



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K
(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2020

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file number 1-442

THE BOEING COMPANY

(Exact name of registrant as specified in its charter)

Delaware

91-0425694

(State or other jurisdiction of
incorporation or organization)

(I.R.S. Employer Identification No.)

100 N. Riverside Plaza, Chicago, IL

60606-1596

(Address of principal executive offices)

(Zip Code)

Registrant's telephone number, including area code (312)-544-2000

Securities registered pursuant to Section 12(b) of the Act:

Common Stock, \$5.00 Par Value

BA

New York Stock Exchange

(Title of each class)

(Trading Symbol)

(Name of each exchange on which registered)

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of June 30, 2020, there were 564,420,221 common shares outstanding held by nonaffiliates of the registrant, and the aggregate market value of the common shares (based upon the closing price of these shares on the New York Stock Exchange) was approximately \$103.5 billion.

The number of shares of the registrant's common stock outstanding as of January 25, 2021 was 582,996,860.

DOCUMENTS INCORPORATED BY REFERENCE

Part III incorporates information by reference to the registrant's definitive proxy statement, to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year ended December 31, 2020.

THE BOEING COMPANY
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For the Fiscal Year Ended December 31, 2020

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PART I

Item 1. Business

The Boeing Company, together with its subsidiaries (herein referred to as “Boeing,” the “Company,” “we,” “us,” “our”), is one of the world’s major aerospace firms.

We are organized based on the products and services we offer. We operate in four reportable segments:

- Commercial Airplanes (BCA);
- Defense, Space & Security (BDS);
- Global Services (BGS);
- Boeing Capital (BCC).

Commercial Airplanes Segment

This segment develops, produces and markets commercial jet aircraft and provides fleet support services, principally to the commercial airline industry worldwide. We are a leading producer of commercial aircraft and offer a family of commercial jetliners designed to meet a broad spectrum of global passenger and cargo requirements of airlines. This family of commercial jet aircraft in production includes the 737 narrow-body model and the 747, 767, 777 and 787 wide-body models. Development continues on the 777X program and certain 737 MAX derivatives.

Defense, Space & Security Segment

This segment engages in the research, development, production and modification of manned and unmanned military aircraft and weapons systems for strike, surveillance and mobility, including fighter and trainer aircraft; vertical lift, including rotorcraft and tilt-rotor aircraft; and commercial derivative aircraft, including anti-submarine and tanker aircraft. In addition, this segment engages in the research, development, production and modification of the following products and related services: strategic defense and intelligence systems, including strategic missile and defense systems, command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR), cyber and information solutions, and intelligence systems; satellite systems, including government and commercial satellites and space exploration.

BDS’ primary customer is the United States Department of Defense (U.S. DoD). Revenues from the U.S. DoD, including foreign military sales through the U.S. government, accounted for approximately 83% of its 2020 revenues. Other significant BDS customers include the National Aeronautics and Space Administration (NASA) and customers in international defense, civil and commercial satellite markets.

This segment’s primary products include the following fixed-wing military aircraft: F/A-18E/F Super Hornet, F-15 programs, P-8 programs, KC-46A Tanker, and T-7A Red Hawk. This segment produces rotorcraft and rotary-wing programs, such as CH-47 Chinook, AH-64 Apache, and V-22 Osprey. Unmanned vehicles include the MQ-25, QF-16, and Insitu’s Scan Eagle aircraft. In addition, this segment’s products include space and missile systems including: government and commercial satellites, NASA’s Space Launch System (SLS), the International Space Station, Commercial Crew, missile defense and weapons programs, and Joint Direct Attack Munition, as well as the United Launch Alliance joint venture.

Global Services Segment

This segment provides services to our commercial and defense customers worldwide. BGS sustains aerospace platforms and systems with a full spectrum of products and services, including supply chain and logistics management, engineering, maintenance and modifications, upgrades and conversions, spare parts, pilot and maintenance training systems and services, technical and maintenance documents, and data analytics and digital services.

Boeing Capital Segment

BCC seeks to ensure that Boeing customers have the financing they need to buy and take delivery of their Boeing product, while managing overall financing exposure. BCC's portfolio consists of equipment under operating leases, sales-type/finance leases, notes and other receivables, assets held for sale or re-lease and investments.

Intellectual Property

We own numerous patents and have licenses for the use of patents owned by others, which relate to our products and their manufacture. In addition to owning a large portfolio of intellectual property, we also license intellectual property to and from third parties. For example, the U.S. government has licenses in our patents that are developed in performance of government contracts, and it may use or authorize others to use the inventions covered by such patents for government purposes. Unpatented research, development and engineering skills, as well as certain trademarks, trade secrets, and other intellectual property rights, also make an important contribution to our business. While our intellectual property rights in the aggregate are important to the operation of each of our businesses, we do not believe that our business would be materially affected by the expiration of any particular intellectual property right or termination of any particular intellectual property patent license agreement.

Human Capital

The COVID-19 pandemic continues to impact lives and businesses around the world. We have taken proactive steps to help protect the health and safety of our employees and maintain business continuity. A vast majority of our office workers continue to telecommute. Within our production and office areas we have established a number of safety protocols, including face covering and physical distance requirements, enhanced cleaning, encouraging daily self-health checks, voluntary temperature screening stations, and access to virtual primary care physicians at no cost. We have also implemented a coronavirus hotline with direct access to our Health Services group to report COVID-19 tests due to illness or exposure and positive COVID-19 tests. As part of that reporting process, we have developed a robust contact tracing program to identify employees who were in close contact with the ill employee in the workplace. We are also actively planning for the time when COVID-19 vaccines will be available for our employees, including reaching out to county public health departments to learn more about their plans to distribute vaccines and monitoring information from vaccine manufacturers about when vaccines will be available. All of the actions above are overseen by Boeing's Crisis Management Working Group, a multi-functional, multi-discipline team tasked with integrating all aspects of Boeing's COVID-19 response.

Additionally, we are adapting to the market impacts of COVID-19 and positioning the company for the future. One of these measures includes reducing the size of our workforce. As of December 31, 2020, Boeing's total workforce was approximately 141,000, with 11% located outside of the U.S. We expect to reduce the size of our workforce in 2021 through additional workforce actions as well as natural attrition.

As of December 31, 2020, our workforce is composed of approximately 47,000 union members. Our principal collective bargaining agreements were with the following unions:

Union	Percent of our Employees Represented	Status of the Agreements with Major Union
The International Association of Machinists and Aerospace Workers (IAM)	20%	We have two major agreements; one expiring in July 2022 and one in September 2024.
The Society of Professional Engineering Employees in Aerospace (SPEEA)	10%	We have two major agreements expiring in October 2026.
The United Automobile, Aerospace and Agricultural Implement Workers of America (UAW)	1%	We have one major agreement expiring in October 2022.

We aspire to be the most equitable, diverse and inclusive company. Guided by our values, we are committed to creating a company where everyone is included and respected, and where we support each other in reaching our full potential. We are committed to diverse representation across all levels of our workforce to reflect the vibrant and thriving diversity of the communities in which we live and work. We also support Business Resource Groups open to all employees that focus on gender, race & ethnicity, generations, gender identity, sexual orientation, disability or veteran status. These groups help foster inclusion among all teammates, build awareness, recruit and retain a diverse workforce and support the company in successfully operating in a global, multicultural business environment. We are committed to increased transparency and will publicly share our diversity metrics annually, beginning in 2021.

To attract and retain the best-qualified talent, we offer competitive benefits, including market-competitive compensation, healthcare, paid time off, parental leave, retirement benefits, tuition assistance, employee skills development, leadership development, and rotation programs. In 2020, our voluntary resignation rate was approximately 3%. Additionally, we hired approximately 8,000 new employees in 2020 for critical skills and had an offer acceptance rate of 82%.

Employees are encouraged to provide feedback about their experience through ongoing employee engagement activities. Boeing actively listens to its employees via surveys ranging from pre-hire to exiting the company. These voluntary surveys provide aggregate trend reports for the company to address in real time and ensure Boeing maintains an employee-focused experience and culture. We also invest in rewarding performance and have established a multi-level recognition program for the purpose of acknowledging the achievements of excellent individual or team performance.

We are committed to supporting our employees continuous development of professional, technical and leadership skills through access to digital learning resources and through partnerships with leading professional/technical societies and organizations around the world. For 2020, Boeing employees consumed approximately 4 million hours of learning. We offer the ability for our people to pursue degree programs, professional certificates and individual courses in strategic fields of study from more than 300 accredited colleges and universities, online and across the globe through our tuition assistance program. Over 12,000 Boeing employees leverage these programs every year.

Safety, quality and integrity are at the core of how Boeing operates. We aspire to achieve zero workplace injuries and provide a safe, open and accountable work environment for our employees. We provide several channels for all employees to speak up, ask for guidance, and report concerns related

to ethics or safety violations. We address employee concerns and take appropriate actions that uphold our Boeing values.

Competition

The commercial jet aircraft market and the airline industry remain extremely competitive. We face aggressive international competitors who are intent on increasing their market share, such as Airbus and other entrants from Russia, China and Japan. We are focused on improving our processes and continuing cost reduction efforts. We intend to continue to compete with other airplane manufacturers by providing customers with greater value products.

BDS faces strong competition in all market segments, primarily from Lockheed Martin Corporation, Northrop Grumman Corporation, Raytheon Technologies Corporation, General Dynamics Corporation and SpaceX. Non-U.S. companies such as BAE Systems and Airbus Group continue to build a strategic presence in the U.S. market by strengthening their North American operations and partnering with U.S. defense companies. In addition, certain competitors have occasionally formed teams with other competitors to address specific customer requirements. BDS expects the trend of strong competition to continue into 2021.

The commercial and defense services markets are extremely challenging and are made up of many of the same strong U.S. and non-U.S. competitors facing BCA and BDS along with other competitors in those markets. BGS leverages our extensive services network offering products and services which span the life cycle of our defense and commercial airplane programs: training, fleet services and logistics, maintenance and engineering, modifications and upgrades - as well as the daily cycle of gate-to-gate operations. BGS expects the market to remain highly competitive in 2021, and intends to grow market share by leveraging a high level of customer satisfaction and productivity.

Regulatory Matters

Our businesses are heavily regulated in most of our markets. We deal with numerous U.S. government agencies and entities, including but not limited to all of the branches of the U.S. military, NASA, the Federal Aviation Administration (FAA) and the Department of Homeland Security. Similar government authorities exist in our non-U.S. markets.

Government Contracts. The U.S. government, and other governments, may terminate any of our government contracts at their convenience, as well as for default based on our failure to meet specified performance requirements. If any of our U.S. government contracts were to be terminated for convenience, we generally would be entitled to receive payment for work completed and allowable termination or cancellation costs. If any of our government contracts were to be terminated for default, generally the U.S. government would pay only for the work that has been accepted and could require us to pay the difference between the original contract price and the cost to re-procure the contract items, net of the work accepted from the original contract. The U.S. government can also hold us liable for damages resulting from the default.

Commercial Aircraft. In the U.S., our commercial aircraft products are required to comply with FAA regulations governing production and quality systems, airworthiness and installation approvals, repair procedures and continuing operational safety. Outside the U.S., similar requirements exist for airworthiness, installation and operational approvals. These requirements are generally administered by the national aviation authorities of each country and, in the case of Europe, coordinated by the European Union Aviation Safety Agency.

Environmental. We are subject to various federal, state, local and non-U.S. laws and regulations relating to environmental protection, including the discharge, treatment, storage, disposal and

remediation of hazardous substances and wastes. We continually assess our compliance status and management of environmental matters to ensure our operations are in compliance with all applicable environmental laws and regulations. Investigation, remediation, and operation and maintenance costs associated with environmental compliance and management of sites are a normal, recurring part of our operations. These costs often are allowable costs under our contracts with the U.S. government. It is reasonably possible that costs incurred to ensure continued environmental compliance could have a material impact on our results of operations, financial condition or cash flows if additional work requirements or more stringent clean-up standards are imposed by regulators, new areas of soil, air and groundwater contamination are discovered and/or expansions of work scope are prompted by the results of investigations.

A Potentially Responsible Party (PRP) has joint and several liability under existing U.S. environmental laws. Where we have been designated a PRP by the Environmental Protection Agency or a state environmental agency, we are potentially liable to the government or third parties for the full cost of remediating contamination at our facilities or former facilities or at third-party sites. If we were required to fully fund the remediation of a site for which we were originally assigned a partial share, the statutory framework would allow us to pursue rights to contribution from other PRPs. For additional information relating to environmental contingencies, see Note 13 to our Consolidated Financial Statements.

Non-U.S. Sales. Our non-U.S. sales are subject to both U.S. and non-U.S. governmental regulations and procurement policies and practices, including regulations relating to import-export control, tariffs, investment, exchange controls, anti-corruption, and repatriation of earnings. Non-U.S. sales are also subject to varying currency, political and economic risks.

Raw Materials, Parts, and Subassemblies

We are highly dependent on the availability of essential materials, parts and subassemblies from our suppliers and subcontractors. The most important raw materials required for our aerospace products are aluminum (sheet, plate, forgings and extrusions), titanium (sheet, plate, forgings and extrusions) and composites (including carbon and boron). Although alternative sources generally exist for these raw materials, qualification of the sources could take a year or more. Many major components and product equipment items are procured or subcontracted on a sole-source basis with a number of companies.

Suppliers

We are dependent upon the ability of a large number of U.S. and non-U.S. suppliers and subcontractors to meet performance specifications, quality standards and delivery schedules at our anticipated costs. While we maintain an extensive qualification and performance surveillance system to control risk associated with such reliance on third parties, failure of suppliers or subcontractors to meet commitments could adversely affect production schedules and program/contract profitability, thereby jeopardizing our ability to fulfill commitments to our customers. We are also dependent on the availability of energy sources, such as electricity, at affordable prices.

Seasonality

No material portion of our business is considered to be seasonal.

Executive Officers of the Registrant

See "Item 10. Directors, Executive Officers and Corporate Governance" in Part III.

Other Information

Boeing was originally incorporated in the State of Washington in 1916 and reincorporated in Delaware in 1934. Our principal executive offices are located at 100 N. Riverside Plaza, Chicago, Illinois 60606 and our telephone number is (312) 544-2000.

General information about us can be found at www.boeing.com. The information contained on or connected to our website is not incorporated by reference into this Annual Report on Form 10-K and should not be considered part of this or any other report filed with the Securities and Exchange Commission (SEC). Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as any amendments to those reports, are available free of charge through our website as soon as reasonably practicable after we file them with, or furnish them to, the SEC. The SEC maintains a website at www.sec.gov that contains reports, proxy statements and other information regarding SEC registrants, including Boeing.

Forward-Looking Statements

This report, as well as our annual report to shareholders, quarterly reports, and other filings we make with the SEC, press and earnings releases and other written and oral communications, contain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as “may,” “should,” “expects,” “intends,” “projects,” “plans,” “believes,” “estimates,” “targets,” “anticipates” and similar expressions generally identify these forward-looking statements. Examples of forward-looking statements include statements relating to our future financial condition and operating results, as well as any other statement that does not directly relate to any historical or current fact.

Forward-looking statements are based on expectations and assumptions that we believe to be reasonable when made, but that may not prove to be accurate. These statements are not guarantees and are subject to risks, uncertainties and changes in circumstances that are difficult to predict. Many factors, including those set forth in the “Risk Factors” section below and other important factors disclosed in this report and from time to time in our other filings with the SEC, could cause actual results to differ materially and adversely from these forward-looking statements. Any forward-looking statement speaks only as of the date on which it is made, and we assume no obligation to update or revise any forward-looking statement whether as a result of new information, future events or otherwise, except as required by law.

Item 1A. Risk Factors

An investment in our common stock or debt securities involves risks and uncertainties and our actual results and future trends may differ materially from our past or projected future performance. We urge investors to consider carefully the risk factors described below in evaluating the information contained in this report.

Risks Related to COVID-19

We face significant risks related to the spread of the COVID-19 virus and developments surrounding the global pandemic have had, and will continue to have, significant effects on our business, financial condition, results of operations, and cash flows. We also face significant risks related to the global economic downturn and severe reduction in commercial air traffic caused by the pandemic. These risks include materially reduced demand for our products and services, increased instability in our supply chain, and challenges to the ongoing viability of some of our customers. We may face similar risks in connection with any future public health crises, including resurgences in the spread of COVID-19.

The COVID-19 pandemic has subjected our business, operations, financial performance, cash flows and financial condition to a number of risks, including, but not limited to those discussed below.

Operations-related risks: As a result of the COVID-19 pandemic, we are facing increased operational challenges from the need to protect employee health and safety. These challenges have included, and may in the future include production site shutdowns, and workplace disruptions and restrictions on the movement of people, raw materials and goods, both at our own facilities and those of our customers and suppliers.

For example, during the second quarter of 2020, we temporarily suspended operations in Puget Sound, South Carolina, and Philadelphia, as well as at several other key production sites. We had not previously experienced a complete suspension of our operations at these production sites. While we have resumed operations at all of our production sites we cannot predict whether or where further production disruptions could be required or what the ongoing impact of COVID-19-related operating restrictions will be. For example, we continue to experience additional operating costs due to social distancing requirements and other factors related to COVID-19 restrictions. We cannot predict the impact that future production disruptions may have on our business, operations, financial performance and financial condition. We continue to monitor federal, state, and municipal health authorities for new or modified guidance and requirements concerning the COVID-19 pandemic, and we may be required to impose additional operational restrictions and/or suspend operations at key production sites based on these requirements and recommendations and/or workplace disruptions caused by COVID-19.

Many of our suppliers also were required to suspend operations during the second quarter of 2020, and they may experience additional disruptions in 2021. Any such disruptions could have severe adverse impacts on our production costs, delivery schedule and/or ability to meet customer commitments.

Any prolonged suspension of operations or delayed recovery in our operations, and/or any similar suspension of operations or delayed recovery at one or more of our key suppliers, or the failure of any of our key suppliers, would result in further challenges to our business, leading to a further material adverse effect on our business, financial condition, results of operations, and cash flows.

Liquidity risks: The COVID-19 pandemic has also had a significant impact on our liquidity and overall debt levels. During the year ended December 31, 2020, net cash used by operating activities was \$18.4 billion. At December 31, 2020, cash and short-term investments totaled \$25.6 billion. Our debt balance totaled \$63.6 billion at December 31, 2020, up from \$27.3 billion at December 31, 2019. We expect negative operating cash flows in future quarters until deliveries begin to return to historical levels, and if

the pace and scope of the recovery are worse than we currently contemplate, we may need to obtain additional financing in order to fund our operations and obligations. If we were to need to obtain additional financing, uncertainty related to COVID-19 and its impact on us and the aerospace industry, as well as continued uncertainty with respect to our credit rating could limit our access to credit markets and we may have difficulty obtaining financing on terms acceptable to us or at all. In addition, certain of our customers may also be unable to make timely payments to us. Factors that could limit our access to additional liquidity include further disruptions in the global capital markets and/or additional declines in our financial performance, outlook or credit ratings. The occurrence of any or all of these events could adversely affect our ability to fund our operations and/or meet outstanding debt obligations and contractual commitments. In addition, further downgrades in our credit ratings could adversely affect our cost of funds and related margins, liquidity, competitive position and access to capital markets, and a significant downgrade could have an adverse impact on our businesses.

Customer-related risks: Commercial air traffic has fallen dramatically due to the COVID-19 pandemic. This trend has impacted passenger traffic most severely. Near-term cargo traffic has also fallen, but to a lesser extent as global trade has begun to recover. Most airlines have significantly reduced their capacity, and many could implement further reductions in the near future. Many airlines are also implementing significant reductions in staffing. These capacity changes are causing, and are expected to continue to cause, negative impacts to our customers' revenue, earnings, and cash flow, and in some cases may threaten the future viability of some of our customers, potentially causing defaults within our customer financing portfolio, which was \$2.0 billion as of December 31, 2020 and/or requiring us to remarket aircraft that have already been produced and/or are currently in backlog. If we are unable to successfully remarket these aircraft and/or the narrow-body and wide-body markets do not recover as soon as we are currently assuming, or if we are required to further reduce production rates and/or contract the accounting quantity on any of our commercial programs, we could experience material reductions in earnings and/or be required to recognize a reach-forward loss on one or more of our programs. For example, in the fourth quarter of 2020, we recognized a reach-forward loss on the 777X program in part due to impacts related to the COVID-19 pandemic. In addition, if 737 MAX aircraft in one or more jurisdictions remain grounded for an extended period of time, we may experience additional reductions to backlog and/or significant order cancellations. Additionally, we may experience fewer new orders and increased cancellations across all of our commercial airplane programs as a result of the COVID-19 pandemic and associated impacts on demand. Our customers may also lack sufficient liquidity to purchase new aircraft due to impacts from the pandemic. We are also observing a significant increase in the number of requests for payment deferrals, contract modifications, lease restructurings and similar actions, and these trends may lead to additional charges, impairments and other adverse financial impacts in our business over time. In addition, to the extent that customers have valid rights to cancel undelivered aircraft, we may be required to refund pre-delivery payments, putting additional constraints on our liquidity.

In addition to the near-term impact, there is risk that the industry implements longer-term strategies involving reduced capacity, shifting route patterns, and mitigation strategies related to impacts from COVID-19 and the risk of future public health crises. In addition, airlines may experience reduced demand due to reluctance by the flying public to travel due to travel restrictions and/or social distancing requirements.

As a result, there is significant uncertainty with respect to when commercial air traffic levels will begin to recover, and whether and at what point capacity will return to and/or exceed pre-COVID-19 levels. The COVID-19 pandemic also has increased, and its aftermath is also expected to continue to increase, uncertainty with respect to global trade volumes, which could put negative pressure on cargo traffic levels. Any of these factors would have a significant impact on the demand for both single-aisle and wide-body commercial aircraft, as well as for the services we provide to commercial airlines. In addition, a lengthy period of reduced industry-wide demand for commercial aircraft would put additional pressure on our suppliers, resulting in increased procurement costs and/or additional supply chain disruption. To

the extent that the COVID-19 pandemic or its aftermath further impacts demand for our products and services or impairs the viability of some of our customers and/or suppliers, our financial condition, results of operations, and cash flows could be adversely affected, and those impacts could be material.

Other risks: The magnitude and duration of the global COVID-19 pandemic is uncertain and continues to adversely affect our business and operating and financial results. For example, during the fourth quarter of 2020, due in part to the prolonged adverse impact of the pandemic on our earnings, we recorded an increase of \$2.5 billion to the valuation allowance associated with deferred income tax assets. The pandemic also is expected to heighten many of the other risks described below. Further, the COVID-19 pandemic may also affect our operating and financial results in a manner that is not presently known to us or that we currently do not expect to present significant risks to our operations or financial results.

Risks Related to Our Business and Operations

We are subject to a number of risks and uncertainties related to the 737 MAX. These risks include uncertainties regarding the timing and conditions of 737 MAX regulatory approvals, in certain non-U.S. jurisdictions, lower than planned production rates and/or delivery rates, increased considerations to customers, increased supplier costs and supply chain health, changes to the assumptions and estimates made in our financial statements regarding the 737 program, and potential outcomes of various 737 MAX-related legal proceedings and government investigations.

On March 13, 2019, the Federal Aviation Administration (FAA) issued an order to suspend operations of all 737 MAX aircraft in the U.S. and by U.S. aircraft operators following two fatal 737 MAX accidents. Non-U.S. civil aviation authorities issued directives to the same effect. Deliveries of the 737 MAX were suspended until December 2020. The grounding has reduced revenues, operating margins, and cash flows, and will continue to do so until production rates return to pre-grounding levels. In connection with the effort to return the 737 MAX to service, we developed software updates for the 737 MAX, together with an associated pilot training and supplementary education program. We continue to work with certain non-U.S. civil aviation authorities to complete remaining steps toward certification and readiness for return to service worldwide. Any delays in certification in one or more jurisdictions and/or the ramp-up of deliveries or other liabilities associated with the accidents or grounding could have a material adverse effect on our financial position, results of operations, and/or cash flows. In addition, multiple legal actions have been filed against us related to the 737 MAX. We also are fully cooperating with U.S. government investigations related to the accidents and the 737 MAX, including investigations by the Securities and Exchange Commission. In January 2021, we entered into a Deferred Prosecution Agreement with the U.S. Department of Justice that resolves the Department of Justice's previously disclosed investigation into us regarding the evaluation of the 737 MAX airplane by the FAA. We expensed \$744 in the fourth quarter of 2020 related to this agreement. Any further adverse impacts related to any such litigation or investigation could have a further material impact on our financial position, results of operations and/or cash flows.

During 2019, we announced plans to reduce, and ultimately to suspend 737 production. Impacts related to these actions significantly increased costs to produce aircraft included in the current accounting quantity and have resulted in reduced 737 program and overall BCA segment operating margins. We have also made significant assumptions regarding estimated costs expected to be incurred in 2021 that should be included in program inventory and those estimated costs that will be expensed when incurred as abnormal production costs. If we are unable to return the 737 MAX aircraft to service in one or more jurisdictions or deliver 737 aircraft to customers on the schedule and/or at a pace consistent with our expectations, we will incur significant additional costs and/or delay the planned ramp-up of 737 production. These delays would also result in significant additional disruption to the 737 production system and further delay efforts to restore and/or implement previously planned increases in the 737

production rate. Cash flows continue to be negatively impacted by delayed payments from customers, higher costs and inventory levels, and payments made to customers in connection with disruption to their operations. In addition, we have experienced claims and assertions from customers in connection with the grounding, and we recorded an earnings charge of \$8,259 million, net of insurance recoveries of \$500 million, in 2019, in connection with an estimate of potential concessions and other considerations to customers for disruptions related to the grounding and associated delivery delays.

