

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

December 19, 2017

JEITA

JAPAN ELECTRONICS AND INFORMATION TECHNOLOGY INDUSTRIES ASSOCIATION

FOREWORD

For the Japanese economy, 2017 was a year of long-term recovery, which continued mainly in the corporate sector, although consumer spending lacked momentum. Exports and capital investment underpinned the economy given strong corporate earnings. Meanwhile, the world economy was in a stronger recovery trend overall because the economies of Europe, the United States, and China all remained strong. In its October 2017 World Economic Outlook, the IMF forecast accelerated economic growth, with real economic growth increasing from 3.6% in 2017 to 3.7% in 2018.

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 6% year on year in 2017, to \$2,740.1 billion, and is expected to increase 4% year on year in 2018, to \$2,836.6 billion. Positive growth is expected to continue given progress in IT investments and other initiatives for improving productivity, a common issue in the world economy, as well as increased demand for solution services.

Global production by Japanese electronics and IT companies is expected to increase 5% year on year in 2017, to ¥38.5 trillion, and 2% year on year in 2018, to ¥39.2 trillion, due in part to an increase in the production of highly functional, energy-saving, highly reliable electronic components and devices reflecting progress in the introduction of electrical equipment and IoT to automobiles.

In this environment, JEITA promotes activities aimed at realizing Society5.0, or a super smart society optimized overall by CPS/IoT, a new concept of creating new added value through information sharing between the real world and the virtual world.

In its eighth “Trends Survey of Focused Areas,” JEITA investigated trends in the world market with respect to CPS/IoT, which will be the key concept for realizing Society5.0, in the area of applications. Particular focus was placed on the Japanese market, which faces a range of issues, including a labor shortage. The areas of “distribution and logistics” and “healthcare” in the Japanese market were added as special topics, and quantitative analysis was done on items that are expected to solve issues and grow with the application of CPS/IoT.

In 2018 and beyond, JEITA will continue to bolster its activities by seeking out comments and opinions widely from both within and outside the electronics and IT industries. We will strive to contribute to the growth of these industries and better lifestyles for people everywhere. We will continue to report on our progress in the future in the sincere hope that information from JEITA proves to be a valuable resource.

December 2017

Shusaku Nagae

Chairman

Japan Electronics and Information Technology Industries Association (JEITA)

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

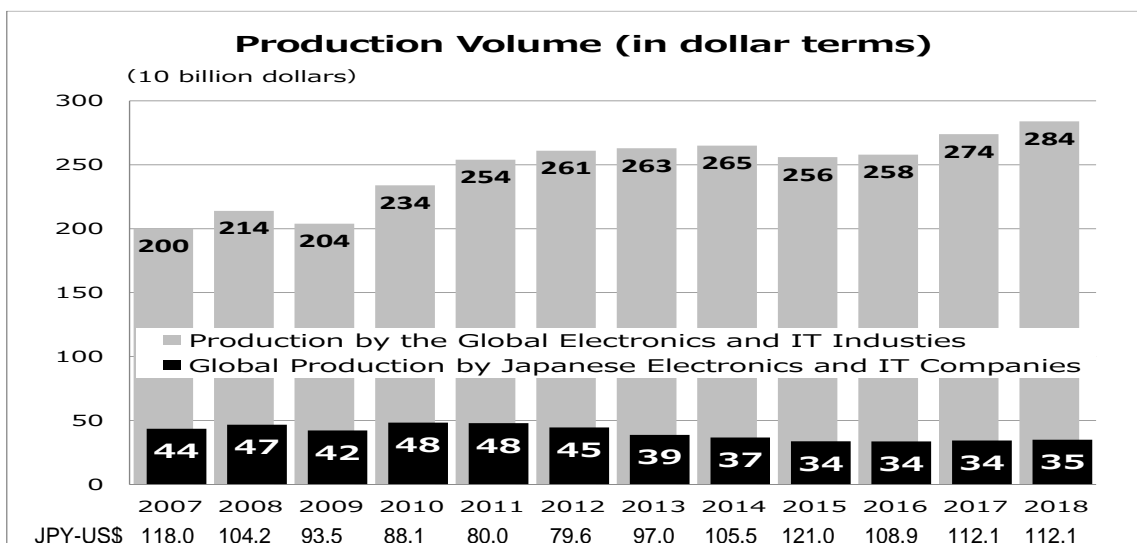
Total global production by the electronics and IT industries is expected to increase 6% year on year in 2017, to \$2,740.1 billion, and should rise 4% year on year in 2018, to \$2,836.6 billion, thanks to further growth in electronic components and devices, due in part to the creation of new value, increased demand for solution services, the higher functionality of smartphones, and the rising percentage of electrical equipment in automobiles, which will result from the global progress in the shift to IoT against the backdrop of a strong world economy.

