

**PRODUCTION FORECASTS FOR THE
GLOBAL ELECTRONICS AND
INFORMATION TECHNOLOGY INDUSTRIES**

December 18, 2019

JEITA

JAPAN ELECTRONICS AND INFORMATION TECHNOLOGY INDUSTRIES ASSOCIATION

FOREWORD

In 2019, the Japanese economy saw social infrastructure investment pick up with the start of the new “Reiwa” era and anticipation of 2020, while efforts to boost productivity also continued particularly in the corporate sector. Capital investment and consumer spending underpinned the economy despite the uncertainty caused by factors such as an export slowdown. In the world economy, however, the Chinese economic slowdown continues to worsen, and prospects are becoming increasingly opaque in both the United States and Europe. In its October 2019 World Economic Outlook, the IMF too forecast that real economic growth would be 3.0% in 2019 and would remain at 3.4% in 2020.

Given the market environment, in the annual industries survey conducted by JEITA, production by the global electronics and information technology industries is estimated to increase 1% year on year in 2019 to reach \$2,921.9 billion, and 5% year on year in 2020 to record \$3,080.7 billion. Positive growth is expected to continue on the back of ongoing innovation around the world toward the commercialization of 5G, as well as more demand for solution services with a view to boosting corporate value.

Global production by Japanese electronics and IT companies is expected to decline 3% year on year in 2019 to ¥37,400 billion due to the export slowdown caused by protracted trade friction between the US and China. Positive growth should return in 2020, however—up 2% to ¥38,100 billion—due to more production of highly functional, energy-saving, and highly reliable electronic components and devices in response to the greater use of electronics in automobiles and advances in IoT device functionality.

In this environment, JEITA’s activities are focused on building new value creation platforms to help realize “Society 5.0”, a super-smart society in which everything is connected to networks and shares data so as to enable more people to participate actively in value creation.

In its tenth “Trends Survey of Focused Areas,” JEITA took up the theme of “Demand Creation Through Local 5G and the Advance of an 5G Era,” which is a key issue in achieving Society 5.0. JEITA conducted a quantitative analysis with respect to the expansion of the CPS/IoT market as well as the 5G and local 5G underpinning the evolution of that market, and also indicated a “Future Vision for a CPA/IoT Society” in a use case scenario.

In 2020 and beyond, JEITA will continue to enhance the contents of the Production Forecasts report by seeking out comments and opinions widely. We will continue to report every year in the sincere hope that information from JEITA proves to be a valuable resource for both within and outside the electronics and IT industries.

December 2019

Nobuhiro Endo

Chairman

Japan Electronics and Information Technology Industries Association (JEITA)

PRODUCTION TRENDS IN THE GLOBAL ELECTRONICS AND INFORMATION TECHNOLOGY INDUSTRIES (IN DOLLAR TERMS)

Total global production by the electronics and IT industries is expected to increase by a mere 1% year on year in 2019 to reach \$2,921.9 billion. While solution services should remain strong thanks to more sophisticated utilization of data and the automation thereof, the slowdown in the global economy caused by persistent trade friction between the US and China, among other factors, has driven semiconductors and electronic components into a correction phase. The situation is expected to improve in 2020, which, combined with the advance of 5G and the further expansion of aggressive IT investment, should result in positive growth of 5% year on year to \$3,080.7 billion.

[Production by the Global Electronics and IT Industries (in dollar terms)]