Any further delays in regulatory approval of the 737 MAX in one or more jurisdictions, further disruptions to suppliers and/or the long-term health of the production system, supplier claims or assertions, or changes to estimated concessions or other considerations we expect to provide to customers could have a material adverse effect on our financial position, results of operations, and/or cash flows. In the event of unanticipated additional training requirements in one or more jurisdictions, delays in regulatory approval, and/or delays in our ability to resume deliveries to one or more customers, we may be required to take actions with longer-term impact, such as further changes to our production plans, employment reductions and/or the expenditure of significant resources to support our supply chain and/or customers.

We have made significant estimates with respect to the 737 program regarding the number of units to be produced, the period during which those units are likely to be produced, and the units' expected sales prices, production costs, program tooling and other non-recurring costs, and routine warranty costs. In addition to the estimated timing of the resumption of deliveries, we have made assumptions regarding outcomes of accident investigations and other government inquiries, timing of future 737 production rate increases, timing and sequence of future deliveries, supply chain health as we implement our production plans, as well as outcomes of negotiations with customers. Any changes in these estimates and/or assumptions with respect to the 737 program could have a material impact on our financial position, results of operations, and/or cash flows. For additional information, see our discussion under "Management's Discussion and Analysis-Critical Accounting Policies and Estimates-737 MAX Grounding" on pages 55 - 56.

In addition to the impact of COVID-19 described above, our Commercial Airplanes and Global Services businesses depend heavily on commercial airlines, and are subject to unique risks.

Market conditions have a significant impact on demand for our commercial aircraft and related services. The commercial aircraft market is predominantly driven by long-term trends in airline passenger and cargo traffic. The principal factors underlying long-term traffic growth are sustained economic growth and political stability both in developed and emerging markets. Demand for our commercial aircraft is further influenced by airline profitability, availability of aircraft financing, world trade policies, government-to-government relations, technological advances, price and other competitive factors, fuel prices, terrorism, epidemics and environmental regulations. Traditionally, the airline industry has been cyclical and very competitive and has experienced significant profit swings and constant challenges to be more cost competitive. Significant deterioration in the global economic environment, the airline industry generally, or the financial stability of one or more of our major customers could result in fewer new orders for aircraft or services, or could cause customers to seek to postpone or cancel contractual orders and/or payments to us, which could result in lower revenues, profitability and cash flows and a reduction in our contractual backlog. In addition, because our commercial aircraft backlog consists of aircraft scheduled for delivery over a period of several years, any of these macroeconomic, industry or customer impacts could unexpectedly affect deliveries over a long period.

We enter into firm fixed-price aircraft sales contracts with indexed price escalation clauses which could subject us to losses if we have cost overruns or if increases in our costs exceed the applicable escalation rate. Commercial aircraft sales contracts are often entered into years before the aircraft are delivered. In order to help account for economic fluctuations between the contract date and delivery date, aircraft pricing generally consists of a fixed amount as modified by price escalation formulas

derived from labor, commodity and other price indices. Our revenue estimates are based on current expectations with respect to these escalation formulas, but the actual escalation amounts are outside of our control. Escalation factors can fluctuate significantly from period to period. Changes in escalation amounts can significantly impact revenues and operating margins in our Commercial Airplanes business.

We derive a significant portion of our revenues from a limited number of commercial airlines. We can make no assurance that any customer will exercise purchase options, fulfill existing purchase commitments or purchase additional products or services from us. In addition, fleet decisions, airline consolidations or financial challenges involving any of our major commercial airline customers could significantly reduce our revenues and limit our opportunity to generate profits from those customers.

Our Commercial Airplanes business depends on our ability to maintain a healthy production system, achieve planned production rate targets, successfully develop new aircraft or new derivative aircraft, and meet or exceed stringent performance and reliability standards.

The commercial aircraft business is extremely complex, involving extensive coordination and integration with U.S and non-U.S. suppliers, highly-skilled labor from thousands of employees and other partners, and stringent regulatory requirements, including the risk of evolving standards for commercial aircraft certification, and performance and reliability standards. In addition, the introduction of new aircraft programs and/or derivatives, such as the 777X, involves increased risks associated with meeting development, testing, production, and certification schedules. The 737 program has also experienced significant disruption due to the grounding of the 737 MAX and associated suspension of 737 MAX production for part of 2020. As a result, our ability to deliver aircraft on time, satisfy regulatory and customer requirements, and achieve or maintain, as applicable, program profitability is subject to significant risks. For example, a number of our customers may have contractual remedies, including rights to reject individual airplane deliveries if the actual delivery date is significantly later than the contractual delivery date. Delays on the 737 MAX and 777X programs have resulted in, and may continue to result in, customers having the right to terminate orders and or substitute orders for other Boeing aircraft.

We must minimize disruption caused by production changes and achieve productivity improvements in order to meet customer demand and maintain our profitability. We have previously announced plans to adjust production rates on several of our commercial aircraft programs. We continue to engage in significant ongoing development, testing and production of the 777X aircraft. In addition, we continue to seek opportunities to reduce the costs of building our aircraft, including working with our suppliers to reduce supplier costs, identifying and implementing productivity improvements, and optimizing how we manage inventory. If production rate changes at any of our commercial aircraft assembly facilities are delayed or create significant disruption to our production system, or if our suppliers cannot timely deliver components to us at the cost and rates necessary to achieve our targets, we may be unable to meet delivery schedules and/or the financial performance of one or more of our programs may suffer.

Operational challenges impacting the production system for one or more of our commercial aircraft programs could result in production delays and/or failure to meet customer demand for new aircraft, either of which would negatively impact our revenues and operating margins. Our commercial aircraft production system is extremely complex. Operational issues, including delays or defects in supplier components, failure to meet internal performance plans, or delays or failures to achieve required regulatory approval, could result in significant out-of-sequence work and increased production costs, as well as delayed deliveries to customers, impacts to aircraft performance and/or increased warranty or fleet support costs. For example, in the fourth quarter of 2020, we expanded the scope of production inspections on the 787 program, and those inspections and associated rework are delaying scheduled deliveries and resulting in additional 787 aircraft in inventory.

If our commercial airplanes fail to satisfy performance and reliability requirements, we could face additional costs and/or lower revenues. Developing and manufacturing commercial aircraft that meet or exceed our performance and reliability standards, as well as those of customers and regulatory agencies, can be costly and technologically challenging. These challenges are particularly significant with newer aircraft programs. Any failure of any Boeing aircraft to satisfy performance or reliability requirements could result in disruption to our operations, higher costs and/or lower revenues.

Changes in levels of U.S. government defense spending or overall acquisition priorities could negatively impact our financial position and results of operations.

We derive a substantial portion of our revenue from the U.S. government, primarily from defense related programs with the U.S. DoD. Levels of U.S. defense spending are very difficult to predict and may be impacted by numerous factors such as the evolving nature of the national security threat environment, U.S. national security strategy, U.S. foreign policy, the domestic political environment, macroeconomic conditions and the ability of the U.S. government to enact relevant legislation such as authorization and appropriations bills.

Although FY21 appropriations have been enacted, long-term uncertainty remains with respect to overall levels of defense spending beyond FY21, and it is likely that U.S. government discretionary spending, including defense spending, will continue to be subject to pressure. In addition, the timeliness of future appropriations for government departments and agencies remains a recurrent risk. A lapse in appropriations for government department or agencies would result in a full or partial government shutdown, which could impact the Company's operations. Alternatively, Congress may fund government departments and agencies with one or more Continuing Resolutions; however, this could restrict the execution of certain program activities and delay new programs or competitions.

There continues to be uncertainty with respect to future acquisition priorities and program-level appropriations for the U.S. DoD and other government agencies (including NASA), including tension between modernization investments, sustainment investments, and investments in new technologies or emergent capabilities. Future investment priority changes or budget cuts, including changes associated with the authorizations and appropriations process could result in reductions, cancellations, and/or delays of existing contracts or programs, or future program opportunities. Any of these impacts could have a material effect on the results of the Company's operations, financial position and/or cash flows.

In addition, as a result of the significant ongoing uncertainty with respect to both U.S. defense spending and the evolving nature of the national security threat environment, we also expect the U.S. DoD to continue to emphasize affordability, innovation, cybersecurity, and delivery of technical data and software in its procurement processes. If we can no longer adjust successfully to these changing acquisition policies our revenues and market share could be impacted.

Our ability to deliver products and services that satisfy customer requirements is heavily dependent on the performance and financial stability of our subcontractors and suppliers, as well as on the availability of raw materials and other components.

We rely on other companies including U.S. and non-U.S. subcontractors and suppliers to provide and produce raw materials, integrated components and sub-assemblies, and production commodities and to perform some of the services that we provide to our customers. If one or more of our suppliers or subcontractors experiences financial difficulties, delivery delays or other performance problems, we may be unable to meet commitments to our customers or incur additional costs. In addition, if one or more of the raw materials on which we depend (such as aluminum, titanium or composites) becomes unavailable or is available only at very high prices, we may be unable to deliver one or more of our products in a timely fashion or at budgeted costs. In some instances, we depend upon a single source of supply. Any service disruption from one of these suppliers, either due to circumstances beyond the supplier's control, such as geopolitical developments, or as a result of performance problems or financial difficulties, could have a material adverse effect on our ability to meet commitments to our customers or increase our operating costs.

Competition within our markets and with respect to the products we sell may reduce our future contracts and sales.

The markets in which we operate are highly competitive and one or more of our competitors may have more extensive or more specialized engineering, manufacturing and marketing capabilities than we do in some areas. In our Commercial Airplanes business, we anticipate increasing competition among non-U.S. aircraft manufacturers of commercial jet aircraft. In our BDS business, we anticipate that the effects of defense industry consolidation, shifting acquisition and budget priorities, and continued cost pressure at our U.S. DoD and non-U.S. customers will intensify competition for many of our BDS products. Our BGS segment faces competition from many of the same strong U.S. and non-U.S. competitors facing BCA and BDS. Furthermore, we are facing increased international competition and cross-border consolidation of competition. There can be no assurance that we will be able to compete successfully against our current or future competitors or that the competitive pressures we face will not result in reduced revenues and market share.

We derive a significant portion of our revenues from non-U.S. sales and are subject to the risks of doing business in other countries.

In 2020, non-U.S. customers, which includes foreign military sales (FMS), accounted for approximately 37% of our revenues. We expect that non-U.S. sales will continue to account for a significant portion of our revenues for the foreseeable future. As a result, we are subject to risks of doing business internationally, including:

- changes in regulatory requirements;
- changes in the global trade environment, including disputes with authorities in non-U.S. jurisdictions, including international trade authorities, that could impact sales and/or delivery of products and services outside the U.S. and/or impose costs on our customers in the form of tariffs, duties, or penalties attributable to the importation of Boeing products and services;
- U.S. and non-U.S. government policies, including requirements to expend a portion of program funds locally and governmental industrial cooperation or participation requirements;
- fluctuations in international currency exchange rates;
- volatility in international political and economic environments and changes in non-U.S. national priorities and budgets, which can lead to delays or fluctuations in orders;
- the complexity and necessity of using non-U.S. representatives and consultants;

- the uncertainty of the ability of non-U.S. customers to finance purchases, including the availability of financing from the Export-Import Bank of the United States;
- uncertainties and restrictions concerning the availability of funding credit or guarantees;
- imposition of domestic and international taxes, export controls, tariffs, embargoes, sanctions and other trade restrictions;
- the difficulty of management and operation of an enterprise spread over many countries;
- compliance with a variety of non-U.S. laws, as well as U.S. laws affecting the activities of U.S. companies abroad; and
- unforeseen developments and conditions, including terrorism, war, epidemics and international tensions and conflicts.

While the impact of these factors is difficult to predict, any one or more of these factors could adversely affect our operations in the future. For example, since 2018, the U.S. and China have imposed tariffs on each other's imports. China is a very significant market for commercial airplanes and represents a significant component of our commercial airplanes backlog. In addition, the U.S. and European Union (EU) have been engaged in two long-running disputes at the World Trade Organization (WTO) relating to large civil aircraft, including one that has resulted in the imposition of tariffs on certain of our products. Impacts from these or future potential tariffs, or deterioration in trade relations between the U.S. and one or more other countries, could have a material adverse impact on our revenues, operating earnings, and/or cash flows.

We use estimates in accounting for many contracts and programs. Changes in our estimates could adversely affect our future financial results.

Contract and program accounting require judgment relative to assessing risks, estimating revenues and costs and making assumptions for schedule and technical issues. Due to the size and nature of many of our contracts and programs, the estimation of total revenues and cost at completion is complicated and subject to many variables. Assumptions have to be made regarding the length of time to complete the contract or program because costs also include expected increases in wages and employee benefits, material prices and allocated fixed costs. Incentives or penalties related to performance on contracts are considered in estimating sales and profit rates, and are recorded when there is sufficient information for us to assess anticipated performance. Supplier claims and assertions are also assessed and considered in estimating costs and profit rates. Estimates of future award fees are also included in sales and profit rates.

With respect to each of our commercial aircraft programs, inventoriable production costs (including overhead), program tooling and other non-recurring costs and routine warranty costs are accumulated and charged as cost of sales by program instead of by individual units or contracts. A program consists of the estimated number of units (accounting quantity) of a product to be produced in a continuing, long-term production effort for delivery under existing and anticipated contracts limited by the ability to make reasonably dependable estimates. To establish the relationship of sales to cost of sales, program accounting requires estimates of (a) the number of units to be produced and sold in a program, (b) the period over which the units can reasonably be expected to be produced and (c) the units' expected sales prices, production costs, program tooling and other non-recurring costs, and routine warranty costs for the total program. Several factors determine accounting quantity, including firm orders, letters of intent from prospective customers and market studies. Changes to customer or model mix, production costs and rates, learning curve, changes to price escalation indices, costs of derivative aircraft, supplier performance, customer and supplier negotiations/settlements, supplier claims and/or certification issues can impact these estimates. In addition, on development programs such as the 777X, we are subject to risks with respect to the timing and conditions of aircraft certification, including potential gaps between when aircraft are certified in various jurisdictions, and our estimates with

respect to timing of future certifications could have an impact on overall program status. Any such change in estimates relating to program accounting may adversely affect future financial performance.

Because of the significance of the judgments and estimation processes described above, materially different sales and profit amounts could be recorded if we used different assumptions or if the underlying circumstances were to change. Changes in underlying assumptions, circumstances or estimates may adversely affect future period financial performance. For additional information on our accounting policies for recognizing sales and profits, see our discussion under “Management’s Discussion and Analysis – Critical Accounting Policies – Contract Accounting/Program Accounting” on pages 53 – 55 and Note 1 to our Consolidated Financial Statements on pages 68 – 81 of this Form 10-K.

We may not realize the anticipated benefits of mergers, acquisitions, joint ventures/strategic alliances or divestitures.

As part of our business strategy, we may merge with or acquire businesses and/or form joint ventures and strategic alliances. Whether we realize the anticipated benefits from these acquisitions and related activities depends, in part, upon our ability to integrate the operations of the acquired business, the performance of the underlying product and service portfolio, and the performance of the management team and other personnel of the acquired operations. Accordingly, our financial results could be adversely affected by unanticipated performance issues, legacy liabilities, transaction-related charges, amortization of expenses related to intangibles, charges for impairment of long-term assets, credit guarantees, partner performance and indemnifications. Consolidations of joint ventures could also impact our reported results of operations or financial position. While we believe that we have established appropriate and adequate procedures and processes to mitigate these risks, there is no assurance that these transactions will be successful. We also may make strategic divestitures from time to time. These transactions may result in continued financial involvement in the divested businesses, such as through guarantees or other financial arrangements, following the transaction. Nonperformance by those divested businesses could affect our future financial results through additional payment obligations, higher costs or asset write-downs.

Risks Related to Our Contracts

We conduct a significant portion of our business pursuant to U.S. government contracts, which are subject to unique risks.

In 2020, 51% of our revenues were earned pursuant to U.S. government contracts, which include FMS through the U.S. government. Business conducted pursuant to such contracts is subject to extensive procurement regulations and other unique risks.

Our sales to the U.S. government are subject to extensive procurement regulations, and changes to those regulations could increase our costs. New procurement regulations, or changes to existing requirements, could increase our compliance costs or otherwise have a material impact on the operating margins of our BDS and BGS businesses. These requirements may result in increased compliance costs, and we could be subject to additional costs in the form of withheld payments and/or reduced future business if we fail to comply with these requirements in the future. Compliance costs attributable to current and potential future procurement regulations such as these could negatively impact our financial condition and operating results.

The U.S. government may modify, curtail or terminate one or more of our contracts. The U.S. government contracting party may modify, curtail or terminate its contracts and subcontracts with us, without prior notice and either at its convenience or for default based on performance. In addition, funding pursuant to our U.S. government contracts may be reduced or withheld as part of the U.S.

Congressional appropriations process due to fiscal constraints, changes in U.S. national security strategy and/or priorities or other reasons. Further uncertainty with respect to ongoing programs could also result in the event that the U.S. government finances its operations through temporary funding measures such as “continuing resolutions” rather than full-year appropriations. Any loss or anticipated loss or reduction of expected funding and/or modification, curtailment, or termination of one or more large programs could have a material adverse effect on our earnings, cash flow and/or financial position.

We are subject to U.S. government inquiries and investigations, including periodic audits of costs that we determine are reimbursable under U.S. government contracts. U.S. government agencies, including the Defense Contract Audit Agency and the Defense Contract Management Agency, routinely audit government contractors. These agencies review our performance under contracts, cost structure and compliance with applicable laws, regulations, and standards, as well as the adequacy of and our compliance with our internal control systems and policies. Any costs found to be misclassified or inaccurately allocated to a specific contract will be deemed non-reimbursable, and to the extent already reimbursed, must be refunded. Any inadequacies in our systems and policies could result in withholds on billed receivables, penalties and reduced future business. Furthermore, if any audit, inquiry or investigation uncovers improper or illegal activities, we could be subject to civil and criminal penalties and administrative sanctions, including termination of contracts, forfeiture of profits, suspension of payments, fines, and suspension or debarment from doing business with the U.S. government. We also could suffer reputational harm if allegations of impropriety were made against us, even if such allegations are later determined to be false.

We enter into fixed-price contracts which could subject us to losses if we have cost overruns.

Our BDS and BGS defense businesses generated approximately 69% and 72% of their 2020 revenues from fixed-price contracts. While fixed-price contracts enable us to benefit from performance improvements, cost reductions and efficiencies, they also subject us to the risk of reduced margins or incurring losses if we are unable to achieve estimated costs and revenues. If our estimated costs exceed our estimated price, we recognize reach-forward losses which can significantly affect our reported results. For example in 2020, we recorded additional reach-forward losses of \$1,320 million on the KC-46A Tanker contract reflecting \$551 million of costs associated with the agreement signed in April 2020 with the U.S. Air Force to develop and integrate a new Remote Vision System, and the remaining costs reflect production inefficiencies including impacts of COVID-19 disruption. New programs could also have risk for reach-forward loss upon contract award and during the period of contract performance. For example, in 2018, in connection with winning the T-7A Red Hawk and MQ-25 competitions, we recorded a loss of \$400 million associated with options for 346 T-7A Red Hawk aircraft and a loss of \$291 million related to the MQ-25 Engineering, Manufacturing and Development (EMD) contract. The long term nature of many of our contracts makes the process of estimating costs and revenues on fixed-price contracts inherently risky. Fixed-price contracts often contain price incentives and penalties tied to performance which can be difficult to estimate and have significant impacts on margins. In addition, some of our contracts have specific provisions relating to cost, schedule and performance.

Fixed-price development contracts are generally subject to more uncertainty than fixed-price production contracts. Many of these development programs have highly complex designs. In addition, technical or quality issues that arise during development could lead to schedule delays and higher costs to complete, which could result in a material charge or otherwise adversely affect our financial condition. Examples of significant BDS fixed-price development contracts include Commercial Crew, KC-46A Tanker, T-7A Red Hawk, VC-25B Presidential Aircraft, MQ-25, and commercial and military satellites.

We enter into cost-type contracts which also carry risks.

Our BDS and BGS defense businesses generated approximately 31% and 28% of their 2020 revenues from cost-type contracting arrangements. Some of these are development programs that have complex design and technical challenges. These cost-type programs typically have award or incentive fees that are subject to uncertainty and may be earned over extended periods. In these cases the associated financial risks are primarily in reduced fees, lower profit rates or program cancellation if cost, schedule or technical performance issues arise. Programs whose contracts are primarily cost-type include Ground-based Midcourse Defense (GMD), Proprietary and SLS programs.

We enter into contracts that include in-orbit incentive payments that subject us to risks.

Contracts in the commercial satellite industry and certain government satellite contracts include in-orbit incentive payments. These in-orbit payments may be paid over time after final satellite acceptance or paid in full prior to final satellite acceptance. In both cases, the in-orbit incentive payment is at risk if the satellite does not perform to specifications for up to 15 years after acceptance. The net present value of in-orbit incentive fees we ultimately expect to realize is recognized as revenue in the construction period. If the satellite fails to meet contractual performance criteria, customers will not be obligated to continue making in-orbit payments and/or we may be required to provide refunds to the customer and incur significant charges.

Risks Related to Cybersecurity and Business Disruptions

Unauthorized access to our or our customers' information and systems could negatively impact our business.

We face certain security threats, including threats to the confidentiality, availability and integrity of our data and systems. We maintain an extensive network of technical security controls, policy enforcement mechanisms, monitoring systems and management oversight in order to address these threats. While these measures are designed to prevent, detect and respond to unauthorized activity in our systems, certain types of attacks, including cyber-attacks, could result in significant financial or information losses and/or reputational harm. In addition, we manage information and information technology systems for certain customers. Many of these customers face similar security threats. If we cannot prevent the unauthorized access, release and/or corruption of our customers' confidential, classified or personally identifiable information, our reputation could be damaged, and/or we could face financial losses.

Business disruptions could seriously affect our future sales and financial condition or increase our costs and expenses.

Our business may be impacted by disruptions including threats to physical security, information technology or cyber-attacks or failures, damaging weather or other acts of nature and pandemics or other public health crises. Any of these disruptions could affect our internal operations or our ability to deliver products and services to our customers. Any significant production delays, or any destruction, manipulation or improper use of our data, information systems or networks could impact our sales, increase our expenses and/or have an adverse effect on the reputation of Boeing and of our products and services.

Risks Related to Legal and Regulatory Matters

The outcome of litigation and of government inquiries and investigations involving our business is unpredictable and an adverse decision in any such matter could have a material effect on our financial position and results of operations.

We are involved in a number of litigation matters. These matters may divert financial and management resources that would otherwise be used to benefit our operations. No assurances can be given that the results of these matters will be favorable to us. An adverse resolution of any of these lawsuits, or future lawsuits, could have a material impact on our financial position and results of operations. In addition, we are subject to extensive regulation under the laws of the United States and its various states, as well as other jurisdictions in which we operate. As a result, we are sometimes subject to government inquiries and investigations of our business due, among other things, to our business relationships with the U.S. government, the heavily regulated nature of our industry, and in the case of environmental proceedings, our current or past ownership of certain property. Any such inquiry or investigation could potentially result in an adverse ruling against us, which could have a material impact on our financial position and results of operations.

Our operations expose us to the risk of material environmental liabilities.

We are subject to various U.S. federal, state, local and non-U.S. laws and regulations related to environmental protection, including the discharge, treatment, storage, disposal and remediation of hazardous substances and wastes. We could incur substantial costs, including cleanup costs, fines and civil or criminal sanctions, as well as third-party claims for property damage or personal injury, if we were to violate or become liable under environmental laws or regulations. In some cases, we may be subject to such costs due to environmental impacts attributable to our current or past manufacturing operations or the operations of companies we have acquired. In other cases, we may become subject to such costs due to an indemnification agreement between us and a third party relating to such environmental liabilities. In addition, new laws and regulations, more stringent enforcement of existing laws and regulations, the discovery of previously unknown contamination or the imposition of new remediation requirements could result in additional costs. For additional information relating to environmental contingencies, see Note 13 to our Consolidated Financial Statements.

Risks Related to Financing and Liquidity

We may be unable to obtain debt to fund our operations and contractual commitments at competitive rates, on commercially reasonable terms or in sufficient amounts.

We depend, in part, upon the issuance of debt to fund our operations and contractual commitments. In addition, our debt balances have increased significantly since 2019, driven primarily by impacts related to the 737 MAX grounding and the COVID-19 pandemic, and we expect to continue to actively manage our liquidity. Our increased debt balance has also resulted in downgrades to our credit ratings. As of December 31, 2020, our debt totaled \$63.6 billion of which approximately \$20.4 billion of principal payments on outstanding debt become due over the next three years. In addition, as of December 31, 2020, our airplane financing commitments totaled \$11,512 million. If we require additional funding in order to pay off existing debt, address further impacts to our business related to the 737 MAX, COVID-19, or broader market developments, fund outstanding financing commitments or meet other business requirements, our market liquidity may not be sufficient. These risks will be particularly acute if we are subject to further credit rating downgrades. A number of factors could cause us to incur increased borrowing costs and to have greater difficulty accessing public and private markets for debt. These factors include disruptions or declines in the global capital markets and/or a decline in our financial performance, outlook or credit ratings, including impacts described above related to the

COVID-19 pandemic and/or associated changes in demand for our products and services. The occurrence of any or all of these events may adversely affect our ability to fund our operations and contractual or financing commitments.

Substantial pension and other postretirement benefit obligations have a material impact on our earnings, shareholders' equity and cash flows from operations, and could have significant adverse impacts in future periods.

