**Renesas**

# FINANCIAL REPORT 2019

**Fiscal Year Ended December 31, 2019**

**RENESAS ELECTRONICS CORPORATION**

## Contents

The following section, Management's Discussion and Analysis of Operations, provides an overview of the consolidated financial statements of Renesas Electronics Corporation ("Renesas Electronics"), and its consolidated subsidiaries (together, "the Group"), as of and for the fiscal year ended December 31, 2019.

Introduction

Financial Position, Operating Results and Cash Flow Analysis

Forward-looking statements concerning financial position, operating results and cash flow are the Group's judgment as of December 31, 2019.

**(1) Significant Accounting Policies and Estimates**

The Group's consolidated financial statements are prepared in accordance with IFRS in accordance to article 93 of the "Ordinance on Terminology, Forms, and Preparation Methods of Consolidated Financial Statements". In preparation of these consolidated financial statements, estimates and assumptions deemed necessary are made based on reasonable standards. Significant accounting policies and indicators for uncertainties relating to assumptions for the future and estimates used in the consolidated financial statements are listed under "Note 3. Significant Accounting Policies, Note 4. Significant Accounting Estimates and Judgments" in the Financial Section.

**(2) Financial Position**

| | **December 31, 2018** | **December 31, 2019** | Increase (Decrease) |
|---|---|---|---|
| | Billions of yen | Billions of yen | Billions of yen |
| Total assets | 1,055.2 | 1,667.4 | 612.2 |
| Total equity | 601.0 | 623.6 | 22.6 |
| Equity attributable to owners of the parent | 598.1 | 620.7 | 22.6 |
| Equity ratio attributable to owners of the parent (%) | 56.7 | 37.2 | (19.5) |
| Interest-bearing debt | 195.0 | 785.9 | 590.9 |
| Debt / Equity ratio | 0.33 | 1.27 | 0.94 |

Total assets at December 31, 2019 were 1,667.4 billion yen, a 612.2 billion yen increase from December 31, 2018. This was mainly due to an increase in goodwill due to the acquisition of Integrated Device Technology, Inc. (hereafter "IDT") in the three months ended March 30, 2019. Net assets were 623.6 billion yen, a 22.6 billion yen increase from December 31, 2018. This was mainly due to an increase in other components of equity due to decrease in deferred gains and losses on hedges.

Equity attributable to owners of the parent increased by 22.6 billion yen from December 31, 2018 and the equity ratio attributable to owners of the parent was 37.2%. Interest-bearing debt increased by 590.9 billion yen from December 31, 2018 due to an increase in borrowings. Consequently, the debt to equity ratio decreased to 1.27.

**(3) Overview of Financial Results**

The Group discloses consolidated business results in terms of both its internal measures which the management relies upon in making decisions (hereinafter the "Non-GAAP" financial measures) and those under IFRS.

Non-GAAP operating profit is operating profit under IFRS (hereinafter "IFRS operating profit") after excluding or adjusting non-recurring items and other adjustments following a certain set of rules. The Group believes providing non-GAAP forecasts will help to better understand the Group's constant business results. Non-recurring items include amortization of intangible assets recognized from acquisitions, other purchase price allocation (hereinafter "PPA") adjustments, costs related to acquisitions and stock-based compensation as well as other non-recurring expenses and income the Group believes to be applicable.

The consolidated financial statements for the year ended December 31, 2019 reflect a significant revision in allocation of the acquisition cost following the provisional accounting treatment finalized on December 31, 2019 for a business combination. For details, please refer to "Note 7. Business Combinations" in the Financial Section.

In addition, following the acquisition of IDT in March 2019 and the transition to an organizational structure based on two business units, from the third quarter ended September 30, 2019, the financial figures disclosed have been reformed into two segments: "Automotive Business" and "Industrial/Infrastructure/IoT Business". Following these changes, the Group will discontinue the disclosure of the "Revenue from Semiconductors" segment and has recast the historical periods based on the new segments. For details, please refer to "Note 6. Business Segments" in the Financial Section.

(Note): For disclosure of Non-GAAP financial measures, the Group refers to the rules specified by the U.S. Securities and Exchange Commission but does not fully comply with such rules.

### A) Overview of the current financial operation (Non-GAAP basis)

**Summary of Consolidated Financial Results for the Fiscal Year ended December 31, 2019 (Non-GAAP basis)**

| | | **Year ended December 31, 2018** (Jan 1 – Dec 31, 2018) | **Year ended December 31, 2019** (Jan 1 – Dec 31, 2019) | Increase (Decrease) | |
|---|---|---|---|---|---|
| | | Billions of yen | Billions of yen | Billions of yen | % Change |
| Non-GAAP Revenue | | 756.5 | 718.2 | (38.3) | (5.1%) |
| | Automotive | 389.7 | 371.1 | (18.5) | (4.8%) |
| | Industrial/Infrastructure/IoT | 346.6 | 329.7 | (16.9) | (4.9%) |
| Non-GAAP Operating Profit<br>Non-GAAP Operating Margin | | 104.0<br>13.8% | 93.1<br>13.0% | (11.0)<br>(0.8pt) | (10.6%)<br>--- |
| | Automotive | 16.2<br>4.1% | 31.0<br>8.3% | 14.8<br>4.2pts | 91.7%<br>--- |
| | Industrial/Infrastructure/IoT | 80.5<br>23.2% | 59.1<br>17.9% | (21.5)<br>(5.3pts) | (26.7%)<br>--- |
| | | Yen | Yen | | |
| Exchange rate (USD) | | 110 | 109 | - | - |
| Exchange rate (EUR) | | 131 | 123 | - | - |

(Note): For details on the above, please refer to "Note 6. Business Segments" in the Financial Section.

<Non-GAAP Revenue>
Non-GAAP Consolidated revenue for the year ended December 31, 2019 were 718.2 billion yen, a 5.1% decrease year on year. Non-GAAP Consolidated revenue decreased mainly due to weakening demand for focused applications including Automotive and Industrial/Infrastructure/IoT from increasing uncertainties in the global economy.

<Non-GAAP Operating Profit (Margin)>
Non-GAAP operating profit for the year ended December 31, 2019 was 93.1 billion yen, an 11.0 billion yen decrease year on year. This was mainly due to decreases in revenue in both the Automotive and Industrial/Infrastructure/IoT business segments. As a result, non-GAAP operating margin for the year ended December 31, 2019 was 13.0%, a decrease by 0.8 point year on year.

The non-GAAP revenue breakdown of the business segments for the year ended December 31, 2019 are as follows:

<u>Automotive Business</u>
The Automotive business includes the product categories "Automotive control," comprising semiconductor devices for controlling automobile engines and bodies, and "Automotive information," comprising semiconductor devices used in automotive information systems such as navigation systems. The Group mainly supplies microcontrollers (MCUs), system-on-chips (SoCs), analog semiconductor devices and power semiconductor devices in each of these categories.

Non-GAAP revenue of the Automotive business for the year ended December 31, 2019 was 371.1 billion yen, a decrease of 4.8% year on year. This was due to decreases in sales in both the "Automotive control" and "Automotive information" categories.

Non-GAAP operating profit of the Automotive business for the year ended December 31, 2019 was 31.0 billion yen, a 14.8 billion yen increase year on year, attributed to controlling R&D (research and development ) and SG&A (selling, general and administrative) expenses despite the decrease in revenue.

<u>Industrial/Infrastructure/IoT Business</u>
The Industrial/Infrastructure/IoT business includes the categories "Industrial", "Infrastructure" and "IoT" which support the smart society. The Group mainly supplies MCUs and SoCs in each of these categories.

Non-GAAP revenue of Industrial/Infrastructure/IoT business for the year ended December 31, 2019 was 329.7 billion yen, a decrease of 4.9% year on year. This was due to decreased sales in the "Industrial", "Infrastructure" and "IoT" categories.

Non-GAAP operating profit for the Industrial/Infrastructure/IoT business for the year ended December 31, 2019 was 59.1 billion yen, a 21.5 billion yen decrease year on year, due to decrease in revenue from the decrease in sales.

The Group updated the "Mid-Term Growth Strategy" and "Financial Model" on February 17, 2020. The Group set as a long-term target achieving sales growth exceeding that of the market through concentrated investment of management resources in markets on which are focusing our attention. The Group also set non-GAAP financial targets of achieving a 50% gross margin and a 20% or more operating margin by optimizing production efficiency, improving the product mix and realizing synergies from the integration of IDT.

**B) Reconciliation of Non-GAAP operating profit to IFRS operating profit**

The total amount of amortization of purchased intangible assets and fixed assets for the fiscal year ended December 31, 2019, was 47.6 billion yen, and the total amount of stock-based compensation was 12.0 billion yen.

(Billion yen)

| | **Year ended December 31, 2018** (Jan 1 – Dec 31, 2018) | **Year ended December 31, 2019** (Jan 1 – Dec 31, 2019) |
|---|---|---|
| Non-GAAP gross profit<br>Non-GAAP gross margin | 334.3<br>44.2% | 316.3<br>44.0% |
| Amortization of purchased intangible assets and fixed assets | (1.3) | (1.7) |
| Stock-based compensation | (0.6) | (0.9) |
| Market value of inventories | — | (11.3) |
| Other reconciliations in non-recurring expenses and adjustments | — | 0.6 |
| IFRS gross profit<br>IFRS gross margin | 332.4<br>43.9% | 302.9<br>42.2% |
| | | |
| Non-GAAP operating profit<br>Non-GAAP operating margin | 104.0<br>13.8% | 93.1<br>13.0% |
| Amortization of purchased intangible assets and fixed assets | (17.1) | (47.6) |
| Stock-based compensation | (5.5) | (12.0) |
| Market value of inventories | — | (11.3) |
| Other reconciliations in non-recurring expenses and adjustments | (13.3) | (15.2) |
| IFRS operating profit<br>IFRS operating margin | 68.2<br>9.0% | 6.8<br>1.0% |

(Note): “Other reconciliations in non-recurring expenses and adjustments” includes the non-recurring items related to acquisitions and other adjustments as well as non-recurring profits or losses.

**C) Overview of the current financial operation (GAAP, IFRS basis)**

**Summary of Consolidated Financial Results for the Year ended December 31, 2019 (GAAP, IFRS basis)**

| | **Year ended December 31, 2018** (Jan 1 – Dec 31, 2018) | **Year ended December 31, 2019** (Jan 1 – Dec 31, 2019) | Increase (Decrease) | |
|---|---|---|---|---|
| | Billion yen | Billion yen | Billion yen | % Change |
| Revenue | 756.5 | 718.2 | (38.3) | (5.1%) |
| Gross Profit<br>Gross Margin | 332.4<br>43.9% | 302.9<br>42.2% | (29.5)<br>(1.8pts) | (8.9%) |
| Operating Profit<br>Operating Margin | 68.2<br>9.0% | 6.8<br>1.0% | (61.4)<br>(8.1pts) | (90.0%) |

**D) Overview of production, orders and sales**

The Group manufactures and sells a wide variety of products, and even if the products are of the same type, their performance, structure, and format are not necessarily uniform. In addition, there are many products that do not take the form of built-to-order production. Accordingly, the Group does not disclose the scale of production or the scale of orders received for each product category in terms of value or quantity.

Therefore, the status of production, orders received, and sales is shown in relation to the Non-GAAP revenue segment in "Management's Discussion and Analysis".

Sales to major customers and the ratio to total sales are as follows.

| | **Reportable Segments** | **Year ended December 31, 2018** (Jan 1 – Dec 31, 2018) | | **Year ended December 31, 2019** (Jan 1 – Dec 31, 2019) | |
|---|---|---|---|---|---|
| | | Millions of yen | % | Millions of yen | % |
| Ryosan Company, Limited | Automotive and Industrial/Infrastructure/IoT Business | 94,804 | 12.5 | 75,146 | 10.5 |

(Note): Tax is not included in the amounts written above.

**(4) Cash Flows**

| | Year ended December 31, 2018 (Jan 1 – Dec 31, 2018) | Year ended December 31, 2019 (Jan 1 – Dec 31, 2019) |
|---|---|---|
| | Billions of yen | Billions of yen |
| Net cash provided by (used in) operating activities | 172.3 | 202.0 |
| Net cash provided by (used in) investing activities | (80.9) | (742.2) |
| Free cash flows | 91.4 | (540.2) |
| Net cash provided by (used in) financing activities | (39.3) | 500.5 |
| Cash and cash equivalents at the beginning of period | 139.5 | 188.8 |
| Cash and cash equivalents at the end of period | 188.8 | 146.5 |

(Net cash provided by (used in) operating activities)
Net cash provided by operating activities for the year ended December 31, 2019 was 202.0 billion yen. This was mainly due to an adjustment of non-expenditure items including depreciation and amortization, etc. within the income before income taxes as well as a decrease in inventory.

(Net cash provided by (used in) investing activities)
Net cash used in investing activities for the year ended December 31, 2019 was 742.2 billion yen. This was mainly due to the acquisition of IDT's shares.

The foregoing resulted in negative free cash flows of 540.2 billion yen for the year ended December 31, 2019.

(Net cash provided by (used in) financing activities)
Net cash provided by financing activities for the year ended December 31, 2019 was 500.5 billion yen. This was mainly due to the execution of new term loan agreements with the main financing banks for obtaining funds for the acquisition of IDT and securing long term working capital, as well as repayments of existing term loans.

**(5) Liquidity and Capital Resources**
The Group's basic financial policy is to secure adequate liquidity and capital resources for its operations and to maintain a strong balance sheet. On January 15, 2019, the Company entered into a syndicated loan agreement for a total of 897.0 billion yen with its main banks, MUFG Bank, Ltd., Mizuho Bank, Ltd., Sumitomo Mitsui Trust Bank, Limited, and others, in order to procure capital necessary for the acquisition of IDT and to renew an existing loan made to secure long-term working capital. This included execution of a 698.0-billion-yen term-loan agreement in March 2019. In addition, the Company repaid an existing term-loan agreement in June 2019 and executed a 149.0-billion-yen term-loan agreement.

As of December 31, 2019, the total amount of borrowings was 771.7 billion yen. As of December 31, 2019, the Company had 146.5 billion yen in cash and cash equivalents.

**(6) Off-balance Sheet Arrangements**
The Group conducts liquidation of accounts receivable on a regular basis. As of December 31, 2018, the balance of liquidated accounts receivable was 14.0 billion yen.

**(7) Information on Differences in Principal Items Related to Overview of Operating Results, Etc.**
Differences between principal items on consolidated financial statements prepared according to IFRS and the corresponding principal items on consolidated financial statements prepared according to JGAAP are as follows.

(Amortization of goodwill)
Under JGAAP, a reasonable amortization period of 20 years or less was specified, and amortization was applied on a straight-line basis, but under IFRS amortization is not applied, and an impairment test is performed each fiscal year. As a result, under IFRS, selling and general administrative expenses for the previous consolidated fiscal year were 20.7 billion yen less, and for this consolidated fiscal year are 61.5 billion yen less, than they would have been under JGAAP.

(Reclassification)
For those items that were classified into non-operating income, non-operating expenses, special income and special losses under JGAAP, finance-related items (interest income, dividends income, interest expenses and foreign exchange gains or losses, etc.) are presented as "Finance income" or "Finance costs," and the other items are presented in "Other income," "Other expenses," "Share of profit or loss of investments accounted for using the equity method", etc., according to the nature of each item under IFRS.

**Risk Factors**

The Group's operations and financial results are subject to various risks and uncertainties, including those described below, that could significantly affect investors' judgments. In addition, the following statements include matters which might not necessarily fall under such significant risks but are deemed important for investors' judgment from a standpoint of affirmative disclosure.

Descriptions about the future in the following are based on what the Group recognizes from the information available as of the current fiscal year.

***1）Market Fluctuations***

Semiconductor market fluctuations, which are caused by factors such as economic cycles in each region and shifts in demand of end customers, affect the Group. Although the Group carefully monitors changes in market conditions, it is difficult to completely avoid the impact of market fluctuations due to economic cycles in countries around the world and changes in the demand for end products. Market downturns, therefore, could lead to decline in product demand and increase in production and inventory amounts, as well as lower sales prices. Consequently, market downturns could reduce the Group's sales, as well as lower fab utilization rates, which may in turn result in worsened gross margins, ultimately leading to deterioration in profits.

***2）Fluctuations in foreign exchange and interest rates***

The Group engages in business activities in all parts of the world and in a wide range of currencies. The Group continues to engage in hedging transactions and other arrangements to minimize exchange rate risks, but it is possible for our consolidated business results and financial condition, including our sales amount in foreign currencies, our materials costs in foreign currencies, our production costs at overseas manufacturing sites, and other items, to be influenced if exchange rates change significantly. Also, the Group's assets, liabilities, income, and costs can change greatly by showing our foreign currency denominated assets and debts converted to amounts in Japanese yen, and these can also change when financial statements in foreign currencies at our overseas subsidiaries are converted to and presented in Japanese yen.

Furthermore, since costs and the values of assets and debts associated with the Group's business operation are influenced by fluctuations in interest rates, it is also possible for the Group's businesses, performance, and financial condition to be adversely influenced by these fluctuations.

***3）Natural Disasters***

Natural disasters such as earthquakes, typhoons, and floods, as well as accidents, acts of terror, infection and other factors beyond the control of the Group could adversely affect the Group's business operation. Especially, as the Group owns key facilities and equipment in areas where earthquakes occur at a frequency higher than the global average, the effects of earthquakes and other events could damage the Group's facilities and equipment and force a halt to manufacturing and other operations, and such events could consequently cause severe damage to the Group's business. The Group sets and manages several preventive plans, Business Continuity Plan, which defines countermeasures such as contingency plans and at the same time the Group is subscribed to various insurances; however, these plans and insurances are not guaranteed to cover all the losses and damages incurred.

***4）Competition***

The semiconductor industry is extremely competitive, and the Group is exposed to fierce competition from competitors around the world in areas such as product performance, structure, pricing and quality. In particular, certain of our competitors have pursued acquisitions, consolidations, and business alliances, etc. in recent years and there is a possibility to have such moves in the future as well. As a result, the competitive environment surrounding the Group may further intensify. To maintain and improve competitiveness, the Group takes various measures including development of leading edge technologies, standardizing design, cost reduction, and consideration of strategic alliances with third parties or possibility of further acquisitions but in the event that the Group cannot maintain its competitiveness, the Group's market share may decline, which may negatively impact the Group's financial results.

In addition, fierce market competition has subjected the products of the Group to sharp downward pressure on prices, for which measures to improve profitability, such as price negotiations and efforts at cost price reduction, have been unable to fully compensate. This raises the possibility of a worsening of the Group's gross margin. Furthermore, in cases where customers for the Group's products for which the gross margin is low have difficulty switching to other products or require a certain amount of time to secure replacements, it may be difficult for the Group to halt or reduce production in a timely manner. This may result in a reduction in the profitability of the Group.

***5）Implementation of Management Strategies***

The Group is implementing a variety of business strategies and structural measures, including the development of "The Mid-Term Growth Strategy" and reforming the organizational structure of the Group, to strengthen the foundations of its profitability. Implementing these business strategies and structural measures requires a certain level of cost and due to changes in economic conditions and the business environment, factors which the future is uncertain, and unforeseeable factors, it is possible that some of those reforms may become difficult to carry out and others may not achieve the originally planned results. Furthermore, additional costs, which are higher than originally expected, may arise. Thus, these issues may adversely influence the Group's performance and financial condition.

***6）Business Activities Worldwide***

The Group conducts business worldwide, which can be adversely affected by factors such as barriers to long-term relationships with potential customers and local enterprises; restrictions on investment and imports/exports; tariffs; fair trade regulations; political, social, and economic risks; outbreaks of illness or disease; exchange rate fluctuations; rising wage levels; and transportation delays. As a result, the Group may fail to achieve its initial targets regarding business in overseas markets, which could have a negative impact on the business growth and performance of the Group.

### *7）Strategic Alliance and Corporate Acquisition*
For business expansion and strengthening of competitiveness, the Group may engage in strategic alliances, including joint investments, and corporate acquisitions, etc.; for example, in February 2017, the Group acquired Intersil Corporation, and in March 2019, the US based semiconductor company IDT. With regard to such alliances and acquisitions, the Group examines the likely return on investment and profitability from a variety of perspectives. However, in cases where there is a mismatch with the prospective alliance partner or acquisition target in areas of management strategy such as capital procurement, technology management, and product development, or there are financial or other problems affecting the business of the prospective collaboration partner or acquisition target, in addition to the time and expense required for integration of aspects such as business execution, technology, products, personnel, systems and response to antitrust laws and other regulations of the relevant authorities, there is a possibility that the alliance relationship or capital ties will not be sustainable, or in the case of acquisitions that the anticipated return on investment or profitability cannot be realized. Furthermore, there is a possibility that the anticipated synergies or other advantages cannot be realized due to an inability to retain or secure the main customers or key personnel of the prospective alliance partner or acquisition target. Thus, there is no guarantee that an alliance or acquisition will achieve the goals initially anticipated.

### *8）Financing*
While the Group has been procuring business funds by methods such as borrowing from financial institutions and other sources, in the future it may become necessary to procure additional financing to implement business and investment plans, expand manufacturing capabilities, acquire technologies and services, and repay debts. It is possible that the Group may face limitations on its ability to raise funds due to a variety of reasons, including the fact that the Group may not be able to acquire required financing in a timely manner or may face increasing financing costs due to the worsening business environment in the semiconductor industry, worsening conditions in the financial and stock markets, and changes in the lending policies of lenders. In addition, some of the borrowing contracts executed between the Group and some financial institutions stipulate articles of financial covenants. If the Group breaches these articles due to worsened financial base of the Group etc., the Group may lose the benefit of term on the contract, and it may adversely influence the Group’s business performance and financial conditions.

### *9）Notes on Additional Financing*
After implementing of the allocation of new shares to a third party based on a decision at the Meeting of the Board of Directors held on December 10, 2012, we received an offer from the former Innovation Network Corporation of Japan (business name changed to Japan Investment Corporation as of September 25, 2018) that they are willing to provide additional investments or loans with an upper limit of 50 billion yen. However, former Innovation Network Corporation of Japan underwent restructuring, forming a separate subsidiary entity as of September 21, 2018, leading to the new subsidiary, INCJ, Ltd., to take over the contract initially undertaken with the former Innovation Network Corporation of Japan. Currently, no specific details regarding the timing of or conditions associated with these additional investments or loans have been determined, and there is no guarantee that these additional investments or loans will actually be implemented. If investments occur based on this offer, further dilution of existing stock will occur, and this may adversely impact existing shareholders. In addition, if loans are made under this offer, the Group’s outstanding interest-bearing debt will increase, and this may impose restrictions on some of our business activities. Furthermore, if fluctuations in interest rates occur in the future, the Group’s businesses, performance, and financial condition may be adversely affected.

### *10）Relationship with Largest Shareholder, INCJ*
As a result of the allocation of common stock to the former Innovation Network Corporation of Japan and others by way of third-party allotment on September 30, 2013, the former Innovation Network Corporation of Japan now holds a majority share of voting rights held in association with Renesas Electronics’ share. From June 2017 onward, the former Innovation Network Corporation of Japan gradually divested itself of its holdings of common stock in the Company, and as of September 21, 2018, formed a separate subsidiary entity. As a result of this restructuring, all shares owned by the former Innovation Network Corporation of Japan were passed on to the new subsidiary, INCJ, Ltd., which is presently the largest shareholder in the Company. Thus, the business operations of the Group are potentially subject to a substantial influence through the exercise by INCJ of its voting rights at General Meetings of Shareholders. In addition, should INCJ at some future date sell all or part of Renesas Electronics’ share which is currently held for investment purpose, this could potentially have a substantial effect on the market value of Renesas Electronics’ share, depending on factors such as the market climate at the time of the sale.

### *11）Rapid Technological Evolutions and Other Issues*
The semiconductor market in which the Group does business is characterized by rapid technological changes and rapid evolution of technological standards. Therefore, if the Group is not able to carry out appropriate research and development, the Group’s businesses, performance, and financial condition may all be adversely affected by product obsolescence and the appearance of competing products.

### *12）Product Production*
a. Production Process Risk

Semiconductor products require extremely complex production processes. In an effort to increase yields (ratio of non-defective products from the materials used), the Group takes steps to properly control production processes and seeks ongoing improvements. However, the emergence of problems in these production processes could lead to worsening yields. This problem, in turn, could trigger shipment delays, reductions in shipment volume, or, at worst, the halting of shipments.

b. Procurement of Raw Materials, Components, and Production Facilities

The timely procurement of necessary raw materials, components and production facilities is critical to semiconductor production. To avoid supply problems related to these essential raw materials, components and production facilities, the

Group works diligently to develop close relationships with multiple suppliers. Some necessary materials, however, are available only from specific suppliers. Consequently, insufficient supply capacity amid tight demand for these materials as well as events including natural disasters, accidents, worsening of business conditions, and withdrawal from the business occurred in suppliers could preclude their timely procurement, or may result in sharply higher prices for these essential materials upon procurement. Furthermore, defects in procured raw materials or components could adversely influence the Group's manufacturing operations and additional costs may be incurred by the Group.

c. Risks Associated with Outsourced Production

The Group outsources the manufacturing of certain semiconductor products to external foundries (contract manufacturers) and other entities. In doing so, the Group selects its trusted outsourcers, rigorously screened in advance based on their technological capabilities, supply capacity, and other relevant traits; however, the possibility of delivery delays, product defects and other production-side risks stemming from outsourcers cannot be ruled out completely. In particular, inadequate production capacity among outsourcers or operation shutdown of the outsourcers as a result of a natural disaster, could result in the Group being unable to supply enough products.

d. Maintenance of Production Capacity at an Appropriate Level

The semiconductor market is sensitive to fluctuations in the business climate, and it is difficult to predict future product demand accurately. Thus, it is not always possible for the Group to maintain production capacity at an appropriate level that matches product demand. In addition, even if the Group engages in capital investment to boost production capacity, there is generally a certain amount of time required before the actual increase in production capacity takes place.

Therefore, if demand for specific products substantially exceeds the Group's production capacity at a certain point and the state of excess demand continues over time, there is a possibility that the Group will be unable to supply customers with the products they desire, that opportunities to sell the products in question will be lost, that the Group will lose market share as customers switch to competing products, and that the relationship of the Group and its customers will suffer.

On the other hand, if in response to a rise in demand for specific products the Group undertakes capital investment with the aim of increasing production capacity, there is no guarantee that demand for the products in question will remain strong once production capacity actually increases and afterward. There is a possibility that actual product demand may turn out to be less than anticipated, in which case it may not be possible to recover the capital investment with the anticipated earnings.

