FINANCIAL SECTION

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FINANCIAL OVERVIEW

GENERAL

The following discussion and analysis provides information that management believes to be relevant to understanding Canon's consolidated financial condition and results of operations. References in this discussion to the "Company" are to Canon Inc. and, unless otherwise indicated, references to the financial condition or operating results of "Canon" refer to Canon Inc. and its consolidated subsidiaries.

OVERVIEW

Canon is one of the world's leading manufacturers of office multifunction devices ("MFDs"), laser printers, inkjet printers, cameras, medical equipment and lithography equipment. Canon earns revenues primarily from the manufacture and sale of these products domestically and internationally. Canon's basic management policy is to contribute to the prosperity and well-being of the world while endeavoring to become a truly excellent global corporate group targeting continued growth and development.

Canon divides its businesses into four segments: the Printing Business Unit, the Imaging Business Unit, the Medical Business Unit and the Industrial Business Unit.

Economic environment

Looking back at 2022, while the global economy resumed its economic activities in earnest, the pace of economic recovery slowed due to global inflation and tight monetary policies in order to control inflation in each country. In the United States, although affected by inflation and tightening monetary policy, the economic recovery continued due to robust increases in personal consumption and expansion of exports. In Europe, the economy slowed down due to surge in energy prices resulting from the Ukraine crisis and continuous price hikes caused by inflation. In China, the recovery of personal consumption declined and capital investment slowed due to restrictions implemented under its Zero-COVID strategy. In other emerging countries, the economy recovered moderately, mainly in India and Southeast Asia. In Japan, affected by surge in price of energy and inflation caused by depreciation of the yen, the economy continued to recover moderately, mainly in terms of personal consumption.

Market environment

Amid the unstable economic environment, in the markets in which Canon operates, despite a shortage of semiconductor chips and supply chain disruptions, demand improved moderately. Looking at performance by products, demand for office multifunction devices (MFDs) remained firm due to a recovery of in-office work. Meanwhile demand for laser printers and inkjet printers slowed due to decreased demand from customers working from home. For cameras, demand remained solid, mainly for mirrorless cameras and lenses for professionals and enthusiasts. For medical equipment, demand in Japan declined this year due to a drop-off following the conclusion of government spending in 2021, although investments in the medical field recovered slowly, mainly for diagnostic imaging unit products outside Japan. For semiconductor lithography equipment, while the memory devices market declined, overall demand remained firm due to strong demand for power devices and sensors. For FPD (Flat Panel Display) lithography equipment, demand tended to decline due to decreased demand from customers working from home amid the COVID-19 pandemic, and demand for laptop computers decreased in response to the current economic slowdown.

The average value of the yen for the year was ¥131.66 against the U.S. dollar, a year-on-year depreciation of approximately ¥22, and ¥138.42 against the euro, a year-on-year depreciation of approximately ¥8.

Summary of operations

In 2022, Canon ensured adequate supplies of products through sustained efforts such as switching to alternative components and seeking new vendors, and taking swift action to secure transportation capacity while utilizing alternative transportation routes to deal with a shortage of components and the logistics disruption. Net sales for the year increased by 14.7% year-on-year to ¥4,031,414 million due to adjustment of product prices and depreciation of the yen. Sales by new business exceeded ¥1,000 billion, and net sales exceeded ¥4,000 billion for the first time in five years since 2017 as a result of the business portfolio transformation. Gross profit as a percentage of net sales decreased by 1.0 points to 45.3% due to the increase in the ratio of hardware sale caused by stabilization of production supply including printers, in addition to the increased costs of parts and logistics. However, gross profit increased by 12.3% year-on-year to ¥1,827,802 million, mainly due to price adjustment of products and the depreciation of the yen. Although operating expenses increased by 9.5% year-on-year to ¥1,474,403 million as a result of increased operating expenses denominated in foreign currencies due to the depreciation of the yen, as well as an increase in selling expenses accompanying a growth in sales, the operating expense to sales ratio decreased by 1.8 points to 36.5% due to continued efficiency-focused cost control and improvements to management structure. As a result, operating profit increased by 25.4% year-on-year to ¥353,399 million. Other income (deductions) decreased by ¥21,747 million year-on-year to a loss of ¥959 million, mainly due to deterioration of valuation gains and losses on securities and currency exchange losses from liabilities, incurred by group finance, denominated in foreign currencies, caused by the depreciation of the yen. As a result, income before income taxes increased by 16.4% year-on-year to ¥352,440 million and net income attributable to Canon Inc. increased by 13.6% year-on-year to ¥243,961 million. Basic net income attributable to Canon Inc. shareholders per share was ¥236.71 for the year, a year-on-year increase of ¥31.36.

Total assets increased by ¥344,642 million to ¥5,095,530 million at December 31, 2022, compared with the end of previous year, mainly due to an increase of inventories resulting from procuring electrical part, materials and key parts, and increasing of trade receivable due to increase of sales. In 2022, the decrease of long-term loans by ¥120.0 billion was a result of the repayment of loans for the acquisition of Toshiba Medical Systems Corporation (currently, Canon Medical Systems Corporation). Under this condition, total liabilities increased by ¥94,041 million to ¥1,746,500 million at December 31, 2022, compared with the end of previous year mainly due to a increase of short-term loans in response to the increase in required working capital. Total equity increased by ¥250,601 million to ¥3,349,030 million at December 31, 2022, compared with the end of previous year, mainly due to an increase in retained earnings resulting from net income attributable to Canon, and an increase in accumulated other comprehensive income due to the depreciation of the yen. In addition, there were repurchases of treasury stock twice. Under these conditions, Canon Inc. shareholders' equity as a percentage of total assets increased by 0.6 points to 61.1%.

Key performance indicators

The following are the key performance indicators ("KPIs") that Canon uses in managing its business. The changes from year to year in these KPIs are set forth in the table shown below.

Net sales and profit ratio

As Canon pursues the goal to become a truly excellent global corporation, one indicator upon which Canon's management places strong emphasis is revenue. The following are some of the KPIs related to revenue that management considers to be important.

Net sales is one such KPI. Canon derives net sales primarily from the sale of products and, to a lesser extent, provision of services associated with its products. Sales vary depending on such factors as product demand, the number and size of transactions within the reporting period, market acceptance for new products, and changes in sales prices. Other factors involved are market share and market environment. In addition, management considers the evaluation of net sales by product to be important for the purpose of assessing Canon's sales performance in various products, taking into account recent market trends.

Gross profit to net sales ratio is another KPI for Canon. Under the basic policy of Phase VI of the Excellent Global Corporation Plan, Canon has been consistently strengthening business competitiveness and striving to provide highly profitable products with price competitiveness. Furthermore, Canon promotes cost reduction initiatives across the Canon Group through in-house production and automation of assembly processes which integrate the three functions of design, production technology and manufacturing. Canon will continue to actively take these measures to improve Canon's gross profit to net sales ratio.

Operating profit to net sales ratio, income before income taxes to net sales ratio, and R&D expense to net sales ratio are considered to be KPIs by Canon. Canon is focusing on two areas for improvement. Canon is striving to control and reduce its selling, general and administrative expenses as its first key point. Secondly, Canon's R&D policy is designed to maintain adequate spending in core technology to sustain Canon's leading position in its current business areas and to exploit opportunities in other markets. Canon believes such investments will create the basis for future success in its business and operations.

Cash flow management

Canon also places significant emphasis on cash flow management. The following are the KPIs relating to cash flow management that Canon's management believes to be important.

Inventory turnover measured in days is a KPI because it measures the efficiency of supply chain management. Inventories have inherent risks of becoming obsolete, physically damaged or otherwise decreasing significantly in value, which may adversely affect Canon's operating results. To mitigate these risks, management believes that it is crucial to continue reducing work-in-process inventories by decreasing production lead times in order to promptly recover related product expenses, while balancing risks of supply chain disruptions by optimizing finished goods inventories in order to avoid losing potential sales opportunities.

The debt to total assets ratio is also one of the KPIs. For a manufacturing company like Canon, it generally takes considerable time to realize profit from a business due to lead times required for R&D, manufacturing and sales. Therefore, management believes that it is important to have sufficient financial strength. Canon will continue to reduce its dependency on external funds for capital investments in favor of generating the necessary funds from its own operations.

Canon Inc. shareholders' equity to total assets ratio is another KPI for Canon. Canon believes that its shareholders' equity to total assets ratio measures its long-term sustainability. Canon also believes that achieving a high or rising shareholders' equity ratio indicates that Canon has maintained a strong financial position or further improved its ability to fund debt obligations and other unexpected expenses. In the long-term, Canon's management believes a high shareholders' equity ratio will enable Canon to maintain a high level of stable investments for its future operations and development. As Canon puts strong emphasis on its R&D activities, management believes that it is important to maintain a stable financial base and, accordingly, a high level of its shareholders' equity to total assets ratio.

KEY PERFORMANCE INDICATORS

	2022	2021	2020	2019	2018
Net sales (Millions of yen)	**4,031,414**	3,513,357	3,160,243	3,593,299	3,951,937
Gross profit to net sales ratio	**45.3%**	46.3%	43.5%	44.8%	46.4%
R&D expense to net sales ratio	**7.6%**	8.2%	8.6%	8.3%	8.0%
Operating profit to net sales ratio	**8.8%**	8.0%	3.5%	4.9%	8.7%
Income before income taxes to net sales ratio	**8.7%**	8.6%	4.1%	5.4%	9.2%
Inventory turnover measured in days	**69 days**	66 days	60 days	59 days	56 days
Debt to total assets ratio	**8.2%**	6.8%	10.9%	10.8%	8.2%
Canon Inc. shareholders' equity to total assets ratio	**61.1%**	60.5%	55.7%	56.3%	57.5%

Note: Inventory turnover measured in days is determined by: Inventory divided by net sales for the previous six months, multiplied by 182.5.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles ("U.S. GAAP") and based on the selection and application of significant accounting policies which require management to make significant estimates and assumptions. These estimates and assumptions include future market conditions, net sales growth rate, gross margin and discount rate. Though Canon believes that the estimates and assumptions are reasonable, actual future results may differ from these estimates and assumptions. In addition, actual results and outcomes may differ from management's estimates and assumptions due to pandemic, geopolitical risk and economic slowdown risk in response to inflation. Canon believes that the following are the more critical judgment areas in the application of its accounting policies that currently affect its financial condition and results of operations.

Revenue recognition

Canon generates revenue mainly through the sale of products of the Printing Business Unit, the Imaging Business Unit, the Medical Business Unit and the Industrial Business Unit, supplies and related services under separate contractual arrangements. Revenue is recognized when, or as, control of promised goods or services transfers to customers in an amount that reflects the consideration to which Canon expects to be entitled in exchange for transferring these goods or services.

Revenue from sales of products of the Printing Business Unit, such as office MFDs, laser printers and inkjet printers, and the Imaging Business Unit, such as digital cameras, is primarily recognized at a point in time upon shipment or delivery, depending upon when the customer obtains controls of these products.

Revenue from sales of equipment of the Medical Business Unit and the Industrial Business Unit that are sold with customer acceptance provisions related to their functionality, including certain medical equipment such as CT systems and MRI systems, and lithography equipment such as semiconductor and FPD lithography equipment, is recognized at a point in time when the equipment is installed at the customer site and the agreed-upon specifications are objectively satisfied and confirmed.

Most of Canon's service revenue is generated from maintenance service in the products of the Printing Business Unit and the Medical Business Unit which is recognized over time. For the service contracts of the Printing Business Unit, the customer typically pays a variable amount based on usage, a stated fixed fee or a stated base fee plus a variable amount which frequently include the provision of consumables as well as break fix activities. The majority portion of service revenue from the products of the Printing Business Unit is recognized as billed since the invoiced amount directly correlates with the value to the customer of the underlying performance obligation delivered to date. For the service contracts of the Medical Business Unit, the customer typically pays a stated fixed fee for the stand ready maintenance service and revenue is recognized ratably over the contract period.

The majority of service arrangements for the products are executed in combination with related products. Transaction prices for products and services need to be allocated to each performance obligation on a relative standalone selling price basis where judgements are required. Canon estimates the standalone selling price using a range of prices that would meet the allocation objective based on all the information that is reasonably available including market conditions and other observable inputs. If transaction prices of the product or service contracts are not within the acceptable range then the revenue is subject to allocation based on the estimated standalone selling prices. Canon recognizes the incremental costs of obtaining a contract as an expense when related products of the Printing Business Unit are sold.

Revenue from sales of certain industrial equipment which do not have alternative use and for which Canon has enforceable right to payment to the customers for the performance completed to date is recognized over time with progress towards completion measured using the cost based input method as the basis to recognize revenue and an estimated margin. Provisions for estimated losses on uncompleted contracts are made in the period in which such losses become evident. Changes in job performance, job conditions, estimated margin and final contract settlements may result in revisions to projected costs and revenue and are recognized in the period in which the revisions to estimates are identified and the amounts can be reasonably estimated. Factors that may affect future project costs and margins include, production efficiencies, availability and costs of labor and materials. These factors can impact the accuracy of Canon's estimates and materially impact future reported revenue and cost of sales.

The transaction prices that Canon is entitled to receive in exchange for transferring goods or services to the customer include certain forms of variable consideration, including product discounts, customer promotions and volume-based rebates mainly for the products of the Imaging Business Unit, which are sold predominantly through distributors and retailers. Canon includes estimated amounts in the transaction price only to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. Variable considerations are estimated based upon historical trends and other known factors at the time of sale, and are subsequently adjusted in each period based on current information. In addition, Canon may provide a right of return on its products for a short time period after a sale. These rights are accounted for as variable consideration when determining the transaction price, and accordingly Canon recognizes revenue based on the estimated amount to which Canon expects to be entitled after considering expected returns.

Taxes collected from customers and remitted to governmental authorities are excluded from revenues in the consolidated statements of income.

Allowance for credit losses

Allowance for credit losses for trade and lease receivables is maintained for all customers based on ASC 326 "Financial Instruments – Credit Losses," based on historical experiences of credit losses and reasonable and supportable forecasts. An additional reserve for individual accounts is recorded when Canon becomes aware of a customer's inability to meet its financial obligations, such as in the case of bankruptcy filings. If circumstances related to customers change, estimates of the recoverability of receivables would be further adjusted. When all collection options are exhausted including legal recourse, the accounts or portions thereof are deemed to be uncollectable and charged against the allowance.

Valuation of inventories

Inventories are stated at the lower of cost or net realizable value. Cost is determined by the average method for domestic inventories and principally the first-in, first-out method for overseas inventories. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make a sale. Canon routinely reviews its inventories for their salability and for indications of obsolescence to determine if inventories should be written down to market value. Judgments and estimates must be made and used in connection with establishing such allowances in any accounting period. In estimating the net realizable value of its inventories, Canon considers the age of the inventories and the likelihood of spoilage or changes in market demand for its inventories.

Impairment of long-lived assets

Long-lived assets, such as property, plant and equipment, and acquired intangibles subject to amortization, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If the carrying amount of the asset exceeds its estimated sum of undiscounted future cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset. Determining the fair value of the asset involves the use of estimates and assumptions.

Property, plant and equipment

Property, plant and equipment are stated at cost. Depreciation is calculated principally by the declining-balance method, except for certain assets which are depreciated by the straight-line method over the estimated useful lives of the assets.

Lease

As for lessor accounting, Canon provides leasing arrangement to its customers primarily for the sale of office products. Revenue from the sale of these products under sales-type leases is recognized at the inception of the lease. Interest income on sales-type leases and direct-financing leases is recognized over the life of each respective lease using the interest method. Leases not qualifying as sales-type leases or direct-financing leases are accounted for as operating leases and related revenue is recognized ratably over the lease term. When product leases are bundled with maintenance contracts, revenue is allocated based upon the estimated standalone selling prices of the lease and non-lease components. Lease components generally include product and financing while non-lease components generally consist of maintenance contracts and supplies. Some of the contracts include options to extend or to terminate the lease. Canon takes such options into account to determine the lease term when it is reasonably certain that the customers will exercise these options. The majority of Canon's lease contracts do not contain bargain purchase options for their customers.

As for lessee accounting, Canon has operating and finance leases for various assets including office buildings, warehouses, employees' accommodations, and vehicles. Canon determines if an arrangement is a lease at the inception of each contract. Some of the contracts include options to extend or to terminate the lease. Canon takes such options into accounts to determine the lease term when it is reasonably certain that it will exercise these options. Canon's lease arrangements do not contain material residual value guarantees or material restrictive covenants. As a rate implicit in most of Canon's leases cannot be determined, Canon uses incremental borrowing rate based on the information available at commencement to determine the present values of lease payments. Canon has lease contracts with lease and non-lease components, which are accounted for separately. Canon allocates the consideration in the lease contract to the lease and non-lease components based upon the estimated standalone prices. Costs associated with operating lease assets are recognized on a straight-line basis over the term of the lease.

Business combinations

Acquisitions are accounted for using the acquisition method of accounting. The acquisition method of accounting requires the identification and measurement of all acquired tangible and intangible assets and assumed liabilities at their respective fair values, as of the acquisition date. The determination of the fair value of net assets acquired involves significant judgment and estimates, such as future cash flow projections, appropriate discount and capitalization rates and other estimates based on available market information. Estimates of future cash flows are based on a number of factors including operating results, known and anticipated trends, as well as market and economic conditions.

Goodwill and other intangible assets

Goodwill and other intangible assets with indefinite useful lives are not amortized, but are instead tested for impairment annually in the fourth quarter of each year, or more frequently if indicators of potential impairment exist. All goodwill is assigned to the reporting unit or units that benefit from the synergies arising from each business combination. If the carrying amount assigned to the reporting unit exceeds the fair value of the reporting unit, Canon recognizes an impairment charge in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit. Fair value of a reporting unit is determined primarily based on the discounted cash flow analysis which involves estimates of projected future cash flows and discount rates. Estimates of projected future cash flows are primarily based on Canon's forecast of future growth rates. Estimates of discount rates are determined based on the weighted average cost of capital, which considers primarily market and industry data as well as specific risk factors. Canon has completed its impairment test in the fourth quarter of 2022 and determined that there were no reporting units that failed the impairment test as the fair value of each reporting unit substantially exceeded its respective carrying amount. However, with regard to goodwill attributed to the Medical Reporting Unit, fair value in excess of reported carrying amount as a percentage is lower than other reporting units. As a result, a future reduction in cash flows of the related business could trigger an impairment. The goodwill related to this reporting unit as of December 31, 2022 is ¥542,695 million. Future cash flows for the Medical Reporting Unit were based on a mid-term management plan that considered the future market growth of medical equipment and growth in geographies where Canon operates its medical business. Intangible assets with finite useful lives consist primarily of software, trademarks, patents and developed technology, license fees and customer relationships, which are amortized using the straight-line method. The estimated useful lives of software are from 3 years to 8 years, trademarks are 15 years, patents and developed technology are from 7 years to 21 years, license fees are 8 years, and customer relationships are from 10 years to 15 years, respectively.

Income tax uncertainties

Canon considers many factors when evaluating and estimating income tax uncertainties. These factors include an evaluation of the technical merits of the tax positions as well as the amounts and probabilities of the outcomes that could be realized upon settlement. The actual resolutions of those uncertainties will inevitably differ from those estimates, and such differences may be material to the financial statements.

Valuation of deferred tax assets

Canon currently has significant deferred tax assets, which are subject to periodic recoverability assessments. Realization of Canon's deferred tax assets is principally dependent upon its achievement of projected future taxable income. Canon's judgments regarding future profitability may change due to future market conditions, its ability to continue to successfully execute its operating activities and other factors. Any changes in these factors may require possible recognition of significant valuation allowances to reduce the net carrying value of these deferred tax asset balances. When Canon determines that certain deferred tax assets may not be recoverable, the amounts, which may not be realized, are charged to income tax expense and will adversely affect net income.

Employee retirement and severance benefit plans

Canon has significant employee retirement and severance benefit obligations that are recognized based on actuarial valuations. Inherent in these valuations are key assumptions, including discount rates and expected return on plan assets. Management must consider current market conditions, including changes in interest rates, in selecting these assumptions. Other assumptions include assumed rate of increase in compensation levels, mortality rate. Changes in assumptions inherent in the valuation are reasonably likely to occur from period to period. Actual results that differ from the assumptions are accumulated and amortized over future periods and, therefore, generally affect future pension expenses. While management believes that the assumptions used are appropriate, the differences may affect employee retirement and severance benefit costs in the future.

In preparing its financial statements for 2022, Canon estimated a weighted-average discount rate used to determine benefit obligations of 1.2% for Japanese plans and 4.1% for foreign plans and a weighted-average expected long-term rate of return on plan assets of 3.1% for Japanese plans and 5.7% for foreign plans. In estimating the discount rate, Canon uses available information about rates of return on high-quality fixed-income government and corporate bonds currently available and expected to be available during the period to the maturity of the pension benefits. Canon establishes the expected long-term rate of return on plan assets based on management's expectations of the long-term return of the various plan asset categories in which it invests. Management develops expectations with respect to each plan asset category based on actual historical returns and its current expectations for future returns.

Decreases in discount rates lead to increases in actuarial pension benefit obligations which, in turn, could lead to an increase in service cost and amortization cost through amortization of actuarial gain or loss, a decrease in interest cost, and vice versa. For 2022, a decrease of 50 basis points in the discount rate increases the projected benefit obligation by approximately ¥77,641 million. The net effect of changes in the discount rate, as well as the net effect of other changes in actuarial assumptions and experience, is deferred until subsequent periods.

Decreases in expected returns on plan assets may increase net periodic benefit cost by decreasing the expected return amounts, while differences between expected value and actual fair value of those assets could affect pension expense in the following years, and vice versa. For 2022, a decrease of 50 basis points in the expected long-term rate of return on plan assets would increase approximately ¥4,862 million in net periodic benefit cost. Canon multiplies management's expected long-term rate of return on plan assets by the value of its plan assets to arrive at the expected return on plan assets that is included in pension expense. Canon defers recognition of the difference between this expected return on plan assets and the actual return on plan assets. The net deferred amount affects future pension expense.

Canon recognizes the funded status (i.e., the difference between the fair value of plan assets and the projected benefit obligations) of its pension plans in its consolidated balance sheets, with a corresponding adjustment to an accumulated other comprehensive income (loss), net of tax.

Environmental Liabilities

Liabilities for environmental remediation and other environmental costs are accrued when environmental assessments or remedial efforts are probable and the costs can be reasonably estimated, and are included in other noncurrent liabilities in the consolidated balance sheets. Such liabilities are adjusted as further information develops or circumstances change. Costs of future obligations are not discounted to their present values.

Recently Issued Accounting Guidance

Please refer to Note 1 of the Notes to Consolidated Financial Statements.

