

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

December 21, 2023

JEITA

JAPAN ELECTRONICS AND INFORMATION TECHNOLOGY INDUSTRIES ASSOCIATION

FOREWORD

In 2023, skyrocketing fuel and raw material prices joined with conflict in Ukraine and Israel in heightening uncertainty in the world economy, and with inflation slowing personal consumption and capital investment, world economic growth remained weak. In its October 2023 World Economic Outlook, the IMF forecast an ongoing decline in the real economic growth rate from 3.5% in 2022 to 3.0% in 2023 and 2.9% in 2024.

Given the economic environment, the annual industries survey conducted by JEITA estimated that production by the global electronics and information technology industries would drop 3% year on year in 2023 to \$3,382.6 billion before lifting 9% year on year in 2024 to \$3,686.8 billion. The negative growth this year reflects a slump in electronic equipment and electronic components and devices. Next year, however, should see demand for electronic components recover on the back of strong digital investment aimed at using generative AI and other innovative technologies to transform companies and industries and promote economic growth. This, accompanied by growth in solution services, is expected to produce positive growth for 2024.

The poor performance of electronic components and devices led by weak consumption overseas caused global production by Japanese electronics and IT companies to fall 1% year on year in 2023 to ¥39,700 billion, but a return to positive growth is expected for 2024—up 5% to ¥41,600 billion—as increasingly sophisticated and automated data utilization drives the expansion of solution services as a new source of value creation.

In this environment, as a digital industry association bringing together companies from a broad spectrum of industries that use digital technologies and services, we at JEITA have been doing our utmost to drive digital transformation toward achieving an affluent society that is focused on both economic growth and problem-solving. We will continue to address this challenge to fulfil our responsibilities in terms of revitalizing the Japanese economy.

In our fourteenth “Trends Survey of Focused Areas,” JEITA took up the theme of “Social Transformation Through the Expansion of Generative AI.” The survey divided the generative AI market into three business layers to estimate market scale. It also identified the hardware likely to grow in tandem with the AI, drawing up a demand forecast through to 2030.

In 2024 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 2023

Keiji Kojima

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 fall 3.0% year on year in 2023 to \$3,382.6 billion. More digitalization investment boosted solution services, but sluggish personal consumption took electronic equipment and electronic components and devices into negative territory. In 2024, further digitalization investment aimed at using generative AI and other innovative technologies to transform companies and industries should produce positive growth of 9% year on year to reach \$3,686.8 billion.

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

Production by the global electronics and IT industries is expected to decline 3% year on year in 2023 but recover in 2024 to achieve 9% growth. The spike in fuel and raw material prices triggered by conflict in Ukraine and Israel also impacted on personal consumption, driving down televisions, smartphones, and computers along with semiconductors and electronic components. Despite the strong performance of solution services, therefore, an overall decline is expected for 2023.

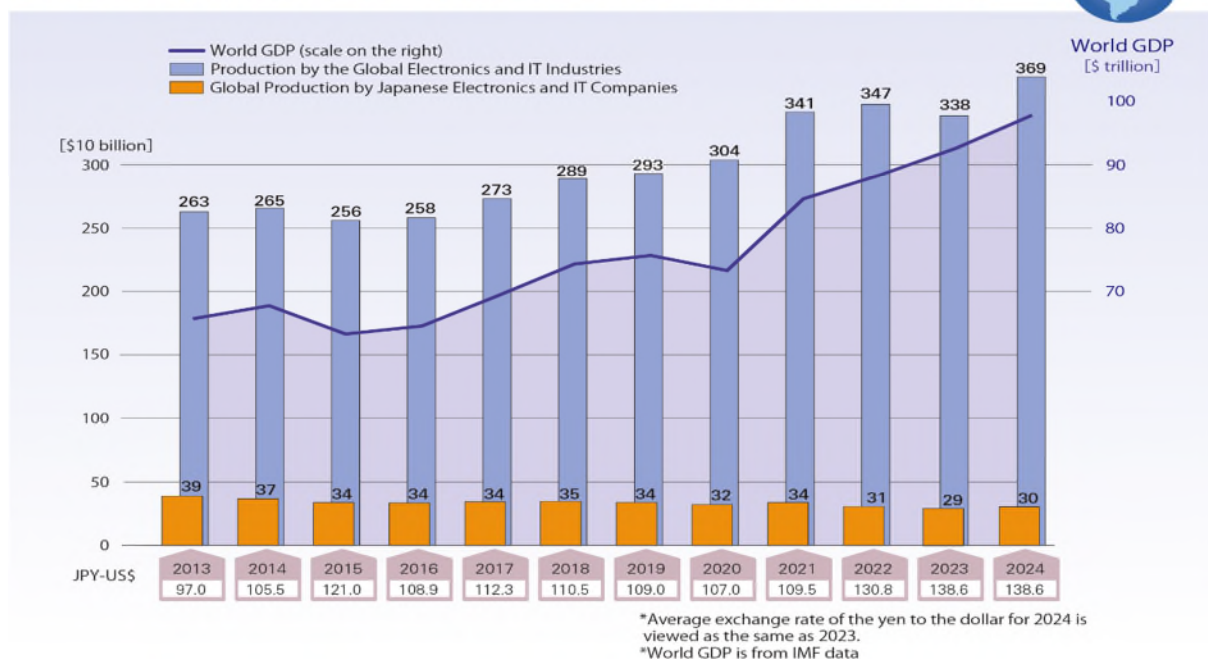
At the same time, digitalization investment continues, as does the process of digital transformation led by increasingly sophisticated data utilization and automation. Looking ahead, as countries around the world pursue digital transformation, or DX through generative AI and other innovative technologies with the goal of transforming society, companies, and industries while also realizing economic growth, demand for solution services will only grow. Growth can also be expected for semiconductors and electronic components due to the increasing percentage of electrical componentry used in automobiles as well as rising demand for eco-friendly products.

