

White Paper on International Economy and Trade 2018 [Outline]

July 10, 2018

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

Table of Contents

Part 1 Global economy

Chapter 1 Recent trends in the global economy and Japan's external trade and investment

Chapter 2 Economic trends and external economic policies in major countries/regions

Part 2 Analysis: Significant shift in the global economy

Chapter 1 Expanding digital trade

Chapter 2 Rise of emerging and developing economies

Section 1 Changes in the roles of emerging and developing countries in the global economy

Section 2 Response to global excess production capacity

Chapter 3 Rapid change in the Chinese economy

Section 1 Macroeconomic trends

Section 2 Advance of new industries

Section 3 External trade and investment

Section 4 Business opportunities for Japanese companies

Part 3 Policies

Chapter 1 Development of free, fair and high-level trade rules

Section 1 Progress in mega-FTAs (TPP11, Japan-EU EPA, RCEP, etc.)

Section 2 Investment-related treaties

Section 3 Japan-U.S. economic relations

Section 4 WTO

Section 5 G7/G20 and OECD

Section 6 APEC

Chapter 2 Emerging country strategy (China, ASEAN/Asia-Pacific, India, Russia, the Middle East, and Africa)

Chapter 3 Comprehensive trade policy

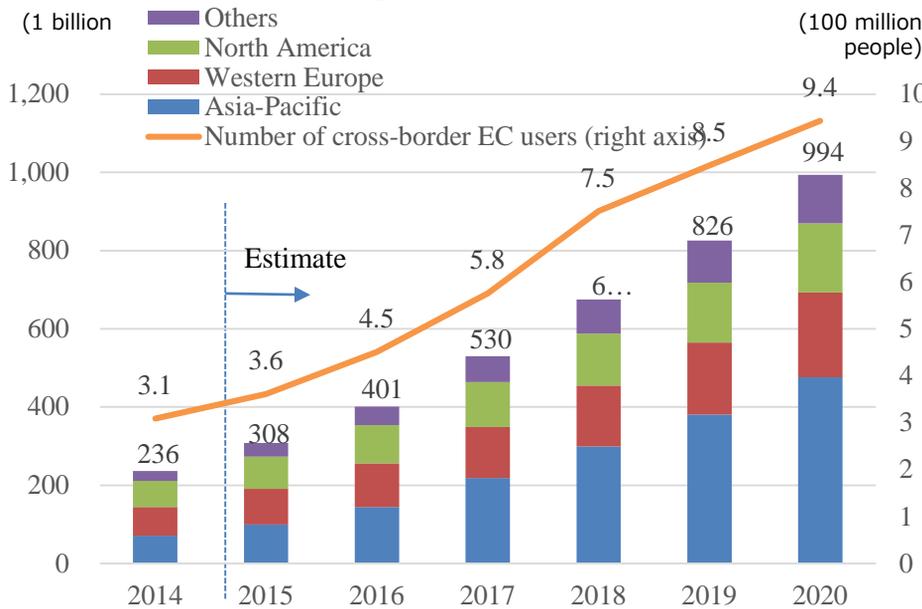
Section 1 Promotion of utilization of economic partnership agreements

Section 2 Consortium for New Export Nation

Section 3 Food exports

- The scale of the global cross-border e-commerce (EC) market is expected to grow in value from 236.0 billion dollars in 2014 to 994.0 billion dollars in 2020.
- The number of cross-border EC users is expected to rise from around 300 million people to more than 900 million people over the same period.
- The domestic business-to-commerce (B2C) EC market is also expanding. In 2016, China was already the global No. 1 in terms of both the scale of the internet retail sales market (with a value of 939.4 billion dollars) and EC ratio (19%).

Scale of the global cross-border EC market



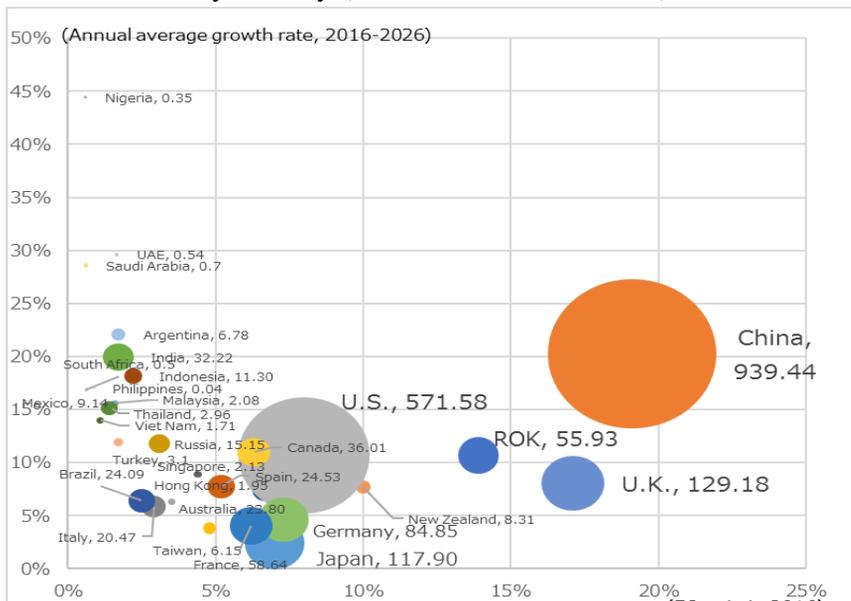
The scale of the global cross-border EC market, which was 236.0 billion dollars in 2014, has continued expanding since then and is expected to reach 994.0 billion dollars in 2020.

The number of cross-border EC users, which was around 300 million people in 2014, is expected to approximately triple to 900 million people in 2020.

Remarks: Estimated figures

Source: Accenture and Alibaba Research (2015).

EC ratio, growth rate, and value of B2C EC market by country (unit: 100 million dollars)



The scale of the global B2C EC market in 2016 expanded 122% in value from the previous year to around 2.4 trillion dollars.

By region, China is the largest EC market, accounting for around 40% of the global market value.

The growth rate for China is higher than the rate for the United States, the second-largest market, so China is expected to continue to lead the global EC market.

China is also the global leader in terms of EC ratio (19%).

Remarks: The size of the circle corresponds to the scale of the EC market. The figures above are for 2016. However, the market scale and the EC ratio in the Middle East/Africa region are figures for 2014 and the annual average growth rate in the region is a figure for 2014-2025.

Source: Prepared on the basis of interviews with eMaketer and Transcosmos

- While companies in such sectors as energy, banking and telecommunications dominated the top rankings of companies in terms of market capitalization 10 years ago, IT platform providers have advanced in the rankings. Six of the top ten companies are now IT platform providers.

Global rankings of companies in terms of market capitalization

2008				
#	Company name	Country	Sector	Market capitalization (1 million dollars)
1	China National Petroleum Corporation	China	Oil/gas	723,998
2	Exxon Mobil Corporation	U.S.	Oil/gas	511,887
3	General Electric Company	U.S.	Industrial conglomerates	374,637
4	China Mobile	Hong Kong	Wireless communication service	354,245
5	Industrial and Commercial Bank of China Limited	China	Banking	339,004
6	Microsoft Corporation	U.S.	Software	333,054
7	Gazprom	Russia	Oil/gas	331,964
8	Royal Dutch Shell plc	Netherlands	Oil/gas	264,764
9	AT&T Inc.	U.S.	Wireless communication service	252,051
10	China Petroleum and Chemical Corporation	China	Oil/gas	249,659



2018				
#	Company name	Country	Sector	Market capitalization (1 million dollars)
1	Apple Inc.	U.S.	Computer hardware	825,593
2	Alphabet Inc.	U.S.	Online services	731,933
3	Microsoft Corporation	U.S.	Software	686,283
4	Amazon.com, Inc.	U.S.	Department stores	671,084
5	Facebook, Inc.	U.S.	Online services	512,471
6	Tencent	China	Online services	497,697
7	Berkshire Hathaway Inc.	U.S.	Casualty insurance	491,154
8	Alibaba Group Holding Limited	China	Online services	454,451
9	JPMorgan Chase & Co.	U.S.	Banking	387,707
10	Industrial and Commercial Bank of China Limited	China	Banking	354,750

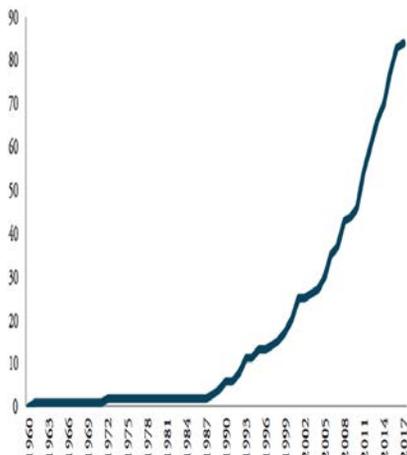
In line with the expansion of digital trade, global companies providing IT platforms for EC and cloud computing services are increasing their presence.

A decade ago, in 2008, telecommunications companies, as well as banks, and oil and gas companies, led the rankings, as businesses providing telecommunication infrastructure tended to be highly valued in terms of market capitalization against the backdrop of a marked rise in the diffusion rate of mobile phones. However, in recent years, online services provided through information and communication networks have risen in prominence.

In the global top 10 rankings in terms of market capitalization as of January 2018, Apple was No. 1, followed by other U.S. and Chinese IT platform companies, such as Alphabet (Google), Amazon, Facebook, Tencent, and Alibaba.

- Data protectionist moves are increasing, including data localization regulation, requirement for the adoption of mandatory security standards, and requirement for source code disclosure that impedes free cross-border data flow.
- If new regulations related to data are introduced, the GDP of that country is expected to be negatively impacted.
- Other challenges include how to secure an environment of fair competition between IT platform providers and existing industries and how to ensure the protection and safety of consumers.

Changes in the number of regulations related to cross-border data flow (1960 to 2017)



Remarks: The years represents the timings of entry-into-force and revision of regulations. Based on a survey by ECIPE.
Source: ECIPE and Digital Trade Estimates

Number of regulations related to cross-border data flow (by region/country) (as of 2017)

	Number of regulations	Share
Europe	37	42.5%
Germany	5	5.7%
Russia	5	5.7%
Asia-Pacific	33	37.9%
China	9	10.3%
Middle East/Africa	7	8.0%
North America	6	6.9%
Canada	5	5.7%
U.S.	1	1.1%
Central and South America	4	4.6%
Total	87	100.0%

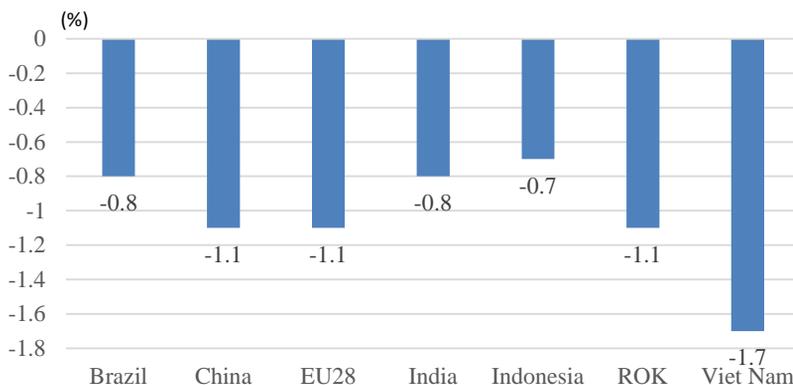
Remarks: The number of regulations which were in force in 2017. The countries indicated above (except for the United States) had more than five regulations.
Source: ECIPE and Digital Trade Estimates

The promotion of the free flow of information is developing a favorable cycle that is creating new technical innovations and business models and is improving the quality of people's lives.

