	32.6	- 38.2	
3	850440	Third	Static converters (rectifiers, etc.)	4,612	50.2	46.2	- 4.0	
4	847150	Third	Digital processing units (excluding notebook computer)	4,412	19.4	9.2	- 10.2	
5	940161*	Third	Seats with wooden frames, upholstered	3,773	67.7	63.9	- 3.8	
6	940320	Third	Metal furniture (excluding for offices)	3,532	70.3	69.0	- 1.3	
7	940540	Third	Electric lamps and lighting fittings	3,115	67.9	68.5	+ 0.6	
8	420292	Third	Bags (plastic, fiber, excluding suitcases and handbags)	3,002	70.4	65.8	- 4.5	
9	940360	Third	Wooden furniture (excluding for offices, kitchens and bedrooms)	2,736	45.8	42.7	- 3.1	
10	854442	Third	Cables for communication and power (with connectors)	2,688	54.1	53.5	- 0.6	
11	870870	Third	Road wheels and parts and accessories for motor vehicles	2,358	58.7	56.0	- 2.7	
12	848180	Third	Cocks (made of steel, copper)	2,235	28.5	30.7	+ 2.2	
13	854370	Second	Electrical devices with individual functions (such as LED bulbs)	2,213	34.1	27.7	- 6.4	
14	847170	First	Automatic data processing storage units	2,137	18.6	4.9	- 13.7	
15	940510	Third	Chandeliers and other electric ceiling or wall lighting fittings	2,136	53.0	54.7	+ 1.7	
16	940179*	Third	Seats with metal frames, not upholstered	2,035	87.6	86.2	- 1.4	
17	870899	Third	Parts and accessories for motor vehicles	1,903	14.3	14.6	+ 0.3	
18	391810	Third	Vinyl floor covering	1,805	84.3	87.3	+ 3.0	
19	850811	Third	Vacuum cleaners (less than 1500-watt output)	1,714	77.4	76.1	- 1.4	
20	853710	Third	Equipment for electrical control and distribution (less than 1,000 volts)	1,681	16.1	18.2	+ 2.0	

Note: 1) Target products released based on the 8-digit HTS code were re-counted in the level of the 6-digit HS code (a total of 3,434 products). 2) Codes with \*, partially include non-target products. 3) In the case that a product is targeted in multiple phase, it was listed with the largest import amount. 4) Colored cells are products of which the share has shrunk by 10%points or more after imposition. Source: "Trade statistics" by the DOC, "Biznews" by JETRO

## Changes of import of target products after additional tariff measures by the US



Note: 1) The period of "Before": Oct. 2017 - Mar. 2018. The period of "After": Oct. 2018 - Mar. 2019. 2) Only the two countries/regions with the largest increase in share of US's total import of all target products as well as each individual product are displayed. 3) Share of China is that of total imports of target product by the US. Source: "Trade statistics" by the DOC, "Biznews" by JETRO

# China's procurement of soybeans and cotton shifts to Brazil and other countries

■ When comparing the US share of the import subject to additional tariff measures in China before and after imposition of the additional tariffs, the US share shrank in items such as soybeans and cotton by more than 30% after imposition.

■ In regard to China's soybean imports, the import from the US, which was its largest trading partner in the category, decreased 90% from before imposition. Meanwhile, the import from Brazil increased 1.9 times, and that from Canada increased 2.5 times. The import of cotton from the US decreased 45.7%, while imports from Brazil and Australia both increased approximately five times.

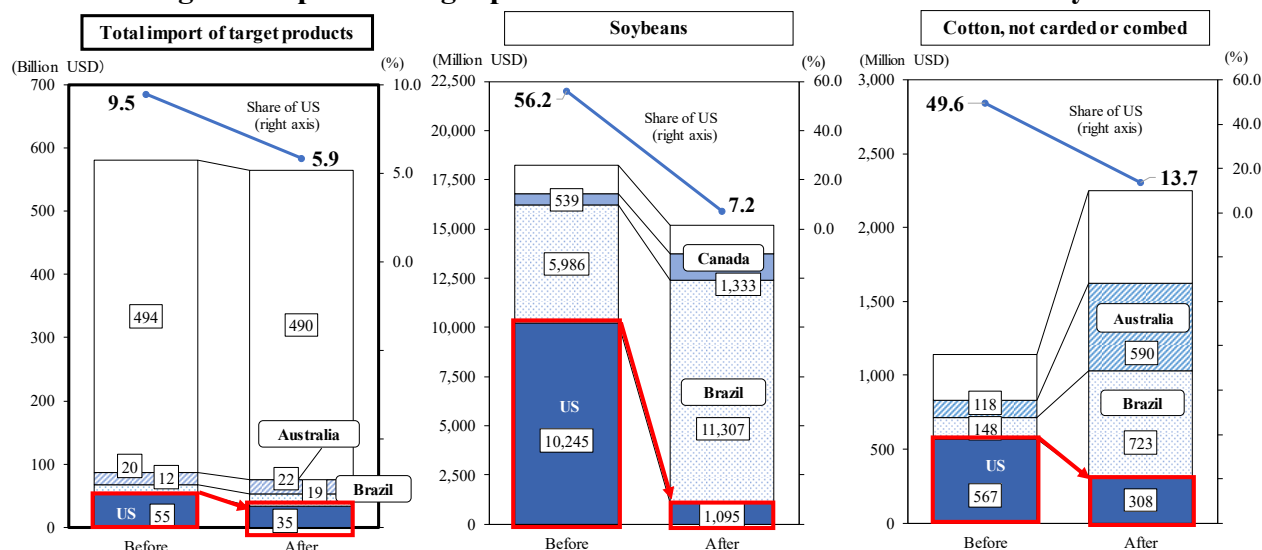
## Changes of US's share of China's imports before and after additional tariff measures by China

