

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

December 17, 2021

JEITA

JAPAN ELECTRONICS AND INFORMATION TECHNOLOGY INDUSTRIES ASSOCIATION

FOREWORD

After the economic recession caused last year by COVID-19, the lingering pandemic has not prevented the world economy from continuing to recover in 2021. In its October 2021 World Economic Outlook, the IMF is forecasting a real economic growth rate of 5.9% this year and 4.9% for 2022. In Japan, COVID-19 countermeasures, fiscal stimulus, and the resumption of economic activities should keep our economic recovery on track.

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 11% year on year in 2021 to reach \$3,360.2 billion, and 5% year on year in 2022 to record \$3,536.6 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 boost their digitalization investment in response to the need to achieve carbon neutrality and to stop the spread of COVID-19.

With the advance of digitalization boosting demand and expanding exports, global production by Japanese electronics and IT companies is expected to grow 8% year on year in 2021 to ¥37,300 billion. Positive growth should continue in 2022—up 2% to ¥38,000 billion—due to the greater demand accompanying digital transformation (DX) as a new source of value creation, including the linkage and automation of various types of data and decarbonization efforts.

In this environment, taking ‘digital’ as our key focus, JEITA is evolving into an industrial association that brings together companies from a broad spectrum of industries using digital technologies to lead 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 sustainable and safe society that ensures its citizens’ peace of mind.

In our twelfth “Trends Survey of Focused Areas,” JEITA took up the theme of “Realizing Carbon Neutrality through Green x Digital,” by which we mean using digital innovation to achieve a green transition. The survey identified five “Green x Digital” target markets where digitalization can contribute to reduced carbon emissions, indicating the carbon emissions reduction potential and world demand forecasts for these. A future vision of the “Green x Digital” contribution to specific use cases was also presented.

In 2022 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 2021

Satoshi Tsunakawa

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 rise 11% year on year in 2021 to reach \$3,360.2 billion. The spread of telework and stay-at-home demand drove up electronic equipment. Solution services grew as more investment in digitalization promoted more sophisticated data use. Semiconductor and electronic components production rose as data centers were beefed up to deal with spiking data volumes. Digitalization investment as well as the spread of decarbonization efforts should result in positive growth of 5% year on year to \$3,536.6 billion in 2021.

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

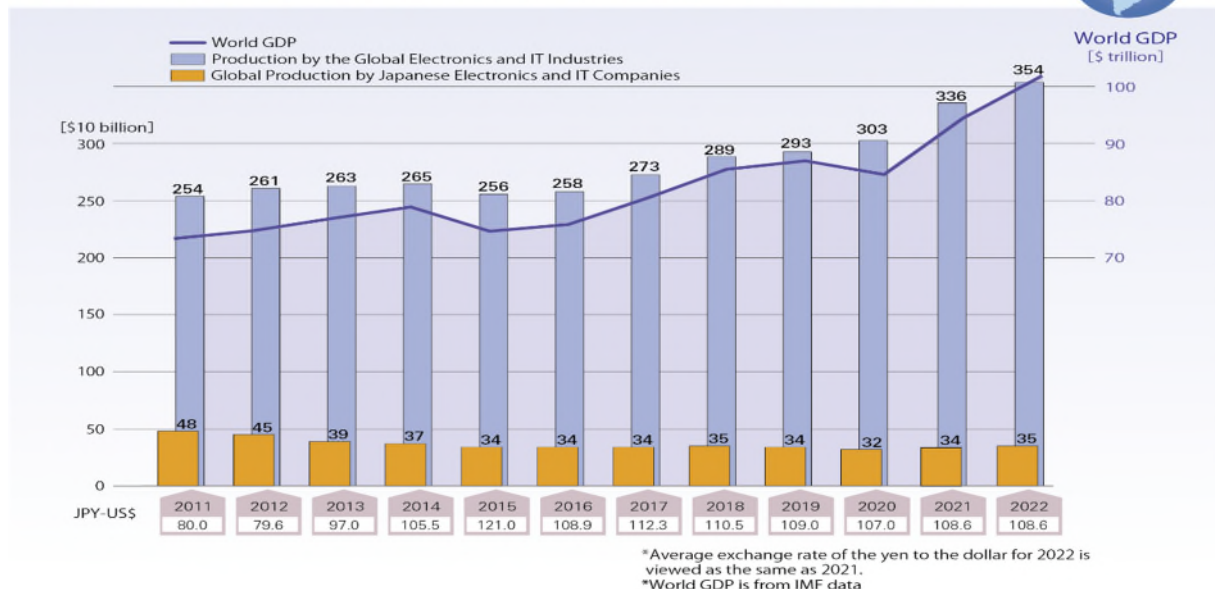
Production by the global electronics and IT industries is expected to grow 11% year on year in 2021 to reach \$3,360.2 billion, with 2022 production too lifting 5% to \$3,536.6 billion. While component supply delays in some areas are currently impacting production, digitalization investment continues unabated, bolstering 5G and other telecommunications infrastructure and upgrading data utilization. Looking ahead, we can expect further efforts to use digital technologies to contribute to decarbonization so as to realize carbon neutrality across society as a whole. Ongoing growth in digitalization investment should boost demand for electronic equipment and solution services. Growth can also be expected for electronic components and devices due to the transition to electric vehicles and the growing percentage of electrical componentry in automobiles, as well as rising demand for eco-friendly products.