Many of our employees have earned benefits under defined benefit pension plans. Potential pension contributions include both mandatory amounts required under the Employee Retirement Income Security Act and discretionary contributions to improve the plans' funded status. The extent of future contributions depends heavily on market factors such as the discount rate and the actual return on plan assets. We estimate future contributions to these plans using assumptions with respect to these and other items. Changes to those assumptions could have a significant effect on future contributions as well as on our annual pension costs and/or result in a significant change to shareholders' equity. For U.S. government contracts, we allocate pension costs to individual contracts based on U.S. Cost Accounting Standards which can also affect contract profitability. We also provide other postretirement benefits to certain of our employees, consisting principally of health care coverage for eligible retirees and qualifying dependents. Our estimates of future costs associated with these benefits are also subject to assumptions, including estimates of the level of medical cost increases. For a discussion regarding how our financial statements can be affected by pension and other postretirement plan accounting policies, see "Management's Discussion and Analysis-Critical Accounting Policies-Pension Plans" on pages 57 - 58 of this Form 10-K. Although under Generally Accepted Accounting Principles in the United States of America (GAAP) the timing of periodic pension and other postretirement benefit expense and plan contributions are not directly related, the key economic factors that affect GAAP expense would also likely affect the amount of cash or stock we would contribute to our plans.

Our insurance coverage may be inadequate to cover all significant risk exposures.

We are exposed to liabilities that are unique to the products and services we provide. We maintain insurance for certain risks and, in some circumstances, we may receive indemnification from the U.S. government. The amount of our insurance coverage may not cover all claims or liabilities and we may be forced to bear substantial costs. For example, liabilities arising from the use of certain of our products, such as aircraft technologies, space systems, spacecraft, satellites, missile systems, weapons, cyber security, border security systems, anti-terrorism technologies, and/or air traffic management systems may not be insurable on commercially reasonable terms. While some of these products are shielded from liability within the U.S. under the SAFETY Act provisions of the 2002 Homeland Security Act, no such protection is available outside the U.S., potentially resulting in significant liabilities. The amount of insurance coverage we maintain may be inadequate to cover these or other claims or liabilities.

A significant portion of our customer financing portfolio is concentrated among certain customers and in certain types of Boeing aircraft, which exposes us to concentration risks.

A significant portion of our customer financing portfolio is concentrated among certain customers and in distinct geographic regions. Our portfolio is also concentrated by varying degrees across Boeing aircraft product types, most notably 717 and 747-8 aircraft, and among customers that we believe have less than investment-grade credit. If one or more customers holding a significant portion of our portfolio assets experiences financial difficulties or otherwise defaults on or does not renew its leases with us at their expiration, and we are unable to redeploy the aircraft on reasonable terms, or if the types of

aircraft that are concentrated in our portfolio suffer greater than expected declines in value, our earnings, cash flows and/or financial position could be materially adversely affected.

Risks Related to Labor

Some of our and our suppliers' workforces are represented by labor unions, which may lead to work stoppages.

Approximately 47,000 employees, which constitute 33% of our total workforce, were union represented as of December 31, 2020. We experienced a work stoppage in 2008 when a labor strike halted commercial aircraft and certain BDS program production. We may experience additional work stoppages in the future, which could adversely affect our business. We cannot predict how stable our relationships, currently with 10 U.S. labor organizations and 12 non-U.S. labor organizations, will be or whether we will be able to meet the unions' requirements without impacting our financial condition. The unions may also limit our flexibility in dealing with our workforce. Union actions at suppliers can also affect us. Work stoppages and instability in our union relationships could delay the production and/or development of our products, which could strain relationships with customers and cause a loss of revenues which would adversely affect our operations.

Item 1B. Unresolved Staff Comments

Not applicable

Item 2. Properties

We occupied approximately 86 million square feet of floor space on December 31, 2020 for manufacturing, warehousing, engineering, administration and other productive uses, of which approximately 93% was located in the United States. The following table provides a summary of the floor space by business as of December 31, 2020:

<i>(Square feet in thousands)</i>	Owned	Leased	Government Owned ⁽¹⁾	Total
Commercial Airplanes	40,444	2,303		42,747
Defense, Space & Security	23,109	6,335		29,444
Global Services	683	7,303	348	8,334
Other ⁽²⁾	2,385	2,343	318	5,046
Total	66,621	18,284	666	85,571

⁽¹⁾ Excludes rent-free space furnished by U.S. government landlord of 49 square feet.

⁽²⁾ Other includes sites used for BCC, common internal services and our Corporate Headquarters.

At December 31, 2020, we occupied in excess of 77.4 million square feet of floor space at the following major locations:

- Commercial Airplanes – Greater Seattle, WA; Charleston, SC; Portland, OR; Greater Los Angeles, CA; Salt Lake City, UT; Canada; and Australia
- Defense, Space & Security – Greater St. Louis, MO; Greater Seattle, WA; Greater Los Angeles, CA; Philadelphia, PA; Mesa, AZ; Huntsville, AL; Oklahoma City, OK; Heath, OH; Greater Washington, DC; Australia; and Houston, TX
- Global Services – San Antonio, TX; Greater Miami, FL; Dallas, TX; Jacksonville, FL; Germany; Mesa, AZ; and Greater Denver, CO
- Other – Chicago, IL; Greater Seattle, WA; Greater Los Angeles, CA ; Greater St. Louis, MO; and Greater Washington, DC.

Most runways and taxiways that we use are located on airport properties owned by others and are used jointly with others. Our rights to use such facilities are provided for under long-term leases with municipal, county or other government authorities. In addition, the U.S. government furnishes us certain office space, installations and equipment at U.S. government bases for use in connection with various contract activities.

To support business needs, property requirements are being evaluated to align with previously announced staffing reductions, utilization studies, and strategic growth investments to optimize footprint.

Item 3. Legal Proceedings

Currently, we are involved in a number of legal proceedings. For a discussion of contingencies related to legal proceedings, see Note 21 to our Consolidated Financial Statements, which is hereby incorporated by reference.

Item 4. Mine Safety Disclosures

Not applicable

PART II**Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities**

The principal market for our common stock is the New York Stock Exchange where it trades under the symbol BA. As of January 25, 2021, there were 99,383 shareholders of record.

Issuer Purchases of Equity Securities

The following table provides information about purchases we made during the quarter ended December 31, 2020 of equity securities that are registered by us pursuant to Section 12 of the Exchange Act:

(Dollars in millions, except per share data)

	(a)	(b)	(c)	(d)
	Total Number of Shares Purchased ⁽¹⁾	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares That May Yet be Purchased Under the Plans or Programs ⁽²⁾
10/1/2020 thru 10/31/2020	4,707	\$168.15		
11/1/2020 thru 11/30/2020	3,072	152.35		
12/1/2020 thru 12/31/2020	16,683	212.42		
Total	24,462	\$196.36		

(1) A total of 24,385 shares were transferred to us from employees in satisfaction of minimum tax withholding obligations associated with the vesting of restricted stock units during the period. We did not purchase any shares of our common stock in the open market pursuant to our repurchase program. We purchased 77 shares in swap transactions.

(2) On March 21, 2020, the Board of Directors terminated its prior authorization to repurchase shares of the Company's outstanding common stock. Share repurchases under this plan had been suspended since April 2019.

Item 6. Selected Financial Data

Five-Year Summary (Unaudited)

(Dollars in millions, except per share data)

	2020	2019	2018	2017	2016
Revenues	\$58,158	\$76,559	\$101,127	\$94,005	\$93,496
Net (loss)/earnings	(\$11,941)	(\$636)	\$10,460	\$8,458	\$5,034
Basic (loss)/earnings per share	(\$20.88)	(\$1.12)	\$18.05	\$14.03	\$7.92
Diluted (loss)/earnings per share	(20.88)	(1.12)	17.85	13.85	7.83
Dividends declared per share ⁽¹⁾	—	8.22	7.19	5.97	4.69
Cash and cash equivalents	\$7,752	\$9,485	\$7,637	\$8,813	\$8,801
Short-term and other investments	17,838	545	927	1,179	1,228
Total assets	152,136	133,625	117,359	112,362	109,076
Total debt	63,583	27,302	13,847	11,117	9,952
Operating cash flow	(\$18,410)	(\$2,446)	\$15,322	\$13,346	\$10,496
Investing cash flow	(\$18,366)	(\$1,530)	(\$4,621)	(\$2,058)	(\$3,378)
Financing cash flow	\$34,955	\$5,739	(\$11,722)	(\$11,350)	(\$9,587)
Total backlog	\$363,404	\$463,403	\$490,481	\$474,640	\$473,492 ⁽²⁾
Year-end workforce	141,000	161,100	153,000	140,800	150,500

⁽¹⁾ In March 2020, the Board of Directors suspended the declaration and/or payment of cash dividends until further notice.

⁽²⁾ 2016 Backlog does not reflect impact of the adoption of ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606).

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Consolidated Results of Operations and Financial Condition

Overview

We are a global market leader in the design, development, manufacture, sale, service and support of commercial jetliners, military aircraft, satellites, missile defense, human space flight and launch systems and services. We are one of the two major manufacturers of 100+ seat airplanes for the worldwide commercial airline industry and one of the largest defense contractors in the U.S. While our principal operations are in the U.S., we conduct operations in an expanding number of countries and rely on an extensive network of non-U.S. partners, key suppliers and subcontractors.

Our strategy is centered on successful execution in healthy core businesses – Commercial Airplanes (BCA), Defense, Space & Security (BDS), and Global Services (BGS) – supplemented and supported by Boeing Capital (BCC). Taken together, these core businesses have historically generated substantial earnings and cash flow that permit us to invest in new products and services. We focus on producing the products and providing the services that the market demands, and continue to find new ways to improve efficiency and quality to provide a fair return for our shareholders. BCA is committed to being the leader in commercial aviation by offering airplanes and services that deliver superior design, safety, efficiency and value to customers around the world. BDS integrates its resources in defense, intelligence, communications, security, space and services to deliver capability-driven solutions to customers at reduced costs. Our BDS strategy is to leverage our core businesses to capture key next-generation programs while expanding our presence in adjacent and international markets, underscored by an intense focus on growth and productivity. BGS provides support for commercial and defense through innovative, comprehensive, and cost-competitive product and service solutions. BCC facilitates, arranges, structures and provides selective financing solutions for our Boeing customers.

Business Environment and Trends

The global outbreak of COVID-19 and the residual impacts of the 737 MAX grounding continue to have significant adverse impacts on our business and are expected to continue to negatively impact revenue, earnings and operating cash flow in future quarters. They are also having a significant impact on our liquidity - see Liquidity Matters in Note 1 to our Consolidated Financial Statements for a further discussion of liquidity and additional actions we are taking in response to these challenges.

The COVID-19 pandemic has caused an unprecedented shock to demand for air travel, creating a tremendous challenge for our customers, our business and the entire commercial aerospace manufacturing and services sector. Global economic growth, a primary driver for air travel, is expected to have declined to between -4% and -5% in 2020. The latest International Air Transport Association (IATA) forecast projected full-year 2020 passenger traffic to be down more than 60% compared to 2019 as global economic activity slows due to COVID-19, and governments severely restricted travel to contain the spread of the virus. The recovery remains slow and uneven as travel restrictions and varying regional travel protocols continue to impact air travel. Generally, we expect domestic travel to recover faster than international travel. As a result, we expect the narrow-body market to recover faster than the wide-body market. Also, the pace of the commercial market recovery will be heavily dependent on COVID-19 infection rates, progress on testing, government travel restrictions, and timing and availability of a vaccine. Air cargo traffic levels contracted this year due to weak global trade growth and capacity limitations given the large impact that COVID-19 has had on international passenger operations, which also carry cargo. Demand for dedicated freighters is developing better relative to cargo traffic trends.

Airline financial performance, which also plays a role in the demand for new capacity, has been adversely impacted by the COVID-19 pandemic. According to IATA, net losses in 2020 for the airline industry are expected to be approximately \$118 billion, compared to net profits of \$26 billion in 2019. Our customers are taking actions to combat the effects of the COVID-19 pandemic on the market by preserving liquidity. This comes in many forms such as deferrals of advances and other payments to suppliers, deferrals of deliveries, reduced spending on services, and, in some cases, cancellation of orders. We face a challenging environment in the near to medium term as airlines adjust to reduced traffic which in turn will lower demand for commercial aerospace products and services. The current environment is also affecting the financial viability of some airlines.

We currently expect it will take approximately three years for world-wide travel to return to 2019 levels and a few years beyond that for the industry to return to long-term trend growth of approximately 5%. To balance the supply and demand given the COVID-19 shock and to preserve our long-term potential and competitiveness, we have reduced the production rates of several of our BCA programs. These rate decisions are based on our ongoing assessments of the demand environment and availability of aircraft financing. There is significant uncertainty with respect to when commercial air traffic levels will recover, and whether, and at what point, capacity will return to and/or exceed pre-COVID-19 levels. During the fourth quarter of 2020, we made adjustments to our estimates regarding timing of 777X entry into service and market demand. We now anticipate that the first 777X delivery will occur in late 2023. We will closely monitor the key factors that affect backlog and future demand including customers' evolving fleet plans, the wide-body replacement cycle and the cargo market. We will maintain a disciplined rate management process, and make adjustments as appropriate in the future. Notwithstanding the changes we have made to production rates, risk remains that further reductions will be required. Additionally, if we are unable to make timely deliveries of the large number of aircraft in inventory as of December 31, 2020, future revenues, earnings and cash flows will be adversely impacted.

The long-term outlook for the industry remains positive due to the fundamental drivers of air travel demand: economic growth, increasing propensity to travel due to increased trade, globalization, and improved airline services driven by liberalization of air traffic rights between countries. The shock from COVID-19 has reduced the near to medium term demand, but our Commercial Market Outlook forecast projects a 4% growth rate for passenger and cargo traffic over a 20 year period. Based on long-term global economic growth projections of 2.5% average annual GDP growth, we project demand for approximately 43,000 new airplanes over the next 20 years. The industry remains vulnerable to exogenous developments including fuel price spikes, credit market shocks, acts of terrorism, natural disasters, conflicts, epidemics, pandemics and increased global environmental regulations.

Deliveries of the 737 MAX resumed in the fourth quarter of 2020, when the FAA rescinded the order that grounded 737 MAX aircraft in the U.S. Orders to suspend operations of 737 MAX aircraft from certain non-U.S. civil aviation authorities, including the Civil Aviation Administration of China, are still in effect. The grounding has had a significant adverse impact on our operations and creates significant uncertainty. We are focused on safely returning the 737 MAX to service for all of our customers.

At BGS, we are seeing a direct impact on our commercial supply chain business as fewer flights and more aircraft retirements result in a decreased demand for our parts and logistics offerings. Additionally, our commercial customers are curtailing discretionary spending, such as modifications and upgrades and focusing on required maintenance. Similar to BCA, we expect a multi-year recovery period for the commercial services business. The demand outlook for our government services business, which in 2019 accounted for just under half of BGS revenue, remains stable.

At BDS, we continue to see a healthy market with solid demand for our major platforms and programs both domestically and internationally. However, we experienced near-term production impacts associated with our temporary suspension of operations at various locations in 2020 .

In March and April of 2020, as a result of COVID-19, we temporarily suspended operations at multiple locations including the Puget Sound area, South Carolina and Philadelphia. Operations in Puget Sound and Philadelphia resumed during the week of April 20, while operations in South Carolina resumed beginning on May 3. We have implemented procedures to promote employee safety in our facilities, including more frequent and enhanced cleaning and adjusted schedules and work flows to support physical distancing. These actions have resulted, and will continue to result, in increased operating costs. In addition, a number of our suppliers have suspended or otherwise reduced their operations, and we are experiencing some supply chain shortages. Our suppliers are also experiencing liquidity pressures and disruptions to their operations as a result of COVID-19. We also continue to have large numbers of employees working from home. These measures and disruptions have reduced overall productivity and adversely impacted our financial position, results of operations, and cash flows in 2020. We expect further adverse impacts in future quarters.

In July 2020, we announced our business transformation efforts to assess our business across five key pillars – infrastructure, overhead and organization, portfolio and investments, supply chain health and operational excellence. We continue to make progress across all five key pillars as we utilize a lower production rate environment to transform and improve our business processes. Within the infrastructure pillar we are assessing our overall facility requirements in light of reduced demand in our commercial businesses and remote and virtual work opportunities for large numbers of our workforce. The consolidation of the 787 production in South Carolina is an example of this. We also anticipate a reduction of approximately 30% in office space needs compared to our current capacity. During 2020, we made certain reductions to our footprint and are planning to implement further reductions over the next few years. However, as we consolidate our footprint, we may incur near term adverse impacts to earnings. The overhead and organization pillar is focused on our cost structure and how we are organized so we can right size our workforce and simplify and reduce management layers and bureaucracy. During 2020, we recorded severance costs for approximately 26,000 employees, of which approximately 18,000 have left the Company as of December 31, 2020, and the remainder are expected to leave in 2021. The portfolio and investments pillar includes aligning our portfolio and investments to focus on our core business and the changes in market conditions. Through our portfolio and investment prioritization, we reduced research and development and capital expenditures during 2020 by \$1.3 billion from the prior year. The supply chain pillar is focused on supply chain health and stability, reducing indirect procurement spend and streamlining our transportation, logistics and warehousing approach. We reduced indirect spend in 2020, by reducing expenditures in areas such as freight and logistics, purchased services and others. The operational excellence pillar is focused on improving performance, enhancing quality and reducing rework. For example, our information technology teams are evaluating opportunities to form or expand strategic partnerships with vendors that allow us to simplify and optimize our operations, and reduce overall costs. These activities are not intended to constrain our capacity, but to enable the Company to emerge stronger and be more resilient when the market recovers. We expect that successful execution of these measures will improve near term liquidity and long term cost competitiveness.

Consolidated Results of Operations

The following table summarizes key indicators of consolidated results of operations:

(Dollars in millions, except per share data)

Years ended December 31,	2020	2019	2018
Revenues	\$58,158	\$76,559	\$101,127
GAAP			
(Loss)/earnings from operations	(\$12,767)	(\$1,975)	\$11,987
Operating margins	(22.0) %	(2.6) %	11.9 %
Effective income tax rate	17.5 %	71.8 %	9.9 %
Net (loss)/earnings attributable to Boeing Shareholders	(\$11,873)	(\$636)	\$10,460
Diluted (loss)/earnings per share	(\$20.88)	(\$1.12)	\$17.85
Non-GAAP ⁽¹⁾			
Core operating (loss)/earnings	(\$14,150)	(\$3,390)	\$10,660
Core operating margins	(24.3) %	(4.4) %	10.5 %
Core (loss)/earnings per share	(\$23.25)	(\$3.47)	\$16.01

(1) These measures exclude certain components of pension and other postretirement benefit expense. See pages 51 - 52 for important information about these non-GAAP measures and reconciliations to the most comparable GAAP measures.

Revenues

The following table summarizes Revenues:

(Dollars in millions)

Years ended December 31,	2020	2019	2018
Commercial Airplanes	\$16,162	\$32,255	\$57,499
Defense, Space & Security	26,257	26,095	26,300
Global Services	15,543	18,468	17,056
Boeing Capital	261	244	274
Unallocated items, eliminations and other	(65)	(503)	(2)
Total	\$58,158	\$76,559	\$101,127

Revenues decreased by \$18,401 million in 2020 compared with 2019 primarily due to lower revenues in our commercial airplanes and commercial services businesses. Revenues for each of our segments have been adversely impacted by COVID-19. BCA revenues decreased by \$16,093 million due to lower deliveries driven by the impacts of the COVID-19 pandemic, 787 production issues, and the 737 MAX grounding, offset by lower charges related to estimated potential concessions and other considerations to 737 MAX customers. BDS revenues increased by \$162 million primarily due to higher fighter aircraft and other volume, partially offset by the impact of higher unfavorable cumulative contract catch-up adjustments, largely due to the KC-46A Tanker charges in 2020. BGS revenues decreased by \$2,925 million primarily due to lower commercial services revenue driven by impacts of the COVID-19 pandemic. The changes in Unallocated items, eliminations and other primarily reflect the timing of eliminations for intercompany aircraft deliveries, as well as reserves related to cost accounting litigation recorded in 2019. We expect the impacts of the COVID-19 pandemic to continue to significantly impact revenues in future quarters until the commercial airline industry recovers.

Revenues decreased by \$24,568 million in 2019 compared with 2018 primarily due to lower revenues at BCA, partially offset by higher revenues at BGS. Lower BCA revenues are primarily driven by lower 737 MAX deliveries and a revenue reduction of \$8,259 million recorded in 2019 for estimated potential concessions and other considerations to customers for disruptions and associated delivery delays related to the 737 MAX grounding, net of insurance recoveries. The changes in Unallocated items, eliminations and other primarily reflect the timing of eliminations for intercompany aircraft deliveries and the sale of aircraft previously leased to customers.

Loss/Earnings From Operations

The following table summarizes (Loss)/earnings from operations:

(Dollars in millions)

Years ended December 31,	2020	2019	2018
Commercial Airplanes	(\$13,847)	(\$6,657)	\$7,830
Defense, Space & Security	1,539	2,615	1,692
Global Services	450	2,697	2,536
Boeing Capital	63	28	79
Segment operating (loss)/profit	(11,795)	(1,317)	12,137
Pension FAS/CAS service cost adjustment	1,024	1,071	1,005
Postretirement FAS/CAS service cost adjustment	359	344	322
Unallocated items, eliminations and other	(2,355)	(2,073)	(1,477)
(Loss)/earnings from operations (GAAP)	(\$12,767)	(\$1,975)	\$11,987
FAS/CAS service cost adjustment *	(1,383)	(1,415)	(1,327)
Core operating (loss)/earnings (Non-GAAP) **	(\$14,150)	(\$3,390)	\$10,660

* The FAS/CAS service cost adjustment represents the difference between the FAS pension and postretirement service costs calculated under GAAP and costs allocated to the business segments.

** Core operating earnings is a Non-GAAP measure that excludes the FAS/CAS service cost adjustment. See pages 51 - 52.

Loss from operations increased by \$10,792 million in 2020 compared with 2019 primarily due to increased losses at BCA and decreased earnings at BGS and BDS. BCA loss from operations increased by \$7,190 million. The loss in 2020 primarily reflects a reach-forward loss recorded in the fourth quarter of \$6,493 million on the 777X program. The reach-forward loss reflects a number of factors, including an updated assessment of global certification requirements informed by continued discussions with regulators and resulting in a management decision to make modifications to the aircraft's design, an updated assessment of COVID-19 impacts on market demand, and discussions with our customers with respect to aircraft delivery timing. These factors resulted in adjustments to production rates and the program accounting quantity, increased change incorporation costs, and associated customer and supply chain impacts. The loss in 2020 also reflects the absence of MAX deliveries during the first three quarters of the year, lower wide-body deliveries and lower program margins resulting from the COVID-19 pandemic and 787 production issues, abnormal production costs, 737NG frame fitting component repair costs, severance costs and 737 MAX customer considerations.

The loss in 2019 primarily reflects the absence of 737 MAX deliveries in the second, third and fourth quarters, and charges of \$8,259 million for estimated 737 MAX customer considerations. BDS earnings decreased by \$1,076 million in 2020 compared with 2019, primarily due to higher unfavorable cumulative contract catch-up adjustments, including charges of \$1,320 million on KC-46A Tanker and \$168 million on VC-25B in 2020, offset by \$489 million of charges on Commercial Crew in 2019. The

lower earnings were also driven by lower gains on property sales compared to 2019. BGS earnings from operations decreased by \$2,247 million in 2020 compared with 2019 primarily due to lower commercial services revenue, as well as asset impairments and severance costs resulting from the COVID-19 market environment. We expect the impacts of the COVID-19 pandemic to continue to reduce earnings in future quarters until the commercial airline industry recovers.

Loss from operations was \$1,975 million in 2019 compared with earnings from operations of \$11,987 million in 2018. The decrease of \$13,962 million is primarily due to a loss from operations at BCA of \$6,657 million in 2019 compared to earnings from operations of \$7,830 million in 2018, partially offset by higher earnings at BDS and BGS in 2019 compared with 2018. BCA results decreased by \$14,487 million due to lower 737 deliveries and the earnings charges for estimated 737 MAX grounding customer considerations of \$8,259 million, net of insurance recoveries. BDS earnings from operations increased by \$923 million primarily due to lower charges in 2019 for development programs. BGS earnings from operations increased by \$161 million primarily due to higher revenues, which was partially offset by less favorable performance and mix.

During 2020, 2019 and 2018, we recorded reach-forward losses on the KC-46A Tanker program of \$1,320 million, \$148 million, and \$736 million, respectively.

Core operating loss increased by \$10,760 million in 2020 compared with 2019 primarily due to higher losses at BCA and lower earnings at BGS and BDS.

Core operating earnings decreased by \$14,050 million in 2019 compared with 2018 primarily due to a loss from operations at BCA in 2019, partially offset by higher earnings at BDS and BGS.

Unallocated Items, Eliminations and Other The most significant items included in Unallocated items, eliminations and other are shown in the following table:

(Dollars in millions)

Years ended December 31,	2020	2019	2018
Share-based plans	(\$120)	(\$65)	(\$76)
Deferred compensation	(93)	(174)	(19)
Amortization of previously capitalized interest	(95)	(89)	(92)
Research and development expense, net	(240)	(401)	(144)
Customer financing impairment		(250)	
Litigation		(109)	(148)
Eliminations and other unallocated items	(1,807)	(985)	(998)
Unallocated items, eliminations and other	(\$2,355)	(\$2,073)	(\$1,477)

Share-based plans expense increased by \$55 million in 2020, and decreased by \$11 million in 2019. The increase in 2020 was due to increased grants of RSUs and other share-based compensation. See Note 17.

Deferred compensation expense decreased by \$81 million in 2020 and increased by \$155 million in 2019, primarily driven by changes in broad stock market conditions and our stock price.

Research and development expense decreased by \$161 million in 2020 and increased by \$257 million in 2019 primarily due to spending by Boeing NeXt on product development.