(Unit: Million USD, %)

Target Products				Imports from the US (2017)	US share of China's imports of target products		
					Before (Oct. 2017 - Mar. 2018)	After (Oct. 2018 - Mar. 2019)	Change of share
Total import of target products (4,078 products, counted based on the six digit HS code)				101,334	9.5	5.9	-3.6
1	120190	First	Soybeans, other than seeds	13,959	56.2	7.2	-49.0
2	870323*	First	Passenger cars with engine over 1,500 cc but not over 3,000 cc	10,318	25.1	17.8	-7.3
3	271112	Second	Liquefied propane gas	1,761	26.4	0.0	-26.4
4	470710	Second	Waste paper (such as unbleached kraft paper)	1,694	51.8	37.0	-14.8
5	870380*	First	Electric-powered vehicles	1,403	94.2	93.4	-0.8
6	740400	Second	Copper waste and scrap	1,390	18.6	4.7	-13.9
7	470321	Third	Chemical woodpulp (of softwood)	1,069	22.2	15.9	-6.3
8	520100	First	Cotton, not carded or combed	980	49.6	13.7	-35.9
9	100790	First	Grain sorghum, other than seeds	956	98.2	0.0	-98.2
10	410150	Third	Whole hides of cows and horses (exceeding 16 kg)	892	55.4	52.5	-2.9
11	020649	First	Offal of swine except livers, edible, frozen	874	46.7	9.7	-37.0
12	760200	Second	Aluminum waste and scrap	832	30.2	29.0	-1.2
13	440791	Third	Oak wood	829	84.7	73.1	-11.6
14	902780	Third	Instuments and apparatus for analysis	820	26.1	23.4	-2.6
15	870324*	First	Passenger cars with engine over 3,000 cc	784	10.2	8.2	-2.1
16	847989	Third	Machines and mechanical appliances with individual functions	764	8.9	6.0	-2.9
17	260300	Third	Copper ores and concentrates	671	2.6	0.0	-2.6
18	870840	First	Gear boxes for motor vehicles	660	11.9	8.2	-3.7
19	852349	Third	Optical media for recording sound or other phenomena	647	29.4	25.4	-4.0
20	271111	Third	Liquid natural gas	644	7.9	0.9	-7.0

Note: 1) Target products released based on the eight digit HS code were re-counted in the level of the six digit HS code (a total of 4,078 products). 2) Codes with \*; partially include non-target products since January 2019. 3) In the case that a product is targeted in multiple measures, it was listed under the measure with the largest import amount. 4) Colored cells are products of which the share has shrunk by 30% or more after imposition. Source: "Trade statistics" by China Customs, "Biznews" by JETRO