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

Production by the global electronics and IT industries declined slightly in 2015, reflecting the global economic contraction in 2009 in the wake of the collapse of Lehman Brothers at the end of 2008 and the subsequent slower growth of the world economy. However, production continued to grow steadily in other years. In 2017, it is estimated to increase 6% year on year, to \$2,740.1 billion, and is expected to rise 4% year on year in 2018, to \$2,836.6 billion. In step with the growth of the world economy, growth is expected to continue in this way, breaking the record in two consecutive years. Overall production of the global electronics and IT industries is expected to be driven by unusually high growth of semiconductors and other electronic components and devices attributed to the progress of IoT.

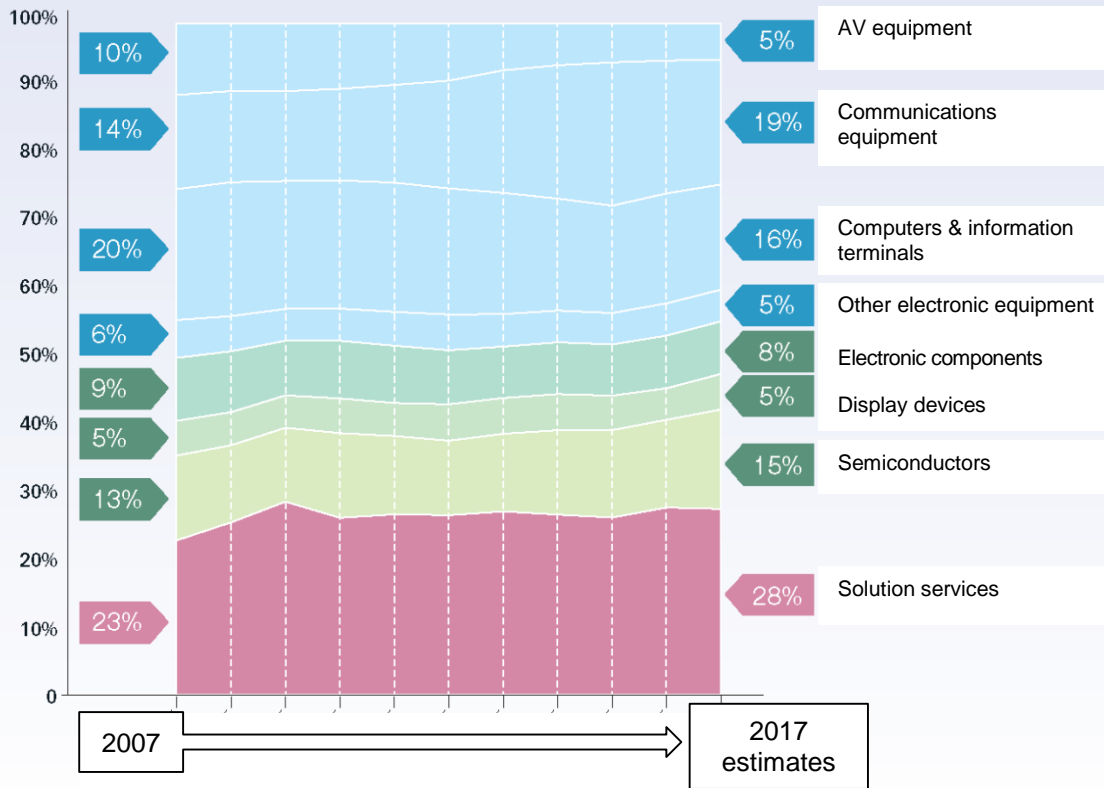
Looking at changes in the breakdown by area from 2007 to 2017 (estimate), production increased from \$282.8 billion to \$512.8 billion in the area of communications, including smartphones, and from \$464.5 billion to \$764.2 billion in the area of IT solution services. As a result, in the production of the global electronics and IT industries, contributions of both areas have risen 5 percentage points over the past 10 years.