***13）Product Quality***

Although the Group makes an effort to improve the quality of semiconductor products, they may contain defects, anomalies or malfunctions that are undetectable at the time of shipment due to increased sophistication of technologies, the diversity of ways in which the Group's products are used by customers and defects in procured raw materials or components. These defects, anomalies or malfunctions could be discovered after the Group products were shipped to customers, resulting in the return or exchange of the Group's products, claims for compensatory damages, or discontinuation of the use of the Group's products, which could negatively impact the profits and operating results of the Group. To prepare for such events, the Group has insurance such as product liability insurance and recall insurance, but it is not guaranteed that the full costs of reimbursements would be covered by these.

***14）Product Sales***

a. Reliance on Key Customers

The Group relies on certain key customers for the bulk of its product sales to customers. The decision by these key customers to cease adoption of the Group's products, or to dramatically reduce order volumes, could negatively impact the Group's operating results.

b. Changes in production plans by customers of custom products

The Group receives orders from customers for the development of specific semiconductor products in some cases. There is the possibility that after the Group received orders the customers decide to postpone or cancel the launch of the end products in which the ordered product is scheduled to be embedded. There is also the possibility that the customers cancel its order if the functions and quality of the product do not meet the customer requirements. Further, the weak sales of end products in which products developed by the Group are embedded may result in customers to reduce their orders, or to postpone delivery dates. Such changes in production plans, order reductions, postponements and other actions from the customers concerning custom products may cause declines in the Group sales and profitability.

c. Reliance on Authorized Sales Agents

In Japan and Asia, the Group sells the majority of its products via independent authorized sales agents, and relies on certain major authorized sales agents for the bulk of these sales. The inability of the Group to provide these authorized sales agents with competitive sales incentives or margins, or to secure sales volumes that the authorized sales agents consider appropriate, could result in a decision by such agents to review their sales network of the Group's products, including the reduction of the network, etc., which could cause a downturn in the Group sales.

***15）Securing Human Resources***

The Group works hard to secure superior human resources for management, technology development, sales, and other areas when deploying business operations. However, since such superbly talented people are of limited number, there is fierce competition in the acquisition of human resources. Under the current conditions, it may not be possible for the Group to secure the talented human resources it requires.

***16）Defined Benefit Obligations***

Net defined benefit liability and net defined benefit asset are calculated based on actuarial assumptions, such as discount rates of returns on assets. However, the Group performance and financial condition may be adversely affected either if discrepancies between actuarial assumptions and business performance arise due to changing interest rates or a fall in the stock market and defined benefit obligations increase or our plan assets decrease and there is an increase in the pension funding deficit in the retirement benefit obligations system.

***17）Capital Expenditures and Fixed Cost Ratio***

The semiconductor business in which the Group is engaged requires substantial capital investment. The Group undertakes capital investment in an ongoing manner, and this requires it to bear the associated amortization costs. In addition, if there is a drop in demand due to changes in the market climate and the anticipated scale of sales cannot be achieved, or if excess supply causes product prices to fall, there is a possibility that a portion or the entirety of the capital investment will not be recoverable or will take longer than anticipated to be recovered. This could have an adverse effect on the business performance and the financial condition of the Group.

Furthermore, the majority of the expenses of the Group are accounted for by fixed costs such as production costs associated with factory maintenance and R&D expenses, in addition to the abovementioned amortization costs accompanying capital investment. Even if there is a slump in sales due to a reduction in orders from the Group's main customers or a drop in product demand, or if the factory operating rate decreases, it may be difficult to reduce fixed costs to compensate. As a result, a relatively small-scale drop in sales can have an adverse effect on the profitability of the Group.

***18）Impairment Loss on Fixed Assets***

The Group owns substantial fixed assets, consisting of both tangible fixed assets such as plant and equipment and intangible fixed assets such as goodwill obtained through the acquisition of the former Intersil Corporation and IDT. When there are indications of impairment, the Group examines the possibility of recovering the book value of assets based on the future cash flow to be generated from the fixed assets. It may be necessary to recognize impairment of such assets if insufficient cash flow is generated.

***19）Information Systems***

Information systems are growing importance in the Group's business activities. Although the Group makes an effort to manage stable operation of information systems, there is a likelihood that customer confidence and social trust would deteriorate, resulting in a negative effect on the Group's performance, if there is a significant problem with the Group's information systems caused by factors such as natural disasters, accidents, computer viruses and unauthorized accesses.

***20）Information Management***

The Group has in its possession a great deal of confidential information and personal information relating to its business activities. While such confidential information is managed according to law and internal regulations specifically designed for that purpose, there is always the risk that information may leak due to unforeseen circumstances. Should such an event occur, there is a likelihood that leaks of confidential information may result in damages to our competitive position and customer confidence and social trust would deteriorate, resulting in a negative effect on the Group's performance.

***21）Legal Restrictions***

The Group is subject to a variety of legal restrictions in the various countries and regions. These include requirements for approval for businesses and investments, antitrust laws and regulations, export restrictions, customs duties and tariffs, accounting standards and taxation, and environment laws. Moving forward, it is possible that the Group's businesses, performance, and financial condition may be adversely affected by increased costs and restrictions on business activities associated with the strengthening of local laws.

The Group makes use of an internal regulation system to ensure legal compliance and appropriate financial reporting. However, since by its nature an internal regulation system is inherently limited, there is no guarantee that it will accomplish its goals completely. Consequently, the possibility is not nonexistent that legal violations, etc., may occur moving forward. Should a violation of the law or other regulations occur, the Group could be subject to administrative penalties such as fines, legal penalties, or claims for compensatory damages, or there could be a negative impact on the social standing of the Group. This could have an adverse effect on the businesses, business performance, and financial condition of the Group.

***22）Environmental Factors***

The Group strives to decrease its environmental impact with respect to diversified and complex environmental issues such as global warming, air pollution, industrial waste, tightening of hazardous substance regulation, and soil pollution. There is the possibility that, regardless of whether there is negligence in its pursuit of business activities, the Group could bear legal or social responsibility for environmental problems. Should such an event occur, the burden of expenses for resolution could potentially be high, and the Group could suffer erosion in social trust.

***23）Intellectual Property***

While the Group seeks to protect its intellectual property, it may not be adequately protected in certain countries and areas. In addition, there are cases that the Group's products are developed, manufactured and sold by using licenses received from third parties. In such cases, there is the possibility that the Group could not receive necessary licenses from third parties, or the Group could only receive licenses under terms and conditions less favorable than before.

With regard to the intellectual property rights related to the Group's products, it is possible that a third party might file a lawsuit against the Group or its customers claiming patent infringement, or the like, and that as a result the manufacture and sale of the affected products might not be possible in certain countries or regions. It is also possible that the Group could be liable for damages to a third party or to a customer of the Group.

***24) Legal Issues***

Details are listed under "Note 37. Commitments and Contingencies, (4) Others." in the Financial Section.

# FINANCIAL SECTION

1. Basis of Preparation of the Consolidated Financial Statements

(1) The consolidated financial statements of Renesas Electronics Corporation (hereafter “the Company”) and its consolidated subsidiaries (hereafter “the Group”) have been prepared in accordance with International Financial Reporting Standards (hereafter “IFRS”) pursuant to the provisions of Article 93 of the “Ordinance on Terminology, Forms and Preparation Methods of Consolidated Financial Statements” (Ministry of Finance Ordinance No. 28, 1976, hereafter “Ordinance on Consolidated Financial Statements”).

(2) The non-consolidated financial statements of the Company were prepared in accordance with the Ministry of Finance Ordinance No. 59, 1963, “Ordinance on Terminology, Forms and Preparation Methods of Consolidated Financial Statements, etc.” (hereafter “Ordinance on Financial Statements”). As a company submitting financial statements prepared in accordance with special provisions, the Company prepares its financial statements in accordance with Article 127 of the Regulations for Financial Statements.

(3) In the consolidated financial statements and the non-consolidated financial statements, figures are presented by rounding them to the nearest million yen.

2. Audit Certification

The consolidated financial statements for the fiscal year ended December 31, 2019 (from January 1, 2019 to December 31, 2019) and the non-consolidated financial statements for the fiscal year ended December 31, 2019 (from January 1, 2019 to December 31, 2019) were audited by PricewaterhouseCoopers Aarata LLC in accordance with Article 193-2, Section 1, of the Financial Instruments and Exchange Act.

For the consolidated and non-consolidated financial statements for the fiscal year ended December 31, 2018:
Ernst & Young ShinNihon LLC
For the consolidated and non-consolidated financial statements for the fiscal year ended December 31, 2019:
PricewaterhouseCoopers Aarata LLC

3. Special Measures for Preparing Fairly Stated Financial Statements

These measures involve attaining a thorough understanding of accounting standards and developing a system for addressing changes made to these standards. To this end, the Company has registered with the Financial Accounting Standards Foundation, and participates in seminars.

4. Development of a System to Appropriately Prepare Consolidated Financial Statements Based on IFRS

To appropriately prepare its consolidated financial statements in accordance with IFRS, the Company obtains press releases and accounting standards issued by the International Accounting Standards Board as required to understand the latest standards and analyze the impact. The Company has also prepared the Group accounting policies or “Global Rule Book” in accordance with IFRS and formulates accounting treatments based on the Group accounting policies. In addition, the Company makes efforts to accumulate in-house expertise by participating in seminars, etc. hosted by the Financial Accounting Standards Foundation and audit corporations, etc.

# 1. Consolidated Financial Statements

## (1) Consolidated Financial Statements

### (i) Consolidated Statement of Financial Position

(In millions of yen)

| | Notes | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|---|
| Assets | | | |
| Current assets | | | |
| Cash and cash equivalents | 8 | 188,820 | 146,468 |
| Trade and other receivables | 9, 34 | 79,449 | 84,459 |
| Inventories | 10 | 115,440 | 89,642 |
| Other current financial assets | 17, 34 | 494 | 468 |
| Income tax receivables | | 2,352 | 4,438 |
| Other current assets | 11 | 7,069 | 7,344 |
| Total current assets | | 393,624 | 332,819 |
| | | | |
| Non-current assets | | | |
| Property, plant and equipment | 12, 14, 15 | 252,503 | 232,579 |
| Goodwill | 7, 13, 15 | 187,230 | 625,030 |
| Intangible assets | 13, 15 | 166,524 | 414,582 |
| Other non-current financial assets | 17, 34 | 5,973 | 9,995 |
| Deferred tax assets | 18 | 44,149 | 46,404 |
| Other non-current assets | 11 | 5,232 | 5,950 |
| Total non-current assets | | 661,611 | 1,334,540 |
| Total assets | | 1,055,235 | 1,667,359 |

(In millions of yen)

| | Notes | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|---|
| Liabilities and equity | | | |
| Liabilities | | | |
| Current liabilities | | | |
| Trade and other payables | 19, 34 | 116,233 | 100,187 |
| Bonds and Borrowings | 20, 34 | 45,000 | 93,182 |
| Other current financial liabilities | 21, 34 | 15,057 | 4,362 |
| Income tax payables | | 2,983 | 7,861 |
| Provisions | 22 | 7,112 | 7,521 |
| Other current liabilities | 11 | 55,384 | 55,528 |
| Total current liabilities | | 241,769 | 268,641 |
| Non-current liabilities | | | |
| Trade and other payables | 19, 34 | 4,403 | 845 |
| Bonds and Borrowings | 20, 34 | 147,248 | 678,577 |
| Other non-current financial liabilities | 21, 34 | 2,323 | 10,093 |
| Income tax payables | | 1,105 | 4,499 |
| Retirement benefit liabilities | 23 | 32,752 | 29,572 |
| Provisions | 22 | 3,745 | 3,860 |
| Deferred tax liabilities | 18 | 18,754 | 43,257 |
| Other non-current liabilities | 11 | 2,168 | 4,400 |
| Total non-current liabilities | | 212,498 | 775,103 |
| Total liabilities | | 454,267 | 1,043,744 |
| Equity | | | |
| Issued capital | 24 | 10,699 | 22,213 |
| Share premium | 24 | 190,074 | 201,588 |
| Retained earnings | 24 | 410,652 | 403,068 |
| Treasury shares | 24 | (11) | (11) |
| Other components of equity | | (13,314) | (6,192) |
| Total equity attributable to owners of the parent | | 598,100 | 620,666 |
| Non-controlling interests | | 2,868 | 2,949 |
| Total equity | | 600,968 | 623,615 |
| Total liabilities and equity | | 1,055,235 | 1,667,359 |

(ii) Consolidated Statement of Profit or Loss and Consolidated Statement of Comprehensive Income

Consolidated Statement of Profit or Loss

(In millions of yen)

| | Notes | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|---|
| Continuing operations | | | |
| Sales revenue | 6, 25 | 756,503 | 718,243 |
| Cost of sales | | (424,066) | (415,315) |
| Gross profit | | 332,437 | 302,928 |
| | | | |
| Selling, general and administrative expenses | 26 | (251,021) | (281,008) |
| Other income | 27 | 8,953 | 2,302 |
| Other expenses | 28 | (22,173) | (17,377) |
| Operating profit | | 68,196 | 6,845 |
| | | | |
| Finance income | 29 | 1,609 | 2,186 |
| Finance costs | 29 | (2,131) | (8,774) |
| Share of profit of investments accounted for using the equity method | | 49 | — |
| Profit before tax from continuing operations | | 67,723 | 257 |
| Income tax expense | 18 | (16,664) | (6,082) |
| Profit or loss from continuing operations | | 51,059 | (5,825) |
| | | | |
| Discontinued operations | | | |
| Profit after tax for the year from discontinued operations | | — | — |
| Profit or loss | | 51,059 | (5,825) |
| | | | |
| Profit attributable to | | | |
| Owners of the parent | | 50,989 | (5,914) |
| Non-controlling interests | | 70 | 89 |
| Profit or loss | | 51,059 | (5,825) |
| | | | |
| Earnings or loss per share | 31 | | |
| Basic earnings or loss per share (yen) | | | |
| Continuing operations | | 30.57 | (3.49) |
| Discontinued operations | | — | — |
| Total basic earnings or loss per share | | 30.57 | (3.49) |
| Diluted earnings or loss per share (yen) | | | |
| Continuing operations | | 30.50 | (3.49) |
| Discontinued operations | | — | — |
| Total diluted earnings or loss per share | | 30.50 | (3.49) |

Consolidated Statement of Comprehensive Income

(In millions of yen)

| | Notes | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|---|
| Profit or loss | | 51,059 | (5,825) |
| Other comprehensive income | | | |
| Items that will not be reclassified to profit or loss | | | |
| Remeasurements of defined benefit plans | | (4,059) | (3,203) |
| Equity instruments measured at fair value through other comprehensive income | | (54) | (177) |
| Share of other comprehensive income of investments accounted for using the equity method | | (26) | — |
| Total of items that will not be reclassified to profit or loss | | (4,139) | (3,380) |
| Items that may be reclassified subsequently to profit or loss | | | |
| Exchange differences on translation of foreign operations | | (14,401) | (18,033) |
| Changes in fair value of cash flow hedges | | (14,318) | 5,614 |
| Total of items that may be reclassified subsequently to profit or loss | | (28,719) | (12,419) |
| Total other comprehensive income | 30 | (32,858) | (15,799) |
| Total comprehensive income | | 18,201 | (21,624) |
| Comprehensive income attributable to | | | |
| Owners of the parent | | 18,248 | (21,705) |
| Non-controlling interests | | (47) | 81 |
| Total comprehensive income | | 18,201 | (21,624) |

(iii) Consolidated Statement of Changes in Equity
The year ended December 31, 2018

(In millions of yen)

| | | Equity attributable to owners of the parent | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Other components of equity | | | | | | | | |
| | Notes | Issued capital | Share premium | Retained earnings | Treasury shares | Stock acquisition rights | Remeasurements of defined benefit plans | Equity instruments measured at fair value through other comprehensive income | Exchange differences on transition of foreign operations | Changes in fair value of cash flow hedges | Total | Total equity attributable to owners of the parents | Non-controlling interests | Total equity |
| Balance as of January 1, 2018 | | 10,022 | 189,397 | 363,542 | (11) | 2,311 | — | (734) | 11,206 | — | 12,783 | 575,733 | 2,916 | 578,649 |
| Profit | | — | — | 50.989 | — | — | — | — | — | — | — | 50,989 | 70 | 51,059 |
| Other comprehensive income | | — | — | — | — | — | (4,048) | (80) | (14,295) | (14,318) | (32,741) | (32,741) | (117) | (32,858) |
| Total comprehensive income | | — | — | 50.989 | — | — | (4,048) | (80) | (14,295) | (14,318) | (32,741) | 18,248 | (47) | 18,201 |
| Issue of new shares | 24 | 677 | 677 | — | — | — | — | — | — | — | — | 1,354 | — | 1,354 |
| Share-based payments | 33 | — | — | — | — | 2,854 | — | — | — | — | 2,854 | 2,854 | — | 2,854 |
| Change of equity method range | | — | — | — | — | — | — | (89) | — | — | (89) | (89) | — | (89) |
| Transfer to retained earnings | | — | — | (3,879) | — | — | 4,048 | (169) | — | — | 3,879 | — | — | — |
| Other | | — | — | — | — | — | — | — | — | — | — | — | (1) | (1) |
| Total amount of transactions with owners | | 677 | 677 | (3,879) | — | 2,854 | 4,048 | (258) | — | — | 6,644 | 4,119 | (1) | 4,118 |
| Balance as of December 31, 2018 | | 10,699 | 190,074 | 410,652 | (11) | 5,165 | — | (1,072) | (3,089) | (14,318) | (13,314) | 598,100 | 2,868 | 600,968 |

The year ended December 31, 2019

(In millions of yen)

| | Notes | Equity attributable to owners of the parent | | | | | | | | | | | Non-controlling interests | Total equity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Other components of equity | | | | | | | | |
| | | Issued capital | Share premium | Retained earnings | Treasury shares | Stock acquisition rights | Remeasurements of defined benefit plans | Equity instruments measured at fair value through other comprehensive income | Exchange differences on transition of foreign operations | Changes in fair value of cash flow hedges | Total | Total equity attributable to owners of the parents | | |
| Balance as of January 1, 2019 | | 10,699 | 190,074 | 410,652 | (11) | 5,165 | — | (1,072) | (3,089) | (14,318) | (13,314) | 598,100 | 2,868 | 600,968 |
| Profit or loss | | — | — | (5,914) | — | — | — | — | — | — | — | (5,914) | 89 | (5,825) |
| Other comprehensive income | | — | — | — | — | — | (3,203) | (177) | (18,025) | 5,614 | (15,791) | (15,791) | (8) | (15,799) |
| Total comprehensive income | | — | — | (5,914) | — | — | (3,203) | (177) | (18,025) | 5,614 | (15,791) | (21,705) | 81 | (21,624) |
| Issue of new shares | 24 | 11,514 | 12,097 | — | — | — | — | — | — | — | — | 23,611 | — | 23,611 |
| Share-based payments | 33 | — | — | — | — | 11,956 | — | — | — | — | 11,956 | 11,956 | — | 11,956 |
| Transfer to retained earnings | | — | (583) | (1,670) | — | (1,068) | 3,203 | 118 | — | — | 2,253 | — | — | — |
| Reclassification to non-financial assets | | — | — | — | — | — | — | — | — | 8,704 | 8,704 | 8,704 | — | 8,704 |
| Total amount of transactions with owners | | 11,514 | 11,514 | (1,670) | — | 10,888 | 3,203 | 118 | — | 8,704 | 22,913 | 44,271 | — | 44,271 |
| Balance as of December 31, 2019 | | 22,213 | 201,588 | 403,068 | (11) | 16,053 | — | (1,131) | (21,114) | — | (6,192) | 620,666 | 2,949 | 623,615 |

(iv) Consolidated Statement of Cash Flows

(In millions of yen)

| | Notes | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|---|
| Cash flows from operating activities | | | |
| Profit before tax | | 67,723 | 257 |
| Depreciation and amortization | | 112,743 | 148,026 |
| Impairment loss | | 1,526 | 2,256 |
| Finance income and costs | | 649 | 5,927 |
| Share of profit of investments accounted for using the equity method | | (49) | — |
| Share-based payments | | 4,208 | 11,896 |
| Gain (loss) on sales of non-current assets | | (1,025) | (515) |
| Changes in inventories | | 6,956 | 43,967 |
| Changes in trade and other receivables | | 22,336 | 9,882 |
| Changes in trade and other payables | | (27,999) | (36) |
| Changes in retirement benefit liabilities | | (1,265) | (3,044) |
| Changes in provisions | | (2,055) | 411 |
| Changes in other current liabilities | | (3,403) | (11,609) |
| Other | | 5,433 | (962) |
| Subtotal | | 185,778 | 206,456 |
| Interest received | | 1,485 | 1,361 |
| Dividends received | | 48 | 203 |
| Income taxes paid | | (15,003) | (6,060) |
| Net cash flows from operating activities | | 172,308 | 201,960 |
| | | | |
| Cash flows from investing activities | | | |
| Purchase of property, plant and equipment | | (64,513) | (38,284) |
| Proceeds from sales of property, plant and equipment | | 2,248 | 755 |
| Purchase of intangible assets | | (22,361) | (18,084) |
| Purchase of other financial assets | | (766) | (545) |
| Proceeds from sales of other financial assets | | 3,175 | 1,431 |
| Acquisition of subsidiaries | 7 | — | (685,831) |
| Proceeds from sales of investments accounted for using the equity method | | 1,378 | — |
| Other | | (33) | (1,604) |
| Net cash flows from investing activities | | (80,872) | (742,162) |
| | | | |
| Cash flows from financing activities | | | |
| Net change in short-term borrowings | 32 | 10,000 | (45,000) |
| Proceeds from long-term borrowings | 32 | — | 847,000 |
| Repayments of long-term borrowings | 32 | (46,529) | (217,645) |
| Repayment of lease liabilities | 32 | (916) | (5,726) |
| Interest paid | | (1,806) | (12,796) |
| Payments for retirement by purchase of bonds | 32 | — | (65,409) |
| Other | | — | 42 |
| Net cash flows from financing activities | | (39,251) | 500,466 |
| Effect of exchange rate changes on cash and cash equivalents | | (2,910) | (2,616) |
| Increase (decrease) in cash and cash equivalents | | 49,275 | (42,352) |
| Cash and cash equivalents at beginning of year | 8 | 139,545 | 188,820 |
| Cash and cash equivalents at end of year | 8 | 188,820 | 146,468 |

**Notes to Consolidated Financial Statements**

1. Reporting Entity

Renesas Electronics Corporation (hereafter "the Company") is a public company established under the Companies Act of Japan and domiciled in Japan. The accompanying consolidated financial statements of the Company and its consolidated subsidiaries (hereafter "the Group") are composed of the Company, its subsidiaries and interests of the Group in its associates, with December 31, 2019 as the closing date. The Group engages in research, design, development, manufacturing, sales and services related to various kinds of semiconductors as a manufacturer specializing in semiconductors. For details of the Group's major business, please refer to "Note 6. Business Segments".

The consolidated financial statements for the year ended December 31, 2019 were approved on March 27, 2020 by Hidetoshi Shibata, President and CEO, and Shuhei Shinkai, Executive Vice President, Member of the Board and CFO.

2. Basis for Preparation

(1) Compliance with IFRS

Because the Group meets the requirements for "Specified Companies Complying with Designated International Accounting Standards" stated in Article 1-2 of Ordinance on Consolidated Financial Statements, the Group has adopted the provisions of Article 93 of the Ordinance. The consolidated financial statements of the Group have been prepared in accordance with IFRS, as issued by the International Accounting Standards Board.

(2) Basis of measurement

The consolidated financial statements of the Group have been prepared based on the accounting policies separately described in "Note 3. Significant Accounting Policies." Assets and liabilities are measured at a historical cost basis unless otherwise stated.

(3) Functional currency and presentation currency

The consolidated financial statements are presented in Japanese yen (rounded to the nearest million yen), which is the functional currency of the Company.

(4) Change in presentation

(Consolidated Statement of Cash Flows)

"Interest paid", which was disclosed under "Cash flows from operating activities" for the prior fiscal year, has been reclassified to "Cash flows from financing activities" from the current fiscal year due to the increase in its materiality. In order to reflect this change in presentation, the consolidated Statement of Cash Flows for the prior fiscal year has also been reclassified. Consequently, 1,806 million yen of "Interest paid", which was disclosed under "Cash flows from operating activities", has been reclassified to "Cash flows from financing activities".

(5) Change in accounting policies

(a) The Group has applied International Financial Reporting Standards 16 "Leases" (hereafter "IFRS16") for the fiscal year ended December 31, 2019.

The Group has applied IFRS16 retrospectively with the cumulative effect of initially applying the Standard recognized at the date of initial application and did not restate comparative information in accordance with paragraph C5(b) for IFRS16. In addition, the Group has applied the practical expedient permitted in paragraph C3 for IFRS16 and did not apply this Standard to contracts that were not previously identified as leases or containing a lease.

Right-of-use asset has been measured at an amount equal to the lease liability, adjusted only by the amount of accrued lease payments relating to that lease recognized in the statement of financial position as of December 31, 2018 in conformity with paragraph C8(b)(ii) for IFRS16. In the context of transition to IFRS16, 12,682 million yen of right-of-use assets and 13,102 million yen of lease liabilities have been recognized, and the difference of 420 million yen has been recognized as accrued leases payments. The weighted average lessee's incremental borrowing rate applied to lease liabilities recognized in the statement of financial position at the date of initial application of IFRS16 is 1.6%.

The adjustment between the amounts of contracts identified as operating leases in accordance with International Accounting Standard 17 (hereafter "IAS17") "Leases" as of December 31, 2018, discounted by the lessee's incremental borrowing rate and the amounts of lease liabilities recognized in the statement of financial position at the date of initial application is as follow.

(In millions of yen)

| | |
|---|---|
| Amounts of contracts identified as operating lease commitments in accordance with IAS17 as of December 31, 2018 at the date of initial application | 12,792 |
| Amounts discounted by the lessee's incremental borrowing rate of 1.6% | (754) |
| Cancellable operating lease contracts | 1,064 |
| Finance lease liabilities as of December 31, 2018 | 2,762 |
| Lease liabilities recognized in the statement of financial position at the date of initial application (January 1, 2019) | 15,864 |

When applying IFRS16, the Group has applied the practical expedient in paragraph C10 for IFRS16 as below for the contracts previously identified as operating leases in accordance with IAS17.

- The Group assesses the leases applying International Accounting Standard 37 "Provisions, Contingent Liabilities and Contingent Assets" (hereafter "IAS37") immediately before the date of initial application as an alternative to performing an impairment review
- Leases for which the lease term ends within 12 months of the date of initial application are treated as short- term leases.