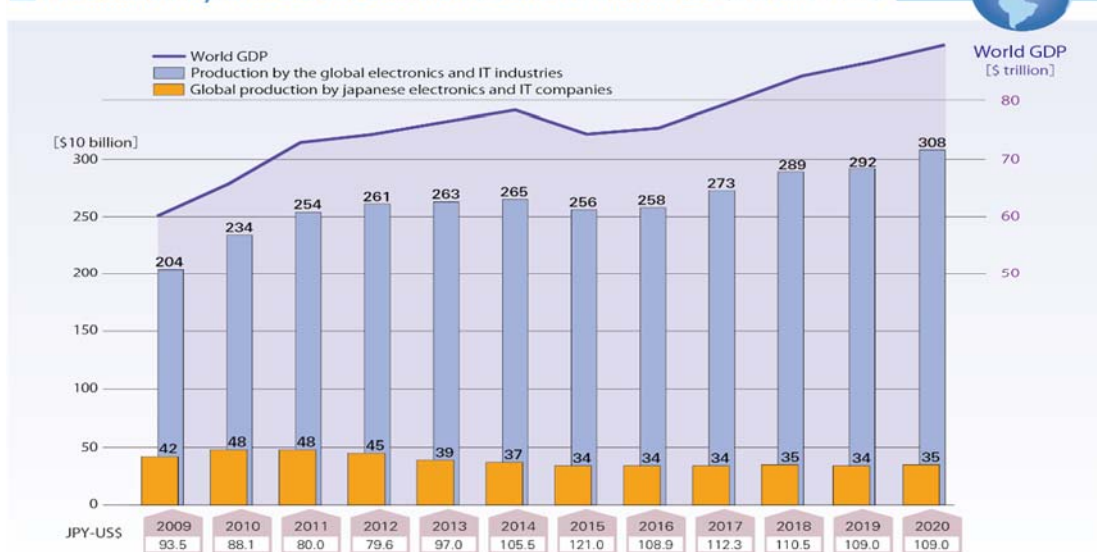
Production by the global electronics and IT industries is expected to grow only 1% year on year in 2019 to reach \$2,921.9 billion, but it should pick up again in 2020, lifting 5% year on year to reach a record \$3,080.7 billion. Despite considerable economic uncertainty around, for example, enduring trade friction between the US and China, ongoing aggressive IT investment by leading-edge companies seeking to realize creative innovation should see demand for solution services continue to grow. The advance of 5G will amplify the need for high-speed processing of vast amounts of video and other data, contributing significantly to the advance of terminal functionality, while greater safety awareness will boost the percentage of electrical componentry in automobiles. Consequently, strong growth can be expected for electronic components and devices.

Looking at changes in the breakdown by field from 2009 to 2019 (estimate), production increased from \$275 billion to \$517 billion in the global growth area of communications equipment including smartphones; from \$226.2 billion to \$409 billion in the area of

semiconductors; and from \$591.3 billion to \$921.8 billion in IT solution services. As a result, the proportions of these areas in the production of the global electronics and IT industries have risen 5 percentage points, 3 percentage points, and 3 percentage points respectively over the past 11 years.

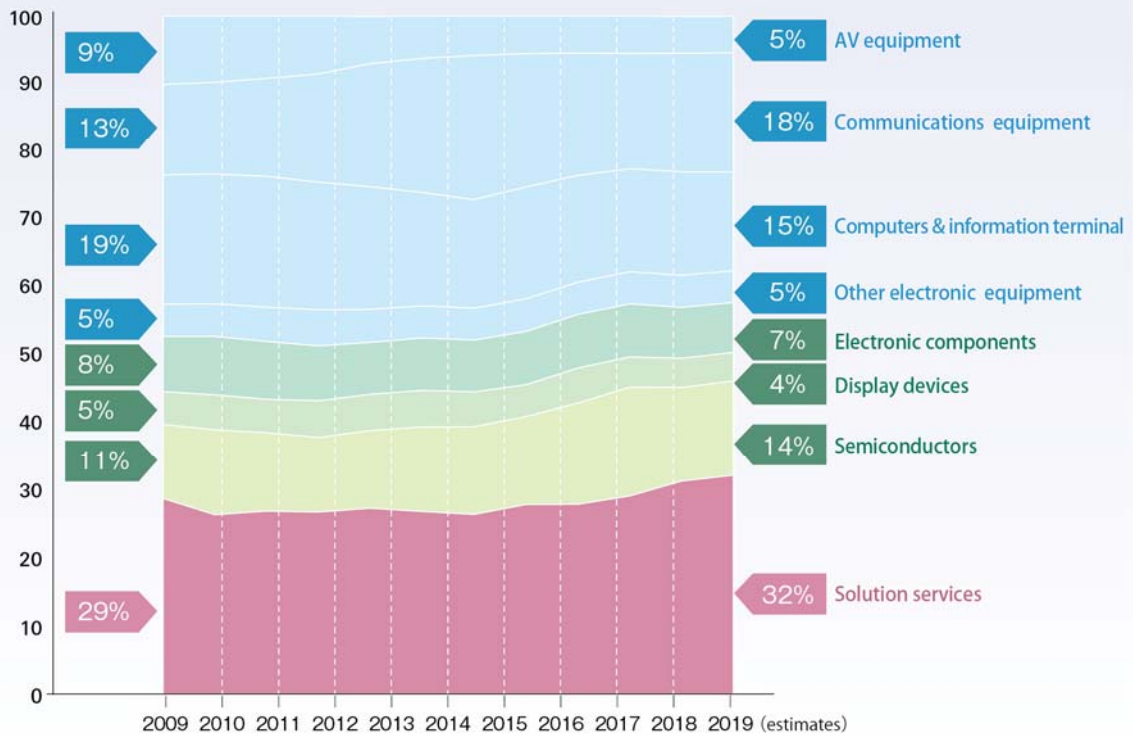
Global production by Japanese electronics and IT companies has continued to decrease since the 2010 peak of \$484.3 billion, with the \$342.8 billion recorded in 2019 representing only around 70% of the peak level. Looking at changes in share during this period, where Japanese electronics and IT companies enjoyed a 21% share of total world production in the peak year of 2010, in 2019 that share is expected to sit at 12%. The drop is due to intensified competition from foreign companies, along with limited growth on the part of Japanese companies in the area of solution services, which is currently registering high growth worldwide. Japan too needs to engage in more aggressive IT investment in order to bring more creativity to its innovation.