CONSOLIDATED RESULTS OF OPERATIONS

SUMMARY OF OPERATIONS

	Millions of yen				
	2022	change	2021	change	2020
Net sales	**4,031,414**	**+14.7%**	3,513,357	+11.2%	3,160,243
Products and Equipment	**3,231,837**	**+15.2%**	2,804,680	+12.6%	2,489,829
Services	**799,577**	**+12.8%**	708,677	+5.7%	670,414
Operating profit	**353,399**	**+25.4%**	281,918	+155.0%	110,547
Income before income taxes	**352,440**	**+16.4%**	302,706	+132.4%	130,280
Net income attributable to Canon Inc.	**243,961**	**+13.6%**	214,718	+157.7%	83,318

Note: See note to KEY PERFORMANCE INDICATORS

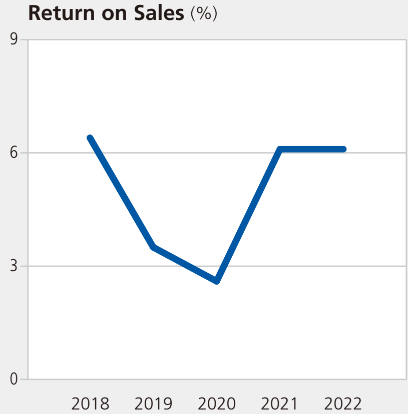
Sales

In the current business term, while the global economy resumed its economic activities in earnest, the pace of economic recovery slowed due to global inflation and tight monetary policies in order to control inflation in each country. In such an environment, despite a shortage of semiconductor chips and supply chain disruptions, Canon's consolidated net sales in 2022 totaled ¥4,031,414 million, an increase of 14.7% from the previous year largely due to a moderate recovery of demand in each segment. Net sales of products and equipment totaled ¥3,231,837 million, a year-on-year increase of 15.2%, while net sales of services totaled ¥799,577 million, a year-on-year increase of 12.8%.

Overseas operations are significant to Canon's operating results and generated 78.5% of total net sales in 2022. Such sales are denominated in the applicable local currencies and are subject to fluctuations in the value of the yen relative to those currencies. Despite efforts to reduce the impact of currency fluctuations on operating results, including localization of manufacturing in some regions along with procuring parts and materials from overseas suppliers, Canon believes such fluctuations have had and will continue to have a significant effect on its results of operations.

The average value of the yen during the year was ¥131.66 against the U.S. dollar, a year-on-year depreciation of approximately ¥22, and ¥138.42 against the euro, a year-on-year depreciation of approximately ¥8. The effects of foreign exchange rate fluctuations positively affected net sales by ¥339,996 million in 2022. This favorable impact consisted of approximately ¥245,939 million of favorable impact for the U.S. dollar denominated sales and favorable impact of ¥56,297 million for the euro denominated sales, and favorable impact of ¥37,760 million for other foreign currency denominated sales.

Return on Sales (%)



Cost of sales

Cost of sales principally reflects the cost of raw materials, parts and labor used by Canon in the manufacture of its products. A portion of the raw materials used by Canon is imported or includes imported materials. Many of these raw materials are subject to fluctuations in world market prices accompanied by fluctuations in foreign exchange rates that may affect Canon's cost of sales. Other components of cost of sales include depreciation expenses, maintenance expenses, light and fuel expenses, and rent expenses. In 2022, Canon was affected by rising prices of parts and materials, as well as by rising transportation costs due to the high demand for international freight transport. Under these conditions, the ratios of cost of sales to net sales for 2022 and 2021 were 54.7% and 53.7%, respectively. Cost of sales as a percentage of net sales increased by 1.0 points.

Gross profit

Canon's gross profit in 2022 increased by 12.3% to ¥1,827,802 million from 2021. However, the gross profit to net sales ratio decreased by 1.0 points to 45.3%. The increase in the gross profit was mainly due to price adjustment of products and the depreciation of the yen. However, the decrease in gross profit to net sales ratio was mainly due to the increase in the ratio of hardware sale caused by stabilization of production supply including printers, in addition to the increased costs of parts and logistics.

Operating expenses

The major components of operating expenses are payroll, R&D, advertising expenses and other marketing expenses. Operating expenses in 2022 increased by 9.5% year on year to ¥1,474,403 million as a result of increased operating expenses denominated in foreign currencies due to the depreciation of the yen, as well as an increase in selling expenses accompanying a growth in sales. However, operating expenses as a percentage of net sales decreased by 1.8 points to 36.5% due to continued efficiency-focused cost control and improvements to management structure.

Operating profit

Operating profit in 2022 increased by 25.4% from 2021 to a total of ¥353,399 million. The operating profit to net sales ratio increased by 0.8 points to 8.8% from 2021.

Other income (deductions)

Other income (deductions) for 2022 was a loss of ¥959 million, a decrease of ¥21,747 million from 2021 mainly due to deterioration of valuation gains and losses on securities and currency exchange losses from liabilities, incurred by group finance, denominated in foreign currencies, caused by the depreciation of the yen.

Income before income taxes

Income before income taxes in 2022 was ¥352,440 million, an increase of 16.4% from 2021, and constituted 8.7% of net sales.

Income taxes

Income taxes in 2022 increased by ¥20,490 million from 2021. The effective tax rate for 2022 was 26.2%, which was lower than the statutory tax rate in Japan. This resulted from a combination of factors such as the increase in tax credits of R&D expenses and the lower effective tax rates at foreign subsidiaries compared to the statutory tax rate in Japan.

Net income attributable to Canon Inc.

As a result, net income attributable to Canon Inc. in 2022 increased by 13.6% to ¥243,961 million, which represents 6.1% of net sales.

Segment information

Canon operates four segments: the Printing Business Unit, the Imaging Business Unit, the Medical Business Unit and the Industrial Business Unit.

- **The Printing Business Unit** mainly includes Office MFDs / Document solutions / Laser MFPs / Laser printers / Inkjet printers / Image scanners / Calculators / Digital continuous feed presses / Digital sheet-fed presses / Large format printers
- **The Imaging Business Unit** mainly includes Interchangeable-lens digital cameras / Interchangeable lenses / Digital compact cameras / Compact photo printers / MR Systems / Network cameras / Video management software / Video content analytics software / Digital camcorders / Digital cinema cameras / Broadcast equipment / Projectors
- **The Medical Business Unit** mainly includes CT systems / Diagnostic ultrasound systems / Diagnostic X-ray systems / MRI systems / Clinical chemistry analyzers / Digital radiography systems / Ophthalmic equipment
- **The Industrial Business Unit** mainly includes Semiconductor lithography equipment / FPD lithography equipment / OLED display manufacturing equipment / Vacuum thin-film deposition equipment / Die bonders

Operating results by segment

Please refer to the table of sales by segment in Note 23 of the Notes to Consolidated Financial Statements.

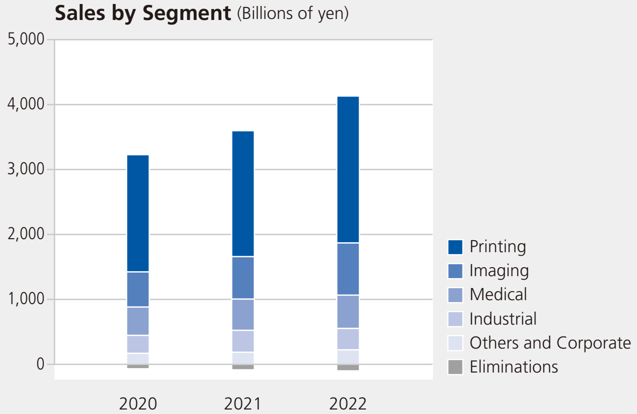
Within the Printing Business Unit, unit sales increased compared with the previous year due to the recovery of office MFDs production, thanks to supplies of semiconductor chips improving in the second half of the year. Sales of services and consumables increased moderately compared with the previous year due to a recovery of increase of in-office work. As for laser printers and inkjet printers, unit sales increased significantly compared with the previous year due to the recovery from stagnating production activities resulting from COVID-19 infections. However, consumables decreased compared with the previous year due to decreased demand from customers working from home. For equipment in the production printing market, sales increased compared with the previous year due to strong sales of the varioPRINT iX series of high-speed cut-sheet color inkjet presses, while revenue from services also increased. These factors resulted in total sales for the business unit of ¥2,261,938 million, a year-on-year increase of 16.7%, while income before income taxes decreased by 3.1% year-on-year to ¥225,780 million, due to the increase in costs of parts and logistics, despite price adjustment of products.

As for the Imaging Business Unit, unit sales of interchangeable-lens digital cameras were above those of the same period of the previous year due to continued robust demand for full-frame mirrorless cameras including the EOS R5 and EOS R6 as well as favorable reviews of the new EOS R7 and EOS R10 APS-C-size mirror-less cameras, despite stagnant production activities caused by a shortage of components. Unit sales of lenses increased owing to strong sales of RF-series interchangeable-lenses that expanded the product lineup. As for network cameras, sales increased significantly, mainly as a result of strengthening sales activities in response to diversifying market needs in addition to the recovery of product supply. As for professional video production equipment, sales of Cinema EOS-series cameras, including the new EOS R5 C, as well as professional video cameras and broadcast lenses, were strong. These factors resulted in total sales for the business unit of ¥803,480 million, a year-on-year increase of 22.9%, while income before income taxes increased by 63.2% year-on-year to ¥128,033 million mainly as a result of improved profitability due to an enhanced product mix.

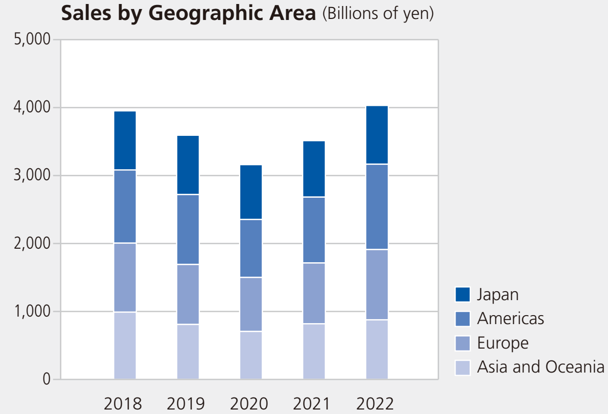
As for the Medical Business Unit, demand in Japan declined this year due to a drop-off after an uptick from government spending, which concluded in 2021, and delays of installation work at medical institutions overseas. However, demand of large systems such as Computed tomography (CT) systems and Magnetic resonance imaging (MRI) systems which was restricted due to the COVID-19 pandemic recovered overseas, mainly in Europe and the United States. Canon achieved steady sales by addressing the tight supply of components against a backdrop of record-high orders. Sales of diagnostic ultrasound systems were also strong. These factors resulted in total sales for the business unit of ¥513,331 million, a year-on-year increase of 6.9%, the highest recorded sales in the history of the business unit. Income before income taxes decreased by 7.0% year-on-year to ¥31,895 million due to an increase in other income (deductions) accompanying a corporate acquisition transaction occurred in the prior year.

As for the Industrial Business Unit, regarding semiconductor lithography equipment, unit sales increased compared with the previous year as a result of maximizing production capacity amid strong sales for a wide range of products such as power devices and sensors. For FPD lithography equipment, performance remained high despite a decrease in unit sales compared with the previous year when the business unit caught up with the delayed equipment installation, although this was mitigated by the minimized impacts of both decreased demand from customers working from home amid the COVID-19 pandemic and the economic slowdown in the current year. For OLED display manufacturing equipment, sales decreased compared with the previous year as panel manufacturers reconsidered investment plans in response to diversifying OLED panel applications. These factors resulted in total sales for the business unit of ¥329,232 million, a year-on-year decrease of 2.5%, while income before income taxes totaled ¥59,213 million, a year-on-year increase of 30.7% following the increased unit sales of semiconductor lithography equipment.

Sales by Segment (Billions of yen)



Sales by Geographic Area (Billions of yen)



SALES BY SEGMENT

	Millions of yen				
	2022	change	2021	change	2020
Printing	**2,261,938**	**+16.7%**	1,938,847	+7.4%	1,804,427
Imaging	**803,480**	**+22.9%**	653,532	+20.7%	541,314
Medical	**513,331**	**+6.9%**	480,362	+10.2%	436,074
Industrial	**329,232**	**-2.5%**	337,721	+22.0%	276,806
Others and Corporate	**223,021**	**+19.5%**	186,593	+10.3%	169,140
Eliminations	**(99,588)**	**—**	(83,698)	—	(67,518)
Total	**4,031,414**	**+14.7%**	3,513,357	+11.2%	3,160,243

Note: Based on the realignment of Canon's internal management structure, from 2022, Canon has changed the name and structure of segments from Industrial and Others Business Unit and Corporate and eliminations to Industrial Business Unit, Others and Corporate and Eliminations. Sales by segment amounts for the years ended December 31, 2021 and 2020 also have been reclassified.

SALES BY GEOGRAPHIC AREA

	Millions of yen				
	2022	change	2021	change	2020
Japan	**864,808**	**+4.1%**	830,378	+3.0%	806,305
Americas	**1,255,405**	**+29.6%**	968,839	+13.7%	852,451
Europe	**1,034,008**	**+15.5%**	894,898	+12.5%	795,616
Asia and Oceania	**877,193**	**+7.1%**	819,242	+16.1%	705,871
Total	**4,031,414**	**+14.7%**	3,513,357	+11.2%	3,160,243

Note: This summary of net sales by geographic area is determined by the location where the product is shipped to the customers.

Sales by geographic area

Please refer to the table of sales by geographic area in Note 23 of the Notes to Consolidated Financial Statements.

In Japan, net sales increased by 4.1% from the previous year mainly owing to an increase in sales of RF-series interchangeable-lenses.

In the Americas, net sales increased by 29.6% from the previous year mainly owing to an increase in unit sales of office MFDs and depreciation of the yen.

In Europe, net sales increased by 15.5% from the previous year mainly owing to an increase in sales of RF-series interchangeable-lenses and depreciation of the yen.

In Asia and Oceania, net sales increased by 7.1% from the previous year mainly owing to an increase in unit sales of office MFDs and depreciation of the yen.

FOREIGN OPERATIONS AND FOREIGN CURRENCY TRANSACTIONS

Canon's marketing activities are performed by subsidiaries in various regions in local currencies, while the cost of sales is generally in yen. Given Canon's current operating structure, appreciation of the yen has a negative impact on net sales and the gross profit to net sales ratio. To reduce the financial risks from changes in foreign exchange rates, Canon utilizes derivative financial instruments, which consist principally of foreign currency exchange contracts.

The operating profit on foreign operation sales is usually lower than that from domestic operations because foreign operations consist mainly of marketing activities. Marketing activities are generally less profitable than production activities, which are mainly conducted by the Company and its domestic subsidiaries. Please refer to the table of geographic information in Note 23 of the Notes to Consolidated Financial Statements.

LIQUIDITY AND CAPITAL RESOURCES

Canon's basic policy for financial strategies is to maintain a sound financial position through consistent cash flow management, and the two basic principles of cash flow management are as follows:

- Canon strives to improve a highly profitable structure by further improving the profitability of existing businesses and accelerating the growth of new businesses.
- Canon strives to maintain financial soundness by keeping total capital investments for medium-term business expansion and growth within the range of depreciation and amortization expenses. However, Canon plans to actively engage in large-scale M&A for growth strategies, and also raises external funds as needed.

Raising Funds (Cash-In)

Canon is basically funded by net cash provided by operating activities. In procuring funds, Canon considers terms, currencies and methods in light of financial market conditions, and selects the most appropriate instrument from a variety of options.

Use of Funds (Cash-Out)
The principal use of cash is determined in accordance with the following priorities.

- Investment for growth such as capital investment, R&D, M&A, etc.:
  Canon values M&A as an option for early development and expansion of new businesses. The selection of investment targets is based on the growth potential and size of the market, and on the market being highly compatible with the Canon's business domains and technologies.
- Return to shareholders:
  Canon returns profits to shareholders stably and aggressively, mainly in the form of a dividend, taking into consideration medium- to long-term business prospects, planned future investments, cash flow and other factors.
- Repayment of borrowings:
  Canon has been repaying borrowings steadily to have sufficient financial strength, following investment for growth and return to shareholders.

Cash and cash equivalents decreased by ¥39,294 million to ¥362,101 million in fiscal 2022 compared to the previous year. Canon's cash and cash equivalents are primarily denominated in Japanese yen and in U.S. dollars, with the remainder denominated in other currencies.

Net cash provided by operating activities decreased by ¥188,425 million to ¥262,603 million in fiscal 2022 compared to the previous year as a result of higher inventory levels of key devices and main products, and an increase in required working capital. The major component of Canon's cash inflow is cash received from customers, and the major components of Canon's cash outflow are payments for parts and materials, selling, general and administrative expenses, R&D expenses and income taxes.

For fiscal 2022, cash inflow from cash received from customers decreased due to increase of trade receivable by sales improvement. There were no significant changes in Canon's collection rates. Cash outflow for payments for parts and materials increased due to an increase of inventory, especially key devices and main products, compared with the inventory in fiscal 2021. Cash outflow for payments for income taxes increased due to an increase in taxable income.

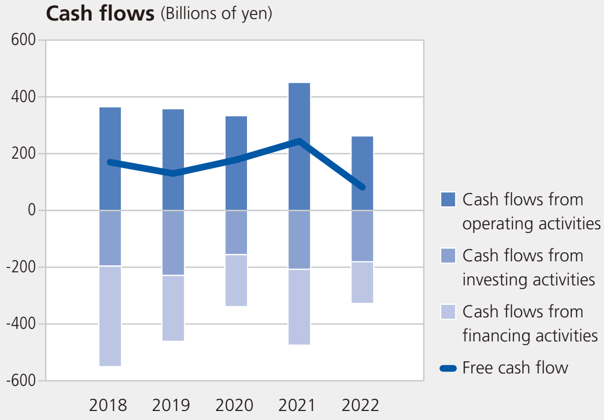
Net cash used in investing activities decreased by ¥26,436 million to ¥180,820 million in fiscal 2022 mainly due to a decrease in acquisitions of business and the increased sales of fixed assets resulting from optimization of branch office capacity at overseas sales subsidiaries, while capital investment to improve efficiency and productivity remained consistent and purchases of securities increased. Purchases of fixed assets increased by ¥11,177 million to ¥188,527 million in fiscal 2022 and purchases of securities increased by ¥19,396 million to ¥21,558 million in fiscal 2022.

Canon defines "free cash flow" as cash flows from operating activities less cash flows from investing activities. For fiscal 2022, free cash flow decreased by ¥161,989 million to ¥81,783 million as compared with ¥243,772 million for fiscal 2021.

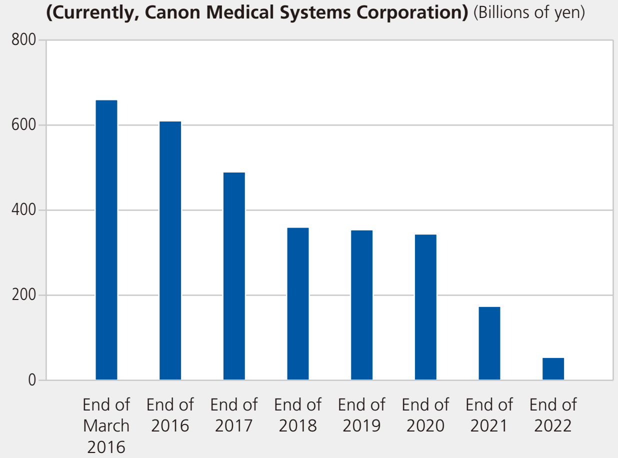
Note: "Free cash flow" is a non-GAAP measure. Refer to the "Non-GAAP Financial Measures" section for the explanation and the reconciliation to the reported GAAP measure.

Canon's management places importance on cash flow management and frequently monitors this indicator. Furthermore, Canon's management believes that this indicator is significant in understanding Canon's current liquidity and the alternatives of use in financing activities because it takes into consideration its operating and investing activities and believes that such indicator is beneficial to investors. Canon refers to this indicator together with relevant U.S. GAAP financial measures shown in its consolidated statements of cash flows and consolidated balance sheets for cash availability analysis.

Cash flows (Billions of yen)



Outstanding balances of loans for the acquisition of Toshiba Medical Systems Corporation
(Currently, Canon Medical Systems Corporation) (Billions of yen)



Net cash used in financing activities totaled ¥146,844 million in fiscal 2022, mainly due to a decrease of long-term loans by ¥120,000 million as a result of the repayment of loans which was provided for the acquisition of Toshiba Medical Systems Corporation (currently, Canon Medical Systems Corporation) and the dividend payout of ¥119,326 million. The Company paid dividends in fiscal 2022 of ¥115.00 per share.

To the extent Canon relies on external funding for its liquidity and capital requirements, it generally has access to various funding sources, including the issuance of additional share capital, issuance of corporate bond or loans. While Canon has been able to obtain funding from its traditional financing sources and from the capital markets, and believes it will continue to be able to do so in the future, there can be no assurance that adverse economic or other conditions will not affect Canon's liquidity or long-term funding in the future.

Canon's long-term debt mainly consists of bank borrowings and finance lease obligations.

In order to facilitate access to global capital markets, Canon obtains a credit rating from S&P Global Ratings ("S&P"). In addition, Canon maintains a rating from Rating and Investment Information, Inc. ("R&I"), a rating agency in Japan, for access to the Japanese capital market.

As of February 28, 2023, Canon's debt ratings are: S&P: A (long-term), A-1 (short-term); and R&I: AA (long-term). Canon does not have any rating downgrade triggers that would accelerate the maturity of a material amount of its debt. A downgrade in Canon's credit ratings or outlook could, however, increase the cost of its borrowings.

As part of its ongoing business, Canon does not participate in transactions that create relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Canon provides guarantees for its employees, affiliates and other companies. The guarantees for the employees are principally made for their housing loans. The guarantees for affiliates and other companies are made for their lease obligations and bank loans to ensure that those companies operate with less financial risk.

Canon would have to perform under a guarantee if the borrower defaults on a payment within the contract terms. The contract terms are 1 year to 12 years in case of employees with housing loans, and 1 year to 6 years in case of affiliates and other companies with lease obligations and bank loans. The maximum amount of undiscounted payments Canon would have had to make in the event of default is ¥1,535 million at December 31, 2022. The carrying amounts of the liabilities recognized for Canon's obligations as a guarantor under those guarantees at December 31, 2022 were not significant.

CONTRACTUAL OBLIGATIONS AND COMMERCIAL COMMITMENTS

The following table summarizes Canon's contractual obligations at December 31, 2022.

		Payments due by period			
Millions of yen	**Total**	Less than 1 year	1-3 years	3-5 years	More than 5 years
Contractual obiligations:					
Long-term debt:					
Loan from the banks	**54,000**	54,000	—	—	—
Other debt	**3,589**	1,172	1,414	756	247
Operating lease obligations	**123,609**	35,535	46,776	23,349	17,949
Purchase commitments for:					
Property, plant and equipment	**101,351**	101,351	—	—	—
Parts and raw materials	**287,591**	287,591	—	—	—
Other long-term liabilities:					
Contribution to defined benefit pension plans	**34,658**	34,658	—	—	—
Total	**604,798**	514,307	48,190	24,105	18,196

Note: See Note 9, 11, 19 and 20 in the Notes to Consolidated Financial Statements for further details. The table does not include provisions for uncertain tax positions and related accrued interest and penalties, as the specific timing of future payments related to these obligations cannot be projected with reasonable certainty. See Note 12, Income Taxes in the Notes to Consolidated Financial Statements for further details.

Canon provides warranties of generally less than one year against defects in materials and workmanship on most of its consumer products. Estimated product warranty related costs are recorded at the time revenue is recognized and are included in selling, general and administrative expenses. Estimates for accrued product warranty costs are primarily based on historical experience, and are affected by ongoing product failure rates, specific product class failures outside of the baseline experience, material usage and service delivery costs incurred in correcting a product failure. As of December 31, 2022 accrued product warranty costs are included in accrued expenses and amounted to ¥20,887 million.