We consequently anticipate positive growth for 2024.

Looking at changes in the breakdown by area from 2013 to 2023 (estimate), production increased from \$305.6 billion to \$520.1 billion in semiconductors, and from \$722.5 billion to \$1,313.7 billion in 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 for semiconductors and 8 percentage points for solution services over the past 10 years.

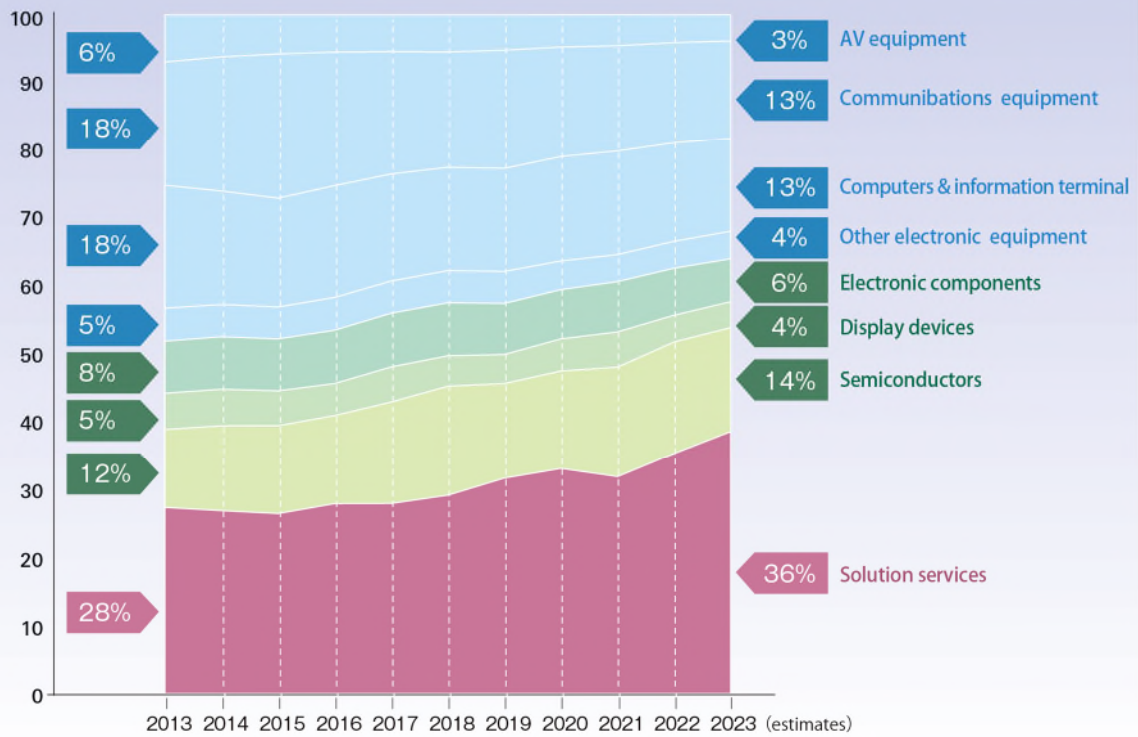
Global production by Japanese electronics and IT companies has continued to decrease since the \$388.2 billion recorded in 2013, with the \$286.3 billion figure for 2023 representing only around 70% of the 2013 level. Looking at changes in share during this period, where Japanese electronics and IT companies enjoyed a 15% share of total world production in 2013, in 2023 that share is expected to sit at 8%. Factors behind the drop include intensified competition with 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 global high-growth areas.