・Initial direct costs from the measurement of the right-of-use asset at the date of initial application are excluded.
・The Group determines the lease term of the contract which contains options to extend or terminate the lease using hindsight.

(b) Application of IFRIC23 “Uncertainty over Income Tax Treatments”

The Group has applied International Financial Reporting Interpretations Committee Interpretation 23 “Uncertainty over Income Tax Treatments” for the fiscal year ended December 31, 2019. In addition, the impact of this application on the financial statements is insignificant.

3. Significant Accounting Policies

The significant accounting policies of the Group are as follows and are applied to all the periods presented in the consolidated financial statements.

(1) Basis of consolidation

a. Subsidiaries

Subsidiaries are entities controlled by the Group. Control refers to a case in which the Group has power over an entity, is exposed to variable returns from involvement with the entity and has the ability to affect those returns through its power over the entity.

The financial statements of subsidiaries are included in the consolidated financial statements from the date when control is obtained until the date when control is lost. In the event that the Group disposes of some of its ownership interest in a subsidiary that does not result in a loss of control, the change in ownership interest of the Group are accounted for as an equity transaction, and the difference between the adjustment of non-controlling interests and the fair value of the consideration is directly recognized in equity as equity attributable to owners of the parent.

If the closing dates of a subsidiary and that of the consolidated financial statements are different, financial statements prepared with a provisional closing date, which is same as that of consolidated financial statements, are used.

b. Associates

Associates are entities over which the Group has a significant influence over the decisions on financial and operating policies, but does not have control. Investments in associates are accounted for using the equity method.

Investments in associates are initially recognized at cost. Ownership interests of the Group in profit or loss and other comprehensive income of the associate from the date when the Group obtains significant influence until the date when the Group loses significant influence are recognized as changes in the amount of investments in associates.

Since the closing date of an associate and that of the consolidated financial statements are different, financial statements prepared with a provisional closing date, which is same as that of consolidated financial statements, are used.

c. Transactions eliminated on consolidation

Inter-company balances of receivables and payables, transactions and unrealized gains or losses resulting from inter-company transactions are eliminated on consolidation.

(2) Business combinations

Business combinations are accounted for using the acquisition method. Consideration transferred in a business combination is measured as the sum of the acquisition-date fair value of the assets transferred, liabilities assumed and equity instruments issued by the Company in exchange for control over the acquiree.

Any excess of the consideration for acquisition, the non-controlling interests in the acquiree and the fair value of assets of the acquiree that the acquirer previously held over the net amount of identifiable assets and liabilities as of the date of acquisition is recognized as goodwill. Conversely, if the consideration for acquisition is lower than the net amount, it is immediately recognized in profit or loss. Acquisition-related costs are recognized in profit or loss. The additional acquisition of non-controlling interests after obtaining control is accounted for as an equity transaction, and no corresponding goodwill is recognized.

If the initial accounting treatment of a business combination is not completed by the end of the fiscal year when the business combination took place, provisional amounts for the items for which accounting is incomplete are reported, and such provisional amounts that were recognized as of the date of acquisition are adjusted retrospectively during the measurement period within one year from the date of acquisition.

(3) Foreign currency translation

a. Functional currency and presentation currency

The financial statements of Group entities are prepared in their respective functional currency. The consolidated financial statements of the Group are presented in Japanese yen, which is the functional currency of the Company.

b. Foreign currency transactions

Foreign currency transactions are translated into the functional currency at the spot exchange rate or a rate approximate to the spot exchange rate on the date of the transaction. Monetary items denominated in a foreign currency at the end of the reporting period are translated into the functional currency using the closing rate, while non-monetary items denominated in a foreign currency that are measured at historical cost are translated using the exchange rate in effect on the date of the initial transaction, and those that are measured at fair value are translated using the exchange rate in effect on the date when the fair value was calculated.

Exchange differences from translation or settlement are recognized in profit or loss during the period when they arise. However, exchange differences arising from equity instruments and cash flow hedges measured through other comprehensive income are recognized in other comprehensive income.

c. Foreign operations

In preparing the consolidated financial statements, the assets and liabilities of a foreign operation are translated into Japanese yen at the exchange rate as of the closing date of the consolidated financial statements, and profit or loss and cash flows of the foreign operation are translated into Japanese yen at the exchange rate on the date of the transaction or the average exchange rate for the period that is approximate to the exchange rate. Exchange differences are recognized in other comprehensive income, and the cumulative amount thereof is recognized in other components of equity.

On disposal of the entire ownership interest in a foreign operation or part of the interest that results in a loss of control or significant influence, the exchange differences of the foreign operation that were recognized in other comprehensive income and accumulated in equity are reclassified from equity to profit or loss when the related gains or losses on disposal are recognized.

(4) Financial instruments

a. Financial assets other than derivatives

(a) Initial recognition and measurement

Trade and other receivables are initially recognized at their transaction price on that date, and all other financial assets are initially recognized on the date of the transaction when the Company becomes the contracting party to the financial assets.

At the time of initial recognition, financial assets are classified as financial assets measured at amortized cost or financial assets measured at fair value.

(i) Financial assets measured at amortized cost

A financial asset is classified as a financial asset measured at amortized cost if both of the following conditions are met or a financial asset measured at fair value in other cases.

- Assets are held within a business model that aims to hold assets to collect contractual cash flows.
- The contract terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

(ii) Financial assets measured at fair value through other comprehensive income

- Debt instruments measured at fair value through other comprehensive income

  If both of the following conditions are met, financial assets are classified as debt instruments measured at fair value through other comprehensive income.

  - Assets are held within a business model whose objective is achieved by both the collection and sale of contractual cash flows.
  - The contract terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

- Equity instruments measured at fair value through other comprehensive income

  Of financial assets measured at amortized cost, or financial assets other than debt instruments measured at fair value through other comprehensive income, when an irrevocable election at the time of initial recognition is made, subsequent changes in fair value are recognized in other comprehensive income and such equity instruments are classified as financial assets measured at fair value through other comprehensive income.

(iii) Financial assets measured at fair value through profit or loss

Financial assets measured at amortized cost or financial assets other than those measured at fair value through other comprehensive income are classified into financial assets measured at fair value through profit or loss.

Financial assets are recognized initially at fair value plus, in the case of financial assets not recorded at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs for financial assets measured at fair value through profit or loss are recognized in profit or loss.

(b) Subsequent measurement

After the initial recognition, financial assets are measured as follows according to their classification.

(i) Financial assets measured at amortized cost

Financial assets measured at amortized cost are measured at amortized cost using the effective interest method.

(ii) Financial assets measured at fair value through other comprehensive income

・Debt instruments measured at fair value through other comprehensive income

The amount of changes in the fair value of debt instruments measured at fair value through other comprehensive income is recognized in other comprehensive income, except for impairment gains or losses and foreign exchange gains or losses, until the financial assets are derecognized. If the financial assets are derecognized, gains or losses accumulated in other comprehensive income are reclassified to profit or loss.

・Equity instruments measured at fair value through other comprehensive income

The amount of changes in the fair value of equity instruments measured at fair value through other comprehensive income is recognized in other comprehensive income. If the financial assets are derecognized, or if the fair value has declined significantly, gains or losses accumulated in other comprehensive income are directly reclassified to retained earnings. Dividend income from the financial assets is recognized as finance income in profit or loss.

(iii) Financial assets measured at fair value through profit or loss

Financial assets measured at fair value through profit or loss are measured at fair value after the initial recognition, and changes in fair value are recognized in profit or loss.

(c) Impairment of financial assets

For impairment of financial assets measured at amortized cost, etc., the Group has decided to recognize an allowance for expected credit losses of financial assets. On each reporting date, the Group assesses whether the credit losses of financial instruments have increased significantly subsequent to initial recognition.

If the credit losses of financial instruments have not increased significantly after initial recognition, the loss allowance of financial instruments is measured at the amount of 12-month expected credit losses, and if the credit losses of financial instruments have increased significantly after initial recognition, the loss allowance of the financial instruments is measured at the amount of lifetime expected credit losses.

However, for trade receivables, etc., the loss allowance is always measured at the amount of lifetime expected credit losses.

Expected credit losses of financial instruments are estimated in a way that reflects:

- An unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes
- The time value of money
- Reasonable and supportable information that is available without undue cost or effort at the reporting date about past events, current conditions and forecasts of future economic conditions

Changes in the amount of the measurement are recognized in profit or loss.

(d) Derecognition

The Group derecognizes financial assets if the contractual rights to the cash flows from the financial asset expire, or if substantially all risks and rewards associated with ownership of the financial assets are transferred as a result of assigning the contractual right to receive cash flows from the financial assets.

b. Financial liabilities other than derivatives

(a) Initial recognition and measurement

At the time of initial recognition, financial liabilities are classified as financial liabilities measured at amortized cost or financial liabilities measured at fair value through profit or loss. Although all financial liabilities are initially measured at fair value, financial liabilities measured at amortized cost are measured at an amount obtained by deducting directly attributable transaction costs.

(b) Subsequent measurement

(i) Financial liabilities measured at amortized cost

Financial liabilities measured at amortized cost are measured at amortized cost using the effective interest method.

(ii) Financial liabilities measured at fair value through profit or loss

Financial liabilities measured at fair value through profit or loss are measured at fair value after the initial recognition, and the changes are recognized in profit or loss.

(c) Derecognition

The Group derecognizes financial liabilities when they are extinguished, for example when then obligations specified in the contract are discharged, cancelled or expired.

c. Derivatives and hedge accounting

The Group holds derivative financial instruments for the purpose of hedging the risk of exchange rate fluctuations, etc. The Group has a policy of not conducting speculative derivative transactions.

Derivatives are initially recognized at fair value, and related transaction costs are recognized in profit or loss when they are incurred. After the initial recognition, derivatives are remeasured at fair value, and changes in the fair value are accounted for as described below, depending on whether the derivative financial instruments that are designated as hedging instruments meet the requirements for hedge accounting. The Group designates the derivatives that meet the requirements for hedge accounting as hedging instruments and applies hedge accounting. In addition, at the inception of a hedge, the Group formally documents the risk management objective, the relationship between hedging instruments and the hedged items, along with strategies when executing hedging transactions, and the method of assessing hedge effectiveness.

(i) Cash flow hedges

Of gains or losses from hedging instruments, the effective portion of the hedge is recognized in other comprehensive income, and the ineffective portion is recognized in profit or loss.

The amount of hedging instruments that is recorded in other comprehensive income is reclassified to profit or loss at the time when the underlying hedged transactions affect profit or loss. If the hedged items give rise to the recognition of non-financial assets or non-financial liabilities, the amount that is recognized in other comprehensive income is reclassified as an adjustment to the initial carrying amount of non-financial assets or non-financial liabilities.

For cash flow hedges other than the above, the amount is reclassified from other comprehensive income to profit or loss in the same period or periods during which the hedged expected future cash flows affect profit or loss. However, if the accumulated amount is a loss and if all or part of the loss is not expected to be recovered in the future, the amount that is not expected to be recovered is immediately reclassified to profit or loss.

When hedge accounting is terminated, this accumulated amount remains in other comprehensive income until the expected future cash flows occur, and if the forecast transaction is no longer expected to occur, this amount is immediately reclassified to profit or loss.

(ii) Derivatives that do not meet requirements for hedge accounting

Changes in fair value are recognized in profit or loss.

(5) Cash and cash equivalents

Cash and cash equivalents consist of cash on hand, deposits that can be withdrawn at any time and short-term investments with a maturity of 3 months or less when purchased that can be easily converted to cash and are subject to an insignificant risk of changes in value.

(6) Inventories

The acquisition cost of inventories comprises all costs of purchase, costs of conversion and all other costs incurred in bringing the inventories to their present location and condition.

After the initial recognition, inventories are measured at the lower of cost and net realizable value, but if cost

exceeds net realizable value, the inventories are written down to net realizable value. The net realizable value is calculated by deducting the estimated costs of completion and the estimated costs necessary to make the sale from the estimated selling price in the ordinary course of business.
The cost is also calculated using the following methods:
Merchandise and finished goods
Custom-made products: Specific identification method
Mass products: Average method
Work in progress
Custom-made products: Specific identification method
Mass products: Average method
Raw materials and supplies: Mainly average method

(7) Property, plant and equipment (other than leased assets)
The acquisition cost of property, plant and equipment includes costs directly related to the acquisition of assets, dismantling, disposal and restoration costs and borrowing costs that meet the requirements for capitalization.
The cost model is used in the measurement of property, plant and equipment, and they are presented at the carrying value obtained by deducting accumulated depreciation and accumulated impairment losses from the acquisition cost.
Except for land and construction in progress, the acquisition cost of each asset after deducting the residual value is depreciated over the estimated useful life using the straight-line method.
The estimated useful life, the residual value and the depreciation method are reviewed at the end of each fiscal year, and any changes are applied to the period when the estimated are changed and future periods prospectively as a change in the accounting estimate. The impact of the change of these estimates is recognized in the period when the estimates are changed and future periods.
The estimated useful lives of major assets are as follows.

| | |
|---|---|
| Buildings and structures | 10 to 45 years |
| Machinery, equipment and vehicles | 2 to 8 years |
| Tools, furniture and fixtures | 2 to 10 years |

(8) Goodwill and intangible assets
a. Goodwill
The measurement of goodwill at the time of initial recognition is as stated in “(2) Business combinations.” After initial recognition, goodwill is not amortized and is measured at cost less any accumulated impairment losses.
Goodwill is allocated to each of the acquirer’s cash-generating units or groups of cash-generating units that are expected to benefit from the synergies of the business combination, and an impairment test is performed for the cash-generating units to which goodwill was allocated at a certain time each fiscal year and whenever there is an indication of impairment. Impairment loss on goodwill is recognized in profit or loss, and is not reversed in a subsequent period.

b. Intangible assets
The cost model is used for intangible assets, and they are presented at cost less any accumulated amortization and accumulated impairment losses.
(a) Intangible assets acquired separately
Intangible assets acquired separately are measured at cost at the time of initial recognition.

(b) Intangible assets acquired in a business combination
For intangible assets acquired in a business combination, their acquisition cost is measured at fair value as of the date of acquisition, and developed technology, customer relationships, and research and development under work-in-process are mainly included.
(Developed technology)
Intangible assets reflected on future excess earnings power expected to arise from the technology etc. have been already developed as of the date of acquisition with the acquiree are recognized as Developed technology.
(Customer relationships)
Intangible assets reflected on future excess earnings power expected to arise from the existing customers as of the date of acquisition with the acquiree are recognized as Customer relationships.
(Research and development under work-in-process)
Intangible assets in intermediate stage of identifiable research and development assets meeting the asset requirements are recognized as Research and development under work-in-process.
The details for intangible assets acquired in a business combination, see “Note 13 Goodwill and Intangible Assets”.

(c) Internally generated intangible assets (Capitalized development cost)
For internally generated intangible assets, the expenditure is recorded as an expense, except for development costs that meet the following requirements for capitalization:
- The technical feasibility of completing the intangible asset so that it will be available for use or sale
- The intention of an entity to complete the intangible asset and use or sell it
- An ability to use or sell the intangible asset
- A method for the intangible asset to generate probable future economic benefits
- The availability of adequate technical, financial and other resources necessary for completing the development of the intangible asset and using or selling it

- An ability to measure the expenditure attributable to the intangible asset during its development reliably
  These internally generated intangible assets are amortized using the straight-line method from the time when they are provided for use in business operations based on an estimated useful life (5 years) that is expected to provide net cash inflow. Expenditure on research and development that does not meet the requirements for capitalization above is recognized in profit or loss at the time of occurrence.

Intangible assets with finite useful lives are amortized over their respective estimated useful life using the straight-line method, and an impairment test is performed if any indications of impairment exist. For intangible assets with finite useful lives, their useful lives and amortization method are reviewed at the end of each fiscal year, and if there is a change, it is applied to the period when the estimated are changed and future periods prospectively as a change in the accounting estimate.

Commercial software products are mainly amortized using a method based on the expected sales volume over the expected sales period (3 years or less), and software for internal use is mainly amortized using the straight-line method based on the expected available period (5 years) for internal use. Technical assets are amortized using the straight-line method based on the available period (12 years or less) in business activities.

Intangible assets with indefinite useful lives and intangible assets that are not yet available for use are not amortized, and an impairment test is performed at a certain time each fiscal year or whenever any indication of impairment exists.

(9) Leases

The Group has applied IFRS16 retrospectively with the cumulative effect of initially applying the Standard recognized at the date of initial application and did not restate comparative information. In addition, the Group has applied the practical expedient under which it is not required to perform a review for the contracts that were not previously identified as leases or containing a lease. Thus, the Group has adopted this standard for contracts that were previously identified as leases adopting IAS 17 and IFRIC 4 “Determining Whether an Arrangement Contains a Lease” (hereafter “IFRIC 4”) for the contracts signed before the date of initial application of IFRS16.

a Overall

(a) Identification of a lease

At inception of a contract, the Group assesses whether the contract is, or contains, a lease. A contract is, or contains, a lease if it conveys the right to control the use of an identified asset for a period of time in exchange for consideration. The Group reviews the following to assesses whether a contract conveys the right to control the use of an identified asset.

(ⅰ)The use of the identified asset in a contract is directed.

(ⅱ)The lessee has the right to obtain substantially all of the economic benefits from use of the identified asset throughout the period of use.

(ⅲ)The lessee has the right to direct the use of an asset. Also, in case that how and for what purpose the asset is used are predetermined, if applicable to any of the following, it’s determined that the lessee has the right to direct the use of an asset.

・The lessee has the right to operate the asset.

・The lessee designed the asset in a way that predetermines how and for what purpose the asset will be used.

(b) Lease term

The lease term is defined as the non-cancellable period for which a lessee has the right to use an underlying asset, together with both:

・periods covered by an option to extend the lease if the lessee is reasonably certain to exercise that option; and

・periods covered by an option to terminate the lease if the lessee is reasonably certain not to exercise that option.

b Leases as Lessee

(a) Separable components of a contract

The Group allocates the consideration in contract for a building lease to lease and non-lease components on the basis of the relative stand-alone price of each lease component. In addition, the Group elects not to separate non-lease components from lease components, and instead account for each lease component and any associated non-lease components as a single lease component for the lease other than a building lease.

(b) Right-of-use assets

The Group recognizes the right-of-use asset and the lease liability at the date of initial application. The right-of-use asset is measured initially at cost. This cost is calculated by deducting any lease incentives received from the sum of the amounts of the initial measurement of the lease liability, any lease payments made at or before the commencement date, any initial direct costs and an estimate of costs to be incurred in dismantling and removing the underlying assets, restoring the underlying asset or restoring the site on which it is located. After the commencement date, the right-of-asset is measured using a cost model by deducting any accumulated depreciation and any accumulated impairment losses from the cost.

The right-of-use asset is depreciated using the straight-line method over the period which is the earlier of the useful life of the underlying asset or the lease term. If it is reasonably certain that the Group will exercise a purchase option, depreciation is based on the useful life of the underlying asset.

(c) Lease liability

Lease liability is measured initially at the present value of unpaid lease payments discounted using the interest rate implicit in the lease. If the interest rate implicit in the lease cannot be readily determined, the Group’s incremental borrowing rate is used and the Group typically uses our incremental borrowing rate as discount rate.

The lease payments in the measurement of lease liabilities includes the fixed payments, the amount of payments for the lease in any optional period if it is considered to be reasonable certain to exercise an extension option, and the payments of penalties for terminating the lease, if the lease term reflects the lessee exercising an option to terminate the lease.

If there is a change in future lease payments resulting from a change in an index or rate, there is a change in the amounts expected to be payable under a residual value guarantee, or there is a change in determining whether purchase, extension and termination option is reasonably certain to exercise, lease liability is remeasured.

When lease liability is remeasured, the carrying amount of the right-of-use asset is adjusted or the remaining remeasurement is recognized in profit or loss if the carrying amount of the right-of-use assets is reduced to zero.

(d) Short-term leases within 12 months and leases of low-value assets

The Group elects not to recognize right-of-use assets and lease liabilities for short-term leases within 12 months and leases of low-value assets including IT equipment, and recognizes these lease payments as expenses over the lease term using the straight-line method.

c Policy under IAS 17 and IFRIC 4

For the prior periods, the Group, as lessee, classify the lease as a finance lease in cases where almost all the risks and rewards of ownership of the underlying assets are transferred and as an operating lease in cases where they are not transferred.

(a) Identifying a lease

For the contracts signed before January 1, FY2019, the Group has determined whether a contract is, or contains, a lease based on the following review.

(i) Fulfilment of the arrangement depends upon the use of a specific asset or assets.

(ii) The arrangement conveys a right to control the use of the underlying asset. This is the case if any of the following conditions is met:

・The purchaser has the ability or right to operate the asset or direct others to operate the asset in a manner it determines while obtaining or controlling more than an insignificant amount of the output or other utility of the asset.

・The purchaser has the ability or right to control physical access to the underlying asset while obtaining or controlling more than an insignificant amount of the output or other utility of the asset.

・Facts and circumstances indicate that it is remote that one or more parties other than the purchaser will take more than an insignificant amount of the output or other utility that will be produced or generated by the asset during the term of the arrangement, and the price that the purchaser will pay for the output is neither contractually fixed per unit of output nor equal to the current market price per unit of output as of the time of delivery of the output.

(b). Finance leases

Leased assets and lease liabilities are initially recognized at the lower of the fair value at the commencement of the lease and the present value of minimum lease payments.

After the initial recognition, they are depreciated using the straight-line method over the estimated useful life or the lease term, whichever is shorter, based on the accounting policy applied to the asset. The minimum lease payments are allocated to finance costs and the repayment portion of the liability balance, and finance costs are allocated over the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability.

(c). Operating leases

In operating lease transactions, lease payments are recognized in profit or loss over the lease term using the straight-line method. In addition, variable lease payments are recognized in profit or loss during the period when they are incurred.

(10) Impairment of non-financial assets

The Company determines whether there is any indication that an asset (except for inventories, deferred tax assets and assets pertaining to retirement benefits) may be impaired each fiscal year, and if such indication exists, an impairment test is performed. However, for goodwill or intangible assets with indefinite useful lives or that are not yet available for use, an impairment test is performed at a certain time each fiscal year or when any signs of impairment are identified.

In the impairment test, a recoverable amount is estimated, and the carrying amount and the recoverable amount are compared. The recoverable amount of assets, cash-generating units or groups of cash-generating units is calculated at the higher of the value in use and the fair value less costs of disposal. The value in use is calculated by discounting the estimated future cash flows to the present value, using the pre-tax discount rate that reflects the time value of money and risks specific to the asset.

If the recoverable amount of assets, cash-generating units or groups of cash-generating units is lower than the carrying amount as a result of the impairment test, an impairment loss is recognized. When the impairment loss of a cash-generating unit including goodwill is recognized, an allocation is made first to reduce the carrying amount of goodwill that is allocated to the cash-generating unit, and then an allocation is made to proportionally reduce the carrying amount of other assets in the cash-generating unit.

The impairment loss is reversed if there is any indication that the impairment loss recognized in a prior period may no longer exist or may have decreased and if the estimated recoverable amount exceeds the carrying amount. The upper limit of the reversal shall not exceed the carrying amount that would have been determined had no impairment loss been recognized in prior years, net of depreciation or amortization. The impairment loss on goodwill is not reversed.

(11) Provisions

The Company recognizes a provision if the Group has assumed a legal or constructive obligation as a result of a past event, if it is probable that an outflow of economic benefits will be required to settle the obligation and if a reliable estimate can be made of the amount of the obligation.

If the time value of the money of the provision is significant, the estimated future cash flows are discounted to the present value using a pre-tax discount rate that reflects the time value of the money and risks specific to the liability. The unwinding of the discount amount due to the passage of time are recognized as a finance cost.

(12) Levies

For levies that are an outflow of resources embodying economic benefits required by the government to entities in accordance with laws and regulations, an expected payment is recognized as a liability when the obligation event that triggers the payment of levies prescribed by laws and regulations occurs.

(13) Employee benefits

a. Short-term employee benefits

A short-term employee benefit is an employee benefit that will be settled within 12 months from the end of the fiscal year in which the employee renders the related service, and the Group recognizes an amount expected to be paid in exchange for the services rendered during a certain accounting period. Short-term employee benefits in the Group include bonuses and benefits related to paid leave.

The expected costs of employee benefits related to accumulating paid leave are recognized when an employee renders the service that will increase the entitlement to future paid leave. In addition, the Group measures the expected cost of accumulating paid leave as an additional amount that the Group is expected to pay as a result of the unused entitlement that has accumulated as of the end of the fiscal year.

Bonuses are recognized as a liability if the Group has a legal or constructive obligation to pay as a result of the provision of service by the employee in the past and if the obligation can be estimated reliably.

b. Post-employment benefits

For post-employment benefit plans, the Group has adopted defined benefit plans and defined contribution plans.

(a) Defined contribution plans

Contributions to defined contribution plans are recognized as an expense when they are incurred unless they are included in inventories or property, plant and equipment. If contributions already paid exceed contributions due for services provided before the end of the fiscal year, an entity recognizes the excess as an asset to the extent to which the prepayment becomes the reduction of future payments or a refund.

(b) Defined benefit plans

The net amount of assets or liabilities of the defined benefit plan is the amount obtained by deducting the fair value of the plan assets (including the upper limit of the assets and adjustments to minimum funding requirements, if necessary) from the present value of defined benefit obligations, and it is recognized in the consolidated financial statements as an asset or a liability. The defined benefit obligations are calculated using the projected unit credit method, and the present value of defined benefit obligations is calculated by applying a discount rate to the expected payment amount in the future. The discount rate is calculated based on market yields at the end of the reporting period on high quality corporate bonds corresponding to the discount period by setting the discount period based on the period until the future expected benefit payment date in each reporting period.

Service costs and net interest expense for the net amount of assets or liabilities related to the defined benefit plans are recognized in profit or loss.

Actuarial gains or losses and fluctuations in the return on the plan assets excluding the portion included in the net interest expense and change in the impact of the asset ceiling are recognized in other comprehensive income as “Remeasurements of defined benefit plans” in the corresponding period, and are immediately transferred from other components of equity to retained earnings. Past service costs are recognized in profit or loss when the plan is revised or curtailed, or when related restructuring costs or termination benefits are recognized, whichever is earlier.

c. Other long-term employee benefits

As long-term employee benefit plans other than post-element benefits, the Group has a special leave and a reward plan based on a certain number of service years. The obligations regarding other long-term employee benefits are measured at the amount obtained by discounting the estimated amount of future benefits that the employees have earned as consideration for services rendered in the previous and current fiscal years to the present value.