On the other hand, digital protectionist moves are also emerging, including imposing restrictions on the free flow of cross-border data and the installation locations of servers.

National regulations related to cross-border data flow have increased rapidly over the past 20 years.

Impact on GDP from introducing data usage regulations

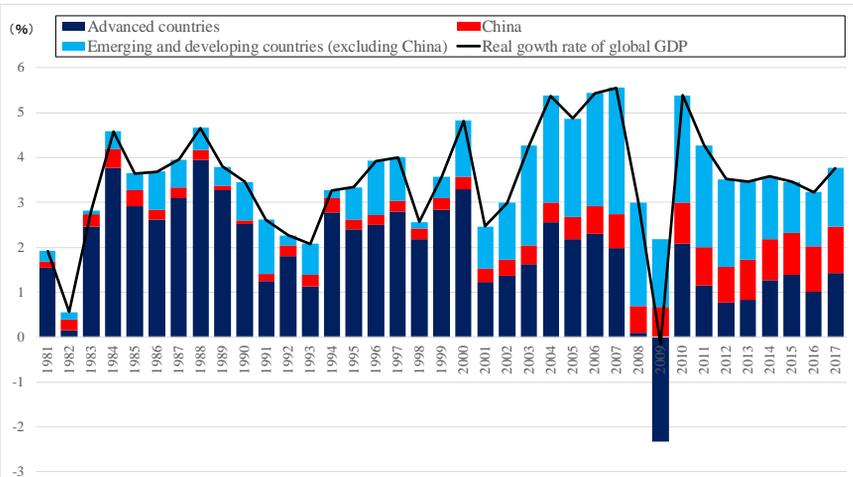


Remarks: The above figures are estimates based on the assumption of the introduction of data usage regulations, including data localization, in all sectors in each country.
Source: Prepared by METI from "The Cost of Data Localization: Friendly Fire on Economic Recovery" (ECIPE).

If a country introduces cross-sectoral data localization regulation, its GDP is estimated to suffer a negative impact ranging from minus 0.7% to minus 1.7% due to such factors as a domestic price increase and a productivity decline caused by an increase in the usage cost of data processing services.

- Since around 2000, emerging and developing economies, especially China, have led global economic growth.
- The share of emerging and developing economies in global GDP is becoming around 40%.

Changes in the global GDP growth rate
(in terms of contribution by country/region)
(1990 -2017)

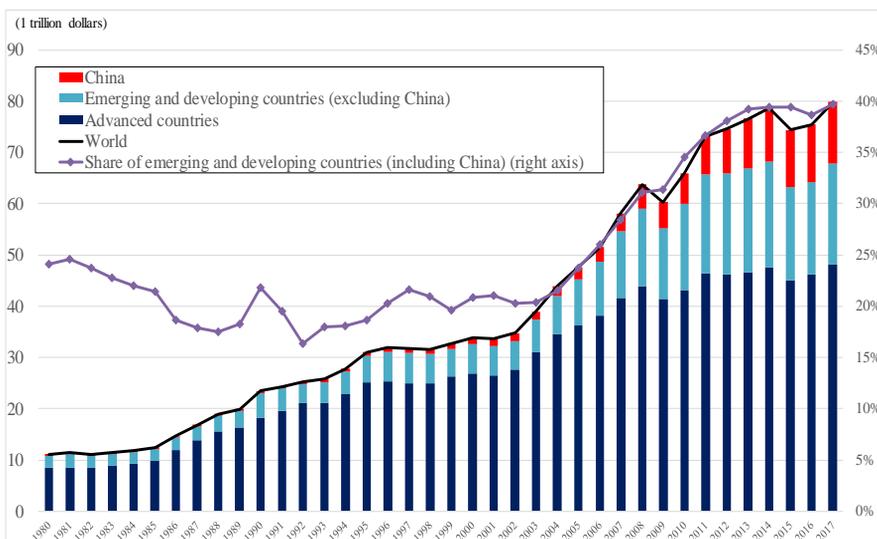


Remarks: The contribution by country/region is an estimate based on each country/region's share in nominal GDP in the previous year.

Source: Prepared by METI based on the database of World Economic Outlook, April 2018 (IMF)

Concerning the contribution to the real growth rate of global GDP by country/region, the contribution by advanced countries has been gradually declining since around 2000, while the contribution by emerging and developing countries, including China, has been increasing.

Changes in the share of emerging and developing countries
in nominal global GDP (Between 1980 and 2017)



Remarks: Nominal GDP is on a U.S. dollar basis.

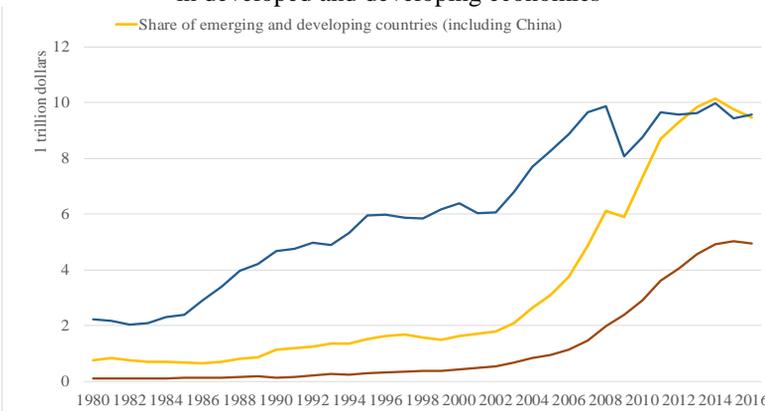
Source: Prepared by METI based on the database of World Economic Outlook, April 2018 (IMF)

Nominal global GDP has been growing steadily despite temporary drops due to the Great Recession, among other factors. The share of emerging and developing countries in nominal global GDP has been increasing since the middle of the 2000s and has recently surpassed 40%.

Features of economic growth of emerging and developing economies

- In emerging and developing economies, fixed capital formation has accelerated since around 2003, and in 2016, it has reached 9.5 trillion dollars, almost the same value as in industrialized economies. The average contribution to the real growth rate of GDP was 36% between 2003 and 2016.
- In line with the growth in fixed capital formation, emerging and developing economies have significantly increased the production capacity of the raw materials industry, providing a contrast to the lack of growth in industrialized economies. Global production capacity for crude steel in 2017 was more than double the level in 2000.

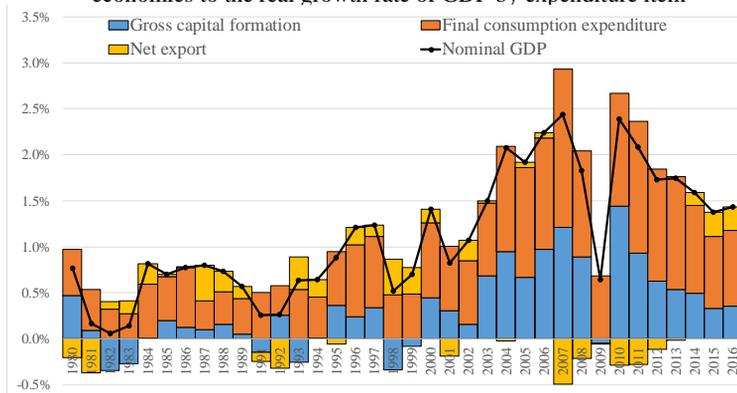
Changes in the value of fixed capital formation (on a flow basis) in developed and developing economies



Source: UN national accounts main aggregates data (December 2017)
Remarks: The classification of advanced, emerging and developing countries is based on the definition in the IMF WEO.

Fixed capital formation (in terms of the value of domestic investments) in emerging and developing economies has been growing since 2000, and in 2016, it reached 9.5 trillion dollars, almost the same value as the value in advanced countries.

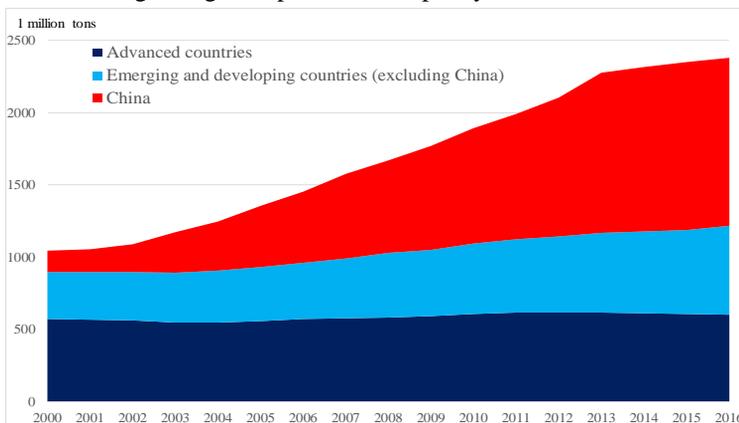
Breakdown of the contribution by emerging and developing economies to the real growth rate of GDP by expenditure item



Remarks: Real GDP data in 1990 was excluded because statistical data concerning NIS countries were newly added, a factor that overrepresents the growth rate.
Source: UN national accounts main aggregates data (December 2017)

Since 2003 in particular, the contribution by emerging and developing economies in terms of fixed capital formation has been significant.

Changes in global production capacity for crude steel



Remarks: The definition of advanced countries is based on the IMF's definition.
Source: OECD Stat

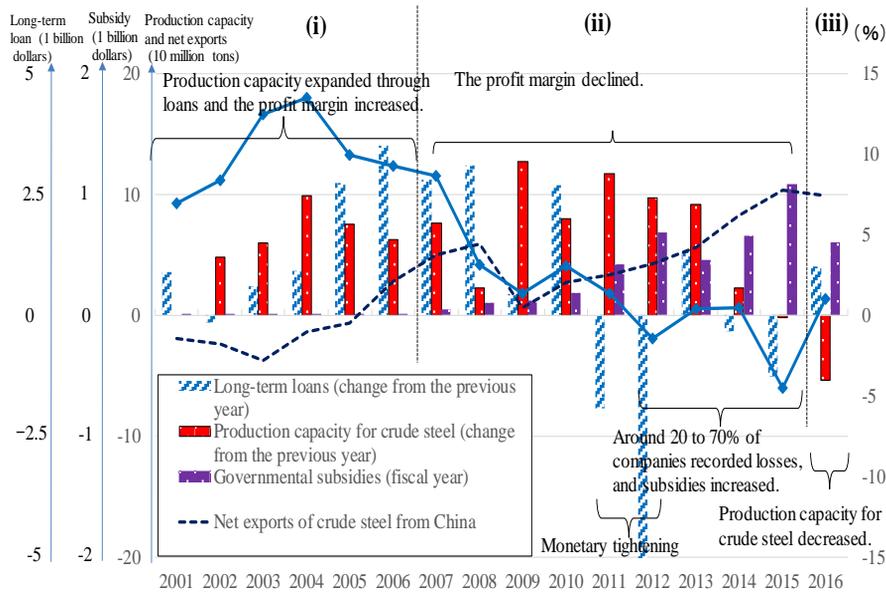
While production capacity for crude steel has stayed at around 600 million tons in developed economies over the past 17 years, capacity in emerging and developing economies as a whole has continued to grow. In 2017, global production capacity increased to 2,300 million tons, around 2.3 times as large as the capacity in 2000.

Among emerging and developing economies, China has increased its production capacity markedly.