■ Production by the Global Electronics and IT Industries (IN DOLLAR TERMS)

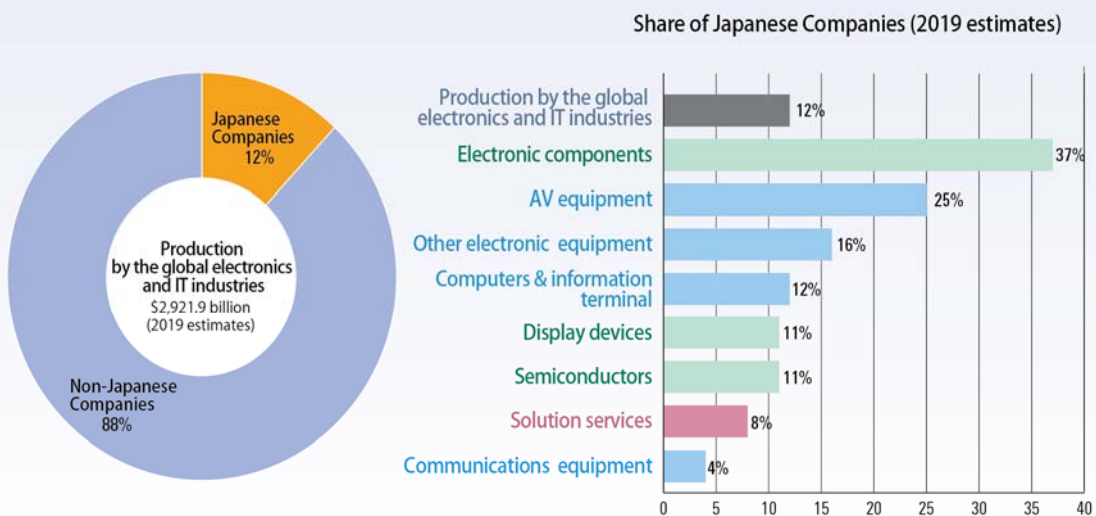


average exchange rate of the yen to the dollar (2020 is viewed to be the same rate as 2019.)
World GDP is from IMF data

Production by the Global Electronics and IT Industries
Composition Ratio by Field (2009→2019 estimates)



Production by the Global Electronics and IT Industries (2019 estimates)