Canon's management believes that current financial resources, cash generated from operations and Canon's potential capacity for additional debt and/or equity financing will be sufficient to fund current and future capital requirements.

Canon's management policy in recent periods to optimize inventory levels is intended to maintain an appropriate balance among relevant imperatives, including minimizing working capital requirement, avoiding undue exposure to the risk of inventory obsolescence, and maintaining the ability to sustain sales despite the occurrence of unexpected disasters.

Canon's total inventory turnover measured in days were 69, 66, and 60 days at the end of the fiscal years 2022, 2021, and 2020, respectively. The inventory turnover in 2022 increased due to an increase in inventories of products in process at plants and in transit to dealers, in order to focus on securing electronic parts, raw materials and important parts amid a shortage of semiconductor components and international logistics disruption.

Canon is committed to cash flow management in order to strengthen its financial base. While actively investing to expand its business performance, Canon is also ensuring stable free cash flow by keeping total capital investments within the range of depreciation and amortization.

Increase in property, plant and equipment on an accrual basis in 2022 amounted to ¥156,593 million compared with ¥151,914 million in 2021 and ¥132,302 million in 2020. For 2023, Canon projects its increase in property, plant and equipment will be approximately ¥210,000 million.

Employer contributions to Canon's worldwide defined benefit pension plans were ¥31,705 million in 2022, ¥43,782 million in 2021 and ¥26,965 million in 2020. Employer contributions to Canon's worldwide defined contribution pension plans were ¥24,346 million in 2022, ¥22,660 million in 2021, and ¥16,334 million in 2020. In addition, employer contributions to the multiemployer pension plan of certain subsidiaries were ¥4,720 million in 2022, ¥4,822 million in 2021 and ¥ ¥4,224 million in 2020.

Working capital in 2022 decreased by ¥26,951 million to ¥790,561 million, compared with ¥817,512 million in 2021 and ¥462,954 million in 2020. The decrease was primarily due to an increase in short-term loans (including the current portion of long-term debt). Canon believes its working capital will be sufficient for its requirements for the foreseeable future. Canon's capital requirements are primarily dependent on management's business plans regarding the levels and timing of purchases of fixed assets and investments. The working capital ratio (ratio of current assets to current liabilities) for 2022 was 1.58 compared to 1.77 for 2021 and to 1.35 for 2020.

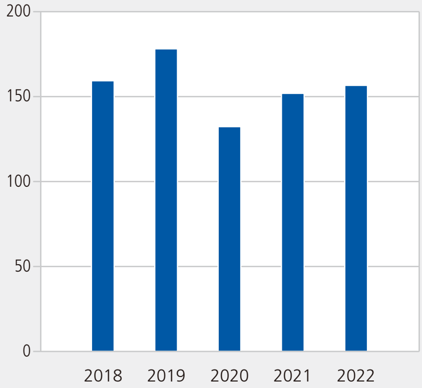
Return on assets (net income attributable to Canon Inc. divided by the average of total assets) was 5.0% in 2022, compared to 4.6% in 2021 and 1.8% in 2020. It improved from the previous fiscal year due to an increase in net income as a result of improved business performance.

Return on Canon Inc. shareholders' equity (net income attributable to Canon Inc. divided by the average of total Canon Inc. shareholders' equity) was 8.1% in 2022 compared with 7.9% in 2021 and 3.2% in 2020. It improved from the previous fiscal year due to a significant increase in net income, although shareholders' equity increased due to an increase in retained earnings resulting from an increase in profit and an increase in foreign currency translation adjustments resulting from the depreciation of the yen.

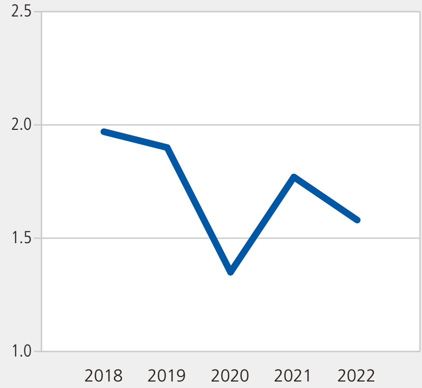
In Phase VI, one of Canon's management policies is to thoroughly implement cash flow management, and Canon is restrengthening its financial base.

In fiscal 2022, loans decreased by ¥120,000 million due to the repayment of loans which was provided for the

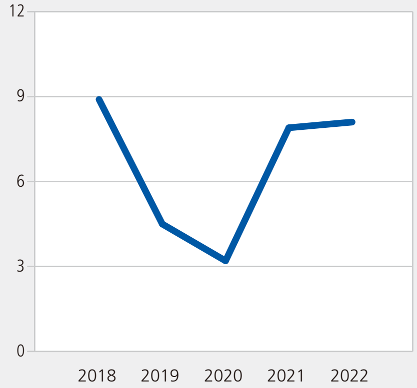
Increase in Property, Plant and Equipment (Billions of yen)



Working Capital Ratio (%)



Return on Canon Inc. Shareholders' Equity (%)



acquisition of Toshiba Medical Systems Corporation (currently, Canon Medical Systems Corporation). On the other hand, short-term loans were increased in response to the increase in required working capital. As a result, **the debt to total assets ratios** were 8.2%, 6.8% and 10.9% as of December 31, 2022, 2021 and 2020, respectively. Canon had short-term loans, current operating lease liabilities, long-term debt, and noncurrent operating lease liabilities of ¥417,413 million, ¥320,971 million, ¥506,172 million as of December 31, 2022, 2021, and 2020, respectively.

Canon Inc. shareholders' equity to total assets ratios were 61.1%, 60.5% and 55.7% as of December 31, 2022, 2021 and 2020, respectively. Canon maintains strong financial base by increase in shareholders' equity through an increase in retained earnings resulting from net income attributable to Canon, and an increase in accumulated other comprehensive income due to the depreciation of the yen.

Non-GAAP Financial Measures

Canon has reported its financial results in accordance with U.S. GAAP. In addition, Canon has discussed its results using the combination of two GAAP cash flow measures, Net cash provided by operating activities and Net cash used for investing activities, which Canon refers to as "Free Cash Flow" which is a non-GAAP measure. Canon believes this measure is beneficial to an investor's understanding of its current liquidity and the alternatives of uses of financing activities because it takes into consideration its operating and investing activities.

A reconciliation of this non-GAAP financial measure and the most directly comparable measure calculated and presented in accordance with GAAP is set forth on the following table.

FREE CASH FLOW

	Millions of yen	
	2022	2021
Net cash provided by operating activities	**262,603**	451,028
Net cash used in investing activities	**(180,820)**	(207,256)
Free cash flow	**81,783**	243,772

RESEARCH AND DEVELOPMENT, PATENTS AND LICENSES

Since its founding, Canon has diversified its business and increased its competitiveness by developing and diversifying core competence management that comprises various core competence technologies ("core technologies") to create industry-leading core products, fundamental technologies that form the basis of technology accumulation and basic technologies for value which are technology and expertise that support the Canon brand accumulated during the Company's growth and the basis of commercialization technology.

Canon's key R&D strategies are as follows:

- Reinforce fundamental technologies and value creation technologies
- Create future businesses based on strong core technologies and fundamental technologies
- Enhance innovation-type R&D in response to the demands of the current age

Canon strives to implement the above R&D strategies as follows:

- ***Reinforce fundamental technologies and value creation technologies:***
  Contribute to higher efficiency of existing businesses by further evolving value creation technologies. Alongside this, extract the essence of a wide range of core technologies possessed by existing businesses, deepen fundamental technologies and inject them into core technologies of new businesses. In doing so, Canon will further strengthen the competitiveness of existing businesses and growing new businesses.

- ***Create future businesses based on strong core technologies and fundamental technologies:***
  Promote development of new business areas through technology diversification. For example, Canon will develop devices that utilize materials technology –the foundation of ink and toner materials– as well as materials with unique properties, and work on development of next-generation technologies that lead to business creation.

• ***Enhance innovation-type R&D in response to the demands of the current age:***
Build upon trends such as DX and carbon neutrality, promote R&D that leads to corporate value improvement. In particular, focus on cyber-physical systems that closely integrate cyberspace, which enables the combination of various services, with physical (real world) space, the point of contact with people. Create various innovations by developing cyber-physical business models and products that stay one step ahead through developing advanced cyber technology with utilizing world-class core technologies in the physical field and business alliances.

R&D expenses were ¥306,730 million in fiscal 2022 and ¥287,338 million in fiscal 2021. The R&D expenses to net sales ratios were 7.6% in fiscal 2022 and 8.2% in fiscal 2021.

Canon believes that new products protected by a robust patent portfolio will not easily allow competitors to surpass them, and will give the Company an advantage in establishing standards in the market and industry.

Canon obtained the fifth greatest number of patents in the United States in 2022, according to the annual ranking list, released by IFI CLAIMS® Patent Services.

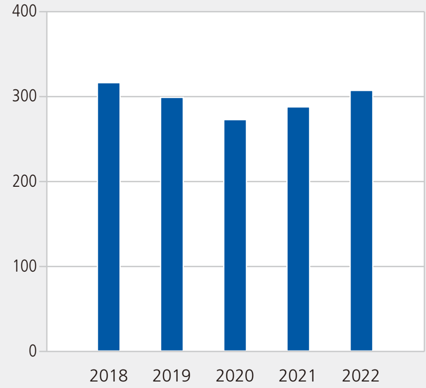
MARKET RISK EXPOSURES

Canon is exposed to market risks, including changes in foreign currency exchange rates, interest rates and prices of marketable securities and investments. In order to hedge the risk of changes in foreign currency exchange rates, Canon uses derivative financial instruments.

Equity price risk

Canon holds marketable securities included in current assets, which consist generally of highly-liquid and low-risk instruments. Investments included in noncurrent assets are held as long-term investments. Canon does not hold marketable securities and investments for trading purposes.

R&D Expenses (Billions of yen)



Maturities and fair values of such marketable securities and investments with original maturities of more than three months were as follows at December 31, 2022.

	Millions of yen
	Fair value
Fund trusts and others	638
Equity securities	21,770
	22,408

Foreign currency exchange rate and interest rate risk

Canon operates internationally, exposing it to the risk of changes in foreign currency exchange rates. Derivative financial instruments are comprised principally of foreign currency exchange contracts utilized by the Company and certain of its subsidiaries to reduce the risk. Canon assesses foreign currency exchange rate risk by continually monitoring changes in the exposures and by evaluating hedging opportunities. Canon does not hold or issue derivative financial instruments for trading purposes. Canon is also exposed to credit-related losses in the event of non-performance by counterparties to derivative financial instruments, but it is not expected that any counterparties will fail to meet their obligations. Most of the counterparties are internationally recognized financial institutions and selected by Canon taking into account their financial condition, and contracts are diversified across a number of major financial institutions.

Canon's international operations expose Canon to the risk of changes in foreign currency exchange rates. Canon uses foreign exchange contracts to manage certain foreign currency exchange exposures principally from the exchange of U.S. dollars and euros into Japanese yen. These contracts are primarily used to hedge the foreign currency exposure of forecasted intercompany sales and intercompany trade receivables which are denominated in foreign currencies. In accordance with Canon's policy, a specific portion of foreign currency exposure resulting from forecasted intercompany sales are hedged using foreign exchange contracts which principally mature within three months.

The following table provides information about Canon's major derivative financial instruments related to foreign currency exchange transactions existing as of December 31, 2022. All of the foreign exchange contracts described in the following table have a contractual maturity date in 2023.

Millions of yen	U.S.$	Euro	Others	Total
Forwards to sell foreign currencies:				
Contract amounts	57,098	74,266	17,716	149,080
Estimated fair value	754	856	483	2,093
Forwards to buy foreign currencies:				
Contract amounts	17,155	1,070	7,999	26,224
Estimated fair value	(315)	(9)	(316)	(640)

Canon expects that fair value changes and cash flows resulting from reasonable near-term changes in interest rates will be immaterial. Accordingly, Canon believes interest rate risk is insignificant. See also Note 9 of the Notes to Consolidated Financial Statements.

Changes in the fair value of derivative financial instruments designated as cash flow hedges, including foreign exchange contracts associated with forecasted intercompany sales, are reported in accumulated other comprehensive income (loss). These amounts are subsequently reclassified into earnings in the same period as the hedged items affect earnings. All amounts recorded in accumulated other comprehensive income (loss) as of December 31, 2022 are expected to be recognized in net sales over the next twelve months. Changes in the fair value of a foreign exchange contract for the period between the date that the forecasted intercompany sales occur and its maturity date are recognized in earnings.

Canon has entered into certain foreign currency exchange contracts to manage its foreign currency exposures. These foreign currency exchange contracts have not been designated as hedges. Accordingly, the changes in fair values of these contracts are recorded in earnings immediately.

LOOKING FORWARD

Under the corporate philosophy of kyosei—living and working together for the common good—Canon's basic management policy is to contribute to the prosperity and well-being of the world while endeavoring to become a truly excellent global corporation targeting continued growth and development.

Based on this basic management policy, Canon launched the Excellent Global Corporation Plan in 1996 and, from Phase I to Phase V, has worked to strengthen its management base and improve corporate value. Under Phase V of the "Excellent Global Corporation Plan," which covered the years from 2016 to 2020, the four new businesses to serve as Canon's new growth drivers, namely, Commercial Printing, Network Cameras, Medical, and Industrial Equipment fully emerged and the basic framework for promoting transformation of the business portfolio was completed. Then in 2021, the initial year of Phase VI of the Excellent Global Corporation Plan, Canon sought to further facilitate the transformation of its business portfolio by reorganizing its product-oriented business divisions into industry-oriented business groups, thereby establishing a framework for enhancing business competitiveness and creating new drivers of growth.

In 2021 and 2022, the business environment remained challenging due to the spread of COVID-19, supply chain disruptions caused by the tight supply of components and pressures on distribution, the conflict between Russia and Ukraine, lockdowns in Shanghai, and accelerating inflation worldwide. However, by harnessing the efforts of the entire Canon Group, including procurement and logistics operations, and backed by strong product competitiveness in each of its businesses, Canon achieved sales and profit growth for the second consecutive year.

Although it is likely that Canon will continue to operate under a volatile economic environment this year as well, Canon will seek to achieve greater performance while leveraging the collective strength of its development, procurement, production, and sales. In so doing, Canon will accordingly focus on the following measures under the basic policy of Phase VI of striving to "accelerate its corporate portfolio transformation by improving productivity and creating new businesses."

1. Further strengthen competitiveness of industry-oriented business groups

Canon will strengthen and expand its four industry-oriented business groups to promote business portfolio transformation.

(1) Printing Group

Even though companies have been shifting to paperless documents due to a greater dispersion of workplaces caused by the COVID-19 pandemic, as well as due to advances in digital transformation (DX), Canon is likely to see solid demand for printing devices given that paper remains an instrumental means of work-related conceptualization and information sharing.

In order to support hybrid work styles that combine office- and tele-work, there is a need to provide a print environment that is free from restrictions on where to work by utilizing the cloud. Leveraging the advantage of having two digital printing technologies, namely electrophotography and inkjet, the Canon Group will offer new solutions for the DX era in both office and home printing.

Furthermore, in the field of digital commercial printing of catalogs, posters and other material, which is poised for growth amid a shift from analog to digital, Canon is expanding sales of printing presses, recognized for their image quality and productivity, which have been further enhanced by incorporating feedback from printing companies, its customers. Furthermore, in the field of industrial printing, which includes labels and packaging, Canon plans to fully enter the market by developing new products while taking advantage of the wealth of technology, knowledge and customer relationships held by Edale Limited, a UK-based company that Canon acquired in 2022.

(2) Imaging Group

Although the overall market for digital cameras has shrunk significantly due to widespread use of smartphones, Canon expects demand to remain solid as current users of interchangeable-lens cameras are mainly professionals and enthusiasts who seek high-quality images. To address the needs of these users, Canon will continuously introduce cameras, from entry-class to professional level models that offer enhanced features as well as interchangeable lenses. In doing so, Canon, as a leading camera company, seeks to stimulate the market. Canon is currently expanding its lineup of mirrorless cameras with its sights set on establishing its position as No. 1 in that field.

In the network camera field, where surveillance applications are likely to keep driving growth due to escalating needs for safety and security, Canon also anticipates substantial growth accompanying an expanding range of applications for such cameras in areas other than surveillance. For instance, this is likely to include applications with respect to facilitating in-store marketing, implementing production control at manufacturing sites, and helping people avoid crowds and contact in places where individuals gather. Canon seeks to achieve market-exceeding growth by offering an abundant lineup of camera bodies and solutions with providing total services encompassing everything from video input to video management and analytics, cooperating with Canon Group companies such as Axis, Milestone Systems, BriefCam, and Arcules.

Canon will take steps to create new businesses by coming up with applications for optical-related technologies involving lenses, sensors, and image processing, cultivated by the Company thus far.

(3) Medical Group

Canon aims to contribute to medical treatment worldwide not only through diagnostic imaging systems, but also by broadening its business sphere, to include healthcare IT and in-vitro diagnostics.

Canon is Japan’s leading manufacturer of diagnostic imaging systems and accordingly deem it necessary to establish a similar presence overseas in order to achieve growth going forward. First, to become the No. 1 company worldwide in CT systems, Canon aims to achieve early commercialization of the next-generation of CT scanners that utilize photon-counting technology. To such ends, Canon developed an X-ray CT system equipped with a photon-counting detector that uses the technology of Canada-based Redlen Technologies, which Canon acquired two years ago. Having installed it at the National Cancer Center of Japan, Canon is accelerating the development of this system. Furthermore, with the aim of achieving a market share of over 10% in the United States, which is highly influential market worldwide, Canon established a new company in January 2023 in the suburbs of Cleveland to focus on marketing. As such, Canon will work to achieve substantial growth in part by increasing its presence as Canon engages in joint research with U.S. medical institutions and promotes stronger relationships with medical practitioners who serve as key opinion leaders. Moreover, to achieve high growth, Canon will spread the benefits to markets not only in the United States, but also to markets worldwide.

In the healthcare IT field, Canon supports the provision of high-quality diagnoses and efficient medical treatment by making it possible to integrate, process, and analyze data collected in clinical settings. Furthermore, in the in-vitro diagnostics field, Canon will expand its business domain to include testing reagents and other areas around testing equipment.

(4) Industrial Group

As applications for semiconductors and displays continue to expand, prompted by innovation particularly with respect to AI, IoT, 5G, and other technologies, Canon anticipates continuing market growth and subsequently expect demand for manufacturing equipment to rise.
As for semiconductor lithography equipment, with its sights set on addressing growing demand, Canon aims to increase its market share by further enhancing product competitiveness and bolstering production capacity. Unlike conventional lithography technology that uses light to expose circuit patterns, the nanoimprint lithography manufacturing equipment being developed by Canon enlists a simple process of stamping a circuit pattern from a mold imprinted with such patterns. Nanoimprint lithography

enables semiconductor manufacturers to reduce costs significantly because it eliminates the necessity of complex processes for etching minute circuit patterns. It also helps to reduce impact on the global environment as it consumes significantly less power given that it does not require powerful lasers and it does not need large vacuum systems or cooling systems.

In the panel market, IT panels used in PCs and tablets are likely to drive growth going forward. As such, Canon will continue to provide FPD lithography equipment and OLED display manufacturing equipment that help panel manufacturers, its customers, boost productivity.

Furthermore, Canon aims to expand the industrial business domain by developing new equipment that integrates core technologies of the group in the areas of ultra-precision positioning, ultra-precision processing and vacuum systems.

2. Rebuild the global production system

Canon has been expanding its manufacturing facilities throughout Asia since the 1970s, but is now reviewing and reorganizing such production sites against the backdrop of supply chain interruptions and geopolitical risks. In its return to domestic production, which has been promoted up until now, Canon has taken a two-pronged approach of shifting to automation and in-house production, effectively achieving thorough cost reduction by integrating design, production technology, and manufacturing sites, thereby gaining competitive edge with respect to costs that is unmatched by overseas production.

3. Strengthen product development based on proprietary technologies

Whereas Canon has been turning to M&A initiatives as a means of developing new businesses in recent years, Canon seeks to create new businesses going forward by further reinforcing product development centered on proprietary technologies. Under its framework of business groups largely reorganized by industry, Canon has been working on developing new products and solutions by combining respective technologies in a manner that gives rise to a sort of chemical reaction. In addition, the Frontier Business Promotion Headquarters has been bringing together Canon's technologies from across the Canon Group with the aim to create new businesses in the fields of life science, materials, and solutions.

In order to achieve these goals, it is important to develop the technology experts who are responsible for product development, and Canon will promote this through a system to certify world-class engineers as "Top Scientists" who lead the development of cutting-edge technologies, and a system to train software engineers by reskilling employees.

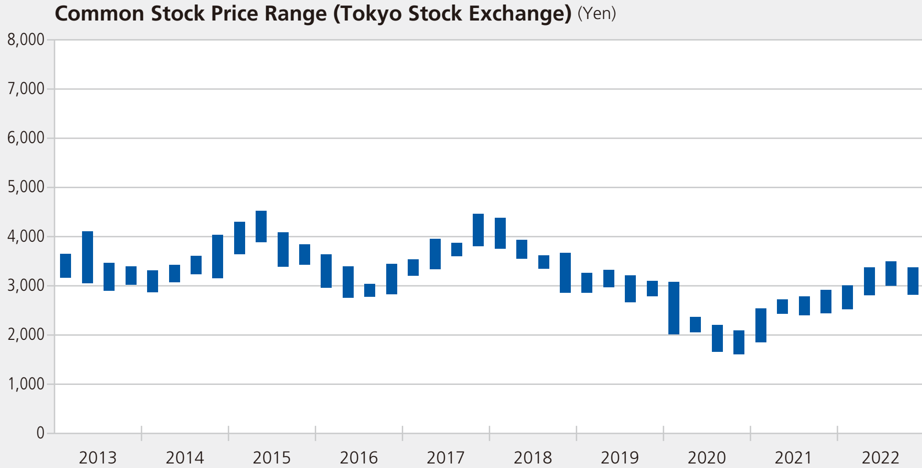
Forward looking statements

The foregoing discussion and other disclosure in this report contains forward-looking statements that reflect management's current views with respect to certain future events and financial performance. Actual results may differ materially from those projected or implied in the forward-looking statements. Further, certain forward-looking statements are based upon assumptions of future events that may not prove to be accurate. The following important factors could cause actual results to differ materially from those projected or implied in any forward-looking statements: foreign currency exchange rate fluctuations; the uncertainty of Canon's ability to implement its plans to localize production and other measures to reduce the impact of foreign currency exchange rate fluctuations; uncertainty as to economic conditions in Canon's major markets; uncertainty of continued demand for Canon's high-value-added products; Canon's ability to continue to develop products and to market products that incorporate new technology on a timely basis, are competitively priced, and achieve market acceptance; the possibility of losses resulting from foreign currency transactions designed to reduce financial risks from changes in foreign currency exchange rates; and inventory risk due to shifts in market demand; further resurgences of COVID-19 or emergence of other types of infectious disease; uncertainty in the global economic environment, including supply chain disruptions and rising inflation; and geopolitical events such as the unfolding situation in Ukraine. A detailed description of these and other risk factors is included in our annual report on Form 20-F, which is on file with the United States Securities and Exchange Commission.