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

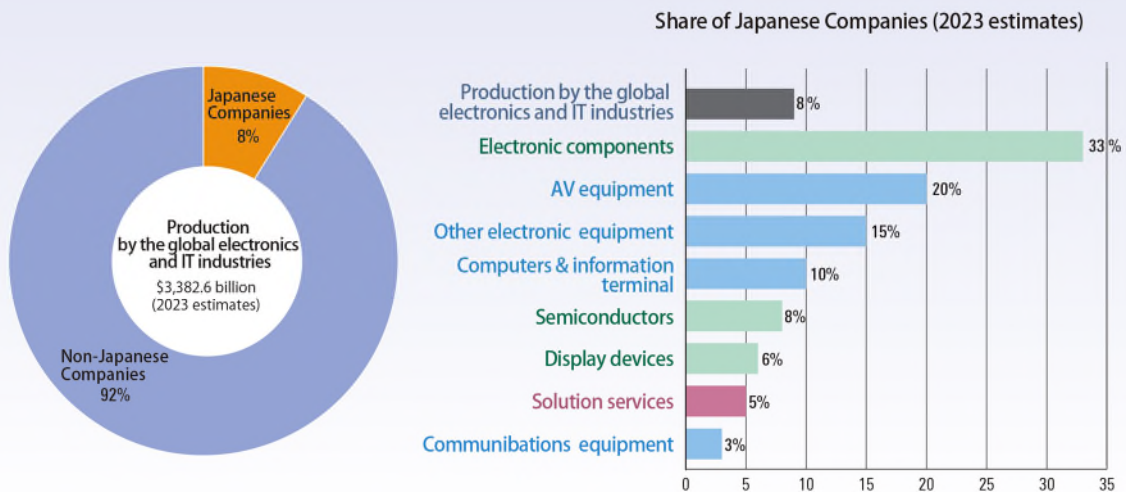




Production by the Global Electronics and IT Industries
Composition Ratio by Field (2013→2023 estimates in dollar terms)



Production by the Global Electronics and IT Industries (2023 estimates in dollar terms)



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 decline in 2023. While the upgrading and automation of data utilization boosted solution services, televisions, smartphones, and computers suffered from the ongoing downturn in stay-at-home demand and sluggish personal demand, and electronic components and devices will also be down. Positive growth is expected for 2024, however, led by a recovery in demand for electronic components and devices and strong solution services growth as countries seek to harness digital innovation to transform society, companies, and industries.

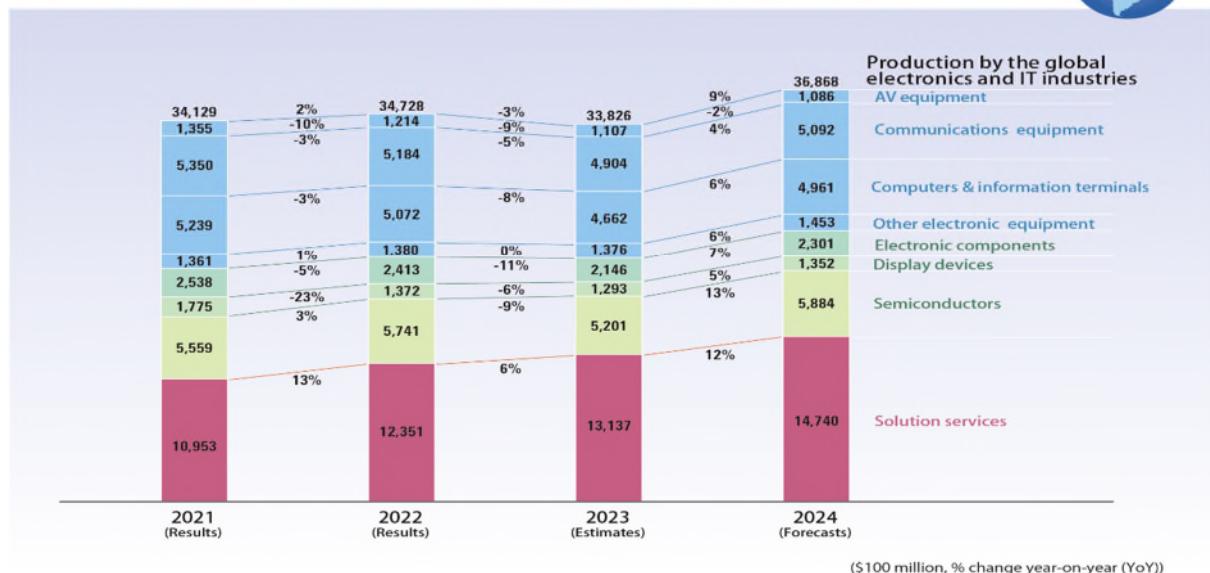
In 2023, the uncertainty created by soaring energy and raw material prices and conflict in Ukraine and Israel slowed personal consumption and capital investment. The solid performance of the US economy was counterbalanced by the protracted slump in the Chinese real estate market, with the recovery in the world economy remaining slow and patchy. In its October World Economic Outlook, the IMF forecast a real GDP growth rate of 3.0% for 2023, a slowdown on the previous year.