## Changes of import of target products after additional tariff measures by China



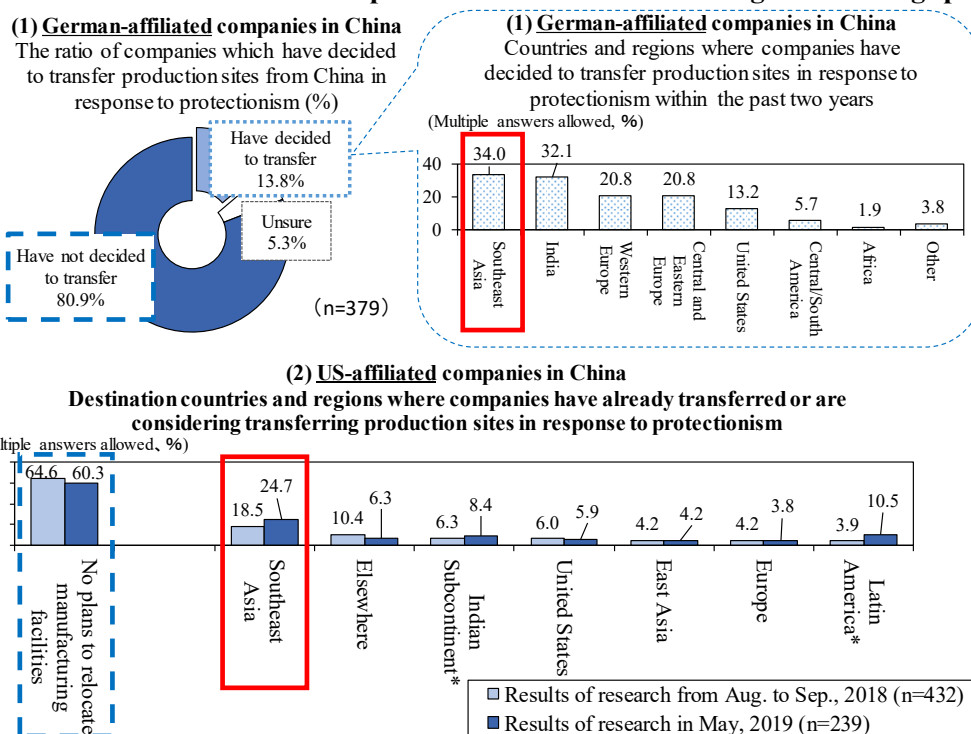
Note: 1) The period of "Before": Oct. 2017 - Mar. 2018. The period of "After": Oct. 2018 - Mar. 2019. 2) Only the two countries/regions with the largest increase in share of China's total import of all target products as well as each individual product are displayed. 3) Share of US is that of total imports of target products by China. 4) As data on "gold (HS7108)" (included in target products) was not disclosed through China's trade statistics before March 2018, gold is excluded from total import of target products.

Source: "Trade Statistics" by China Customs, "Biznews" by JETRO

## Southeast Asia as a candidate for transferring production bases

Although a number of foreign-affiliated companies in China did not have plans to transfer their production bases when asked in surveys, some companies had begun to review their production system. Should the decision be made to transfer production and bases to other countries in response to protectionism, foreign-affiliated companies in China listed Southeast Asia as a candidate location.

### Candidate regions where German and US companies in China are considering transferring production sites



Note: 1. Duration: (1) From August 27 to October 22, 2018; (2) The periods of research are from August 29 to September 5, 2018, and from May 16 to 20, 2019.

2. Target companies are (1) members of the German Chamber of Commerce and Industry in China with production sites in China, and (2) members of the US Chamber of Commerce and Industry in China and Shanghai with production sites in China.

3. In graph (2), "Indian Subcontinent" includes India, Bangladesh, Pakistan and Sri Lanka, and "Latin America" includes "Mexico". (Research in May 2019 was done only in "Mexico".)

4. For other details, refer to the documents below.

Source: (1)"German Business in China Business Confidence Survey"(The Delegations of German Industry and Commerce in China), (2)"Impact of US and Chinese Tariffs on American Companies in China"(AmCham China and AmCham Shanghai)

### Trends of global companies which were affected by additional tariff measures by the US and China (major cases)

	Time of announcement	Company	Head office location	Field	Outline
For Chinese market	Jul. 2018	Tesla	US	Electric vehicles	Constructed an EV production plant in the suburbs of Shanghai
	Apr. 2019	Harley-Davidson	US	Motorcycles	Moved its motorcycle production from the US to Thailand
	May. 2019	BMW Group	Germany	Automobiles	Moved its SUV production from the US to China (Shenyang)
	May. 2019	Ford Motor Company	US	Automobiles	Planning to start production of a new model car (Lincoln) in China
For US market	Jul. 2018	Volvo Cars (Zhejiang Geely Group Holding)	Sweden (China)	Automobiles	Moved its SUV production from China to Europe
	Oct. 2018	Nidec Corporation	Japan	Motors	Moved its production of cars and home electronic parts for the US from China to Mexico
	Feb. 2019	TCL Corporation	China	TV	Started construction of TV production plants in Vietnam for domestic sales and the US market
	May. 2019	Ricoh Company	Japan	Multifunction printers	Moved main production of main multifunction printers for the US market to Thailand from China
	May. 2019	Brooks Running Company	US	Shoes	Moved most production of running shoes from China to Vietnam
Jun. 2019	Sharp Corporation (Foxconn Technology Group)	Japan (Taiwan)	PCs	Moved a part of production of notebook PCs from China to Vietnam	

Note: Some cases may include production other than for the Chinese or US market.

Source: Media coverage and press releases

## Downturn in global economy resulting from trade issues, WTO reform becomes critical agenda

■ The global economic outlook is dominated by risks of downturn. According to estimates by international organizations, when looking at the economic impact of trade tensions, the harm to corporate sentiment and investment is more serious than the additional tariff measures. Therefore, even from the viewpoint that trade tensions adversely affect the global economy, maintaining and strengthening the multilateral trade system is considered important.