TEN-YEAR FINANCIAL SUMMARY

	Millions of yen (except per share amounts)			
	2022	2021	2020	2019
Net sales:				
Domestic	**864,808**	830,378	806,305	872,534
Overseas	**3,166,606**	2,682,979	2,353,938	2,720,765
Total	**4,031,414**	3,513,357	3,160,243	3,593,299
Percentage of previous year	**114.7%**	111.2%	87.9%	90.9%
Net income attributable to Canon Inc.	**243,961**	214,718	83,318	124,964
Percentage of sales	**6.1%**	6.1%	2.6%	3.5%
Advertising	**45,986**	36,812	31,273	46,665
Research and development expenses	**306,730**	287,338	272,312	298,503
Depreciation and amortization	**226,492**	221,246	227,825	237,327
Capital expenditure	**183,291**	179,000	161,727	211,228
Long-term debt, excluding current installments	**2,417**	179,750	4,834	357,340
Canon Inc. shareholders' equity	**3,113,105**	2,873,773	2,575,031	2,685,496
Total assets	**5,095,530**	4,750,888	4,625,614	4,771,918
Per share data:				
Net income attributable to Canon Inc. shareholders per share:				
Basic	**236.71**	205.35	79.37	116.79
Diluted	**236.63**	205.29	79.35	116.77
Dividend per share	**120.00**	100.00	80.00	160.00
Stock price:				
High	**3,516**	2,938	3,099	3,338
Low	**2,539**	1,876	1,627	2,688
Average number of common shares in thousands	**1,030,644**	1,045,633	1,049,802	1,069,957
Number of employees	**180,775**	184,034	181,897	187,041

Common Stock Price Range (Tokyo Stock Exchange) (Yen)



2018	2017	2016	2015	2014	2013	Thousands of U.S. dollars (except per share amounts) 2022
869,577	884,828	706,979	714,280	724,317	715,863	**$ 6,502,316**
3,082,360	3,195,187	2,694,508	3,085,991	3,002,935	3,015,517	**23,809,067**
3,951,937	4,080,015	3,401,487	3,800,271	3,727,252	3,731,380	**30,311,383**
96.9%	119.9%	89.5%	102.0%	99.9%	107.2%	**114.7%**
252,441	242,081	150,334	219,943	254,627	229,829	**1,834,293**
6.4%	5.9%	4.4%	5.8%	6.8%	6.2%	**6.1%**
58,729	61,207	58,707	80,907	79,765	86,398	**345,759**
315,842	333,371	306,537	332,678	311,896	307,500	**2,306,241**
251,554	261,881	250,096	273,327	263,480	275,173	**1,702,947**
200,504	181,389	208,379	243,130	224,760	227,478	**1,378,128**
361,962	493,238	611,289	881	1,148	1,448	**$ 18,173**
2,820,644	2,863,986	2,776,327	2,959,929	2,971,963	2,904,212	**23,406,805**
4,902,955	5,201,626	5,142,279	4,431,720	4,464,854	4,246,796	**38,312,256**
233.80	223.03	137.66	201.41	228.88	200.21	**$ 1.78**
233.78	223.03	137.66	201.40	228.88	200.21	**1.78**
160.00	160.00	150.00	150.00	150.00	130.00	**0.90**
4,395	4,472	3,656	4,539	4,045	4,115	**26.32**
2,877	3,218	2,780	3,402	2,889	2,913	**19.40**
1,079,753	1,085,439	1,092,071	1,092,018	1,112,510	1,147,934	
195,056	197,776	197,673	189,571	191,889	194,151	

Notes: 1. U.S. dollar amounts are translated from yen at the rate of U.S.$1 = JPY133, the approximate exchange rate on the Tokyo Foreign Exchange Market as of December 30, 2022.
2. Depreciation and amortization and Capital expenditure are the total of tangible and intangible assets.

CONSOLIDATED BALANCE SHEETS

Canon Inc. and Subsidiaries
December 31, 2022 and 2021

	Millions of yen	
ASSETS	**2022**	2021
Current assets:		
Cash and cash equivalents (Notes 1 and 22)	**362,101**	401,395
Short-term investments (Notes 2 and 22)	**10,905**	3,377
Trade receivables (Note 3)	**636,803**	522,432
Inventories (Note 4)	**808,312**	650,568
Current lease receivables (Notes 1 and 6)	**137,038**	121,324
Prepaid expenses and other current assets (Notes 15, 18 and 22)	**215,990**	193,165
Allowance for credit losses (Notes 3 and 6)	**(15,235)**	(13,916)
Total current assets	**2,155,914**	1,878,345
Noncurrent receivables (Note 20)	**12,996**	16,388
Investments (Notes 2 and 22)	**65,128**	60,967
Property, plant and equipment, net (Note 5)	**1,035,065**	1,041,403
Operating lease right-of-use assets (Note 19)	**117,843**	95,791
Intangible assets, net (Notes 7 and 8)	**280,995**	301,793
Goodwill (Notes 7 and 8)	**972,626**	953,850
Noncurrent lease receivables (Notes 1 and 6)	**279,332**	225,300
Other assets (Notes 11 and 12)	**179,297**	179,420
Allowance for credit losses (Note 6)	**(3,666)**	(2,369)
Total assets	**5,095,530**	4,750,888

LIABILITIES AND EQUITY		
Current liabilities:		
Short-term loans and current portion of long-term debt (Notes 9 and 21)	**296,384**	44,891
Short-term loans related to financial services	**41,200**	42,300
Other short-term loans and current portion of long-term debt	**255,184**	2,591
Trade payables (Note 10)	**355,930**	338,604
Accrued income taxes (Note 12)	**48,414**	43,081
Accrued expenses (Notes 11 and 20)	**365,847**	323,929
Current operating lease liabilities (Note 19)	**33,281**	30,945
Other current liabilities (Notes 5, 15, 18 and 22)	**265,497**	279,383
Total current liabilities	**1,365,353**	1,060,833
Long-term debt, excluding current portion of long-term debt (Notes 9 and 21)	**2,417**	179,750
Accrued pension and severance cost (Note 11)	**189,215**	248,467
Noncurrent operating lease liabilities (Note 19)	**85,331**	65,385
Other noncurrent liabilities (Notes 12 and 15)	**104,184**	98,024
Total liabilities	**1,746,500**	1,652,459
Equity:		
Canon Inc. shareholders' equity:		
Common stock		
Authorized 3,000,000,000 shares; issued 1,333,763,464 shares in 2022 and 2021	**174,762**	174,762
Additional paid-in capital (Note 13)	**404,838**	403,119
Legal reserve (Note 13)	**64,509**	68,015
Retained earnings (Note 13)	**3,664,735**	3,538,037
Accumulated other comprehensive income (loss) (Note 14)	**62,623**	(151,794)
Treasury stock, at cost; 318,250,096 shares in 2022 and 287,991,705 shares in 2021	**(1,258,362)**	(1,158,366)
Total Canon Inc. shareholders' equity	**3,113,105**	2,873,773
Noncontrolling interests	**235,925**	224,656
Total equity	**3,349,030**	3,098,429
Total liabilities and equity	**5,095,530**	4,750,888

See accompanying Notes to Consolidated Financial Statements.

CONSOLIDATED STATEMENTS OF INCOME

Canon Inc. and Subsidiaries
Years ended December 31, 2022, 2021 and 2020

	Millions of yen		
	2022	2021	2020
Net sales (Notes 6,14,15 and 18)			
Products and Equipment	**3,231,837**	2,804,680	2,489,829
Services	**799,577**	708,677	670,414
	4,031,414	3,513,357	3,160,243
Cost of sales (Notes 5, 8, 11 and 19)			
Products and Equipment	**1,828,555**	1,552,766	1,463,637
Services	**375,057**	332,799	320,738
	2,203,612	1,885,565	1,784,375
Gross profit	**1,827,802**	1,627,792	1,375,868
Operating expenses (Notes 1, 5, 8, 11, 14, 16, 19 and 20):			
Selling, general and administrative expenses	**1,167,673**	1,058,536	993,009
Research and development expenses	**306,730**	287,338	272,312
	1,474,403	1,345,874	1,265,321
Operating profit	**353,399**	281,918	110,547
Other income (deductions):			
Interest and dividend income	**5,177**	2,232	2,923
Interest expense	**(1,046)**	(647)	(854)
Other, net (Notes 1, 2, 7, 11, 14 and 18)	**(5,090)**	19,203	17,664
	(959)	20,788	19,733
Income before income taxes	**352,440**	302,706	130,280
Income taxes (Note 12)	**92,356**	71,866	34,337
Consolidated net income	**260,084**	230,840	95,943
Less: Net income attributable to noncontrolling interests	**16,123**	16,122	12,625
Net income attributable to Canon Inc.	**243,961**	214,718	83,318

	Yen		
Net income attributable to Canon Inc. shareholders per share (Note 17):			
Basic	**236.71**	205.35	79.37
Diluted	**236.63**	205.29	79.35

See accompanying Notes to Consolidated Financial Statements.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Canon Inc. and Subsidiaries
Years ended December 31, 2022, 2021 and 2020

	Millions of yen		
	2022	2021	2020
Consolidated net income	**260,084**	230,840	95,943
Other comprehensive income (loss), net of tax (Note 14):			
Foreign currency translation adjustments	**186,563**	120,439	(17,354)
Net unrealized gains and losses on securities	**(34)**	—	—
Net gains and losses on derivative instruments	**449**	(972)	970
Pension liability adjustments	**29,897**	56,508	1,382
	216,875	175,975	(15,002)
Comprehensive income (loss)	**476,959**	406,815	80,941
Less: Comprehensive income attributable to noncontrolling interests	**18,581**	19,102	13,961
Comprehensive income (loss) attributable to Canon Inc.	**458,378**	387,713	66,980

See accompanying Notes to Consolidated Financial Statements.

CONSOLIDATED STATEMENTS OF EQUITY

Canon Inc. and Subsidiaries
Years ended December 31, 2022, 2021 and 2020

	Millions of yen									
	Common stock	Additional paid-in capital	Legal reserve	Other retained earnings	Total retained earnings	Accumulated other comprehensive income (loss)	Treasury stock	Total Canon Inc. shareholders' equity	Non-controlling interests	Total equity
Balance at December 31, 2019	174,762	405,017	67,572	3,455,083	3,522,655	(308,442)	(1,108,496)	2,685,496	198,484	2,883,980
Cumulative effects of accounting standard update—adoption of ASU No. 2016-13				(159)	(159)			(159)	—	(159)
Equity transactions with noncontrolling interests and other		(316)				(9)	(15)	(340)	1,091	751
Dividends to Canon Inc. shareholders (120.00 yen per share)				(126,938)	(126,938)			(126,938)		(126,938)
Dividends to noncontrolling interests									(4,526)	(4,526)
Transfers to legal reserve			1,864	(1,864)	—			—		—
Comprehensive income:										
Net income				83,318	83,318			83,318	12,625	95,943
Other comprehensive income (loss), net of tax (Note 14):										
Foreign currency translation adjustments						(17,355)		(17,355)	1	(17,354)
Net unrealized gains and losses on securities										
Net gains and losses on derivative instruments						987		987	(17)	970
Pension liability adjustments						30		30	1,352	1,382
Total comprehensive income (loss)								66,980	13,961	80,941
Repurchases and reissuance of treasury stock		(81)		(69)	(69)		(49,858)	(50,008)		(50,008)
Balance at December 31, 2020	174,762	404,620	69,436	3,409,371	3,478,807	(324,789)	(1,158,369)	2,575,031	209,010	2,784,041
Equity transactions with noncontrolling interests and other		(62)						(62)	1,725	1,663
Dividends to Canon Inc. shareholders (85.00 yen per share)				(88,891)	(88,891)			(88,891)		(88,891)
Dividends to noncontrolling interests									(5,181)	(5,181)
Transfers to legal reserve		(1,429)	(1,421)	2,850	1,429			—		—
Comprehensive income:										
Net income				214,718	214,718			214,718	16,122	230,840
Other comprehensive income (loss), net of tax (Note 14):										
Foreign currency translation adjustments						119,165		119,165	1,274	120,439
Net unrealized gains and losses on securities										
Net gains and losses on derivative instruments						(994)		(994)	22	(972)
Pension liability adjustments						54,824		54,824	1,684	56,508
Total comprehensive income (loss)								387,713	19,102	406,815
Repurchases and reissuance of treasury stock		(10)		(11)	(11)		3	(18)		(18)
Balance at December 31, 2021	174,762	403,119	68,015	3,538,037	3,606,052	(151,794)	(1,158,366)	2,873,773	224,656	3,098,429
Equity transactions with noncontrolling interests and other		**298**	**(4,538)**	**4,536**	**(2)**			**296**	**(1,151)**	**(855)**
Dividends to Canon Inc. shareholders (115.00 yen per share)				**(119,326)**	**(119,326)**			**(119,326)**		**(119,326)**
Dividends to noncontrolling interests									**(6,161)**	**(6,161)**
Transfers to legal reserve		**1,432**	**1,032**	**(2,464)**	**(1,432)**			**—**		**—**
Comprehensive income:										
Net income				**243,961**	**243,961**			**243,961**	**16,123**	**260,084**
Other comprehensive income (loss), net of tax (Note 14):										
Foreign currency translation adjustments						**185,768**		**185,768**	**795**	**186,563**
Net unrealized gains and losses on securities						**(34)**		**(34)**		**(34)**
Net gains and losses on derivative instruments						**466**		**466**	**(17)**	**449**
Pension liability adjustments						**28,217**		**28,217**	**1,680**	**29,897**
Total comprehensive income (loss)								**458,378**	**18,581**	**476,959**
Repurchases and reissuance of treasury stock		**(11)**		**(9)**	**(9)**		**(99,996)**	**(100,016)**		**(100,016)**
Balance at December 31, 2022	**174,762**	**404,838**	**64,509**	**3,664,735**	**3,729,244**	**62,623**	**(1,258,362)**	**3,113,105**	**235,925**	**3,349,030**

See accompanying Notes to Consolidated Financial Statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

Canon Inc. and Subsidiaries
Years ended December 31, 2022, 2021 and 2020

	Millions of yen		
	2022	2021	2020
Cash flows from operating activities:			
Consolidated net income	**260,084**	230,840	95,943
Adjustments to reconcile consolidated net income to net cash provided by operating activities:			
Depreciation and amortization	**226,492**	221,246	227,825
(Gain) loss on disposal of fixed assets	**(6,458)**	7,745	4,326
Deferred income taxes	**(7,800)**	(9,826)	(15,542)
(Increase) decrease in trade receivables	**(78,203)**	44,678	15,120
(Increase) decrease in inventories	**(108,510)**	(61,017)	16,075
(Increase) decrease in lease receivables (Notes 1 and 6)	**(30,379)**	(1,075)	10,230
Increase (decrease) in trade payables	**3,293**	52,138	(4,636)
Increase in accrued income taxes	**3,472**	24,017	43
Increase (decrease) in accrued expenses	**23,407**	(8,673)	(16,413)
Decrease in accrued pension and severance cost	**(42,580)**	(41,477)	(16,601)
Other, net	**19,785**	(7,568)	17,435
Net cash provided by operating activities	**262,603**	451,028	333,805
Cash flows from investing activities:			
Purchases of fixed assets (Note 5)	**(188,527)**	(177,350)	(164,719)
Proceeds from sale of fixed assets (Note 5)	**14,733**	3,796	7,815
Purchases of held-to-maturity securities	**—**	(2,216)	—
Proceeds from maturity of held to maturity securities	**2,151**	—	—
Purchases of securities	**(21,558)**	(2,162)	(592)
Proceeds from sale and maturity of securities	**7,680**	1,714	558
Acquisitions of businesses, net of cash acquired (Note 7)	**(5,890)**	(31,751)	(127)
Other, net	**10,591**	713	1,626
Net cash used in investing activities	**(180,820)**	(207,256)	(155,439)
Cash flows from financing activities:			
Proceeds from issuance of long-term debt (Note 9)	**300**	175,100	2,100
Repayments of long-term debt (Note 9)	**(122,067)**	(347,029)	(11,095)
(Decrease) increase in short-term loans related to financial services, net (Note 9)	**(1,100)**	(2,700)	5,100
Increase (decrease) in other short-term loans, net (Note 9)	**197,826**	(175)	542
Transaction with noncontrolling interests	**3,700**	1,527	1,376
Dividends paid	**(119,326)**	(88,891)	(126,938)
Repurchases and reissuance of treasury stock, net	**(100,016)**	(17)	(50,008)
Other, net	**(6,161)**	(5,181)	(4,526)
Net cash used in financing activities	**(146,844)**	(267,366)	(183,449)
Effect of exchange rate changes on cash and cash equivalents	**25,767**	17,305	(47)
Net change in cash and cash equivalents	**(39,294)**	(6,289)	(5,130)
Cash and cash equivalents at beginning of year	**401,395**	407,684	412,814
Cash and cash equivalents at end of year	**362,101**	401,395	407,684
Supplemental disclosure for cash flow information:			
Cash paid during the year for:			
Interest	**994**	599	1,028
Income taxes	**102,579**	71,573	45,471

See accompanying Notes to Consolidated Financial Statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Canon Inc. and Subsidiaries

1. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES

(a) Description of Business

Canon Inc. (the "Company") and its subsidiaries (collectively "Canon") is one of the world's leading manufacturers of office multi-function devices ("MFDs"), laser printers, inkjet printers, cameras, medical equipment and lithography equipment. Canon reports in four reportable segments: the Printing Business Unit, the Imaging Business Unit, the Medical Business Unit and the Industrial Business Unit with Others and Corporate. Products of the Printing Business Unit consist mainly of office MFDs, document solutions, laser multifunction printers ("MFPs"), laser printers, inkjet printers, image scanners, calculators, digital continuous feed presses, digital sheet-fed presses and large format printers. Products of the Imaging Business Unit consist mainly of interchangeable-lens digital cameras, interchangeable lenses, digital compact cameras, compact photo printers, MR systems, network cameras, video management software, video content analytics software, digital camcorders, digital cinema cameras, broadcast equipment and projectors. Products of the Medical Business Unit consist mainly of computed tomography ("CT") systems, diagnostic ultrasound systems, diagnostic X-ray systems, magnetic resonance imaging ("MRI") systems, clinical chemistry analyzers, digital radiography systems and ophthalmic equipment. Products of the Industrial Business Unit consist mainly of semiconductor lithography equipment, Flat Panel Display ("FPD") lithography equipment, Organic Light-Emitting Diode ("OLED") display manufacturing equipment, vacuum thin-film deposition equipment and die bonders. Others consist mainly of handy terminals and document scanners. Sales are made principally under the Canon brand name, almost entirely through sales subsidiaries. These subsidiaries are responsible for marketing and distribution, and primarily sell to retail dealers in their geographic areas. Further segment information is described in Note 23.

Canon sells laser printers on an OEM basis to HP Inc.; such sales constituted 12.0%, 11.6% and 11.4% of consolidated net sales for the years ended December 31, 2022, 2021 and 2020, respectively, and are included in the Printing Business Unit.

Canon's manufacturing operations are conducted primarily at 29 plants in Japan and 13 overseas plants which are located in countries and regions such as the United States, Germany, France, the Netherlands, Taiwan, China, Malaysia, Thailand, Vietnam and Philippines.

(b) Basis of Presentation

The Company and its domestic subsidiaries maintain their books of account in conformity with financial accounting standards of Japan. Foreign subsidiaries maintain their books of account in conformity with financial accounting standards of the countries of their domicile.

Certain adjustments and reclassifications have been incorporated in the accompanying consolidated financial statements to conform with U.S. generally accepted accounting principles ("U.S. GAAP"). These adjustments were not recorded in the statutory books of account.

Canon has changed the presentation of "Current lease receivables" separated from "Prepaid expenses and other current assets" and "Noncurrent lease receivables" separated from "Other assets" in the consolidated balance sheets from 2022. Consolidated balance sheet for the year ended December 31, 2021 has also been reclassified.

Canon has also reclassified certain items in the consolidated statements of cash flows for the year ended December 31, 2021 and 2020 to conform to the current year's presentation.

(c) Principles of Consolidation

The consolidated financial statements include the accounts of the Company, its majority owned subsidiaries and those variable interest entities where the Company or its consolidated subsidiaries are the primary beneficiaries. All intercompany balances and transactions have been eliminated.

(d) Use of Estimates

The preparation of the consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the period. Significant estimates and assumptions are reflected in valuation and disclosure of accounts including: revenue recognition, allowance for credit losses, inventories, long-lived assets, leases, goodwill and other intangible assets with indefinite useful lives, environmental liabilities, deferred tax assets, uncertain tax positions, employee retirement and severance benefit obligations and business combinations. Actual results could differ materially from those estimates. In addition, actual results and outcomes of the Company may differ from management's estimates and assumptions due to pandemic, geopolitical risk and economic slowdown including impacts of rising inflation.

(e) Translation of Foreign Currencies

Assets and liabilities of the Company's subsidiaries located outside Japan with functional currencies other than Japanese yen are translated into Japanese yen at the rates of exchange in effect at the balance sheet date. Income and expense items are translated at the average exchange rates prevailing during the year. Gains and losses resulting from translation of financial statements are excluded from earnings and are reported in other comprehensive income (loss).

Gains and losses resulting from foreign currency transactions and translation of assets and liabilities denominated in foreign currencies are included in other income (deductions) in the consolidated statements of income. Foreign currency exchange gains and losses were net losses of ¥34,772 million, ¥21,746 million and ¥4,451 million for the years ended December 31, 2022, 2021 and 2020, respectively.

(f) Cash Equivalents

All highly liquid investments acquired with original maturities of three months or less are considered to be cash equivalents. Certain debt securities with original maturities of less than three months, classified as available-for-sale debt securities of ¥627 million and ¥500 million at December 31, 2022 and 2021, respectively, are included in cash and cash equivalents in the consolidated balance sheets.

(g) Investments

Investments consist primarily of time deposits with original maturities of more than three months, debt and equity securities and investments in affiliated companies.

Canon classifies investments in debt securities as held-to-maturity debt securities and available-for-sale securities. Canon does not hold any trading securities which are bought and held primarily for the purpose of sale in the near term. Canon reports investments with maturities of less than one year as short-term investments.

Available-for-sale debt securities and equity securities with readily determinable fair value that are not accounted for under the equity method are recorded at fair value which is determined based on quoted market prices, projected discounted cash flows or other valuation techniques as appropriate. The changes in fair value for equity securities are included in other, net in the consolidated statements of income. The changes in fair value for available-for-sale debt securities are included in net unrealized gains and losses on securities in the consolidated statements of comprehensive income.

Held-to-maturity debt securities are recorded at amortized cost. The fair values of held-to-maturity debt securities are mainly measured at the quoted market price.

Available-for-sale debt securities are regularly reviewed for other-than-temporary declines in the carrying amount based on criteria that include the length of time and the extent to which the market value has been less than cost, the financial condition and near-term prospects of the issuer and Canon's intent and ability to retain the investment for a period of time sufficient to allow for any anticipated recovery in market value. For available-for-sale debt securities for which the declines are deemed to be other-than-temporary and there is no intent to sell, the impairment is separated into the amount related to credit loss, which is recognized in earnings and the amount related to all other factors is recognized in other comprehensive income (loss). For available-for-sale debt securities for which the declines are deemed to be other-than-temporary and there is an intent to sell, the impairment in its entirety is recognized in earnings. Canon recognizes an impairment loss to the extent the cost basis of the investment exceeds the fair value of the investment.