Looking at changes in the breakdown by area from 2011 to 2021 (estimate), production increased from \$372.3 billion to \$523.4 billion in the global growth area of telecommunications equipment, including

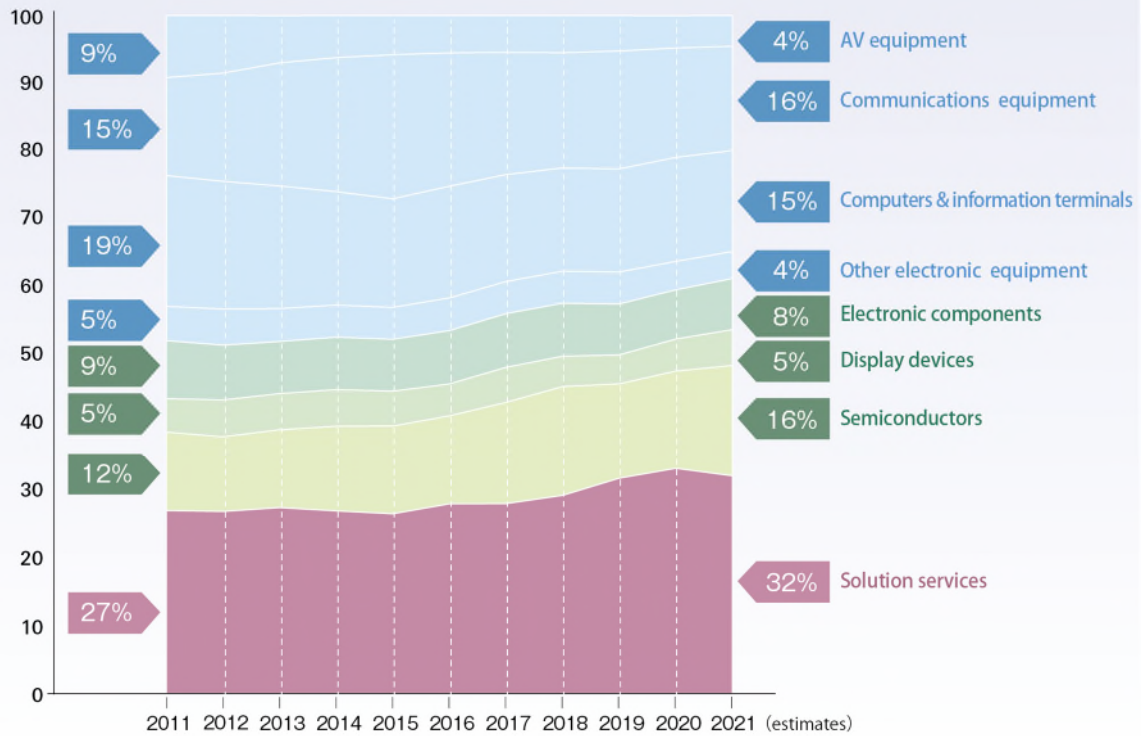
smartphones and 5G and other telecommunications infrastructure; from \$298.4 billion to \$533 billion in the area of semiconductors; and from \$688.8 billion to \$1,082.6 billion in solution services. As a result, the proportions of these areas in the production of the global electronics and IT industries have risen 1 percentage point, 4 percentage points, and 5 percentage points respectively over the past 10 years.