In 2023, the electronics and IT industries saw negative production growth for electronic equipment, components, and devices due to an ongoing downturn in the special demand enjoyed in 2021 (the shift to telework driving up demand for 5G smartphones and network enhancement, consumers stuck at home replacing their televisions with large-screen 4K models, and the beefing up of data centers to deal with spiking data volumes), as well as a drop in replacement demand caused by tightening household purse strings. Even the strong performance of solution services due to more automated and increasingly sophisticated data utilization, as well as the advance of digitalization particularly in the automobile and industry sectors, was not sufficient to offset this, resulting in the 2023

global production of the electronics and IT industries (the total of the electronics industry and IT solution services) forecast to drop 3% year on year to \$3,382.6 billion. Of this total, global production by the electronics industry (hardware, including electronic equipment, components, and devices) too is forecast to drop 8% year on year to \$2,068.9 billion.

In 2024, while the risk remains that another spike in fuel and food prices might rekindle inflation, a recovery in personal consumption and economic stimulus measures should generate stable economic growth. Ongoing efforts to transform society, companies, and industries and resolve social problems through digital innovation such as generative AI are projected to boost solution services demand and get demand for electronic components back on track. Strong growth can also be expected for electronic components and devices thanks to the transition to EVs and the growing percentage of electrical componentry used in automobiles to enhance safety performance, as well as demand for eco-friendly products with reduced carbon emissions. Production by the global electronics and IT industries should consequently record positive growth in 2024, increasing 9% year on year to \$3,686.8 billion.

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



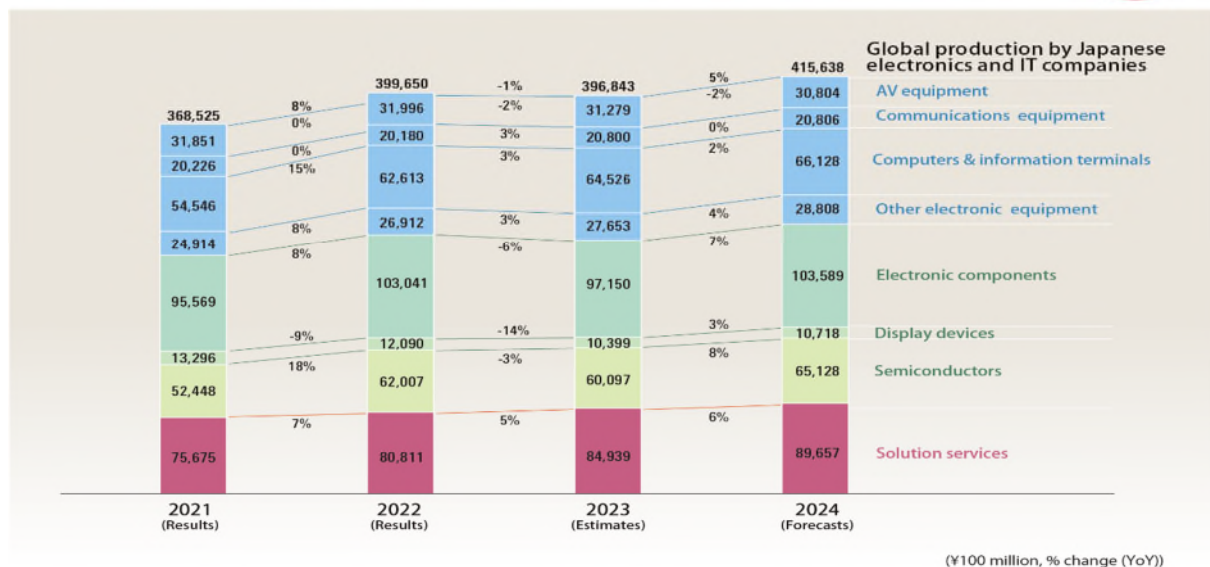
FORECASTS OF GLOBAL PRODUCTION BY JAPANESE COMPANIES (IN YEN TERMS)