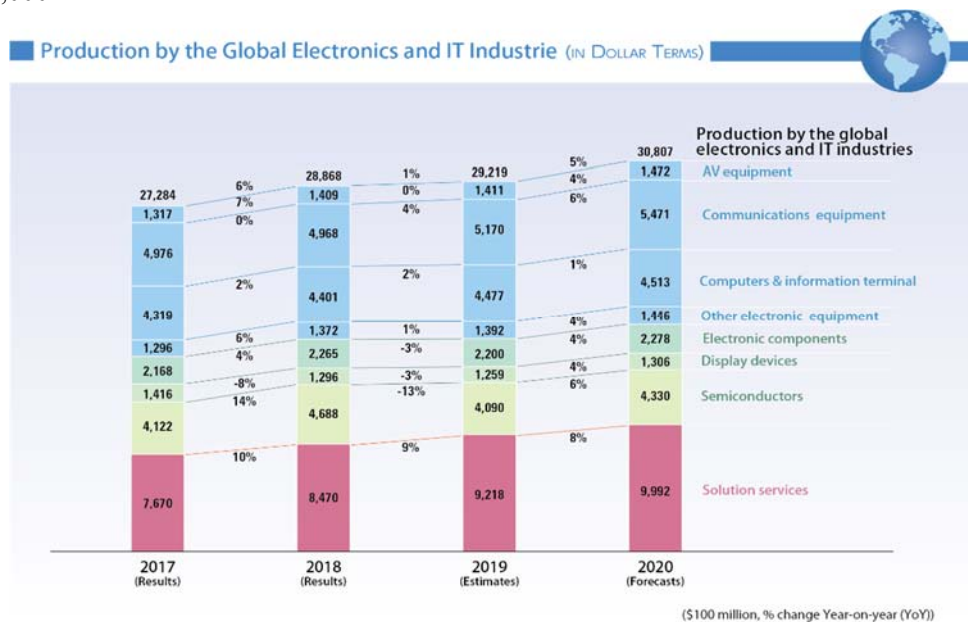


PRODUCTION FORECASTS FOR THE GLOBAL ELECTRONICS AND INFORMATION TECHNOLOGY INDUSTRIES (IN DOLLAR TERMS)

Overall production by the global electronics and IT industries (in dollar terms) was driven by the continued strong performance of solution services on the back of more sophisticated data use and the automation thereof. However, the slowdown in the global economy caused by protracted trade friction between the US and China, etc, weakened business sentiment and constrained capital investment, with electronic components and devices recording negative growth. As a result, production is expected to increase only slightly in 2019. The advance of 5G and the further expansion of aggressive IT investment around the world should boost both solution services and electronic components and devices, generating positive growth in 2020.

In 2019, the world economy had to deal with a worsening economic slowdown in China and increasingly opaque prospects in both the United States and Europe. In its October 2019 World Economic Outlook, the IMF forecast that real economic growth would be 3.0% in 2019, the lowest level since the global financial crisis. Against this backdrop, the electronics and IT industries are being swept by a wave of reform that transcends industry boundaries. More sophisticated use of data and the automation thereof are transforming business models and boosting productivity, while efforts are also underway to create new value. However, the economic uncertainty caused by factors such as the unabating US-China trade friction are weakening business sentiment and constraining capital investment, protracting the correction phase underway in electronic components and devices. Total global production by the electronics and IT industries (total of electronics industry and IT solution services) in 2019 is expected to rise a scant 1% year on year to \$2,921.9 billion. Of this total, production by the electronics industry (hardware, including electronic equipment, components and devices) is also expected to record negative growth, decreasing 2% year on year to \$2,000.1 billion.

In 2020, despite lingering concern about the global economy, government economic stimulus packages introduced in China and elsewhere should begin to produce results, while the launch of 5G services around the world will increase the need for immediate processing and storing of huge amounts of video data. More advanced terminal functionality, advances in video analytics and transmission technologies, and innovations in AI-based Big Data analysis technologies will progress new value creation in areas of utilization such as manufacturing, public works, and other areas of industry. Additionally, new services will emerge, boosting demand for solution services related to these. Electronic components and devices should also grow as a result of the greater percentage of electrical equipment used in automobiles as safety consciousness increases, the emergence of more advanced smartphones as a form of social infrastructure accompanying economic advance, and widening demand for smart speakers that can be easily operated by anyone using voice commands. Production by the global electronics and IT industries should consequently realize positive growth in 2020, increasing 5% year on year.