Global production by Japanese electronics and IT companies has continued to decrease since the \$479.8 billion recorded in 2011, with the \$343.6 billion figure for 2021 representing only around 70% of the 2011 level. Looking at changes in share during this period, where Japanese electronics and IT companies enjoyed a 19% share of total world production in 2011, in 2021 that share is expected to sit at 10%. Factors behind the drop include intensified competition from foreign companies, shrinkage in the AV market itself due to the widespread uptake of Internet streaming services, and the limited growth of Japanese companies in the global high-growth areas of smartphones and solution services.

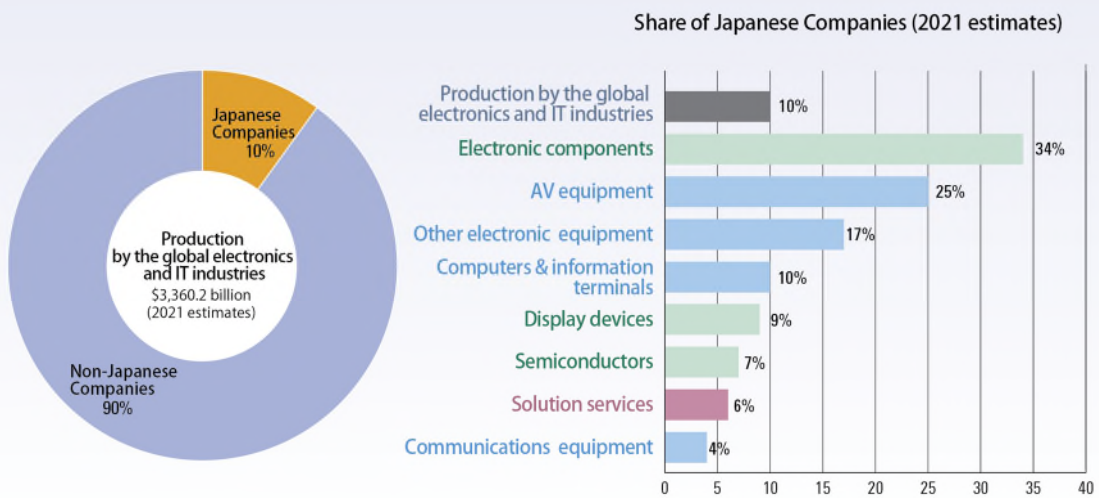
■ Production by the Global Electronics and IT Industries (IN DOLLAR TERMS)



Production by the Global Electronics and IT Industries
Composition Ratio by Field (2011→2021 estimates)



Production by the Global Electronics and IT Industries (2021 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) is expected to increase in 2021 due to the strong television, smartphone, and server growth driven by stay-at-home demand and the advance of telework and other digitalization, a surge in electronic components and devices as data centers were augmented and TVs became super-sized, and robust solution service sales responding to the upgrading and automation of data utilization. As countries around the world progress efforts to realize decarbonization through DX, the strong performance of solution services should generate positive growth again in 2022.

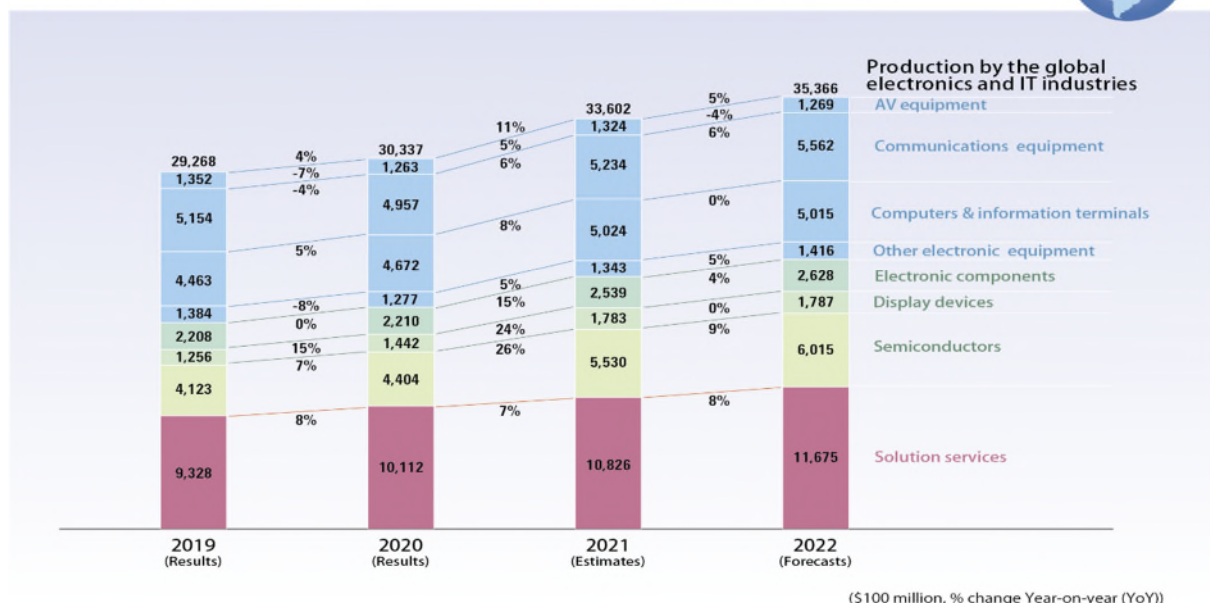
In 2021, the economies of the United States, Europe, and other parts of the developed world remained buoyant due to high COVID-19 vaccination rates, a service recovery, and economic measures. In the emerging world, while coronavirus variants slowed recovery and parts and materials supply delays affected production in some areas, the impact on economic activities was limited. In its October World Economic Outlook, the IMF forecast a real economic growth rate of 5.9% for 2021.

