

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

December 16, 2020

JEITA

JAPAN ELECTRONICS AND INFORMATION TECHNOLOGY INDUSTRIES ASSOCIATION

FOREWORD

In 2020, the Japanese economy faced sluggish demand due to the spread of the coronavirus disease (COVID-19), and the government continues to use fiscal stimulus and other initiatives to revive economic activities. In the world economy, while China is recovering faster than expected, prospects remain opaque. In its October 2020 World Economic Outlook, the IMF forecast that the real economic growth rate would tumble to minus 4.4% in 2020 but bounce back to 5.2% in 2021.

Given the economic environment, in the annual industries survey conducted by JEITA, production by the global electronics and information technology industries is estimated to increase 2% year on year in 2020 to reach \$2,972.7 billion, and 7% year on year in 2021 to record \$3,175.6 billion. Positive growth is expected to continue on the back of greater demand for solution services and electronic components and devices as countries around the world use remote information technologies to boost remote and contactless interaction in a bid to stop the spread of COVID-19.

Global production by Japanese electronics and IT companies is expected to decline 5% year on year in 2020 to ¥35,200 billion due to declined exports deriving from a reduction in sales of automobiles and smartphones caused by restrictions on mobility and leaving the house. Positive growth should return in 2021, however—up 3% to ¥36,300 billion—due to the greater demand accompanying digital transformation (DX) as a new source of value creation, including automated and increasingly sophisticated data utilization.

In this environment, taking ‘digital’ as our key focus, JEITA is evolving into an industrial association that brings together companies from all industries, services included, to support the realization of ‘Society 5.0,’ a super-smart society in which ubiquitous network connectivity and data-sharing enable broader participation in value creation. We will continue to do our utmost to build a more resilient and flexible society.

In our eleventh “Trends Survey of Focused Areas,” JEITA took up the theme of “Creating the New Normal through Remote IT.” Identifying eight use areas where remote IT can contribute, JEITA conducted a quantitative analysis of the remote IT market, and also indicated a “Future Vision and Contribution” in a use case scenario.

In 2021 and beyond, JEITA will continue to enhance 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 2020

Shigeki Ishizuka

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 2% year on year in 2020 to reach \$2,972.7 billion. The coronavirus pandemic caused demand for electronic devices to plummet, but some areas did well: computer sales rose as more people turned to telework, more semiconductors were needed to beef up data centers faced with spiking telecommunications volume, and more sophisticated data utilization required more solution services. While the spread of COVID-19 will remain a concern in 2021, more widespread use of remote IT technologies should result in positive growth of 7% year on year to \$3,175.6 billion.

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

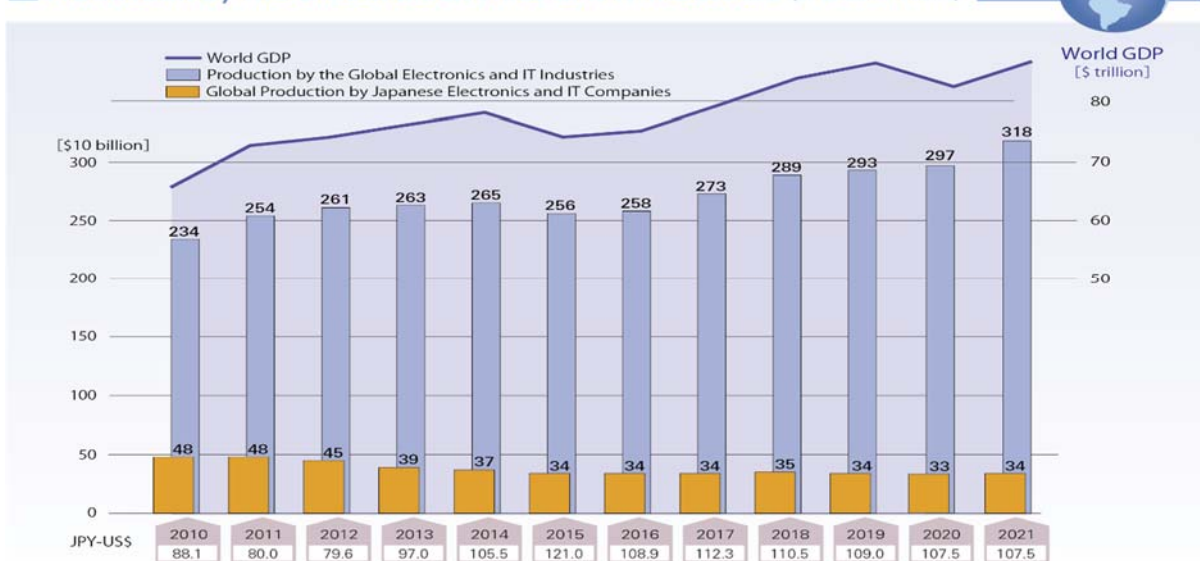
Production by the global electronics and IT industries is expected to grow just 2% year on year in 2020 to reach \$2,972.7 billion, but should pick up again in 2021, lifting 7% year on year to reach a record \$3,175.6 billion. Despite considerable economic uncertainty around the spread of COVID-19, moves to secure social distancing and realize remote and contactless interaction with remote IT that utilizes the increasing sophistication of 5G and local 5G networks will boost demand for solution services. Strong growth can be expected for electronic components and devices on the back of an automobile demand recovery, the transition to eco-friendly electric vehicles, and the growing percentage of electrical componentry in automobiles used for enhanced safety performance, not to mention a growing 5G smartphone line-up.