Global production by Japanese electronics and IT companies has been on a downward trend since it peaked at \$484.3 billion in 2010. It is expected to increase slightly by 2% year on year in 2017, to \$343.8 billion, which is no more than approx. 70% of the peak value. Looking at changes in the share during this period, the overall share was 21% in the peak year of 2010, meaning that production by Japanese electronics and IT companies accounted for around 20% of total production in the world. In 2017 (estimate), however, the overall share declined by 8 percentage points, to 13%. Behind this trend is a significant fall in the share in the area of electronic equipment where they had traditionally maintained a high global share, such as AV equipment (from 46% in 2010 to 27% in 2017), communications equipment (from 12% to 4%), and computers & information terminals (from 21% to 12%), due to intensified competition with foreign companies. On the other hand, Japanese electronics and IT companies maintain a high share of around 40% in electronic components, although it declined by 2 percentage points from 2010 to 2017 (from 40% to 38%).

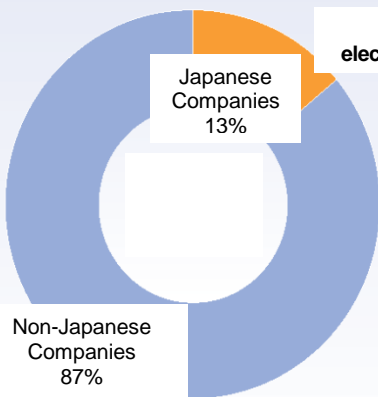


average exchange rate of the yen to the dollar
(2018 is viewed to be the same rate as 2017.)

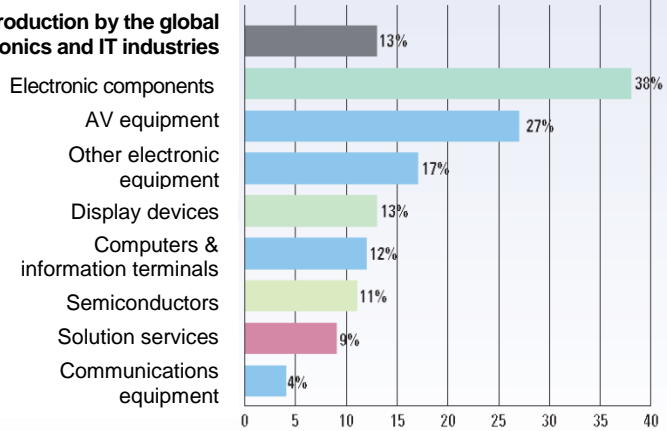
Production by the global electronics and IT industries composition ratio by field (2007→2017 estimates)



Production by the global electronics and IT industries \$2,740.1 billion (2017 estimates)



Share of Japanese Companies (2017 estimates)



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

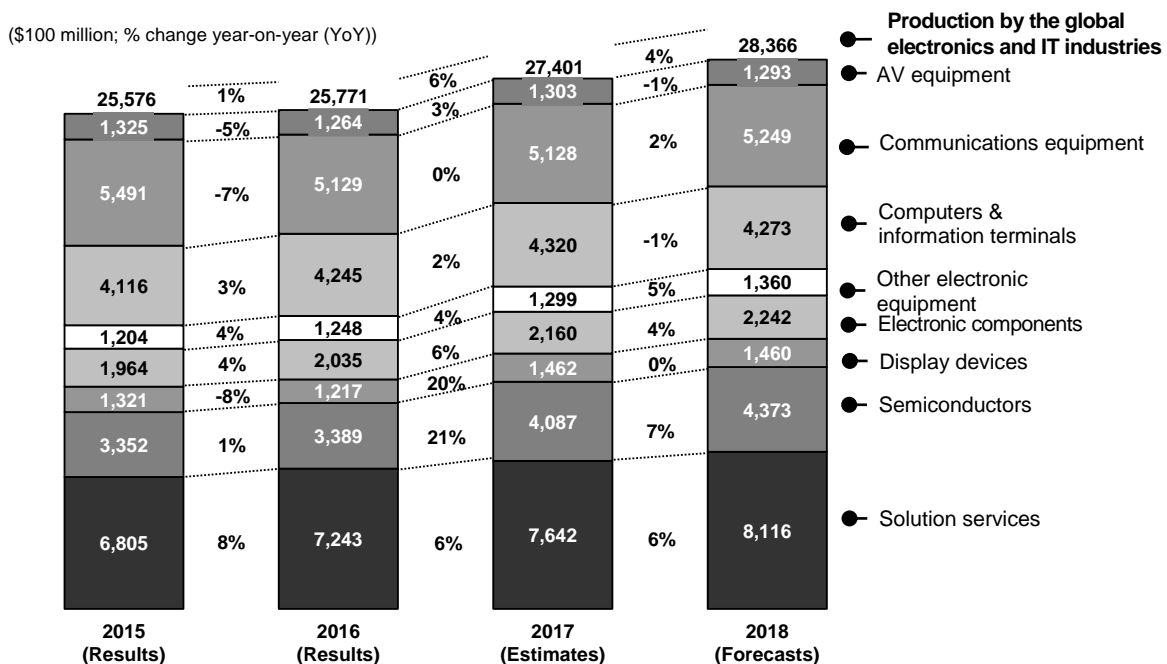
With regard to production by the global electronics and IT industries (in dollar terms), IT solution services remained strong. In addition, the percentage of electrical equipment in automobiles increased due to the higher functionality of smartphones, which is attributed in part to the realization of large-capacity, low-power-consumption semiconductors. As a result, production of electronic components and devices increased, and positive growth is expected in both 2017 and 2018.