In 2019, we recorded a \$250 million charge related to the impairment of lease incentives with one customer that experienced liquidity issues, and a \$109 million charge related to ongoing litigation associated with recoverable costs on U.S. government contracts. In 2018, we recorded a \$148 million charge related to the outcome of the Spirit litigation.

Eliminations and other unallocated expense increased by \$822 million in 2020 primarily due to earnings charges of \$744 million in the fourth quarter of 2020 related to an agreement between Boeing and the U.S. Department of Justice in January 2021. See Note 13. Eliminations and other unallocated expense decreased by \$13 million in 2019 primarily due to timing of expense allocations.

Net periodic pension benefit costs included in (Loss)/earnings from operations were as follows:

<i>(Dollars in millions)</i>	Pension		
Years ended December 31,	2020	2019	2018
Allocated to business segments	(\$1,027)	(\$1,384)	(\$1,318)
Pension FAS/CAS service cost adjustment	1,024	1,071	1,005
Net periodic benefit cost included in (Loss)/earnings from operations	(\$3)	(\$313)	(\$313)

The pension FAS/CAS service cost adjustment recognized in (Loss)/earnings from operations in 2020, 2019, and 2018 was largely consistent across all periods. The decrease in net periodic benefit cost included in (Loss)/earnings from operations in 2020 was primarily due to prior year service cost that was included in earnings in 2019. The net periodic benefit cost included in (Loss)/earnings from operations in 2019 was consistent with 2018, as reductions in current year service cost were offset by higher amortization of prior year service costs.

For additional discussion related to Postretirement Plans, see Note 16 to our Consolidated Financial Statements.

Other Earnings Items

(Dollars in millions)

Years ended December 31,	2020	2019	2018
(Loss)/earnings from operations	(\$12,767)	(\$1,975)	\$11,987
Other income, net	447	438	92
Interest and debt expense	(2,156)	(722)	(475)
(Loss)/earnings before income taxes	(14,476)	(2,259)	11,604
Income tax benefit/(expense)	2,535	1,623	(1,144)
Net loss from continuing operations	(11,941)	(636)	10,460
Less: net loss attributable to noncontrolling interest	(68)		
Net (loss)/earnings attributable to Boeing Shareholders	(\$11,873)	(\$636)	\$10,460

Other income, net increased by \$9 million in 2020 primarily due to lower non-operating postretirement expense, partially offset by lower non-operating pension income, lower interest income and higher foreign exchange losses. Other income, net increased by \$346 million in 2019 primarily due to higher non-operating pension income.

Non-operating pension income included in Other income, net was \$340 million in 2020, \$374 million in 2019, and \$143 million in 2018. The decreased income in 2020 compared to 2019 was due to higher amortization of actuarial losses and lower asset returns, partially offset by lower interest cost. The increased income in 2019 compared to 2018 was due to lower amortization of actuarial losses, partially offset by lower asset returns and higher interest cost.

Non-operating postretirement expense included in Other income, net was \$16 million in 2020, \$107 million in 2019, and \$101 million in 2018. The decreased expense in 2020 compared to 2019 was due to lower interest cost. The expense in 2019 was largely consistent with 2018.

Interest and debt expense increased by \$1,434 million in 2020 and increased by \$247 million in 2019 as a result of higher debt balances.

For additional discussion related to Income Taxes, see Note 4 to our Consolidated Financial Statements.

Total Costs and Expenses (“Cost of Sales”)

Cost of sales, for both products and services, consists primarily of raw materials, parts, sub-assemblies, labor, overhead and subcontracting costs. Our BCA segment predominantly uses program accounting to account for cost of sales. Under program accounting, cost of sales for each commercial airplane program equals the product of (i) revenue recognized in connection with customer deliveries and (ii) the estimated cost of sales percentage applicable to the total remaining program. For long-term contracts, the amount reported as cost of sales is recognized as incurred. Substantially all contracts at our BDS segment and certain contracts at our BGS segment are long-term contracts with the U.S. government and other customers that generally extend over several years. Cost of sales for commercial spare parts is recorded at average cost.

The following table summarizes cost of sales:

(Dollars in millions)

Years ended December 31	2020	2019	Change	2019	2018	Change
Cost of sales	\$63,843	\$72,093	(\$8,250)	\$72,093	\$81,490	(\$9,397)
Cost of sales as a % of revenues	109.8 %	94.2 %	15.6 %	94.2 %	80.6 %	13.6 %

Cost of sales decreased by \$8,250 million in 2020 compared with 2019, primarily due to lower revenue in 2020, partially offset by higher charges in 2020 related to the 777X program, COVID-19 impacts, KC-46A Tanker program, abnormal production costs at BCA and severance costs. Cost of sales as a percentage of Revenues increased in 2020 compared to 2019 primarily due to the reach-forward loss on the 777X program, impacts of the 737 MAX grounding and the COVID-19 pandemic, as well as severance costs.

Cost of sales decreased by \$9,397 million in 2019 compared with 2018, primarily due to lower revenue and lower reach-forward losses. Cost of sales as a percentage of Revenues increased in 2019 primarily due to the 737 MAX grounding.

Research and Development The following table summarizes our Research and development expense:*(Dollars in millions)*

Years ended December 31,	2020	2019	2018
Commercial Airplanes	\$1,385	\$1,956	\$2,188
Defense, Space & Security	713	741	776
Global Services	138	121	161
Other	240	401	144
Total	\$2,476	\$3,219	\$3,269

Research and development expense decreased by \$743 million in 2020 compared with 2019 primarily due to lower spending at BCA and at Boeing NeXt on product development.

Research and development expense decreased by \$50 million in 2019 compared with 2018 primarily due to lower spending on 777X and 737 MAX, partially offset by higher spending on product development at BCA and Boeing NeXt.

Backlog

Our backlog at December 31 was as follows:

(Dollars in millions)

Years ended December 31,	2020	2019
Commercial Airplanes	\$281,588	\$376,593
Defense, Space & Security	60,847	63,691
Global Services	20,632	22,902
Unallocated items, eliminations and other	337	217
Total Backlog	\$363,404	\$463,403
Contractual backlog	\$339,309	\$436,473
Unobligated backlog	24,095	26,930
Total Backlog	\$363,404	\$463,403

Contractual backlog of unfilled orders excludes purchase options, announced orders for which definitive contracts have not been executed, and unobligated U.S. and non-U.S. government contract funding. The decrease in contractual backlog during 2020 was primarily due to a reduction for orders that in our assessment no longer meet the accounting requirements of Accounting Standards Codification (ASC) 606 for inclusion in backlog primarily due to 737 MAX and 777X, deliveries in excess of new orders, aircraft order cancellations and changes in projected price escalation. We are experiencing fewer new 737 MAX orders than we were receiving prior to the grounding. If 737 MAX aircraft remain grounded in certain jurisdictions for an extended period of time and/or if entry into service of the 777X, 737 MAX 7 and/or 737 MAX 10 is further delayed, we may experience additional reductions to backlog and/or significant order cancellations. Additionally, we may continue to experience fewer new orders and increased cancellations across all of our commercial airplane programs as a result of the COVID-19 pandemic and associated impacts on demand.

Unobligated backlog includes U.S. and non-U.S. government definitive contracts for which funding has not been authorized. The decrease in unobligated backlog in 2020 was primarily due to reclassifications to contractual backlog related to BGS and BDS contracts, partially offset by contract awards.

Additional Considerations

Global Trade We continually monitor the global trade environment in response to geopolitical economic developments, as well as changes in tariffs, trade agreements, or sanctions that may impact the company.

The global economy is currently experiencing significant adverse impacts due to the COVID-19 pandemic, including a decline in overall trade in general and in aerospace in particular. There is a great deal of uncertainty regarding the duration, scale, and localization of these impacts to the global economy and governments are enacting a wide range of responses to mitigate the unfolding economic impacts. We are closely monitoring the current impact and potential future economic consequences of COVID-19 to the global economy, the aerospace sector, and our Company. These adverse economic impacts have resulted in fewer orders than previously anticipated for our commercial aircraft.

China is a very significant market for commercial airplanes and represents a significant component of our commercial airplanes backlog. Since 2018, the U.S. and China imposed an escalating series of tariffs on each other's imports. Certain aircraft parts and components that Boeing procures are subject to these tariffs. The U.S. and China entered into a Phase I agreement in January 2020. However, implementation of this agreement is incomplete and overall diplomatic relations between the U.S. and China have deteriorated. We continue monitoring developments for potential adverse impacts to the Company.

Beginning in June 2018, the U.S. Government has imposed tariffs on steel and aluminum imports. In response to these tariffs, several major U.S. trading partners have imposed, or announced their intention to impose, tariffs on U.S. goods. In May 2019, the U.S. Government, Mexico and Canada reached an agreement to end the steel and aluminum tariffs between these countries. Implementation of the U.S./Mexico/Canada Free Trade Agreement (USMCA) will also result in lower tariffs. We continue to monitor the potential for any extra costs that may result from the remaining global tariffs.

The U.S. Government continues to impose and/or consider imposing sanctions on certain businesses and individuals in Russia. Although our operations or sales in Russia have not been impacted to date, we continue to monitor additional sanctions that may be imposed by the U.S. Government and any responses from Russia that could affect our supply chain, business partners or customers.

The U.S. and European Union (EU) have been engaged in two long-running disputes at the World Trade Organization (WTO) relating to large civil aircraft. As part of those disputes, in October 2019, the WTO authorized the U.S. to impose approximately \$7.50 billion in annual tariffs on EU products in connection with the EU's provision of eight instances of launch aid subsidies to Airbus. The U.S. is currently imposing 15% tariffs on new Airbus airplanes imported into the U.S. as well as fuselages that Airbus manufactures in Europe and imports into the U.S. In October 2020, the WTO authorized the EU to impose approximately \$3.99 billion in annual tariffs on U.S. products in connection with a tax incentive used by Boeing in Washington state that has since been repealed. The EU is currently imposing 15% tariffs on Boeing airplanes imported into the EU. We will continue to assess and work with our customers on the possible impact of these tariffs, as deliveries to European customers are expected to increase in 2021.

Segment Results of Operations and Financial Condition

Commercial Airplanes

Business Environment and Trends

Airline Industry Environment See Overview to Management's Discussion and Analysis of Financial Condition and Results of Operations for a discussion of the impacts of COVID-19 on the airline industry environment.

Industry Competitiveness The industry continues to adjust to the unprecedented COVID-19 shock and subsequent economic impact, government restrictions, and new regulations. The commercial airplane market and the airline industry both remain extremely competitive. While the impacts and responses have varied globally, the reduction of demand and disruption in production has adversely impacted most manufacturers in the commercial airplane industry.

Continued access to global markets remains vital to our ability to fully realize our sales potential and long-term investment returns. Approximately 80% of Commercial Airplanes' total backlog, in dollar terms, is with non-U.S. airlines. We face aggressive international competitors who are intent on increasing their market share. They offer competitive products and have access to most of the same customers and suppliers. The grounding of the 737 MAX and the associated suspension of 737 MAX deliveries significantly reduced our market share with respect to deliveries of single aisle aircraft in 2019 and 2020 and may provide competitors with an opportunity to obtain more orders and increase market share. With government support, Airbus has historically invested heavily to create a family of products to compete with ours. After the acquisition of a majority share of Bombardier's C Series (now A220) in 2018, Airbus continues to expand in the 100-150 seat transcontinental market. Other competitors are also in different phases of developing commercial jet aircraft. Some of these competitors have historically enjoyed access to government-provided financial support, including "launch aid," which greatly reduces the cost and commercial risks associated with airplane development activities. This has enabled the development of airplanes without broad commercial viability; others to be brought to market more quickly than otherwise possible; and many offered for sale below market-based prices. Competitors continue to make improvements in efficiency, which may result in funding product development, gaining market share and improving earnings. This market environment has resulted in intense pressures on pricing and other competitive factors, and we expect these pressures to continue or intensify in the coming years.

We are focused on improving our products and services and continuing our business transformation efforts, which enhances our ability to compete and positions us for market recovery. We are also focused on taking actions to ensure that Boeing is not harmed by unfair subsidization of competitors.

Results of Operations

(Dollars in millions)

Years ended December 31,	2020	2019	2018
Revenues	\$16,162	\$32,255	\$57,499
% of total company revenues	28 %	42 %	57 %
(Loss)/earnings from operations	(\$13,847)	(\$6,657)	\$7,830
Operating margins	(85.7)%	(20.6)%	13.6 %
Research and development	\$1,385	\$1,956	\$2,188

Revenues

BCA revenues decreased by \$16,093 million in 2020 compared with 2019 due to lower deliveries primarily driven by the impacts of the COVID-19 pandemic, 787 production issues and the 737 MAX grounding. This was partially offset by lower charges related to estimated potential concessions and other considerations to 737 MAX customers of \$498 million in 2020 compared with \$8,259 million in 2019.

BCA revenues decreased by \$25,244 million in 2019 compared with 2018 driven by lower 737 MAX deliveries and a revenue reduction of \$8,259 million that was recorded in 2019 for estimated potential concessions and other considerations to customers related to the 737 MAX grounding, net of \$500 million of insurance recoveries.

While we resumed deliveries of 737 MAX aircraft in December 2020, the 737 MAX grounding is still in effect in certain non-U.S. jurisdictions. The 737 MAX grounding will continue to have a significant impact on future revenues until deliveries ramp up, and COVID-19 will continue to have a significant impact on future revenues until the commercial airline industry recovers.

Commercial Airplanes deliveries as of December 31 were as follows:

	737 *	747	767 *	777 †	787	Total
2020						
Cumulative deliveries	7,482	1,560	1,206	1,653	992	
Deliveries	43 ⁽¹⁴⁾	5	30 ⁽¹¹⁾	26	53	157
2019						
Cumulative deliveries	7,439	1,555	1,176	1,627	939	
Deliveries	127 ⁽¹⁹⁾	7	43 ⁽²³⁾	45 ⁽²⁾	158	380
2018						
Cumulative deliveries	7,312	1,548	1,133	1,582	781	
Deliveries	580 ⁽¹⁸⁾	6	27 ⁽¹⁰⁾	48	145	806

* Intercompany deliveries identified by parentheses

† Aircraft accounted for as revenues by BCA and as operating leases in consolidation identified by parentheses

Loss/Earnings From Operations

BCA loss from operations was \$13,847 million in 2020 compared with loss from operations of \$6,657 million in 2019. The 2020 loss reflects the reach-forward loss on 777X of \$6,493 million, lower deliveries and lower program margins resulting from the COVID-19 pandemic and 787 production issues and associated rework, \$2,567 million of abnormal production costs related to 737 MAX, \$623 million of

severance cost, \$498 million of 737 MAX customer considerations, \$336 million related to 737NG frame fitting component repair costs and \$270 million of abnormal production costs in the first half of 2020 from the temporary suspension of operations in response to COVID-19, partially offset by lower research and development spending. Lower 787 margins reflecting a reduction in the accounting quantity in the first quarter of 2020 also contributed to lower earnings. The 2019 loss primarily reflects the absence of 737 MAX deliveries in the second, third and fourth quarters of 2019 and charges of \$8,259 million for estimated 737 MAX customer considerations.

BCA loss from operations was \$6,657 million in 2019 compared with earnings from operations of \$7,830 million in 2018. The decrease of \$14,487 million is primarily due to lower 737 deliveries and earnings charges related to the 737 MAX.

The 737 MAX grounding and the COVID-19 pandemic will continue to have a significant adverse impact on future earnings and margins until 737 MAX deliveries ramp up and wide-body deliveries return to historical levels.

Backlog

Our total backlog represents the estimated transaction prices on unsatisfied and partially satisfied performance obligations to our customers where we believe it is probable that we will collect the consideration due and where no contingencies remain before we and the customer are required to perform. Backlog does not include prospective orders where customer controlled contingencies remain, such as the customer receiving approval from its board of directors, shareholders or government or completing financing arrangements. All such contingencies must be satisfied or have expired prior to recording a new firm order even if satisfying such conditions is highly certain. Backlog excludes options and BCC orders. A number of our customers may have contractual remedies, including rights to reject individual airplane deliveries if the actual delivery date is significantly later than the contractual delivery date. We address customer claims and requests for other contractual relief as they arise. The value of orders in backlog is adjusted as changes to price and schedule are agreed to with customers and is reported in accordance with the requirements of Topic 606.

BCA total backlog of \$281,588 million at December 31, 2020 decreased from \$376,593 million at December 31, 2019, reflecting a reduction for orders that in our assessment no longer meet the accounting requirements of ASC 606 for inclusion in backlog, aircraft order cancellations, changes in projected price escalation and deliveries in excess of new orders. Aircraft order cancellations during the year ended December 31, 2020 totaled \$34,618 million and primarily relate to 737 MAX aircraft. The ASC 606 adjustments for the year ended December 31, 2020 totaled \$54,450 million and primarily relate to 737 MAX aircraft and 777X aircraft. The ASC 606 adjustments include aircraft orders where a customer controlled contingency now exists, as well as orders where we can no longer assert that the customer is committed to perform or that it is probable that the customer will pay the full amount of consideration when it is due. If 737 MAX aircraft remain grounded in certain jurisdictions for an extended period of time and/or if entry into service of the 777X, 737 MAX 7 and/or 737 MAX 10 is further delayed, we may experience additional reductions to backlog and/or significant order cancellations. Additionally, we may continue to experience fewer new orders and increased cancellations across all of our commercial airplane programs as a result the COVID-19 pandemic and associated impacts on demand.

Accounting Quantity The accounting quantity is our estimate of the quantity of airplanes that will be produced for delivery under existing and anticipated contracts. The determination of the accounting quantity is limited by the ability to make reasonably dependable estimates of the revenue and cost of existing and anticipated contracts. It is a key determinant of the gross margins we recognize on sales of individual airplanes throughout a program's life. Estimation of each program's accounting quantity takes into account several factors that are indicative of the demand for that program, including firm orders,

letters of intent from prospective customers and market studies. We review our program accounting quantities quarterly.

The accounting quantity for each program may include units that have been delivered, undelivered units under contract, and units anticipated to be under contract in the reasonable future (anticipated orders). In developing total program estimates, all of these items within the accounting quantity must be considered.

The following table provides details of the accounting quantities and firm orders by program as of December 31. Cumulative firm orders represent the cumulative number of commercial jet aircraft deliveries plus undelivered firm orders. Firm orders include military derivative aircraft that are not included in program accounting quantities. All revenues and costs associated with military derivative aircraft production are reported in the BDS segment.

	Program						
	737 †	747*	767	777 †	777X	787 †	
2020							
Program accounting quantities	10,000	1,574	1,207	1,700	350	1,500	
Undelivered units under firm orders	3,282	8	75	41	191	458	(22)
Cumulative firm orders	10,764	1,568	1,281	1,694	191	1,450	
2019							
Program accounting quantities	10,400	1,574	1,195	1,690	**	1,600	
Undelivered units under firm orders	4,398	17	94	68	309	520	(29)
Cumulative firm orders	11,837	1,572	1,270	1,695	309	1,459	
2018							
Program accounting quantities	10,400	1,574	1,195	1,680	**	1,600	
Undelivered units under firm orders	4,708	(75)	24	111	100	604	(30)
Cumulative firm orders	12,020	1,572	1,244	1,682	326	1,385	

† Aircraft ordered by BCC are identified in parentheses.

* At December 31, 2020, the 747 accounting quantity includes one already completed aircraft that has not been sold and is being remarketed.

** See 777 and 777X Programs for discussion of the 777X accounting quantity.

Program Highlights

737 Program We reduced the program accounting quantity from 10,400 at December 31, 2019 to 10,000 at March 31, 2020. This reflects a slower than previously planned production rate ramp-up caused by commercial airline industry uncertainty due to the impact of COVID-19. See further discussion of the 737 MAX Grounding and COVID-19 Impacts and Product Warranties in Note 13 to our Consolidated Financial Statements.

747 Program We are currently producing at a rate of 0.5 aircraft per month. We will complete production of the 747 in 2022. We believe that ending production of the 747 will not have a material impact on our financial position, results of operations or cash flows.

767 Program The accounting quantity for the 767 program increased by 12 units during 2020 due to the program's normal progress of obtaining additional orders and delivering airplanes. The 767 assembly line includes the commercial program and a derivative to support the tanker program. We are currently producing at a rate of 3 aircraft per month.

777 and 777X Programs The accounting quantity for the 777 program increased by 10 units during 2020 due to the program's normal progress of obtaining additional orders and delivering airplanes. The production rate expectation for the combined 777/777X program remains at 2 per month in 2021.

In 2013, we launched the 777X-8 and 777X-9, which feature new composite wings, new engines and folding wing-tips. The first flight of the 777X was completed during the first quarter of 2020.

During the first three quarters of 2020, we made adjustments to our estimates regarding timing of 777X entry into service and market demand. As previously disclosed, market uncertainties driven primarily by the impacts of COVID-19 resulted in lower planned production rates and created significant pressure on the 777X program's revenue and cost estimates. While the 777X program did not have a reach-forward loss as of the third quarter of 2020 based on our assessment of the probable range of initial accounting quantities and other factors at that time, we noted that future levels of 777X profitability would be subject to a number of factors, including continued market uncertainty, the impacts of COVID-19 on our production system as well as on our supply chain and customers, subsequent production rate reductions for both 777X and other commercial programs, and potential risks associated with the testing program and the timing of 777X certification.

We now anticipate that the first 777X delivery will occur in late 2023. We also recorded a \$6.5 billion reach-forward loss on the 777X program in the fourth quarter of 2020. The revised schedule and the reach-forward loss reflect a number of factors, including an updated assessment of global certification requirements informed by continued discussions with regulators and resulting in a management decision to make modifications to the aircraft's design, an updated assessment of COVID-19 impacts on market demand, and discussions with our customers with respect to aircraft delivery timing. These factors resulted in adjustments to production rates and the program accounting quantity, increased change incorporation costs, and associated customer and supply chain impacts.

The timing of the certification will ultimately be determined by the regulators, and further determinations with respect to anticipated certification requirements could result in additional delays in entry into service and/or additional cost increases.

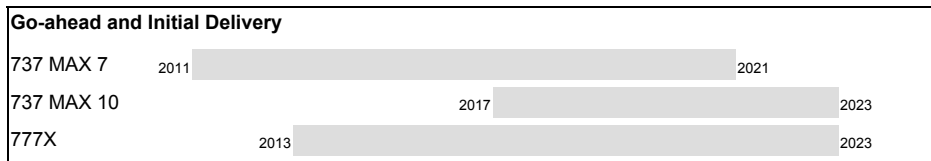
The level of profitability on the 777X program will be subject to a number of factors. These factors include continued market uncertainty, the impacts of COVID-19 on our production system as well as impacts on our supply chain and customers, further production rate adjustments for the 777X or other commercial aircraft programs, contraction of the accounting quantity and potential risks associated with the testing program and the timing of aircraft certification. One or more of these factors could result in additional reach-forward losses on the 777X program in future periods.

787 Program During 2020, we experienced significant reductions in deliveries due to the impacts of COVID-19 on our customers as well as production issues and associated rework. The 787 program delivered four airplanes during the fourth quarter of 2020 and has a large number of undelivered airplanes in inventory at December 31, 2020. We expanded the scope of production inspections during the fourth quarter of 2020, and those inspections and associated rework are delaying scheduled deliveries and resulting in additional 787 aircraft in inventory. At December 31, 2020, we had approximately 80 787 aircraft in inventory. We expect deliveries to resume at a slow pace in early 2021, with the majority of the aircraft in inventory expected to be delivered by the end of 2021. We continue to work with customers to facilitate deliveries. We are implementing changes in the production process designed to ensure that newly-built airplanes meet our specifications and do not require further inspections. Pre-COVID-19, we were producing at a rate of 14 per month and had planned to adjust the 787 production rate to 12 per month in late 2020 and to 10 per month in early 2021. Due to the impacts of COVID-19 on customer demand, we now plan to reduce to 5 per month in 2021. As a result of the planned production rate changes, we reduced the accounting quantity for the 787 program by 100 units during the first quarter of 2020. The 787 program has near breakeven gross margins due to the

reductions in the production rates and the reduction in the program accounting quantity. If we are required to further reduce the accounting quantity and/or production rates, experience further delivery delays, or experience other factors that could result in lower margins, the program could record a reach-forward loss in future periods. We made the decision during the third quarter of 2020 to consolidate 787 production in South Carolina in 2021, which did not have a significant financial impact on the program.

Fleet Support We provide the operators of our commercial airplanes with assistance and services to facilitate efficient and safe airplane operation. Collectively known as fleet support services, these activities and services begin prior to airplane delivery and continue throughout the operational life of the airplane. They include flight and maintenance training, field service support, engineering services, information services and systems and technical data and documents. The costs for fleet support are expensed as incurred and have historically been approximately 1% of total consolidated costs of products and services.

Program Development The following chart summarizes the time horizon between go-ahead and planned initial delivery for major Commercial Airplanes derivatives and programs.



Reflects models in development during 2020

We launched the 737 MAX 7 in August 2011 and the 737 MAX 10 in June 2017. We launched the 777X in November 2013. We now anticipate that the first 737 MAX 10 and 777X delivery will occur in 2023. This schedule reflects a number of factors, including an updated assessment of global certification requirements informed by continued discussions with regulators and resulting in a management decision to make modifications to the aircraft's design.