■ Amidst the negative impact of trade tensions, there spreads a sense of crisis that the rulemaking, monitoring and dispute settlement mechanism of the WTO in its current state are insufficient. In particular, recovery of the dispute settlement function is not expected in the short-term due to the issue regarding appointing Appellate Body members. With the improvement in terms of fairness and reliability of the judicial function by Appellate Body, which has been in place since the inception of the WTO framework, it should be resolved as soon as possible.

### Outline of IMF's analysis of the impact of global trade tensions on the economy (GDP)

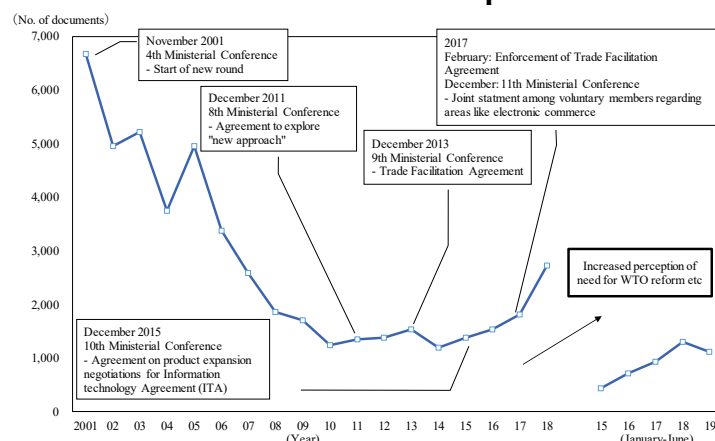
Scenario		Impact on economy (GDP) (%)			
		World	US	China	Japan
(1) Measures already implemented	2019	-0.11	-0.15	-0.56	0.03
	2020	-0.12	-0.16	-0.46	-0.00
	2023	-0.08	-0.16	-0.23	-0.03
(2) Additional tariffs on all mutual imports between US and China	2019	-0.20	-0.20	-1.16	0.08
	2020	-0.23	-0.27	-0.95	0.01
	2023	-0.14	-0.31	-0.37	-0.05
(3) Additional tariffs on cars and parts	2019	-0.25	-0.61	-1.00	-0.04
	2020	-0.35	-0.69	-0.88	-0.15
	2023	-0.25	-0.55	-0.41	-0.24
(4) Impact on sentiment of firms	2019	-0.50	-0.74	-1.27	-0.23
	2020	-0.51	-0.76	-1.04	-0.34
	2023	-0.29	-0.55	-0.47	-0.27
(5) Impact on financial market	2019	-0.78	-0.91	-1.63	-0.47
	2020	-0.82	-0.95	-1.41	-0.66
	2023	-0.32	-0.56	-0.51	-0.34

Note: Each scenario is as follows:

- 1) The US imposes additional tariffs of 10% on aluminum imports, 25% on steel imports, 25% on \$50 billion of imports from China and 10% on an additional \$200 billion of imports from China (rising to 25% in 2019). US trading partners impose retaliatory tariffs of an equivalent amount, except in the case of the 10% tariff on \$200 billion in Chinese imports. In this case, China responds with additional tariffs of 7% on \$60 billion of US imports (rising to 17% in 2019).
- 2) In addition to the above, from 2019 the US imposes additional tariffs of 25% on a further \$267 billion of imports from China, and China responds with additional tariffs of 25% on all imports from the US.
- 3) In addition to the above, from 2019 the US imposes additional tariffs of 25% on all imported cars and car parts, with trading partners imposing retaliatory tariffs of an equivalent amount.
- 4) In addition to the above, the sentiment of companies worsens, and investment declines.
- 5) In addition to the above, the financial market is negatively affected.

Source: "WEO, October 2018" (IMF)

### Major developments surrounding the WTO and number of documents published



Note: The number of documents in which the word "WTO" has been published in 39 major overseas newspapers/magazines which could be identified since 2001.

Source: "Factiva (July 2, 2019)" (Dow Jones), website of Ministry of Foreign Affairs, various materials

### Function of WTO and evaluations

Function		2014	2018	2019	
		Publication year of JETRO Global Trade and Investment Report			
		Evaluation		Challenges	
Legislative	Multilateral trade rule formation and trade liberalization negotiations	×→△	△	△	Difficulties in decision making among all members. Lack of US involvement in the WTO. (Same as 2018)
Monitoring	Deterrence of protectionism by investigating and publishing the implementation status of current trade rules	○	○→△	△	Elimination of market-distorting measures such as subsidies. Improvement of monitoring function to ensure that all members comply with their notification requirements.
Judicial	Judicial settlement of trade disputes and its implementation by Dispute Settlement Body	○	◎→△	▲	The suspension of the Appellate Body is not the suspension of the dispute settlement function (panel procedures remain), but two of the three members of the current Appellate Body will have their terms end on December 19.