Chronology of the excess production capacity in China's steel industry

- (i) Period of “imports surpassed exports”: Production capacity for crude steel expanded through the use of loans from state-owned local banks, while the profit margin increased
- (ii) Period of “exports surpassed imports”: The expansion of production capacity continued, but the profit margin declined. Subsidies started to increase.
- (iii) After the reduction of production capacity for crude steel: The profit margin showed signs of improving.

The development of the Chinese steel industry (2001-2016)



Sources: Production capacity: National Bureau of Statistics of China and CEIC Database; net exports of crude steel: World Steel Association; long-term loan and government subsidy: annual reports of 33 listed Chinese steel companies.

(i) Between 2001 and 2005, China recorded steel import surpluses. As banks increased low-interest loans and steel companies expanded production capacity, the return on assets (ROA) rose from 7% in 2001 to 14% in 2004.

(ii) Since 2006, China has recorded steel export surpluses, but loans and production capacity expansion have continued.

From 2008 onward, the ROA for steel companies stayed below 5%.

Subsequently, the steel market slumped. In 2012, around half of all listed steel companies recorded operating losses, and in 2015, around 70% did so. In both years, governmental subsidies increased steeply.

(iii) In February 2016, the central government set the target for the reduction of production equipment and strictly managed the implementation of the target. As a result, the target was achieved in 2016 and 2017.

Targets for the reduction of crude steel production equipment in China and the results

Long-term target	2016		2017	2018
	Target	Result	Target	Target
Reduction of 100 to 150 million tons over five years from 2016	45 million tons	65 million tons	Approx. 50 million tons	Approx. 30 million tons

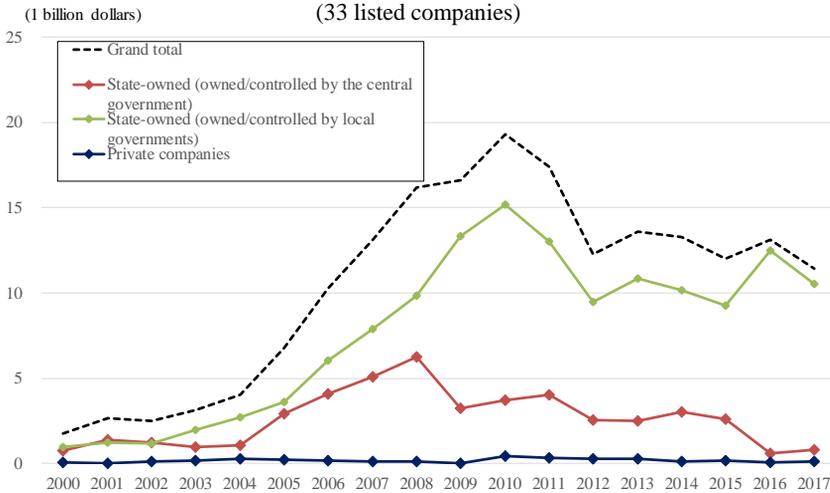
Remarks: The target for 2017 was reportedly achieved.

Source: The government work report issued at the National People's Congress, etc.

In response to the G20 Leaders' Communique at the Hangzhou Summit in 2016, the Global Forum on Steel Excess Capacity was established. Through the forum, information is exchanged with respect to production capacity for crude steel and governmental support measures in individual countries.

● Most loans from state-owned banks and support measures such as governmental subsidies are provided to steel companies owned/controlled by local governments, whose operational efficiency is relatively low.

Changes in the balance of long-term loans at Chinese steel companies

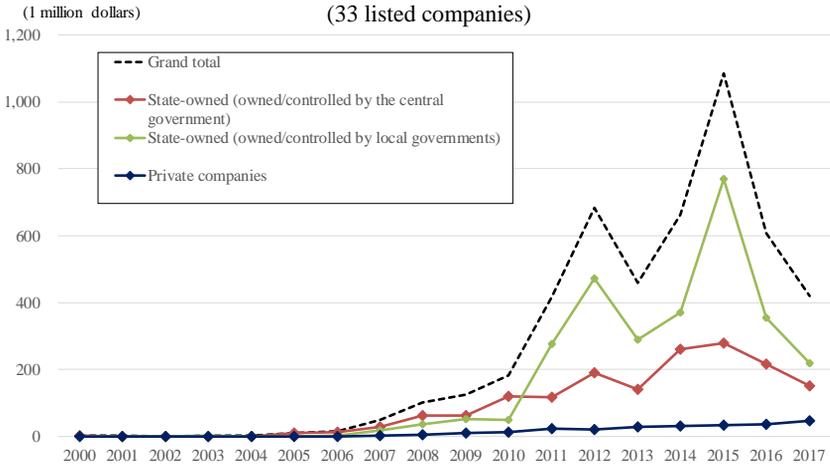


Remarks: As of the end of 2016, there were 5 companies owned/controlled by the central government, 21 companies owned/controlled by local governments, and 7 private companies.
Source: Annual reports of 33 listed Chinese steel companies

Support measures such as loans to production equipment investment in steel companies and government subsidies, provided in response to the sluggish business performance since 2012, have been allocated mainly to companies owned/controlled by local governments.

Most loans and governmental subsidies have been allocated to steel companies owned/controlled by local governments, according to a comparison of three groups—companies owned/controlled by the central government, companies owned/controlled by local governments, and private companies.

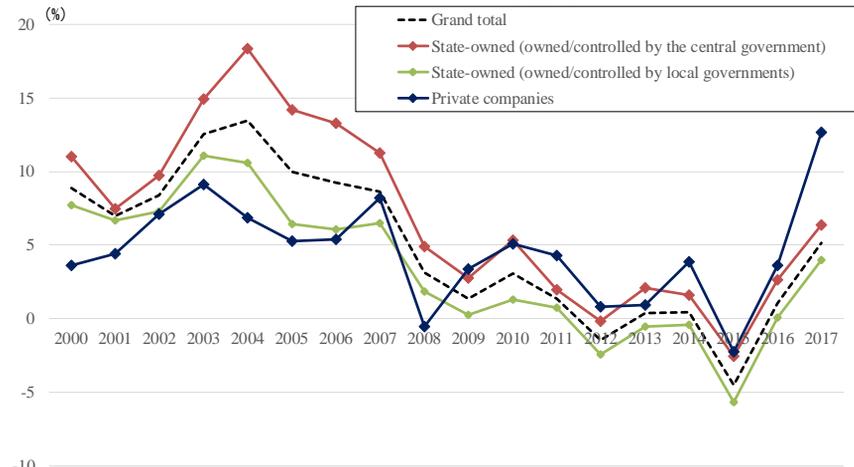
Changes in the value of subsidies received by Chinese steel companies



Remarks: As of the end of 2016, there were 5 companies owned/controlled by the central government, 21 companies owned/controlled by local governments, and 7 private companies.

However, the allocation of loans and subsidies has not necessarily contributed to any improvement of the companies' profitability or value added. In particular, despite the intensive support they received, management capability of companies owned/controlled by local governments has not improved, with their ROA remaining lower than other groups' ROA.

The return on assets (ROA) for Chinese steel companies (by corporate ownership type)

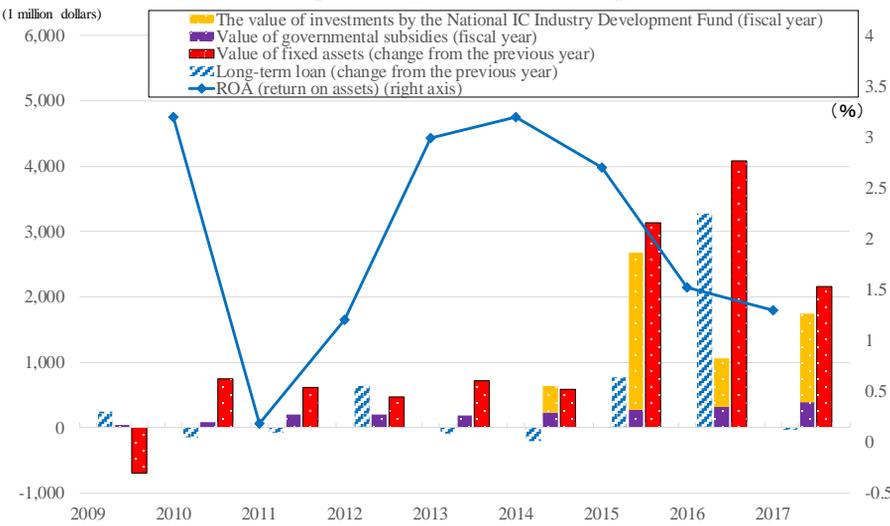


Remarks 1: As of the end of 2016, there were 5 companies owned/controlled by the central government, 21 companies owned/controlled by local governments, and 7 private companies.
Source: Annual reports of 33 listed Chinese steel companies.

Possibility of a new excess capacity

- China’s integrated circuit (IC) industry has rapidly increased capital investment through governmental support. This is similar to the situation in the period (i) “imports surpassed exports” in the steel industry, but capital investment has not yet led to a profitability improvement.
- As a new support tool, industry development funds have emerged.
- There is a risk that an excess production capacity problem may occur in the future.

Increase in the value of fixed assets, value of governmental subsidies, and profit margin of IC-related companies



Remarks 1: The ROA is obtained by dividing the total value of operating profits of the 19 IC-related listed companies in China by the total value of assets. The ROA in 2009 was -12.4%.
 Source: Annual reports of the 19 IC-related listed companies in China.

In 2014, the Chinese government formulated the National IC Development Guidelines.

Based on the guidelines, a national investment fund specialized in support for the IC industry (National IC Industry Investment Fund) was established in the same year, and the fund has invested around 4 billion dollars annually in IC-related companies.

As a result, in addition to governmental subsidies and companies’ borrowings, policy resources including investments by investment funds have increased rapidly since 2014. In line with the increase, the value of fixed assets rose steeply between 2015 and 2017.

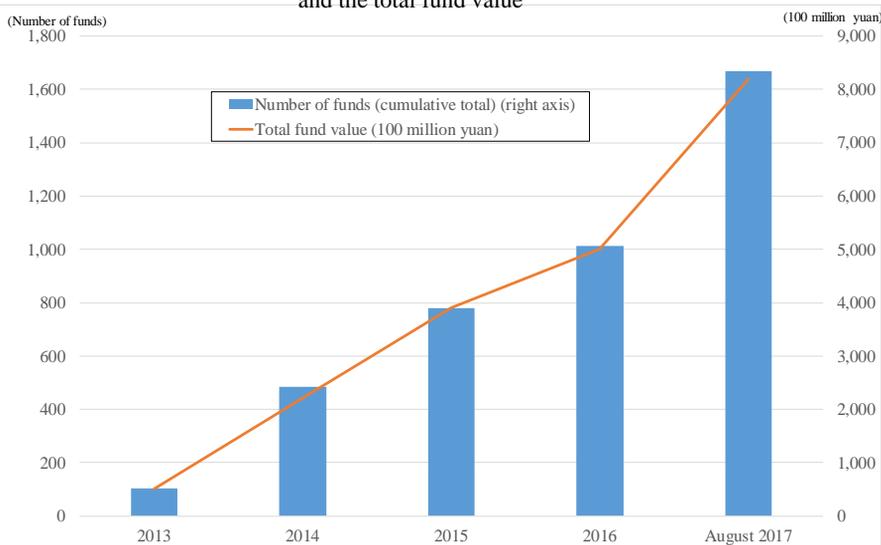
On the other hand, the return on assets for companies continued to decline in the same period.