In 2023, global production by Japanese electronics and IT companies (including offshore production) is projected to decline year on year. The weak yen propped up digital cameras and electric measuring instruments thanks to their greater offshore price competitiveness, and more sophisticated data utilization and automation bolstered the performance of computers and solution services. This will not be enough, however to offset the drop in electronic components and devices caused by the consumption slowdown in overseas markets. Brighter prospects await in 2024, when digital transformation aimed at new value creation should boost demand for solution services, while electronic components and devices should also recover, driving positive growth.

In Japan, yen depreciation continues to push up prices for oil, raw materials, and other commodities, but personal consumption is recovering now that COVID-19 restrictions on movement have been relaxed, while price hikes are improving corporate profits, with capital investment too on a recovery trajectory. The Japanese economy is consequently gradually recovering, albeit in a rather seesaw fashion. In the electronics and IT industries, the positive impact of the weak yen on the international price competitiveness of digital cameras and electric measuring instruments has kept them on the plus side of the ledger. Replacement demand driven by remote work is leading a trend toward high added value in laptop computers, and solution services too performed well due to more sophisticated data utilization and automation. Sluggish personal demand overseas, however, took electronic components and devices into negative growth, with production by Japanese electronics and IT companies (including offshore production) consequently estimated to fall 1% year on year in 2023 to ¥39,684.3 billion, within which electronics production is also expected to fall 2% year on year to ¥31,190.4 billion.

Looking ahead, the rapid expansion of generative AI will increase awareness of its utility at the personal level, and there will also be increasing interest in the business applications of robotics. Digital transformation efforts will accelerate as an avenue for creating new value in an era of labor force decline, including working-style reforms that enable hybrid work and greater supply chain efficiency directed at cost optimization. Innovative new digital technologies as a source of new value (data linkage, AI-based data analysis, and advanced authentication, etc.) will fuel an ongoing drive for social, corporate, and industrial transformation and economic growth that can be expected to expand demand for electronic equipment and solution services. A recovery in electronic equipment demand along with the transition to EVs and the growing percentage of on-board electronic components as automated driver-assistance functions become increasingly standard—both trends driven by environmental and safety consciousness—should boost semiconductor and electronic component production. Global production by Japanese electronics and IT companies should accordingly record positive growth of 5% year on year in 2024 to \$41,563.8 billion.

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



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

In 2023, domestic production by the Japanese electronics industry is expected to fall slightly year on year, with the greater international price competitiveness provided by yen depreciation not sufficient to counter the impact of reduced exports of electronic components and devices caused by the worldwide slump in demand for electronic equipment as heightened uncertainty depressed consumption. In 2024, better corporate performances should see more capital investment ahead of production expansion, which, along with factory and business process automation, should push up electronic equipment production and lead a production recovery for electronic components and devices, generating positive growth.

Ongoing yen depreciation is boosting the international price competitiveness of Japanese electronic components and devices, while the transition to EVs and the advance of automated driver-assistance functions are also contributing to production increases. The worldwide trend toward better environmental performance so as to achieve carbon neutrality is driving strong demand for the semiconductors underpinning energy efficiency in products like IGBT and other power semiconductors and light-emitting diodes. At the same time, demand for smartphones and laptop computers has been well down due to the international slump in personal consumption that has continued since 2022, and exports of electronic components and devices have remained in negative territory. As a result, domestic production for 2023 is expected to slip by 1% year on year to ¥10,853.6 billion.

Looking ahead, together with a recovery in personal consumption, the wider utilization of innovative technologies like generative AI should expand demand for electronic equipment. Greater data volumes will increase demand for server storage in

data centers, and the transition to EVs and the expansion of automated driver-assistance functions will increase the number of on-board electronic components and devices. A recovery in corporate performance will prompt greater equipment demand ahead of increased production, as well as factory and business process automation. This increased digitalization investment will in turn boost demand for electronic equipment as well as pushing up the production and export of electronic components and devices contributing to slim, energy-efficient, high-performance equipment. Domestic output in 2024 is consequently expected to return to positive growth, rising 6% year on year to ¥11,511.9 billion. Domestic production is set to account for 35% of the total global production by Japanese companies. In particular, the ratio of domestic production should remain strong in areas requiring high reliability and quality, such as display devices (78% manufactured in Japan), electronic medical equipment (68%), electric measuring instruments (66%), server/storage equipment (63%), and semiconductors (49%).

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