Note: Each symbol is only to illustrate the current situation of the WTO, and not intended to undervalue the significance and function of the organization.

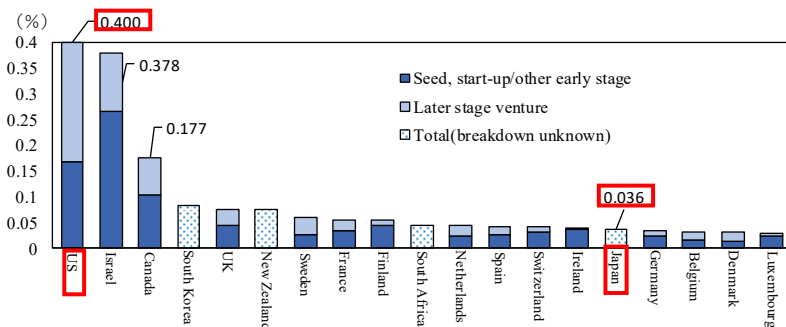
Source: "Global Trade and Investment" (JETRO, respective years), and various materials

# Emerging companies show presence in major developed countries

■ According to the National Venture Capital Association (NVCA), global venture capital (VC) investment reached 254.3 billion dollars in 2018. Breaking down the amount of VC investment by economy, the highest is the US, followed by China and then Europe. When comparing VC investment as a percentage of GDP, that for the US (0.4%), and Israel (0.378%) is more than 10 times higher than other major developed countries like Japan (0.036%). In recent years, while the ratio for major developed countries overall has been climbing, it has only seen minute growth in Japan.

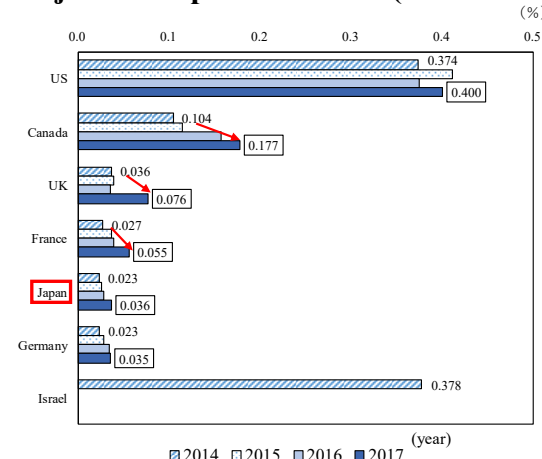
■ Ecosystems which produce emerging companies such as startups are created by multiple factors such as people aiming to start their own business, capital, a structural foundation for companies and legal regulations. They continuously produce startups that specialize in business progressiveness and pursuit of innovation and work to promote corporate renewal.

**VC investments as a percentage of GDP (2017)**



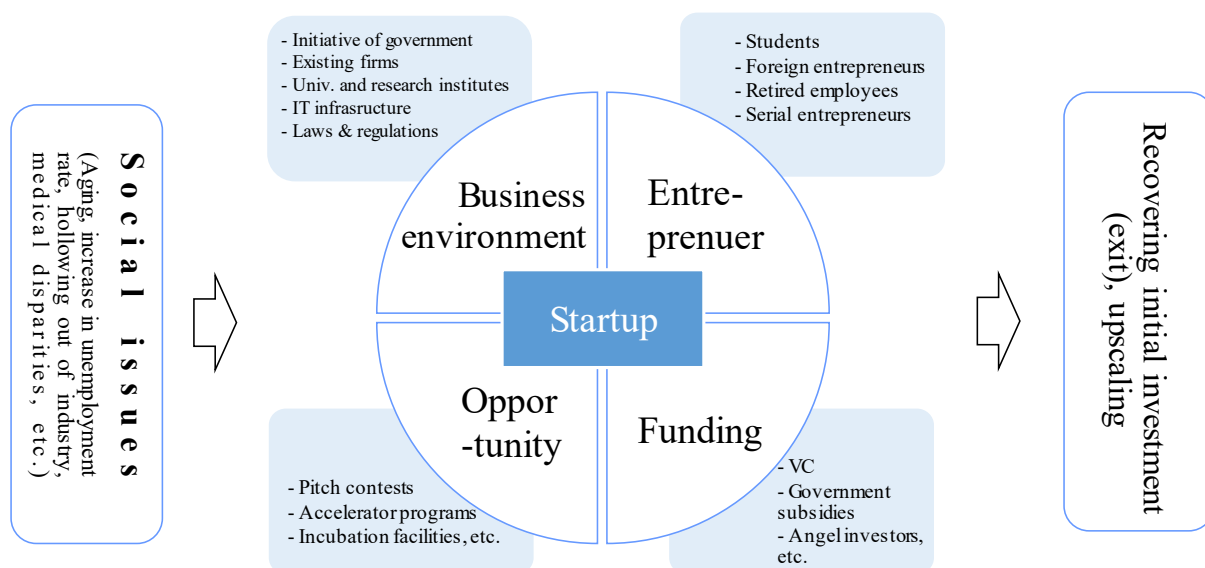
Note: 1. The percentage for Israel is from 2014, and that for South Africa from 2016. Only that for Japan was calculated by JETRO from the total GDP and the VC investment amount, on a fiscal year basis (from April to March of the next year).  
 2. The growth stage of companies are decided based on OECD categories.  
 Source: OECD, Venture Enterprise Center, Japan (VEC)