This trend in the Chinese IC industry is similar to the situation of the Chinese steel industry in the period of net import, so there are concerns that an excess production capacity problem may occur in the IC industry as well in the future.

In recent years, industry investment funds such as the National IC Industry Development Fund have played a particularly significant role as policy fund sources.

Since around 2014, the number and value of those funds have increased rapidly, and the funds’ presence as the main policy fund source in China is growing.

Changes in the number of industry investment funds and the total fund value



Source: Database of Zero2IPO Group "Si Mu Tong"

Comparison between Japan and China in terms of governmental support

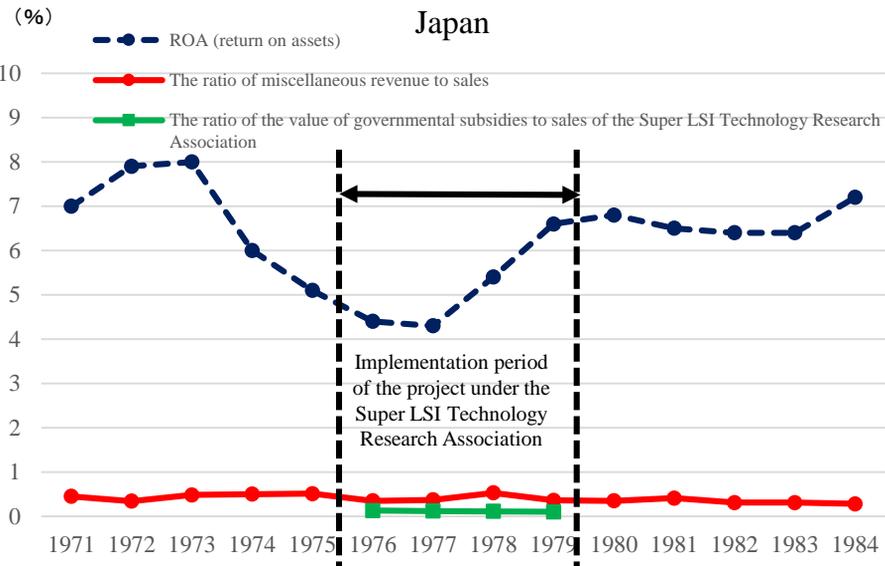
- There is a large difference between the IC industry promotion measures in Japan and China in terms of the scale of governmental support.
- The Chinese government's subsidies for those companies are equivalent in value to around 2 to 4% of their sales. Meanwhile, the ROA shows a downward trend.
- The Japanese government's subsidies for those companies are equivalent in value to less than 0.6% of their sales, at most. Meanwhile, the ROA shows an upward trend.



The Chinese government's subsidies for companies are equivalent in value to around 2 to 4% of their sales.

Meanwhile, the ROA is trending downward.

Remarks 1: The ROA is the figure obtained by dividing the total value of operating profits of the 19 IC-related listed companies in China by the total value of assets.
 Remarks 2: The ROA was -4.3% in 2008 and -12.4% in 2009.
 Source: Annual reports of the 19 IC-related listed companies in China.



The value of governmental investments in the Super LSI Technology Research Association was 29.0 billion yen.

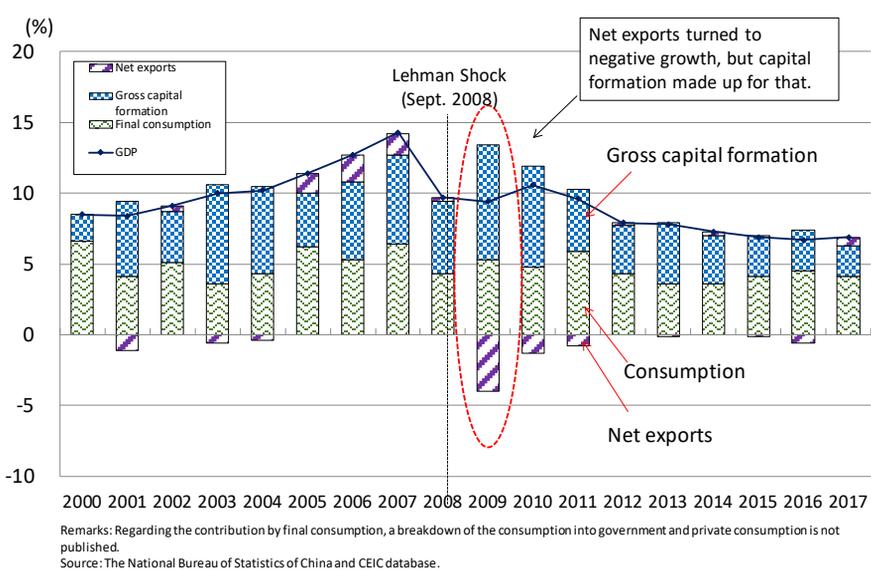
The value of governmental subsidies for companies before and after the implementation period of the association's project in Japan was equivalent to less than 0.6% of their sales at most.

Meanwhile, the ROA is trending upward.

Remarks 1: Data was obtained from the five companies that participated in the Super LSI Technology Research Association (excluding joint venture companies).
 Remarks 2: The ROA is the figure obtained by dividing the total value of operating profits of the five companies by the total value of assets.
 Remarks 3: Regarding "miscellaneous revenue ("others")", figures in the non-operating revenue column of the profit and loss statement were used.
 Remarks 4: The ratio of the value of governmental subsidies to sales for the Super LSI Technology Research Association is the figure obtained by dividing by four the total value of governmental subsidies in the four-year project period, which was 29 billion yen, and then dividing the figure thus obtained by the total sales figure of the five companies.
 Source: Securities reports of the five companies that participated in the Super LSI Technology Research Association (excluding joint venture companies)

- In China, consumption has replaced gross capital formation as the largest contributor to GDP growth. The economy is gradually shifting from the previous investment-led growth to a consumption-led one.
- By industry, the contribution by the information transmission, software and information technology services industries, which are growth industries, grew 26% in 2017 compared with the previous year.

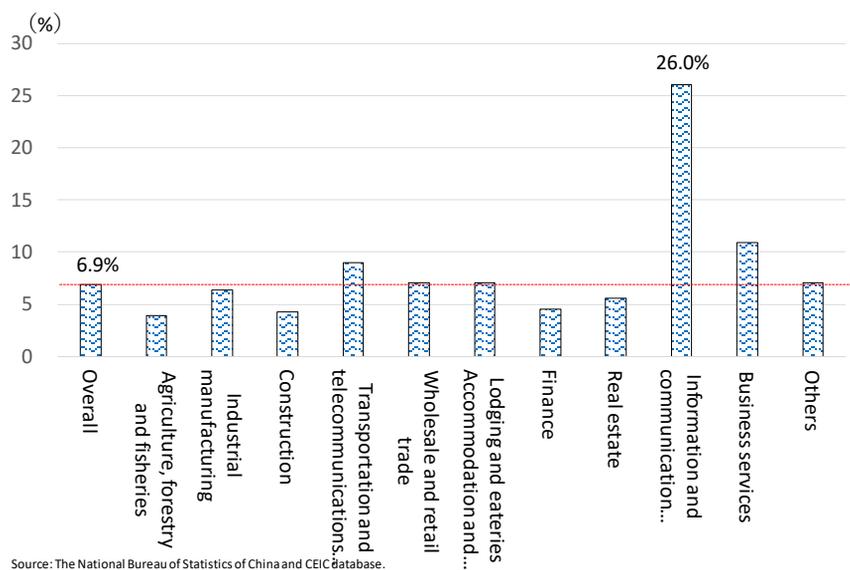
Changes in the contribution by GDP components to China's real GDP growth rate



If GDP is looked at from the viewpoint of demand, the share of net exports in GDP has declined since the Great Recession and the share of gross capital formation has decreased since the 4-trillion-yuan economic package, while the share of final consumption has been growing moderately.

If these trends are examined based on the breakdown of contributions to the real GDP growth rate, the contribution by investment has declined since the Great Recession, while consumption has become the main driver of growth. In that sense, the economy is gradually shifting from investment-led growth to consumption-led growth.

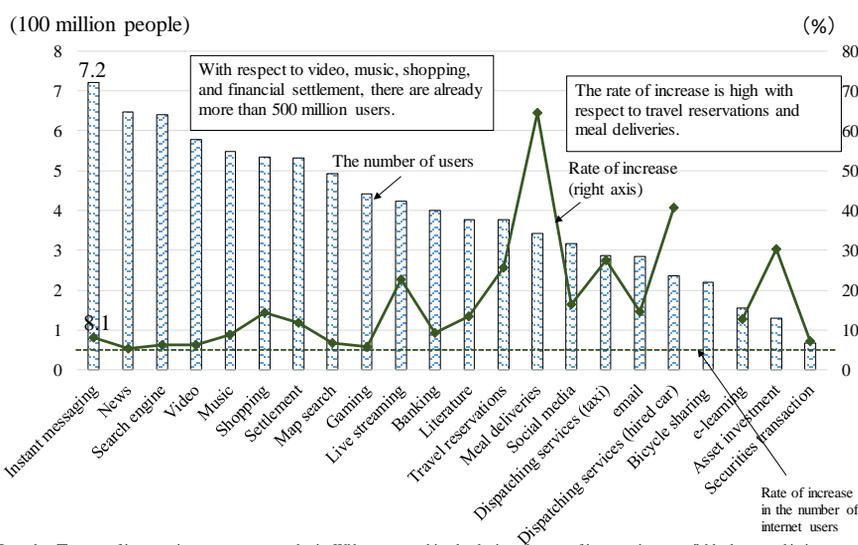
Real GDP growth rate by industry in China (2017)



A look at the real GDP growth rate by industry in China in 2017 shows that the information transmission, software and information technology services industry recorded an outstandingly high growth rate of 26.0%.

- China was the global No. 1 in terms of EC transactions in 2016 with a total transaction value of 23 trillion yuan (around 3.4 trillion dollars).
- Internet services for consumers are wide-ranging, but the number of users is rising at a particularly high pace with respect to travel reservations, meal deliveries, car dispatching and financial services.
- The scale of the sharing economy has also been growing rapidly, rising 47% in value in 2017 compared with the previous year to around 4.9 trillion yuan (around 0.73 trillion dollars).

Utilization of internet applications by sector in China
(as of the end of 2017)



Concerning Internet applications, it is estimated that there are more than 500 million users with respect to each of instant messaging, search engines, video, music, shopping, online settlement.

The rate of increase in the number of users is high with respect to travel reservations, meal deliveries, car dispatching, and financial services, indicating a rapid market expansion.

Remarks: The rate of increase is on a year-on-year basis. With respect to bicycle sharing, the rate of increase is not available because this item was not covered in the previous year's survey.

Source: The 41st Statistical Report on Internet Development in China (January 2018) (China Internet Network Information Center)

The scale of the sharing economy (2017)

(Unit: 100 million yuan, %)

	Scale of the market			Value of funds provided
	Value of transaction	Share	Rate of increase	
Medical care	70	0.1	48.0	19
Housing and lodging	145	0.3	70.6	37
Knowledge and skills	1,382	2.8	126.6	266
Transportation	2,010	4.1	56.8	1,072
Production capacity	4,120	8.4	25.0	34
Everyday life services	13,214	26.9	82.7	512
Financial services	28,264	57.4	35.5	220
Total	49,205	100.0	47.2	2,160

Source: "Report on Development of Sharing Economy 2018" (Sharing Economy Research Center, State Information Center and Working Committee on Sharing Economy, Internet Society of China)

The sharing economy has emerged as a new type of economic activity conducted via the internet.