Canon measures non-marketable equity securities without readily determinable fair value at cost, minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for an identical or a similar investment of the same issuer.

Realized gains and losses are determined by the average cost method and reflected in earnings.

Investments in affiliated companies over which Canon has the ability to exercise significant influence, but does not hold a controlling financial interest, are accounted for by the equity method.

(h) Allowance for Credit Losses

Allowance for Credit Losses for trade and lease receivables is maintained for all customers based on ASC 326 "Financial Instruments – Credit Losses," based on historical experiences of credit losses and reasonable and supportable forecasts. An additional reserve for individual accounts is recorded when Canon becomes aware of a customer's inability to meet its financial obligations, such as in the case of bankruptcy filings. If circumstances related to customers change, estimates of the recoverability of receivables would be further adjusted. When all collection options are exhausted including legal recourse, the accounts or portions thereof are deemed to be uncollectable and charged against the allowance.

(i) Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is determined by the average method for domestic inventories and principally by the first-in, first-out method for overseas inventories.

(j) Impairment of Long-Lived Assets

Long-lived assets, such as property, plant and equipment, and acquired intangible assets subject to amortization, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of the asset and the estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of the asset exceeds its estimated sum of undiscounted future cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset. Assets to be disposed of by sale are reported at the lower of the carrying amount or fair value less costs to sell, and are no longer depreciated.

(k) Property, Plant and Equipment, net

Property, plant and equipment are stated at cost less accumulated depreciation. Depreciation is calculated principally by the declining-balance method, except for certain assets which are depreciated by the straight-line method over the estimated useful lives of the assets.

The depreciation period ranges from 3 years to 60 years for buildings and 1 year to 20 years for machinery and equipment.

Gains and losses from the sale of property, plant and equipment are included in selling, general and administrative expenses in the consolidated statements of income.

(l) Leases

As for lessor accounting, Canon provides leasing arrangements to its customers primarily for the sale of office products. Revenue from the sale of these products under sales-type leases is recognized at the inception of the lease. Interest income on sales-type leases and direct-financing leases is recognized over the life of each respective lease using the interest method. Leases not qualifying as sales-type leases or direct-financing leases are accounted for as operating leases and related revenue is recognized ratably over the lease term. When product leases are bundled with maintenance contracts, revenue is allocated based upon the estimated standalone selling prices of the lease and non-lease components. Lease components generally include product and financing while non-lease components generally consist of maintenance contracts and supplies. Some of the contracts include options to extend or to terminate the lease. Canon takes such options into account to determine the lease term when it is reasonably certain that customers will exercise these options. The majority of Canon's lease contracts do not contain bargain purchase options for their customers. Assets leased to others under operating leases are stated at cost and depreciated to the estimated residual value of the assets by the straight-line method over a period of generally 2 years to 50 years.

As for lessee accounting, Canon has operating and finance leases for various assets including office buildings, warehouses, employees' accommodations, and vehicles. Canon determines if an arrangement is a lease at the inception of each contract. Some of the contracts include options to extend or to terminate the lease. Canon takes such options into account to determine the lease term when it is reasonably certain that it will exercise these options. Canon's lease arrangements do not contain material residual value guarantees or material restrictive covenants. As a rate implicit in the most of Canon's leases cannot be determined, Canon uses incremental borrowing rates based on the information available at commencement to determine the present values of lease payments. Canon has lease contracts with lease and non-lease components, which are accounted for separately. Canon allocates the consideration in the lease contract to the lease and non-lease components based upon the estimated standalone prices. Costs associated with operating lease assets are recognized on a straight-line basis over the term of the lease.

(m) Goodwill and Other Intangible Assets

Goodwill and other intangible assets with indefinite useful lives are not amortized, but are instead tested for impairment annually in the fourth quarter of each year, or more frequently if indicators of potential impairment exist. All goodwill is assigned to the reporting unit or units that benefit from the synergies arising from each business combination. If the carrying amount assigned to the reporting unit exceeds the fair value of the reporting unit, Canon recognizes an impairment charge in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit.

Intangible assets with finite useful lives consist primarily of software, trademarks, patents and developed technology, license fees and customer relationships, which are amortized using the straight-line method. The estimated useful lives of software are from 3 years to 8 years, trademarks are 15 years, patents and developed technology are from 7 years to 21 years, license fees are 8 years, and customer relationships are from 10 years to 15 years. Certain costs incurred in connection with developing or obtaining internal-use software are capitalized. These costs consist primarily of payments made to third parties and the salaries of employees working on such software development. Costs incurred in connection with developing internal-use software are capitalized at the application development stage. In addition, Canon capitalizes the cost which was incurred subsequent to the stage of assuring the technological feasibility of the software, either developed or acquired, for marketing purposes.

(n) Environmental Liabilities

Liabilities for environmental remediation and other environmental costs are accrued when environmental assessments or remedial efforts are probable and the costs can be reasonably estimated, and are included in other noncurrent liabilities in the consolidated balance sheets. Such liabilities are adjusted as further information develops or circumstances change. Costs of future obligations are not discounted to their present values.

(o) Income Taxes

Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Canon records a valuation allowance to reduce the deferred tax assets to the amount that is more likely than not realizable.

Canon recognizes the financial statement effects of tax positions when it is more likely than not, based on the technical merits, that the tax positions will be sustained upon examination by the tax authorities. Benefits from tax positions that meet the more-likely-than-not recognition threshold are measured at the largest amount of benefit that is greater than 50% likely of being realized upon settlement. Interest and penalties accrued related to unrecognized tax benefits are included in income taxes in the consolidated statements of income.

(p) Stock-Based Compensation
Canon measures stock-based compensation cost at the grant date, based on the fair value of the award, and recognizes the cost on a straight-line basis over the requisite service period, which is the vesting period.

(q) Net Income Attributable to Canon Inc. Shareholders per Share
Basic net income attributable to Canon Inc. shareholders per share is computed by dividing net income attributable to Canon Inc. by the weighted-average number of common shares outstanding during each year. Diluted net income attributable to Canon Inc. shareholders per share includes the effect from potential issuances of common stock based on the assumptions that all stock options were exercised.

(r) Revenue Recognition
Canon generates revenue mainly through the sale of products of the Printing Business Unit, the Imaging Business Unit, the Medical Business Unit and the Industrial Business Unit, supplies and related services under separate contractual arrangements. Revenue is recognized when, or as, control of promised goods or services transfers to customers in an amount that reflects the consideration to which Canon expects to be entitled in exchange for transferring these goods or services. For further information, please refer to Note 15.

(s) Research and Development Costs
Research and development costs are expensed as incurred.

(t) Advertising Costs
Advertising costs are expensed as incurred. Advertising expenses were ¥45,986 million, ¥36,812 million and ¥31,273 million for the years ended December 31, 2022, 2021 and 2020, respectively.

(u) Shipping and Handling Costs
Shipping and handling costs totaled ¥62,126 million, ¥53,347 million and ¥47,721 million for the years ended December 31, 2022, 2021 and 2020, respectively, and are included in selling, general and administrative expenses in the consolidated statements of income.

(v) Derivative Financial Instruments
All derivatives are recognized at fair value and are included in prepaid expenses and other current assets, or other current liabilities in the consolidated balance sheets.

Canon uses and designates certain derivatives as a hedge of a forecasted transaction or the variability of cash flows to be received or paid related to a recognized asset or liability (“cash flow” hedge). Canon formally documents all relationships between hedging instruments and hedged items, as well as its risk-management objective and strategy for undertaking various hedge transactions. Canon also formally assesses, both at the hedge’s inception and on an ongoing basis, whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in cash flows of hedged items. When it is determined that a derivative is not highly effective as a hedge or that it has ceased to be a highly effective hedge, Canon discontinues hedge accounting prospectively. Changes in the fair value of a derivative that is designated and qualifies as a cash flow hedge are recorded in other comprehensive income (loss), until earnings are affected by the variability in cash flows of the hedged item, and reclassified in the same income statement line item in which the earnings effect of the hedged item is reported.

Canon also uses certain derivative financial instruments which are not designated as hedges. The changes in fair values of these derivative financial instruments are immediately recorded in earnings.

Canon classifies cash flows from derivatives as cash flows from operating activities in the consolidated statements of cash flows.

(w) Guarantees
Canon recognizes, at the inception of a guarantee, a liability for the fair value of the obligation it has undertaken in issuing guarantees.

(x) Recent Accounting Guidance
Recently adopted accounting guidance

In November 2021, Accounting Standards Update (“ASU”) No. 2021-10, “Disclosures by Business Entities about Government Assistance”-ASC 832 (“Government Assistance”), was issued by the Financial Accounting Standards Board (“FASB”). The standard requires annual disclosures about transactions with a government that are accounted for by applying a grant or contribution accounting model by analogy. The disclosures shall include; (1) information about natures of the transactions and related accounting policies used to account for the transactions, (2) the line items on the balance sheet and income statement that are affected by the transactions, and the amounts applicable to each financial statement line item, and (3) significant terms and conditions of the transactions, including commitments and contingencies. Canon adopted the standard from the end of the year beginning January 1, 2022. The adoption of this standard did not have a material impact on its disclosure.

Recently issued accounting guidance not yet adopted

In October 2021, ASU No. 2021-08, “Accounting for Contract Assets and Contract Liabilities from Contracts with Customers”-ASC 805 (“Business Combinations”), was issued by FASB. The standard requires us to apply ASC 606 “Revenue from Contracts with Customers” to recognize and measure contract assets and contract liabilities acquired in a business combination. The standard is effective for interim and annual reporting periods beginning after December 15, 2022. Canon is currently evaluating the adoption date and the effect that the adoption of the standard will have on its consolidated results of operations and financial condition.

In March 2022, ASU No. 2022-02, "Troubled Debt Restructurings and Vintage Disclosures"-ASC 326 ("Credit Losses"), was issued by FASB. The standard requires us to expand disclosures for certain loan re-financings and restructurings, and requires current-period gross write-offs by year of origination for financing receivables and net investments in leases. The standard is effective for interim and annual reporting periods beginning after December 15, 2022. The adoption of this standard is not expected to have a material impact its consolidated results of operation and financial condition.

In September 2022, ASU No. 2022-04, "Disclosure of Supplier Finance Program Obligations"-ASC 405-50 ("Liabilities - Supplier Finance Programs"), was issued by FASB. The standard requires entities that use supplier finance programs in connection with the purchase of goods and services to disclose the key terms of the programs and information about obligations outstanding at the end of the reporting period, including a rollforward of those obligations. The standard's requirements to disclose the key terms of the programs and information about obligations outstanding are effective for interim and annual reporting periods beginning after December 15, 2022. The standard's requirement to disclose a rollforward of obligations outstanding is effective for annual reporting periods beginning after December 15, 2023. Canon is currently evaluating the effect that the adoption of the standard will have on its disclosure information. Canon does not expect the adoption of the standard will have an effect on its consolidated results of operation and financial condition.

2. INVESTMENTS

There were no held-to-maturity debt securities as of December 31, 2022. Held-to-maturity debt securities included in short-term investments in the accompanying consolidated balance sheet were ¥2,164 million at December 31, 2021.

The cost, gross unrealized holding gains, gross unrealized holding losses and fair value for available-for-sale debt securities included in short-term investments and investments by major security type at December 31, 2022 are as follows:

	Millions of yen			
	Cost	Gross unrealized holding gains	Gross unrealized holding losses	Fair value
Current:				
Corporate bonds	**9,277**	**35**	**11**	**9,301**
Noncurrent:				
Corporate bonds	**4,850**	**—**	**65**	**4,785**
	14,127	**35**	**76**	**14,086**

There were no available-for-sale debt securities included in short-term investments and investments at December 31, 2021.

Maturities of available-for-sale debt securities included in short-term investments and investments in the accompanying consolidated balance sheets at December 31, 2022 are as follows:

	Millions of yen
	Fair value
Due within one year	**9,301**
Due after one year through five years	**4,785**
Total	**14,086**

The unrealized and realized gains and losses related to equity securities for the years ended December 31, 2022, 2021 and 2020 are as follows:

Years ended December 31	Millions of yen		
	2022	2021	2020
Net gains (losses) recognized during the period on equity securities	**(6,267)**	8,958	1,959
Less: Net gains (losses) recognized during the period on equity securities sold during the period	**117**	467	477
Unrealized gains (losses) recognized during the period on equity securities still held at December 31	**(6,384)**	8,491	1,482

The carrying amount of non-marketable equity securities without readily determinable fair value totaled ¥6,808 million and ¥6,661 million at December 31, 2022 and 2021, respectively. The impairment or other adjustments resulting from observable price changes recorded during the years ended December 31, 2022 and 2021 were not significant.

Time deposits with original maturities of more than three months are ¥1,604 million and ¥1,213 million at December 31, 2022 and 2021, respectively, and are included in short-term investments in the accompanying consolidated balance sheets.

Investments in affiliated companies accounted for by the equity method are as follows:

Years ended December 31	Millions of yen, except percentage data		
	2022 Ownership percentage	**2022**	2021
Canon Korea Inc.	**50%**	**14,073**	11,627
Others	**—**	**14,428**	10,398
	—	**28,501**	22,025

The difference between the carrying amount of investment in each affiliate and Canon's share of its net assets is immaterial.

Canon's share of the net earnings in affiliated companies accounted for by the equity method, included in other income (deductions), were earnings of ¥2,174 million and ¥1,396 million for the year ended December 31, 2022 and 2021, respectively, and losses of ¥994 million for the years ended December 31, 2020.

3. TRADE RECEIVABLES

Trade receivables are summarized as follows:

December 31	Millions of yen	
	2022	2021
Notes	**30,535**	28,616
Accounts	**606,268**	493,816
Trade receivables	**636,803**	522,432
Less allowance for credit losses	**(13,305)**	(12,494)
	623,498	509,938

4. INVENTORIES

Inventories are summarized as follows:

December 31	Millions of yen	
	2022	2021
Finished goods	**486,826**	395,381
Work in process	**253,026**	199,153
Raw materials	**68,460**	56,034
	808,312	650,568

5. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are stated at cost less accumulated depreciation and are summarized as follows:

December 31	Millions of yen	
	2022	2021
Land	**275,261**	276,306
Buildings	**1,760,058**	1,728,811
Machinery and equipment	**1,893,745**	1,849,271
Construction in progress	**60,914**	43,283
Finance lease right-of-use assets	**7,315**	6,533
Cost	**3,997,293**	3,904,204
Less accumulated depreciation	**(2,962,228)**	(2,862,801)
Property, plant and equipment, net	**1,035,065**	1,041,403

Depreciation expense for the years ended December 31, 2022, 2021 and 2020 was ¥162,841 million, ¥156,333 million and ¥162,733 million, respectively.

Amounts due for purchases of property, plant and equipment were ¥24,745 million and ¥29,562 million at December 31, 2022 and 2021, respectively, and are included in other current liabilities in the accompanying consolidated balance sheets. Fixed assets presented in the consolidated statements of cash flows include property, plant and equipment and intangible assets.

6. LESSOR ACCOUNTING

Lease income is included in products and equipment sales in the accompanying consolidated statements of income. Supplemental income statement information is as follows:

Years ended December 31	Millions of yen		
	2022	2021	2020
Lease income – sales-type and direct financing leases			
Revenue at lease commencement	**122,941**	84,895	92,133
Interest income on lease receivables	**20,919**	18,351	18,594
	143,860	103,246	110,727
Lease income – operating leases	**34,798**	27,122	23,878
Variable lease income	**5,606**	5,277	5,343
	184,264	135,645	139,948

Lease Receivables

Lease receivables represent financing leases, which consist of sales-type leases and direct financing leases. These receivables typically have terms ranging from 1 year to 8 years. Lease receivables within one year and more than one year are presented in current lease receivables and noncurrent lease receivables in the accompanying consolidated balance sheets, respectively. The components of the lease receivables are as follows:

December 31	Millions of yen	
	2022	2021
Total minimum lease payments receivable	**442,870**	366,051
Unguaranteed residual values	**13,560**	12,192
Executory costs	**—**	—
Unearned income	**(40,060)**	(31,619)
	416,370	346,624
Less allowance for credit losses	**(5,596)**	(3,791)
	410,774	342,833
Less current portion	**(135,108)**	(119,902)
	275,666	222,931

Allowance for Credit Losses

The activities in the allowance for credit losses are as follows:

Years ended December 31	Millions of yen	
	2022	2021
Balance at beginning of year	**3,791**	3,068
Write-offs	**(3,605)**	(2,157)
Provision	**3,769**	2,331
Translation adjustments and other	**1,641**	549
Balance at end of year	**5,596**	3,791

Canon has policies in place to ensure that its products are sold to customers with an appropriate credit history and continuously monitors its customers' credit quality based on information including length of period in arrears, macroeconomic conditions, initiation of legal proceedings against customers and bankruptcy filings. The allowance for credit losses of lease receivables is evaluated collectively based on historical experiences of credit losses and reasonable and supportable forecasts. An additional reserve for individual accounts is recorded when Canon becomes aware of a customer's inability to meet its financial obligations, such as in the case of bankruptcy filings. Lease receivables which are past due or individually evaluated for impairment at December 31, 2022 and 2021 are not significant.

Equipment leased to customers

The cost of equipment leased to customers under operating leases included in property, plant and equipment, net at December 31, 2022 and 2021 was ¥151,858 million and ¥143,160 million, respectively. Accumulated depreciation on equipment under operating leases at December 31, 2022 and 2021 was ¥93,215 million and ¥87,879 million, respectively.

Maturity Analysis

The following is a schedule by year of the future minimum lease payments to be received under finance leases and non-cancellable operating leases at December 31, 2022.

Year ending December 31:	Millions of yen	
	Financing leases	Operating leases
2023	152,187	13,236
2024	119,567	8,106
2025	85,578	5,305
2026	53,864	2,539
2027	23,266	1,657
Thereafter	8,408	497
	442,870	31,340

Information about transferring lease receivables

Canon has syndication arrangements to sell its entire interests in lease receivables to the third-party financial institutions. The transactions under the arrangements are accounted for as sales in accordance with ASC 860 "Transfers and Servicing." There were no significant transfers of lease receivables for the year ended December 31, 2022 and 2021 while the transfers of lease receivables for the year ended December 31, 2020 were ¥19,185 million. The amount that remained uncollected was ¥13,077 million and ¥23,984 million at December 31, 2022 and 2021, respectively. Cash proceeds from the transactions are included in (Increase) decrease in lease receivables under the cash flow from operating activities in the consolidated statements of cash flows. Canon continues to provide collection and administrative services for the financial institutions. The amount associated with the servicing liability measured at fair value was not significant at December 31, 2022 and 2021. Canon also retains limited recourse obligations which cover credit defaults. The recourse obligations were not significant at December 31, 2022 and 2021.

7. ACQUISITIONS

On September 28, 2021, Canon acquired 87.0% of the issued shares of Redlen Technologies Inc. ("Redlen"), a Canada-based company, for the cash consideration of ¥31,640 million, making it a wholly owned subsidiary of Canon.

Redlen possesses advanced technologies of radiation detection and imaging solutions of Cadmium Zinc Telluride ("CZT") semiconductor detector modules which play an important role in the development of photon-counting CT systems ("PCCT"). This technology will enable Canon to accelerate the development of competitive PCCT systems, and strengthen its CT systems and the medical systems business. In addition, Canon will provide CZT semiconductor detector modules to medical equipment manufacturers around the world, thus helping to strengthen Canon's medical component business. In this way, Canon will continue to contribute to the advancement of global diagnostic imaging.

The acquisition was accounted for using the acquisition method of accounting. Acquisition-related costs were expensed as incurred and were not material. Prior to the acquisition date, Canon held an investment in Redlen at a value of ¥1,252 million. Using step acquisition accounting, Canon remeasured the acquisition-date carrying value of its previously held equity investment to its fair value of ¥5,223 million using the fair value of Redlen's issued shares on the acquisition date, which resulted in a gain of approximately ¥3,971 million, recorded in other, net of other income (deductions) in the consolidated statements of income.

The consideration for the acquisition was provisionally valued at the acquisition date based on the Share Purchase Agreement, and subsequently, an adjustment was made to the acquisition price within the measurement period after the acquisition date and determined on December 31, 2021. As a result, the fair value of the previously held equity investment before the acquisition date and the gain on the step acquisition have been adjusted.

The final allocation of the purchase price to the assets acquired and the liabilities assumed on the acquisition date was as follows:

	Millions of yen
Current assets	4,043
Intangible assets	8,955
Goodwill	28,826
Others	389
Assets acquired	42,213
Liabilities assumed	5,350
Net assets acquired	36,863

The intangible assets acquired are composed by ¥8,929 million of technical assets and ¥26 million of other intangible assets, and are subject to amortization. The useful life of the technical assets and the other intangible assets are 21 years and 5 years, respectively. The weighted average useful life of the total intangible assets is approximately 21 years.

Goodwill is composed of the synergy effects of merging Redlen and Canon which is not tax deductible. The items is allocated to the Medical Business Unit when conducting the impairment test of goodwill. Net sales and net income of Redlen generated from the acquisition date which is reflected in the consolidated statement of income for the year ended December 31, 2021 was not material.

8. GOODWILL AND OTHER INTANGIBLE ASSETS

Intangible assets subject to amortization acquired during the year ended December 31, 2022, including those recorded from businesses acquired, totaled ¥26,698 million, which primarily consist of software of ¥26,342 million. The weighted average amortization periods for intangible assets in total acquired during the year ended December 31, 2022 are approximately 5 years. The weighted average amortization period for software acquired during the year ended December 31, 2022 is approximately 5 years.

Intangible assets subject to amortization acquired during the year ended December 31, 2021, including those recorded from business acquired as stated in Note 7, totaled ¥36,015 million, which primarily consist of software of ¥25,965 million. The weighted average amortization periods for intangible assets in total acquired during the year ended December 31, 2021 are approximately 9 years. The weighted average amortization period for software acquired during the year ended December 31, 2021 is approximately 5 years.

The components of intangible assets subject to amortization at December 31, 2022 and 2021 were as follows:

December 31	Millions of yen			
	2022		2021	
	Gross carrying amount	Accumulated amortization	Gross carrying amount	Accumulated amortization
Software	**428,693**	**327,568**	399,331	300,905
Customer relationships	**161,424**	**70,900**	158,513	59,465
Patents and developed technology	**140,136**	**84,020**	133,923	70,795
Trademarks	**46,122**	**24,446**	45,726	21,350
License fees	**12,139**	**6,972**	16,881	10,098
Other	**15,251**	**10,959**	18,765	10,521
	803,765	**524,865**	773,139	473,134

Aggregate amortization expense for the years ended December 31, 2022, 2021 and 2020 was ¥63,651 million, ¥64,913 million and ¥65,092 million, respectively. Estimated amortization expense for intangible assets currently held for the next five years ending December 31 is ¥54,644 million in 2023, ¥45,139 million in 2024, ¥38,081 million in 2025, and ¥31,478 million in 2026, and ¥21,918 million in 2027.

Intangible assets not subject to amortization other than goodwill at December 31, 2022 and 2021 were not significant.

For management reporting purposes, goodwill is not allocated to the reporting unit. Goodwill has been allocated to its respective reporting unit for impairment testing.