**VC investments as a percentage of GDP of major developed countries (2014 - 2017)**



Note: Israel is with the data in 2014 only. The 2017 data of Japan was calculated by JETRO from the total GDP and the VC investment amount. The data of Japan is on a fiscal year basis (from April to March of the next year). The figures without a box are from the data of 2014. Those with a box are from the data of 2017.  
 Source: OECD, Venture Enterprise Center, Japan (VEC)

## Concept of ecosystem





## Ecosystems being developed in various countries toward fostering startups

Looking at the characteristics of ecosystems in the world's leading cities from the four perspectives of 1) entrepreneur, 2) funding, 3) opportunity and 4) business environment, the strengths of each ecosystem become clear. In Japan, with the spread of open innovation by large companies, a fourth venture boom is coming, and corporate venture capital (CVC) and accelerators are increasing especially in Tokyo.

The policies of various governments aimed at developing ecosystems can be grouped into three categories: 1) supply of tax benefits and subsidies, 2) establishment and deregulation of visas for foreign entrepreneurs and 3) creation of regulatory sandboxes. The Japanese government has lowered the corporate tax and begun creating a startup visa system with the intention of creating 20 unicorns (unlisted venture enterprises with a value of one billion dollars or more) or equivalent listed venture enterprises by 2023.

### Advantages of major ecosystems

City	Advantages	City	Advantages
Silicon Valley	<ul style="list-style-type: none"> <li>- Referred to as the birthplace of the ecosystem, that of Silicon Valley has formed spontaneously. With serial entrepreneurs playing a mentoring role, there is a mechanism in place to create startups on an ongoing basis.</li> <li>- Numerous foreign entrepreneurs help maintain diversity in the region.</li> </ul>	Tel Aviv	<ul style="list-style-type: none"> <li>- Numerous startups are being created in the fields of life-science and cyber security, with many researchers who have won the Nobel Prize and entrepreneurs who have just completed military service.</li> <li>- <u>The Jewish Community has greatly contributed to forming ecosystems.</u></li> </ul>
Boston	<ul style="list-style-type: none"> <li>- There is an <u>accumulation of life-science companies and research institutes</u> such as MIT and Harvard University.</li> <li>- As entrepreneurs and spin-off startups rise, they draw large companies and investors.</li> </ul>	Dubai	<ul style="list-style-type: none"> <li>- The government, which aims at developing an economy not dependant on natural resources, is proactive in drawing overseas startups.</li> <li>- Under the initiative of the city leadership, it is establishing a support organization for funds and ventures.</li> </ul>
London	<ul style="list-style-type: none"> <li>- As a renowned financial city, it has drawn an accumulation of startups endeavoring in the fields of fintech, block chains and crypto currency.</li> <li>- In terms of activities such as experimental studies, the city offers a flexible and innovative legal system such as through the establishment of a regulatory sandbox to create new industries.</li> </ul>	Singapore	<ul style="list-style-type: none"> <li>- Through the strong leadership of the government, it has successfully established an innovation hub in a short period of time.</li> <li>- As a financial city, it has an accumulation of overseas-affiliated companies, and has established its position as a hub of financial procurement.</li> </ul>
Paris	<ul style="list-style-type: none"> <li>- <u>The government is leading the initiative "La French Tech" to support startups.</u> Overseas startups also receive generous support.</li> <li>- Startups in fields related to fashion and life-style have accumulated in the city.</li> </ul>	Shenzhen	<ul style="list-style-type: none"> <li>- With the creation of supply chains for electronic parts in the background, an ecosystem with strength in manufacturing has been forming.</li> <li>- <u>Due to proximity to the market and customers, it is distinguished by product development focusing on quick commercialization.</u></li> </ul>
Berlin	<ul style="list-style-type: none"> <li>- With cost of living cheaper than in former West Germany due to industry being hollowed out during the era of the East-West Division, an ecosystem has been growing among subcultures such as artists and hackers.</li> <li>- The city has a well-prepared support framework for students aspiring to be entrepreneurs, and numerous excellent engineers from Eastern Europe have gathered.</li> </ul>	Tokyo	<ul style="list-style-type: none"> <li>- Startups with strength in productization by combining devices with software are showing growth, particularly related to core technologies.</li> <li>- <u>CVC and accelerator programs have recently been increasing in line with the promotion of open innovation by major companies aiming at branching out from in-house innovation models.</u></li> </ul>

Note: 1) List includes cities where "JETRO Global Acceleration Hub" which assist Japanese startups in expanding business through overseas ecosystems, are located plus Tokyo.