In 2017, the world economy was on a stronger overall recovery trend because the economies of Europe, the United States, and China all remained strong. According to the World Economic Outlook by IMF (October 2017), the real economic growth rate is expected to increase from 3.2% in 2016 to 3.6%. Against this backdrop, initiatives for creating new value and innovations are progressing along with the expansion of the use of products and solutions which link a number of industries and apply CPS/IoT. With these and other changes, the Fourth Industrial Revolution has begun, concerning the improvement of productivity as a common issue in the world economy. For the enhancement of automated driving functions and reduction of CO2 emissions in the automotive field, there are growing efforts to increase the percentage of electrical equipment in automobiles. Further, higher functionality of smartphones and other equipment for internet connectivity has been making progress due in part to the advancement of semiconductor technologies. Total global production by the electronics and IT industries (total of electronics industry and IT solutions and services) in 2017 is expected to increase 6% year on year, to \$2,740.1

billion. Of this total, production by the electronics industry (hardware, including electronic equipment, components and devices) is also expected to increase 7% year on year, to \$1,975.8 billion.

In 2018, given the accelerated growth of the world economy, the electronics and IT industries are expected to continue to grow in the percentage of electrical equipment in automobiles and higher functionality of a variety of information equipment, resulting in increased demand for electronic components and semiconductors. At the same time, due to the demand for informatization-related investments by companies, initiatives for creating new value by applying CPS/IoT to productivity improvement are expected to make progress, and rising demand for solution services related to such initiatives is also anticipated. Production by the global electronics and IT industries is expected to increase 4% year on year in 2018. It is expected to maintain growth with the world economy (which is expected to grow 3.7% year on year, according to the World Economic Outlook by IMF).

Production by the Global Electronics and IT Industries



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

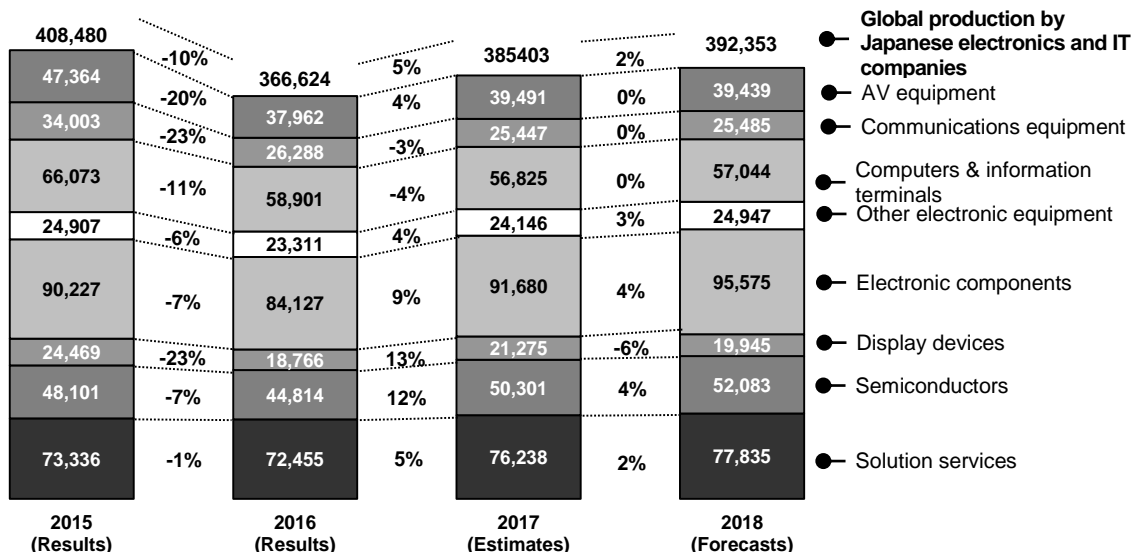
In 2017, global production by Japanese electronics and IT companies (including offshore production) is projected to grow 5% year on year, to ¥38,540.3 billion, due to the increase in the production of semiconductors, electronic components, and display devices, with stable exchange rates. Global production by Japanese electronics and IT companies is expected to continue growing, due in part to an increase of high function, energy-saving and high-reliability electronic components and devices, reflecting progress in infrastructure development toward 2020 and the introduction of electrical equipment and IoT to automobiles.