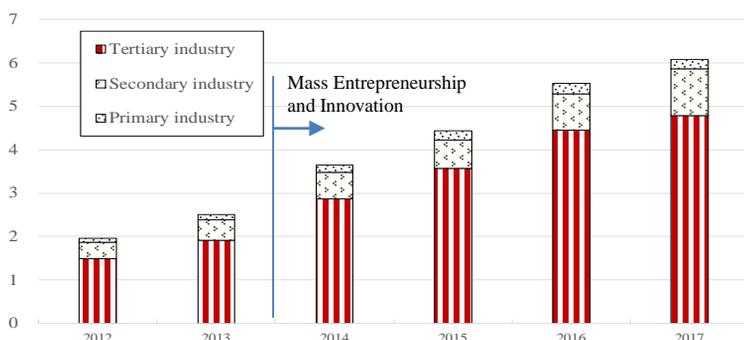
The scale of the market was around 4.9 trillion yuan in 2017, up 47% from the previous year.

By transaction value by sector, the transaction value of financial services, including online financial services, amounts to around 2.8 trillion yuan, accounting for more than half of the total.

The total value of funds provided for new market entry and business expansion in all sectors grew 25.7% from the previous year to 216.0 billion yuan.

- The annual number of newly registered companies was 6.07 million in 2017 (19.25 million if self-employed businesses are included).
- China became the second largest investing country in venture companies with a total investment value of 2.2 trillion yen, next to the United States, where the total investment value was 7.5 trillion yen.

Changes in the number of newly registered companies in China (million companies)

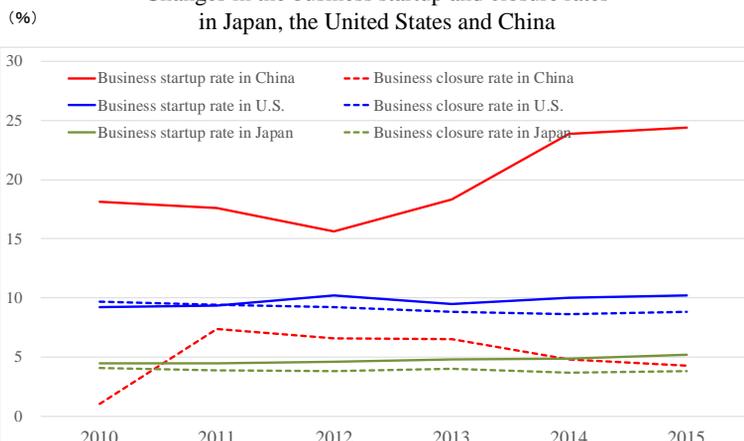


Source: The State Administration for Industry & Commerce of the People's Republic of China and the CEIC database.

Remarks: The total number of registered companies in China is 30.34 million, and the number is around 98 million if self-employed businesses are included (2017).

Since around 2014, when “Mass Entrepreneurship and Innovation,” an entrepreneurship support initiative promoted by the Chinese government, was announced, the number of new business startups has increased rapidly.

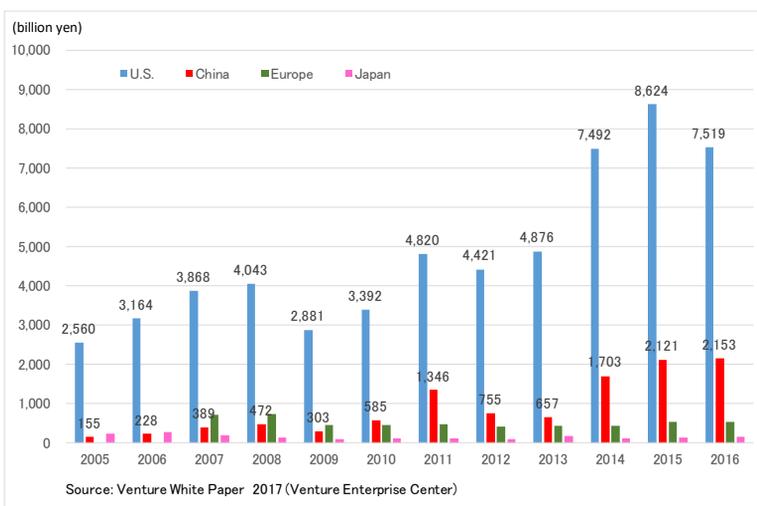
Changes in the business startup and closure rates in Japan, the United States and China



Source: CEIC with respect to China; U.S.: Business Dynamics Statistics; Japan: Annual Report on Employment Insurance .

As evidenced by the huge number of newly registered companies, the business startup rate in China is much higher than the rates in the United States and Japan.

The value of venture investments in major countries



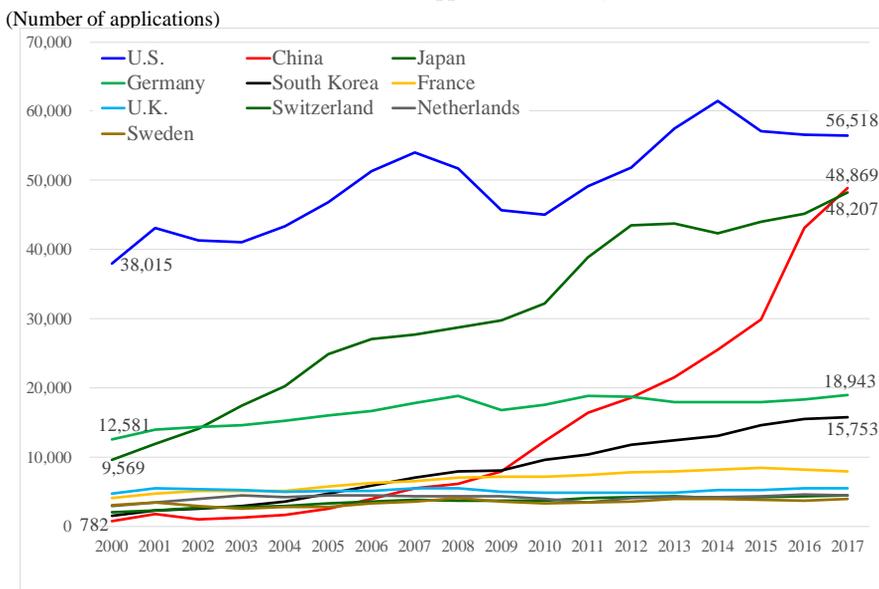
Source: Venture White Paper 2017 (Venture Enterprise Center)

In terms of the value of investments made by venture capital, China was the second largest investing country with a value of 2.2 trillion yen, next to the United States, where the total investment value was 7.5 trillion yen.

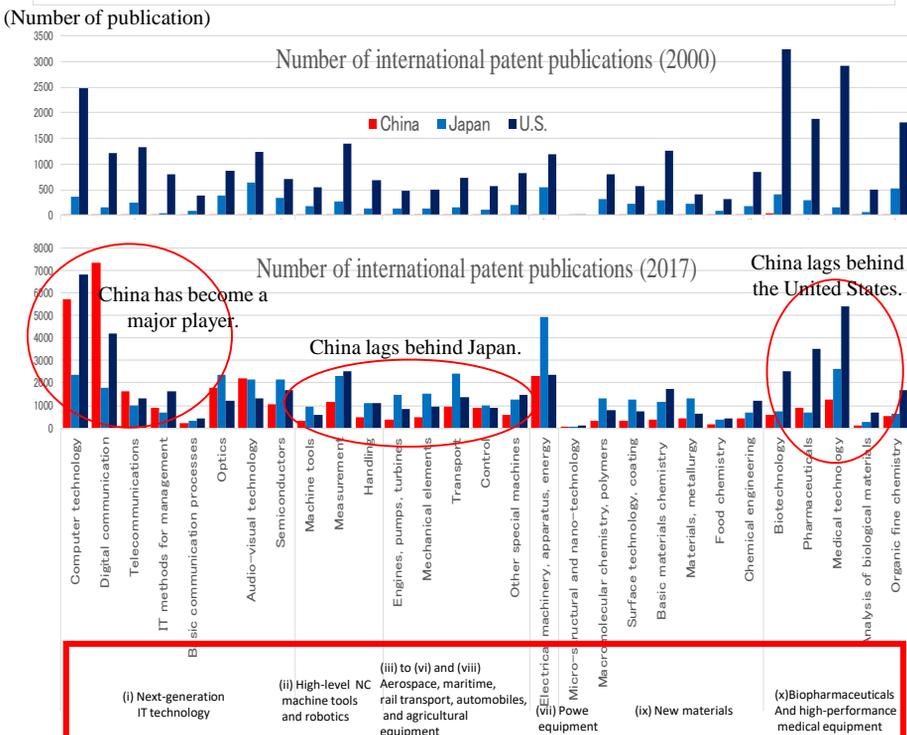
It can be said that the financing environment in China is very favorable for entrepreneurs.

- The number of Chinese international patent publications has increased over the past 18 years and has almost caught up with the United States and Japan.
- Regarding the 10 priority fields of “Made in China 2025”, China has become a major global player in the field of IT-related technology.
- On the other hand, China still lags behind the United States in the field of biotechnology and medical products, and behind Japan in the field of machinery.

International Patent Applications in Major Countries



Since China acceded to the Patent Cooperation Treaty (PCT) in 1994, the annual number of patent applications have risen sharply. In 2000, China was 16th in terms of the number of international patent applications, with 782 applications. China overtook the Republic of Korea in 2010 and Germany in 2013, and in 2017, it overtook Japan to become the global No. 2, after the United States.



Looking at the number of international patent publications in the 10 priority fields of “Made in China 2025”, China has not only caught up with major global countries in the field of IT-related technology in particular but is also leading the world in some fields, such as digital communications.

On the other hand, China lags behind the United States in biotechnology and medical technology and behind Japan in the field of machinery-related technology, including robotics, in terms of the number of patent publications. This indicates that China has focused on particular fields in efforts to enhance its technological capability.

China is attempting to strengthen its competitiveness in fields where it is lagging, designating them as priority fields, and it is possible that the country will make rapid advances in some of those fields, as it did in the field of IT-related technology.

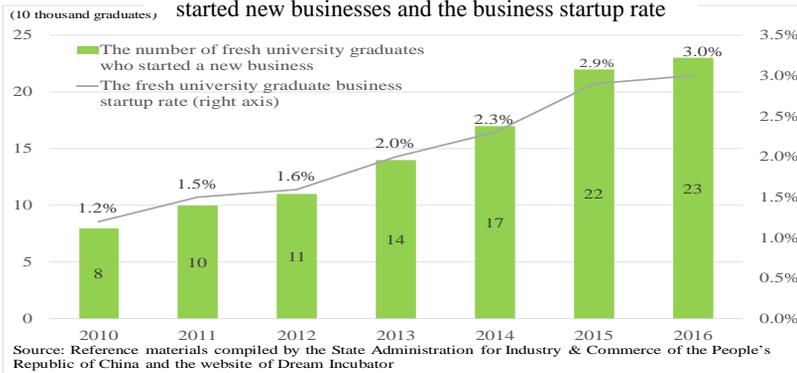
Source: WIPO (2017) data

Remarks: The red square indicate the corresponding relationship with the priority fields of Made in China 2025. In some cases, applicants choose the option of treating core technology as a “black box” and refrain from filing a patent application concerning it. Therefore, it should be kept in mind that the number of patent publications does not directly indicate the level of countries’ or companies’ technological capability.