2) Blue colored quadrants indicate advantages.

Source: Various materials

### Measures of major countries for fostering ecosystems

Country	Government objectives and measures	Policies for developing ecosystems				Government initiative
		1. Tax incentives, subsidies	2. Establishment of startup visa and relaxation of visa regulations	3. Regulatory sandbox (Note)	4. Other	
UAE	Priority areas were announced for promoting innovation in "UAE Vision 2021" advocated by the Federal Government, and a government-controlled fund to assist entrepreneurs was established.	✓	✓	✓		
Singapore	Various entrepreneur support programs conducted by different ministries and agencies have been integrated into a single brand under the title "Startup SG," through which necessary assistance is provided based on the growth stage of individual startups.	✓	✓	✓		
France	In 2013, the government established the initiative "La French Tech" which aims at supporting ecosystems and cultivating them to an international level. The initiative will <u>facilitate the formation of communities, growth of ecosystems and internationalization.</u>	✓	✓			
UK	Within its industrial strategy, the government has set five foundations (ideas, human resources, infrastructure, business environment and places) and four grand challenges (AI, clean growth, future-oriented mobility and an aging society).	✓	✓	✓		
Japan	The government has set a target to create <u>20 or more unlisted venture enterprises with an enterprise value or market cap of one billion dollars (unicorns) or equivalent listed venture enterprises by 2023.</u>	✓	✓ *Some local gov.	✓		
Israel	The government has engaged in investment and created multiple VC firms through "Project Yozma" started in 1993. "The Magnet Program" is supporting collaboration between industry and academia.	✓			Approval of transfer of military technology to the private sector	
China	The country is pushing a mass entrepreneurship and innovation campaign, with the State Council and local governments implementing over 400 measures combined.	✓	✓ * Some ministries			
Germany	The Federal Ministry of Economics and Energy (BMWi) and the Credit Institute for Reconstruction (KfW) are playing a leading role in investing into startups through the government-affiliated venture investment fund "Hightech Startup Fund," and holding business competitions. The frameworks vary depending on each state.				Addressing the promotion of digital education and collaboration between startups and SMEs	
US	The prior administration under President Obama started the Startup America Initiative under a strategy for American Innovation. It has focused on improving access to funds, cultivating entrepreneurial human resources, deregulation and accelerating technological transfer.				Established a framework for early stage investment, expanded entrepreneur education, expedited the patent process	

Note: A regulatory sandbox is a framework in which the government reviews regulations using information and data obtained through demonstrations with the goal of introducing new technologies and business models to society.

Source: Various materials

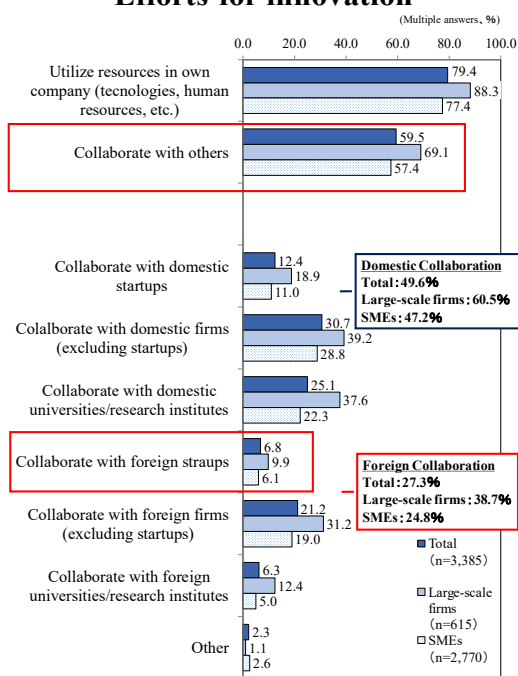


## Expansion into new markets and business fields through collaboration

■ According to a JETRO survey, under 30% of Japanese companies have engaged in collaboration with foreign companies and/or organizations for innovation. In international patent applications, the proportion of those with foreign co-inventor(s) for Japan was 2.1% and smaller than the global average (6.1%). These statistics indicate Japan is lagging behind in establishing networks with foreign companies, organizations, and/or researchers.