In 2021, the electronics and IT industries enjoyed a surge in server and semiconductor sales as the shift to telework drove network augmentation and demand for 5G smartphones, while consumers stuck at home replaced their televisions with large-screen 4K models and data centers were beefed up to deal with spiking data volumes. 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 a rise of 11% year on year in 2021 to \$3,360.2 billion. Of

this total, production by the electronics industry (hardware, including electronic equipment, components and devices) is expected to grow 13% year on year to \$2,277.6 billion.

In 2022, while a COVID-19 resurgence remains on the cards, governments' coronavirus countermeasures and monetary and fiscal policies should ensure stable economic growth. Demand for solution services is projected to increase amidst ongoing investment in digitalization to develop the necessary telecommunications infrastructure for 5G and telework, which will help to prevent the spread of the pandemic and achieve carbon neutrality across society as a whole. Strong growth can also be expected for electronic components and devices thanks to the transition to electric vehicles and the growing percentage of electrical componentry in automobiles used for enhanced safety performance, as well as demand for eco-friendly products such as renewable energies, etc. Production by the global electronics and IT industries should consequently realize positive growth in 2022, increasing 5% year on year.

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



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

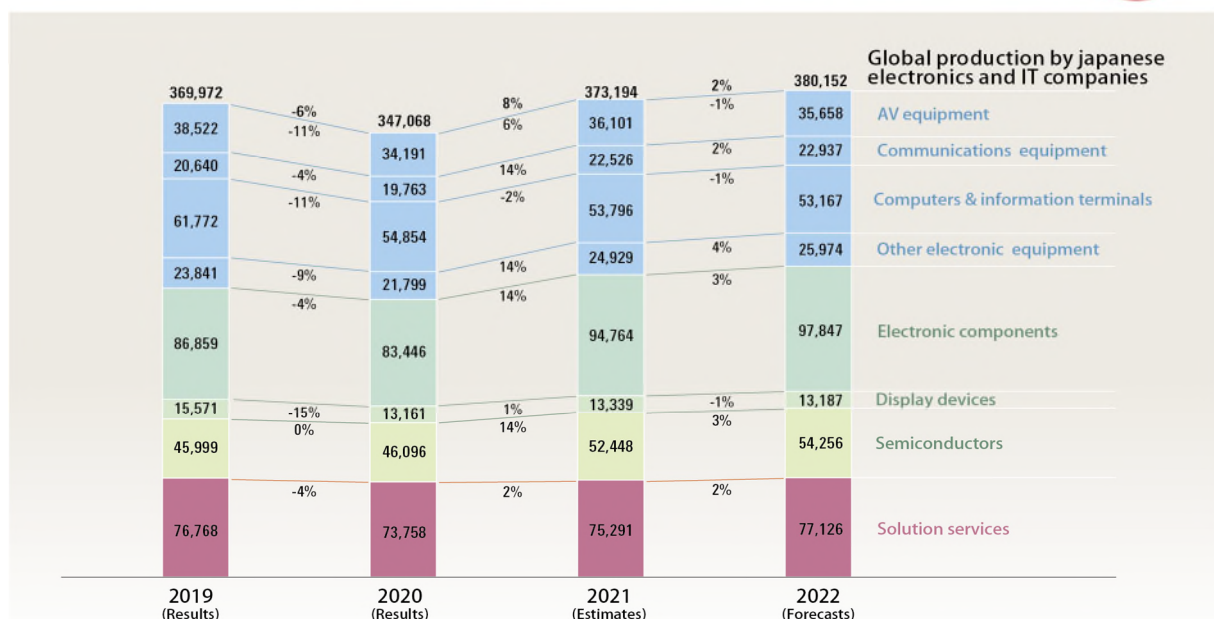
In 2021, televisions, printers, and medical electronic equipment were particularly buoyant, driven primarily by stay-at-home demand, while ongoing digitalization boosted exports of electronic components, semiconductors, and wireless telecommunications equipment. As a result, global production by Japanese electronics and IT companies (including offshore production) is projected to increase 8% year on year to ¥37,319.4 billion. Looking ahead, decarbonization efforts and DX as a new source of value creation through, for example, the linkage and automation of various types of data, are expected to boost demand, with a production increase of 2% year on year forecast for 2022.