Massive number of highly skilled human resources

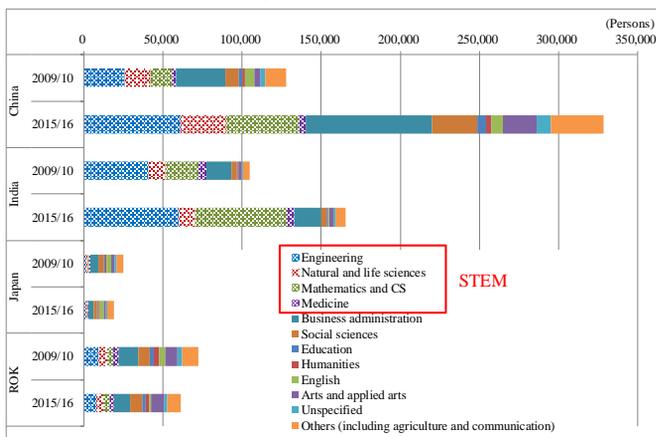
- In China, the annual number of fresh university graduates who start a new business has been around 200,000 in recent years.
- Many Chinese students study in the United States, mainly in the STEM (science, technology, engineering, and mathematics) fields. Partly because of the Chinese government's policy of encouraging students to return home after studying abroad, such students have become a major source of the supply of human resources for innovation and new business in China.
- It is significant to recognize anew the advance of new industries, the improvement of innovation capability, and the state of vigorous entrepreneurship activity in China and to make further efforts to vitalize Japanese domestic industries.

The number of recent university graduates who started new businesses and the business startup rate



What is notable about China is not only the huge number of newly registered companies but also the large number of new businesses started by recent university graduates. Of the more than 7 million students who graduate from university annually, around 200,000 start a new business.

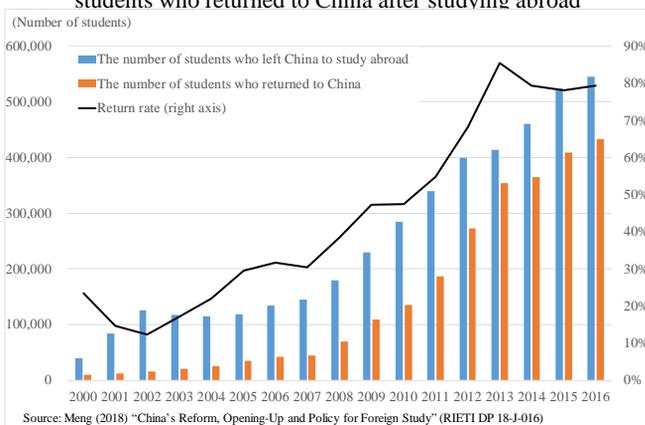
Number of students studying in the United States by nationality and major



The massive supply of human resources in the science and engineering fields is considered to be one reason for the large numbers of patent applications, research papers and unicorn companies in China.

Nearly half of Chinese students studying in the United States major in the STEM (science, technology, engineering and mathematics) fields. In 2009/2010, 45.6% of Chinese students in the United States majored in the STEM fields, and the share was 42.7% in 2014/2015.

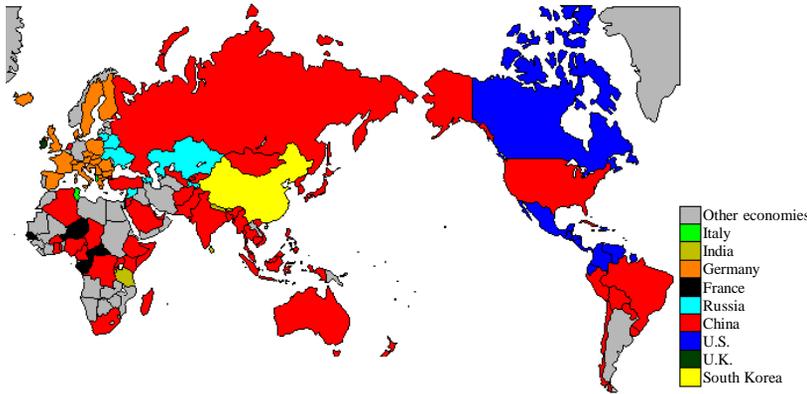
Numbers of Chinese student who left China to study abroad and Chinese students who returned to China after studying abroad



From 2000 onwards, the number of Chinese students studying abroad continued to rise, but until 2008, the return rate among such students was as low as less than 30%. However, the Chinese government announced a series of measures to encourage Chinese students studying abroad to return to China in order to secure highly skilled human resources, and as a result, the return rate has risen rapidly since then. The return rate in 2013 was 85%.

- Countries for which China is the largest import source country have rapidly increased. In 2017, China was the largest import source country for around 30% (57 countries) of all countries around the world.
- China is also the largest export destination country for 16% (30 countries) of all countries around the world, the second largest share after the United States.

Map of countries color-coded by the largest import source country (2017)

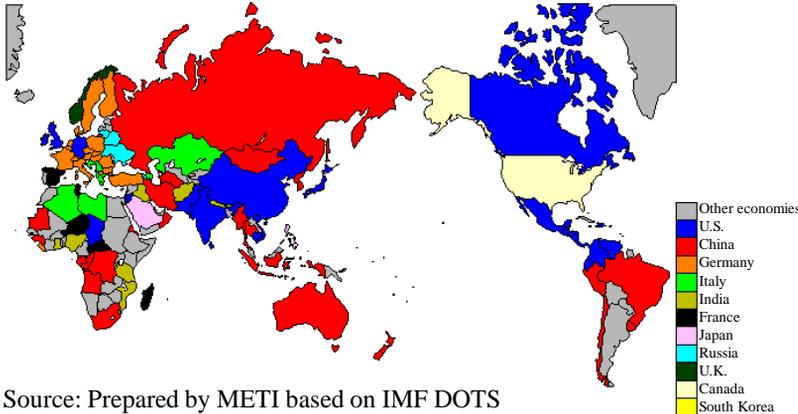


Source: Prepared by METI based on IMF DOTS

In 2017, China was the largest import source country for most countries excluding Canada, Mexico, some Central and South American countries, and some European countries.

For Canada, Mexico and European countries, the main industrialized country in their regions—the United States in the case of Canada and Mexico and Germany in the case of European countries—are the largest import source countries. However, China is the largest import source country for the United States and the second largest for Germany, after the Netherlands.

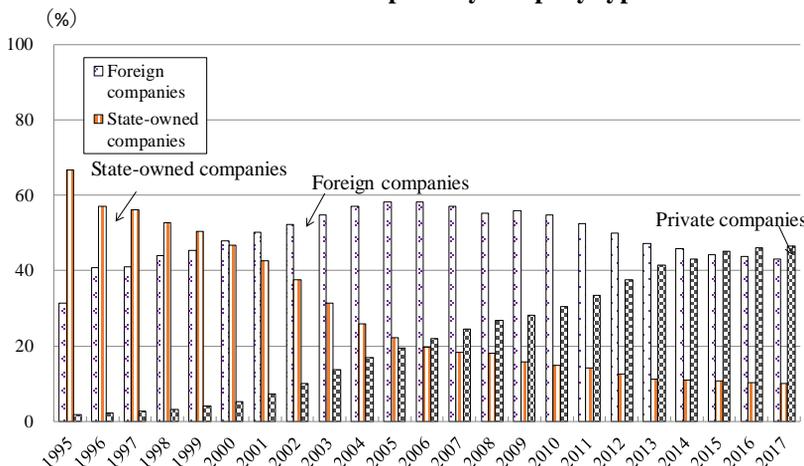
Map of countries color-coded by the largest export destination country (2017)



Source: Prepared by METI based on IMF DOTS

In 2017, China replaced Japan as the largest export destination country for ASEAN and Australia. In addition, China replaced the United States as the largest export destination country for many countries in Africa and South America.

Share in China's exports by company type



Remarks: Foreign companies include not only companies fully owned by foreign interests but also joint ventures between local and foreign companies.

Source: The Chinese General Administration of Customs, CEI database, and Global Trade Atlas

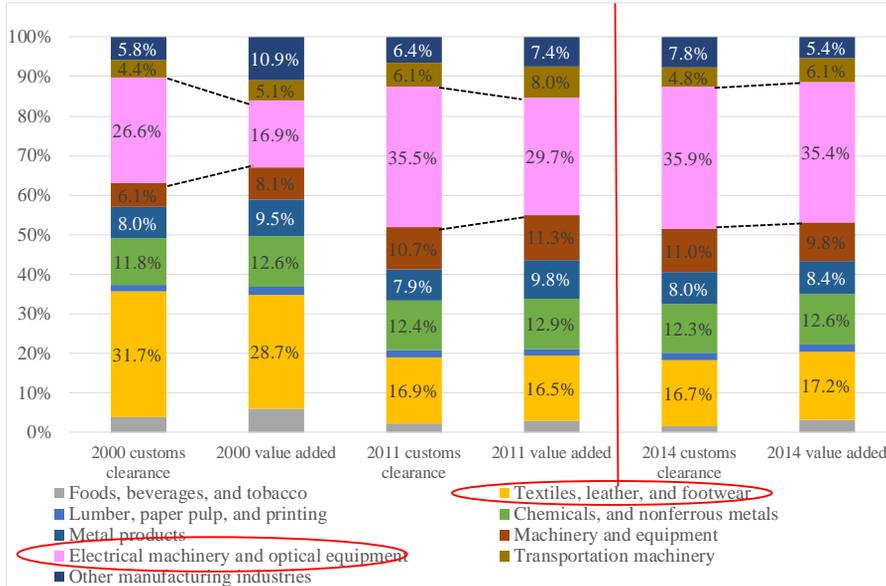
Looking at the share in China's exports by corporate ownership type, state-owned companies' share declined, while foreign companies' share continued to grow until the middle of the 2000s. This is evidence that foreign companies played a major role in Chinese exports.

However, as private export companies have been growing, their share has recently surpassed foreign companies' share.

Change in China's main export industries

- Electrical and optical equipment have replaced textiles as the main driver of Chinese exports.
- The growth in the shares of China's electrical and optical equipment industries in exports is higher on a value-added basis than on a customs-clearance basis. The domestic value-added ratio in the industry's export is also growing, indicating progress in a shift to local procurement of parts and to products with higher value added

Share of value in China's exports comparison with VA and CC by industry

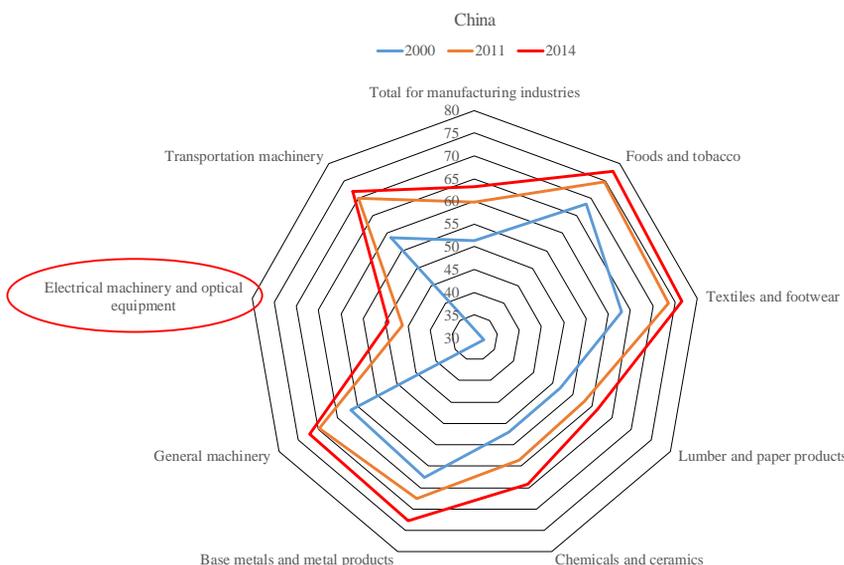


Looking at a share of value in China's exports by and optical equipment have replaced textiles as the main driver of Chinese exports.