Looking at changes in the breakdown by area from 2010 to 2020 (estimate), production increased from \$321.1 billion to \$480.9 billion in the global growth area of smartphones and other communications; from \$297 billion to \$433.1 billion in the area of semiconductors;

and from \$621.2 billion to \$1,005.3 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 2 percentage points, 2 percentage points, and 7 percentage points respectively over the past 11 years.

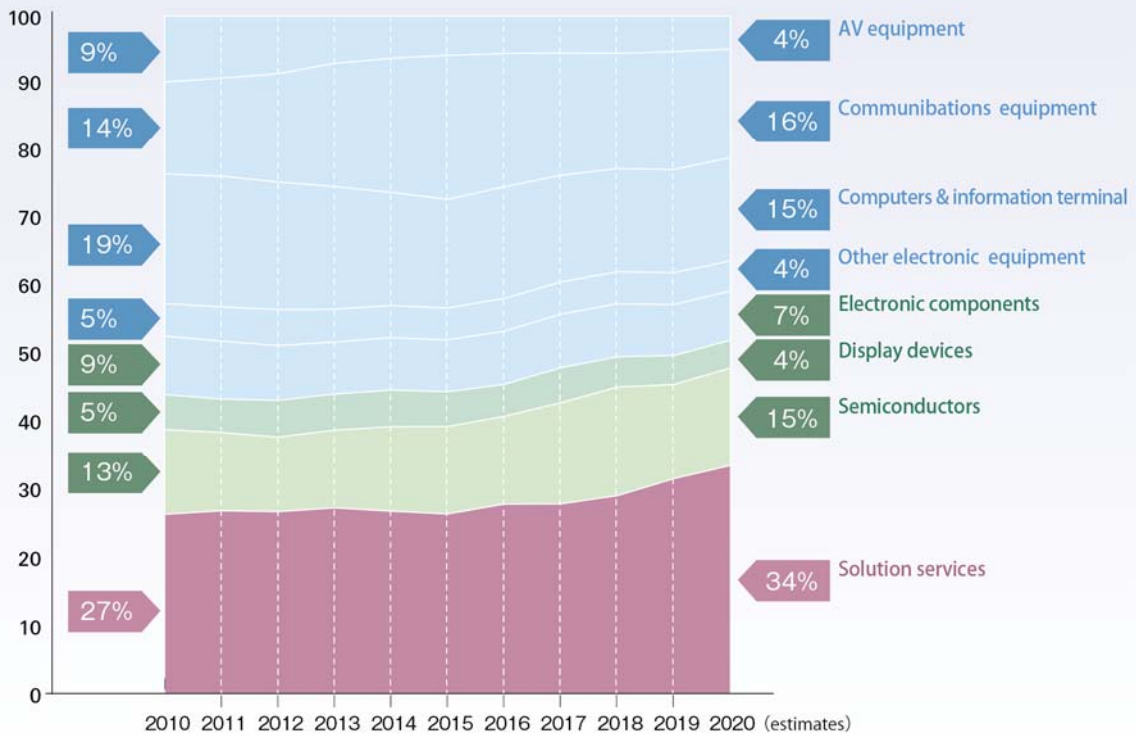
Global production by Japanese electronics and IT companies has continued to decrease since the 2010 peak of \$484.3 billion, with the \$327.1 billion recorded in 2020 representing only around 70% of the peak level. Looking at changes in share during this period, where Japanese electronics and IT companies enjoyed a 21% share of total world production in the peak year of 2010, in 2020 that share is expected to sit at 11%. Factors behind the drop include intensified competition from foreign companies, shrinkage in the AV market itself due to more sophisticated smartphones and the widespread uptake of Internet streaming services, and the limited growth of Japanese companies in the global high-growth areas of smartphones, semiconductors, and solution services.