Additional Considerations

The development and ongoing production of commercial aircraft is extremely complex, involving extensive coordination and integration with suppliers and highly-skilled labor from employees and other partners. Meeting or exceeding our performance and reliability standards, as well as those of customers and regulators, can be costly and technologically challenging. In addition, the introduction of new aircraft and derivatives, such as the 777X and 737 MAX derivatives, involves increased risks associated with meeting development, production and certification schedules. These challenges include increased global regulatory scrutiny of all development aircraft in the wake of the 737 MAX accidents. As a result, our ability to deliver aircraft on time, satisfy performance and reliability standards and achieve or maintain, as applicable, program profitability is subject to significant risks. Factors that could result in lower margins (or a material charge if an airplane program has or is determined to have reach-forward losses) include the following: changes to the program accounting quantity, customer and model mix, production costs and rates, changes to price escalation factors due to changes in the inflation rate or other economic indicators, performance or reliability issues involving completed aircraft, capital expenditures and other costs associated with increasing or adding new production capacity, learning curve, additional change incorporation, achieving anticipated cost reductions, the addition of regulatory requirements in connection with certification in one or more jurisdictions, flight test and certification schedules, costs, schedule and demand for new airplanes and derivatives and status of customer claims, supplier claims or assertions and other contractual negotiations. While we believe the cost and revenue estimates incorporated in the consolidated financial statements are appropriate, the technical complexity of our airplane programs creates financial risk as additional completion costs may become

necessary or scheduled delivery dates could be extended, which could trigger termination provisions, order cancellations or other financially significant exposure.

Defense, Space & Security

Business Environment and Trends

United States Government Defense Environment Overview

The Omnibus appropriations acts for FY21, enacted in December 2020, provided FY21 appropriations for government departments and agencies, including the United States Department of Defense (U.S. DoD), the National Aeronautics and Space Administration (NASA) and the Federal Aviation Administration.

The enacted FY21 appropriations included funding for Boeing's major programs, such as the F/A-18 Super Hornet, F-15EX, CH-47 Chinook, AH-64 Apache, V-22 Osprey, KC-46A Tanker, P-8 Poseidon and Space Launch System. However, there continues to be uncertainty with respect to future program-level appropriations for the U.S. DoD and other government agencies, including NASA. Future budget cuts or investment priority changes, including changes associated with the authorizations and appropriations process, could result in reductions, cancellations and/or delays of existing contracts or programs. Any of these impacts could have a material effect on our results of operations, financial position and/or cash flows.

Non-U.S. Defense Environment Overview The non-U.S. market continues to be driven by complex and evolving security challenges and the need to modernize aging equipment and inventories. BDS expects that it will continue to have a wide range of opportunities across Asia, Europe and the Middle East given the diverse regional threats. At the end of 2020, 31.8% of BDS backlog was attributable to non-U.S. customers.

Results of Operations

(Dollars in millions)

Years ended December 31,	2020	2019	2018
Revenues	\$26,257	\$26,095	\$26,300
% of total company revenues	45 %	34 %	26 %
Earnings from operations	\$1,539	\$2,615	\$1,692
Operating margins	5.9 %	10.0 %	6.4 %

Since our operating cycle is long-term and involves many different types of development and production contracts with varying delivery and milestone schedules, the operating results of a particular period, may not be indicative of future operating results. In addition, depending on the customer and their funding sources, our orders might be structured as annual follow-on contracts, or as one large multi-year order or long-term award. As a result, period-to-period comparisons of backlog are not necessarily indicative of future workloads. The following discussions of comparative results among periods should be viewed in this context.

Deliveries of units for new-build production aircraft, including remanufactures and modifications were as follows:

Years ended December 31,	2020	2019	2018
F/A-18 Models	20	23	17
F-15 Models	4	11	10
C-17 Globemaster III		1	
CH-47 Chinook (New)	27	13	13
CH-47 Chinook (Renewed)	3	22	17
AH-64 Apache (New)	19	37	
AH-64 Apache (Remanufactured)	52	74	23
KC-46A Tanker	14	28	
P-8 Models	15	18	16
C-40A		2	
Total	154	229	96

New-build satellite deliveries were as follows:

Years ended December 31,	2020	2019	2018
Commercial and civil satellites		2	1
Military satellites			1

Revenues

BDS revenues in 2020 increased by \$162 million compared with 2019 reflecting higher revenues from fighter aircraft, Space Launch System, B-52 upgrades, proprietary and MQ-25, partially offset by reduced volume in missile defense. These net increases were offset by the unfavorable impact of cumulative contract catch-up adjustments, which was \$312 million higher than the comparable period in the prior year, largely due to the KC-46A Tanker charges during 2020.

BDS revenues in 2019 decreased by \$205 million compared with 2018 primarily due to timing associated with non-U.S. contract awards for fighters and the final C-17 sale occurring in 2018; in addition, the unfavorable impact of cumulative contract catch-up adjustments was \$163 million higher than the prior year, reflecting increased unfavorable adjustments on the Commercial Crew contract and less favorable performance. These were partially offset by increases from new programs, including E-7 early warning aircraft, VC-25B, T-7A Red Hawk, and MQ-25, as well as from satellites and weapons.

Earnings From Operations

BDS earnings from operations in 2020 decreased by \$1,076 million compared with 2019 primarily due to the unfavorable impact of cumulative contract catch-up adjustments, which was \$828 million higher than the prior year, largely due to charges of \$1,320 million on KC-46A Tanker and \$168 million on VC-25B, offset by \$489 million in charges on Commercial Crew in the prior period. The lower earnings in 2020 also reflect lower gains on property sales compared to the same period in 2019. These current period decreases were partially offset by the volume increases described above.

The KC-46A Tanker reach-forward loss of \$1,320 million reflects \$551 million of costs associated with the agreement signed in April 2020 with the U.S. Air Force to develop and integrate a new Remote Vision System, and the remaining costs reflect production inefficiencies including impacts of COVID-19 disruption. The \$168 million reach-forward loss on VC-25B recorded in the first quarter was associated

with engineering inefficiencies from the COVID-19 environment. We believe these inefficiencies will result in staffing challenges, schedule inefficiencies, and higher costs in the upcoming phases of the program.

BDS earnings from operations in 2019 increased by \$923 million compared with 2018 primarily due to the absence of \$691 million related to losses on the T-7A Red Hawk and MQ-25 contracts. The unfavorable impact of cumulative contract catch-up adjustments in 2019 was \$62 million lower than the prior year. In 2019, BDS recorded charges of \$489 million related to Commercial Crew and \$148 million related to KC-46A Tanker compared with \$736 million in 2018.

BDS earnings from operations include equity earnings of \$141 million, \$128 million and \$147 million primarily from our ULA and non-U.S. joint ventures in 2020, 2019 and 2018, respectively.

Backlog

Total backlog of \$60,847 million at December 31, 2020 was \$2,844 million lower than December 31, 2019 due to the timing of awards and revenue recognized.

Additional Considerations

Our BDS business includes a variety of development programs which have complex design and technical challenges. Many of these programs have cost-type contracting arrangements. In these cases, the associated financial risks are primarily in reduced fees, lower profit rates or program cancellation if cost, schedule or technical performance issues arise. Examples of these programs include Ground-based Midcourse Defense, Proprietary and Space Launch System programs.

Some of our development programs are contracted on a fixed-price basis, and BDS customers are increasingly seeking fixed-price proposals for new programs. Examples of significant fixed-price development programs include Commercial Crew, KC-46A Tanker, MQ-25, T-7A Red Hawk, VC-25B, and commercial and military satellites. New programs could also have risk for reach-forward loss upon contract award and during the period of contract performance. Many development programs have highly complex designs. As technical or quality issues arise during development, we may experience schedule delays and cost impacts, which could increase our estimated cost to perform the work or reduce our estimated price, either of which could result in a material charge or otherwise adversely affect our financial condition. These programs are ongoing, and while we believe the cost and fee estimates incorporated in the financial statements are appropriate, the technical complexity of these programs creates financial risk as additional completion costs may become necessary or scheduled delivery dates could be extended, which could trigger termination provisions, the loss of satellite in-orbit incentive payments, or other financially significant exposure. These programs have risk for reach-forward losses if our estimated costs exceed our estimated contract revenues.

Global Services

Business Environment and Trends

The aerospace markets we serve include parts distribution, logistics, and other inventory services; maintenance, engineering, and upgrades; training and professional services; and information services. Prior to COVID-19, we had expected the market to grow by around 3.5% annually, however the pandemic is having a direct impact on our commercial services business. See Overview to Management's Discussion and Analysis of Financial Condition and Results of Operations for a discussion of the impacts of COVID-19 on the airline industry environment.

Over the long-term, as the size of the worldwide commercial airline fleet continues to grow, so does demand for aftermarket services designed to increase efficiency and extend the economic lives of

airplanes. Airlines are using data analytics to plan flight operations and predictive maintenance to improve their productivity and efficiency. Airlines continue to look for opportunities to reduce the size and cost of their spare parts inventory, frequently outsourcing spares management to third parties.

The demand outlook for our government services business has remained stable in 2020. Government services market segments are growing on pace with related fleets, but vary based on the utilization and age of the aircraft. The U.S. government services market is the single largest individual market, comprising over 50 percent of the government services markets served. Over the next decade, we expect U.S. growth to remain flat and non-U.S. fleets, led by Middle East and Asia Pacific customers, to add rotorcraft and commercial derivative aircraft at the fastest rates. We expect less than 20 percent of the worldwide fleet of military aircraft to be retired and replaced over the next ten years, driving increased demand for services to maintain aging aircraft and enhance aircraft capability.

BGS' major customer, the U.S. government, remains subject to the spending limits and uncertainty described on page 40, which could restrict the execution of certain program activities and delay new programs or competitions.

Industry Competitiveness Aviation services is a competitive market with many domestic and international competitors. This market environment has resulted in intense pressures on pricing, and we expect these pressures to continue or intensify in the coming years. Continued access to global markets remains vital to our ability to fully realize our sales growth potential and long-term investment returns.

Results of Operations

(Dollars in millions)

Years ended December 31,	2020	2019	2018
Revenues	\$15,543	\$18,468	\$17,056
% of total company revenues	27 %	24 %	17 %
Earnings from operations	\$450	\$2,697	\$2,536
Operating margins	2.9 %	14.6 %	14.9 %

Revenues

BGS revenues in 2020 decreased by \$2,925 million compared with 2019 due to lower commercial services revenue driven by impacts of the COVID-19 pandemic. The favorable impact of cumulative contract catch-up adjustments in 2020 was \$101 million lower than the comparable period in the prior year. We expect the impacts of the COVID-19 pandemic to continue to reduce BGS commercial revenues in future quarters until the commercial airline industry environment recovers.

BGS revenues in 2019 increased by \$1,412 million compared with 2018 due to growth across our services portfolio, primarily driven by higher parts revenue, including the acquisition of KLX in the fourth quarter of 2018 and government services revenue, partially offset by lower commercial services revenue. The favorable impact of cumulative contract catch-up adjustments in 2019 was \$80 million higher than the comparable period in the prior year.

Earnings From Operations

BGS earnings from operations in 2020 decreased by \$2,247 million compared with 2019, primarily due to lower commercial services revenue as well as earnings charges in 2020, including \$531 million of inventory write-downs, \$178 million of related impairments of distribution rights primarily driven by airlines' decisions to retire certain aircraft, \$398 million for higher expected credit losses primarily driven by customer liquidity issues, \$115 million of contract termination and facility impairment charges, as well as \$72 million of severance costs. These charges reflect the significant impacts of the COVID-19 pandemic on commercial airline customers' liquidity and demand for certain products as customers' fleet plans evolve to adapt to the sharp reduction in demand for air travel. The favorable impact of cumulative contract catch-up adjustments in 2020 was consistent with the prior year.

BGS earnings from operations in 2019 increased by \$161 million compared with 2018 primarily due to higher revenues, partially offset by less favorable performance and mix. Earnings from operations for 2019 also includes a divestiture gain of \$395 million and a charge of \$293 million related to our decision in the fourth quarter to retire the Aviall brand and trade name. The favorable impact of cumulative contract catch-up adjustments in 2019 was \$21 million higher than the comparable period in the prior year.

Backlog

BGS total backlog of \$20,632 million at December 31, 2020 decreased by 10% from \$22,902 million at December 31, 2019, primarily due to a reduction for commercial orders that, in our assessment, no longer meet the accounting requirements of ASC 606 for inclusion in backlog.

Boeing Capital

Business Environment and Trends

BCC's gross customer financing and investment portfolio at December 31, 2020 totaled \$1,974 million. A substantial portion of BCC's portfolio is related to customers that we believe have less than investment-grade credit. BCC's portfolio is also concentrated by varying degrees across Boeing aircraft product types, most notably 717 and 747-8 aircraft.

BCC provided customer financing of \$14 million and \$419 million during 2020 and 2019. While we may be required to fund a number of new aircraft deliveries in 2021 and/or provide refinancing for existing bridge debt, we expect alternative financing will be available at reasonable prices from broad and globally diverse sources.

Aircraft values and lease rates are impacted by the number and type of aircraft that are currently out of service. Approximately 7,300 western-built commercial jet aircraft (29.4% of current world fleet) were parked at the end of 2020, including both in-production and out-of-production aircraft types. Of these parked aircraft, a larger portion are expected to be retired compared to the pre-COVID-19 period, which directly impacts the Company in terms of number of new aircraft deliveries and financing opportunities, the ability of existing customers to meet current payment obligations and the value of aircraft in its portfolio. We continue to work closely with our customers to mitigate the risk. At the end of 2019 and 2018, 8.5% and 6.7% of the western-built commercial jet aircraft were parked. Aircraft valuations could decline if significant numbers of additional aircraft, particularly types with relatively few operators, are placed out of service. See Overview to Management's Discussion and Analysis of Financial Condition and Results of Operations for a discussion of the impacts of COVID-19 on the airline industry environment.

Results of Operations*(Dollars in millions)*

Years ended December 31,	2020	2019	2018
Revenues	\$261	\$244	\$274
Earnings from operations	\$63	\$28	\$79
Operating margins	24 %	11 %	29 %

Revenues

BCC segment revenues consist principally of lease income from equipment under operating lease, interest income from financing receivables and notes, and other income. BCC's revenues in 2020 increased by \$17 million compared with 2019 primarily due to gains on re-lease of assets. BCC's revenues in 2019 decreased by \$30 million compared with 2018 primarily due to lower gains on the sale of assets.

Earnings From Operations

BCC's earnings from operations are presented net of interest expense, provision for (recovery of) losses, asset impairment expense, depreciation on leased equipment and other operating expenses. Earnings from operations in 2020 increased by \$35 million compared with 2019 primarily due to higher revenues, lower asset impairment expenses and lower interest expenses. Earnings from operations in 2019 decreased by \$51 million compared with 2018 primarily due to lower revenues and higher asset impairment expenses.

Financial Position

The following table presents selected financial data for BCC as of December 31:

<i>(Dollars in millions)</i>	2020	2019
Customer financing and investment portfolio, net	\$1,961	\$2,251
Other assets, primarily cash and short-term investments	402	535
Total assets	\$2,363	\$2,786
Other liabilities, primarily deferred income taxes	\$392	\$432
Debt, including intercompany loans	1,640	1,960
Equity	331	394
Total liabilities and equity	\$2,363	\$2,786
Debt-to-equity ratio	5-to-1	5-to-1

BCC's customer financing and investment portfolio at December 31, 2020 decreased from December 31, 2019, primarily due to \$321 million of note payoffs and portfolio run-off.

BCC enters into certain transactions with Boeing, reflected in Unallocated items, eliminations and other, in the form of intercompany guarantees and other subsidies that mitigate the effects of certain credit quality or asset impairment issues on the BCC segment.

Leased aircraft with a carrying value of approximately \$57 million are scheduled to be returned off lease during 2021. We are seeking to remarket these aircraft or have the leases extended.

Liquidity and Capital Resources**Cash Flow Summary***(Dollars in millions)*

Years ended December 31,	2020	2019	2018
Net (loss)/earnings	(\$11,941)	(\$636)	\$10,460
Non-cash items	10,866	2,819	2,578
Changes in working capital	(17,335)	(4,629)	2,284
Net cash (used)/provided by operating activities	(18,410)	(2,446)	15,322
Net cash used by investing activities	(18,366)	(1,530)	(4,621)
Net cash provided/(used) by financing activities	34,955	5,739	(11,722)
Effect of exchange rate changes on cash and cash equivalents	85	(5)	(53)
Net (decrease)/increase in cash & cash equivalents, including restricted	(1,736)	1,758	(1,074)
Cash & cash equivalents, including restricted, at beginning of year	9,571	7,813	8,887
Cash & cash equivalents, including restricted, at end of year	\$7,835	\$9,571	\$7,813

Operating Activities Net cash used by operating activities was \$18.4 billion during 2020, compared with net cash used by operating activities of \$2.4 billion during 2019 and net cash provided by operating activities of \$15.3 billion in 2018. The decrease in operating cash flows in 2020 is primarily driven by our net loss in 2020 and changes in working capital, partially offset by an increase in non-cash items. Non-cash items include the \$6.5 billion reach-forward loss on the 777X program in 2020, which was recorded as a reduction to inventory. The year-over-year increase in non-cash items also reflects higher inventory write-downs and higher allowances for expected credit losses in 2020. The changes in working capital reflect increases in commercial airplane inventory due to the large number of undelivered aircraft in 2019 resulting from the 737 MAX grounding, and in 2020 due to the 737 MAX grounding, 787 production issues and COVID-19 impacts. Cash used by Advances and progress billings was \$1.1 billion in 2020, as compared with \$0.7 billion provided by Advances and progress billings in 2019. The changes in working capital in 2020 also reflect lower accounts payable due to reductions in commercial purchases from suppliers and lower supply chain financing. Compensation payments to 737 MAX customers totaled \$2.2 billion during 2020 and \$1.2 billion during 2019. The accrued liability for 737 MAX customer considerations at December 31, 2019 resulted in a \$7.4 billion favorable change to working capital in 2019. The impacts of the COVID-19 pandemic and the 737 MAX grounding are expected to continue to have a significant negative impact on our operating cash flows during 2021.

The decrease in operating cash flows in 2019 compared to 2018 primarily reflected the impacts of the 737 MAX grounding resulting in lower earnings, higher inventory and lower advances and progress payments. In addition, compensation payments to 737 MAX customers of \$1.2 billion for disruption to their operations also reduced 2019 cash from operating activities. Cash used to fund inventory was \$12.4 billion during 2019 as we continued to produce aircraft while deliveries were suspended. Cash provided by Advances and progress billings was \$0.7 billion in 2019, compared with \$2.6 billion in 2018.

Payables to suppliers who elected to participate in supply chain financing programs declined by \$1.9 billion for the year ended December 31, 2020, and increased by \$2.6 billion and \$0.6 billion for the same period in 2019 and 2018. Supply chain financing is not material to our overall liquidity. The decline for the year ended December 31, 2020 was primarily due to reductions in commercial purchases from suppliers. The increase for the years ended December 31, 2019 and 2018 reflects a combination of higher purchases, an extension of payment terms with certain suppliers, and increased utilization of our supply chain financing programs.

Investing Activities Cash used by investing activities during 2020, 2019 and 2018 was \$18.4 billion, \$1.5 billion and \$4.6 billion. The increase in cash outflows in 2020 compared to 2019 is primarily due to \$17.4 billion of higher net contributions to investments. The reduction in cash outflows in 2019 compared with 2018 is primarily due to acquisitions completed in the second half of 2018 and the timing of investments. Acquisitions net of cash acquired were \$0.5 billion in 2019, primarily related to the acquisition of KLX. Proceeds from dispositions was \$0.5 billion in 2019 as a result of the divestiture of two businesses. Capital expenditures totaled \$1.3 billion in 2020, compared with \$1.8 billion in 2019 and \$1.7 billion 2018. We expect capital expenditures in 2021 to be relatively consistent with 2020. Net contributions to investments were \$17.3 billion in 2020, compared with net proceeds from investments of \$0.1 billion in 2019 and \$0.3 billion in 2018.

Financing Activities Cash provided by financing activities was \$35.0 billion during 2020, compared with cash provided by financing activities of \$5.7 billion in 2019 and cash used by financing activities of \$11.7 billion in 2018. The increase of \$29.3 billion compared with 2019 primarily reflects higher net borrowings, lower share repurchases, and lower dividend payments. Cash provided by financing activities increased \$17.5 billion compared with 2018 primarily due to higher net borrowings and lower share repurchases, partially offset by higher dividend payments in 2019. During the twelve months ended December 31, 2020, new borrowings net of repayments were \$36.3 billion compared with \$13.2 billion and \$1.4 billion in the same period in 2019 and 2018. The increase in 2020 is primarily due to \$29.9 billion of fixed rate senior notes issued in 2020 and \$13.8 billion of new borrowings under a two-year delayed draw term loan agreement entered into in the first quarter of 2020. For further discussion see Liquidity Matters in Note 1 to our Consolidated Financial Statements.

At December 31, 2020 and 2019 the recorded balance of debt was \$63.6 billion and \$27.3 billion, of which \$1.7 billion and \$7.3 billion were classified as short-term. This included \$1.6 billion and \$2.0 billion of debt attributable to BCC at December 31, 2020 and 2019, of which \$0.9 billion and \$0.5 billion were classified as short-term.

During the year ended December 31, 2020, we did not repurchase any shares through our open market share repurchase program compared to repurchases of 6.9 million and 26.1 million shares in 2019 and 2018 totaling \$2.7 billion and \$9.0 billion. Share repurchases under this plan had been suspended since April 2019. In March 2020, the Board of Directors terminated its prior authorization to repurchase shares of the Company's outstanding common stock. We had 0.6 million, 0.6 million, and 0.7 million shares transferred to us from employee tax withholdings in 2020, 2019, and 2018, respectively. During the twelve months ended December 31, 2020 we paid dividends of \$1.2 billion compared with \$4.6 billion and \$3.9 billion in the same period in 2019 and 2018. In March 2020, the Company announced that our dividend will be suspended until further notice. In December 2018 we increased our quarterly dividend from \$1.71 to \$2.055, which resulted in \$684 million of higher dividend payments in 2019 compared with 2018.

Capital Resources The impacts of the COVID-19 pandemic and 737 MAX grounding are having a significant negative impact on our liquidity and ongoing operations and creating significant uncertainty. We have and are continuing to take significant actions to manage and preserve our liquidity. For further discussion see Liquidity Matters in Note 1 to our Consolidated Financial Statements.

At December 31, 2020, we had \$7.8 billion of cash and \$17.8 billion of short term investments. At December 31, 2020, we had \$9.5 billion of unused borrowing capacity on revolving credit line agreements. We anticipate that these credit lines will primarily serve as backup liquidity to support our general corporate borrowing needs. The \$9.5 billion of unused borrowing capacity includes a \$3.1 billion 364-day revolving credit facility, which expires in October 2021. We had no commercial paper borrowings at December 31, 2020, compared to commercial paper borrowings of \$6.1 billion and \$1.9 billion at December 31, 2019 and 2018, which were supported by unused commitments under the revolving credit agreement.

Our debt balances have increased significantly since 2019, and we are continuing to actively manage our liquidity. Scheduled principal payments for debt for the next five years are as follows:

	2021	2022	2023	2024	2025
Debt	\$1,630	\$14,976	\$3,776	\$2,001	\$4,301

Our increased debt balance has also resulted in downgrades to our credit ratings. We expect to be able to access capital markets when we require additional funding in order to pay off existing debt, address further impacts to our business related to market developments, fund outstanding financing commitments, or meet other business requirements. A number of factors could cause us to incur increased borrowing costs and to have greater difficulty accessing public and private markets for debt. These factors include disruptions or declines in the global capital markets and/or a decline in our financial performance, outlook or credit ratings, including impacts described above related to the COVID-19 pandemic and/or associated changes in demand for our products and services. These risks will be particularly acute if we are subject to further credit rating downgrades. The occurrence of any or all of these events may adversely affect our ability to fund our operations and financing or contractual commitments.

Any future borrowings may affect our credit ratings and are subject to various debt covenants. At December 31, 2020, we were in compliance with the covenants for our debt and credit facilities. The most restrictive covenants include a limitation on mortgage debt and sale and leaseback transactions as a percentage of consolidated net tangible assets (as defined in the credit agreements), and a limitation on consolidated debt as a percentage of total capital (as defined). When considering debt covenants, we continue to have substantial borrowing capacity.

Customer financing commitments totaled \$11.5 billion and \$13.4 billion at December 31, 2020 and 2019. The decrease primarily relates to financing commitment amendments and expirations. We anticipate that we will not be required to fund a significant portion of our financing commitments as we continue to work with third party financiers to provide alternative financing to customers. Historically, we have not been required to fund significant amounts of outstanding commitments. However, there can be no assurances that we will not be required to fund greater amounts than historically required.

At December 31, 2020 and 2019, our pension plans were \$13.7 billion and \$15.9 billion underfunded as measured under GAAP. On an Employee Retirement Income Security Act (ERISA) basis our plans are more than 100% funded at December 31, 2020. We do not expect to make significant contributions to our pension plans in 2021. We may be required to make higher contributions to our pension plans in future years.

In the fourth quarter of 2020, we contributed \$3 billion of our common stock to our pension fund. In the fourth quarter of 2020, we also began using our common stock in lieu of cash to fund Company contributions to our 401(k) plans for the foreseeable future, which we estimate will conserve approximately \$1 billion of cash over the next 12 months. Under this approach, common stock is contributed to our 401(k) plans following each pay period. We expect this measure to further enable the Company to conserve cash. We have retained an independent fiduciary to manage and liquidate stock contributed to these plans at its discretion.

Contractual Obligations

The following table summarizes our known obligations to make future payments pursuant to certain contracts as of December 31, 2020, and the estimated timing thereof.