The changes in the carrying amount of goodwill by segment for the years ended December 31, 2022 and 2021 were as follows:

Year ended December 31	Millions of yen					
	2022					
	Printing	Imaging	Medical	Industrial*	Others and Corporate*	Total
Goodwill - gross	**146,025**	**293,749**	**537,183**	**9,512**	**706**	**987,175**
Accumulated impairment losses	**(33,325)**	**—**	**—**	**—**	**—**	**(33,325)**
Balance at beginning of year	**112,700**	**293,749**	**537,183**	**9,512**	**706**	**953,850**
Goodwill acquired during the year	**1,114**	**—**	**947**	**—**	**—**	**2,061**
Translation adjustments and other	**7,624**	**3,076**	**4,565**	**1,463**	**(13)**	**16,715**
Goodwill - gross	**157,561**	**296,825**	**542,695**	**10,975**	**693**	**1,008,749**
Accumulated impairment losses	**(36,123)**	**—**	**—**	**—**	**—**	**(36,123)**
Balance at end of year	**121,438**	**296,825**	**542,695**	**10,975**	**693**	**972,626**

Year ended December 31	Millions of yen					
	2021					
	Printing	Imaging	Medical	Industrial*	Others and Corporate*	Total
Goodwill - gross	142,185	289,999	506,513	8,559	724	947,980
Accumulated impairment losses	(32,416)	—	—	—	—	(32,416)
Balance at beginning of year	109,769	289,999	506,513	8,559	724	915,564
Goodwill acquired during the year	—	—	28,826	—	—	28,826
Translation adjustments and other	2,931	3,750	1,844	953	(18)	9,460
Goodwill - gross	146,025	293,749	537,183	9,512	706	987,175
Accumulated impairment losses	(33,325)	—	—	—	—	(33,325)
Balance at end of year	112,700	293,749	537,183	9,512	706	953,850

* Based on the realignment of Canon's internal management structure, from 2022, Canon has changed the name and structure of segments from Industrial and Others Business Unit and Corporate and eliminations to Industrial Business Unit, Others and Corporate and Eliminations. Changes in the carrying amounts of goodwill by segment for the fiscal year ended December 31, 2021 also have been reclassified.

9. SHORT-TERM LOANS AND LONG-TERM DEBT

Short-term loans related to financial services are external loans held by Canon's lease subsidiaries for the purpose of financing its customers through loans. Short-term loans related to financial services consisting of bank borrowings at December 31, 2022 and 2021 were ¥41,200 million and ¥42,300 million, and other short-term loans consisting of bank borrowings were ¥200,012 million and ¥1,301 million respectively. The weighted average interest rate on short-term borrowings outstanding at December 31, 2022 and 2021 were 0.14% and 0.19%, respectively. Unused overdraft facilities at December 31, 2022 were ¥550,000 million. The overdraft facilities bear interest at a rate equal to a base rate plus a spread.

Long-term debt consisted of the following:

December 31	Millions of yen	
	2022	2021
Loan from banks; bearing interest rates of 0.22% at December 31, 2022 and 0.21% at December 31, 2021 *1	**54,000**	174,000
Other debt *2	**3,589**	7,040
	57,589	181,040
Less current portion	**(55,172)**	(1,290)
	2,417	179,750

*1 During the year ended December 31, 2022, Canon prepaid ¥120,000 million of the outstanding loan under the unsecured revolving credit facility contracts which had expiration date in December 2023. The outstanding loans under the credit facilities are ¥54,000 million at a floating interest of 0.22% and Canon has no unused credit facilities as of December 31, 2022.
*2 Other debt consisted of Bank loans and finance lease obligations as of December 31, 2022 and 2021.

The aggregate annual maturities of long-term debt outstanding at December 31, 2022 were as follows:

Year ending December 31:	Millions of yen
2023	55,172
2024	817
2025	597
2026	392
2027	364
Thereafter	247
	57,589

Both short-term and long-term bank loans are primarily made under general agreements which provide that security and guarantees for present and future indebtedness shall be given upon request of the bank, and that the bank shall have the right to offset cash deposits against obligations that have become due or, in the event of default, against all obligations due to the bank.

10. TRADE PAYABLES

Trade payables are summarized as follows:

December 31	Millions of yen	
	2022	2021
Notes	**82,702**	82,243
Accounts	**273,228**	256,361
	355,930	338,604

11. EMPLOYEE RETIREMENT AND SEVERANCE BENEFITS

The Company and certain of its subsidiaries have contributory and noncontributory defined benefit pension plans covering substantially all of their employees. Benefits payable under the plans are based on employee earnings and years of service.

The Company and certain of its subsidiaries also have defined contribution pension plans covering substantially all of their employees.

Obligations and funded status

Reconciliations of beginning and ending balances of the projected benefit obligations and the fair value of the plan assets are as follows:

Actuarial gains in the projected benefit obligation in 2022 were primarily the result of an increase in the discount rate.

December 31	Millions of yen			
	Japanese plans		Foreign plans	
	2022	2021	**2022**	2021
Change in benefit obligations:				
Projected benefit obligations at beginning of year	**909,634**	911,121	**476,230**	477,337
Service cost	**29,063**	30,194	**7,551**	3,827
Interest cost	**4,851**	4,815	**7,301**	5,965
Plan participants' contributions	**—**	—	**741**	658
Actuarial (gain) loss	**(101,222)**	2,935	**(158,318)**	(21,133)
Benefits paid	**(46,055)**	(39,390)	**(19,420)**	(13,471)
Plan amendments	**(44)**	(41)	**608**	(10,617)
Curtailments and settlements	**(1,478)**	—	**(1,669)**	(682)
Foreign currency exchange rate changes	**—**	—	**30,679**	34,346
Projected benefit obligations at end of year	**794,749**	909,634	**343,703**	476,230
Change in plan assets:				
Fair value of plan assets at beginning of year	**756,743**	724,039	**394,912**	321,713
Actual return on plan assets	**(50,994)**	52,688	**(135,292)**	24,024
Employer contributions	**13,400**	11,652	**18,305**	32,130
Plan participants' contributions	**—**	—	**741**	658
Benefits paid	**(35,321)**	(31,636)	**(19,420)**	(13,471)
Settlements	**—**	—	**(106)**	1,743
Foreign currency exchange rate changes	**—**	—	**29,411**	28,115
Fair value of plan assets at end of year	**683,828**	756,743	**288,551**	394,912
Funded status at end of year	**(110,921)**	(152,891)	**(55,152)**	(81,318)

Amounts recognized in the consolidated balance sheets at December 31, 2022 and 2021 are as follows:

December 31	Millions of yen			
	Japanese plans		Foreign plans	
	2022	2021	**2022**	2021
Other assets	**7,469**	2,911	**18,442**	13,596
Accrued expenses	**(1,461)**	(1,208)	**(1,308)**	(1,041)
Accrued pension and severance cost	**(116,929)**	(154,594)	**(72,286)**	(93,873)
	(110,921)	(152,891)	**(55,152)**	(81,318)

Amounts recognized in accumulated other comprehensive income (loss) at December 31, 2022 and 2021 before the effect of income taxes are as follows:

December 31	Millions of yen			
	Japanese plans		Foreign plans	
	2022	2021	**2022**	2021
Actuarial loss	**123,711**	156,028	**92,620**	104,647
Prior service credit	**(13,662)**	(20,371)	**(8,597)**	(10,319)
	110,049	135,657	**84,023**	94,328

The accumulated benefit obligation for all defined benefit plans was as follows:

December 31	Millions of yen			
	Japanese plans		Foreign plans	
	2022	2021	**2022**	2021
Accumulated benefit obligation	**769,140**	883,462	**329,843**	462,306

The projected benefit obligations and the fair value of plan assets for the pension plans with projected benefit obligations in excess of plan assets, and the accumulated benefit obligations and the fair value of plan assets for the pension plans with accumulated benefit obligations in excess of plan assets are as follows:

December 31	Millions of yen			
	Japanese plans		Foreign plans	
	2022	2021	**2022**	2021
Plans with projected benefit obligations in excess of plan assets:				
Projected benefit obligations	**765,781**	895,898	**340,589**	473,860
Fair value of plan assets	**650,680**	739,581	**283,701**	391,054
Plans with accumulated benefit obligations in excess of plan assets:				
Accumulated benefit obligations	**740,658**	870,314	**321,630**	455,164
Fair value of plan assets	**650,680**	739,581	**277,541**	386,223

Components of net periodic benefit cost and other amounts recognized in other comprehensive income (loss)

Net periodic benefit cost for Canon's employee retirement and severance defined benefit plans for the years ended December 31, 2022, 2021 and 2020 consisted of the following components:

Years ended December 31	Millions of yen					
	Japanese plans			Foreign plans		
	2022	2021	2020	**2022**	2021	2020
Service cost	**29,063**	30,194	30,604	**7,551**	3,827	5,303
Interest cost	**4,851**	4,815	4,064	**7,301**	5,965	6,087
Expected return on plan assets	**(23,161)**	(21,618)	(21,013)	**(17,001)**	(15,221)	(12,006)
Amortization of prior service credit	**(6,743)**	(8,303)	(8,732)	**(1,114)**	(818)	(675)
Amortization of actuarial loss	**5,230**	8,768	12,401	**5,989**	7,341	6,122
(Gain) loss on curtailments and settlements	**(666)**	—	—	**(627)**	—	236
	8,574	13,856	17,324	**2,099**	1,094	5,067

Service cost component of net periodic benefit cost for Canon's employee retirement and severance defined benefit plans is included in cost of sales and operating expenses in the consolidated statements of income. The components other than the service cost component are included in other, net of other income (deductions) in the consolidated statements of income.

Other changes in plan assets and benefit obligations recognized in other comprehensive income (loss) for the years ended December 31, 2022, 2021 and 2020 are summarized as follows:

Years ended December 31	Millions of yen					
	Japanese plans			Foreign plans		
	2022	2021	2020	**2022**	2021	2020
Current year actuarial (gain) loss	**(27,067)**	(28,135)	(26,479)	**(6,024)**	(29,936)	31,296
Current year prior service credit	**(44)**	(41)	(859)	**608**	(10,617)	(1,463)
Amortization of actuarial loss	**(5,230)**	(8,768)	(12,401)	**(5,989)**	(7,341)	(6,122)
Amortization of prior service credit	**6,743**	8,303	8,732	**1,114**	818	675
Curtailments and settlements	**(10)**	—	—	**(14)**	(531)	(966)
	(25,608)	(28,641)	(31,007)	**(10,305)**	(47,607)	23,420

Assumptions

Weighted-average assumptions used to determine benefit obligations are as follows:

December 31	Japanese plans		Foreign plans	
	2022	2021	**2022**	2021
Discount rate	**1.2%**	0.5%	**4.1%**	1.5%
Assumed rate of increase in future compensation levels	**2.6%**	2.6%	**2.5%**	0.7%
Interest crediting rate for cash balance plans	**1.8%**	1.9%	**1.0%**	1.0%

Weighted-average assumptions used to determine net periodic benefit cost are as follows:

Years ended December 31	Japanese plans			Foreign plans		
	2022	2021	2020	**2022**	2021	2020
Discount rate	**0.5%**	0.5%	0.5%	**1.5%**	1.5%	1.6%
Assumed rate of increase in future compensation levels	**2.6%**	2.6%	2.6%	**0.7%**	0.9%	1.0%
Expected long-term rate of return on plan assets	**3.1%**	3.0%	3.0%	**5.7%**	4.4%	4.8%
Interest crediting rate for cash balance plans	**1.9%**	1.9%	1.9%	**1.0%**	1.0%	1.0%

Canon determines the expected long-term rate of return based on the expected long-term return of the various asset categories in which it invests. Canon considers the current expectations for future returns and the actual historical returns of each plan asset category.

Plan assets

Canon's investment policies are designed to ensure adequate plan assets are available to provide future payments of pension benefits to eligible participants. Taking into account the expected long-term rate of return on plan assets, Canon formulates a "model" portfolio which comprises of the optimal combination of equity securities and debt securities. Plan assets are invested in individual equity and debt securities using the guidelines of the "model" portfolio in order to produce a total return that will match the expected return on a mid-term to long-term basis. Canon evaluates the gap between expected return and actual return of invested plan assets on an annual basis to determine if such differences necessitate a revision in the formulation of the "model" portfolio. Canon revises the "model" portfolio when and to the extent considered necessary to achieve the expected long-term rate of return on plan assets.

Canon's model portfolio for Japanese plans consists of three major components: approximately 30% is invested in equity securities, approximately 45% is invested in debt securities, and approximately 25% is invested in other products, such as investments in insurance contracts including life insurance company general accounts.

Outside Japan, investment policies vary by country, but Canon's model portfolio for foreign plans consists of three major components: approximately 15% is invested in equity securities, approximately 35% is invested in debt securities, and approximately 50% is invested in other products, such as investments in real estate assets.

The target allocation percentages of plan assets set by Canon's investment policies approximate the actual allocation percentages of plan assets at December 31, 2022 and 2021.

The equity securities are selected primarily from stocks that are listed on securities exchanges. Prior to investing, Canon investigates the business condition of the investee companies, and appropriately diversifies investments by type of industry and other relevant factors. The debt securities are selected primarily from government bonds, public debt instruments, and corporate bonds. Prior to investing, Canon investigates the quality of the issue, including rating, interest rate, and repayment dates, and appropriately diversifies the investments. Pooled funds are selected using strategies consistent with the equity and debt securities described above. As for insurance contracts, there are several types of insurance contracts between Canon and the life insurance companies including life insurance company general accounts which guarantee the payments of interest based on expected interest rates and return of capital, and insured pension plans which cover future designated contractual benefit payments to covered participants. With respect to investments in foreign financial products, Canon investigates the stability of the underlying governments and economies, the market characteristics such as settlement systems and the taxation systems. For each such investment, Canon selects the appropriate investment country and currency.

The three levels of input used to measure fair value are more fully described in Note 22. The fair values of Canon's pension plan assets at December 31, 2022 and 2021, by asset category, are as follows:

December 31	Millions of yen							
	2022							
	Japanese plans				Foreign plans			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Equity securities:								
Japanese companies (a)	**92,382**	**—**	**—**	**92,382**	**—**	**—**	**—**	**—**
Foreign companies	**10,373**	**—**	**—**	**10,373**	**9,382**	**—**	**—**	**9,382**
Pooled funds (b)	**—**	**167,605**	**—**	**167,605**	**—**	**31,481**	**—**	**31,481**
Debt securities:								
Government bonds (c)	**69,331**	**—**	**—**	**69,331**	**—**	**—**	**—**	**—**
Municipal bonds	**—**	**1,071**	**—**	**1,071**	**—**	**3,244**	**—**	**3,244**
Corporate bonds	**—**	**13,986**	**—**	**13,986**	**—**	**16,970**	**—**	**16,970**
Pooled funds (d)	**—**	**134,266**	**—**	**134,266**	**—**	**113,005**	**—**	**113,005**
Mortgage backed securities (and other asset backed securities)	**—**	**11,309**	**—**	**11,309**	**—**	**9,804**	**—**	**9,804**
Insurance contracts	**—**	**95,029**	**—**	**95,029**	**—**	**13,153**	**27,824**	**40,977**
Other assets	**—**	**75,736**	**1,189**	**76,925**	**—**	**33,927**	**—**	**33,927**
Investment measured at net asset value	**—**	**—**	**—**	**11,551**	**—**	**—**	**—**	**29,761**
	172,086	**499,002**	**1,189**	**683,828**	**9,382**	**221,584**	**27,824**	**288,551**

December 31	Millions of yen							
	2021							
	Japanese plans				Foreign plans			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Equity securities:								
Japanese companies (e)	95,698	—	—	95,698	—	—	—	—
Foreign companies	12,746	—	—	12,746	11,628	—	—	11,628
Pooled funds (f)	—	180,286	—	180,286	—	43,026	—	43,026
Debt securities:								
Government bonds (g)	133,691	—	—	133,691	—	—	—	—
Municipal bonds	—	1,264	—	1,264	—	2,899	—	2,899
Corporate bonds	—	19,373	—	19,373	—	7,821	—	7,821
Pooled funds (h)	—	145,348	—	145,348	—	138,687	—	138,687
Mortgage backed securities (and other asset backed securities)	—	11,449	—	11,449	—	6,826	—	6,826
Insurance contracts	—	114,624	—	114,624	—	6,287	39,398	45,685
Other assets	—	28,181	366	28,547	—	106,657	532	107,189
Investment measured at net asset value	—	—	—	13,717	—	—	—	31,151
	242,135	500,525	366	756,743	11,628	312,203	39,930	394,912

(a) The plan's equity securities include common stock of the Company and certain of its subsidiaries in the amounts of ¥236 million.
(b) These funds invest in listed equity securities consisting of approximately 20% Japanese companies and 80% foreign companies for Japanese plans, and mainly foreign companies for foreign plans.
(c) This class includes approximately 65% Japanese government bonds and 35% foreign government bonds for Japanese plans, and mainly foreign government bonds for foreign plans.
(d) These funds invest in approximately 30% Japanese government bonds, 50% foreign government bonds, 5% Japanese municipal bonds, and 15% corporate bonds for Japanese plans. These funds invest in approximately 55% foreign government bonds and 45% corporate bonds for foreign plans.
(e) The plan's equity securities include common stock of the Company and certain of its subsidiaries in the amounts of ¥234 million.
(f) These funds invest in listed equity securities consisting of approximately 30% Japanese companies and 70% foreign companies for Japanese plans, and mainly foreign companies for foreign plans.
(g) This class includes approximately 80% Japanese government bonds and 20% foreign government bonds for Japanese plans.
(h) These funds invest in approximately 25% Japanese government bonds, 55% foreign government bonds, 5% Japanese municipal bonds, and 15% corporate bonds for Japanese plans. These funds invest in approximately 75% foreign government bonds and 25% corporate bonds for foreign plans.

Each level into which assets are categorized is based on inputs used to measure the fair value of the assets, and does not necessarily indicate the risks or ratings of the assets.

Level 1 assets are comprised principally of equity securities and government bonds, which are valued using unadjusted quoted market prices in active markets with sufficient volume and frequency of transactions.

Level 2 assets are comprised principally of pooled funds that invest in equity and debt securities, corporate bonds, investments in life insurance company general accounts and other assets. Pooled funds are valued at their net asset values that are calculated by the sponsor of the fund and have daily liquidity. Corporate bonds are valued using quoted prices for identical assets in markets that are not active. Investments in life insurance company general accounts are valued at conversion value. Other assets are comprised principally of interest bearing cash and hedge funds.

The fair values of Level 3 asset, consisting of investments in insured pension plans and hedge funds, were ¥29,013 million and ¥40,296 million at December 31, 2022 and 2021, respectively. Actual returns on, purchases and sales of these assets during the years ended December 31, 2022 and 2021 were not significant.

Contributions

Canon expects to contribute ¥15,614 million to its Japanese defined benefit pension plans and ¥19,044 million to its foreign defined benefit pension plans for the year ending December 31, 2023.

Estimated future benefit payments

The following benefit payments, which reflect expected future service, as appropriate, are expected to be paid:

Year ending December 31:	Millions of yen	
	Japanese plans	Foreign plans
2023	46,177	15,856
2024	45,013	16,721
2025	46,423	17,591
2026	44,715	18,722
2027	49,524	19,985
2028 – 2032	224,410	118,393

Multiemployer pension plans

The amounts of cost recognized for the multiemployer pension plans primarily in the Netherlands for the years ended December 31, 2022, 2021 and 2020 were ¥4,720 million, ¥4,822 million and ¥4,224 million, respectively. The multiemployer pension plan in which the subsidiaries in the Netherlands participated was 108.3% funded as of December 31, 2021. The terms of the collective bargaining agreements are negotiated on a regular basis between the local labor unions and participating employers. Canon is not liable for other participating employers' obligations under the terms and conditions of the agreements.

Defined contribution plans
The amounts of cost recognized for the defined contribution pension plans of the Company and certain of its subsidiaries for the years ended December 31, 2022, 2021 and 2020 were ¥24,346 million, ¥22,660 million and ¥16,334 million, respectively.

12. INCOME TAXES

Domestic and foreign components of income before income taxes and the current and deferred income tax expense attributable to such income are summarized as follows:

Years ended December 31	Millions of yen		
	2022		
	Japanese	Foreign	Total
Income before income taxes	**177,235**	**175,205**	**352,440**
Income taxes:			
Current	**53,104**	**47,052**	**100,156**
Deferred	**(1,129)**	**(6,671)**	**(7,800)**
	51,975	**40,381**	**92,356**

Years ended December 31	Millions of yen		
	2021		
	Japanese	Foreign	Total
Income before income taxes	165,927	136,779	302,706
Income taxes:			
Current	47,491	34,201	81,692
Deferred	6,883	(16,709)	(9,826)
	54,374	17,492	71,866

Years ended December 31	Millions of yen		
	2020		
	Japanese	Foreign	Total
Income before income taxes	48,186	82,094	130,280
Income taxes:			
Current	24,063	25,816	49,879
Deferred	(6,007)	(9,535)	(15,542)
	18,056	16,281	34,337

The Company and its domestic subsidiaries are subject to a number of income taxes, which, in the aggregate, represent a statutory income tax rate of approximately 31% for the years ended December 31, 2022, 2021 and 2020.

A reconciliation of the Japanese statutory income tax rate and the effective income tax rate as a percentage of income before income taxes is as follows:

Years ended December 31	2022	2021	2020
Japanese statutory income tax rate	**31.0%**	31.0%	31.0%
Increase (reduction) in income taxes resulting from:			
Expenses not deductible for tax purposes	**0.6**	0.7	2.3
Income of foreign subsidiaries taxed at lower than Japanese statutory tax rate	**(3.1)**	(3.9)	(5.8)
Tax credit for research and development expenses	**(2.8)**	(3.2)	(1.7)
Change in valuation allowance	**(0.3)**	(3.9)	2.4
Deferred tax liabilities on undistributed earnings of foreign subsidiaries	**1.6**	4.5	2.6
Tax credit at foreign subsidiaries	**(0.5)**	(0.3)	(1.3)
Effect of enacted changes in tax laws	**0.0**	(1.0)	(1.5)
Other	**(0.3)**	(0.2)	(1.6)
Effective income tax rate	**26.2%**	23.7%	26.4%

Net deferred income tax assets and liabilities are included in the accompanying consolidated balance sheets under the following captions:

December 31	Millions of yen	
	2022	2021
Other assets	**131,063**	138,507
Other noncurrent liabilities	**(38,518)**	(43,402)
	92,545	95,105

The tax effects of temporary differences that give rise to the deferred tax assets and deferred tax liabilities at December 31, 2022 and 2021 are presented below:

December 31	Millions of yen	
	2022	2021
Deferred tax assets:		
Inventories	**14,107**	11,263
Accrued business tax	**2,732**	3,387
Accrued pension and severance cost	**55,986**	67,752
Research and development – costs capitalized for tax purposes	**7,119**	5,004
Property, plant and equipment	**40,549**	35,658
Operating lease liabilities	**20,515**	17,328
Accrued expenses	**28,080**	29,331
Net operating losses carried forward	**34,045**	33,873
Other	**48,675**	48,621
	251,808	252,217
Less valuation allowance	**(17,732)**	(19,073)
Total deferred tax assets	**234,076**	233,144
Deferred tax liabilities:		
Undistributed earnings of foreign subsidiaries	**(20,306)**	(19,677)
Tax deductible reserve	**(3,658)**	(4,007)
Financing lease revenue	**(17,335)**	(14,602)
Operating lease right-of-use assets	**(20,090)**	(17,066)
Intangible assets	**(46,054)**	(51,173)
Other	**(34,088)**	(31,514)
Total deferred tax liabilities	**(141,531)**	(138,039)
Net deferred tax assets	**92,545**	95,105

The net changes in the total valuation allowance were a decrease of ¥1,341 million, a decrease of ¥11,679 million and an increase of ¥3,074 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Based on the level of historical taxable income and projections for future taxable income over the periods which the net deductible temporary differences are expected to reverse, management believes it is more likely than not that Canon will realize the benefits of these deferred tax assets, net of the valuation allowance, at December 31, 2022.