The growth in exports by China's electrical and optical equipment industries is higher on a value-added basis (VA) than on a customs-clearance basis (CC).

Remarks: Data from OECD TiVA was used with respect to value added in 2000 and 2011. Value added in 2014 was estimated based on WIOD
Source: GTA, OECD TiVA, and WIOD

Changes in domestic value added ratio in the export by industry



Remarks: The figures for 2014 are provisional.
Source: OECD TiVA

On an industry-by-industry basis, the share of the electrical and optical equipment industries in China was low at around 30% in 2000.

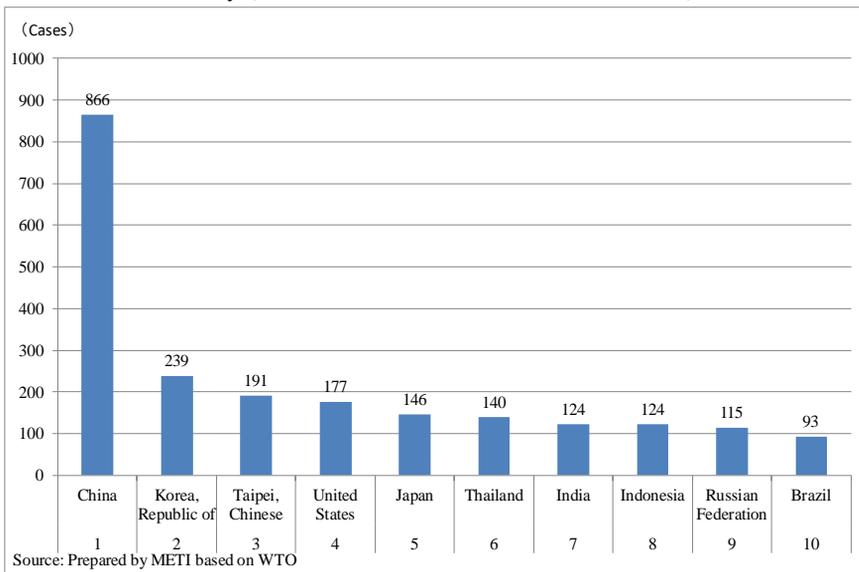
This is presumably because those industries were using a global value chain in their manufacturing activity, as shown by their imports of a large volume of semiconductors and liquid crystal display panels from other countries.

On the other hand, those industries' share of the value added increased from the level in 2000 to around 50% in 2011 and 2014, indicating progress in a shift to local procurement of parts and to products with higher value added.

Trends in various countries with respect to trade with China

- Between 1995 and 2016, China was the most frequent target of anti-dumping (AD) measures, as AD measures were implemented against it in 866 cases. In recent years, the number of cases in which AD measures were implemented has been trending upward. Emerging and developing countries implemented anti-dumping measures against China in more cases than advanced countries, such as the United States and European countries.
- In addition to implementing AD measures against China, the United States considered and implemented other measures with respect to trade with China based on Section 301 of the trade act and other laws.
- Europe has also implemented AD measures against China, and revised the AD regulation in 2017.

Number of cases in which AD measures were implemented by exporting country (cumulative total between 1995 and 2016)

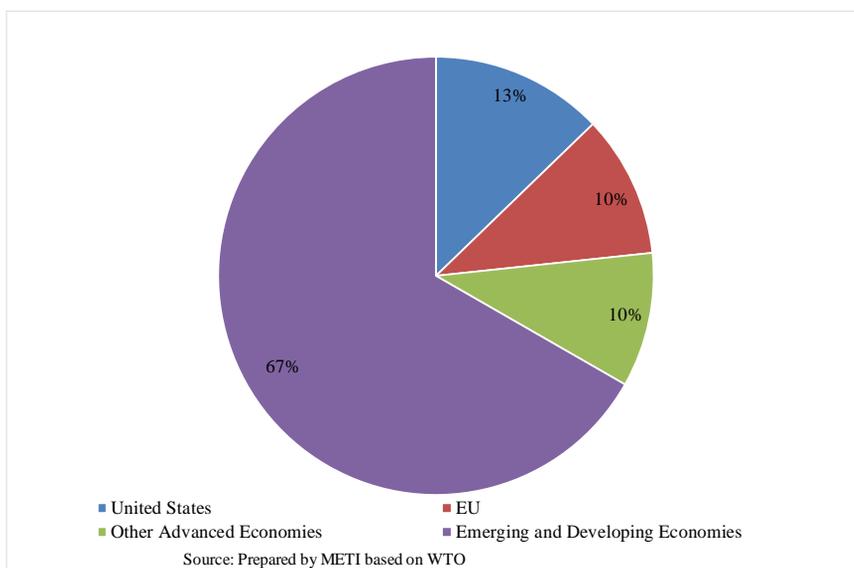


Following the establishment of the WTO, China was the most frequent target of AD measures (866 cases) between 1995 and 2016, followed far behind by the Republic of Korea (239 cases), Taiwan (191 cases), the United States (177 cases), and Japan (146 cases) in that order.

In recent years, the number of cases of implementation of AD measures against China has increased across the world: the number was 61 cases in 2015 and 44 cases in 2016, increasing steeply from 27 in 1995.

Source: Prepared by METI based on WTO

Number of cases of implementation of AD measures against China (by region) (cumulative total between 1995 and 2016)

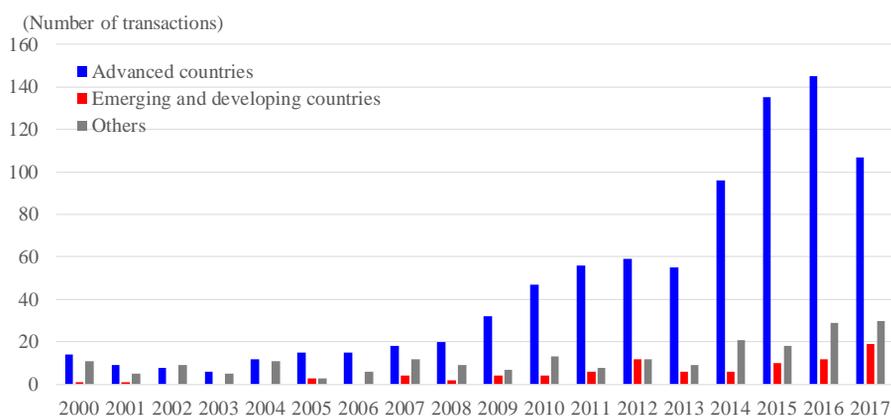


On a region-by-region basis, , emerging countries implemented AD measures against China in more cases than advanced countries did. Among advanced counties, the United States implemented AD measures against China most frequently, followed by the EU.

Increasing China's foreign direct investments

- Since the beginning of the 2010s, Chinese companies have become active in acquiring industrial and technology companies in advanced economies.
- The United States has strengthened regulation on foreign direct investment. For example, it has refused to approve acquisitions of U.S. companies by Chinese ones in some cases.
- As for EU, European Commission has proposed the establishment of a new screening framework concerning foreign direct investments in the region. At the national level as well, Germany and some other EU member countries are moving to strengthen their regulation.

Changes in the number of Chinese companies' cross-border M&As (industrial and technology sectors)



Remarks 1: Acquired companies were classified by nationality into advanced countries, emerging and developing countries, and others. The "advanced countries" are those in the IMF's advanced country category excluding Hong Kong and Macau. "Others" are Hong Kong, Macau, the British Virgin Islands, the Cayman Islands, and Bermuda.
Remarks 2: The industrial and high-tech sectors include software, semiconductors, electrical equipment, machinery, and automobiles and auto parts.
Source: Prepared by METI based on Thomson One (as of March 2018)

The number of cross-border M&As by Chinese companies increased 14-fold, from 44 transactions in 2000 to 598 transactions in 2016. However, in 2017, the number declined to 463 transactions due to the Chinese government's restrictions on capital outflow.

As a measure to enhance the innovation capability of technologies and industries that it wants to develop as priorities, the Chinese government is actively promoting M&As as a national policy.

In the industrial and high-tech sectors, Chinese company M&A is mainly targeted at countries in advanced economies, mainly the United States and the EU, rather than those in emerging and developing countries.

Cases of prohibition of investment based on recommendations from CFIUS

Implementation year	President	Overview
2016	Barack Obama	Ordered the prohibition of the acquisition of Aixtron, a German semiconductor company owning assets in the United States, by Fujian Grand Chip Investment Fund, a Chinese investment fund. The Congressional Research Service cited a reported blocking of the transaction due to the possibility that Aixtron's overall technical body of knowledge and experience could be applied to military use.
2017	Donald Trump	Ordered the prohibition of the acquisition of Lattice Semiconductor, a U.S. semiconductor company, by Canyon Bridge Fund, in which a company affiliated with the Chinese government is investing. The reason was that, as Lattice is handling military-use devices used by the U.S. government, a transfer of intellectual property from the company could pose a national security threat.

With respect to foreign direct investments in the United States, there has been an increasing number of cases in which a corporate acquisition by a Chinese company is reviewed by the Committee on Foreign Investment in the United States (CFIUS). In some cases, the president has issued an order prohibiting an acquisition.

In Japan, too, the Foreign Exchange and Foreign Trade Act was revised in 2017 to strengthen the control of foreign direct investment in Japan (the revised act was put into force on January 1, 2017).

- The value of Japanese exports to China in 2017 was a record high 14.9 trillion yen. Exports of foods, consumer goods and industrial machinery (semiconductor-manufacturing equipment and machine tools) increased significantly.
- The value of cross-border EC purchases by Chinese consumers from Japan surpassed 1 trillion yen.

Major product items for which Japanese exports to China recorded high growth (2017)

[Consumer goods]

(Unit: million dollars, %)

HS	Items	Value of exports	Growth rate	
		2017	2017 alone	2014–2017
3304	Beauty care products, and preparations for cosmetics	723.3	98	328
3305	Preparations for shampoos and other haircare products	128.4	94	367
3401	Soaps	199.2	77	296
3005	Sanitary cotton, gauze, and bandages	45.4	57	160
9619	Baby diapers	1,220.8	26	121

[Industrial machinery]

(Unit: million dollars, %)

HS	Items	Value of exports	Growth rate	
		2017	2017 alone	2014–2017
8429	Civil engineering machinery (bulldozers)	214	63.4	71.0
8456	Machine tools (for laser processing)	245	60.9	45.6
8477	Rubber and plastics processing machinery	903	48.4	52.4
8486	Semiconductor-manufacturing equipment	6,552	43.5	118.1
8457	Machine tools (machining centers)	1,359	39.0	2.4

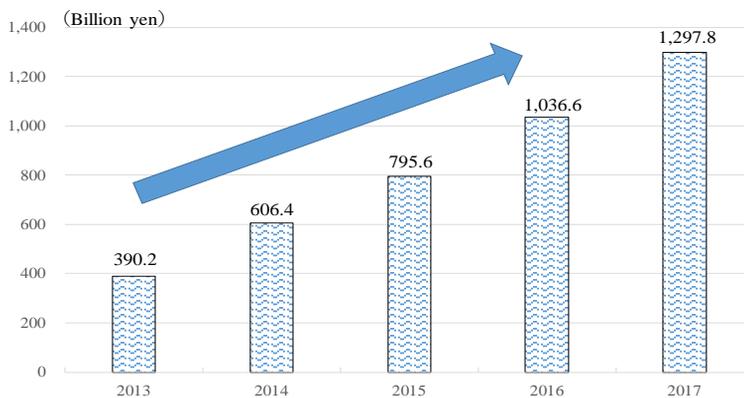
Remarks: 1. Product items whose growth rate was high or whose value was large in 2017 on an HS4 digit basis were selected.
2. Product item names were simplified for the sake of ease of use.
3. Figures for 2014–2017 represent the total of the growth rate.
Source: Global Trade Atlas

The value of Japanese exports to China reached a record high of around 14.9 trillion yen in 2017, making China the second-largest export destination country for Japan, after the United States, for which the value of exports from Japan was around 15.1 trillion yen. Exports to China account for around 20% of overall Japanese exports.