<i>(Dollars in millions)</i>	Total	Less than 1 year	1-3 years	3-5 years	After 5 years
Long-term debt (including current portion)	\$63,963	\$1,630	\$18,752	\$6,302	\$37,279
Interest on debt	37,614	2,271	4,274	3,852	27,217
Pension and other postretirement cash requirements	5,077	610	1,163	1,073	2,231
Finance lease obligations	228	68	84	20	56
Operating lease obligations	1,781	307	432	240	802
Purchase obligations not recorded on the Consolidated Statements of Financial Position	93,928	36,540	29,933	16,367	11,088
Purchase obligations recorded on the Consolidated Statements of Financial Position	19,621	19,502	99	7	13
Total contractual obligations⁽¹⁾	\$222,212	\$60,928	\$54,737	\$27,861	\$78,686

⁽¹⁾ Excludes income tax matters. As of December 31, 2020, we have uncertain tax positions of \$966 million. We are not able to reasonably estimate the timing of future cash flows related to uncertain tax positions. For further discussion of income taxes, see Note 4 to our Consolidated Financial Statements.

Pension and Other Postretirement Benefits Pension cash requirements are based on an estimate of our minimum funding requirements, pursuant to ERISA regulations, although we may make additional discretionary contributions. Estimates of other postretirement benefits are based on both our estimated future benefit payments and the estimated contributions to plans that are funded through trusts.

Purchase Obligations Purchase obligations represent contractual agreements to purchase goods or services that are legally binding; specify a fixed, minimum or range of quantities; specify a fixed, minimum, variable, or indexed price provision; and specify approximate timing of the transaction. Purchase obligations include amounts recorded as well as amounts that are not recorded on the Consolidated Statements of Financial Position.

Purchase Obligations Not Recorded on the Consolidated Statements of Financial Position Purchase obligations not recorded on the Consolidated Statements of Financial Position include agreements for inventory procurement, tooling costs, electricity and natural gas contracts, property, plant and equipment, customer financing equipment, and other miscellaneous production related obligations. The most significant obligation relates to inventory procurement contracts. We have entered into certain significant inventory procurement contracts that specify determinable prices and quantities, and long-term delivery timeframes. In addition, we purchase raw materials on behalf of our suppliers. These agreements require suppliers and vendors to be prepared to build and deliver items in sufficient time to meet our production schedules. The need for such arrangements with suppliers and vendors arises from the extended production planning horizon for many of our products. A significant portion of these inventory commitments is supported by firm contracts and/or has historically resulted in settlement through reimbursement from customers for penalty payments to the supplier should the customer not take delivery. These amounts are also included in our forecasts of costs for program and contract accounting. Some inventory procurement contracts may include escalation adjustments. In these limited cases, we have included our best estimate of the effect of the escalation adjustment in the amounts disclosed in the table above.

Purchase Obligations Recorded on the Consolidated Statements of Financial Position Purchase obligations recorded on the Consolidated Statements of Financial Position primarily include accounts payable and certain other current and long-term liabilities including accrued compensation.

Industrial Participation Agreements We have entered into various industrial participation agreements with certain customers outside of the U.S. to facilitate economic flow back and/or technology or skills transfer to their businesses or government agencies as the result of their procurement of goods and/or services from us. These commitments may be satisfied by our local operations there, placement of direct work or vendor orders for supplies, opportunities to bid on supply contracts, transfer of technology or other forms of assistance. However, in certain cases, our commitments may be satisfied through other parties (such as our vendors) who purchase supplies from our non-U.S. customers. In certain cases, penalties could be imposed if we do not meet our industrial participation commitments. During 2020, we incurred no such penalties. As of December 31, 2020, we have outstanding industrial participation agreements totaling \$26.4 billion that extend through 2034. Purchase order commitments associated with industrial participation agreements are included in purchase obligations in the table above. To be eligible for such a purchase order commitment from us, a non-U.S. supplier must have sufficient capability to meet our requirements and must be competitive in cost, quality and schedule.

Commercial Commitments

The following table summarizes our commercial commitments outstanding as of December 31, 2020.

<i>(Dollars in millions)</i>	Total Amounts				
	Committed/Maximum Amount of Loss	Less than 1 year	1-3 years	4-5 years	After 5 years
Standby letters of credit and surety bonds	\$4,238	\$1,680	\$1,621	\$735	\$202
Commercial aircraft financing commitments	11,512	2,329	4,061	3,504	1,618
Total commercial commitments	\$15,750	\$4,009	\$5,682	\$4,239	\$1,820

Commercial aircraft financing commitments include commitments to provide financing related to aircraft on order, under option for deliveries or proposed as part of sales campaigns or refinancing with respect to delivered aircraft, based on estimated earliest potential funding dates. Based on historical experience, we anticipate that we will not be required to fund a significant portion of our financing commitments. However, there can be no assurances that we will not be required to fund greater amounts than historically required. See Note 13 to our Consolidated Financial Statements.

Contingent Obligations

We have significant contingent obligations that arise in the ordinary course of business, which include the following:

Legal Various legal proceedings, claims and investigations are pending against us. Legal contingencies are discussed in Note 21 to our Consolidated Financial Statements.

Environmental Remediation We are involved with various environmental remediation activities and have recorded a liability of \$565 million at December 31, 2020. For additional information, see Note 13 to our Consolidated Financial Statements.

Off-Balance Sheet Arrangements

We are a party to certain off-balance sheet arrangements including certain guarantees. For discussion of these arrangements, see Note 14 to our Consolidated Financial Statements.

Non-GAAP Measures

Core Operating Earnings, Core Operating Margin and Core Earnings Per Share

Our Consolidated Financial Statements are prepared in accordance with Generally Accepted Accounting Principles in the United States of America (GAAP) which we supplement with certain non-GAAP financial information. These non-GAAP measures should not be considered in isolation or as a substitute for the related GAAP measures, and other companies may define such measures differently. We encourage investors to review our financial statements and publicly-filed reports in their entirety and not to rely on any single financial measure. Core operating earnings, core operating margin and core earnings per share exclude the FAS/CAS service cost adjustment. The FAS/CAS service cost adjustment represents the difference between the FAS pension and postretirement service costs calculated under GAAP and costs allocated to the business segments. Core earnings per share excludes both the FAS/CAS service cost adjustment and non-operating pension and postretirement expenses. Non-operating pension and postretirement expenses represent the components of net periodic benefit costs other than service cost. Pension costs, comprising service and prior service costs computed in accordance with GAAP are allocated to BCA and certain BGS businesses supporting commercial customers. Pension costs allocated to BDS and BGS businesses supporting government customers are computed in accordance with U.S. Government Cost Accounting Standards (CAS), which employ different actuarial assumptions and accounting conventions than GAAP. CAS costs are allocable to government contracts. Other postretirement benefit costs are allocated to all business segments based on CAS, which is generally based on benefits paid.

The Pension FAS/CAS service cost adjustment recognized in (loss)/earnings from operations during 2020 was a benefit of \$1,024 million, largely consistent with a benefit of \$1,071 million in 2019 and \$1,005 million in 2018. The non-operating pension expense included in Other income, net was a benefit of \$340 million in 2020, \$374 million in 2019 and \$143 million in 2018. The benefits in 2020, 2019, and 2018 reflect expected returns in excess of interest cost and amortization of actuarial losses.

For further discussion of pension and other postretirement costs see the Management's Discussion and Analysis on pages 30 - 31 of this Form 10-K and see Note 22 to our Consolidated Financial Statements. Management uses core operating earnings, core operating margin and core earnings per share for purposes of evaluating and forecasting underlying business performance. Management believes these core earnings measures provide investors additional insights into operational performance as unallocated pension and other postretirement benefit cost, primarily represent costs driven by market factors and costs not allocable to U.S. government contracts.

Reconciliation of GAAP Measures to Non-GAAP Measures

The table below reconciles the non-GAAP financial measures of core operating earnings, core operating margin and core earnings per share with the most directly comparable GAAP financial measures of earnings from operations, operating margins and diluted earnings per share.

(Dollars in millions, except per share data)

Years ended December 31,	2020	2019	2018
Revenues	\$58,158	\$76,559	\$101,127
(Loss)/earnings from operations, as reported	(\$12,767)	(\$1,975)	\$11,987
Operating margins	(22.0)%	(2.6)%	11.9 %
Pension FAS/CAS service cost adjustment ⁽¹⁾	(\$1,024)	(\$1,071)	(\$1,005)
Postretirement FAS/CAS service cost adjustment ⁽¹⁾	(\$359)	(\$344)	(\$322)
FAS/CAS service cost adjustment ⁽¹⁾	(\$1,383)	(\$1,415)	(\$1,327)
Core operating (loss)/earnings (non-GAAP)	(\$14,150)	(\$3,390)	\$10,660
Core operating margins (non-GAAP)	(24.3)%	(4.4)%	10.5 %
Diluted (loss)/earnings per share, as reported	(\$20.88)	(\$1.12)	\$17.85
Pension FAS/CAS service cost adjustment ⁽¹⁾	(\$1.80)	(\$1.89)	(\$1.71)
Postretirement FAS/CAS service cost adjustment ⁽¹⁾	(\$0.63)	(\$0.61)	(\$0.55)
Non-operating pension expense ⁽²⁾	(\$0.60)	(\$0.66)	(\$0.24)
Non-operating postretirement expense ⁽²⁾	\$0.03	\$0.19	\$0.17
Provision for deferred income taxes on adjustments ⁽³⁾	\$0.63	\$0.62	\$0.49
Core (loss)/earnings per share (non-GAAP)	(\$23.25)	(\$3.47)	\$16.01
Weighted average diluted shares (in millions)	569.0	566.0	586.2

(1) FAS/CAS service cost adjustment represents the difference between the FAS pension and postretirement service costs calculated under GAAP and costs allocated to the business segments. This adjustment is excluded from Core operating (loss)/earnings (non-GAAP).

(2) Non-operating pension and postretirement expenses represent the components of net periodic benefit costs other than service cost. These expenses are included in Other income, net and are excluded from Core (loss)/earnings per share (non-GAAP).

(3) The income tax impact is calculated using the U.S. corporate statutory tax rate.

Critical Accounting Policies & Estimates

Accounting for long-term contracts

Substantially all contracts at BDS and certain contracts at BGS are long-term contracts. Our long-term contracts typically represent a single distinct performance obligation due to the highly interdependent and interrelated nature of the underlying goods and/or services and the significant service of integration that we provide.

Accounting for long-term contracts involves a judgmental process of estimating the total sales, costs, and profit for each performance obligation. Cost of sales is recognized as incurred and revenue is determined by adding a proportionate amount of the estimated profit to the amount reported as cost of sales.

Due to the size, duration and nature of many of our long-term contracts, the estimation of total sales and costs through completion is complicated and subject to many variables. Total sales estimates are based on negotiated contract prices and quantities, modified by our assumptions regarding contract options, change orders, incentive and award provisions associated with technical performance, and price adjustment clauses (such as inflation or index-based clauses). The majority of these long-term contracts are with the U.S. government where the price is generally based on estimated cost to produce the product or service plus profit. Federal Acquisition Regulations provide guidance on the types of cost that will be reimbursed in establishing contract price. Total cost estimates are largely based on negotiated or estimated purchase contract terms, historical performance trends, business base and other economic projections. Factors that influence these estimates include inflationary trends, technical and schedule risk, internal and subcontractor performance trends, business volume assumptions, COVID-19 disruptions, asset utilization, and anticipated labor agreements.

Revenue and cost estimates for all significant long-term contract performance obligations are reviewed and reassessed quarterly. Changes in these estimates could result in recognition of cumulative catch-up adjustments to the performance obligation's inception to date revenues, cost of sales and profit, in the period in which such changes are made. Changes in revenue and cost estimates could also result in a reach-forward loss or an adjustment to a reach-forward loss, which would be recorded immediately in earnings. For the years ended December 31, 2020, 2019 and 2018 net unfavorable cumulative catch-up adjustments, including reach-forward losses, across all long-term contracts decreased Earnings from operations by \$942 million, \$111 million and \$190 million, respectively. The cumulative catch-up adjustments in 2020 were primarily due to reach-forward losses incurred on the KC-46A Tanker program.

Due to the significance of judgment in the estimation process described above, it is likely that materially different earnings could be recorded if we used different assumptions or if the underlying circumstances were to change. Changes in underlying assumptions/estimates, supplier performance, or circumstances may adversely or positively affect financial performance in future periods. If the combined gross margin for all long-term contract performance obligations for all of 2020 had been estimated to be higher or lower by 1%, it would have increased or decreased pre-tax income for the year by approximately \$330 million. In addition, a number of our fixed price development contracts are in a reach-forward loss position. Changes to estimated losses are recorded immediately in earnings.

Program Accounting

Program accounting requires the demonstrated ability to reliably estimate the relationship of sales to costs for the defined program accounting quantity. A program consists of the estimated number of units (accounting quantity) of a product to be produced in a continuing, long-term production effort for delivery under existing and anticipated contracts. The determination of the accounting quantity is limited by the ability to make reasonably dependable estimates of the revenue and cost of existing and

anticipated contracts. For each program, the amount reported as cost of sales is determined by applying the estimated cost of sales percentage for the total remaining program to the amount of sales recognized for airplanes delivered and accepted by the customer.

Factors that must be estimated include program accounting quantity, sales price, labor and employee benefit costs, material costs, procured part costs, major component costs, overhead costs, program tooling and other non-recurring costs, and warranty costs. Estimation of the accounting quantity for each program takes into account several factors that are indicative of the demand for the particular program, such as firm orders, letters of intent from prospective customers, and market studies. Total estimated program sales are determined by estimating the model mix and sales price for all unsold units within the accounting quantity, added together with the sales prices for all undelivered units under contract. The sales prices for all undelivered units within the accounting quantity include an escalation adjustment for inflation that is updated quarterly. Cost estimates are based largely on negotiated and anticipated contracts with suppliers, historical performance trends, and business base and other economic projections. Factors that influence these estimates include production rates, internal and subcontractor performance trends, customer and/or supplier claims or assertions, asset utilization, anticipated labor agreements, COVID-19 disruptions, and inflationary or deflationary trends.

To ensure reliability in our estimates, we employ a rigorous estimating process that is reviewed and updated on a quarterly basis. This includes reassessing the accounting quantity. Changes in estimates of program margins are normally recognized on a prospective basis; however, when estimated costs to complete a program exceed estimated revenues from undelivered units in the accounting quantity, a loss provision is recorded in the current period for the estimated loss on all undelivered units in the accounting quantity.

The program method of accounting allocates tooling and other non-recurring and production costs over the accounting quantity for each program. Because of the higher unit production costs experienced at the beginning of a new program and substantial investment required for initial tooling and other non-recurring costs, new commercial aircraft programs, typically have lower initial margins than established programs and a higher risk for reach-forward loss. Actual costs incurred for earlier units in excess of the estimated average cost of all units in the program accounting quantity are included within program inventory as deferred production costs. Deferred production, unamortized tooling and other non-recurring costs are expected to be fully recovered when all units in the accounting quantity are delivered as the expected unit cost for later deliveries is below the estimated average cost as learning curve and other improvements are realized.

We now anticipate that the first 777X delivery will occur in late 2023. We also recorded a \$6.5 billion reach-forward loss on the 777X program in the fourth quarter of 2020. The revised schedule and the reach-forward loss reflect a number of factors, including an updated assessment of global certification requirements informed by continued discussions with regulators and resulting in a management decision to make modifications to the aircraft's design, an updated assessment of COVID-19 impacts on market demand, and discussions with our customers with respect to aircraft delivery timing. These factors resulted in adjustments to production rates and the program accounting quantity, increased change incorporation costs, and associated customer and supply chain impacts.

Absent changes in the estimated revenues or costs, deliveries which are expected to begin in 2023 will be recorded at zero margin. Reductions to the estimated loss in subsequent periods are spread over all undelivered units in the accounting quantity, whereas increases to the estimated loss are recorded immediately. The level of profitability on the 777X program will be subject to a number of factors. These factors include continued market uncertainty, the impacts of COVID-19 on our production system as well as impacts on our supply chain and customers, further production rate adjustments for the 777X or other commercial aircraft programs, contraction of the accounting quantity and potential risks associated with the testing program and the timing of aircraft certification. One or more of these factors

could result in additional reach-forward losses on the 777X program in future periods which may be material.

Due to the impacts of COVID-19 on our customers as well as production issues and associated rework, the 787 program has near breakeven gross margins at December 31, 2020. The margins reflect reductions in the production rate and program accounting quantity during 2020. If we are required to further reduce the accounting quantity and/or production rates or experience higher than anticipated costs or delays addressing production issues and associated rework, or other factors that could result in lower margins, the program could record a reach-forward loss in future periods which may be material.

The 747 and 767 programs also have near breakeven gross margins at December 31, 2020. If we are unable to mitigate risks associated with these programs, or if our assumptions with respect to items such as pricing, cost, accounting quantity or future production rates were to change, we could be required to record reach-forward losses in future periods which may be material.

737 MAX Grounding

In 2019, following two fatal 737 MAX accidents, the Federal Aviation Administration (FAA) and non-U.S. civil aviation authorities issued orders suspending commercial operations of 737 MAX aircraft. Deliveries of the 737 MAX were suspended following these orders. Deliveries resumed in late 2020 following rescission by the FAA of its grounding order.

Multiple legal actions have been filed against us as a result of the accidents. In addition, we are fully cooperating with U.S. government investigations related to the accidents and the 737 MAX program, including an investigation by the Securities and Exchange Commission, the outcome of which may be material. On January 6, 2021, we entered into a Deferred Prosecution Agreement with the U.S. Department of Justice that resolves the Department of Justice's previously disclosed investigation into us regarding the evaluation of the 737 MAX airplane by the FAA. Other than with respect to the U.S. Department of Justice, we cannot reasonably estimate a range of loss, if any, not covered by available insurance that may result given the current status of the lawsuits, investigations and inquiries related to the 737 MAX.

In the preparation of our financial statements, we have made assumptions regarding outcomes of accident investigations and other government inquiries, timing and conditions of return to service, the timing of future 737 production rate increases, supplier readiness to support production rate changes, timing and sequence of future customer deliveries as well as outcomes of negotiations with customers impacted by the grounding. We have also made significant assumptions regarding estimated costs expected to be incurred in 2021 that should be included in program inventory and those costs that should be expensed when incurred as abnormal production costs. While these assumptions reflect our best estimate at this time, they are highly uncertain and significantly affect the estimates inherent in our financial statements.

In December 2020, we delivered 27 aircraft, in compliance with the FAA regulatory requirements. We have assumed that the remaining non-U.S. regulatory approvals will occur and enable deliveries during the first half of 2021. We have approximately 425 airplanes in inventory as of December 31, 2020. A number of customers have requested to defer deliveries or to cancel orders for 737 MAX aircraft, and we are remarketing and/or delaying deliveries of certain aircraft included within inventory. We now expect to deliver about half of the 737 MAX aircraft in inventory by the end of 2021. In the event that we are unable to resume aircraft deliveries in non-U.S. jurisdictions consistent with our assumptions of regulatory approval timing, our expectation of delivery timing could be impacted.

Due to the grounding and associated suspension of 737 MAX deliveries, we temporarily suspended 737 MAX production beginning in January 2020. We resumed early stages of 737 MAX production in May 2020 and continued to produce at low rates through the end of 2020.

In addition, we reduced the number of aircraft included in the accounting quantity by 400 units in the first quarter of 2020 as a result of reductions to planned production rates due to COVID-19 driven market uncertainties. As we are producing at abnormally low production rates in 2020 and 2021, we expect to incur approximately \$5.0 billion of abnormal production costs that are being expensed as incurred. The slowdown in the planned production rate ramp-up increased expected abnormal costs however this increase was offset by adjustments to the determination of the normal production level due to COVID-19 impacts on customer demand, as well as cost reduction activities, including significant reductions in employment levels. We expensed approximately \$2.6 billion of abnormal production costs during the year ended December 31, 2020.

In addition to impacts related to the 737 MAX accidents and subsequent grounding, the 737 program continues to be significantly impacted by the COVID-19 pandemic and its effect on aircraft demand. These impacts have resulted in lower production and delivery rate assumptions. We currently expect to gradually increase the production rate to 31 per month by early 2022. We currently assume that we will implement further gradual production rate increases in subsequent periods based on market demand. The ongoing impacts of COVID-19 on market demand have also created significant uncertainty around the timing of deliveries of 737 MAX aircraft in inventory. We may need to recognize additional costs associated with remarketing and/or reconfiguring aircraft in inventory, which may reduce revenue and/or earnings in future periods.

We are working with our customers to minimize the impact to their operations from grounded and undelivered aircraft. We continue to reassess the liability for estimated potential concessions and other considerations to customers on a quarterly basis. This reassessment includes updating estimates to reflect revisions to return to service, delivery and production rate assumptions driven by timing of regulatory approvals, as well as latest information based on engagements with 737 MAX customers. The remaining liability of \$5.5 billion at December 31, 2020 represents our current best estimate of future concessions and other considerations to customers, and is necessarily based on a series of assumptions. It is subject to change in future quarters as negotiations with customers mature and timing and conditions of return to service are better understood.

Our assumptions reflect our current best estimate, but actual timing and conditions of return to service and resumption of deliveries could differ from this estimate, the effect of which could be material. We are unable at this time to reasonably estimate potential future additional financial impacts or a range of loss, if any, due to continued uncertainties related to the timing and conditions of return to service, uncertainties related to the impacts of COVID-19 on our operations, supply chain and customers, future changes to the production rate, supply chain impacts, and/or the results of negotiations with particular customers. Any such impacts, including any changes in our estimates, could have a material adverse effect on our financial position, results of operations, and/or cash flows. For example, we expect that, in the event that we are unable to resume aircraft deliveries in non-U.S. jurisdictions consistent with our assumptions, the continued absence of revenue, earnings, and cash flows associated with 737 MAX deliveries would continue to have a material impact on our operating results. In the event that future production rate increases occur at a slower rate or take longer than we are currently assuming we expect that the growth in inventory and other cash flow impacts associated with production would decrease. However, while any prolonged production suspension or delays in planned production rate increases could mitigate the impact on our liquidity, it could significantly increase the overall expected costs to produce aircraft included in the accounting quantity, which would reduce 737 program margins and/or increase abnormal production costs in the future.

Goodwill Impairments

We test goodwill for impairment by performing a qualitative assessment or quantitative test. If we choose to perform a qualitative assessment, we evaluate economic, industry and company-specific factors as an initial step in assessing the fair value of operations. If we determine it is more likely than

not that the carrying value of the net assets is more than the fair value of the related operations, then a quantitative test is performed; otherwise, no further testing is required. For operations where the quantitative test is used, we compare the carrying value of net assets to the estimated fair value of the related operations. If the fair value is determined to be less than carrying value, the shortfall up to the carrying value of the goodwill represents the amount of goodwill impairment.

We generally estimate the fair values of the related operations using a combination of discounted cash flows and market-based valuation methodologies such as comparable public company trading values. Forecasts of future cash flows are based on our best estimate of future sales, operating costs, and changes in working capital. These forecasts reflect existing firm orders, expected future orders, expected production rates and delivery profiles, contracts with suppliers, labor agreements, and general market conditions. Changes in these forecasts could significantly change the amount of impairment recorded, if any. The cash flow forecasts are adjusted by an appropriate discount rate derived from our market capitalization plus a suitable control premium at the date of evaluation. Therefore, changes in the stock price may also affect the amount of impairment recorded, if any.

We completed our annual assessment of goodwill as of April 1, 2020 and determined that there was no impairment of goodwill.

As a result of the continuing significant adverse impacts of the COVID-19 pandemic on our Commercial Airplanes and Commercial Services businesses, we concluded it is a triggering event for testing whether goodwill recorded by our Commercial Airplanes and Commercial Services reporting units is impaired. At December 31, 2020, Commercial Airplanes has \$1,316 million of goodwill and Commercial Services has \$3,087 million. We performed a quantitative test and determined the fair values of our Commercial Airplane and Commercial Services reporting units substantially exceeded their carrying values as of December 31, 2020. As of December 31, 2020, we also estimated the fair values of our other reporting units significantly exceeded their corresponding carrying values.

We will continue to monitor the impacts of the COVID-19 pandemic in future quarters. Changes in our forecasts, discount rates, or decreases in the value of our common stock could cause book values to exceed their fair values which may result in goodwill impairment charges in future periods.

Pension Plans

Many of our employees have earned benefits under defined benefit pension plans. Nonunion and the majority of union employees that had participated in defined benefit pension plans transitioned to a company-funded defined contribution retirement savings plan in 2016. Additional union employees transitioned to company-funded defined contribution retirement savings plans effective January 1, 2019. Accounting rules require an annual measurement of our projected obligation and plan assets. These measurements are based upon several assumptions, including the discount rate and the expected long-term rate of asset return. Future changes in assumptions or differences between actual and expected outcomes can significantly affect our future annual expense, projected benefit obligation and Shareholders' equity.

The projected benefit obligation is sensitive to discount rates. The projected benefit obligation would decrease by \$2,591 million or increase by \$2,930 million if the discount rate increased or decreased by 25 basis points. A 25 basis point change in the discount rate would not have a significant impact on pension cost. However, net periodic pension cost is sensitive to changes in the expected long-term rate of asset return. A decrease or increase of 25 basis points in the expected long-term rate of asset return would have increased or decreased 2020 net periodic pension cost by \$145 million.

Deferred Income Taxes – Valuation Allowance

The Company has deferred income tax assets of \$11,600 million at December 31, 2020, that can be used in future years to offset taxable income and reduce income taxes payable. The Company has deferred income tax liabilities of \$9,430 million at December 31, 2020, that will partially offset deferred income tax assets and result in higher taxable income in future years and increase income taxes payable. Tax law determines whether future reversals of temporary differences will result in taxable and deductible amounts that offset each other in future years. The particular years in which temporary differences result in taxable or deductible amounts generally are determined by the timing of the recovery of the related asset or settlement of the related liability. The deferred income tax assets and liabilities relate primarily to U.S. federal and state tax jurisdictions.