(14) Treasury shares

When treasury shares are acquired, the amount of the consideration paid, including directly attributable transaction costs, is recognized at cost and deducted from equity. If treasury shares are sold, the consideration received is recognized as an increase in equity, and the difference between the carrying amount and the consideration received is recognized in the share premium account.

(15) Share-based payments

The Group has adopted an equity-settled share-based payment plan as an incentive plan for directors (excluding outside directors), senior vice presidents and employees, etc.

Share-based payments (hereafter "stock options") are estimated at fair value on the grant date and recognized as an expense over the vesting period, taking into account the number of stock options that are expected to eventually vest, and the same amount is recognized as an increase in equity. The fair value of granted options is calculated by taking the terms and conditions of the options into account. If it is determined that the number of stock options that will be vested will differ from the prior estimate due to subsequent information, the estimate of the number of stock options that will be vested is revised as necessary.

(16) Revenue recognition

The Group recognizes revenue based on the following five-step model.

Step 1: Identify the contract with a customer
Step 2: Identify the performance obligations in the contract
Step 3: Determine the transaction price
Step 4: Allocate the transaction price to the performance obligations in the contract
Step 5: Recognize revenue when the entity satisfies a performance obligation

The Group engages in research, design, development, manufacturing, sales and services related to various kinds of semiconductors as a manufacturer specializing in semiconductors. Revenue is recognized when the goods are delivered as the ownership of these goods has been transferred to the customer and the performance obligations are identified at the time of delivery.

Also, revenue is measured at the fair value of the consideration received after deducting discounts, rebates and returns.

(17) Finance income and costs

Finance income consists of dividend income, interest income, foreign exchange gains, gains on sales of financial assets, gains on hedging financial instruments that are recognized in profit or loss, and the transfer of amounts previously recognized in other comprehensive income. Interest income is recognized at the time of occurrence using the effective interest method. Dividend income is usually recognized on the date when the Group's right to receive payment is established.

Finance costs consist of interest expenses for corporate bonds, borrowings and interest expense for lease liabilities, foreign exchange losses, losses on sales of financial assets, losses from hedging financial instruments that are recognized in profit or loss, and the transfer of amounts previously recognized in other comprehensive income. Acquisitions or construction of qualifying assets, or borrowing costs not directly attributable to the production, are recognized at the time of occurrence using the effective interest method. Lease payments are allocated to finance costs and the repayment portion of the liability balance, and finance costs are allocated over the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability.

(18) Income tax

Current taxes and deferred taxes are presented as income tax expense in the consolidated statement of profit or loss, except for those related to business combinations and items that are recognized in other comprehensive income or that are directly recognized in equity.

Current taxes and deferred taxes related to items that are recognized in other comprehensive income are recognized in other comprehensive income.

a. Current taxes

Current taxes are measured at the amount paid to tax authorities or the amount expected to be refunded from tax authorities. The tax rates and the tax law used for the calculation of the tax amount are those established or substantively established by the closing date.

b. Deferred taxes

Deferred taxes are calculated based on temporary differences between the tax base amount and the carrying amount for accounting purposes of assets and liabilities at the end of the fiscal year. Deferred tax assets are recognized for deductible temporary differences, unused tax credits and unused tax losses are expected to arise to the extent to which it is probable that taxable profits will available against which they can be utilized, and deferred tax liabilities are recognized for taxable temporary differences, in principle.

Neither a deferred tax asset nor a deferred tax liability is recognized for the following temporary differences:

- Temporary difference arising from the initial recognition of goodwill
- Temporary difference arising from the initial recognition of an asset and a liability arising from a transaction (excluding business combination transactions) that does not have an impact on accounting profits and taxable profits
- A case where the timing for eliminating a taxable temporary difference for an investment in a subsidiary or an associate and an interest in the arrangement of joint control can be controlled and where it is probable that the difference will not be eliminated in the foreseeable future
- A case where it is improbable that a deductible temporary difference for an investment in a subsidiary or an associate and an interest in the arrangement of joint control will be eliminated in the foreseeable future, or a case where it is improbable that a taxable profit that will be available for the temporary difference will be earned

Deferred tax assets and liabilities are measured at a tax rate (and tax law) that is expected to be applied in the period when assets are realized or liabilities are settled based on the statutory tax rate (and tax law) that is established or substantively established by the closing date.

Deferred tax assets and deferred tax liabilities are offset if they have the legally enforceable right to offset current tax assets and current tax liabilities, and if any of the following cases applies:

- Income tax is imposed on the same taxable entity by the same tax authority
- Although income tax is imposed on different taxable entities, these taxable entities intend to settle current tax assets and current tax liabilities on a net basis or intend to settle current tax liabilities at the same time as realizing current tax assets.

The carrying amount of deferred tax assets is reviewed at the end of each fiscal year. If it becomes improbable that taxable profits sufficient to realize part or all of the benefits of deferred tax assets will be earned, the carrying amount of deferred tax assets is reduced to that extent. In addition, the amount of the write-down is reversed to the extent to which it becomes probable that sufficient taxable profits will be earned.

(19) Earnings per share

Basic earnings per share are calculated by dividing profit (loss) attributable to owners (ordinary shareholders) of the parent by the weighted average number of ordinary shares outstanding, net of treasury shares, during each fiscal year.

Diluted basic earnings per share are calculated, adjusted for the effects of all dilutive potential ordinary shares.

(20) Non-current assets held for sale and discontinued operations

a. Non-current assets held for sale

Of assets or a group of assets that are not in ongoing use and are expected to be recovered by sale, assets held for sale or liabilities directly related to assets held for sale are distinguished from other assets and liabilities as disposal groups and recorded in the consolidated financial statements if they are available for immediate sale in their present condition, if management is committed to a plan to sell them, and if their sales within a year are highly probable.

Non-current assets classified as assets held for sale are recognized at the lower of the carrying amount and the fair value after deducting the costs for sale, those assets after classification are not depreciated or amortized.

b. Discontinued operations

A component of an entity that has either been disposed of or is classified as held for sale is recognized as a discontinued operation if any of the following applies:

- A separate major line of business or geographical area of operations;
- Part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations; or
- A subsidiary acquired exclusively with a view to resale.

If an operation is classified as a discontinued operation, the consolidated statement of profit or loss and the consolidated statement of comprehensive income for a comparative period are restated on the assumption that the operation was discontinued on the commencement date of the comparative period.

4. Significant Accounting Estimates and Judgments

In preparing the consolidated financial statements, management of the Group is required to make judgments, accounting estimates and assumptions that could have an impact on the application of accounting policies and the reporting amounts of assets, liabilities, revenue and expenses. These estimates and assumptions are based on the best judgment of management, taking into account various factors that are deemed reasonable on the closing date in light of past experience and available information. However, figures based on these estimates and assumptions may differ from the actual results due to their nature.

Estimates and underlying assumptions are reviewed continuously. The impact of the review of these estimates is recognized in the period when the estimates are revised and future periods.

Estimates and assumptions that could have a significant impact on the figures in the consolidated financial statements are as follows.

(1) Impairment of non-financial assets

The Company performs an impairment test for non-financial assets (excluding inventories, deferred tax assets and assets pertaining to retirement benefits) if there is any indication that the recoverable amount will be less than the carrying amount. However, for
goodwill or intangible assets with indefinite useful lives or that are not yet available for use, an impairment test is performed at a certain time each fiscal year or when any signs of impairment exist.

The impairment test is performed by comparing the carrying amount and the recoverable amount of the assets, and if the recoverable amount falls below the carrying amount, an impairment loss is recorded. The recoverable amount is mainly calculated using the discounted cash flow model, and when it is calculated, certain assumptions, including the useful life of the asset, future cash flows, discount rate, and long-term growth rate, etc., are made. These assumptions are determined based on the best estimates and judgments of management, but could be influenced by the results of fluctuations in uncertain future economic conditions. If a revision becomes necessary, it could have a significant impact on the amounts that will be recognized in the consolidated financial statements of subsequent periods.

The calculation method of the recoverable amount is stated in “Note 15. Impairment of Non-financial Assets.”

(2) Post-employment benefits

The Company has a variety of post-employment benefit plans, including a defined benefit plan.

The present value of the defined benefit obligation of each plan and related service costs, etc. are calculated based on actuarial assumptions. For the actuarial assumptions, estimates and judgments on a range of variables such as the discount rate are required.

The actuarial assumptions are determined based on the best estimates and judgments of the management, but could be affected by the results of fluctuations in uncertain future economic conditions. If a revision becomes necessary, it could have a significant impact on the amounts that will be recognized in the consolidated financial statements of subsequent periods.

These actuarial assumptions and related sensitivities are stated in “Note 23. Employee Benefits.”

(3) Provisions

The Group posts a range of provisions in the consolidated statement of financial position, including the provision for product warranties and asset retirement obligations, etc.

These provisions are recorded based on the best estimate of expenditure required for the settlement of the obligations, taking into account risks and uncertainties related to the obligations on the closing date.

The amount of expenditure required for the settlement of the obligations is calculated by comprehensively taking into account results that could arise in the future, but it could be affected by the occurrence of unforeseeable events and changes in the situation. If the actual amount of expenditure differs from the estimate, it could have a significant impact on amounts recognized in the consolidated financial statements of subsequent periods.

The nature and amounts of provisions are stated in “Note 22. Provisions.”

(4) Recoverability of deferred tax assets

When deferred tax assets are recognized, the time and amount of taxable profits that could be earned in the future based on a business plan are estimated and calculated in the judgment of the possibility that taxable profits will arise. Because the timing and amount of taxable profits are affected by the future business performance of the Group, if the actual timing and amount differ from the estimate, it could have a significant impact on the amounts recognized in the consolidated financial statements of subsequent periods.

Details and amounts of deferred tax assets are stated in “Note 18. Income Tax.”

(5) Inventories

Inventories are measured at cost, but if the net realizable value at the end of the fiscal year falls below the acquisition cost, inventories are measured at the net realizable value, and the difference from the acquisition cost is recognized in the cost of sales, in principle. For slow moving inventory that is outside of the operating cycle process, the net realizable value, etc. is calculated reflecting the future demand and market trends. If the net realizable value declines significantly due to the greater-than-expected deterioration of the market environment, a loss could arise.

(6) Measurement method of the fair value of financial instruments

When the Group evaluates the fair value of certain financial instruments, the Group uses valuation techniques that use inputs that are not observable in the market. These unobservable inputs could be affected by the result of fluctuations in uncertain future economic conditions, and if a revision becomes necessary, it could have a significant impact on the consolidated financial statements in subsequent periods.

The details and amounts of the fair value of financial instruments are stated in “Note 3. Significant Accounting Policies, (4) Financial instruments” and “Note 34. Financial Instruments.”

5. Standards and Interpretations Not Yet Adopted

Of the new standards and interpretations that were newly issued or revised as of the date of the approval of the consolidated financial statements, the major standards and interpretations that the Group has not yet adopted as of December 31, 2019 are as follows.

IFRS 17 “Insurance Contract”

IFRS 17 “Insurance Contract” was issued as replacement for IFRS4 “Insurance Contracts”. The Group will apply the standard from January 1, 2021. At this point, the Group has not yet calculated an impact on the consolidated financial statements by adoption of the standards.

In addition, the International Accounting Standards Board has proposed to defer the effective date of the Standard by one year to 2022 in the Exposure Draft on proposed amendments to IFRS 17 Insurance Contracts published in June 2019.

## 6. Business Segments

### (1) Overview of reportable segments

The Group's reportable segments are components of the Group for which separate financial information is available that is evaluated regularly by the Board of Directors to determine the allocation of management resources and assess performance.

The Group consists of "Automotive Business" and "Industrial/Infrastructure/IoT Business" and those are the Group's reportable segments.

The Automotive Business includes the product categories "Automotive control", comprising semiconductor devices for controlling automobile engines and bodies, and "Automotive information", comprising semiconductor devices used in automotive information systems such as navigation systems. The Group mainly supplies microcontrollers (MCUs), system-on-chips (SoCs), analog semiconductor devices and power semiconductor devices in each of these categories. The Industrial/Infrastructure/IoT Business includes the product categories "Industrial", "Infrastructure" and "IoT" which support the smart society. The Group mainly supplies MCUs and SoCs in each of these categories. Additionally, commissioned development and manufacturing from the Group's design and manufacturing subsidiaries are categorized as "Other".

From the fiscal year ended December 31, 2019, the Group has implemented a change in the Group's classification of segments for allocation of management resources and assessment of performance. Following this change, the legacy reported sole operating segment of the Group has been divided into "Automotive Business", "Industrial/Infrastructure/IoT Business", with commissioned development and manufacturing from the Group's design and manufacturing subsidiaries categorized as "Other" from the fiscal year ended December 31, 2019. The information on reportable segments for the fiscal year ended December 31, 2018 has also been reclassified in accordance with the new classification of reportable segments.

### (2) Information on reportable segments

The accounting treatment for reportable segments is same as described in "Note 3. Significant Accounting Policies.". The internal indicators which are used by management when making decisions have been adjusted by non-recurring items specified by the Group and other adjustment following a certain set of rules from operating profit in accordance with IFRS. Segment profit or loss is calculated by deducting "Cost of Sale", "General, Selling and Administrative Expenses" and "Other Expenses" from "Revenue" and adding "Other Income". The Group's Executive Officers assess the performance after eliminating intragroup transactions, and therefore, there is no transfer between reportable segments.

Information on reportable segments is as follows.

The year ended December 31, 2018 (In millions of yen)

| | Reportable Segments | | Other | Adjustment (Note 1) | Total | Adjustment (Note 2) | Consolidation basis |
|---|---|---|---|---|---|---|---|
| | Automotive | Industrial/ Infrastructure/ IoT | | | | | |
| Revenue from external customers | 389,683 | 346,569 | 20,251 | — | 756,503 | — | 756,503 |
| Segment profit or loss | 16,165 | 80,547 | 1,834 | 5,498 | 104,044 | (35,848) | 68,196 |
| Financial income | | | | | | | 1,609 |
| Financial expenses | | | | | | | (2,131) |
| Profit of investments accounted for using the equity method | | | | | | | 49 |
| Profit or loss before tax for the period | | | | | | | 67,723 |
| (Other adjustment) Depreciation and amortization | 58,842 | 36,448 | 356 | — | 95,646 | 17,097 | 112,743 |

The year ended December 31, 2019 (In millions of yen)

| | Reportable Segments | | Other | Adjustment (Note 1) | Total | Adjustment (Note 2) | Consolidation basis |
|---|---|---|---|---|---|---|---|
| | Automotive | Industrial/ Infrastructure/ IoT | | | | | |
| Revenue from external customers | 371,145 | 329,705 | 17,393 | — | 718,243 | — | 718,243 |
| Segment profit or loss | 30,984 | 59,063 | 1,619 | 1,398 | 93,064 | (86,219) | 6,845 |
| Financial income | | | | | | | 2,186 |
| Financial expenses | | | | | | | (8,774) |
| Profit or loss before tax for the period | | | | | | | 257 |
| (Other adjustment) Depreciation and amortization | 59,191 | 41,373 | (160) | — | 100,404 | 47,622 | 148,026 |

(Note 1) Reportable Segment's allocation of non-recurring items and other specified adjustments deducted or adjusted following a certain set of rules

(Note 2) Non-recurring items and other specified adjustments deducted or adjusted following a certain set of rules

(3) Information on products and services

Information on products and services is the same with information on reportable segments and therefore, omitted from this section.

(4) Information on regions and countries

The components of revenue from external customers by region and country are as follows.

a. Sales revenue from external customers

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Japan | 300,530 | 261,663 |
| China | 153,289 | 150,486 |
| Asia (Excluding China) | 106,984 | 117,959 |
| Europe | 125,062 | 118,990 |
| North America | 67,239 | 66,228 |
| Others | 3,399 | 2,917 |
| Total | 756,503 | 718,243 |

(Note) Sales are based on the location of customers and are classified by country or region.

b. Non-current assets

Items covered by non-current assets are property, plant and equipment, goodwill and intangible assets.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Japan | 421,808 | 811,354 |
| Malaysia | 108,607 | 326,738 |
| Asia (Excluding Malaysia) | 29,297 | 23,591 |
| Europe | 694 | 37,048 |
| North America | 45,851 | 73,460 |
| Total | 606,257 | 1,272,191 |

(5) Major customers

Sales revenue from a single external customer who makes up 10% or more of sales revenue is as follows.

(In millions of yen)

| | Name of related reportable segments | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|---|
| Ryosan Company, Limited | Automotive, Industrial/ Infrastructure/IoT | 94,804 | 75,146 |

7. Business Combinations

(1) Business combination by acquisition

(The year ended December 31, 2019)

a. Overview of business combination

The Company resolved at the Meeting of Board of Directors to reach an agreement with IDT, whereby IDT would become a wholly-owned subsidiary of the Company and concluded a merger agreement for the purpose of implementing the acquisition on September 11, 2018. In addition, on March 30, 2019, following the completion of the acquisition, IDT has become a wholly-owned subsidiary of the Company.

1) Name and overview of the acquiree

Name of the acquiree: Integrated Device Technology, Inc.

Business overview: Development, Manufacturing and Sale of mixed signal analog integrated circuit, etc.

2) Date of the acquisition

March 30, 2019 (Pacific Daylight Time: March 29, 2019)

3) Purpose of the Acquisition

The Group has been executing its growth strategy to thrive as a world-leading embedded solution provider in the rapidly changing global semiconductor market. As the pillars of its growth strategy, the Group is accelerating its focus on the automotive segment, where the Group has maintained a key global position over many years and further growth is anticipated in areas such as autonomous driving and EV/HEV; industrial and infrastructure segments, which are expected to advance with Industry 4.0 and 5G (fifth-generation) wireless communications, as well as the fast-growing IoT segment.

In order to achieve this growth strategy, the Group is working to expand its analog solution lineup and to strengthen its kit solution offerings that combine its world-leading microcontrollers (MCUs), system-on-chips (SoCs) and analog products. In this context, the Group already completed the acquisition of Intersil Corporation (hereafter “Intersil”), a U.S.-based analog semiconductor supplier, in February 2017.

With the Intersil acquisition, the Group enhanced its lineup of power management-related analog devices as well as its ability to deliver kit solutions to customers combining the Group’s MCUs/SoCs and analog products from the former Intersil. At the same time, the Group expanded its sales and design-ins outside of Japan and strengthened global management capabilities by absorbing the former Intersil’s experienced management team into the Group.

The Group has made the decision to acquire IDT, a U.S.-based analog semiconductor supplier, to contribute further towards the growth strategy. IDT is a global enterprise engaged in the development, production, sale, and provision of services related to analog semiconductor products such as mixed-signal semiconductor solutions particularly for markets related to the data economy such as data center and communication infrastructure that require big-data processing. IDT has annual sales of approximately US$843 million (approximately 92.7 billion yen at an exchange rate of 110 yen to the dollar, as of March 2018) and an operating profit margin of over 25% (Non-GAAP basis).

The main strategic benefits this transaction is expected to bring are: (i) Complementary products expand the Group’s solution offerings, and (ii) Expands business growth opportunities. Details are as follows:

(i) Complementary products expand the Group’s solution offerings

The acquisition will provide the Group with access to a vast array of robust analog mixed-signal capabilities in embedded systems, including RF, high performance timing, memory interface, real-time interconnect, optical interconnect, wireless power and smart sensors. The combination of these product lines with the Group’s advanced MCUs and SoCs and power management ICs enables the Group to offer an integrated solution that supports the increasing demand of high data processing performance. The enriched solution offerings will bring optimal systems from external sensors through analog front end to processors and interfaces.

(ii) Expands business growth opportunities.

IDT's analog mixed-signal products for data sensing, storage and interconnect are key devices that support the growth of data economy. Acquisition of these products enables the Group to extend its reach to fast-growing data economy-related applications including data center and communication infrastructure and strengthens its presence in the industrial and automotive segments.

Welcoming IDT as part of the Group after the Intersil acquisition completed in 2017 is therefore seen as an effective measure to further enhance the Group’s competitiveness in fields where the Group is focusing its efforts to strengthen the Company’s position as a global leader.

4) Acquisition Method

For the purpose of the acquisition, the Group had established a wholly-owned subsidiary ("acquisition subsidiary") in Delaware, United States that then merged with IDT (in a reverse triangular merger). The surviving company following the merger is IDT. Cash was issued for IDT's shares as consideration for the merger, and the shares of the acquisition subsidiary owned by the Group was converted into outstanding shares in the surviving company, making the surviving company a wholly-owned subsidiary of the Group.

b. Consideration for the acquisition and its breakdown

(In millions of yen)

| Consideration | | Amount |
|---|---|---|
| Cash consideration for the acquisition | | 703,559 |
| Stock options consideration for the acquisition | | 23,188 |
| Total consideration for the acquisition | A | 726,747 |

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Acquisition-related expenses for the business combination were 1,258 million yen, with 885 million yen recorded in "Selling, general and administrative expenses" for the fiscal year ended December 31, 2019.

c. Fair value of assets acquired, liabilities assumed and goodwill

(In millions of yen)

| | | Date of acquisition (March 30, 2019) |
|---|---|---|
| Current assets | | |
| Cash and cash equivalents | | 26,326 |
| Trade and other receivables (Note 2) | | 16,136 |
| Inventories | | 18,808 |
| Other | | 786 |
| Total current assets | | 62,056 |
| Non-current assets | | |
| Property, plant and equipment | | 19,775 |
| Intangible assets | | 320,276 |
| Other | | 11,852 |
| Total non-current assets | | 351,903 |
| Total assets | | 413,959 |
| Current liabilities | | |
| Trade and other payables | | 5,121 |
| Bonds and borrowings (Note 3) | | 65,262 |
| Other | | 13,997 |
| Total current liabilities | | 84,380 |
| Non-current liabilities | | |
| Income tax payables | | 2,599 |
| Deferred tax liabilities | | 33,853 |
| Other | | 3,759 |
| Total non-current liabilities | | 40,211 |
| Total liabilities | | 124,591 |
| Net assets | B | 289,368 |
| Basis adjustments | C | 8,598 |
| Goodwill (Note 4) | A-B+C | 445,976 |

(Note) 1. As of September 30, 2019, the acquisition was accounted for using provisional amounts determined based on reasonable information currently available, and since the recognition and fair value measurement of the identifiable assets acquired and liabilities assumed at the acquisition date have not been finalized, the PPA allocation is still preliminary. As of December 31, 2019, the provisional fair value has been adjusted based on reasonable information currently available. The Group has revised the amount of goodwill based on current fiscal year's allocation of determined acquisition cost.

(In millions of yen)

| Adjusted items | Adjustments of goodwill |
|---|---|
| Goodwill (before adjustment) | 447,135 |
| Deferred tax liabilities | (1,159) |
| Total adjustments | (1,159) |
| Goodwill (after adjustment) | 445,976 |

2. The total contract amount is same as the fair value, and there are no receivables that are expected to be unrecoverable.
3. The content of bonds and borrowings is bonds. Refer to "Note 20 Bonds and Borrowings" for more details.
4. Goodwill reflects future excess earning power expected from future business development including IDT and synergies between the Company and IDT. No amount of goodwill is expected to be deductible for tax purposes.

d. Expenditure for the acquisition

(In millions of yen)

| Item | Amount |
|---|---|
| Consideration for acquisition in cash | (703,559) |
| Cash and cash equivalents held by the acquiree at the time of obtaining control | 26,326 |
| Amount of cash paid for the acquisition of subsidiaries | (677,233) |
| Basis adjustments | (8,598) |
| Amount of cash paid for the acquisition of subsidiaries (net amount) | (685,831) |

e. Impact on profit of the period on the assumption that the date of the acquisition of IDT was at the beginning of the fiscal year
Provisional pro forma information (unaudited information) on the assumption that the date of the acquisition of IDT was at the beginning of the fiscal year is as follows.

(In millions of yen)

| | The year ended December 31, 2019 |
|---|---|
| Revenue | 745,184 |
| Profit or loss | (8,598) |

The above information has not been audited. In addition, items such as the amortization of intangible assets on the assumption that the date of the acquisition of IDT was at the beginning of the fiscal year were added to the approximate amount of impact. The pro forma information is not necessarily indicative of events that may happen in the future.

8. Cash and Cash Equivalents

The components of cash and cash equivalents are as described below. The balance of cash and cash equivalents in the consolidated statement of financial position and the balance of cash and cash equivalents in the consolidated statement of cash flows on the transition date, as of December 31, 2018 and December 31, 2019 are the same.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Cash and deposits | 185,326 | 135,870 |
| Short-term investments | 3,494 | 10,598 |
| Total | 188,820 | 146,468 |

(Note) Cash and cash equivalents are classified as financial assets measured at amortized cost.

9. Trade and Other Receivables

The components of trade and other receivables are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Notes and trade receivables | 76,356 | 81,473 |
| Other receivables | 3,141 | 3,081 |
| Loss allowance | (48) | (95) |
| Total | 79,449 | 84,459 |

(Note) Trade and other receivables are classified as financial assets measured at amortized cost.

10. Inventories

The components of inventories are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Merchandise and finished goods | 37,193 | 28,659 |
| Work in progress | 72,725 | 54,841 |
| Raw materials and supplies | 5,522 | 6,142 |
| Total | 115,440 | 89,642 |

(Note) For write-downs of inventories previously recognized as an expense as a result of declining profitability, using the reversal method (figures in parentheses represent reversals) (1,013) million yen and 2,879 million yen were included in cost of sales in the prior fiscal year and the current fiscal year, respectively.