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

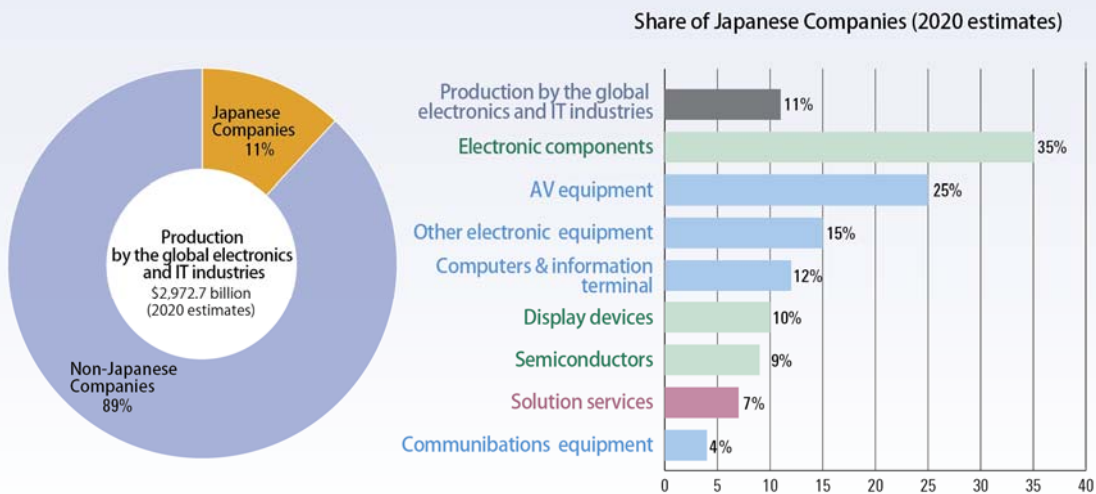


average exchange rate of the yen to the dollar (2021 is viewed to be the same rate as 2020.)
World GDP is from IMF data

Production by the Global Electronics and IT Industries Composition Ratio by Field (2010→2020estimates)



Production by the Global Electronics and IT Industries (2020estimates)



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

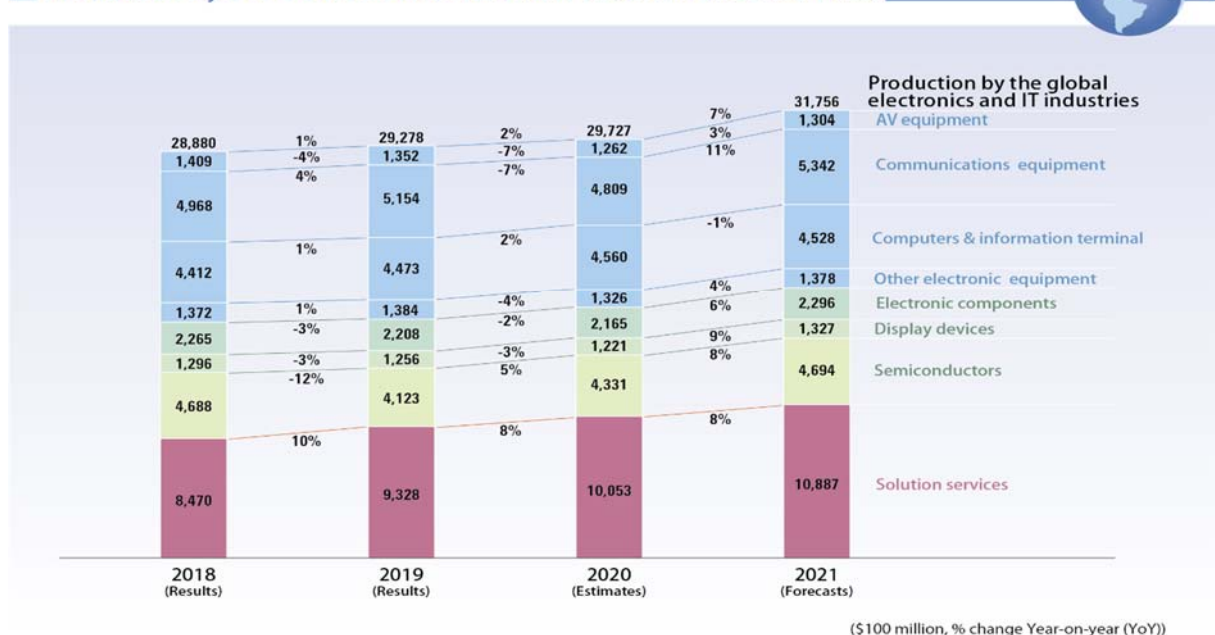
Overall production by the global electronics and IT industries (in dollar terms) is expected to continue to increase slightly in 2020 due to strong computer sales driven by the COVID-19-induced surge in telework, greater semiconductor demand as data centers were enhanced to deal with spiking telecommunications volume, and buoyant solution service sales responding to more sophisticated data utilization. As countries move ahead with initiatives to realize remote and contactless interactions using remote IT, the strong performance of solution services and electronic components should generate positive growth in 2021.