Turning to the Japanese economy, COVID-19 vaccination rates are rising and the government continues to take COVID countermeasures and use fiscal stimulus and other policy measures to underpin the economy. A recovery trend has emerged particularly in transport and manufacturing, including materials and manufacturing machinery, but consumption remains sluggish amidst ongoing mobility restrictions. Electronics and IT production has grown on the back of large-screen 4K televisions purchased to watch the Olympics and Paralympics at home, the introduction of medical electronic equipment for inpatient monitoring, and a rebound from last year's slump in printers, smartphones, and digital cameras. The advance of digitalization amidst the global shift to telework, as well as the growing percentage of electrical componentry in automobiles, have kept exports buoyant for electronic components, semiconductors, and wireless telecommunications equipment, resulting in double-figure growth. Production by Japanese electronics and IT companies (including offshore production) is therefore estimated to rise 8% year

on year in 2021 to ¥37,319.4 billion, within which electronics production is expected to grow 9% year on year to ¥29,790.39 billion.

Looking ahead, efforts will step up to create new value by developing functions geared to factory automation and telework-led work-style reforms, as well as government moves toward decarbonization. DX as a new source of value creation through data visualization and linkage, AI-based high-speed analysis, sophisticated authentication, and Robotic Process Automation (RPA) will expand demand for IoT equipment and solution services. The number of on-board electronic components and devices is also expected to grow due to higher terminal demand in response to the spread of 5G, a recovery in automobile production, and more on-board electronic components due to the spread of advanced driver-assistance systems (ADAS) and the transition to eco-friendly electric vehicles. Global production by Japanese electronics and IT companies should accordingly record slight positive growth of 2% year on year in 2022.

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



(¥100 million, % change (YoY))

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

In 2021, domestic production by the Japanese electronics industry is expected to surge 11% year on year to ¥10,932.2 billion thanks to the strong export performance of electronic components and devices and the growth in telecommunications infrastructure equipment as lifestyle changes such as staying at home pushed up data volumes. Looking ahead to 2022, increased production is expected to boost equipment demand, while steps will be taken toward automated and eco-friendly factories, and digitalization investment will continue to expand. These factors should boost electronic component and semiconductor production, with domestic production rising 2% year on year to ¥11,161.4 billion.

While consumption was soft in 2021, companies pursued digital investment geared to rapid changes in work styles, including working from home. Companies are also planning to increase their capital investment to maintain and update their factories as well as to boost productivity through energy conservation and greater efficiency. In the electronics industry, surging telecommunications volumes due to the shift to telework pushed up telecommunications infrastructure equipment, while production growth is expected particularly for electric measuring instruments for production equipment and imaging analysis equipment for confirming pneumonia symptoms. The electronic components and devices which account for around 60% of domestic production experienced strong exports and greater electronic equipment demand due to lifestyle changes such as people staying at and working from home. As a result, domestic production in the electronics industry in 2021 is estimated to shoot up 11% year on year, recovering to ¥10,000 billion.

In 2022, if high vaccination rates see restrictions relaxed, we should see a sustained recovery for the Japanese economy. In addition to increased production of medical electronic equipment and electric measuring instruments, greater demand for eco-friendly power semiconductors, equipment demand for the purpose of boosting production, and more investment in factory automation and digitalization will boost production and exports of semiconductors and electronic components contributing to greater functionality, slimmer dimensions, and energy conservation. Domestic output in 2022 is consequently expected to rise 2% year on year. Domestic production is set to account for 37% of the total global production by Japanese companies in 2022. 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), electric measuring instruments (70%), electronic medical equipment (69%), server/storage equipment (70%), and semiconductors (53%).

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