11. Other Assets and Liabilities

The components of other current assets and other non-current assets are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Prepaid expenses | 8,122 | 8,786 |
| Consumption tax receivables | 3,083 | 2,088 |
| Other | 1,096 | 2,420 |
| Total | 12,301 | 13,294 |
| Current assets | 7,069 | 7,344 |
| Non-current assets | 5,232 | 5,950 |

The components of other current liabilities and other non-current liabilities are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Accrued expenses | 39,788 | 40,527 |
| Paid leave payables | 10,710 | 10,336 |
| Advances received | 1,377 | 536 |
| Other | 5,677 | 8,529 |
| Total | 57,552 | 59,928 |
| Current liabilities | 55,384 | 55,528 |
| Non-current liabilities | 2,168 | 4,400 |

12. Property, Plant and Equipment

(1) Movement during the fiscal year

The changes in cost, accumulated depreciation and impairment losses, and the carrying amounts of property, plant and equipment are as follows.

a. Cost

(In millions of yen)

| | Buildings and structures | Machinery, equipment and vehicles | Tools, furniture and fixtures | Right-of-use assets | Land | Construction in progress | Total |
|---|---|---|---|---|---|---|---|
| Balances as of January 1, 2018 | 212,591 | 671,064 | 123,653 | — | 23,398 | 21,914 | 1,052,620 |
| Acquisitions | 85 | 136 | 3,119 | | — | 48,719 | 52,059 |
| Sales or disposal | (7,125) | (21,233) | (13,694) | — | (1,556) | (112) | (43,720) |
| Transfer from construction in progress | 3,402 | 35,819 | 13,550 | — | — | (52,771) | — |
| Exchange differences | (777) | (6,266) | (1,030) | — | (14) | (134) | (8,221) |
| Other | 147 | 867 | 404 | — | (2) | (266) | 1,150 |
| Balances as of December 31, 2018 | 208,323 | 680,387 | 126,002 | — | 21,826 | 17,350 | 1,053,888 |
| Adjustment due to adoption of IFRS16 | (45) | (9,444) | (70) | 22,240 | — | — | 12,681 |
| Balances as of January 1, 2019 | 208,278 | 670,943 | 125,932 | 22,240 | 21,826 | 17,350 | 1,066,569 |
| Acquisitions | 95 | 1,685 | 2,273 | 2,826 | — | 18,956 | 25,835 |
| Acquisition due to business combination | 7,504 | 7,156 | 1,290 | 1,161 | 2,023 | 290 | 19,424 |
| Impairment losses | — | — | — | — | (26) | — | (26) |
| Sales or disposal | (360) | (13,628) | (5,675) | (2,902) | (9) | (59) | (22,633) |
| Transfer from construction in progress | 1,481 | 12,644 | 9,438 | — | — | (23,564) | (1) |
| Exchange differences | (254) | (1,561) | (485) | 59 | 3 | (23) | (2,261) |
| Other | 28 | (208) | (328) | (616) | 7 | (72) | (1,189) |
| Balances as of December 31, 2019 | 216,772 | 677,031 | 132,445 | 22,768 | 23,824 | 12,878 | 1,085,718 |

b. Accumulated depreciation and impairment losses

(In millions of yen)

| | Buildings and structures | Machinery, equipment and vehicles | Tools, furniture and fixtures | Right-of-use assets | Land | Construction in progress | Total |
|---|---|---|---|---|---|---|---|
| Balances as of December 31, 2018 | (149,208) | (531,837) | (91,717) | — | (1,714) | (57) | (774,533) |
| Depreciation | (5,530) | (47,069) | (18,276) | — | — | — | (70,875) |
| Impairment losses | (955) | (719) | (35) | — | (726) | — | (2,435) |
| Sales or disposal | 6,352 | 21,158 | 13,534 | — | 1,001 | — | 42,045 |
| Exchange differences | 404 | 3,691 | 646 | — | — | — | 4,741 |
| Other | 48 | 20 | (396) | — | — | — | (328) |
| Balances as of December 21, 2018 | (148,889) | (554,756) | (96,244) | — | (1,439) | (57) | (801,385) |
| Adjustment due to adoption of IFRS 16 | 21 | 6,477 | 69 | (6,567) | — | — | — |
| Balances as of January 1, 2019 | (148,868) | (548,279) | (96,175) | (6,567) | (1,439) | (57) | (801,385) |
| Depreciation | (5,412) | (46,237) | (17,713) | (5,581) | — | — | (74,943) |
| Impairment losses | (118) | (303) | (124) | — | — | — | (545) |
| Sales or disposal | 260 | 13,352 | 5,563 | 2,884 | — | — | 22,059 |
| Exchange differences | 132 | 887 | 327 | (6) | — | — | 1,340 |
| Other | 10 | (122) | 203 | 244 | — | — | 335 |
| Balances as of December 31, 2019 | (153,996) | (580,702) | (107,919) | (9,026) | (1,439) | (57) | (853,139) |

c. Carrying amount

(In millions of yen)

| | Buildings and structures | Machinery, equipment and vehicles | Tools, furniture and fixtures | Right-of-use assets | Land | Construction in progress | Total |
|---|---|---|---|---|---|---|---|
| Balances as of December 31, 2018 | 59,434 | 125,631 | 29,758 | — | 20,387 | 17,293 | 252,503 |
| Adjustment due to adoption of IFRS 16 | (24) | (2,967) | (1) | 15,673 | — | — | 12,681 |
| Balances as of January 1, 2019 | 59,410 | 122,664 | 29,757 | 15,673 | 20,387 | 17,293 | 265,184 |
| Balances as of December 31, 2019 | 62,776 | 96,329 | 24,526 | 13,742 | 22,385 | 12,821 | 232,579 |

(Note) 1. The amount of property, plant and equipment under construction is presented as construction in progress.
2. For property, plant and equipment on which a mortgage is placed as collateral for liabilities, see “Note 20. Bonds and Borrowings.”
3. For commitments to the acquisition of property, plant and equipment, see “Note 37. Commitments and Contingencies.”
4. Depreciation is included in “Cost of sales” and “Selling, general and administrative expenses” in the consolidated statement of profit or loss.
5. Impairment losses are included in “Other expenses” in the consolidated statement of profit or loss. For details on impairment losses, see “Note 15. Impairment of Non-financial Assets.”
6. There are no borrowing costs included in the cost of property, plant and equipment.

(2) Leased assets under finance leases

The carrying amounts of leased assets under finance lease arrangements included in the carrying amounts of property, plant and equipment in (1) are as follows.

(In millions of yen)

| | Buildings and structures | Machinery, equipment and vehicles | Tools, furniture and fixtures | Total |
|---|---|---|---|---|
| Balances as of January 1, 2018 | 30 | 2,846 | 13 | 2,889 |
| Balances as of December 31, 2018 | 24 | 2,967 | 1 | 2,992 |
| Balances as of December 31, 2019 | — | — | — | — |

(Note) For other information on finance leases, see “Note 14. Leases”. The Group applies IFRS16 for the year ended December 31, 2019. For change in accounting policies, see “2. Basis for Preparation, (5) Change in accounting policies” and “Note 14. Leases”.

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13. Goodwill and Intangible Assets

(1) Movement during the fiscal year

The changes in cost, accumulated amortization and impairment losses, and the carrying amounts of goodwill and intangible assets are as follows.

a. Cost

(In millions of yen)

| | Goodwill | Intangible assets | | | | | |
|---|---|---|---|---|---|---|---|
| | | Software | Capitalized development costs | Developed technology | Customer relationships | Other | Total |
| Balances as of January 1, 2018 | 190,603 | 71,940 | 8,465 | 144,686 | 25,009 | 91,321 | 341,421 |
| Internally developed | — | 2,113 | 1,319 | — | — | — | 3,432 |
| Acquisitions | — | 2,864 | — | — | — | 1,980 | 4,844 |
| Sales or disposal | — | (3,496) | (1,728) | (146) | — | (3,042) | (8,412) |
| Exchange differences | (3,373) | (105) | — | (2,220) | (256) | (502) | (3,083) |
| Other | — | 62 | — | — | — | — | 62 |
| Balances as of December 31, 2018 | 187,230 | 73,378 | 8,056 | 142,320 | 24,753 | 89,757 | 338,264 |
| Internally developed | — | 1,632 | 1,616 | — | — | — | 3,248 |
| Acquisitions | — | 2,940 | — | — | — | — | 2,940 |
| Acquisition due to business combination | 445,976 | 2,290 | — | 217,540 | 79,025 | 21,421 | 320,276 |
| Sales or disposal | — | (2,833) | (1,371) | — | — | (1,017) | (5,221) |
| Exchange differences | (8,176) | (48) | — | (4,401) | (1,202) | (348) | (5,999) |
| Impairment losses | — | — | — | — | — | (218) | (218) |
| Other | — | 631 | — | (401) | — | 572 | 802 |
| Balances as of December 31, 2019 | 625,030 | 77,990 | 8,301 | 355,058 | 102,576 | 110,167 | 654,092 |

b. Accumulated amortization and impairment losses

(In millions of yen)

| | Goodwill | Intangible assets | | | | | |
|---|---|---|---|---|---|---|---|
| | | Software | Capitalized development costs | Developed technology | Customer relationships | Other | Total |
| Balances as of January 1, 2018 | — | (53,289) | (4,017) | (26,648) | (11,406) | (43,659) | (139,019) |
| Amortization | — | (5,690) | (1,705) | (16,084) | (1,010) | (16,598) | (41,087) |
| Impairment losses | — | — | — | — | — | (331) | (331) |
| Sales or disposal | — | 3,365 | 1,728 | 146 | — | 2,987 | 8,226 |
| Exchange differences | — | 78 | — | 145 | 10 | 242 | 475 |
| Other | — | (5) | — | — | — | 1 | (4) |
| Balances as of December 31, 2018 | — | (55,541) | (3,994) | (42,441) | (12,406) | (57,358) | (171,740) |
| Amortization | — | (6,534) | (1,730) | (39,971) | (5,278) | (18.523) | (72,036) |
| Impairment losses | — | — | — | — | — | (1,353) | (1,353) |
| Sales or disposal | — | 2,771 | 1,371 | 401 | — | 428 | 4,971 |
| Exchange differences | — | 37 | — | 306 | 22 | (111) | 254 |
| Other | — | 199 | — | — | — | 195 | 394 |
| Balances as of December 31, 2019 | — | (59,068) | (4,353) | (81,705) | (17,662) | (76,722) | (239,510) |

c. Carrying amount

(In millions of yen)

| | Goodwill | Intangible assets | | | | | |
|---|---|---|---|---|---|---|---|
| | | Software | Capitalized development costs | Developed technology | Customer relationships | Other | Total |
| Balances as of January 1, 2018 | 190,603 | 18,651 | 4,448 | 118,038 | 13,603 | 47,662 | 202,402 |
| Balances as of December 31, 2018 | 187,230 | 17,837 | 4,062 | 99,879 | 12,347 | 32,399 | 166,524 |
| Balances as of December 31, 2019 | 625,030 | 18,922 | 3,948 | 273,353 | 84,914 | 33,445 | 414,582 |

(Note) 1. Of software in intangible assets, the carrying amount classified as internally generated assets was 797 million yen as of December 31, 2018 and 856 million yen as of December 31, 2019.
2. Construction in progress is included in “Software” under intangible assets.
3. Technical resources acquired through installment transactions are included in “Other” under intangible assets.
4. There are no intangible assets with restrictions on ownership or intangible assets on which a mortgage is placed as collateral for liabilities.
5. For commitments to the acquisition of intangible assets, see “Note 37. Commitments and Contingencies.”
6. Amortization of intangible assets is included in “Cost of sales” and “Selling, general and administrative expenses” in the consolidated statement of profit or loss.
7. Impairment losses are included in “Other expenses” in the consolidated statement of profit or loss. For details on impairment losses, see “Note 15. Impairment of Non-financial Assets.”

(2) Significant intangible assets

Major intangible assets are developed technology acquired in the business combination with Intersil in February 2017 and IDT in March 2019. The carrying amount of developed technology acquired in the business combination was 97,413 million yen as of December 31, 2018 and 272,916 million yen as of December 31, 2019, and the remaining amortization period as of December 31, 2019 is 4 to 11 years.

(3) Intangible assets with indefinite useful lives

The carrying amount of intangible assets with indefinite useful lives is included in “Other” and was 2,720 million yen as of December 31, 2018 and 16,982 million yen as of December 31, 2019, and research and development under work-in-process. In addition, for certain research and development under work-in-process, since the development has been completed and the assets have been put to operational use, amortization of these assets has been recognized as of December 31, 2019.

14. Leases

(1) Leases as lessee

a. Lease expenses, income and cashflows

Lease expenses, income and cashflows are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Depreciation charge for right-of-use assets by class of underlying asset | | |
| Land | — | 93 |
| Buildings | — | 2,732 |
| Machinery, equipment and vehicles | — | 2,586 |
| Tools, furniture and fixtures | — | 170 |
| Total | — | 5,581 |
| Interest expense on lease liabilities | — | (251) |
| Expense relating to short-term leases | — | (2,645) |
| Expense relating to leases of low-value assets (excluding short-term leases) | — | (493) |
| Expense relating to variable lease payments which are not reflected in the measurement of lease liabilities | — | — |
| Income from subleasing right-of-use assets | — | — |
| Total cash outflows for leases | — | (9,086) |
| Gain or loss from sale and leaseback transactions | — | — |

b. Right-of-use assets which are included in the carrying amount of property, plant and equipment

The carrying amount and the increase/decrease in carrying amount of right-of-use assets which are included in the carrying amount of property, plant and equipment are as follows.

(In millions of yen)

| | Balance as of January 1, 2019 | Balance as of December 31, 2019 |
|---|---|---|
| Land | 346 | 268 |
| Buildings | 9,181 | 9,525 |
| Machinery, equipment and vehicles | 5,909 | 3,763 |
| Tools, furniture and fixtures | 237 | 186 |
| Total | 15,673 | 13,742 |

(Note) The increased amount of right-of-use assets for the fiscal year ended December 31, 2019 was 2,826 million yen.

c. Nature of the leasing activities

The Group leases land, Building, and Machinery, equipment and vehicles.

The terms of lease contracts are negotiated individually and include a wide variety of the terms of contracts.

d. Options of extension and termination

The options of extension and termination are included in many lease contracts for buildings, and machinery and equipment. The lease term for office buildings are mainly from 3 to 10 years and for machinery and equipment, its term is from 3 to 5 years and some contracts include an option to extend one year or the same lease years for the current lease contract after the termination date.

These options will be utilized to maximize operational flexibility from the point of asset management used in the Group’s businesses.

15. Impairment of Non-financial Assets

The Group recorded impairment losses for the assets below. Impairment loss is included in "Other expenses" in the consolidated statement of profit or loss.

The components of assets for which the impairment losses are recorded are as follows. The impairment losses for the fiscal year ended December 31, 2018 have been prepared pursuant to the reporting segment classification subsequent to the changes.

The year ended December 31, 2018

(In millions of yen)

| | Reportable segments | | Total |
|---|---|---|---|
| | Automotive | Industrial/ Infrastructure/IoT | |
| Property, plant and equipment | 1,575 | 860 | 2,435 |
| Intangible assets | 175 | 156 | 331 |
| Other | 212 | 115 | 327 |
| Total impairment loss | 1,962 | 1,131 | 3,093 |

The year ended December 31, 2019

(In millions of yen)

| | Reportable segments | | Total |
|---|---|---|---|
| | Automotive | Industrial/ Infrastructure/IoT | |
| Property, plant and equipment | 371 | 203 | 574 |
| Intangible assets | 846 | 751 | 1,597 |
| Other | 55 | 30 | 85 |
| Total impairment loss | 1,272 | 984 | 2,256 |

(1) Impairment losses

The Group generally makes a grouping according to the minimum independent cash-generating, based on the categories used for business management, and makes a grouping by each individual asset for significant idle assets and operational assets that are unlikely to be used, etc.

For the year ended December 31, 2018

(Assets to be disposed of)

For the Automotive and Industrial/Infrastructure/IoT business, the Group is implementing business and production structural reforms to build a stronger revenue structure and performs impairment tests as independent cash-generating units for the assets that have been decided to be transferred and assets to be disposed of that have become unlikely to be used associated with the policy of consolidating the production sites and eliminating and consolidating the operating bases, and writes down the carrying amount of assets such as the Kofu Plant whose market value has declined significantly to their recoverable amount. As a result, the Group has recorded impairment losses of 1,744 million yen.

The recoverable amount is measured at the fair value after deducting disposal costs. The fair value after deducting disposal costs is measured at the expected sales amount, and the hierarchy level of the fair value is 3.

(Idle assets)

For the Automotive and Industrial/Infrastructure/IoT business, the Group has performed impairment tests as independent cash-generation units, written down the carrying amount of idle assets that are unlikely to be used to their recoverable amount, and recorded impairment losses of 1,018 million yen.

The recoverable amount is measured at the fair value after deducting disposal costs. The fair value after deducting disposal costs is set at zero because it is difficult to sell these assets, and the hierarchy level of the fair value is 3.

(Operational assets)

For the Automotive and Industrial/Infrastructure/IoT business, the Group has performed impairment tests as independent cash-generation units, written down the carrying amount of idle assets that are unlikely to be used to their recoverable amount, and recorded impairment losses of 331 million yen. The component of assets by category is "Intangible assets" 331 million yen.

The recoverable amount is measured at the fair value after deducting disposal costs. The fair value after deducting disposal costs is set at zero because it is difficult to sell these assets, and the hierarchy level of the fair value is 3.

For the year ended December 31, 2019

(Idle assets)

For the Automotive and Industrial/Infrastructure/IoT business, the Group has performed impairment tests as independent cash-generation units, written down the carrying amount of idle assets that are unlikely to be used to their recoverable amount, and recorded impairment losses of 317 million yen.

The recoverable amount is measured at the fair value after deducting disposal costs. The fair value after deducting disposal costs is set at zero because it is difficult to sell these assets, and the hierarchy level of the fair value is 3.

(Operational assets)

For the Automotive and Industrial/Infrastructure/IoT business, the Group has performed impairment tests as independent cash-generation units, written down the carrying amount of idle assets that are unlikely to be used to their recoverable amount, and recorded impairment losses of 1,939 million yen.

The recoverable amount is measured at the fair value after deducting disposal costs. The fair value after deducting disposal costs is set at zero because it is difficult to sell these assets, and the hierarchy level of the fair value is 3.

(2) Impairment test of goodwill and intangible assets with indefinite useful lives

The Group performs impairment tests for groups of cash-generating units to which goodwill and intangible assets with indefinite useful lives are allocated at a certain time each fiscal year and whenever there is any indication of impairment.

The goodwill in the consolidated statement of financial position was recognized when the Company merged with Intersil for the fiscal year ended December 31, 2017 and IDT for the fiscal year ended December 31, 2019 and it's allocated to the group of cash-generating units of the Group expected to provide future excess earning power arising from synergies of these business combinations.

In the impairment test, goodwill and intangible assets with indefinite useful lives that were allocated to the cash-generating units or the group of cash-generating units of the Group are as follows.

(In millions of yen)

| | Reportable segments | Group of cash-generating units | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|---|---|
| Goodwill | Automotive | Automotive | 73,376 | 244,950 |
| | Industrial/ Infrastructure/IoT | Industrial/ Infrastructure/IoT | 113,854 | 380,080 |
| Research and development under work-in-process | Automotive | Automotive | — | 3,287 |
| | Industrial/ Infrastructure/IoT | Industrial/ Infrastructure/IoT | 2,720 | 13,695 |

The recoverable amount of the cash-generating units or the group of cash-generating units is measured at the value in use. The value in use is calculated by discounting the estimated amount of cash flows based on a business plan and a growth rate in the future that are approved by the management, reflecting past experiences and external information, to the present value. The discount rates are the weighted average capital cost before tax. The discount rates used for the calculation of the value in use are 11.5% in the prior fiscal year and 9.8% in the current fiscal year.

In the estimation of cash flows, for cash flows in a period beyond the projected period that is approved by the management, the value in use is calculated with the growth rate as 2.0% both in the prior fiscal year and the current fiscal year . The approved growth rate used for the estimation for the period exceeding the approved business plan is determined based on the estimated inflation rate of the market to which the cash-generating units or the group of cash-generating units belong.

Because the recoverable amount of the group of cash-generating units sufficiently exceeds the carrying amount in the current fiscal year, management believes that it is unlikely that the recoverable amount of the cash-generating units or the group of cash-generating units will fall below the carrying amount even if the major assumptions used in the impairment test are changed in a reasonable range.

In addition, the major assumptions (Inflation rate/ Discount rate before tax) in a reasonable range used in the impairment test are as follows.

| Major assumptions | Prior fiscal year | Current fiscal year |
|---|---|---|
| Inflation rate | 1.5~2.5% | 1.5~2.5% |
| Discount rate before tax | 10.5~12.5% | 8.8~10.8% |

For certain research and development under work-in-process that were acquired in a business combination, since such assets are not yet available to use, the Group performs impairment test at a certain time each fiscal year and whenever there is any indication of impairment. The Group recognizes impairment losses in case the value in use of the cash-generating units fall below the carrying amount based on the result of the impairment test conducted during the fiscal year.

16. Investments accounted for using the equity method

(1) Major associates

The major associate of the Group to which the equity method is applied is as follows. For the prior fiscal year, the Group has excluded RENESAS EASTON Co., Ltd. from the scope of application of the equity method due to the reduction of the Group's portion of shares.

Because the closing date of the above entity accounted for using the equity method is different from that of the consolidated financial statements, its financial statements prepared with a provisional closing date, which is same as that of consolidated financial statements, are used.

| Name | Country | Ownership interest (%) | |
|---|---|---|---|
| | | As of December 31, 2018 | As of December 31, 2019 |
| RENESAS EASTON Co., Ltd. | Japan | 5.54 | — |

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Profit for the year | 49 | — |
| Other comprehensive income | (26) | — |
| Total comprehensive income for the year | 23 | — |

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## 17. Other Financial Assets

### (1) Components of other financial assets

The components of other financial assets are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Stocks (Note 1) | 3,262 | 3,926 |
| Investment trust (Note 2) | — | 3,967 |
| Long-term receivables (Other) (Note 3) | 1,776 | 1,244 |
| Other (Note 4) | 1,429 | 1,326 |
| Total | 6,467 | 10,463 |
| Current assets | 494 | 468 |
| Non-current assets | 5,973 | 9,995 |

(Note)
1. Stocks are classified either as equity instruments measured at fair value through other comprehensive income or financial assets measured at fair value through profit or loss. (see "Note 34. Financial Instruments").
2. Investment trust is classified as Financial assets measured at fair value through profit or loss.
3. Financial assets measured at amortized cost are included in "Long-term receivables (Other)"
4. Term deposits with a deposit term of more than three months, security deposits and long-term accounts receivable are included in "Other." These assets are classified as financial assets measured at amortized cost.

### (2) Equity instruments measured at fair value through other comprehensive income

The Group mainly designates stocks that are expected to be held over the long term, etc. that are for investment by an incentive plan for directors and some employees of subsidiaries as equity instruments measured at fair value through other comprehensive income.

Name of major equity instruments and their fair value measured at fair value through other comprehensive income are as follows.

(In millions of yen)

| Company name | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Shanghai Walden Venture Capital Enterprise | 1,155 | — |
| LeddarTech Inc. | — | 1,096 |

### (3) Derecognized equity instruments measured at fair value through other comprehensive income

The fair value and cumulative gains or losses (before tax) as of the date of derecognition of equity instruments measured at fair value through other comprehensive income that were derecognized during the period are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Fair value | 3,176 | 606 |
| Cumulative gains or losses | 84 | (175) |

(Note)
1. With a view to investment by the incentive plan for directors and some employees of subsidiaries, the Group disposed of part of the equity instruments measured at fair value through other comprehensive income by selling them and derecognized them in the prior fiscal year and the current fiscal year.
2. If equity instruments measured at fair value through other comprehensive income are derecognized, cumulative gains or losses (after tax) previously recognized in other comprehensive income are reclassified to retained earnings. The corresponding gain (loss) was (169) million yen in the prior fiscal year and 118 million yen in the current fiscal year.
3. For dividend income received from equity instruments measured at fair value through other comprehensive income, see "Note 29. Finance Income and Finance Costs".

18. Income Taxes

(1) Components of and changes in deferred tax assets and deferred tax liabilities

The components of and changes in deferred tax assets and deferred tax liabilities by major causes of their occurrence are as follows.

| | As of December 31, 2017 | Recognized in profit or loss | Recognized in other comprehensive income | Business combination | As of December 31, 2018 |
|---|---|---|---|---|---|
| Deferred tax assets | | | | | |
| Inventories | 8,385 | (1,561) | — | — | 6,824 |
| Fixed assets | 7,665 | (2,255) | — | — | 5,410 |
| Research and development expense | 2,098 | (454) | — | — | 1,644 |
| Accrued expenses | 9,716 | 1,076 | — | — | 10,792 |
| Retirement benefits liabilities | 7,084 | (2,550) | 1,824 | — | 6,358 |
| Carryforward of unused tax losses | 37,454 | (5,944) | — | — | 31,510 |
| Carryforward of unused tax credits | 3,837 | (960) | — | — | 2,877 |
| Other | 8,671 | (863) | — | — | 7,808 |
| Subtotal | 84,910 | (13,511) | 1,824 | — | 73,223 |
| Deferred tax liabilities | | | | | |
| Fixed assets | (37,793) | 1,470 | — | — | (36,323) |
| Tax on undistributed earnings | (4,495) | (980) | — | — | (5,475) |
| Total income from specified foreign subsidiaries, etc. | (3,448) | (802) | — | — | (4,250) |
| Other | (2,656) | 856 | 20 | — | (1,780) |
| Subtotal | (48,392) | 544 | 20 | — | (47,828) |
| Net deferred tax assets (liabilities) | 36,518 | (12,967) | 1,844 | — | 25,395 |

| | As of December 31, 2018 | Recognized in profit or loss | Recognized in other comprehensive income | Business combination | As of December 31, 2019 |
|---|---|---|---|---|---|
| Deferred tax assets | | | | | |
| Inventories | 6,824 | (646) | — | 1 | 6,179 |
| Fixed assets | 5,410 | (79) | — | 117 | 5,448 |
| Research and development expense | 1,644 | (229) | — | — | 1,415 |
| Accrued expenses | 10,792 | (1,247) | — | 1,339 | 10,884 |
| Retirement benefits liabilities | 6,358 | (641) | 788 | — | 6,505 |
| Carryforward of unused tax losses | 31,510 | (5,813) | — | 4,253 | 29,950 |
| Carryforward of unused tax credits | 2,877 | 1,428 | — | 793 | 5,098 |
| Other | 7,808 | 4,654 | — | (273) | 12,189 |
| Subtotal | 73,223 | (2,573) | 788 | 6,230 | 77,668 |
| Deferred tax liabilities | | | | | |
| Fixed assets | (36,323) | 4,890 | — | (33,424) | (64,857) |
| Tax on undistributed earnings | (5,475) | (512) | — | — | (5,987) |
| Total income from specified foreign subsidiaries, etc. | (4,250) | 3,338 | — | — | (912) |
| Other | (1,780) | (583) | 27 | (429) | (2,765) |
| Subtotal | (47,828) | 7,133 | 27 | (33,853) | (74,521) |
| Net deferred tax assets (liabilities) | 25,395 | 4,560 | 815 | (27,623) | 3,147 |

(Note) The Group considers the possibility that a portion of, or all of, the deductible temporary differences or carryforward of unused tax losses can be utilized against future taxable profits in the recognition of deferred tax assets.
The differences between total amount recognized in profit or loss and total amount of the deferred tax expenses are due to changes in foreign exchange rate.