On a quarterly basis, we assess the likelihood that we will be able to recover our deferred tax assets against future sources of taxable income and reduce the carrying amounts of deferred tax assets by recording a valuation allowance if, based on the available evidence, it is more likely than not (defined as a likelihood of more than 50%) that all or a portion of such assets will not be realized.

This assessment, which is completed on a taxing jurisdiction basis, takes into account both positive and negative evidence. A recent history of financial reporting losses is heavily weighted as a source of objectively verifiable negative evidence. Cumulative pre-tax losses in the three-year period ending with the current quarter is considered to be significant negative evidence regarding future profitability. If cumulative pre-tax losses adjusted for non-recurring items result in positive normalized earnings that would be considered an objectively verifiable source of positive evidence of the ability of the company to generate positive earnings in the future. When there is a recent history of operating losses and negative normalized earnings and a return to operating profitability has not yet been demonstrated, we cannot rely on projections of future earnings for purposes of assessing recoverability of our deferred tax assets. In such cases, we use systematic and logical methods to estimate when deferred tax liabilities will reverse and generate taxable income and when deferred tax assets will reverse and generate tax deductions. The selection of methodologies and assessment of when temporary differences will result in taxable or deductible amounts involves significant management judgment and is inherently complex and subjective. We believe that the methodologies we use are reasonable and can be replicated on a consistent basis in future periods.

As described above, a recent history of financial reporting losses is heavily weighted as a source of objectively verifiable negative evidence of the Company's ability to generate future taxable income to recover deferred tax assets. During 2019 and 2020 the Company generated significant losses and in the fourth quarter of 2020 the Company reached a three-year cumulative pre-tax loss position. We expect cumulative three-year losses to grow in 2021 as record earnings in 2018 are replaced by 2021 results. We also normalized earnings and other comprehensive income for certain non-recurring items and expect to reach a three-year cumulative loss position in 2021 as record earnings in 2018 are replaced with 2021 results. For purposes of assessing the recoverability of deferred tax assets, the Company determined that it could not include future projected earnings in the analysis due to recent history of losses.

Deferred tax liabilities represent the assumed source of future taxable income and the majority are assumed to generate taxable amounts during the next five years. Deferred tax assets include amounts

related to pension and other postretirement benefits that are assumed to generate significant deductible amounts beyond five years. The Company's valuation allowance of \$3,094 million at December 31, 2020 primarily relates to pension and other postretirement benefit obligation deferred tax assets that are assumed to reverse beyond the period in which reversals of deferred tax liabilities are assumed to occur. Because the pension and other postretirement benefit obligations are recorded to both continuing operations and other comprehensive income (OCI), the Company recorded a portion of the fourth quarter increase in the valuation allowance to income tax expense in continuing operations (\$2,513 million) and a portion to OCI (\$196 million).

If the Company continues to generate losses and negative normalized earnings in future periods, additional valuation allowances may have to be recorded with corresponding adverse impacts on earnings and/or OCI. When income generation returns to more normal levels we can expect to see the allowance reverse and increase reported earnings and/or OCI.

For additional information regarding income taxes, see Note 4 of the Notes to the Financial Statements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Risk

We have financial instruments that are subject to interest rate risk, principally fixed- and floating-rate debt obligations, and customer financing assets and liabilities. The investors in our fixed-rate debt obligations do not generally have the right to demand we pay off these obligations prior to maturity. Therefore, exposure to interest rate risk is not believed to be material for our fixed-rate debt. In the first quarter of 2020, we entered into a \$13.8 billion two-year delayed draw floating-rate term loan credit agreement. An increase or decrease of 100 basis points in interest rates on this floating-rate debt would increase or decrease our pre-tax earnings by \$138 million over the next 12 months. Historically, we have not experienced material gains or losses on our customer financing assets and liabilities due to interest rate changes.

Foreign Currency Exchange Rate Risk

We are subject to foreign currency exchange rate risk relating to receipts from customers and payments to suppliers in foreign currencies. We use foreign currency forward contracts to hedge the price risk associated with firmly committed and forecasted foreign denominated payments and receipts related to our ongoing business. Foreign currency forward contracts are sensitive to changes in foreign currency exchange rates. At December 31, 2020, a 10% increase or decrease in the exchange rate in our portfolio of foreign currency contracts would have increased or decreased our unrealized losses by \$245 million. Consistent with the use of these contracts to neutralize the effect of exchange rate fluctuations, such unrealized losses or gains would be offset by corresponding gains or losses, respectively, in the remeasurement of the underlying transactions being hedged. When taken together, these forward currency contracts and the offsetting underlying commitments do not create material market risk.

Commodity Price Risk

We are subject to commodity price risk relating to commodity purchase contracts for items used in production that are subject to changes in the market price. We use commodity swaps and commodity purchase contracts to hedge against these potentially unfavorable price changes. Our commodity purchase contracts and derivatives are both sensitive to changes in the market price. At December 31, 2020, a 10% increase or decrease in the market price in our commodity derivatives would have increased or decreased our unrealized losses by \$38 million. Consistent with the use of these contracts

to neutralize the effect of market price fluctuations, such unrealized losses or gains would be offset by corresponding gains or losses, respectively, in the remeasurement of the underlying transactions being hedged. When taken together, these commodity purchase contracts and the offsetting swaps do not create material market risk.

Item 8. Financial Statements and Supplementary Data

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The Boeing Company and Subsidiaries
Consolidated Statements of Operations

(Dollars in millions, except per share data)

Years ended December 31,	2020	2019	2018
Sales of products	\$47,142	\$66,094	\$90,229
Sales of services	11,016	10,465	10,898
Total revenues	58,158	76,559	101,127
Cost of products	(54,568)	(62,877)	(72,922)
Cost of services	(9,232)	(9,154)	(8,499)
Boeing Capital interest expense	(43)	(62)	(69)
Total costs and expenses	(63,843)	(72,093)	(81,490)
	(5,685)	4,466	19,637
Income/(loss) from operating investments, net	9	(4)	111
General and administrative expense	(4,817)	(3,909)	(4,567)
Research and development expense, net	(2,476)	(3,219)	(3,269)
Gain on dispositions, net	202	691	75
(Loss)/earnings from operations	(12,767)	(1,975)	11,987
Other income, net	447	438	92
Interest and debt expense	(2,156)	(722)	(475)
(Loss)/earnings before income taxes	(14,476)	(2,259)	11,604
Income tax benefit/(expense)	2,535	1,623	(1,144)
Net (loss)/earnings	(11,941)	(636)	10,460
Less: net loss attributable to noncontrolling interest	(68)		
Net (loss)/earnings attributable to Boeing Shareholders	(\$11,873)	(\$636)	\$10,460
Basic (loss)/earnings per share	(\$20.88)	(\$1.12)	\$18.05
Diluted (loss)/earnings per share	(\$20.88)	(\$1.12)	\$17.85

See Notes to the Consolidated Financial Statements on pages 67 – 131.

The Boeing Company and Subsidiaries
Consolidated Statements of Comprehensive Income

(Dollars in millions)

Years ended December 31,	2020	2019	2018
Net (loss)/earnings	(\$11,941)	(\$636)	\$10,460
Other comprehensive income/(loss), net of tax:			
Currency translation adjustments	98	(27)	(86)
Unrealized gain on certain investments, net of tax of \$0, \$0 and (\$1)		1	2
Derivative instruments:			
Unrealized gain/(loss) arising during period, net of tax of (\$4), \$13, and \$40	14	(48)	(146)
Reclassification adjustment for loss included in net earnings, net of tax of (\$7), (\$7), and (\$8)	27	26	30
Total unrealized gain/(loss) on derivative instruments, net of tax	41	(22)	(116)
Defined benefit pension plans & other postretirement benefits:			
Net actuarial (loss)/gain arising during the period, net of tax of \$111, \$405, and (\$105)	(1,956)	(1,413)	384
Amortization of actuarial losses included in net periodic pension cost, net of tax of (\$52), (\$133), and (\$242)	917	464	878
Settlements and curtailments included in net income, net of tax of \$0, \$0, and (\$2)	5		8
Pension and postretirement benefit related to our equity method investments, net of tax \$0, (\$5), and (\$6)		17	22
Amortization of prior service credits included in net periodic pension cost, net of tax of \$6, \$25, and \$39	(112)	(89)	(143)
Prior service cost/(credit) arising during the period, net of tax of (\$2), \$0, and (\$94)	27	(1)	341
Total defined benefit pension plans & other postretirement benefits, net of tax	(1,119)	(1,022)	1,490
Other comprehensive (loss)/income, net of tax	(980)	(1,070)	1,290
Comprehensive loss related to noncontrolling interests		(41)	(21)
Comprehensive (loss)/income, net of tax	(12,921)	(1,747)	11,729
Less: Comprehensive loss related to noncontrolling interest	(68)	(41)	(21)
Comprehensive (loss)/income attributable to Boeing Shareholders, net of tax	(\$12,853)	(\$1,706)	\$11,750

See Notes to the Consolidated Financial Statements on pages 67 – 131.

The Boeing Company and Subsidiaries
Consolidated Statements of Financial Position

(Dollars in millions, except per share data)

December 31,	2020	2019
Assets		
Cash and cash equivalents	\$7,752	\$9,485
Short-term and other investments	17,838	545
Accounts receivable, net	1,955	3,266
Unbilled receivables, net	7,995	9,043
Current portion of customer financing, net	101	162
Inventories	81,715	76,622
Other current assets, net	4,286	3,106
Total current assets	121,642	102,229
Customer financing, net	1,936	2,136
Property, plant and equipment, net	11,820	12,502
Goodwill	8,081	8,060
Acquired intangible assets, net	2,843	3,338
Deferred income taxes	86	683
Investments	1,016	1,092
Other assets, net of accumulated amortization of \$729 and \$580	4,712	3,585
Total assets	\$152,136	\$133,625
Liabilities and equity		
Accounts payable	\$12,928	\$15,553
Accrued liabilities	22,171	22,868
Advances and progress billings	50,488	51,551
Short-term debt and current portion of long-term debt	1,693	7,340
Total current liabilities	87,280	97,312
Deferred income taxes	1,010	413
Accrued retiree health care	4,137	4,540
Accrued pension plan liability, net	14,408	16,276
Other long-term liabilities	1,486	3,422
Long-term debt	61,890	19,962
Total liabilities	170,211	141,925
Shareholders' equity:		
Common stock, par value \$5.00 – 1,200,000,000 shares authorized; 1,012,261,159 shares issued	5,061	5,061
Additional paid-in capital	7,787	6,745
Treasury stock, at cost	(52,641)	(54,914)
Retained earnings	38,610	50,644
Accumulated other comprehensive loss	(17,133)	(16,153)
Total shareholders' deficit	(18,316)	(8,617)
Noncontrolling interests	241	317
Total equity	(18,075)	(8,300)
Total liabilities and equity	\$152,136	\$133,625

See Notes to the Consolidated Financial Statements on pages 67 – 131.



The Boeing Company and Subsidiaries
Consolidated Statements of Cash Flows

(Dollars in millions)

Years ended December 31,	2020	2019	2018
Cash flows – operating activities:			
Net (loss)/earnings	(\$11,941)	(\$636)	\$10,460
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Non-cash items –			
Share-based plans expense	250	212	202
Treasury shares issued for 401(k) contribution	195		
Depreciation and amortization	2,246	2,271	2,114
Investment/asset impairment charges, net	410	443	93
Customer financing valuation adjustments	12	250	(3)
Gain on dispositions, net	(202)	(691)	(75)
777X reach-forward loss	6,493		
Other charges and credits, net	1,462	334	247
Changes in assets and liabilities –			
Accounts receivable	909	603	(795)
Unbilled receivables	919	982	(1,826)
Advances and progress billings	(1,060)	737	2,636
Inventories	(11,002)	(12,391)	568
Other current assets	372	(682)	98
Accounts payable	(5,363)	1,600	2
Accrued liabilities	1,074	7,781	1,117
Income taxes receivable, payable and deferred	(2,576)	(2,476)	(180)
Other long-term liabilities	(222)	(621)	87
Pension and other postretirement plans	(794)	(777)	(153)
Customer financing, net	173	419	120
Other	235	196	610
Net cash (used)/provided by operating activities	(18,410)	(2,446)	15,322
Cash flows – investing activities:			
Property, plant and equipment additions	(1,303)	(1,834)	(1,722)
Property, plant and equipment reductions	296	334	120
Acquisitions, net of cash acquired		(455)	(3,230)
Proceeds from dispositions		464	
Contributions to investments	(37,616)	(1,658)	(2,607)
Proceeds from investments	20,275	1,759	2,898
Purchase of distribution rights		(127)	(69)
Other	(18)	(13)	(11)
Net cash used by investing activities	(18,366)	(1,530)	(4,621)
Cash flows – financing activities:			
New borrowings	47,248	25,389	8,548
Debt repayments	(10,998)	(12,171)	(7,183)
Contributions from noncontrolling interests		7	35
Stock options exercised	36	58	81
Employee taxes on certain share-based payment arrangements	(173)	(248)	(257)
Common shares repurchased		(2,651)	(9,000)
Dividends paid	(1,158)	(4,630)	(3,946)
Other		(15)	
Net cash provided/(used) by financing activities	34,955	5,739	(11,722)
Effect of exchange rate changes on cash and cash equivalents	85	(5)	(53)
Net (decrease)/increase in cash & cash equivalents, including restricted	(1,736)	1,758	(1,074)
Cash & cash equivalents, including restricted, at beginning of year	9,571	7,813	8,887
Cash & cash equivalents, including restricted, at end of year	7,835	9,571	7,813
Less restricted cash & cash equivalents, included in Investments	83	86	176
Cash and cash equivalents at end of year	\$7,752	\$9,485	\$7,637

See Notes to the Consolidated Financial Statements on pages 67 – 131.

The Boeing Company and Subsidiaries
Consolidated Statements of Equity

<i>(Dollars in millions, except per share data)</i>	Boeing shareholders						Non-controlling Interest	Total
	Common Stock	Additional Paid-In Capital	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Total		
Balance at January 1, 2018	\$5,061	\$6,804	(\$43,454)	\$49,618	(\$16,373)	\$57	\$1,713	
Net earnings/(loss)				10,460		(21)	10,439	
Other comprehensive income, net of tax of (\$379)					1,290		1,290	
Share-based compensation and related dividend equivalents		238		(36)			202	
Treasury shares issued for stock options exercised, net		(45)	126				81	
Treasury shares issued for other share-based plans, net		(229)	(20)				(249)	
Common shares repurchased			(9,000)				(9,000)	
Cash dividends declared (\$7.19 per share)				(4,101)			(4,101)	
Changes in noncontrolling interests						35	35	
Balance at December 31, 2018	\$5,061	\$6,768	(\$52,348)	\$55,941	(\$15,083)	\$71	\$410	
Net loss				(636)		(41)	(677)	
Other comprehensive loss, net of tax of \$298					(1,070)		(1,070)	
Share-based compensation and related dividend equivalents		245		(33)			212	
Treasury shares issued for stock options exercised, net		(47)	104				57	
Treasury shares issued for other share-based plans, net		(221)	(19)				(240)	
Common shares repurchased			(2,651)				(2,651)	
Cash dividends declared (\$8.22 per share)				(4,628)			(4,628)	
Changes in noncontrolling interests						287	287	
Balance at December 31, 2019	\$5,061	\$6,745	(\$54,914)	\$50,644	(\$16,153)	\$317	(\$8,300)	
Impact of ASU 2016-13				(162)			(162)	
Balance at January 1, 2020	\$5,061	\$6,745	(\$54,914)	\$50,482	(\$16,153)	\$317	(\$8,462)	
Net loss				(11,873)		(68)	(11,941)	
Other comprehensive loss, net of tax of \$52					(980)		(980)	
Share-based compensation		250					250	
Treasury shares issued for stock options exercised, net		(26)	63				37	
Treasury shares issued for other share-based plans, net		(214)	47				(167)	
Treasury shares contributed to pension plans		952	2,048				3,000	
Treasury shares issued for 401(k) contribution		80	115				195	
Changes in noncontrolling interests						(8)	(8)	
Other				1			1	
Balance at December 31, 2020	\$5,061	\$7,787	(\$52,641)	\$38,610	(\$17,133)	\$241	(\$18,075)	

See Notes to the Consolidated Financial Statements on pages 67 – 131.

The Boeing Company and Subsidiaries
Notes to the Consolidated Financial Statements
Summary of Business Segment Data

(Dollars in millions)

Years ended December 31,	2020	2019	2018
Revenues:			
Commercial Airplanes	\$16,162	\$32,255	\$57,499
Defense, Space & Security	26,257	26,095	26,300
Global Services	15,543	18,468	17,056
Boeing Capital	261	244	274
Unallocated items, eliminations and other	(65)	(503)	(2)
Total revenues	\$58,158	\$76,559	\$101,127
(Loss)/earnings from operations:			
Commercial Airplanes	(\$13,847)	(\$6,657)	\$7,830
Defense, Space & Security	1,539	2,615	1,692
Global Services	450	2,697	2,536
Boeing Capital	63	28	79
Segment operating (loss)/earnings	(11,795)	(1,317)	12,137
Unallocated items, eliminations and other	(2,355)	(2,073)	(1,477)
FAS/CAS service cost adjustment	1,383	1,415	1,327
(Loss)/earnings from operations	(12,767)	(1,975)	11,987
Other income, net	447	438	92
Interest and debt expense	(2,156)	(722)	(475)
(Loss)/earnings before income taxes	(14,476)	(2,259)	11,604
Income tax benefit/(expense)	2,535	1,623	(1,144)
Net (loss)/earnings	(11,941)	(636)	10,460
Less: net loss attributable to noncontrolling interest	(68)		
Net (loss)/earnings attributable to Boeing Shareholders	(\$11,873)	(\$636)	\$10,460

This information is an integral part of the Notes to the Consolidated Financial Statements. See Note 22 for further segment results.

The Boeing Company and Subsidiaries
Notes to the Consolidated Financial Statements
Years ended December 31, 2020, 2019 and 2018
(Dollars in millions, except otherwise stated)

Note 1 – Summary of Significant Accounting Policies

Principles of Consolidation and Basis of Presentation

The Consolidated Financial Statements included in this report have been prepared by management of The Boeing Company (herein referred to as “Boeing,” the “Company,” “we,” “us,” or “our”). These statements include the accounts of all majority-owned subsidiaries and variable interest entities that are required to be consolidated. All significant intercompany accounts and transactions have been eliminated. As described in Note 22, we operate in four reportable segments: Commercial Airplanes (BCA); Defense, Space & Security (BDS), Global Services (BGS), and Boeing Capital (BCC). Effective at the beginning of 2020, certain programs were realigned between our BDS segment and Unallocated items, eliminations and other. Amounts in prior periods have been reclassified to conform to the current year presentation.

Liquidity Matters

The global outbreak of COVID-19 and the grounding of the 737 MAX airplane are having a significant adverse impact on our business and are expected to continue to negatively impact revenue, earnings and operating cash flow in future quarters. The COVID-19 pandemic has caused an unprecedented shock to demand for air travel, creating a tremendous challenge for our customers, our business and the entire aerospace manufacturing and services sector. We currently expect it will take approximately three years for travel to return to 2019 levels and a few years beyond that for the industry to return to long-term trend growth. There is significant uncertainty with respect to when commercial air traffic levels will recover, and whether and at what point capacity will return to and/or exceed pre-COVID-19 levels.

During 2020, net cash used by operating activities was \$18.4 billion, and we expect negative operating cash flows in future quarters until commercial deliveries ramp up. In the first quarter of 2020, we entered into and fully drew on a \$13.8 billion two-year delayed draw term loan credit agreement (delayed draw term loan facility). In the second quarter of 2020, we issued \$25 billion of fixed rate senior notes that mature between 2023 and 2060. In the fourth quarter of 2020, we issued \$4.9 billion of fixed rate senior notes that mature between 2024 and 2031. As a result, our cash and short-term investment balance was \$25.6 billion and our debt balance was \$63.6 billion at December 31, 2020.

The major credit rating agencies downgraded our short term and long term credit ratings during 2020, and there is risk for further downgrades. At December 31, 2020, our debt balance includes no commercial paper borrowings compared to \$6.1 billion at December 31, 2019. In the current environment, we may have limited future access to the commercial paper market. In addition, we have term notes of \$1.5 billion maturing in 2021.

At December 31, 2020, trade payables included \$3.8 billion payable to suppliers who have elected to participate in supply chain financing programs. While access to supply chain financing has been reduced due to our current credit ratings and debt levels, we do not believe that these or future changes in the availability of supply chain financing will have a significant impact on our liquidity.

At December 31, 2020, we had \$9.5 billion of unused borrowing capacity on revolving credit agreements. We anticipate that these credit lines will primarily serve as back-up liquidity to support our general corporate borrowing needs. Our borrowing capacity includes a \$3.1 billion 364-day revolving credit facility, which is set to expire in October 2021.

In addition to our debt issuances, we have taken a number of actions to improve liquidity. During the first quarter of 2020, our Board of Directors terminated its prior authorization to repurchase shares of the Company's outstanding common stock and suspended the declaration and/or payment of dividends until further notice. We have also reduced production rates in our commercial business to reflect the impact of COVID-19 on the industry. We are executing on our plans to reduce our workforce through a combination of voluntary and involuntary layoffs and natural turnover. During 2020, we recorded severance costs for approximately 26,000 employees, of which approximately 18,000 have left the Company as of December 31, 2020, and the remainder are expected to leave in 2021. In the fourth quarter of 2020, we began using our common stock in lieu of cash to fund Company contributions to our 401(k) plans. In December 2020, we awarded most of our employees a one-time stock grant that will vest in three years in lieu of merit increases. We expect these actions to further enable the Company to conserve cash.

We are also working with our customers and supply chain to accelerate receipts and conserve cash. For example, the United States Department of Defense (U.S. DoD) has taken steps to work with its industry partners to increase liquidity in the form of increased progress payment rates and reductions in withholds among other initiatives. We are also deferring certain tax payments pursuant to the Coronavirus Aid, Relief, and Economic Security (CARES) Act.

We have reduced discretionary spending, including reducing or deferring research and development and capital expenditures.

In July 2020, we announced our business transformation efforts to assess our business across five key pillars – infrastructure, overhead and organization, portfolio and investments, supply chain health and operational excellence. Within the infrastructure pillar we are assessing our overall facility requirements in light of reduced demand in our commercial businesses and remote and virtual work opportunities for large numbers of our workforce. We also anticipate a reduction in office space needs compared to our current capacity. However, as we consolidate our footprint, we may incur near term adverse impacts to earnings. The overhead and organization pillar is focused on our cost structure and how we are organized so we can right size our workforce and simplify and reduce management layers and bureaucracy. The portfolio and investments pillar includes aligning our portfolio and investments to focus on our core business and the changes in market conditions. The supply chain pillar is focused on supply chain health and stability, reducing indirect procurement spend and streamlining our transportation, logistics and warehousing approach. The operational excellence pillar is focused on improving performance, enhancing quality and reducing rework. These activities are not intended to constrain our capacity, but to enable the Company to emerge stronger and be more resilient when the market recovers.

Based on our current best estimates of market demand, planned production rates, timing of cash receipts and expenditures, our ability to successfully implement further actions to improve liquidity as well as our ability to access additional liquidity, if needed, we believe it is probable that we will be able to fund our operations for the foreseeable future.

Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles (GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. We believe that the accounting estimates and assumptions are appropriate given the increased uncertainties surrounding the severity and duration of the impacts of the COVID-19 pandemic, however actual results could differ from those estimates.

Operating Cycle

For classification of certain current assets and liabilities, we use the duration of the related contract or program as our operating cycle, which is generally longer than one year.

Standards Issued and Implemented

In the first quarter of 2020, we adopted ASU 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments, using a modified retrospective method, which resulted in the recognition of allowances for credit losses on our Consolidated Statement of Financial Position as of January 1, 2020 and a \$162 cumulative-effect adjustment to retained earnings to align our credit loss methodology with the new standard. The standard replaces the incurred loss impairment methodology under Topic 310 with a methodology that reflects expected credit losses and requires the use of a forward-looking expected credit loss model for accounts receivables, loans, and certain other financial assets. See Notes 5, 6, 9 and 14 for additional disclosures.

In the first quarter of 2020, we also adopted ASU 2017-04, Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment. The standard simplifies the quantitative impairment test from a two-step process to a one-step process. The quantitative test is performed by comparing the carrying value of net assets to the estimated fair value of the related operations. If the fair value is determined to be less than carrying value, the shortfall up to the carrying value of the goodwill represents the amount of goodwill impairment. The standard continues to permit a company to test goodwill for impairment by performing a qualitative assessment or using the quantitative test.

Revenue and Related Cost Recognition

Commercial aircraft contracts The majority of our BCA segment revenue is derived from commercial aircraft contracts. For each contract, we determine the transaction price based on the consideration expected to be received. We allocate the transaction price to each commercial aircraft performance obligation based on relative standalone selling prices adjusted by an escalation formula as specified in the customer agreement. Revenue is recognized for each commercial aircraft performance obligation at the point in time when the aircraft is completed and accepted by the customer. We use program accounting to determine the amount reported as cost of sales.

In certain situations, where an aircraft is still in our possession, and title and risk of loss has passed to the customer (known as a bill-and-hold arrangement), revenue will be recognized when all specific requirements for transfer of control under a bill-and-hold arrangement have been met.

Payments for commercial aircraft sales are received in accordance with the customer agreement, which generally includes a deposit upon order and additional payments in accordance with a payment schedule, with the balance being due immediately prior to or at aircraft delivery. Advances and progress billings (contract liabilities) are normal and customary for commercial aircraft contracts and not considered a significant financing component as they are intended to protect us from the other party failing to adequately complete some or all of its obligations under the contract.