FORECASTS OF GLOBAL PRODUCTION BY JAPANESE COMPANIES (IN YEN TERMS)

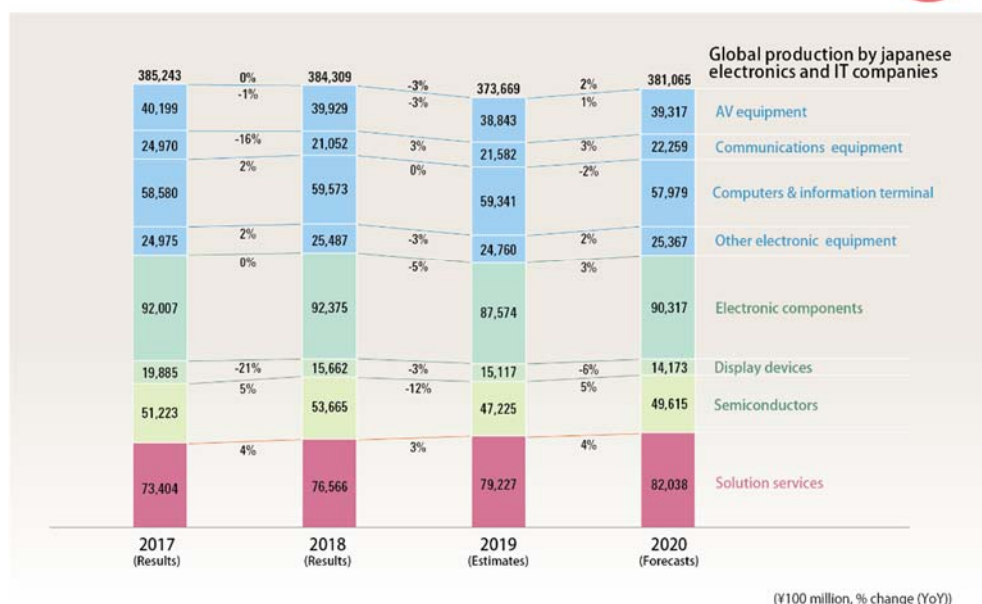
In 2019, greater corporate productivity and improvements to facility safety should boost demand for computers, public displays, and solution services, but protracted trade friction between the United States and China will pull down electronic component and device exports, with global production by Japanese electronics and IT companies projected to decline 3% year on year to ¥37,366.9 billion as a result. Looking ahead, the introduction of increasingly sophisticated IoT devices* and the emergence of a string of new business models are expected to expand demand, with a production increase of 2% year on year forecast for 2020.

With social infrastructure investment picking up in the leadup to 2020, the Japanese economy has continued to enjoy modest growth driven primarily by the corporate sector. However, declining exports particularly to China and Asia may affect the performance of the manufacturing industry, while consumer sentiment could cool as a result of flattening income. In Japan's electronics and IT industries, demand for computers has been strong thanks to more rigorous labor management particularly in the corporate sector as part of workstyle reform, as well as the penetration of productivity enhancement initiatives. Demand for public displays has also been robust, the aim being to boost safety and convenience. However, the high-function, energy-efficient, and highly-reliable semiconductors and electronic components at which Japanese manufacturers excel have been hit hard by the slowdown caused by persistent US-China trade friction, and production by Japanese electronics and IT companies (including offshore production) in 2019 is estimated to drop 3% year on year to ¥37,366.9 billion, within which electronics production is expected to decline 4% year on year to \$29,444.2 billion.

Despite ongoing concerns such as enduring US-China trade friction, efforts to create new value by developing functions aligned with customer needs in various industry and business types are projected to accelerate. Increased demand for IoT* devices and solution services should make a significant contribution as a source of new value creation, including AI-based, high-speed Big Data analysis, sophisticated security technologies, and Robotic Process Automation (RPA) using data linkage technology. Demand for electronic components and devices is expected to grow due to the surge in demand arising from expanding 5G-related investment, the growing percentage of electrical equipment in automobiles as a result of enhanced autonomous driving support functions, and the growing number of electronic components used in smartphones as their functionality advances. Global production by Japanese electronics and IT companies should record positive growth of 2% year on year in 2020.

* IoT devices: All electronic devices and physical objects connected via networks.