The Japanese economy continued to enjoy long-term recovery, mainly in the corporate sector. Strong corporate earnings continued and exports and capital investment underpinned the economy. Japanese electronics and IT companies saw dramatic downscaling of personal computers and mobile phones and significant falling share attributed to intensified competition with foreign manufacturers. Meanwhile, in the world market, Japanese electronics and IT companies remained strong because high function, energy-saving, and high-reliability display devices, semiconductors, and electronic components, at which Japanese manufacturers excel, were supported in anticipation of strong needs for compatibility with automated driving support and high function smartphones and other devices. Production by Japanese electronics and IT companies (including offshore production) in 2017 is estimated to grow 5% year on year, to ¥38,540.3 billion. Of this total, electronics production is seen increasing 5%, to ¥30,916.5 billion. The level is somewhat insufficient considering the rebound from the double-digit decline in the previous year. However, it was a year for gaining a recovery foothold.

In 2018, while growth of the world economy is expected to accelerate, the Japanese market is anticipated to see an increase in informatization-related investments by companies and progress in the infrastructure development toward the Tokyo 2020 Olympic and Paralympic Games. In addition, demand for products for overseas tourists remains persistently strong, although it is not as strong as during the peak period. In IT solutions and services, initiatives for creating new value and innovations using new technologies, such as advanced technologies for security and data sharing technologies, will make progress along with the expanded use of products and solutions that link industries and apply CPS/IoT, toward productivity improvement. In electronic components and devices, given that needs for high-function and high-reliability electronic components and devices, at which Japanese companies excel, will increase due to the rise in the percentage of electrical equipment in automobiles, progress in the shift to IoT, and expansion of high function smartphones. Global production by the Japanese electronics and IT companies should see 2% year-on-year growth in 2018.

Global Production by Japanese Electronics and IT Companies

(¥100 million; % change YoY)



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

Domestic production by the Japanese electronics industry in 2017 is expected to grow 7% year on year, to ¥12,278 billion, the first increase in two years and largely attributable to an increase in exports of electronic components and devices. The following year, 2018, is expected to grow 2% year on year, to ¥12,295.5 billion, given the recovery in domestic demand for electronic medical equipment and other products.

In 2017, Japanese economic recovery continued, mainly in the corporate sector, although consumer spending somewhat lacked momentum. Corporate earnings continued strong and exports and capital investment underpinned the economy. The electronics industry saw an increase in the production of semiconductors, such as memories and CCD, and display devices (medium- and small-sized ones in particular), due in part to the higher functionality of smartphones, rising percentage of electrical equipment in automobiles, and increased demand for products for data centers. In addition, production of electronic measuring instruments, electronic medical equipment, and personal computers enjoying strong replacement demand also increased in 2017. Domestic production by the Japanese electronics industry in 2017 is expected to increase 7% year on year, for the first time in two years.

In 2018, moderate economic recovery is expected to continue due in part to the infrastructure investment and demand for redevelopment toward the Tokyo 2020 Olympic and Paralympic Games, in addition to the expected brisk results in the corporate sector. Trends including (1) higher functionality of smartphones, (2) rising percentage of electrical equipment in automobiles, and (3) factory automation are expected to lead to an increase in the production and export of highly reliable electronic components and semiconductors, which contribute to downscaling, slimmer dimensions, and energy conservation. Domestic production is set to account for 39% of total global production by Japanese companies in 2018. In particular, domestic production should remain strong for products offering high reliability and quality, such as display devices (96% manufactured in Japan), server/storage equipment (78%), semiconductors (68%), electronic medical equipment (71%) and electric measuring instruments (69%).

Domestic Production by the Japanese Electronics Industry

(¥100 million; % change YoY)