At December 31, 2022, Canon had net operating losses which can be carried forward for income tax purposes of ¥177,351 million to reduce future taxable income. Periods available to reduce future taxable income vary in each tax jurisdiction and generally range from one year to an indefinite period as follows:

	Millions of yen
Within one year	1,431
After one year through five years	18,404
After five years through ten years	35,727
After ten years through twenty years	3,849
Indefinite period	117,940
	177,351

Income taxes have not been accrued on undistributed earnings of domestic subsidiaries as the tax law provides a means by which the dividends from a domestic subsidiary can be received tax free.

Canon has not recognized deferred tax liabilities of ¥19,408 million for a portion of undistributed earnings of foreign subsidiaries of ¥857,289 million as of December 31, 2022 because Canon intends to permanently reinvest such undistributed earnings of foreign subsidiaries. Deferred tax liabilities will be recognized when such undistributed earnings are no longer permanently reinvested.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

Years ended December 31	Millions of yen		
	2022	2021	2020
Balance at beginning of year	**9,813**	8,572	8,120
Additions for tax positions of the current year	**583**	1,168	—
Additions for tax positions of prior years	**220**	216	208
Reductions for tax positions of prior years	**(2,538)**	—	(49)
Settlements with tax authorities	**(594)**	(62)	—
Other	**870**	(81)	293
Balance at end of year*	**8,354**	9,813	8,572

* The unrecognized tax benefits were offset by deferred tax assets in the amount of ¥1,800 million, ¥1,695 million and ¥1,412 million as of December 31, 2022, 2021 and 2020, respectively, and reported under "other noncurrent liabilities" on the consolidated balance sheets.

The total amounts of unrecognized tax benefits that would reduce the effective tax rate, if recognized, were ¥8,354 million and ¥9,813 million at December 31, 2022 and 2021, respectively.

Although Canon believes its estimates and assumptions of unrecognized tax benefits are reasonable, uncertainty regarding the final determination of tax examination settlements and any related litigation could affect the effective tax rate in a future period. Based on each of the items of which Canon is aware at December 31, 2022, no significant changes to the unrecognized tax benefits are expected within the next twelve months.

Canon recognizes interest and penalties accrued related to unrecognized tax benefits in income taxes. Both interest and penalties accrued at December 31, 2022 and 2021, and interest and penalties included in income taxes for the years ended December 31, 2022, 2021 and 2020 were not significant.

Canon files income tax returns in Japan and various foreign tax jurisdictions. In Japan, Canon is no longer subject to regular income tax examinations by the tax authority for years before 2021. Canon is also no longer subject to a transfer pricing examination by the tax authority for years before 2021. In other major foreign tax jurisdictions, including the United States and the Netherlands, Canon is no longer subject to income tax examinations by tax authorities for years before 2014 with a few exceptions.

13. LEGAL RESERVE AND RETAINED EARNINGS

The Corporation Law of Japan provides that an amount equal to 10% of distributions from retained earnings paid by the Company and its Japanese subsidiaries be appropriated as a legal reserve. No further appropriations are required when the total amount of the additional paid-in capital and the legal reserve equals 25% of their respective stated capital. The Corporation Law of Japan also provides that additional paid-in capital and legal reserve are available for appropriations by resolution of the shareholders. Certain foreign subsidiaries are also required to appropriate their earnings to legal reserves under the laws of their respective countries.

Cash dividends and appropriations to the legal reserve charged to retained earnings for the years ended December 31, 2022, 2021 and 2020 represent dividends paid out during those years and the related appropriations to the legal reserve. Retained earnings at December 31, 2022 did not reflect current year-end dividends in the amount of ¥60,931 million which were approved by the shareholders in March 2023.

The amount available for dividends under the Corporation Law of Japan is based on the amount recorded in the Company's nonconsolidated books of account in accordance with financial accounting standards of Japan. Such amount was ¥832,748 million at December 31, 2022.

Retained earnings at December 31, 2022 included Canon's equity in undistributed earnings of affiliated companies accounted for by the equity method in the amount of ¥19,787 million.

14. OTHER COMPREHENSIVE INCOME (LOSS)

Changes in accumulated other comprehensive income (loss) for the years ended December 31, 2022, 2021 and 2020 are as follows:

	Millions of yen				
	Foreign currency translation adjustments	Net unrealized gains and losses on securities	Gains and losses on derivative instruments	Pension liability adjustments	Total
Balance at December 31, 2019	(96,282)	—	(887)	(211,273)	(308,442)
Equity transactions with noncontrolling interests and other	(9)	—	—	—	(9)
Other comprehensive income (loss) before reclassifications	(17,355)	—	(1,199)	(7,530)	(26,084)
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	2,186	7,560	9,746
Net change during the year	(17,364)	—	987	30	(16,347)
Balance at December 31, 2020	(113,646)	—	100	(211,243)	(324,789)
Other comprehensive income (loss) before reclassifications	119,689	—	(3,330)	49,759	166,118
Amounts reclassified from accumulated other comprehensive income (loss)	(524)	—	2,336	5,065	6,877
Net change during the year	119,165	—	(994)	54,824	172,995
Balance at December 31, 2021	5,519	—	(894)	(156,419)	(151,794)
Other comprehensive income (loss) before reclassifications	**189,827**	**(44)**	**(7,430)**	**25,768**	**208,121**
Amounts reclassified from accumulated other comprehensive income (loss)	**(4,059)**	**10**	**7,896**	**2,449**	**6,296**
Net change during the year	**185,768**	**(34)**	**466**	**28,217**	**214,417**
Balance at December 31, 2022	**191,287**	**(34)**	**(428)**	**(128,202)**	**62,623**

Reclassifications out of accumulated other comprehensive income (loss) for the years ended December 31, 2022, 2021 and 2020 are as follows:

Years ended December 31	Amount reclassified from accumulated other comprehensive income (loss) *			Affected line items in consolidated statements of income
	Millions of yen			
	2022	2021	2020	
Foreign currency translation adjustments	**(5,883)**	(759)	—	Selling, general and administrative expenses
	1,824	235	—	Income taxes
	(4,059)	(524)	—	Consolidated net income
	—	—	—	Net income attributable to noncontrolling interests
	(4,059)	(524)	—	Net income attributable to Canon Inc.
Net unrealized gains and losses on securities	**13**	—	—	Other, net
	(3)	—	—	Income taxes
	10	—	—	Consolidated net income
	—	—	—	Net income attributable to noncontrolling interests
	10	—	—	Net income attributable to Canon Inc.
Gains and losses on derivative instruments	**10,683**	3,285	3,034	Net Sales
	(2,889)	(959)	(775)	Income taxes
	7,794	2,326	2,259	Consolidated net income
	102	10	(73)	Net income attributable to noncontrolling interests
	7,896	2,336	2,186	Net income attributable to Canon Inc.
Pension liability adjustments	**3,386**	7,519	10,082	Other, net
	(561)	(1,625)	(2,484)	Income taxes
	2,825	5,894	7,598	Consolidated net income
	(376)	(829)	(38)	Net income attributable to noncontrolling interests
	2,449	5,065	7,560	Net income attributable to Canon Inc.
Total amount reclassified, net of tax and noncontrolling interests	**6,296**	6,877	9,746	

* Amounts in parentheses indicate gains in consolidated statements of income.

Tax effects allocated to each component of other comprehensive income (loss) and reclassification adjustments, including amounts attributable to noncontrolling interests, are as follows:

Years ended December 31	Millions of yen		
	Before-tax amount	Tax (expense) or benefit	Net-of-tax amount
2022:			
Foreign currency translation adjustments			
Amount arising during the year	**191,679**	**(1,057)**	**190,622**
Reclassification adjustments for gains and losses realized in net income	**(5,883)**	**1,824**	**(4,059)**
Net change during the year	**185,796**	**767**	**186,563**
Net unrealized gains and losses on securities:			
Amount arising during the year	**(54)**	**10**	**(44)**
Reclassification adjustments for gains and losses realized in net income	**13**	**(3)**	**10**
Net change during the year	**(41)**	**7**	**(34)**
Net gains and losses on derivative instruments:			
Amount arising during the year	**(10,057)**	**2,712**	**(7,345)**
Reclassification adjustments for gains and losses realized in net income	**10,683**	**(2,889)**	**7,794**
Net change during the year	**626**	**(177)**	**449**
Pension liability adjustments:			
Amount arising during the year	**32,527**	**(5,455)**	**27,072**
Reclassification adjustments for gains and losses realized in net income	**3,386**	**(561)**	**2,825**
Net change during the year	**35,913**	**(6,016)**	**29,897**
Other comprehensive income (loss)	**222,294**	**(5,419)**	**216,875**
2021:			
Foreign currency translation adjustments			
Amount arising during the year	122,075	(1,112)	120,963
Reclassification adjustments for gains and losses realized in net income	(759)	235	(524)
Net change during the year	121,316	(877)	120,439
Net gains and losses on derivative instruments:			
Amount arising during the year	(4,596)	1,298	(3,298)
Reclassification adjustments for gains and losses realized in net income	3,285	(959)	2,326
Net change during the year	(1,311)	339	(972)
Pension liability adjustments:			
Amount arising during the year	68,729	(18,115)	50,614
Reclassification adjustments for gains and losses realized in net income	7,519	(1,625)	5,894
Net change during the year	76,248	(19,740)	56,508
Other comprehensive income (loss)	196,253	(20,278)	175,975
2020:			
Foreign currency translation adjustments			
Amount arising during the year	(17,583)	229	(17,354)
Reclassification adjustments for gains and losses realized in net income	—	—	—
Net change during the year	(17,583)	229	(17,354)
Net gains and losses on derivative instruments:			
Amount arising during the year	(1,731)	442	(1,289)
Reclassification adjustments for gains and losses realized in net income	3,034	(775)	2,259
Net change during the year	1,303	(333)	970
Pension liability adjustments:			
Amount arising during the year	(2,495)	(3,721)	(6,216)
Reclassification adjustments for gains and losses realized in net income	10,082	(2,484)	7,598
Net change during the year	7,587	(6,205)	1,382
Other comprehensive income (loss)	(8,693)	(6,309)	(15,002)

15. REVENUE

Revenue from sales of products of the Printing Business Unit, such as office MFDs, laser printers and inkjet printers, and the Imaging Business Unit, such as digital cameras, is primarily recognized at a point in time upon shipment or delivery, depending upon when the customer obtains controls of these products.

Revenue from sales of equipment of the Medical Business Unit and the Industrial Business Unit that are sold with customer acceptance provisions related to their functionality, including certain medical equipment such as CT systems and MRI systems, and lithography equipment such as semiconductor and FPD lithography equipment, is recognized at a point in time when the equipment is installed at the customer site and the agreed-upon specifications are objectively satisfied and confirmed.

Most of Canon's service revenue is generated from maintenance service in the products of the Printing Business Unit and the Medical Business Unit which is recognized over time. For the service contracts of the Printing Business Unit, the customer typically pays a variable amount based on usage, a stated fixed fee or a stated base fee plus a variable amount which frequently include the provision of consumables as well as break fix activities. The majority portion of service revenue from the products of the Printing Business Unit is recognized as billed since the invoiced amount directly correlates with the value to the customer of the underlying performance obligation delivered to date. For the service contracts of the Medical Business Unit, the customer typically pays a stated fixed fee for the stand ready maintenance service and revenue is recognized ratably over the contract period.

The majority of service arrangements for the products are executed in combination with related products. Transaction prices for products and services need to be allocated to each performance obligation on a relative standalone selling price basis where judgements are required. Canon estimates the standalone selling price using a range of prices that would meet the allocation objective based on all the information that is reasonably available including market conditions and other observable inputs. If transaction prices of the product or service contracts are not within the acceptable range then the revenue is subject to allocation based on the estimated standalone selling prices. Canon recognizes the incremental costs of obtaining a contract as an expense when related products of the Printing Business Unit are sold.

Revenue from sales of certain industrial equipment which do not have alternative use and for which Canon has enforceable right to payment to the customers for the performance completed to date is recognized over time with progress towards completion measured using the cost based input method as the basis to recognize revenue and an estimated margin. Provisions for estimated losses on uncompleted contracts are made in the period in which such losses become evident. Changes in job performance, job conditions, estimated margin and final contract settlements may result in revisions to projected costs and revenue and are recognized in the period in which the revisions to estimates are identified and the amounts can be reasonably estimated. Factors that may affect future project costs and margins include, production efficiencies, availability and costs of labor and materials. These factors can impact the accuracy of Canon's estimates and materially impact future reported revenue and cost of sales.

The transaction prices that Canon is entitled to receive in exchange for transferring goods or services to the customer include certain forms of variable consideration, including product discounts, customer promotions and volume-based rebates mainly for the products of the Imaging Business Unit, which are sold predominantly through distributors and retailers. Canon includes estimated amounts in the transaction price only to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. Variable considerations are estimated based upon historical trends and other known factors at the time of sale, and are subsequently adjusted in each period based on current information. In addition, Canon may provide a right of return on its products for a short time period after a sale. These rights are accounted for as variable consideration when determining the transaction price, and accordingly Canon recognizes revenue based on the estimated amount to which Canon expects to be entitled after considering expected returns.

Disaggregated revenue by timing is as follows. Disaggregated revenue by business unit, product and geographic area are described in Note 23.

	Millions of yen						
	Printing	Imaging	Medical	Industrial*	Others and Corporate*	Eliminations*	Consolidated
2022:							
Revenue recognized at a point in time	**1,673,767**	**795,442**	**348,138**	**259,317**	**211,956**	**(99,588)**	**3,189,032**
Revenue recognized over time	**588,171**	**8,038**	**165,193**	**69,915**	**11,065**	**—**	**842,382**
Total	**2,261,938**	**803,480**	**513,331**	**329,232**	**223,021**	**(99,588)**	**4,031,414**
2021:							
Revenue recognized at a point in time	1,419,043	646,849	329,323	241,379	177,107	(83,698)	2,730,003
Revenue recognized over time	519,804	6,683	151,039	96,342	9,486	—	783,354
Total	1,938,847	653,532	480,362	337,721	186,593	(83,698)	3,513,357
2020:							
Revenue recognized at a point in time	1,316,556	534,685	287,849	160,597	160,062	(67,518)	2,392,231
Revenue recognized over time	487,871	6,629	148,225	116,209	9,078	—	768,012
Total	1,804,427	541,314	436,074	276,806	169,140	(67,518)	3,160,243

* Based on the realignment of Canon's internal management structure, from 2022, Canon has changed the name and structure of segments from Industrial and Others Business Unit and Corporate and eliminations to Industrial Business Unit, Others and Corporate and Eliminations. Changes in the disaggregated revenue by timing and by segment for the fiscal year ended December 31, 2021 and 2020 also has been reclassified.

Revenue recognized over time includes primarily revenue from maintenance service in the products of the Printing Business Unit and the Medical Business Unit and sales of certain equipment of the Industrial Business Unit which do not have an alternative use and for which Canon has enforceable right to payment to the customers for the performance completed to date.

Canon recognizes contract assets primarily for unbilled receivables mainly arising from services contracts for the products of the Printing Business Unit. Contract assets are reclassified to trade receivables when they are billed under the terms of the contract. The difference between the opening and closing balances of contract assets primarily results from the timing difference of Canon's performance and billing to customers. Contract assets at December 31, 2022 and 2021 were ¥39,251 million and ¥44,722 million, respectively, and are included in prepaid expenses and other current assets in the consolidated balance sheets.

Canon typically bills to the customer when the performance obligation is satisfied and collects the payment in relatively short term except for certain maintenance service of the products of the Printing Business Unit and the Medical Business Unit and certain industrial equipment for which Canon occasionally receives the payment in advance from customers. The amount received in excess of revenue recognized is recorded as deferred revenue until the performance obligation for distinct goods or services are satisfied. Deferred revenue at December 31, 2022 and 2021 were ¥141,840 million and ¥132,087 million, respectively, and are included in other current liabilities and other non-current liabilities in the accompanying consolidated balance sheets. Revenue recognized for the year ended December 31, 2022, which had been included in the deferred revenue balance at December 31, 2021, was ¥112,720 million.

Remaining performance obligations for products and equipment at December 31, 2022 primarily arise from the sales of certain industrial equipment, amounting to ¥163,039 million, 64% of which is expected to be recognized as revenue within one year, 31% is within two years and remaining 5% is within three years. Disclosure of remaining performance obligations is not required for the majority of services since the related revenue is recognized on an as billed basis applying the right to invoice practical expedient or is generated from the contracts with original expected duration of less than one year. The portion of fixed maintenance service contract for the products of the Printing Business Unit and the Medical Business Unit with original expected duration of more than one year is ¥110,782 million and the average remaining period for these fixed contracts as of December 31, 2022 is about 2 years.

Taxes collected from customers and remitted to governmental authorities are excluded from revenues in the consolidated statements of income.

16. STOCK-BASED COMPENSATION

On April 28, 2022, based on the approval of the board of directors, the Company granted stock options to its directors and executive officers to acquire 69,000 shares of common stock. Those to whom stock acquisition rights are granted (the "Holder(s)") shall be entitled to exercise all the stock acquisition rights together within 10 days (in case the last day is not a business day, the following business day) from after the date when they cease to hold any position as a director or an executive officer of the Company. These option awards have a 30 year exercisable period. The grant-date fair value per share of the stock options granted during the year ended December 31, 2022 was ¥2,541.

On April 28, 2021, based on the approval of the board of directors, the Company granted stock options to its directors and executive officers to acquire 43,700 shares of common stock. Those to whom stock acquisition rights are granted (the "Holder(s)") shall be entitled to exercise all the stock acquisition rights together within 10 days (in case the last day is not a business day, the following business day) from after the date when they cease to hold any position as a director or an executive officer of the Company. These option awards have a 30 year exercisable period. The grant-date fair value per share of the stock options granted during the year ended December 31, 2021 was ¥2,227.

The compensation cost recognized for these stock options for the years ended December 31, 2022 was ¥175 million, for 2021 was ¥97 million and for 2020 was ¥147 million, and is included in selling, general and administrative expenses in the consolidated statements of income.

The fair value of the option award was estimated on the date of grant using the Black-Sholes option pricing model that incorporates the assumptions presented below:

Years ended December 31	**2022**	2021
Expected term of option (in years)	**5.0**	5.0
Expected volatility	**25.88%**	24.83%
Dividend yield	**3.28%**	3.04%
Risk-free interest rate	**(0.02%)**	(0.10%)

A summary of option activity under the stock option plans as of and for the years ended December 31, 2022, 2021 and 2020 is presented below:

	Shares	Weighted-average exercise price	Weighted-average remaining contractual term	Aggregate intrinsic value
		Yen	Year	Millions of yen
Outstanding at January 1, 2020	185,800	1	29.0	555
Granted	98,900	1		
Exercised	(37,100)	1		
Outstanding at December 31, 2020	247,600	1	28.4	324
Granted	43,700	1		
Exercised	(4,800)	1		
Outstanding at December 31, 2021	286,500	1	27.8	802
Granted	**69,000**	**1**		
Exercised	**(4,900)**	**1**		
Outstanding at December 31, 2022	**350,600**	**1**	**27.2**	**1,001**
Exercisable at December 31, 2022	**350,600**	**1**	**27.2**	**1,001**

The total fair values of shares vested were ¥175 million, ¥97 million, and ¥147 million for the years ended December 31, 2022, 2021, and 2020, respectively. Cash received from the exercise of stock options for the years ended December 31, 2022, 2021 and 2020 were not significant.

17. NET INCOME ATTRIBUTABLE TO CANON INC. SHAREHOLDERS PER SHARE

A reconciliation of the numerators and denominators of basic and diluted net income attributable to Canon Inc. shareholders per share computations is as follows:

Years ended December 31	Millions of yen		
	2022	2021	2020
Basic net income attributable to Canon Inc.	**243,961**	214,718	83,318
Diluted net income attributable to Canon Inc.	**243,957**	214,714	83,315

	Number of shares		
Weighted average common shares outstanding	**1,030,644,385**	1,045,632,588	1,049,802,197
Effect of dilutive securities:			
Stock options	**334,875**	277,066	229,691
Diluted common shares outstanding	**1,030,979,260**	1,045,909,654	1,050,031,888

	Yen		
Net income attributable to Canon Inc. shareholders per share:			
Basic	**236.71**	205.35	79.37
Diluted	**236.63**	205.29	79.35

18. DERIVATIVES AND HEDGING ACTIVITIES

Risk management policy

Canon operates internationally, exposing it to the risk of changes in foreign currency exchange rates. Derivative financial instruments are comprised principally of foreign exchange contracts utilized by the Company and certain of its subsidiaries to reduce the risk. Canon assesses foreign currency exchange rate risk by continually monitoring changes in the exposures and by evaluating hedging opportunities. Canon does not hold or issue derivative financial instruments for speculative purposes. Canon is also exposed to credit-related losses in the event of non-performance by counterparties to derivative financial instruments, but it is not expected that any counterparties will fail to meet their obligations. Most of the counterparties are internationally recognized financial institutions and selected by Canon taking into account their financial condition, and contracts are diversified across a number of major financial institutions.

Foreign currency exchange rate risk management

Canon's international operations expose Canon to the risk of changes in foreign currency exchange rates. Canon uses foreign exchange contracts to manage certain foreign currency exchange exposures principally from the exchange of U.S. dollars and euros into yen. These contracts are primarily used to hedge the foreign currency exposure of forecasted intercompany sales and intercompany trade receivables that are denominated in foreign currencies. In accordance with Canon's policy, a specific portion of foreign currency exposure resulting from forecasted intercompany sales is hedged using foreign exchange contracts which principally mature within three months.

Cash flow hedge

Changes in the fair value of derivative financial instruments designated as cash flow hedges, including foreign exchange contracts associated with forecasted intercompany sales, are reported in accumulated other comprehensive income (loss). These amounts are subsequently reclassified into earnings in the same period as the hedged items affect earnings. All amounts recorded in accumulated other comprehensive income (loss) as of December 31, 2022 are expected to be recognized in net sales over the next twelve months. Changes in the fair value of a foreign exchange contract for the period between the date that the forecasted intercompany sales occur and its maturity date are recognized in earnings.

Derivatives not designated as hedges
Canon has entered into certain foreign exchange contracts to primarily offset the earnings impact related to fluctuations in foreign currency exchange rates associated with certain assets denominated in foreign currencies. Although these foreign exchange contracts have not been designated as hedges as required in order to apply hedge accounting, the contracts are effective from an economic perspective. The changes in the fair value of these contracts are recorded in earnings immediately.