Among consumer goods, cosmetics, medical products, products related to leisure, such as toys and travel-related goods, and baby goods recorded high export growth.

Among machinery, machine tools recorded significant export growth, presumably reflecting investment for labor-saving and rationalization purposes. In addition, reflecting an increase in the number of internet users, semiconductor demand is growing rapidly, resulting in a high value and high growth of exports of semiconductor-manufacturing equipment.

Value of cross-border EC purchases by Chinese consumers from Japanese companies

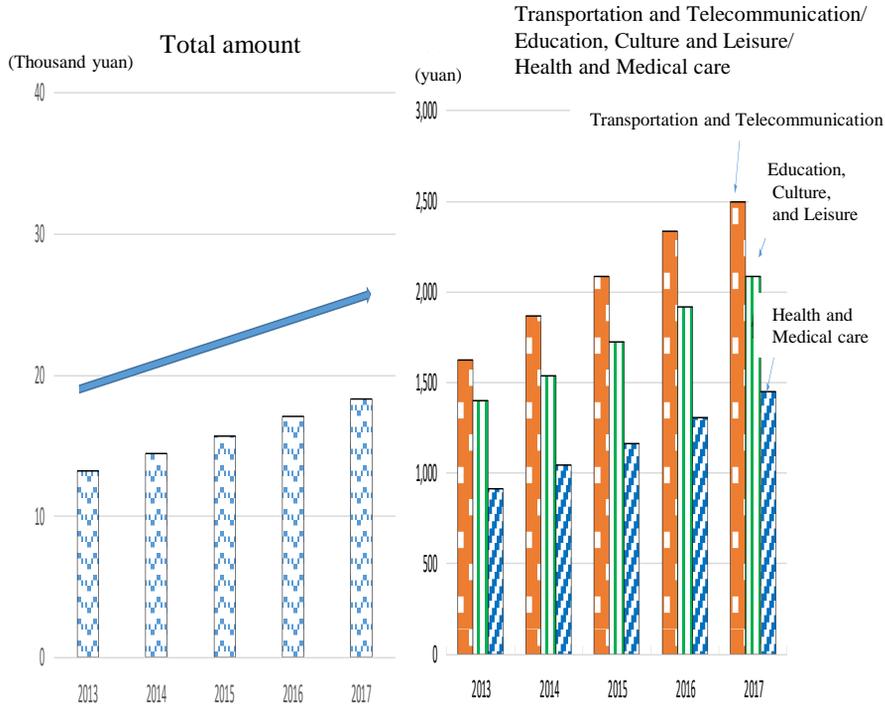


Source: E-Commerce Market Survey (METI)

In recent years, cross-border e-commerce (EC) sales from Japan to China have expanded rapidly. In 2016, the value of such sales surpassed the 1 trillion yen mark and reached 1,036.6 billion yen, and in 2017, the value is estimated to have reached 1,297.8 billion yen (an increase of 25.2% from the previous year).

- The annual value of per-capita consumption in China increased from 13,000 yuan (approx. 1,925 dollars) in 2013 to 18,000 yuan (approx. 2,665 dollars). In particular, the shares of education, culture, leisure, health, and medical care expenditures in overall consumption increased.
- As a result of earnest efforts to deal with environmental problems, related markets are expected to expand.

Changes in per-capita consumption expenditure in China



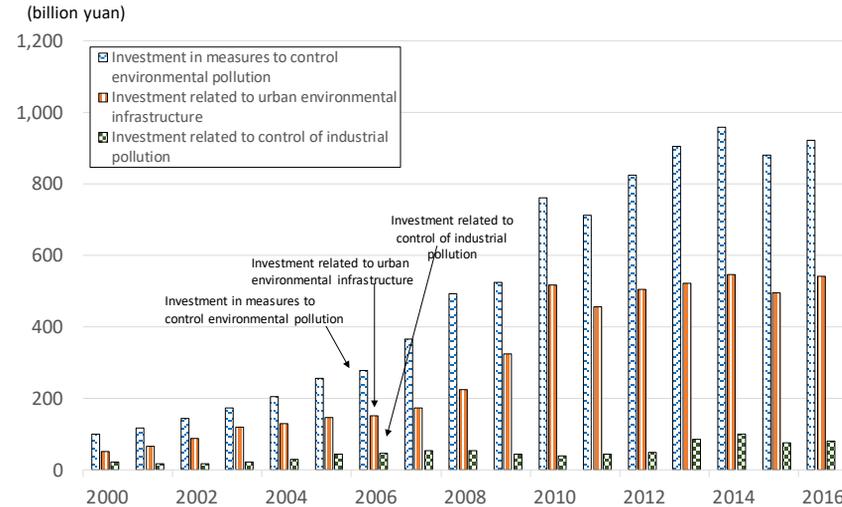
Source: National Bureau of Statistics of China and CEIC database

Source: National Bureau of Statistics of China and CEIC database

Between 2013 and 2017, per-capita consumption expenditure in China increased by around 40%, from 13,000 yuan to 18,000 yuan.

While non-discretionary expenditure, which corresponds to expenditure on clothing, foods and housing, remained almost flat or declined, expenditure on transportation, telecommunications, education, culture, leisure, and health and medical care increased.

Investment in measures to manage environmental pollution in China



Source: Ministry of Environmental Protection and CEIC database

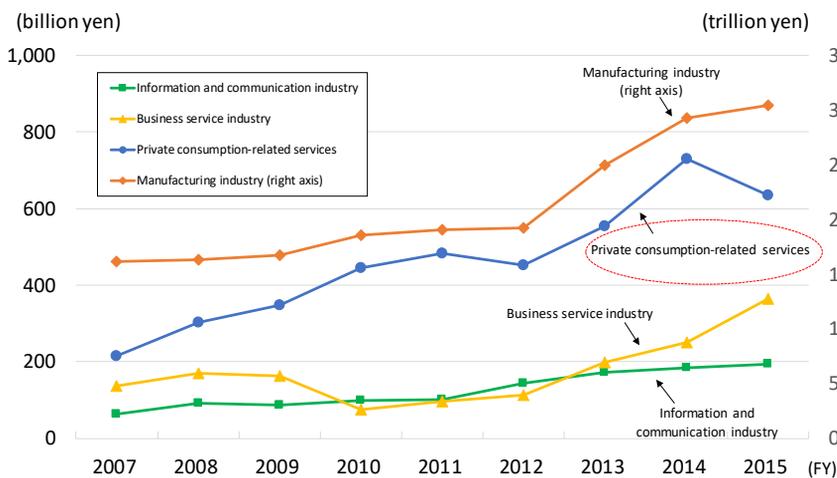
In China, addressing environmental problems has become a major challenge. The value of investments made in measures to manage environmental pollution as announced by the Chinese government has been trending upward despite some year-to-year fluctuations.

While Japanese companies also need to comply with environmental regulations, this may create business opportunities for companies owning superior environmental technologies.

Status and prospects of Japanese companies operating in China

- What is notable about Japanese companies operating in China is the large proportion of manufacturing companies. Japanese manufacturing companies are increasing both sales and profits by capturing robust domestic and external demand related to China.
- On the other hand, the Japanese service industry is lagging behind their European and U.S. competitors in China. There is further room for growth in Chinese consumer markets, including markets of products for the middle class, babies and infants, and elderly people.
- It is crucial to take advantage of the vitality of China, which continues to grow, to vitalize Japanese industries through further business expansion of Japanese companies in China and cooperation between Japanese and Chinese companies in third-party countries.

Changes in sales of Japanese companies operating in China by major industry

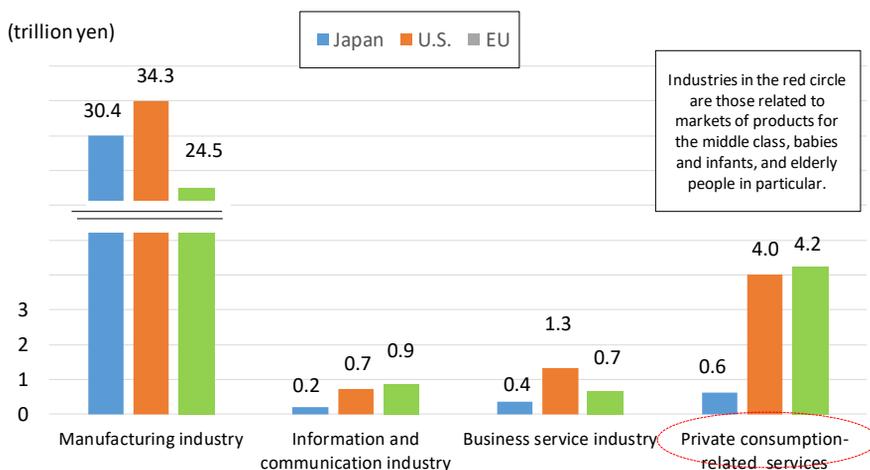


Remarks: Business services as referred to here include consulting, advertising, and professional and technical services, while private consumption-related services include retail trade, accommodations, eateries, education, medical care, welfare service, and leisure.
Source: Basic Survey on Overseas Business Activities (METI)

Looking at sales of Japanese companies operating in China, the proportion of manufacturing companies is large.

Although sales of private consumption-related services are also growing, the sales value is small, at around 60 million yen compared with the sales value of the manufacturing industry, which is around 30 trillion yen.

Sales of Japanese, U.S., and European companies operating in China by major industry (2015)



Remarks: 1. Sales of U.S. and EU companies were converted on the basis of the annual average exchange rates in 2015 (1 dollar = 121 yen; 1 euro = 134 yen).
2. The tabulation was made with respect to business categories which are presumed to cover similar businesses in Japan, the United States and Europe. For example, the "private consumption-related services" category covers retail trade, accommodations, eateries, education, medical care, welfare and leisure, while the "business services" category covers consulting, advertising, and professional and technical services. Automobile sales and repair in the EU were included in wholesale trade.
Source: Basic Survey on Overseas Business Activities (METI), the website of the U.S. Bureau of Economic Analysis under the Department of Commerce, and the website of Eurostat

A comparison between sales by Japanese, U.S. and European companies in China shows that Japanese companies' sales of private consumption-related services are small compared with the sales of their U.S. and European counterparts.

In China, markets of products for the middle class, babies and infants, and elderly people are expanding. In this situation, Japanese companies may be lagging behind European and U.S. companies, which have expanded into China and are already generating sales in those markets.