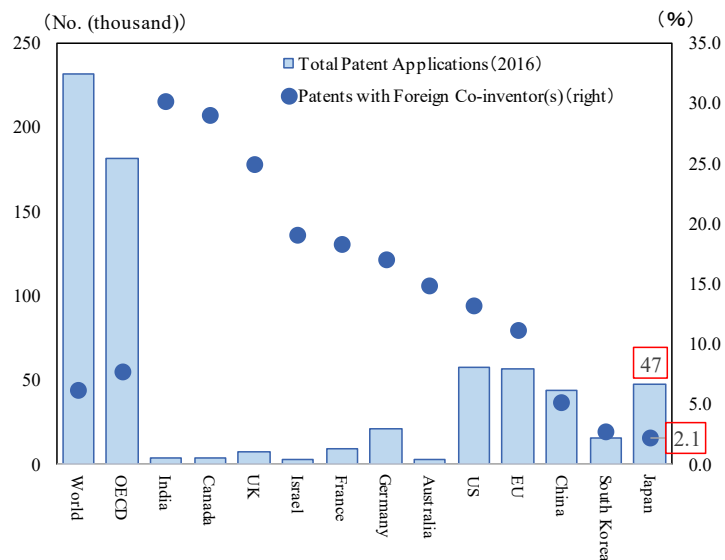
■ Some Japanese companies have expanded into new markets and business fields through collaboration with emerging foreign companies such as startups. Issues in collaboration have been raised, such as costs of collaboration, risks of information leakage, and differences in business practices. The key to overcome these issues lies in how determined the company can be as a whole, executives included, in engaging in the collaborations.

### Efforts for innovation



Source: FY2018 Survey on the International Operations of Japanese Firms (JETRO)

### Number of patent applications in major countries/regions and proportion of applications with foreign co-inventor(s)



Note: The number of application indicates the number of international patent application applied under the Patent Cooperation Treaty.

Source: OECD.Stat

### Collaboration between emerging foreign companies and Japanese companies

Company	Partner	Motivation	Business	Advantages and effects
IDOM	Uber Technologies: Founded in 2009, (US), Ride-hailing service	Seeking a business model to be a foothold toward expanding business in Africa as a new sales market	The company leases second-hand Japanese cars for local drivers registered with Uber in Tanzania. If the amount paid passes a certain threshold, the driver can take possession of the car. This has created a new sales channel for second-hand cars and, at the same time, a means for a more stable income for local drivers.	<u>The company recognized the potential of the new business model</u> in expanding into a new market, obtaining knowhow and a new customer base. Through scaling up the new model, the company is aiming to expand its business in other areas.
OPENLOGI	Shipper (Logistics): Founded in 2016, Shoppee/ Tokopedia: Founded in 2009/2015 (Indonesia), Local e-commerce SMEs	The first step towards expanding its logistic outsourcing service abroad. The company saw an opportunity in the logistics service industry in Indonesia, where the e-commerce market is rapidly growing. Cases have been reported where local SMEs have difficulties in inventory management.	With the aim of enabling more efficient and reliable inventory management and shipping, the company conducted a pilot project for logistics outsourcing operations in collaboration with the logistics platform service company and the system of leading Indonesian e-commerce platforms as well as local e-commerce SMEs.	The one-year pilot project went without any trouble such as a misdelivery or returned package, proving the feasibility of the business in Indonesia. In addition, the project also showed there is no significant difference between domestic and overseas warehouse operations. <u>As the company confirmed the viability of its business model for the overseas market, it is looking to enter Indonesia.</u>
SBI Remit	BitPesa: Founded in 2013 (Kenya) Affordable and speedy overseas money transfer service through blockchains	Seeking innovative solutions to improve customer service within Africa, where the company had a strategic interests for its growth prospects.	This is the company's first business collaboration in Africa. Money transfer from Africa to Japan requires first exchanging the local money to another major foreign currency before exchanging it to Japanese yen. The collaboration with BitPesa, however, enables the company to provide a faster and more affordable money transfer service between African countries and Japan.	Collaboration with BitPesa, which already has business operations in eight African countries and covers 85 countries for money transfer, has <u>allowed the company to provide a direct money transfer service between African countries and Japan.</u>

Source: Interviews by JETRO, press releases and media reports

## **JETRO Global Trade and Investment Report 2019: The fluctuating international economic order and global business in the future**

### **Key Points**

---

Address any inquiries concerning this report to:  
International Economy Division, Overseas Research Department  
Japan External Trade Organization (JETRO)  
1-12-32 Akasaka, Minato-ku, Tokyo 107-6006 Japan  
TEL: +81-(0)3-3582-5177  
E-mail: [ORI@jetro.go.jp](mailto:ORI@jetro.go.jp)

---

Note: Figures may not sum up to the total because some are less than one unit.

Disclaimer of liability: Responsibility for any decisions made based on or in relation to the information provided in this material shall rest solely on the reader. Although JETRO strives to provide accurate information, JETRO will not be responsible for any loss or damages incurred by readers through the use of such information in any manner.

[Reproduction without permission is prohibited.]

Copyright (C) 2019 JETRO. All rights reserved.