■ Global Production by Japanese Electronics and IT Companies (IN YEN TERMS) 



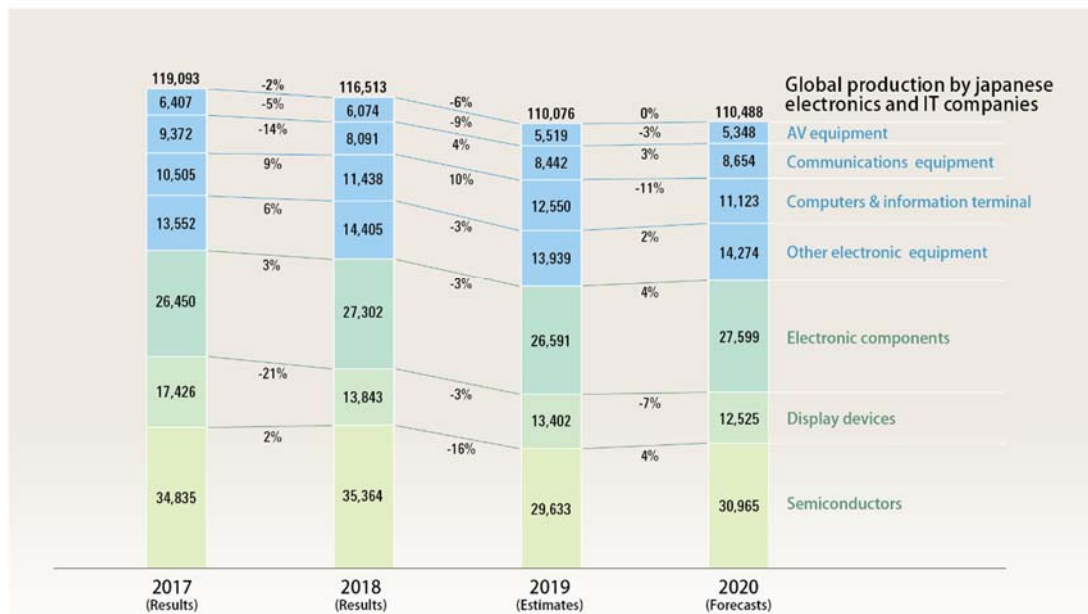
FORECASTS OF DOMESTIC PRODUCTION BY THE JAPANESE ELECTRONICS INDUSTRY (IN YEN TERMS)

While production of computers and other information devices rose in 2019, domestic production by the Japanese electronics industry is expected to fall 6% year on year to ¥11,007.6 billion due to fewer exports of electronic components and devices. Looking ahead to 2020, while the ongoing trade friction between the US and China presents a cause for concern, more advanced functionality and eco-friendly innovations in automobiles and electronic devices should see electronic components and devices recover, with domestic production by the Japanese electronics industry coming in at much the same year on year as in 2019 at ¥11,048.8 billion.

While the corporate sector enabled the Japanese economy to sustain moderate growth in 2019, a nosedive in exports particularly to China and Asia may affect the performance of the manufacturing industry. Consumer sentiment may also have cooled as a result of flattening income and the October consumption tax hike. In the electronics industry, stable corporate demand for computer replacement and infrastructure investment in the run-up to the Tokyo 2020 Olympic and Paralympic Games should realize positive growth for public displays, etc. However, the electronic components and devices which account for just under 70% of domestic production suffered a drop in output due to falling semiconductor memory prices, as well as decreased exports due to the slow recovery of offshore production of automobiles and smart phones, both of which are important sources of demand. As a result, domestic production in the electronics industry in 2019 is estimated to drop 6% year on year.

In 2020, while export concerns will remain due to heightened US-China trade tension, production should rise for the power semiconductors used in energy conservation control, as well as for electronic components like CMOS image sensors and capacitors in response to advances in mobile phone functionality. Increased demand for automobiles and smartphones should boost production and exports of highly reliable electronic components and semiconductors which contribute to greater functionality, slimmer dimensions, and energy conservation. Domestic output in 2020 is consequently expected to hold at around the same level year on year. Domestic production is set to account for 37% of the total global production by Japanese companies in 2020. In particular, the ratio of domestic production should remain strong in areas requiring high reliability and quality, such as public displays (88% manufactured in Japan), server/storage equipment (78%), semiconductors (62%), electronic medical equipment (65%) and electric measuring instruments (68%).

Domestic Production by the Japanese Electronics Industry (IN YEN TERMS)



(¥100 million, % change (YoY))