(2) Deductible temporary differences, etc. for which no deferred tax assets are recognized

The amounts of deductible temporary differences, carryforward of unused tax losses and carryforward of unused tax credits for which no deferred tax assets are recognized are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Deductible temporary differences | 16,325 | — |
| Carryforward of unused tax losses | 396,006 | 342,697 |
| Carryforward of unused tax credits | 9,934 | 16,542 |
| Total | 422,265 | 359,239 |

(Note) Deductible temporary differences and carryforward of unused tax losses are measured on an income basis, and carryforward of unused tax credits is measured on a tax amount basis.

The expiration schedule of the carryforward of unused tax losses for which no deferred tax assets are recognized is as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| First year | 81,195 | 142,499 |
| Second year | 127,638 | 182,023 |
| Third year | 178,811 | 7,780 |
| Fourth year | — | — |
| Fifth year or thereafter | 8,362 | 10,395 |
| Total | 396,006 | 342,697 |

The expiration schedule of the carryforward of unused tax credits for which no deferred tax assets are recognized is as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| First year | 1,191 | 316 |
| Second year | 206 | — |
| Third year | — | — |
| Fourth year | — | — |
| Fifth year or thereafter | 8,537 | 16,226 |
| Total | 9,934 | 16,542 |

The Group adopts the consolidated taxation system in Japan. The above figures do not include the amount of the carryforward of unused tax losses for which no deferred tax asset is recognized for local taxes (residential tax and business tax) that are not subject to the consolidated taxation system in Japan. The amount of the carryforward of unused tax losses for local taxes (residential tax and business tax) was 13,361 million yen for residential tax and 457,982 million yen for business tax in the prior fiscal year (as of December 31, 2018) and 12,249 million yen for residential tax and 398,074 million yen for business tax in the current fiscal year (as of December 31, 2019).

(3) Components of income tax
The components of income tax are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Current tax expense | | |
| Current tax expense | 8,776 | 8,869 |
| Tax expense from previous periods | (5,199) | 1,471 |
| Total current tax expense | 3,577 | 10,340 |
| Deferred tax expense | | |
| Origination and reversal of temporary differences | 56,795 | (7,119) |
| Effects from tax regulation changes | (36) | (104) |
| Revaluation of deferred tax assets | (45,415) | 2,551 |
| Other | 1,743 | 414 |
| Total deferred tax expense | 13,087 | (4,258) |
| Total income tax | 16,664 | 6,082 |

(Note) 1. Current tax expense includes the amount of previously unrecognized tax loss, tax credits or temporary differences of a prior period, and decreases by 10,859 million yen and 2,732 million yen in the prior fiscal year and the current fiscal year, respectively.
2. Current deferred tax expense in the prior fiscal year and the current fiscal year does not include the amount of previously unrecognized tax loss, tax credits or temporary differences of a prior period
3. Current deferred tax expense includes the amount of previously unrecognized tax loss, tax credits or temporary differences of a prior period, and increases by 4,336 million yen and 6,566 million yen in the prior fiscal year and the current fiscal year, respectively.

(4) Reconciliation of the statutory effective tax rate and the average effective tax rate
The reconciliation of the statutory effective tax rate and the average effective tax rate is as follows.

(%)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Statutory effective tax rate (Note) | 30.9 | 31.5 |
| Changes in unrecognized deferred tax assets | (2.2) | 554.0 |
| Permanent differences | (2.2) | (548.4) |
| Foreign tax rate differences | (3.9) | 3,165.8 |
| Tax credits | (5.0) | (1,088.2) |
| Tax on undistributed earnings | 1.5 | 199.2 |
| Effects from tax regulation changes | 2.3 | — |
| Other | 3.2 | 52.2 |
| Average effective tax rate | 24.6 | 2,366.1 |

(Note) The applicable statutory effective tax rate is the sum of 23.1% for national taxes and 8.4% for local taxes.

Major taxes imposed on the Company and its subsidiaries in Japan are income tax, residential tax and business tax. The applicable statutory effective tax rate in Japan was 30.9% in the prior fiscal year and 31.5% in the current fiscal year. Income tax, etc. rates applicable to overseas subsidiaries are calculated based on local tax rates in their location.

The Group has business in multiple tax areas and the profit before tax and income tax expenses in Japan differ materially from those in the other tax areas especially for the fiscal year ended December 31, 2019. Therefore, the average effective tax rate becomes significantly larger than the statutory effective tax rate.

19. Trade and Other Payables

The components of trade and other payables are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Trade payables | 59,579 | 64,740 |
| Other payables | 41,682 | 16,974 |
| Electronically recorded obligations | 16,323 | 16,725 |
| Refund liabilities | 3,052 | 2,593 |
| Total | 120,636 | 101,032 |
| Current liabilities | 116,233 | 100,187 |
| Non-current liabilities | 4,403 | 845 |

(Note) Trade and other payables are classified as financial liabilities measured at amortized cost.

## 20. Bonds and Borrowings

(1) Bonds

Following the acquisition of IDT, an amount of 588 million USD (65,262 million yen) of convertible bonds issued on November 1, 2015 by IDT (Total amount issued: 374 million USD (41,483 million yen), interest rate: 0.875%, redemption date: November 22, 2022) has been recognized by measuring at fair value in the financial statements for the three months ended March 31, 2019 and retirement by purchase has been performed during the three months ended June 30, 2019.

(2) The components of borrowings are as follows.

a. Short-term borrowings

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Syndicated loan ex-C | 45,000 | — |

b. Long-term borrowings

(In millions of yen)

| | Maturity | Average interest rate | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|---|---|
| Syndicated loan ex-B | From Sep.2016 to Sep.2021 | | 147,742 | — |
| Syndicated loan A | From Mar.2019 to Mar.2024 | 0.82% | — | 395,973 |
| Syndicated loan B | From Mar.2019 to Mar.2024 | 0.82% | — | 232,150 |
| Syndicated loan C | From Jun.2019 to Jun.2024 | 0.82% | — | 148,975 |
| Total | | | 147,742 | 777,098 |
| Arrangement fee | | | (494) | (5,351) |
| Current liabilities | | | — | (93,170) |
| Non-current liabilities | | | 147,248 | 678,577 |

(Note)
1. Borrowings are classified as financial liabilities measured at amortized cost.
2. For the balance of borrowings by maturity, see “Note 34. Financial Instruments”.
3. For the average interest rate, the weighted average interest rate on the balance of borrowings at the end of the current fiscal year is stated.
4. Financial covenants are included in borrowings.
5. In order to refinance the existing borrowings to finance partial funds necessary for the acquisition and working capital as the medium-and-long term funds, the Company has entered into a syndicated loan agreement with the total amount of 897,000 million yen on January 15, 2019. During the three months ended March 31, 2019, 698,000 million yen of term loan with availability period (Implementation date: March 28, 2019, Repayment date: March 28, 2024, participating financial institutions: MUFG Bank, Ltd., Mizuho Bank, Ltd., Sumitomo Mitsui Trust Bank, Limited and other 5 financial institutions) has been executed. In addition, during the three months ended June 30, 2019, borrowings of 149,000 million yen of term loan (Implementation date: June 28, 2019, Repayment date: June 28, 2024, participating financial institutions: MUFG Bank, Ltd., Mizuho Bank, Ltd., Sumitomo Mitsui Trust Bank, Limited) have been conducted to refinance the existing term loan.

(3) Assets pledged as collateral and corresponding liabilities on the transition date and as of each fiscal year end are as follows.

a. Assets pledged as collateral

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Buildings, and structures | 40,587 | 38,329 |
| Machinery, equipment and vehicles | 68,323 | 50,872 |
| Land | 16,845 | 16,811 |
| Total | 125,755 | 106,012 |

(Note) Other than the above, stock of subsidiary of 802,492 million yen has been eliminated on consolidation is collateralized.

b. Liabilities corresponding to assets pledged as collateral

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Short-term borrowings | 45,000 | — |
| Current portion of long-term borrowings | — | 93,170 |
| Long-term borrowings (excluding current portion) | 147,248 | 678,577 |
| Total | 192,248 | 771,747 |

## 21. Other Financial Liabilities

The components of other financial liabilities are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Derivative liabilities (Note 1) | 14,318 | — |
| Lease obligations (Note 2) | 2,762 | 14,155 |
| Other | 300 | 300 |
| Total | 17,380 | 14,455 |
| Current liabilities | 15,057 | 4,362 |
| Non-current liabilities | 2,323 | 10,093 |

(Note) 1. Derivative liabilities are classified as financial liabilities measured at fair value through other comprehensive income, except for those for which hedge accounting is applicable (see “Note 34. Financial Instruments”).

2. The Group has applied IFRS16 for the fiscal year ended December 31, 2019 and applied IAS 17 and IFRIC14 for the fiscal year ended December 31, 2018. For information on lease obligations, see “Note 14. Leases”.

22. Provisions

The components of provisions and their changes are as follows.

(In millions of yen)

| | Asset retirement obligations | Provision for business structure improvement | Provision for product warranties | Provision for loss on litigation | Other | Total |
|---|---|---|---|---|---|---|
| Balances as of December 31, 2018 | 3,000 | 1,238 | 206 | 6,410 | 3 | 10,857 |
| Current liabilities | 43 | 1,050 | 206 | 5,810 | 3 | 7,112 |
| Non-current liabilities | 2,957 | 188 | — | 600 | — | 3,745 |
| Increase during the period | 68 | 5,028 | 410 | 693 | — | 6,199 |
| Decrease during the period (utilization) | (18) | (3,256) | (381) | (1,961) | (3) | (5,619) |
| Decrease during the period (reversal) | (20) | (77) | — | — | — | (97) |
| Period interest expense in discount calculation | 7 | — | — | — | — | 7 |
| Increase due to business combination | — | 137 | 16 | — | — | 153 |
| Other | (9) | (31) | (2) | (77) | — | (119) |
| Balances as of December 31, 2019 | 3,028 | 3,039 | 249 | 5,065 | — | 11,381 |
| Current liabilities | 59 | 2,898 | 249 | 4,315 | — | 7,521 |
| Non-current liabilities | 2,969 | 141 | — | 750 | — | 3,860 |

a. Asset retirement obligations

The amount expected arising from performing obligations necessary to restore assets to their original state under the real estate lease agreements of offices and plants used by the Group and legal obligations to remove hazardous substances related to fixed assets is recorded as a provision. The amount of asset retirement obligations was computed using an estimated useful life of 3 to 47 years as well as a discount rate of 0.1% to 0.5%, although the timing of payments will be affected by future business plans, etc.

b. Provision for business structure improvement

Provision for business structure improvement is established in preparation for expected future losses in connection with business structure reform and consolidation, and estimated losses are recorded. The timing of payments will be affected by future business plans, etc.

c. Provision for product warranties

The Group accrues product warranty liabilities for estimated future warranty costs using the individual estimates for the specific matters as well as the historical ratio of warranty costs to net sales.

d. Provision for loss on litigation

The Group records the estimated amount of reasonably calculated losses, examining individual risks, in preparation for losses on litigation, etc. that could arise in the future from lawsuits and disputed cases. (Refer to “Note 37. Commitments and Contingencies, (4) Others” considering the policy for extended disclosure for Contingencies)

23. Employee Benefits

The Group adopts post-employment benefit plans such as a defined benefit plan and a defined contribution plan, except for some overseas consolidated subsidiaries.

(1) Defined benefit plans

a. Characteristics of defined benefit plans and related risks

The characteristics of defined benefit plans and related risks are as follows.

(a) Characteristics of defined benefit plans

The defined benefit plans of the Company and its subsidiaries in the Group include (i) a severance indemnity plan and (ii) a defined benefit corporate pension plan. The Group may also provide premium severance pay upon the retirement of employees.

(i) The severance indemnity plan is an unfunded plan to make a lump-sum payment only with an internal reserve without making an external reserve for the obligations of the retirement benefit plans. As the lump-sum payment, an amount based on salaries and number of service years in accordance with the retirement allowance regulations including the rules of employment of each company is paid.

(ii) The defined benefit corporate pension plan is a defined benefit pension and a funded plan established under the Defined Benefit Corporate Pension Act (enforced in April 2002). It is a fund-type corporate pension, and a lump-sum payment or an annuity is paid from the fund based on salaries and number of service years. In the defined benefit corporate pension plan, administrators of the corporate pension, such as the executive directors of the employer and the fund, abide by laws, regulations and asset management and investment contracts, etc., and their standards of practice such as the prohibition of acts involving conflicts of interest against the participants in the plan have been clearly defined.

In the defined benefit corporate pension plan, the amount of benefits is calculated based on the cumulative number of points granted to employees according to their job classification. The Company and its subsidiaries in Japan adopt a cash balance pension plan for the defined benefit corporate pension plan. Under the cash balance pension plan, each participant has an account in which a certain amount calculated by the revaluation rate that is determined based on the current base salary, the job classification and the market interest rate is accumulated.

(b) Risks to which an entity is exposed by the plan

The Group is exposed to actuarial risks such as price fluctuation risk by plan assets, interest rate risk and life expectancy rate risk by present value of obligations of the defined benefit plans.

b. Amounts recognized in the consolidated statement of financial position

The amounts recognized in the consolidated statement of financial position are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Present value of obligations of the funded defined benefit plans (with plan assets) | 132,173 | 127,397 |
| Fair value of plan assets | (142,218) | (144,613) |
| Funded status | (10,045) | (17,216) |
| Impact of asset ceiling | 10,724 | 17,989 |
| Present value of obligations of the unfunded defined benefit plans (without plan assets) | 32,073 | 28,799 |
| Net amount of liabilities (assets) pertaining to defined benefits recognized in the consolidated statement of financial position | 32,752 | 29,572 |
| Liabilities pertaining to retirement benefits | 32,752 | 29,572 |
| Assets pertaining to retirement benefits | — | — |

c. Changes in the present value of defined benefit obligation

The changes in the present value of defined benefit obligation are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Present value of defined benefit obligation (beginning) | 167,861 | 164,246 |
| Service cost | 3,009 | 2,835 |
| Interest expense | 1,124 | 1,131 |
| Benefits paid | (6,674) | (16,739) |
| Remeasurements of defined benefit plans | | |
| (i) Actuarial differences arising from changes in demographic assumptions | 551 | 2,408 |
| (ii) Actuarial differences arising from changes in financial assumptions | (908) | 2,617 |
| (iii) Revisions to other results | 383 | (175) |
| Exchange differences | (1,766) | 82 |
| Other | 666 | (209) |
| Present value of defined benefit obligation (ending) | 164,246 | 156,196 |

The weighted average duration of the defined benefit obligation in each fiscal year is as follows.

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Weighted average duration | 12.4 years | 12.4 years |

d. Changes in the fair value of plan assets

Changes in the fair value of plan assets are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Fair value of plan assets (beginning) | 145,125 | 142,218 |
| Interest income | 1,009 | 1,024 |
| Remeasurement – Return on plan assets | (6,528) | 7,900 |
| Contributions by employer (Note 1) | 8,867 | 5,830 |
| Benefits paid | (5,194) | (12,570) |
| Exchange differences | (1,582) | 408 |
| Other | 521 | (197) |
| Fair value of plan assets (ending) | 142,218 | 144,613 |

(Note)
1. Contributions to the defined benefit plans in the Group are made in consideration of factors such as the financial position of the Company, the funding situation of plan assets and actuarial factors based on laws and regulations.
   In the fiscal year ending December 31, 2020, 2,245 million yen is planned to be contributed to the defined benefit pension plans.
2. The purpose of the investment of plan assets of the Group is to secure necessary revenue in the long term within the acceptable range of risks in order to provide benefits to beneficiaries reliably in the future.
   The target rate of return aims to exceed the assumed interest rate required for the financial position of the pension scheme on a stable basis for the long term.
   The Group has set a “policy asset mix” to achieve the investment target and attempts to make an investment to maintain the asset mix based on the policy asset mix. The asset mix is reviewed as necessary and tailored to changes in the situation of the Group and the institution and the environment surrounding the Group.
3. Some consolidated subsidiaries participate in a multi-employer defined benefit pension plan.

e. Changes in the impact of the asset ceiling

The changes in the impact of the asset ceiling are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Impact of asset ceiling (beginning) | (11,553) | (10,724) |
| Interest income | (113) | (136) |
| Remeasurement – Changes in the impact of the asset ceiling | 691 | (6,933) |
| Exchange differences | 287 | (93) |
| Other | (36) | (103) |
| Impact of the asset ceiling (ending) | (10,724) | (17,989) |

(Note) The Group sets the asset ceiling and calculates liabilities in some of its pension plans because economic benefits could not be enjoyed as a result of contributions that will not be reduced or returned in the future.

f. Components of fair value of plan assets by type

The components of the fair value of plan assets by type are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Equity instruments | | |
| Domestic equity securities | 14,808 | 15,617 |
| Foreign equity securities | 17,341 | 19,631 |
| Debt instruments | | |
| Domestic bonds | 12,647 | 12,841 |
| Foreign bonds | 35,127 | 32,393 |
| General accounts of life insurance company | 25,659 | 26,013 |
| Cash and cash equivalents | 15,342 | 14,192 |
| Other | 21,294 | 23,926 |
| Total | 142,218 | 144,613 |

(Note) Most of plan assets are operated through commingled funds and classified as those with no public market price in active markets. These commingled funds are appropriately diversified into stocks and debts etc. mainly listed in active market based on corporate pension fund code. “General accounts of life insurance company” are the accounts that the life insurance company jointly manages the funds with several contracts and includes a guaranteed interest rate and return of capital. The major components of "Other" represent alternative instruments that are invested using long/short positions and securitized products, etc. As for disclosure of the plan assets, since the Group has certain shares against the funds rather than direct investment in the funds, the change to disclosure as commingled funds has been reflected from the year ended December 31, 2019, though the investment types operated by the commingled funds were disclosed until the year ended December 31, 2018.

g. Major actuarial assumptions

Major actuarial assumptions (weighted average) are as follows.

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Discount rate | 0.7% | 0.7% |

h. Sensitivity analysis

In the calculation of the defined benefit obligation in the sensitivity analysis, the same method as the calculation method for the defined benefit obligation recognized in the consolidated statement of financial position is used.

The sensitivity analysis is made based on changes in assumptions that can be reasonably presumed at the end of the reporting period. In addition, although the sensitivity analysis assumes that all actuarial assumptions other than those that are subject to the sensitivity analysis remain constant, changes in those other actuarial assumptions could have an impact in reality.

The impact of a 0.5% change in actuarial assumptions on the defined benefit obligation is as follows.

(In millions of yen)

| | | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|---|
| Discount rate | 0.5% increase | (9,765) | (8,215) |
| | 0.5% decrease | 8,676 | 9,060 |

(2) Defined contribution plans

The Group has adopted defined contribution pension plans. The amount recognized as an expense in relation to the defined contribution plans, including employee pension premiums paid by the employer under the Employees' Pension Insurance Act, is as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Contributions | 10,390 | 8,963 |

(Note) This amount is included in "Cost of sales" and "Selling, general and administrative expenses" in the consolidated statement of profit or loss.

(3) Employee benefits expense

The components of the employee benefits expense are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Personnel expenses | 153,765 | 159,580 |
| Retirement benefit expenses | 13,627 | 12,041 |
| Expenses for extra retirement benefits | 1,598 | 11,800 |
| Other | 2,049 | 2,736 |
| Total | 171,039 | 186,157 |

(Note) This amount is included in "Cost of sales" and "Selling, general and administrative expenses" in the consolidated statement of profit or loss.

## 24. Equity and Other Equity Items

### (1) Issued capital and treasury shares

Ordinary shares

| | Total number of authorized shares (shares) | Total number of issued shares (shares) | Treasury shares (shares) |
|---|---|---|---|
| As of December 31, 2018 | 3,400,000,000 | 1,668,385,390 | 2,581 |
| Changes (Note 2) | — | 41,891,400 | — |
| As of December 31, 2019 | 3,400,000,000 | 1,710,276,790 | 2,581 |

(Note) 1. All the shares issued by the Company are non-par value ordinary shares with no restrictions on rights.
2. Changes are due to the exercise of stock options. As to stock options, see “Note 33. Share-based Payments”.
3. Total number of issued shares has been already paid-up.

### (2) Reserves

a. Share premium

The Companies Act of Japan stipulates that one half or more of the paid-in amount from the issue of shares shall be accounted for as issued capital, and the remainder shall be accounted for as capital reserve included in share premium. Under the Companies Act, the amount of such capital reserve may be transferred to issued capital by the resolution of a shareholders meeting.

b. Retained earnings

The Companies Act of Japan stipulates that one tenth of the amount of the distributions of surplus shall be accumulated as capital reserve or legal reserve until the sum of the capital reserve and legal reserve reaches one fourth of the issued capital. The accumulated retained earnings reserve may be appropriated to cover a loss. The Companies Act also states that the retained earnings reserve may be used by the resolution of a shareholders meeting.

25. Revenue

(1) Disaggregation of revenue

Disaggregation of revenue recognized from contracts with customers are stated in "Note 6. Business Segments, (2) Information on reportable segments and (4) Information on regions and countries". Also, all of the revenue arises from contracts with customers.

The Group engages in research, design, development, manufacturing, sales and services related to various kinds of semiconductors as a manufacturer specializing in semiconductors, and the revenue is mainly due to sales of semiconductor products.

Regarding the sales of these products, the Group recognizes revenue when the customer obtains control over the product, i.e., at the time of delivery of a product because legal title of the product, physical possession of the asset, the significant risks and rewards of ownership are transferred to the customer, and the customer has an obligation to pay for the products at the time of delivery of the product.

Revenue is measured at the amount of promised consideration in contracts with customers.

With regard to sales contract including variable consideration such as rebate and discounts, etc., the transaction price is estimated and determined using the most-likely-amount method based largely on historical data, considering variable prices within a range that will not result in significant deviation between estimate and historical data.

Consideration under sales contracts is recovered mainly within one year from satisfaction of a performance obligation and includes no significant financing components.

(2) Accounts arising from contracts

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Contract assets | — | — |
| Contract liability | 788 | 1,688 |

(Note) 1. Contract liability relates to the payment received in advance of performance under the contract. The contract liabilities are reclassified to revenue when the Group satisfies a performance obligation based on the contract.

2. The amounts of revenues recognized during the prior fiscal year and the current fiscal year from the performance obligations satisfied in the past periods were immaterial.

3. Of the revenues recognized in the prior fiscal year, 681 million yen was included in the balance of contract liabilities as of January 1, 2018. In addition, of the revenues recognized in the current fiscal year, 269 million yen was included in the balance of contract liabilities as of January 1, 2019.

(3) Transaction price allocated to the remaining performance obligation

The Group uses the practical expedient of omitting the disclosure of information on the remaining performance obligations because it has no significant transactions with individual expected contractual terms exceeding one year. In addition, there are no significant amounts in consideration from contracts with customers that are not included in transaction prices.

(4) Assets recognized from the cost to obtain or fulfill contracts with customers

There are no assets recognized from the cost to obtain or fulfill contracts with customers.

26. Selling, General and Administrative Expenses

The components of selling, general and administrative expenses are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Research and development expenses | 126,535 | 127,094 |
| Personnel expenses | 43,511 | 46,829 |
| Depreciation and amortization | 26,345 | 59,825 |
| Retirement benefit expenses | 3,209 | 3,215 |
| Other | 51,421 | 44,045 |
| Total | 251,021 | 281,008 |

27. Other Income

The components of other income are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Gain on sales of property, plant and equipment | 1,070 | 653 |
| Subsidy income | — | 423 |
| Reversal of provision for contingent loss (Note) | 6,385 | 2 |
| Other | 1,498 | 1,224 |
| Total | 8,953 | 2,302 |

(Note) A partial amount of provision on contingent loss has been reversed for the year ended December 31, 2018, mainly regarding the civil lawsuit in the United Stated related to the alleged patent infringement and trade secret violation etc. in which the Company‘s subsidiary has been named as a defendant, after reviewing the estimated amount following the revocation of compensation based on the judgement of the Court of First Instance in addition to reasons stated at the Appellate Court, which was conducted following the retrial order at the Court of First Instance.

28. Other Expenses

The components of other expenses are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Business structure improvement expenses (Note 1) | 5,655 | 12,041 |
| Impairment losses (Note 2) | 1,526 | 2,256 |
| Provision for loss on litigation (Note 3) | 3,956 | 784 |
| Compensation expenses (Note 4) | 7,652 | — |
| Loss on change of equity (Note 5) | 1,273 | — |
| Other | 2,111 | 2,296 |
| Total | 22,173 | 17,377 |

(Note 1) The Group has reformed businesses and structures of production to strengthen its financial basis, and those related expenses are shown as business structure improvement expenses. The main items of business structure improvement expenses for the year ended December 31, 2018 were personnel expenses such as additional retirement benefits and impairment losses and equipment removal expenses of property, plant and equipment associated with consolidating the operating bases. The main items of business structure improvement expenses for the year ended December 31, 2019 were additional retirement benefits, etc. of the early retirement incentive program.

(Note 2) Impairment losses were mainly idle assets for the year ended December 31, 2018 and software for internal use in overseas subsidiary for the year ended December 31, 2019.

(Note 3) Provision was provided for compensation or litigation proceedings, etc.

(Note 4) Compensation expenses for the current fiscal year were temporary payments due to manufacturing contract revision between the Group and contract manufacturers

(Note 5) Following the partial transfer of the Group’s shares of RENESAS EASTON Co., Ltd. on August 1, 2018, the Group excluded RENESAS EASTON Co., Ltd. from the scope of application of the equity method for the year ended December 31, 2018. Accordingly, the Group recognized loss for the year ended December 31, 2018 for loss on transfer of shares in addition to loss arising from the fair value evaluation of the Group’s residual investment at the time of discontinuation of the equity-method.

29. Finance Income and Finance Costs

The components of finance income and costs are as follows.

(1) Finance income

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Interest income | | |
| Financial assets measured at amortized cost | 1,391 | 1,325 |
| Valuation gain of investment trust | | |
| Financial assets measured at fair value through profit or loss | — | 548 |
| Dividends received | | |
| Equity financial assets measured at fair value through other comprehensive income | 91 | — |
| Financial assets measured at fair value through profit or loss | — | 238 |
| Foreign exchange gains | 127 | — |
| Other | — | 75 |
| Total | 1,609 | 2,186 |

The components of dividends received from equity instruments measured at fair value through other comprehensive income are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Financial assets derecognized during the period | 91 | — |
| Financial assets held as of the closing date | — | — |
| Total | 91 | — |

(2) Finance costs

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Interest expense | | |
| Financial liabilities measured at amortized cost | 2,131 | 7,484 |
| Foreign exchange losses (Note) | — | 1,269 |
| Other | — | 21 |
| Total | 2,131 | 8,774 |

(Note) Foreign exchange losses include losses on valuation of currency derivatives.