In 2020, the world economy was thrown into complete turmoil by the COVID-19 pandemic. With no end yet in sight, recession continues particularly in business types directly constrained by the pandemic, such as those that provide face-to-face services. In its October 2020 World Economic Outlook, the IMF forecast that real economic growth would fall to minus 4.4% in 2020. Mobility curfews right down to the level of leaving the house and limited in-store shopping by countries have heavily impacted the electronics and IT industries. The opaque economic prospects have also caused some companies to postpone capital investment. At the same time, networks had to be enhanced to cope with telework and remote learning, and stay-at-home online purchasing gave a solid boost to electronic commerce. These trends drove up laptop sales, while semiconductor sales were buoyed by data center augmentation to deal with the greater than expected spike in data volume. Underpinned also by the strong performance of solution services due to more automated and increasingly sophisticated data utilization, total global production by the electronics and IT industries (total of electronics industry and IT solution services) is expected to

record another slight rise of 2% year on year in 2020 to \$2,972.7 billion. However, of this total, production by the electronics industry (hardware, including electronic equipment, components and devices) is expected to record negative growth, decreasing 1% year on year to \$1,967.4 billion.

In 2021, while COVID-19 will remain a concern, coronavirus countermeasures as well as monetary and fiscal policy-based economic stimulus should provide some relief. Demand for solution services is projected to increase as countries take advantage of more sophisticated 5G and local 5G networks to secure social distancing and shift education, work, and customer transactions on to a contactless basis using digital technologies. Strong growth can also be expected for electronic components and devices thanks to an automobile demand recovery, the transition to eco-friendly electric vehicles, and the growing percentage of electrical componentry in automobiles used for enhanced safety performance, as well as a growing 5G smartphone line-up. Production by the global electronics and IT industries should consequently realize positive growth in 2021, increasing 7% year on year.

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



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

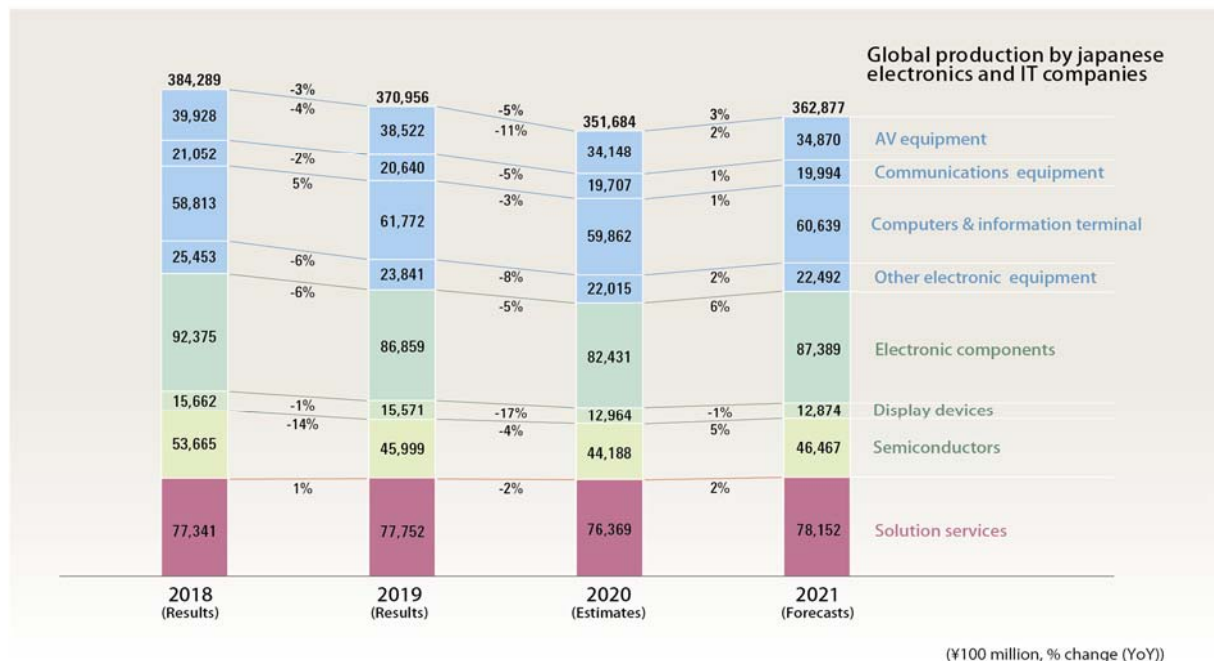
In 2020, while the telework and remote learning introduced to combat the spread of COVID-19 increased demand for computers and tablets, slower automobile and smartphone sales pulled down exports of electronic components and devices, with global production by Japanese electronics and IT companies projected to decline 5% year on year to ¥35,168.4 billion as a result. Looking ahead, digital transformation as a new source of value creation, such as automated and increasingly sophisticated data utilization, is expected to boost demand, with a production increase of 3% year on year forecast for 2021.