Contract amounts of foreign exchange contracts at December 31, 2022 and 2021 are set forth below:

December 31	Millions of yen	
	2022	2021
To sell foreign currencies	**149,080**	169,392
To buy foreign currencies	**26,224**	27,453

Fair value of derivative instruments in the consolidated balance sheets

The following tables present Canon's derivative instruments measured at gross fair value as reflected in the consolidated balance sheets at December 31, 2022 and 2021.

Derivatives designated as hedging instruments

December 31		Millions of yen	
		Fair value	
	Balance sheet location	**2022**	2021
Assets:			
Foreign exchange contracts	Prepaid expenses and other current assets	**176**	42
Liabilities:			
Foreign exchange contracts	Other current liabilities	**416**	777

Derivatives not designated as hedging instruments

December 31		Millions of yen	
		Fair value	
	Balance sheet location	**2022**	2021
Assets:			
Foreign exchange contracts	Prepaid expenses and other current assets	**2,539**	23
Liabilities:			
Foreign exchange contracts	Other current liabilities	**846**	1,342

Effect of derivative instruments in the consolidated statements of income

The following tables present the effect of Canon's derivative instruments in the consolidated statements of income for the years ended December 31, 2022, 2021 and 2020.

Derivatives in cash flow hedging relationships

Years ended December 31	Millions of yen		
	Gain (loss) recognized in OCI	Gain (loss) reclassified from accumulated OCI into income	
	Amount	Location	Amount
2022: Foreign exchange contracts	**(10,057)**	Net sales	**(10,683)**
2021: Foreign exchange contracts	(4,596)	Net sales	(3,285)
2020: Foreign exchange contracts	(1,731)	Net sales	(3,034)

Derivatives not designated as hedging instruments

Years ended December 31		Millions of yen		
		Gain (loss) recognized in income on derivative		
	Location	**2022**	2021	2020
Foreign exchange contracts	Other, net	**(11,926)**	(6,099)	104

19. LESSEE ACCOUNTING

Lease costs are included in cost of sales or selling general and administrative expense in accompanying consolidated statements of income. Supplemental income statement information is as follows:

Years ended December 31	Millions of yen		
	2022	2021	2020
Operating lease cost	**45,109**	39,699	40,053
Short-term lease cost	**15,566**	13,961	14,245
Other lease cost	**219**	71	120
Total	**60,894**	53,731	54,418

Operating lease cash flow

Supplemental cash flow information is as follows.

Years ended December 31	Millions of yen		
	2022	2021	2021
Cash paid for amount included in the measurement of lease liabilities			
Operating cash flows from operating leases	**42,178**	39,879	36,733
Noncash activity - Rights of use assets obtained in exchange for lease liabilities			
Operating leases	**56,854**	21,588	30,700

Maturity Analysis

The following is a schedule by year of the future minimum lease payments under operating leases at December 31, 2022.

Years ending December 31:	Millions of yen
2023	35,535
2024	26,718
2025	20,058
2026	13,704
2027	9,645
Thereafter	17,949
Total future minimum lease payments	123,609
Less Imputed Interest	(4,997)
	118,612

Remaining lease term and discount rate

The following is remaining lease term and discount rate under operating leases at December 31, 2022 and 2021.

December 31	2022	2021
Weighted-average remaining lease term	**54 months**	54 months
Weighted-average discount rate	**2.5%**	2.1%

20. COMMITMENTS AND CONTINGENT LIABILITIES

Commitments

At December 31, 2022, commitments outstanding for the purchase of property, plant and equipment approximated ¥101,351 million, and commitments outstanding for the purchase of parts and raw materials approximated ¥287,591 million.

Guarantees

Canon occupies sales offices and other facilities under lease arrangements accounted for as operating leases. Deposits mainly for restoration made under such arrangements aggregated ¥10,086 million and ¥10,812 million at December 31, 2022 and 2021, respectively, and are included in noncurrent receivables in the accompanying consolidated balance sheets.

Canon provides guarantees for its employees, affiliates and other companies. The guarantees for the employees are principally made for their housing loans. The guarantees for affiliates and other companies are made for their lease obligations and bank loans to facilitate financing.

Canon would have to perform under a guarantee if the borrower defaults on a payment within the contract terms. The contract terms are 1 year to 12 years in case of employees with housing loans, and 1 year to 6 years in case of affiliates and other companies with lease obligations and bank loans. The maximum amount of undiscounted payments Canon would have had to make in the event of default is ¥1,535 million at December 31, 2022. The carrying amounts of the liabilities recognized for Canon's obligations as a guarantor under those guarantees at December 31, 2022 were not significant.

Canon also offers assurance-type warranties under which it generally guarantees the performance of products delivered and services rendered for a certain period or term. Estimated product warranty costs are recorded at the time revenue is recognized and are included in selling, general and administrative expenses in the accompanying consolidated statements of income. Estimates for accrued product warranty costs are based on historical experience. Accrued product warranty costs are included in accrued expenses in the accompanying consolidated balance sheets and the changes for the years ended December 31, 2022 and 2021 are summarized as follows:

Years ended December 31	Millions of yen	
	2022	2021
Balance at beginning of the year	**16,949**	14,300
Additions	**19,678**	15,687
Utilization	**(14,934)**	(11,928)
Other	**(806)**	(1,110)
Balance at end of the year	**20,887**	16,949

Legal proceedings

Canon is involved in various claims and legal actions arising in the ordinary course of business. Canon has recorded provisions for liabilities when it is probable that liabilities have been incurred and the amount of loss can be reasonably estimated. Canon reviews these provisions at least quarterly and adjusts these provisions to reflect the impact of the negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular case. Based on its experience, although litigation is inherently unpredictable, Canon believes that any damage amounts claimed in outstanding matters are not a meaningful indicator of Canon's potential liability. In the opinion of management, any reasonably possible range of losses from outstanding matters would not have a material adverse effect on Canon's consolidated financial position, results of operations, and cash flows.

21. DISCLOSURES ABOUT THE FAIR VALUE OF FINANCIAL INSTRUMENTS AND CONCENTRATIONS OF CREDIT RISK

Fair value of financial instruments

The estimated fair values of Canon's financial instruments at December 31, 2022 and 2021 are set forth below. The following summary excludes cash and cash equivalents, trade receivables, noncurrent receivables, short-term loans, trade payables and accrued expenses, and the fair values of these instruments approximate their carrying amounts. The summary also excludes investments and derivative instruments which are disclosed in Note 2 and Note 22, and Note 18, respectively.

December 31	Millions of yen			
	2022		2021	
	Carrying amount	Estimated fair value	Carrying amount	Estimated fair value
Long-term debt, including current portion of long-term debt	**(54,205)**	**(54,205)**	(177,410)	(177,343)

The following methods and assumptions are used to estimate the fair value in the above table.

Long-term debt

Canon's long-term debt instruments are classified as Level 2 instruments and valued based on the present value of future cash flows associated with each instrument discounted using current market borrowing rates for similar debt instruments of comparable maturity. The levels are more fully described in Note 22.

Limitations of fair value estimates

Fair value estimates are made at a specific point in time, based on relevant market information and information about the financial instruments. These estimates are subjective in nature and involve uncertainties and matters of significant judgment and therefore cannot be determined with precision. Changes in assumptions could significantly affect the estimates.

Concentrations of credit risk

No single customer accounted for more than 10 percent of consolidated trade receivables as of December 31, 2022 or 2021.

22. FAIR VALUE MEASUREMENTS

Fair value is the price that would be received to sell an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants at the measurement date. A three-level fair value hierarchy that prioritizes the inputs used to measure fair value is as follows:

Level 1 – Inputs are quoted prices in active markets for identical assets or liabilities.

Level 2 – Inputs are quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable, and inputs that are derived principally from or corroborated by observable market data by correlation or other means.

Level 3 – Inputs are derived from valuation techniques in which one or more significant inputs or value drivers are unobservable, which reflect the reporting entity's own assumptions about the assumptions that market participants would use in establishing a price.

Assets and liabilities measured at fair value on a recurring basis

The following tables present Canon's assets and liabilities that are measured at fair value on a recurring basis consistent with the fair value hierarchy at December 31, 2022 and 2021.

December 31	Millions of yen			
	2022			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash and cash equivalents	—	627	—	627
Short-term investment:				
Available-for-sale:				
Corporate bonds	—	9,301	—	9,301
Investments:				
Available-for-sale:				
Corporate bonds	—	4,785	—	4,785
Fund trusts and others	255	383	—	638
Equity securities	21,770	—	—	21,770
Prepaid expenses and other current assets:				
Derivatives	—	2,715	—	2,715
Total assets	22,025	17,811	—	39,836
Liabilities:				
Other current liabilities:				
Derivatives	—	1,262	—	1,262
Total liabilities	—	1,262	—	1,262

December 31	Millions of yen			
	2021			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash and cash equivalents	—	500	—	500
Short-term investment:				
Available-for-sale:				
Corporate bonds	—	—	—	—
Investments:				
Available-for-sale:				
Corporate bonds	—	—	—	—
Fund trusts and others	281	328	—	609
Equity securities	28,640	—	—	28,640
Prepaid expenses and other current assets:				
Derivatives	—	65	—	65
Total assets	28,921	893	—	29,814
Liabilities:				
Other current liabilities:				
Derivatives	—	2,119	—	2,119
Total liabilities	—	2,119	—	2,119

Level 1 investments are comprised principally of Japanese equity securities, which are valued using an unadjusted quoted market price in active markets with sufficient volume and frequency of transactions. Level 2 assets and liabilities are comprised principally of corporate bonds included in cash and cash equivalents, investments or short-term investments, and derivatives. Corporate bonds included in cash and cash equivalents, and investments or short-term investments are valued using quoted prices for identical assets in markets that are not active or quotes obtained from counterparties or third parties.

Derivative financial instruments are comprised of foreign exchange contracts. Level 2 derivatives are valued using quotes obtained from counterparties or third parties, which are periodically validated by pricing models using observable market inputs, such as foreign currency exchange rates and interest rates, based on market approach.

Assets and liabilities measured at fair value on a nonrecurring basis

There were no significant assets or liabilities to be measured at fair value on a nonrecurring basis during the year ended December 31, 2022 and 2021.

23. SEGMENT INFORMATION

Canon reports in four reportable segments: the Printing Business Unit, the Imaging Business Unit, the Medical Business Unit and the Industrial Business Unit with Others and Corporate, which are based on the organizational structure and information reviewed by Canon's management to evaluate results and allocate resources.

Based on the realignment of Canon's internal management structure, from 2022, Canon has changed the name and structure of segments from Industrial and Others Business Unit and Corporate and eliminations to Industrial Business Unit, Others and Corporate and Eliminations.

The primary products included in each segment are as follows:

Printing Business Unit:
Office multifunction devices (MFDs) / Document solutions/ Laser multifunction printers (MFPs) / Laser printers / Inkjet printers / Image scanners / Calculators / Digital continuous feed presses / Digital sheet-fed presses / Large format printers

Imaging Business Unit:
Interchangeable-lens digital cameras / Interchangeable lenses / Digital compact cameras /Compact photo printers / MR Systems / Network cameras / Video management software / Video content analytics software / Digital camcorders / Digital cinema cameras / Broadcast equipment /Projectors

Medical Business Unit:
Computed tomography (CT) systems / Diagnostic ultrasound systems / Diagnostic X-ray systems / Magnetic resonance imaging (MRI) systems / Clinical chemistry analyzers / Digital radiography systems / Ophthalmic equipment

Industrial Business Unit:
Semiconductor lithography equipment / FPD (Flat panel display) lithography equipment / OLED display manufacturing equipment / Vacuum thin-film deposition equipment / Die bonders

Others:
Handy terminals / Document scanners

The accounting policies of the segments are substantially the same as those described in the significant accounting policies in Note 1. Canon evaluate results and allocate resources for each segment based on income before income taxes.

Information about operating results and assets for each segment as of and for the years ended December 31, 2022, 2021 and 2020 is as follows:

	Millions of yen						
	Printing	Imaging	Medical	Industrial	Others and Corporate	Eliminations	Consolidated
2022:							
Net sales:							
External customers	**2,255,402**	**803,057**	**513,028**	**320,817**	**139,110**	**—**	**4,031,414**
Intersegment	**6,536**	**423**	**303**	**8,415**	**83,911**	**(99,588)**	**—**
Total	**2,261,938**	**803,480**	**513,331**	**329,232**	**223,021**	**(99,588)**	**4,031,414**
Operating cost and expenses	**2,049,964**	**676,850**	**482,326**	**271,213**	**296,399**	**(98,737)**	**3,678,015**
Operating profit	**211,974**	**126,630**	**31,005**	**58,019**	**(73,378)**	**(851)**	**353,399**
Other income (deductions)	**13,806**	**1,403**	**890**	**1,194**	**(12,147)**	**(6,105)**	**(959)**
Income before income taxes	**225,780**	**128,033**	**31,895**	**59,213**	**(85,525)**	**(6,956)**	**352,440**
Total assets	**1,224,187**	**349,338**	**356,799**	**233,969**	**2,952,891**	**(21,654)**	**5,095,530**
Depreciation and amortization	**72,946**	**20,374**	**13,418**	**12,195**	**107,559**	**—**	**226,492**
Capital expenditures	**66,550**	**17,841**	**11,956**	**15,271**	**71,673**	**—**	**183,291**
2021:							
Net sales:							
External customers	1,934,012	651,494	480,029	328,164	119,658	—	3,513,357
Intersegment	4,835	2,038	333	9,557	66,935	(83,698)	—
Total	1,938,847	653,532	480,362	337,721	186,593	(83,698)	3,513,357
Operating cost and expenses	1,713,154	574,814	450,942	292,854	282,643	(82,968)	3,231,439
Operating profit	225,693	78,718	29,420	44,867	(96,050)	(730)	281,918
Other income (deductions)	7,259	(256)	4,876	434	14,978	(6,503)	20,788
Income before income taxes	232,952	78,462	34,296	45,301	(81,072)	(7,233)	302,706
Total assets	1,009,922	236,143	311,247	212,156	2,999,754	(18,334)	4,750,888
Depreciation and amortization	69,549	21,840	12,435	11,193	106,229	—	221,246
Capital expenditures	63,609	12,069	11,888	10,127	81,307	—	179,000
2020:							
Net sales:							
External customers	1,800,898	539,560	435,368	271,149	113,268	—	3,160,243
Intersegment	3,529	1,754	706	5,657	55,872	(67,518)	—
Total	1,804,427	541,314	436,074	276,806	169,140	(67,518)	3,160,243
Operating cost and expenses	1,657,319	535,584	410,830	249,346	265,576	(68,959)	3,049,696
Operating profit	147,108	5,730	25,244	27,460	(96,436)	1,441	110,547
Other income (deductions)	5,076	(778)	300	677	15,645	(1,187)	19,733
Income before income taxes	152,184	4,952	25,544	28,137	(80,791)	254	130,280
Total assets	913,931	239,605	286,749	239,992	2,963,532	(18,195)	4,625,614
Depreciation and amortization	69,725	22,201	11,781	12,266	111,852	—	227,825
Capital expenditures	56,613	12,540	7,244	8,082	77,248	—	161,727

Intersegment sales are recorded at the same prices used in transactions with third parties. Expenses not directly associated with specific segments are allocated based on the most reasonable measures applicable. Corporate expenses include certain corporate research and development expenses. Amortization costs of identified intangible assets resulting from the purchase price allocation of Toshiba Medical Systems Corporation (currently, Canon Medical Systems Corporation) are also included in corporate expenses. Segment assets are based on those directly associated with each segment. Corporate assets primarily consist of cash and cash equivalents, investments, deferred tax assets, goodwill, identified intangible assets from acquisitions and corporate properties. Capital expenditures represent the additions to property, plant and equipment and intangible assets measured on an accrual basis.

Information about sales by product and service to external customers for each segment for the years ended December 31, 2022, 2021 and 2020 is as follows:

Years ended December 31	Millions of yen		
	2022	2021	2020
Printing			
Office multifunction devices	**570,175**	477,000	455,357
Office others	**320,713**	279,366	267,123
Office	**890,888**	756,366	722,480
Laser printers	**647,192**	560,159	502,157
Inkjet printers and Others	**355,270**	328,932	326,041
Prosumer	**1,002,462**	889,091	828,198
Production	**362,052**	288,555	250,220
Total	**2,255,402**	1,934,012	1,800,898
Imaging			
Cameras	**509,464**	432,885	347,240
Network cameras and Others	**293,593**	218,609	192,320
Total	**803,057**	651,494	539,560
Medical			
Diagnostic equipment	**513,028**	480,029	435,368
Industrial			
Optical equipment	**240,332**	215,890	144,387
Industrial equipment	**80,485**	112,274	126,762
Total	**320,817**	328,164	271,149
Others and Corporate	**139,110**	119,658	113,268
Consolidated	**4,031,414**	3,513,357	3,160,243

Based on the realignment of Canon's internal management structure, from 2022, Canon has changed products category and some product sales, which were previously included in Others, have been added to Lithography equipment and are presented as Optical equipment.

Information by major geographic area as of and for the years ended December 31, 2022, 2021 and 2020 is as follows:

	Millions of yen		
	2022	2021	2020
Net sales:			
Japan	**864,808**	830,378	806,305
Americas	**1,255,405**	968,839	852,451
Europe	**1,034,008**	894,898	795,616
Asia and Oceania	**877,193**	819,242	705,871
Total	**4,031,414**	3,513,357	3,160,243
Long-lived assets:			
Japan	**953,140**	986,638	1,011,109
Americas	**167,968**	152,137	133,648
Europe	**173,774**	158,297	175,516
Asia and Oceania	**139,021**	141,915	143,265
Total	**1,433,903**	1,438,987	1,463,538

Net sales are attributed to areas based on the location where the products are shipped and the services are performed to the customers. Other than in Japan and the United States, Canon does not conduct business in any individual country in which its sales in that country exceed 10% of consolidated net sales. Net sales in the United States were ¥1,183,022 million, ¥907,909 million and ¥801,376 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Long-lived assets represent property, plant and equipment, intangible assets, and operating lease right-of-use assets for each geographic area.

24. SUBSEQUENT EVENT

On January 5, 2023, Canon borrowed ¥140,000 million under its existing overdraft facilities with Mizuho Bank, Ltd. and MUFG Bank, Ltd. for required operating funds. The overdraft facilities bear interest at a rate equal to a base rate plus a spread.

SCHEDULE II VALUATION AND QUALIFYING ACCOUNTS

Years ended December 31	Millions of yen				
	Balance at beginning of period	Addition-charged to income	Deduction bad debts written off	Translation adjustments and other	Balance at end of period
2022:					
Allowance for credit losses					
Trade receivables	**12,494**	**817**	**(1,167)**	**1,161**	**13,305**
Lease receivables	**3,791**	**3,769**	**(3,605)**	**1,641**	**5,596**
2021:					
Allowance for credit losses					
Trade receivables	11,645	1,857	(1,540)	532	12,494
Lease receivables	3,068	2,331	(2,157)	549	3,791
2020:					
Allowance for credit losses					
Trade receivables	10,359	3,419	(1,983)	(150)	11,645
Lease receivables	2,627	2,351	(2,199)	289	3,068

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Canon is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) and 15d-15(f) promulgated under the Exchange Act, as a process designed by, or under the supervision of, the Company's principal executive and principal financial officers and effected by the Company's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles and includes those policies and procedures that (1) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of Canon; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures of Canon are being made only in accordance with authorizations of management and directors of Canon; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of Canon's assets that could have a material effect on the financial statements.

Because there are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our financial statements would be prevented or detected. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Canon's management assessed the effectiveness of internal control over financial reporting as of December 31, 2022. In making this assessment, management used the criteria established in Internal Control–Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO").

Based on its assessment, management concluded that, as of December 31, 2022, Canon's internal control over financial reporting was effective.

Canon's independent registered public accounting firm, Deloitte Touche Tohmatsu LLC, has issued an audit report on the effectiveness of Canon's internal control over financial reporting. This report appears in Item 18.

Fujio Mitarai
Chairman & CEO

Toshizo Tanaka
Executive Vice President & CFO

March 30, 2023

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Deloitte.

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To the shareholders and the Board of Directors of
Canon Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Canon Inc. and subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, equity, and cash flows, for each of the three years in the period ended December 31, 2022, and the related notes and the schedule listed in the Index at Item 18 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 30, 2023, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Goodwill—Medical Reporting Unit—Refer to Notes 1 and 8 to the financial statements

Critical Audit Matter Description

The Company tests goodwill for impairment annually in the fourth quarter of each year, or more frequently if indicators of potential impairment exist. The fair value of a reporting unit is determined primarily based on the discounted cash flow analysis, which involves estimates of projected future cash flows and discount rates. The Company's total consolidated goodwill was ¥972,626 million (19.1% of Total assets) as of December 31, 2022, of which ¥542,695 million (55.8% of Goodwill) was allocated to the Medical Reporting Unit. The estimates of projected future cash flows for the Medical Reporting Unit are based on a mid-term management plan that considered the future market growth of medical equipment and growth in geographies where the Company operates its medical business. The estimate of discount rate is determined based on the weighted average cost of capital, which considers primarily market and industry data as well as specific risk factors.

The Company has completed its impairment test in the fourth quarter of 2022 and determined that the Medical Reporting Unit did not fail the impairment test as the fair value of the unit exceeded its carrying amount; however, the fair value in excess of reported carrying value as a percentage is lower than other reporting units. As a result, a future reduction in cash flows of the Medical Reporting Unit could trigger an impairment.

Given the goodwill attributed to the Medical Reporting Unit represents 55.8% of the total consolidated goodwill and there are significant judgements made by management to estimate the fair value of the Medical Reporting Unit, performing audit procedures to evaluate the reasonableness of management's estimates and assumptions related to the projected future cash flows and the selection of the discount rate required a high degree of auditor judgment and an increased extent of effort, including the need to involve fair value specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the projected future cash flows and selection of the discount rate used by management to estimate the fair value of the Medical Reporting Unit included the following, among others:

- We tested the effectiveness of controls over management's goodwill impairment evaluation, including those over management's estimates and assumptions used in the projected future cash flows and selection of the discount rate.
- We evaluated management's ability to accurately project future cash flows by comparing actual results to management's historical projections.
- We made inquiries of management to understand significant assumptions used in the projected future cash flows.
- We evaluated the reasonableness of management's projected future cash flows by comparing the projections to actual results and a mid-term management plan for respective net sales, cost of sales and other elements, which comprise management's projected future cash flows.

- We evaluated the reasonableness of management's significant assumptions regarding the revenue growth rate, which could have a significant impact on the fair value of the Medical Reporting Unit, by comparing the revenue growth rates to the expected market growth rate for each type of medical equipment included in the third-party industry reports.
- With the assistance of our fair value specialists, we evaluated the reasonableness of the valuation methodology and selected discount rate by:
  - —Examining whether the valuation methodology used including the one to determine the discount rate was consistent with existing valuation practices that are both generally accepted in practice and recognized as appropriate in similar circumstances.
  - —Testing the source information underlying the determination of the discount rate and the mathematical accuracy of the calculation.
  - —Developing a range of independent estimates and comparing those to the discount rate selected by management.

Deloitte Touche Tohmatsu LLC

March 30, 2023

We have served as the Company's auditor since 2020.

Deloitte.

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To the shareholders and the Board of Directors of
Canon Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Canon Inc. and subsidiaries (the "Company") as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2022, of the Company and our report dated March 30, 2023, expressed an unqualified opinion on those financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Deloitte Touche Tohmatsu LLC

March 30, 2023