30. Other Comprehensive Income

Reclassification adjustments of other comprehensive income

Reclassification adjustments and tax effects of other comprehensive income by component are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Items that will not be reclassified to profit or loss: | | |
| Remeasurements of defined benefit plans | | |
| Amount incurred during the period | (5,883) | (3,991) |
| Tax effect | 1,824 | 788 |
| After tax effect | (4,059) | (3,203) |
| Equity financial assets measured at fair value through other comprehensive income | | |
| Amount incurred during the period | (64) | (204) |
| Tax effect | 10 | 27 |
| After tax effect | (54) | (177) |
| Share of other comprehensive income of investments accounted for using the equity method | | |
| Amount incurred during the period | (26) | — |
| Tax effect | — | — |
| After tax effect | (26) | — |
| Total of items that will not be reclassified to profit or loss | (4,139) | (3,380) |
| Items that may be reclassified subsequently to profit or loss: | | |
| Exchange differences on translation of foreign operations | | |
| Amount incurred during the period | (14,401) | (18,033) |
| Reclassification | — | — |
| Before tax effect | (14,401) | (18,033) |
| Tax effect | — | — |
| After tax effect | (14,401) | (18,033) |
| Cash flow hedges | | |
| Amount incurred during the period | (14,318) | 5,614 |
| Before tax effect | (14,318) | 5,614 |
| Tax effect | — | — |
| After tax effect | (14,318) | 5,614 |
| Total of items that may be reclassified subsequently to profit or loss | (28,719) | (12,419) |
| Total other comprehensive income | (32,858) | (15,799) |

31. Earnings Per Share

Basic earnings or loss per share attributable to owners of the parent and diluted earnings or loss per share are as follows.

(1) Basic earnings or loss per share

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Profit or loss attributable to owners of the parent used for the calculation of basic earnings per share (million yen) | 50,989 | (5,914) |
| Profit or loss from continuing operations (million yen) | 50,989 | (5,914) |
| Profit from discontinued operations (million yen) | — | — |
| Weighted average number of ordinary shares during the year (thousands of shares) | 1,667,717 | 1,694,151 |
| Basic earnings or loss per share (yen) | 30.57 | (3.49) |
| Continuing operations (yen) | 30.57 | (3.49) |
| Discontinued operations (yen) | — | — |

(2) Diluted earnings or loss per share

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Profit or loss attributable to owners of the parent used for the calculation of basic earnings per share (million yen) | 50,989 | (5,914) |
| Adjustments on earnings (million yen) | — | — |
| Profit or loss used for the calculation of diluted earnings per share (million yen) | 50,989 | (5,914) |
| Profit or loss from continuing operations (million yen) | 50,989 | (5,914) |
| Profit from discontinued operations (million yen) | — | — |
| Weighted average number of ordinary shares during the year before dilution (thousands of shares) | 1,667,717 | 1,694,151 |
| Increase in ordinary shares due to warrants (thousands of shares) | 4,043 | — |
| Weighted average number of ordinary shares during the year after dilution (thousands of shares) | 1,671,759 | 1,694,151 |
| Diluted earnings or loss per share (yen) | 30.50 | (3.49) |
| Continuing operations (yen) | 30.50 | (3.49) |
| Discontinued operations (yen) | — | — |

(Note) 1. The diluted loss per share for the fiscal year ended December 31, 2019 is the same amount as the basic loss per share due to the absence of residual equity with a dilutive effect.

2. For the fiscal year ended December 31, 2019, since the warrants the Company issues do not have a dilutive effect, these are not included in the calculation for diluted loss per share (yen).

32. Consolidated Statement of Cash Flows

(1) Changes in liabilities in financing activities

The components of liabilities in financing activities and their changes during the fiscal year are as follows.

(For the year ended December 31, 2018) (In millions of yen)

| | As of December 31, 2017 | Cash flows | Non-cash transactions | | As of December 31, 2018 |
|---|---|---|---|---|---|
| | | | Acquisition | Other | |
| Borrowings (non-current) (Note 1) | 193,459 | (46,529) | — | 318 | 147,248 |
| Borrowings (current) | 35,000 | 10,000 | — | — | 45,000 |
| Lease liabilities | 2,626 | (916) | 1,052 | — | 2,762 |
| Total | 231,085 | (37,445) | 1,052 | 318 | 195,010 |

(For the year ended December 31, 2019)

(In millions of yen)

| | As of December 31, 2018 | Adjustment due to adoption of IFRS16 | As of January 1, 2019 | Cash flows | Non-cash transactions | | | As of December 31, 2019 |
|---|---|---|---|---|---|---|---|---|
| | | | | | Acquisition | Increase due to business combination | Other (Note 2) | |
| Borrowings (non-current) (Note 1) | 147,248 | — | 147,248 | 629,355 | — | — | (4,856) | 771,747 |
| Borrowings (current) | 45,000 | — | 45,000 | (45,000) | — | — | — | — |
| Bonds | — | — | — | (65,409) | — | 65,262 | 159 | 12 |
| Lease liabilities | 2,762 | 13,102 | 15,864 | (5,726) | 2,826 | 1,234 | (43) | 14,155 |
| Total | 195,010 | 13,102 | 208,112 | 513,220 | 2,826 | 66,496 | (4,740) | 785,914 |

(Note) 1. Current portion of long-term borrowings are included in borrowings (non-current).
2. Non-cash transactions for borrowings (non-current) includes the arrangement fees.

(2) Non-cash transactions

There is no significant non-cash transaction in the prior fiscal year and the current fiscal year.
The Group has applied IFRS16 for the fiscal year ended December 31, 2019. For the details of change in accounting policy and the right-of-use recognized when applying IFRS16, see "2. Basis for Preparation, (5) Change in accounting policies" and "Note 14. Leases".

(3) Principal assets and liabilities of a company that became a consolidated subsidiary due to acquisition of stock

(For the year ended December 31, 2019)
For details of the breakdown of assets and liabilities for IDT and its subsidiaries at time of its consolidation resulting from the acquisition of stock as well as the relationship between the acquisition price of stock and expenditures (net) for its acquisition, see "Note 7. Business Combinations".

33. Share-based Payments

(1) Overview of the share-based payment plan

The Company has adopted a share-based payment plan (hereafter “the stock option plan”) as an incentive plan for directors (excluding outside directors), senior vice presidents and employees.

Under the stock option plan, warrants have been granted to eligible persons in accordance with the resolution of the Board of Directors of the Company based on the arrangement approved at the shareholders meeting of the Company. The exercise period of the stock options is set by an allotment contract, and if they are not exercised during the exercise period, the stock options will lapse. In addition, if an eligible person has left the Company before the vesting date, the options will also lapse. However, this does not apply to certain cases addressed in the warrants allotment contract, such as resignation due to the expiration of the term of office.

The stock option plan of the Company is accounted for as equity-settled share-based payments.

(2) Share-based payment plan

The share-based payment plan in effect during the current fiscal year is as follows.

| | Category and number of grantees | Type of stock and number of shares | Grant date | Vesting conditions | Vesting period | Exercise period |
|---|---|---|---|---|---|---|
| Fiscal year 2016 Stock options No.1 No.2 No.3 | Directors of the Company 2<br><br>Corporate officers and executive officers of the Company 10 | Common stock 288,500 shares | August 1, 2016 | The rights will vest in stages as follows.<br>One third will vest on August 2, 2017<br>One third will vest on August 2, 2018<br>The remaining will vest on August 2, 2019 | From August 1, 2016 to August 2, 2019 | From August 2, 2016 to August 1, 2026 |
| Fiscal year 2017 Stock options No.1 – 1 No.2 – 1 | Directors of the Company 2<br><br>Corporate officers and executive officers of the Company 11<br><br>Employees of the Company 342<br><br>Directors of subsidiaries 20<br><br>Employees of subsidiaries 890 | Common stock 3,549,500 shares | April 3, 2017 | The rights will vest in stages as follows<br>One third will vest on April 4, 2018<br>One third will vest on April 4, 2019<br>The remaining will vest on April 4, 2020 | From April 3, 2017 to April 4, 2020 | From April 4, 2017 to April 3, 2027 |
| Fiscal year 2017 Stock options No.1 – 2 No.2 – 2 | Directors of the Company 2<br><br>Corporate officers and executive officers of the Company 11<br><br>Employees of the Company 78<br><br>Directors of subsidiaries 14 | Common stock 2,112,000 shares | April 3, 2017 | The Company sets the upper limit number of shares expected to vest by multiplying the number of allocated stock subscription rights with the rate calculated by comparing total shareholder return fluctuation rate of the Company and companies that are the components of PHLX Semiconductor Sector Index and Tokyo Stock Price Index. | From April 3, 2017 to April 4, 2020 | From April 4, 2017 to April 3, 2027 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Employees of subsidiaries 59 | | | | | |
| Fiscal year 2017 Stock options No.3 | Employees of subsidiaries 7 | Common stock 30,900 shares | May 11, 2017 | The rights will vest in stages as follows One third will vest on April 4, 2018 One third will vest on April 4, 2019 The remaining will vest on April 4, 2020 | From May 11, 2017 to April 4, 2020 | From May 12, 2017 to May 11, 2027 |
| Fiscal year 2017 Stock options No.4 | Employees of subsidiaries 13 | Common stock 52,200 shares | July 12, 2017 | The rights will vest in stages as follows One third will vest on April 4, 2018 One third will vest on April 4, 2019 The remaining will vest on April 4, 2020 | From July 12, 2017 to April 4, 2020 | From July 13, 2017 to July 12, 2027 |
| Fiscal year 2017 Stock options No.5 No.6 | Employees of subsidiaries 20 | Common stock 98,000 shares | September 14, 2017 | The rights will vest in stages as follows One third will vest on April 4, 2018 One third will vest on April 4, 2019 The remaining will vest on April 4, 2020 | From September 14, 2017 to April 4, 2020 | From September 15, 2017 to September 14, 2027 |
| Fiscal year 2017 Stock options No.7 | Employees of subsidiaries 16 | Common stock 94,000 shares | October 12, 2017 | The rights will vest in stages as follows One third will vest on April 4, 2018 One third will vest on April 4, 2019 The remaining will vest on April 4, 2020 | From October 12, 2017 to April 4, 2020 | From October 13, 2017 to October 12, 2027 |
| Fiscal year 2017 Stock options No.8 | Employees of subsidiaries 26 | Common stock 117,300 shares | January 15, 2018 | The rights will vest in stages as follows Certain amount will vest on April 4, 2018 Certain amount will vest on April 4, 2019 Certain amount will vest on April 4, 2020 The remaining will vest on April 4, 2021 | From January 15, 2018 to April 4, 2021 | From January 16, 2018 to January 15, 2028 |
| Fiscal year 2018 Stock options No.1 – 1 No.2 – 1 | Directors of the Company 3<br><br>Corporate officers and executive officers of the Company 10<br><br>Employees of the Company 472<br><br>Directors of subsidiaries 18<br><br>Employees of subsidiaries 743 | Common stock 3,607,200 shares | April 2, 2018 | The rights will vest in stages as follows One third will vest on April 3, 2019 One third will vest on April 3, 2020 The remaining will vest on April 3, 2021 | From April 2, 2018 to April 3, 2021 | From April 3, 2018 to April 2, 2028 |
| Fiscal year 2018 Stock options | Directors of the Company 3 | Common stock 2,047,200 | April 2, 2018 | The Company sets the upper limit number of shares | From April 2, 2018 to April 3, | From April 3, 2018 to April 2, |

| | | | | | | |
|---|---|---|---|---|---|---|
| No.1 – 2<br>No.2 – 2 | Corporate officers and executive officers of the Company<br>10<br><br>Employees of the Company<br>95<br><br>Directors of subsidiaries<br>13<br><br>Employees of subsidiaries<br>47 | shares | | expected to vest by multiplying the number of allocated stock subscription rights with the rate calculated by comparing total shareholder return fluctuation rate of the Company and companies that are the components of PHLX Semiconductor Sector Index and Tokyo Stock Price Index. | 2021 | 2028 |
| Fiscal year 2018 Stock options<br>No.3<br>No.4 | Employees of the Company<br>257<br><br>Directors of subsidiaries<br>1<br><br>Employees of subsidiaries<br>181 | Common stock 534,600 shares | July 31, 2018 | The rights will vest in stages as follows<br>One third will vest on April 3, 2019<br>One third will vest on April 3, 2020<br>The remaining will vest on April 3, 2021 | From July 31, 2018 to April 3, 2021 | From August 1, 2018 to July 31, 2028 |
| Fiscal year 2018 Stock options<br>No.5 | Employees of subsidiaries<br>22 | Common stock 182,700 shares | October 31, 2018 | The rights will vest in stages as follows<br>Certain amount will vest on April 3, 2019<br>Certain amount will vest on April 3, 2020<br>Certain amount will vest on April 3, 2021<br>The remaining will vest on April 3, 2022 | From October 31, 2018 to April 3, 2022 | From November 1, 2018 to October 31, 2028 |
| Fiscal year 2019<br>Stock options<br>No.1<br>No.2<br>No.3 | Corporate officers and executive officers of the Company<br>1<br><br>Directors of subsidiaries<br>1<br><br>Corporate officers and executive officers of subsidiaries<br>3<br><br>Employees of subsidiaries<br>1,337 | Common stock 57,043,500 shares | April 9, 2019 | According to completion of the acquisitions with IDT, the existing stock options for IDT allocated to directors of IDT and its subsidiaries, corporate officers and executive officers of subsidiaries, and employees of subsidiaries are converted into the stock options for the Company and issued. The rights are based on the vesting periods for the stock option originally scheduled in IDT. | From April 9, 2019 to March 15, 2023 | From April 9, 2019 to April 8, 2029 |
| Fiscal year 2019 Stock options<br>No.4 – 1<br>No.5 – 1 | Corporate officers and executive officers of the Company<br>1<br><br>Employees of the Company<br>1 | Common stock 659,800 shares | May 31, 2019 | The rights will vest in stages as follows<br>One third will vest on April 1, 2020<br>One third will vest on April 1, 2021<br>The remaining will vest on April 1, 2022 | From May 31, 2019 to April 1, 2022 | From June 1, 2019 to May 31, 2029 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Employees of subsidiaries<br>32 | | | | | |
| Fiscal year 2019 Stock options<br>No.4 – 2<br>No.5 – 2 | Corporate officers and executive officers of the Company<br>1<br><br>Employees of the Company<br>1 | Common stock<br>364,300 shares | May 31, 2019 | The Company sets the upper limit number of shares expected to vest by multiplying the number of allocated stock subscription rights with the rate calculated by comparing total shareholder return fluctuation rate of the Company and companies that are the components of PHLX Semiconductor Sector Index and Tokyo Stock Price Index. | From May 31, 2019 to April 1, 2022 | From June 1, 2019 to May 31, 2029 |
| Fiscal year 2019 Stock options<br>No.6 – 1<br>No.7 – 1 | Employees of the Company<br>486<br><br>Directors of subsidiaries<br>15<br><br>Employees of subsidiaries<br>1,875 | Common stock<br>16,222,700 shares | July 25, 2019 | The rights will vest in stages as follows<br>One third will vest on April 1, 2020<br>One third will vest on April 1, 2021<br>The remaining will vest on April 1, 2022 | From July 25, 2019 to April 1, 2022 | From July 26, 2019 to July 25, 2029 |
| Fiscal year 2019 Stock options<br>No.6 – 2<br>No.7 – 2 | Employees of the Company<br>90<br><br>Directors of subsidiaries<br>10<br><br>Employees of subsidiaries<br>46 | Common stock<br>3,203,800 shares | July 25, 2019 | The Company sets the upper limit number of shares expected to vest by multiplying the number of allocated stock subscription rights with the rate calculated by comparing total shareholder return fluctuation rate of the Company and companies that are the components of PHLX Semiconductor Sector Index and Tokyo Stock Price Index. | From July 25, 2019 to April 1, 2022 | From July 26, 2019 to July 25, 2029 |
| Fiscal year 2019 Stock options<br>No.8 – 1<br>No.9 – 1 | Directors of the Company<br>2<br><br>Corporate officers and executive officers of the Company<br>12<br><br>Employees of the Company<br>2 | Common stock<br>985,900 shares | August 23, 2019 | The rights will vest in stages as follows<br>One third will vest on April 1, 2020<br>One third will vest on April 1, 2021<br>The remaining will vest on April 1, 2022 | From August 23, 2019 to April 1, 2022 | From August 24, 2019 to August 23, 2029 |
| Fiscal year 2019 Stock options<br>No.8 – 2<br>No.9 – 2 | Directors of the Company<br>2<br><br>Corporate officers | Common stock<br>1,963,800 shares | August 23, 2019 | The Company sets the upper limit number of shares expected to vest by multiplying the | From August 23, 2019 to April 1, 2022 | From August 24, 2019 to August 23, 2029 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | and executive officers of the Company<br>12 | | | number of allocated stock subscription rights with the rate calculated by comparing total shareholder return fluctuation rate of the Company and companies that are the components of PHLX Semiconductor Sector Index and Tokyo Stock Price Index. | | |
| Fiscal year 2019<br>Stock options No.10 | Employees of subsidiaries<br>441 | Common stock 351,600 shares | September 20, 2019 | The rights will vest in stages as follows<br>One third will vest on April 1, 2020<br>One third will vest on April 1, 2021<br>The remaining will vest on April 1, 2022 | From September 20, 2019 to April 1, 2022 | From September 21, 2019 to September 20, 2029 |
| Fiscal year 2019 Stock options<br>No.11 – 1<br>No.12 – 1 | Corporate officers and executive officers of the Company<br>1<br><br>Employees of the Company<br>122<br><br>Employees of subsidiaries<br>123 | Common stock 887,700 shares | October 31, 2019 | The rights will vest in stages as follows<br>Certain amount will vest on April 1, 2020<br>Certain amount will vest on April 1, 2021<br>Certain amount will vest on April 1, 2022<br>The remaining will vest on April 1, 2023 | From October 31, 2019 to April 1, 2023 | From November 1, 2019 to October 31, 2029 |
| Fiscal year 2019 Stock options<br>No.11 – 2<br>No.12 – 2 | Corporate officers and executive officers of the Company<br>1<br><br>Employees of subsidiaries<br>1 | Common stock 73,800 shares | October 31, 2019 | The Company sets the upper limit number of shares expected to vest by multiplying the number of allocated stock subscription rights with the rate calculated by comparing total shareholder return fluctuation rate of the Company and companies that are the components of PHLX Semiconductor Sector Index and Tokyo Stock Price Index. | From October 31, 2019 to April 1, 2023 | From November 1, 2019 to October 31, 2029 |
| Fiscal year 2019<br>Stock options No.13 | Employees of subsidiaries<br>15 | Common stock 204,800 shares | December 25, 2019 | The rights will vest in stages as follows<br>One third will vest on April 1, 2020<br>One third will vest on April 1, 2021<br>The remaining will vest on April 1, 2022 | From December 25, 2019 to April 1, 2022 | From December 26, 2019 to December 25, 2029 |

(Note) 1. Working until when the stock is vested after the grant date is vesting conditions. However, this does not apply to certain cases such as mandatory retirement, resignation due to the expiration of the term of office or the other justifiable reasons.

2. Grantees cannot execute those options during the time from the day after the grant date until when the stock is vested. Also, the option will be forfeited if the target retires or resigns from the Company or subsidiary by the vesting date. However, if allowed at the Stock Acquisition Rights Allocation Agreement, those options may be exercised. For example, if retirement or resignation due to the expiration of terms of office allowed at Stock Acquisition Rights

Allocation Agreement, the said person may execute the said stock options starting on the day following said loss of eligibility until 13 months after.

3. If grantees forfeit their stock acquisition rights, they may not exercise their stock options.

(3) Number and weighted average exercise price of stock options

Changes of the number and the weighted average exercise price of stock options granted in the prior fiscal year and the current fiscal year are as follows. The number of stock options is stated by converting them to the number of shares.

| | The year ended December 31, 2018 | | The year ended December 31, 2019 | |
|---|---|---|---|---|
| | Number of options (shares) | Weighted average exercise price (yen) | Number of options (shares) | Weighted average exercise price (yen) |
| Beginning balance of unexercised options | 6,037,300 | 1 | 10,854,400 | 1 |
| Granted | 6,489,000 | 1 | 81,961,700 | 1 |
| Exercised | 1,190,900 | 1 | 41,891,400 | 1 |
| Forfeited | 468,900 | 1 | 3,357,800 | 1 |
| Expired | 12,100 | 1 | 109,500 | 1 |
| Ending balance of unexercised options | 10,854,400 | 1 | 47,457,400 | 1 |
| Ending balance of exercisable options | 428,800 | 1 | 2,486,800 | 1 |

(Note) 1. For the stock options exercised during the period, the weight average share price as of the exercise date was 887 yen for the fiscal year ended December 31, 2018 and 597 yen for the fiscal year ended December 31, 2019.

2. Remaining weighted average contractual life outstanding at the end of the prior fiscal year and the current fiscal year was 4 years, respectively.

(4) Fair value of stock options granted and estimation method of fair value

The valuation techniques used for the stock options granted for the fiscal year ended December 31, 2018 and the fiscal year ended December 31, 2019 are the Binomial model, and the major basic assumptions and estimation method are as follows.

| Date of grant | Fair value per share at the grant date (yen) | Share price on date of grant (yen) | Exercise price (yen) | Expected volatility (Note 1) | Expected holding period (Note 2) | Expected dividend (Note 3) | Risk-free interest rate (Note 4) |
|---|---|---|---|---|---|---|---|
| January 2018 | 1,320 | 1,321 | 1 | 48.191% | 5 years | No dividend | (0.081%) |
| April 2018 | 1,092<br>425 (Note 5) | 1,093 | 1 | 47.500% | 5 years | No dividend | (0.106%) |
| July 2018 | 995 | 996 | 1 | 39.782% | 5 years | No dividend | (0.100%) |
| October 2018 | 597 | 598 | 1 | 39.794% | 5 years | No dividend | (0.087%) |
| April 2019 | 511 | 512 | 1 | 46.525% | 5 years | No dividend | (0.202%) |
| May 2019 | 494<br>294 (Note 5) | 495 | 1 | 43.038% | 5 years | No dividend | (0.203%) |
| July 2019 | 638<br>381 (Note 5) | 639 | 1 | 43.200% | 5 years | No dividend | (0.235%) |
| August 2019 | 629<br>399 (Note 5) | 630 | 1 | 42.800% | 5 years | No dividend | (0.323%) |
| September 2019 | 660 | 661 | 1 | 42.469% | 5 years | No dividend | (0.346%) |
| October 2019 | 739<br>469 (Note 5) | 740 | 1 | 42.188% | 5 years | No dividend | (0.269%) |
| December 2019 | 753 | 754 | 1 | 42.194% | 5 years | No dividend | (0.116%) |

(Note)
1. The expected volatility is calculated using the actual share prices during the expected holding period from the grant date.
2. The expected holding period is based on the number of years from the grant date to the last day of the principle exercise period.
3. The expected dividend is calculated based on the actual annual dividend for the year.
4. The risk-free interest rate is the yield on Japanese government bonds for the period that corresponds to the remaining life of the option.
5. For the stock options whose vesting condition is the stock price requirement, the actual rates of granted stocks are reflected on the fair value based on the results of comparing the fluctuation rate of the Company's stock with that of stock indexes over a certain period.

(5) Share-based payment expenses

Share-based payment expenses included in the consolidated statement of profit or loss totaled 461 million yen in "Cost of sales" and 3,830 million yen in "Selling, general and administrative expenses" in the previous fiscal year, and 827 million yen in "Cost of sales" and 10,927 million yen in "Selling, general and administrative expenses" in the current fiscal year.

34. Financial Instruments

(1) Capital management

The Group aims to achieve sustainable growth and maximize its corporate value. Investments of surplus funds are limited to short-term deposits and financial assets with a high level of safety. Regarding financing sources, the Group mainly uses borrowings from banks. The Group mainly uses derivative financial instruments to manage fluctuations in foreign currency exchange rates, and the Group's policies prohibit holding or issuing derivative financial instruments for speculative transactions. Items subject to management are net interest-bearing debt obtained by deducting cash and cash equivalents from interest-bearing debt and equity. Their balances and the major indicators that the Group uses for its capital management are as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Interest-bearing debt | 195,010 | 785,914 |
| Less: Cash and cash equivalents | (188,820) | (146,468) |
| Net interest-bearing debt | 6,190 | 639,446 |
| Equity | 598,100 | 620,666 |
| Equity ratio (%) | 56.7 | 37.2 |

Equity: Total equity attributable to owners of the parent
Equity ratio: Equity/Total liabilities and equity

(2) Basic policies for financial risk management

The Group is exposed to financial risks (credit risk, liquidity risk and market risk) in the process of executing its business activities. Accordingly, the Group regularly monitors the financial risks based on internal management regulations, etc. and takes measures to avoid or reduce the risks as required.
The Group does not engage in derivative transactions for speculative purposes.

a. Credit risk

(a) Credit risk management

Notes and trade receivables are exposed to the credit risk of customers. Conforming to the internal rules for the management of receivables, the Group regularly monitors major customers' credit and manages the due dates of collection and the balance for each customer. Other receivables are exposed to the credit risk of customers, but most of them are settled in the short term. Short-term investments are financial assets invested on a short-time basis, and the Group transacts with highly creditworthy financial institutions. Trade receivables, etc. are regarded as non-performing if all or part of them cannot be collected or if collection is deemed extremely difficult. The Group does not have any exposure to the significant credit risk of certain customers, and there is no excessive concentration of credit risk that requires special management.

The largest exposure to credit risk at the end of the reporting period is the carrying amount of financial assets after impairment, but there is no track record of recognizing a significant credit loss in previous years.

Regarding debt guarantees, the balance of debt guarantees presented in "Note 37. Commitments and Contingencies" is the largest exposure of the Group to credit risk.