Turning to the Japanese economy, while prospects for 2021 remain unclear, the government is expected to continue taking policy measures to combat COVID-19 and underpin the economy, including fiscal stimulus and monetary easing. An early recovery is also expected in exports to China. Japan's electronics and IT industries have enjoyed a surge in demand for portable laptops for online learning as COVID-19 closes schools and prompts companies to institute more telework as part of work-style reforms. The early roll-out of the 'one device per student' initiative in the Ministry of Education, Culture, Sports, Science and Technology's GIGA School Program has also caused a computer and electronic tablet demand spike. However, with people asked to stay at home and store hours being shortened, smartphone and car sales have fallen, impacting on the production of electronic components and devices. Production by Japanese electronics and IT companies (including offshore production) is therefore estimated to drop 5% year on year in 2020 to ¥35,168.4 billion, within which electronics

production is expected to decline 6% year on year to ¥27,531.5 billion.

Looking ahead, remote technologies that reduce crowding and close contact will gain greater recognition, and efforts will step up to create new value by developing functions geared to work-style reforms and factory automation. Digital transformation as a new source of value creation, such as AI-based, high-speed Big Data analysis, sophisticated authentication technologies, and Robotic Process Automation (RPA) using data linkage technologies, will expand demand for IoT devices and solution services. Demand for electronic components and devices is also expected to grow due to a wider line-up of 5G terminals, an automobile demand pickup, and more on-board electronic components due to the higher percentage of electrical equipment used in electric vehicles and for enhanced safety performance. Global production by Japanese electronics and IT companies should record positive growth of 3% year on year in 2021.

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



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

Despite a strong performance by telecommunications infrastructure equipment in 2020, domestic production by the Japanese electronics industry is expected overall to fall 5% year on year to ¥9,789.6 billion due to a slump in electronic components and devices for domestically produced equipment and automobiles. Looking ahead to 2021, while concerns about the spread of COVID-19 remain, a demand recovery for automobiles and smartphones and the more advanced functionality and eco-friendly innovations offered by these should see electronic component and semiconductor production improve, with domestic production rising 4% year on year to ¥10,145.3 billion.

The Japanese economy suffered in 2020 as companies postponed capital investment and put the brakes on new investment in the face of worsening profits, low operating ratios and concerns about future prospects given that a quick foreign demand recovery seems unlikely anywhere except China. The employment environment has deteriorated particularly in COVID-19-constrained business types such as those offering face-to-face services, while consumer sentiment has cooled due to income uncertainty. The electronics industry may have seen production rise in some areas, such as the telecommunications infrastructure equipment needed to cope with the explosion in telecommunications volume accompanying telework and remote learning, but due to a decrease in demand impacted by restricted outings and shortened store hours, production is expected to be negative across the industry as a whole. Despite stronger demand for computers and portable game machines, the electronic components and devices which account for around 60% of domestic production were heavily affected by slower sales of automobiles and smartphones bringing down exports and a domestic demand slump caused by reduced

domestic production of equipment and automobiles. As a result, domestic production in the electronics industry in 2020 is estimated to drop 5% year on year.

In 2021, even amidst ongoing COVID-19-related recession concerns, production and exports of the semiconductors and electronic components contributing to greater functionality, slimmer dimensions, and energy conservation should rise due to the accelerated introduction of electronic components into eco-friendly automobiles, increased data center demand, and more 5G smartphones with advanced functions and multiple image sensors. Domestic output in 2021 is consequently expected to rise 4% year on year. Domestic production is set to account for 36% of the total global production by Japanese companies in 2021. In particular, the ratio of domestic production should remain strong in areas requiring high reliability and quality, such as display devices (84% manufactured in Japan), server/storage equipment (73%), electronic medical equipment (64%), electric measuring instruments (63%), and semiconductors (54%).

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