(b) Analysis of changes in loss allowance

The changes in the loss allowance are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | | | | The year ended December 31, 2019 | | | |
|---|---|---|---|---|---|---|---|---|
| | Loss allowance for financial instruments other than trade receivables (12-month expected credit losses) | Loss allowance for trade receivables (lifetime expected credit losses) | Loss allowance for financial instruments whose credit risk has increased significantly (lifetime expected credit losses) | Loss allowance for financial instruments whose credit is impaired (lifetime expected credit losses) | Loss allowance for financial instruments other than trade receivables (12-month expected credit losses) | Loss allowance for trade receivables (lifetime expected credit losses) | Loss allowance for financial instruments whose credit risk has increased significantly (lifetime expected credit losses) | Loss allowance for financial instruments whose credit is impaired (lifetime expected credit losses) |
| Beginning balance | — | 65 | 15 | — | — | 48 | — | — |
| Increases | — | 76 | — | — | — | 103 | — | — |
| Decreases due to reversal | — | (89) | — | — | — | (55) | — | — |
| Other | — | (4) | (15) | — | — | (1) | — | — |
| Ending balance | — | 48 | — | — | — | 95 | — | — |

(Note) Acquisition by business combination is included in "Increases".

(c) Carrying amount of financial instruments for the loss allowance

The carrying amount (before the loss allowance) of financial instruments for the loss allowance on the transition date and as of each fiscal year end is as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Financial instruments other than trade receivables (12-month expected credit losses) | 3,141 | 3,081 |
| Trade receivables (lifetime expected credit losses) | 76,356 | 81,473 |
| Financial instruments whose credit risk has increased significantly (lifetime expected credit losses) | — | — |
| Financial instruments whose credit is impaired (lifetime expected credit losses) | — | — |

(d) Analysis of credit risk

The aging analysis of trade receivables on the transition date and as of each fiscal year end is as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Before due date | 71,853 | 76,198 |
| Up to 30 days past due | 3,996 | 4,579 |
| Over 30 days past due and up to 90 days past due | 504 | 696 |
| Over 90 days past due | 3 | — |
| Total | 76,356 | 81,473 |

For trade receivables, the Group's major counterparties consist of specific distributors, etc. with high credit ratings and there is no materiality in the balance of loss allowance based on expected loss rate.

For financial instruments other than trade receivables, there is no credit risk that is concentrated around credit ratings.

b. Liquidity risk

The Group is exposed to liquidity risk whereby the performance of payment obligations could become difficult. To limit its exposure to liquidity risk, however, the Group works to maintain fund management through the optimization of capital efficiency due to the efficient management of working capital and the concentrated management of funds by the Company. The Group also manages the liquidity risk by appropriately maintaining liquidity on hand through the timely preparation and updating of the financing plan and taking the external financial environment into account.

The balance of financial liabilities by due date is as follows.

As of December 31, 2018

(In millions of yen)

| | Carrying amount | Contractual cash flows | Due within one year | Due after one year but within two years | Due after two years but within three years | Due after three years but within four years | Due after four years but within five years | Due after five years |
|---|---|---|---|---|---|---|---|---|
| Non-derivative financial liabilities | | | | | | | | |
| Trade and other payables | 120,636 | 120,636 | 116,233 | 4,388 | 15 | — | — | — |
| Bonds and Borrowings | 192,248 | 196,449 | 46,586 | 1,213 | 148,650 | — | — | — |
| Other | 3,062 | 3,157 | 765 | 753 | 304 | 287 | 284 | 764 |
| Derivative liabilities | 14,318 | 14,318 | 14,318 | — | — | — | — | — |
| Total | 330,264 | 334,560 | 177,902 | 6,354 | 148,969 | 287 | 284 | 764 |

As of December 31, 2019

(In millions of yen)

| | Carrying amount | Contractual cash flows | Due within one year | Due after one year but within two years | Due after two years but within three years | Due after three years but within four years | Due after four years but within five years | Due after five years |
|---|---|---|---|---|---|---|---|---|
| Non-derivative financial liabilities | | | | | | | | |
| Trade and other payables | 101,032 | 101,032 | 100,187 | 584 | 261 | — | — | — |
| Bonds and Borrowings | 771,759 | 797,931 | 99,265 | 98,474 | 97,712 | 96,941 | 405,539 | — |
| Lease liabilities | 14,155 | 15,840 | 4,486 | 2,620 | 2,083 | 1,816 | 1,484 | 3,351 |
| Other | 300 | 300 | — | 300 | — | — | — | — |
| Total | 887,246 | 915,103 | 203,938 | 101,978 | 100,056 | 98,757 | 407,023 | 3,351 |

c. Market risk

(a) Foreign currency exchange risk

(i) Foreign currency exchange risk management

Foreign currency receivables and obligations arising from the global business development of the Group are exposed to the risk of foreign exchange rate fluctuations. To reduce the risk of foreign exchange rate fluctuations, the Group uses forward exchange contracts, currency options and currency swaps.

(ii) Net foreign exchange risk exposure

The Group's exposure to the risk of foreign exchange rate fluctuations (net amount) is as follows. This excludes derivative transactions and the amount entered into to hedge foreign exchange rate fluctuation risk using foreign currency deposits.

(In millions of yen)

| Currency | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| US dollar | 114,725 | 37,452 |
| Euro | 15,842 | 13,976 |

(iii) Sensitivity analysis of foreign exchange rates

Based on the assumption that all other variables are constant for foreign currency financial instruments held by the Group in the previous fiscal year and the current fiscal year, the amount of the impact of the 1.0% appreciation of the yen against the US dollar and the euro on profit before tax in the consolidated statement of profit or loss is as follows.

(In millions of yen)

| Currency | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| US dollar | (1,147) | (375) |
| Euro | (158) | (140) |

(b) Interest rate risk

Although the Group raises funds through borrowings for the purpose of securing funds for long-term working capital and the promotion of growth strategies, the Group is exposed to the risk of interest rate fluctuations because some borrowings are made at floating interest rates. To reduce the risk of changes in the interest paid on borrowings, the Group uses interest rate swaps as required. Accordingly, the Group has decided that the impact of the risk of interest rate fluctuations on the Company is limited and insignificant, and does not conduct a sensitivity analysis for interest rate risk.

(c) Stock price risk

The Group has adopted an incentive plan for its employees for the purpose of securing excellent human resources, particularly at subsidiaries. To operate the incentive plan, the Group holds shares and other financial instruments for the long term and is exposed to the risk of changes in their market prices. Please note that, following the introduction of a stock option plan, the incentive plan was abolished and there was no new issuance.

The Group does not conduct a sensitivity analysis for the risk of changes in share prices since the impact of changes in share prices are immaterial.

(3) Fair value of financial instruments

a. Calculation method of fair value

The calculation method of the fair value of financial instruments is as follows.

(a) Cash and cash equivalents, and trade and other receivables

The fair value of these instruments approximates their carrying amount due to short term maturities.

(b) Trade and other payables

For trade and other payables that will mature within a relatively short amount of time, the fair value approximates the carrying amount. The fair value of trade and other payables that will not mature in a short amount of time is calculated by the present value that is discounted by an interest rate assumed for the case where a similar borrowing is newly made and classified as Level 2.

(c) Securities

If the market price of a security is available in an active market, the securities are measured using this market price and classified as Level 1. If the market price is not available, the fair value is measured mainly by a method based on net assets (method of calculating by making adjustments to the market value as required based on the net assets of the entity that issues shares), etc. and classified as Level 3.

(d) Long-term borrowings and lease liabilities

The fair value of long-term borrowings and lease liabilities is calculated at the present value that is discounted using an interest rate assumed for the case where a similar borrowing is newly made and classified as Level 2.

(e) Derivative transactions

Forward exchange contracts are calculated based on forward exchange rates and classified as Level 2.

(f) Bonds

The fair value of bonds acquired due to business combination is calculated by referring to a market price and classified as Level 2.

(g) Other financial assets and liabilities

Time deposits with maturities of more than three months, long-term accounts receivable, security deposits and guarantee deposits received that are measured at amortized cost are classified as Level 2. Because their fair value approximates their carrying amount, they are omitted from the following table.

b. Classification of financial instruments measured at fair value by levels

In the fair value hierarchy, financial instruments are classified from Level 1 to Level 3 as follows.

Level 1: Fair value measured using unadjusted quoted prices in the active markets

Level 2: Fair value other than quoted prices include within Level 1 that are observable, either directly or indirectly

Level 3: Fair value calculated by using a valuation technique including inputs that are not based on observable market data

Transfers between the levels in the fair value hierarchy are recognized on the assumption that the transfers occur at the end of each reporting period. There is no transfer between levels.

(a) Financial instruments measured at amortized cost

The carrying amount and the fair value of financial instruments measured at amortized cost are as follows. Financial instruments measured at fair value and financial instruments whose carrying amount closely approximates fair value are not included in the table below.

As of December 31, 2018

(In millions of yen)

| | Carrying amount | Fair value | | | |
|---|---|---|---|---|---|
| | | Level 1 | Level 2 | Level 3 | Total |
| Financial liabilities | | | | | |
| Borrowings | 192,248 | — | 192,554 | — | 192,554 |
| Bonds | — | — | — | — | — |
| Other payables | 41,682 | — | 41,626 | — | 41,626 |
| Lease liabilities | 2,762 | — | 2,767 | — | 2,767 |
| Total | 236,692 | — | 236,947 | — | 236,947 |

As of December 31, 2019

(In millions of yen)

| | Carrying amount | Fair value | | | |
|---|---|---|---|---|---|
| | | Level 1 | Level 2 | Level 3 | Total |
| Financial liabilities | | | | | |
| Borrowings | 771,747 | — | 776,736 | — | 776,736 |
| Bonds | 12 | — | 12 | — | 12 |
| Other payables | 16,974 | — | 16,934 | — | 16,934 |
| Total | 788,733 | — | 793,682 | — | 793,682 |

(b) Financial instruments measured at fair value

The components of financial assets and financial liabilities measured at fair value on a recurring basis that are classified as each level of the fair value hierarchy are as follows.

As of December 31, 2018

(In millions of yen)

| | Level 1 | Level 2 | Level 3 | Total |
|---|---|---|---|---|
| Financial assets | | | | |
| Equity instruments measured at fair value through other comprehensive income | | | | |
| Listed securities | 2,017 | — | — | 2,017 |
| Unlisted securities | — | — | 1,245 | 1,245 |
| Total | 2,017 | — | 1,245 | 3,262 |
| Financial liabilities | | | | |
| Financial liabilities measured at fair value through profit or loss | | | | |
| Derivative liabilities | — | 14,318 | — | 14,318 |
| Total | — | 14,318 | — | 14,318 |

As of December 31, 2019

(In millions of yen)

| | Level 1 | Level 2 | Level 3 | Total |
|---|---|---|---|---|
| Financial assets | | | | |
| Financial assets measured at fair value through profit or loss | | | | |
| Listed securities | 3,967 | — | — | 3,967 |
| Unlisted securities | — | — | 1,258 | 1,258 |
| Financial assets measured at fair value through other comprehensive income | | | | |
| Unlisted securities | — | — | 2,668 | 2,668 |
| Total | 3,967 | — | 3,926 | 7,893 |

c. Changes in financial assets that are classified as Level 3 are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Beginning balance | 1,463 | 1,245 |
| Total gains or losses in the period | 251 | (21) |
| Profit or loss (Note 1) | — | 119 |
| Other comprehensive income (Note 2) | 251 | (140) |
| Purchases | — | — |
| Sales | (5) | (60) |
| Settlement | (464) | — |
| Acquisition due to business combination | — | 2,816 |
| Other | — | (54) |
| Ending balance | 1,245 | 3,926 |

Changes in financial liabilities that are classified as Level 3 are as follows.

(In millions of yen)

| | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Beginning balance | — | — |
| Total gains or losses in the period | — | (67) |
| Profit or loss (Note 1) | — | (67) |
| Other comprehensive income | — | — |
| Purchases | — | — |
| Sales | — | — |
| Settlement | — | (222) |
| Acquisition due to business combination | — | 294 |
| Other | — | (5) |
| Ending balance | — | — |

(Note) 1. Total gains or losses in the period are for financial assets and liabilities measured at fair value through profit or loss and included in finance income and costs in the consolidated statement of profit or loss.

2. Total gains or losses in the period are all for equity instruments measured at fair value through other comprehensive income at the end of the reporting period and presented in “Equity instruments measured at fair value through other comprehensive income” in the consolidated statement of comprehensive income.

3. Financial instruments that are classified as Level 3 consist of unlisted securities. The fair value of unlisted securities is measured by the responsible department in the Group according to the Group accounting policies, etc., using the immediately preceding available figure in each quarter. The measurement results of the fair value are reviewed and approved by an appropriate authorized person.

For the financial instruments classified as Level 3, the Company does not expect that there will be any significant change in the fair value amount even if the assumptions used are changed within a reasonable range.

(4) Derivative transactions and hedging activities

a. Overview of hedges

The Group uses forward exchange contracts, currency options and currency swaps for the purpose of hedging transactions against the risk of foreign exchange rate fluctuations mainly, in foreign currency cash flows. Hedge accounting is applied to those transactions that meet the requirements for hedge accounting. Even if the requirements for hedge accounting are not met, the Group uses derivative transactions if they are economically reasonable. Changes in the fair value of the derivative transactions are recognized in profit or loss. The Group has also set a policy of not engaging in derivative transactions for speculative purposes.

Cash flow hedges

Cash flow hedges are hedges to avoid the risk of changes in future cash flows, and changes in the fair value of derivative transactions that are designated as cash flow hedges are recognized in other comprehensive income. The amount that is recognized in accumulated other comprehensive income is reclassified to profit or loss at the time when the hedged transactions affect profit or loss. If the hedged items give rise to the recognition of non-financial assets or non-financial liabilities, the amount that is recognized in other comprehensive income is reclassified as an adjustment to the initial carrying amount of non-financial assets or non-financial liabilities. Derivatives that are designated as cash flow hedges include forward exchange contracts, currency options and currency swaps to hedge the risk of changes in cash flows due to changes in the foreign exchange rates for foreign currency transactions.

In the previous fiscal year and the current fiscal year, no amount was recognized in profit or loss for the hedge ineffectiveness portion and the portion that was excluded from the assessment of hedge effectiveness.

b. Information on items that are designated as hedging instruments

The impact of hedging instruments that are designated as hedges on the consolidated statement of financial position is as follows. Derivative assets and liabilities are included in “Other financial assets” and “Other financial liabilities,” respectively, in the consolidated statement of financial position.

As of December 31, 2018

(In millions of yen)

| | Contract amount, etc. | Carrying amount of hedging instruments (fair value) | | Changes in the fair value used as a base to recognize the ineffective portion of the hedge |
|---|---|---|---|---|
| | | Assets | Liabilities | |
| Cash flow hedges | | | | |
| Foreign currency exchange risk | | | | |
| Currency options | 579,056 | — | 12,970 | — |
| Currency swaps | 112,161 | — | 1,348 | — |

As of December 31, 2019
Not applicable

c. Information on items designated as hedged items

The amount of the impact of hedged items that are designated as hedges on the consolidated statement of financial position is as follows.

As of December 31, 2018

(In millions of yen)

| | Changes in the fair value used as a base to recognize the ineffective portion of the hedge | Cash flow hedge reserve for ongoing hedges | Cash flow hedge reserve for the cancellation of hedge accounting |
|---|---|---|---|
| Cash flow hedges | | | |
| Foreign currency exchange risk | | | |
| Planned purchases | — | (14,318) | — |

As of December 31, 2019
Not applicable

d. Impact of the application of hedge accounting on the consolidated statement of profit and loss and the consolidated statement of

comprehensive income

The impact of hedging instruments that are designated as cash flow hedges on the consolidated statement of profit and loss and the consolidated statement of comprehensive income is as follows.

(In millions of yen)

| | Changes in the value of hedging instruments recognized in other comprehensive income (Note) | Ineffective portion recognized in profit or loss | Amount after basis adjustment to cash flow hedges (Note) |
|---|---|---|---|
| As of December 31, 2018 | | | |
| Cash flow hedges | | | |
| Foreign currency exchange risk | | | |
| Currency options | (12,970) | — | — |
| Currency swaps | (1,348) | — | — |
| As of December 31, 2019 | | | |
| Cash flow hedges | | | |
| Foreign currency exchange risk | | | |
| Currency options | — | — | — |
| Currency swaps | — | — | — |

(Note) Amount before tax effect.

e. Fair value of derivatives to which hedge accounting is not applied

The fair value and contract amount, etc. of derivatives to which hedge accounting is not applied are as follows.

As of December 31, 2018 and December 31, 2019

Not applicable.

(5) Transfer of financial assets

Accelerating from restructuring to growth stage, the Group provides diversified financing to achieve these growth strategies and liquidates certain trade receivables by transferring receivables etc.

The expenses arising from transfer of trade receivables derecognized in their entirety were 11 million yen in the prior fiscal year and 54 million yen in the current fiscal year.

## 35. Transactions with Related Parties

### (1) Transactions with related parties

Innovation Network Corporation of Japan, which was a principal shareholder of the Group, was established in July 2009 with the Japanese government as the principal shareholder, and the total amount of investments by the Japanese government accounts for 95% or more of the capital of Innovation Network Corporation of Japan . As a result, the Japanese government and the government-related entities have become related parties of the Group.

In addition, Innovation Network Corporation of Japan conducted a business divestiture in September 21, 2018 and newly created INCJ, Ltd.. INCJ, Ltd. succeeded to all of the Group's shares of Innovation Network Corporation of Japan and became a principal shareholder of the Group.

Between the Group and these related parties, there are neither significant transactions individually nor significant transactions on aggregate although not significant individually.

Furthermore, transactions with INCJ and other related parties are not applicable.

### (2) Compensation to key management

Compensation paid to key management personnel is as follows.

(In millions of yen)

| Category | The year ended December 31, 2018 | The year ended December 31, 2019 |
|---|---|---|
| Remuneration and bonuses | 317 | 516 |
| Share-based payments | 78 | 91 |
| Total | 395 | 607 |

(Note) The exercise price, etc. of share-based payments is as stated in "Note 33. Share-based Payments."

36. Major Subsidiaries

All subsidiaries are included in the scope of consolidation for our consolidated financial statements.

Major subsidiaries as of December 31, 2019 are as follows.

| Company | Location | Descriptions of Principal Businesses | Percentage Ownership and Voting Interest (%) (Note 1) | |
|---|---|---|---|---|
| | | | The year ended December 31, 2018 | The year ended December 31, 2019 |
| Renesas Semiconductor Manufacturing Co., Ltd. | Hitachinaka, Ibaraki | Manufacturing and Engineering Service Companies | 100.0 | 100.0 |
| Renesas Electronics (China) Co., Ltd. | Beijing, China | Sales Companies | 100.0 | 100.0 |
| Renesas Electronics Hong Kong Limited | Hong Kong, China | Sales Companies | 100.0 | 100.0 |
| Renesas Electronics America Inc. (Note 6) | California, U.S.A. | Design, Applications, Manufacturing and Sales Companies | 100.0 | 100.0 |
| Renesas Electronics Europe Limited (England) (Note 4) | Buckinghamshire, UK | Design, Applications and Sales Companies | 100.0 | 100.0 |
| Renesas Electronics Europe GmbH (Germany) (Note 4) | Dusseldorf, Germany | Design, Applications and Sales Companies | 100.0 (100.0) (Note 2) | 100.0 |
| Renesas Semiconductor (Beijing) Co., Ltd. | Beijing, China | Manufacturing and Engineering Service Companies | 100.0 | 100.0 |
| Renesas Semiconductor (Suzhou) Co., Ltd. | Suzhou, China | Manufacturing and Engineering Service Companies | 100.0 (6.33) (Note 2) | 100.0 (6.33) (Note 2) |
| Renesas Semiconductor (Malaysia) Sdn. Bhd. | Penang, Malaysia | Manufacturing and Engineering Service Companies | 90.0 | 90.0 |
| Renesas International Operations Sdn. Bhd. | Kuala Lumpur, Malaysia | Business Corporations and Others | 100.0 (100.0) (Note 2) | 100.0 (100.0) (Note 2) |
| Intersil Luxembourg S.a.r.l. | Esch-sur-Alzette Luxembourg | Business Corporations and Others | 100.0 (100.0) (Note 2) | 100.0 (100.0) (Note 2) |
| IDT (Note 5) (Note 6) | California, U.S.A. | Development, Manufacturing and Sale of analog integrated circuit | — | 100.0 |
| IDT Singapore Pte. Ltd. | Singapore | Sales Companies | — | 100.0 (100.0) (Note 2) |
| IDT Canada, Inc. | Ontario, Canada | Applications and Sales Companies | — | 100.0 (100.0) (Note 2) |
| Integrated Device Technology Malaysia SDN.BHD. | Penang, Malaysia | Applications, Manufacturing and Sales Companies | — | 100.0 (100.0) (Note 2) |
| IDT Europe GmbH | Dresden, Germany | Applications, Manufacturing and Sales Companies | — | 100.0 (100.0) (Note 2) |
| IDT Bermuda Ltd. | Bermuda | Business Corporations and Others | — | 100.0 (100.0) (Note 2) |
| GigPeak, Inc. | California, U.S.A. | Business Corporations and Others | — | 100.0 (100.0) (Note 2) |

(Note) 1. Percentage ownership and voting interest are rounded down to the second decimal point.
2. Numbers in parentheses represent indirect voting rights.
3. On January 1, 2019 the Company merged with Renesas Semiconductor Package & Test Solutions Co., Ltd through an absorption-type merger method.
4. On January 1, 2019 the Company acquired all outstanding shares in Renesas Electronics Europe GmbH, and Renesas Electronics Europe GmbH became a wholly owned subsidiary of the Company.
wholly-owned subsidiary of Renesas Renesas Electronics Europe GmbH
5. The Company acquired IDT, a leading supplier of analog mixed-signal products on March 30, 2020 and IDT became a wholly owned subsidiary of the Company.
6. On January 1, 2020 IDT merged with Renesas America in an absorption-type merger and changed the trade name to Renesas America.

There are no subsidiaries with significant non-controlling interests.

37. Commitments and Contingencies

(1) Commitments for the acquisition of assets

Commitments for the acquisition of assets are as follows.

(In millions of yen)

| Name | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Property, plant and equipment | 9,271 | 3,608 |
| Intangible assets | 789 | 533 |
| Total | 10,060 | 4,141 |

(2) Loan commitments

The Company has entered into a contract for setting a commitment line with its main banks for the purpose of securing long-term working capital, and the balance of unused loans is as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Total amount of commitment lines | 50,000 | 50,000 |
| Balance of used loans | 45,000 | — |
| Balance of unused loans | 5,000 | 50,000 |

(3) Debt guarantees

The Group provides debt guarantees against bank loans, etc. of its employees and third parties as follows.

(In millions of yen)

| | As of December 31, 2018 | As of December 31, 2019 |
|---|---|---|
| Guarantees of employees' obligations | 65 | 45 |
| Total | 65 | 45 |

(Guarantees of employees' obligations)

The Group provides guarantees for the housing loans of employees as part of its welfare program. If an employee cannot repay a housing loan covered by a debt guarantee, the Group must assume the obligation. These debt guarantees are secured by the houses of the employees.

(4) Others

As the Group conducts business worldwide, it is possible that the Group may become a party to lawsuits, investigation by regulatory authorities and other legal proceedings in various countries.

Though it is difficult to predict the outcome of the legal proceedings to which the Group is presently a party or to which it may become a party in future, the resolution of such proceedings may require considerable time and expense, and it is possible that the Group may be required to pay compensation for damages, possibly resulting in significant adverse effects to the business, performance, financial condition, cash flow, reputation and creditability of the Group.

(Civil lawsuit related to the alleged patent infringement and trade secret violation)

The Company's subsidiary has been named as a defendant in a civil lawsuit in the United States related to the alleged patent infringement and trade secret violation.

The Company's subsidiary has been named as a defendant in a lawsuit filed in November 2008 in the United States District Court for the Eastern District of Texas (hereafter "the Court of First Instance"). The Court of First Instance entered a final judgment in June 2016 against us in the amount of 77.3 million U.S. dollars, however the Company's subsidiary immediately filed a notice of appeal at the Court of Appeals for the Federal Circuit (hereafter "the Court of Second Instance"). In July 2018, the Court of Second Instance rejected the judgement of the Court of First Instance for payment of compensation and conducted the retrial order at the Court of First Instance.

(Civil lawsuit related to the alleged violations of the competition law)

The Group has been named in Canada and the United Kingdom as a defendant in a civil lawsuit related to possible violations of competition law involving smartcard chips brought by purchasers of such products.

The civil lawsuit in Canada was brought in July 2013 in Supreme Court of British Columbia, but the lawsuit was withdrawn by the plaintiff in December 2019 without any progress. There are two civil lawsuits in the United Kingdom. One The one case was brought in December 2014 in the Senior Courts of England and Wales and the proceedings were ordered stayed by the request of the party after that. The other case was brought in July 2019 in Supreme Court of British Columbia by the other purchasers of such products and has not reached settlement either.

(Indemnification claim related to environmental pollution)
The Group's subsidiary in Taiwan may be subject to requests for restitution for environmental pollution associated with a factory in Taiwan owned by the subsidiary's predecessor company.

Since June, 2004, the Group's subsidiary has been notified that other company reserved its right to seek indemnification from us for all costs associated with the remediation of the contamination related to environmental pollution found at a factory in Taiwan owned by the subsidiary's predecessor company, and the costs associated with the lawsuit as well as the costs relating to those retained environmental liabilities in a toxic tort class action lawsuit filed by ex-employees worked at the factory. Though the Group's subsidiary is not a defendant in the class action lawsuit, the claimant initiated arbitration proceedings against us related to all claims arising out of the contamination, including the remediation, the toxic tort claims, and attorneys' fees in December, 2017, but afterward, the arbitration was ordered stayed by the arbitrator on a unilateral request by the claimant.

pwc

Independent Auditor's Report

To the Board of Directors of Renesas Electronics Corporation

We have audited the accompanying consolidated financial statements of Renesas Electronics Corporation ("the Company") and its consolidated subsidiaries, which comprise the consolidated statement of financial position as at December 31, 2019 and the consolidated statement of profit or loss, consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the year then ended, and notes to consolidated financial statements.

## Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

## Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in Japan. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, while the purpose of the financial statement audit is not to express an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

## Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company and its consolidated subsidiaries as at December 31, 2019, and their financial performance and cash flows for the year then ended in accordance with International Financial Reporting Standards.

## Emphasis of Matter

We draw attention to Note 6 of "Business Segments" to the consolidated financial statements, which describes that, from the fiscal year ended December 31, 2019, the Company has implemented a change in the classification of segments. Our opinion is not qualified in respect of this matter.

## Other Matter

The consolidated financial statements of the Company for the fiscal year ended December 31, 2018 had been audited by a predecessor auditor. The predecessor auditor had issued unqualified opinion for the consolidated financial statements on March 28, 2019.

PricewaterhouseCoopers Aarata LLC.

March 27, 2020