Long-term contracts Substantially all contracts at BDS and certain contracts at BGS are long-term contracts with the U.S. government and other customers that generally extend over several years. Products sales under long-term contracts primarily include fighter jets, rotorcraft, cybersecurity products, surveillance suites, advanced weapons, missile defense, military derivative aircraft, satellite systems, and modification of commercial passenger aircraft to cargo freighters. Services sales under long-term contracts primarily include support and maintenance agreements associated with our commercial and defense products and space travel on Commercial Crew.

For each long-term contract, we determine the transaction price based on the consideration expected to be received. We allocate the transaction price to each distinct performance obligation to deliver a good or service, or a collection of goods and/or services, based on the relative standalone selling prices. A long-term contract will typically represent a single distinct performance obligation due to the highly interdependent and interrelated nature of the underlying goods and/or services and the significant service of integration that we provide. While the scope and price on certain long-term contracts may be modified over their life, the transaction price is based on current rights and obligations under the contract and does not include potential modifications until they are agreed upon with the customer. When applicable, a cumulative adjustment or separate recognition for the additional scope and price may result. Long-term contracts can be negotiated with a fixed price or a price in which we are reimbursed for costs incurred plus an agreed upon profit. The Federal Acquisition Regulations provide guidance on the types of cost that will be reimbursed in establishing the price for contracts with the U.S. government. Certain long-term contracts include in the transaction price variable consideration, such as incentive and award fees, if specified targets are achieved. The amount included in the transaction price represents the expected value, based on a weighted probability, or the most likely amount.

Long-term contract revenue is recognized over the contract term (over time) as the work progresses, either as products are produced or as services are rendered. We generally recognize revenue over time as we perform on long-term contracts because of continuous transfer of control to the customer. For U.S. government contracts, this continuous transfer of control to the customer is supported by clauses in the contract that allow the customer to unilaterally terminate the contract for convenience, pay us for costs incurred plus a reasonable profit and take control of any work in process. Similarly, for non-U.S. government contracts, the customer typically controls the work in process as evidenced either by contractual termination clauses or by our rights to payment of the transaction price associated with work performed to date on products or services that do not have an alternative use to the Company.

The accounting for long-term contracts involves a judgmental process of estimating total sales, costs and profit for each performance obligation. Cost of sales is recognized as incurred. The amount reported as revenues is determined by adding a proportionate amount of the estimated profit to the amount reported as cost of sales. Recognizing revenue as costs are incurred provides an objective measure of progress on the long-term contract and thereby best depicts the extent of transfer of control to the customer.

Changes in estimated revenues, cost of sales and the related effect on operating income are recognized using a cumulative catch-up adjustment which recognizes in the current period the cumulative effect of the changes on current and prior periods based on a long-term contract's percentage-of-completion. When the current estimates of total sales and costs for a long-term contract indicate a loss, a provision for the entire reach-forward loss on the long-term contract is recognized.

Net cumulative catch-up adjustments to prior years' revenue and earnings, including certain reach-forward losses, across all long-term contracts were as follows:

	2020	2019	2018
(Decrease)/Increase to Revenue	(\$359)	\$54	\$137
Increase to Loss/decrease to Earnings from operations	(\$942)	(\$111)	(\$190)
Decrease to Diluted EPS	(\$1.37)	(\$0.06)	(\$0.29)

Significant adjustments during the three years ended December 31, 2020 included reach-forward losses of \$953, \$148 and \$736 on KC-46A Tanker recorded during 2020, 2019, and 2018, as well as reach-forward losses on Commercial Crew of \$489 during 2019.

Due to the significance of judgment in the estimation process, changes in underlying assumptions/estimates, supplier performance, or circumstances may adversely or positively affect financial performance in future periods.

Payments under long-term contracts may be received before or after revenue is recognized. The U.S. government customer typically withholds payment of a small portion of the contract price until contract completion. Therefore, long-term contracts typically generate Unbilled receivables (contract assets) but may generate Advances and progress billings (contract liabilities). Long-term contract Unbilled receivables and Advances and progress billings are not considered a significant financing component because they are intended to protect either the customer or the Company in the event that some or all of the obligations under the contract are not completed.

Commercial spare parts contracts Certain contracts at our BGS segment include sales of commercial spare parts. For each contract, we determine the transaction price based on the consideration expected to be received. The spare parts have discrete unit prices that represent fair value. We generally consider each spare part to be a separate performance obligation. Revenue is recognized for each commercial spare part performance obligation at the point in time of delivery to the customer. We may provide our customers with a right to return a commercial spare part where a customer may receive a full or partial refund, a credit applied to amounts owed, a different product in exchange, or any combination of these items. We consider the potential for customer returns in the estimated transaction price. The amount reported as cost of sales is recorded at average cost. Payments for commercial spare parts sales are typically received shortly after delivery.

Other service revenue contracts Certain contracts at our BGS segment are for sales of services to commercial customers including maintenance, training, data analytics and information-based services. We recognize revenue for these service performance obligations over time as the services are rendered. The method of measuring progress (such as straight-line or billable amount) varies depending upon which method best depicts the transfer of control to the customer based on the type of service performed. Cost of sales is recorded as incurred.

Concession Sharing Arrangements We account for sales concessions to our customers in consideration of their purchase of products and services as a reduction of the transaction price and the revenue that is recognized for the related performance obligations. The sales concessions incurred may be partially reimbursed by certain suppliers in accordance with concession sharing arrangements. We record these reimbursements, which are presumed to represent reductions in the price of the vendor's products or services, as a reduction in Cost of products.

Unbilled Receivables and Advances and Progress Billings Unbilled receivables (contract assets) arise when the Company recognizes revenue for amounts which cannot yet be billed under terms of the contract with the customer. Advances and progress billings (contract liabilities) arise when the Company receives payments from customers in advance of recognizing revenue. The amount of Unbilled receivables or Advances and progress billings is determined for each contract.

Financial Services Revenue We record financial services revenue associated with sales-type/finance leases, operating leases, and notes receivable.

Lease and financing revenue arrangements are included in Sales of services on the Consolidated Statements of Operations. For sales-type/finance leases, we record financing receivables at lease inception. A financing receivable is recorded at the aggregate of future minimum lease payments, estimated residual value of the leased equipment, and deferred incremental direct costs less unearned income. Income is recognized over the life of the lease to approximate a level rate of return on the net investment. Income recognition is generally suspended for financing receivables at the date full recovery of income and principal becomes not probable. Income is recognized when financing receivables become contractually current and performance is demonstrated by the customer. Residual

values, which are reviewed periodically, represent the estimated amount we expect to receive at lease termination from the disposition of the leased equipment. Actual residual values realized could differ from these estimates. Declines in estimated residual value that are deemed other-than-temporary are recognized in the period in which the declines occur.

For operating leases, revenue on leased aircraft and equipment is recorded on a straight-line basis over the term of the lease. Operating lease assets, included in Customer financing, are recorded at cost and depreciated over the period that we project we will hold the asset to an estimated residual value, using the straight-line method. We periodically review our estimates of residual value and recognize forecasted changes by prospectively adjusting depreciation expense.

For notes receivable, notes are recorded net of any unamortized discounts and deferred incremental direct costs. Interest income and amortization of any discounts are recorded ratably over the related term of the note.

Reinsurance Revenue Our wholly-owned insurance subsidiary, Astro Ltd., participates in a reinsurance pool for workers' compensation. The member agreements and practices of the reinsurance pool minimize any participating members' individual risk. Reinsurance revenues were \$129, \$151 and \$145 during 2020, 2019 and 2018, respectively. Reinsurance costs related to premiums and claims paid to the reinsurance pool were \$136, \$150 and \$136 during 2020, 2019 and 2018, respectively. Revenues and costs are presented net in Cost of sales in the Consolidated Statements of Operations.

Fleet Support

We provide assistance and support to facilitate efficient and safe aircraft operation to the operators of all our commercial airplane models. Collectively known as fleet support, these activities and support services include flight and maintenance training, field service support, engineering support, and technical data and documents. Fleet support activity begins prior to aircraft delivery as the customer receives training, manuals, and technical consulting support. This activity continues throughout the aircraft's operational life. Services provided after delivery include field service support, consulting on maintenance, repair, and operational issues brought forth by the customer or regulators, updating manuals and engineering data, and the issuance of service bulletins that impact the entire model's fleet. Field service support involves our personnel located at customer facilities providing and coordinating fleet support activities and requests. The costs for fleet support are expensed as incurred as Cost of services.

Research and Development

Research and development includes costs incurred for experimentation, design, and testing, as well as bid and proposal efforts related to government products and services which are expensed as incurred unless the costs are related to certain contractual arrangements with customers. Costs that are incurred pursuant to such contractual arrangements are recorded over the period that revenue is recognized, consistent with our contract accounting policy. We have certain research and development arrangements that meet the requirement for best efforts research and development accounting. Accordingly, the amounts funded by the customer are recognized as an offset to our research and development expense rather than as contract revenues. Research and development expense included bid and proposal costs of \$224, \$214 and \$234 in 2020, 2019 and 2018, respectively.

Share-Based Compensation

We provide various forms of share-based compensation to our employees. For awards settled in shares, we measure compensation expense based on the grant-date fair value net of estimated forfeitures. For awards settled in cash, or that may be settled in cash, we measure compensation

expense based on the fair value at each reporting date net of estimated forfeitures. The expense is recognized over the requisite service period, which is generally the vesting period of the award.

Income Taxes

Provisions for U.S. federal, state and local, and non-U.S. income taxes are calculated on reported (Loss)/earnings before income taxes based on current tax law and also include, in the current period, the cumulative effect of any changes in tax rates from those used previously in determining deferred tax assets and liabilities. Such provisions differ from the amounts currently receivable or payable because certain items of income and expense are recognized in different time periods for financial reporting purposes than for income tax purposes. Significant judgment is required in determining income tax provisions and evaluating tax positions.

The accounting for uncertainty in income taxes requires a more-likely-than-not threshold for financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. We record a liability for the difference between the benefit recognized and measured for financial statement purposes and the tax position taken or expected to be taken on our tax return. To the extent that our assessment of such tax positions changes, the change in estimate is recorded in the period in which the determination is made. Tax-related interest and penalties are classified as a component of Income tax benefit/(expense).

We also assess the likelihood that we will be able to recover our deferred tax assets against future sources of taxable income and reduce the carrying amounts of deferred tax assets by recording a valuation allowance if, based on the available evidence, it is more likely than not that all or a portion of such assets will not be realized. Changes in our estimates and judgments regarding realization of deferred tax assets may result in an increase or decrease to our tax expense and/or other comprehensive income, which would be recorded in the period in which the change occurs.

Postretirement Plans

Many of our employees have earned benefits under defined benefit pension plans. Nonunion and the majority of union employees that had participated in defined benefit pension plans transitioned to a company-funded defined contribution retirement savings plan in 2016. Additional union employees transitioned to company-funded defined contribution retirement savings plans effective January 1, 2019. We also provide postretirement benefit plans other than pensions, consisting principally of health care coverage to eligible retirees and qualifying dependents. Benefits under the pension and other postretirement benefit plans are generally based on age at retirement and years of service and, for some pension plans, benefits are also based on the employee's annual earnings. The net periodic cost of our pension and other postretirement plans is determined using the projected unit credit method and several actuarial assumptions, the most significant of which are the discount rate, the long-term rate of asset return, and medical trend (rate of growth for medical costs). A portion of the service cost component of net periodic pension and other postretirement income or expense is not recognized in net earnings in the year incurred because it is allocated to production as product costs, and reflected in inventory at the end of a reporting period. Actuarial gains and losses, which occur when actual experience differs from actuarial assumptions, are reflected in Shareholders' equity (net of taxes). If actuarial gains and losses exceed ten percent of the greater of plan assets or plan liabilities we amortize them over the average expected future lifetime of participants. The funded status of our pension and postretirement plans is reflected on the Consolidated Statements of Financial Position.

Postemployment Plans

We record a liability for postemployment benefits, such as severance or job training, when payment is probable, the amount is reasonably estimable, and the obligation relates to rights that have vested or accumulated.

Environmental Remediation

We are subject to federal and state requirements for protection of the environment, including those for discharge of hazardous materials and remediation of contaminated sites. We routinely assess, based on in-depth studies, expert analyses and legal reviews, our contingencies, obligations, and commitments for remediation of contaminated sites, including assessments of ranges and probabilities of recoveries from other responsible parties and/or insurance carriers. Our policy is to accrue and charge to current expense identified exposures related to environmental remediation sites when it is probable that a liability has been incurred and the amount can be reasonably estimated. The amount of the liability is based on our best estimate or the low end of a range of reasonably possible exposure for investigation, cleanup, and monitoring costs to be incurred. Estimated remediation costs are not discounted to present value as the timing of payments cannot be reasonably estimated. We may be able to recover a portion of the remediation costs from insurers or other third parties. Such recoveries are recorded when realization of the claim for recovery is deemed probable.

Cash and Cash Equivalents

Cash and cash equivalents consist of highly liquid instruments, such as commercial paper, time deposits, and other money market instruments, which have original maturities of three months or less. We aggregate our cash balances by bank where conditions for right of set-off are met, and reclassify any negative balances, consisting mainly of uncleared checks, to Accounts payable. Negative balances reclassified to Accounts payable were \$74 and \$101 at December 31, 2020 and 2019.

Inventories

Inventoried costs on commercial aircraft programs and long-term contracts include direct engineering, production and tooling and other non-recurring costs, and applicable overhead, which includes fringe benefits, production related indirect and plant management salaries and plant services, not in excess of estimated net realizable value. To the extent a material amount of such costs are related to an abnormal event or are fixed costs not appropriately attributable to our programs or contracts, they are expensed in the current period rather than inventoried. Inventoried costs include amounts relating to programs and contracts with long-term production cycles, a portion of which is not expected to be realized within one year. Included in inventory for federal government contracts is an allocation of allowable costs related to manufacturing process reengineering.

Commercial aircraft programs inventory includes deferred production costs and supplier advances. Deferred production costs represent actual costs incurred for production of early units that exceed the estimated average cost of all units in the program accounting quantity. Higher production costs are experienced at the beginning of a new or derivative airplane program. Units produced early in a program require substantially more effort (labor and other resources) than units produced later in a program because of volume efficiencies and the effects of learning. We expect that these deferred costs will be fully recovered when all units included in the accounting quantity are delivered as the expected unit cost for later deliveries is below the estimated average cost of all units in the program. Supplier advances represent payments for parts we have contracted to receive from suppliers in the future. As parts are received, supplier advances are amortized to work in process.

The determination of net realizable value of long-term contract costs is based upon quarterly reviews that estimate costs to be incurred to complete all contract requirements. When actual contract costs and the estimate to complete exceed total estimated contract revenues, a loss provision is recorded. The determination of net realizable value of commercial aircraft program costs is based upon quarterly program reviews that estimate revenue and cost to be incurred to complete the program accounting quantity. When estimated costs to complete exceed estimated program revenues to go, a program loss provision is recorded in the current period for the estimated loss on all undelivered units in the accounting quantity.

Used aircraft purchased by the Commercial Airplanes segment and general stock materials are stated at cost not in excess of net realizable value. See 'Aircraft Valuation' within this Note for a discussion of our valuation of used aircraft. Spare parts inventory is stated at lower of average unit cost or net realizable value. We review our commercial spare parts and general stock materials quarterly to identify impaired inventory, including excess or obsolete inventory, based on historical sales trends, expected production usage, and the size and age of the aircraft fleet using the part. Impaired inventories are charged to Cost of products in the period the impairment occurs.

Included in inventory for commercial aircraft programs are amounts paid or credited in cash, or other consideration to certain airline customers, that are referred to as early issue sales consideration. Early issue sales consideration is recognized as a reduction to revenue when the delivery of the aircraft under contract occurs. If an airline customer does not perform and take delivery of the contracted aircraft, we believe that we would have the ability to recover amounts paid. However, to the extent early issue sales consideration exceeds advances and is not considered to be otherwise recoverable, it would be written off in the current period.

Precontract Costs

We may, from time to time, incur costs in excess of the amounts required for existing contracts. If we determine the costs are probable of recovery from future orders, then we capitalize the precontract costs we incur, excluding start-up costs which are expensed as incurred. Capitalized precontract costs are included in Inventories in the accompanying Consolidated Statements of Financial Position. Should future orders not materialize or we determine the costs are no longer probable of recovery, the capitalized costs would be written off.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost, including applicable construction-period interest, less accumulated depreciation and are depreciated principally over the following estimated useful lives: new buildings and land improvements, from 10 to 40 years; and new machinery and equipment, from 4 to 20 years. The principal methods of depreciation are as follows: buildings and land improvements, 150% declining balance; and machinery and equipment, sum-of-the-years' digits. Capitalized internal use software is included in Other assets and amortized using the straight line method over 5 years. Capitalized software as a service is included in Other assets and amortized using the straight line method over the term of the hosting arrangement which is typically no greater than 10 years. We periodically evaluate the appropriateness of remaining depreciable lives assigned to long-lived assets, including assets that may be subject to a management plan for disposition.

Long-lived assets held for sale are stated at the lower of cost or fair value less cost to sell. Long-lived assets held for use are subject to an impairment assessment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. If the carrying value is no longer recoverable based upon the undiscounted future cash flows of the asset, the amount of the impairment is the difference between the carrying amount and the fair value of the asset.

Leases We determine if an arrangement is, or contains, a lease at the inception date. Operating leases are included in Other assets, with the related liabilities included in Accrued liabilities and Other long-term liabilities. Assets under finance leases, which primarily represent computer equipment, are included in Property, plant and equipment, net, with the related liabilities included in Short-term debt and current portion of long-term debt and Long-term debt on the Consolidated Statements of Financial Position.

Operating lease assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease assets and liabilities are recognized at the lease commencement date based on the estimated present

value of lease payments over the lease term. We use our estimated incremental borrowing rate in determining the present value of lease payments. Variable components of the lease payments such as fair market value adjustments, utilities, and maintenance costs are expensed as incurred and not included in determining the present value. Our lease terms include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Lease expense is recognized on a straight-line basis over the lease term.

We have lease agreements with lease and non-lease components which are accounted for as a single lease component.

Asset Retirement Obligations

We record all known asset retirement obligations for which the liability's fair value can be reasonably estimated, including certain asbestos removal, asset decommissioning and contractual lease restoration obligations. Recorded amounts are not material.

We also have known conditional asset retirement obligations, such as certain asbestos remediation and asset decommissioning activities to be performed in the future, that are not reasonably estimable due to insufficient information about the timing and method of settlement of the obligation. Accordingly, these obligations have not been recorded in the Consolidated Financial Statements. A liability for these obligations will be recorded in the period when sufficient information regarding timing and method of settlement becomes available to make a reasonable estimate of the liability's fair value. In addition, there may be conditional asset retirement obligations that we have not yet discovered (e.g. asbestos may exist in certain buildings but we have not become aware of it through the normal course of business), and therefore, these obligations also have not been included in the Consolidated Financial Statements.

Goodwill and Other Acquired Intangibles

Goodwill and other acquired intangible assets with indefinite lives are not amortized, but are tested for impairment annually and when an event occurs or circumstances change such that it is more likely than not that an impairment may exist. Our annual testing date is April 1.

We test goodwill for impairment by performing a qualitative assessment or using a quantitative test. If we choose to perform a qualitative assessment and determine it is more likely than not that the carrying value of the net assets is more than the fair value of the related operations, the quantitative test is then performed; otherwise, no further testing is required. For operations where the quantitative test is used, we compare the carrying value of net assets to the estimated fair value of the related operations. If the fair value is determined to be less than carrying value, the shortfall up to the carrying value of the goodwill represents the amount of goodwill impairment.

Indefinite-lived intangibles consist of a brand and trade name and in-process research and development (IPR&D) acquired in business combinations. IPR&D is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment thereafter. IPR&D is reclassified to finite-lived acquired intangible assets when a project is completed, and then amortized on a straight-line basis over the asset's estimated useful life. We test these intangibles for impairment by comparing the carrying values to current projections of related discounted cash flows. Any excess carrying value over the amount of discounted cash flows represents the amount of the impairment.

Our finite-lived acquired intangible assets are amortized on a straight-line basis over their estimated useful lives as follows: developed technology, from 4 to 14 years; product know-how, from 6 to 30 years; customer base, from 3 to 17 years; distribution rights, from 3 to 27 years; and other, from 1 to 32 years. We evaluate the potential impairment of finite-lived acquired intangible assets whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. If the carrying

value is no longer recoverable based upon the undiscounted future cash flows of the asset, the amount of the impairment is the difference between the carrying amount and the fair value of the asset.

Investments

Time deposits are held-to-maturity investments that are carried at cost.

Available-for-sale debt securities include commercial paper, U.S. government agency securities, and corporate debt securities. Available-for-sale debt securities are recorded at fair value, and unrealized gains and losses are recorded, net of tax, as a component of accumulated other comprehensive income. Realized gains and losses on available-for-sale debt securities are recognized based on the specific identification method. Available-for-sale debt securities are assessed for impairment quarterly.

The equity method of accounting is used to account for investments for which we have the ability to exercise significant influence, but not control, over an investee. Significant influence is generally deemed to exist if we have an ownership interest in the voting stock of an investee of between 20% and 50%. The cumulative earnings approach is used for cash flow classification of distributions received from equity method investments.

Other Equity investments are recorded at fair value, with gains and losses recorded through net earnings. Equity investments without readily determinable fair value are measured at cost, less impairments, plus or minus observable price changes. Equity investments without readily determinable fair value are assessed for impairment quarterly.

We classify investment income and loss on our Consolidated Statements of Operations based on whether the investment is operating or non-operating in nature. Operating investments align strategically and are integrated with our operations. Earnings from operating investments, including our share of income or loss from equity method investments, dividend income from other equity investments, and any impairments or gain/loss on the disposition of these investments, are recorded in Income from operating investments, net. Non-operating investments are those we hold for non-strategic purposes. Earnings from non-operating investments, including interest and dividends on marketable securities, and any impairments or gain/loss on the disposition of these investments are recorded in Other income/(loss), net.

Derivatives

All derivative instruments are recognized in the financial statements and measured at fair value regardless of the purpose or intent of holding them. We use derivative instruments to principally manage a variety of market risks. For our cash flow hedges, the derivative's gain or loss is initially reported in comprehensive income and is subsequently reclassified into earnings in the same period or periods during which the hedged forecasted transaction affects earnings. We have agreements to purchase and sell aluminum to address long-term strategic sourcing objectives and international business requirements. These agreements are derivatives for accounting purposes but are not designated for hedge accounting treatment. We also hold certain derivative instruments for economic purposes that are not designated for hedge accounting treatment. For these aluminum agreements and for other derivative instruments not designated for hedge accounting treatment, the changes in their fair value are recorded in earnings immediately.

Allowances for losses on certain financial assets

We establish allowances for credit losses on accounts receivable, unbilled receivables, customer financing receivables, and certain other financial assets. The adequacy of these allowances are assessed quarterly through consideration of factors including, but not limited to, customer credit ratings, bankruptcy filings, published or estimated credit default rates, age of the receivable, expected loss rates

and collateral exposures. We assign internal credit ratings for all customers and determine the creditworthiness of each customer based upon publicly available information and information obtained directly from our customers. Our rating categories are comparable to those used by major credit rating agencies.

Aircraft Valuation

Used aircraft under trade-in commitments and aircraft under repurchase commitments In conjunction with signing a definitive agreement for the sale of new aircraft (Sale Aircraft), we have entered into trade-in commitments with certain customers that give them the right to trade in used aircraft at a specified price upon the purchase of Sale Aircraft. Additionally, we have entered into contingent repurchase commitments with certain customers wherein we agree to repurchase the Sale Aircraft at a specified price, generally 10 to 15 years after delivery of the Sale Aircraft. Our repurchase of the Sale Aircraft is contingent upon a future, mutually acceptable agreement for the sale of additional new aircraft. If we execute an agreement for the sale of additional new aircraft, and if the customer exercises its right to sell the Sale Aircraft to us, a contingent repurchase commitment would become a trade-in commitment. Our historical experience is that contingent repurchase commitments infrequently become trade-in commitments.

Exposure related to trade-in commitments may take the form of:

- (1) adjustments to revenue for the difference between the contractual trade-in price in the definitive agreement and our best estimate of the fair value of the trade-in aircraft as of the date of such agreement, which would be recognized upon delivery of the Sale Aircraft, and/or
- (2) charges to cost of products for adverse changes in the fair value of trade-in aircraft that occur subsequent to signing of a definitive agreement for Sale Aircraft but prior to the purchase of the used trade-in aircraft. Estimates based on current aircraft values would be included in Accrued liabilities.

The fair value of trade-in aircraft is determined using aircraft-specific data such as model, age and condition, market conditions for specific aircraft and similar models, and multiple valuation sources. This process uses our assessment of the market for each trade-in aircraft, which in most instances begins years before the return of the aircraft. There are several possible markets in which we continually pursue opportunities to place used aircraft. These markets include, but are not limited to, the resale market, which could potentially include the cost of long-term storage; the leasing market, with the potential for refurbishment costs to meet the leasing customer's requirements; or the scrap market. Trade-in aircraft valuation varies significantly depending on which market we determine is most likely for each aircraft. On a quarterly basis, we update our valuation analysis based on the actual activities associated with placing each aircraft into a market or using current published third-party aircraft valuations based on the type and age of the aircraft, adjusted for individual attributes and known conditions.

Used aircraft acquired by the Commercial Airplanes segment are included in Inventories at the lower of cost or net realizable value as it is our intent to sell these assets. To mitigate costs and enhance marketability, aircraft may be placed on operating lease. While on operating lease, the assets are included in Customer financing.

Customer financing Customer financing includes operating lease equipment, notes receivable, and sales-type/finance leases. Sales-type/finance leases are treated as receivables, and allowances for losses are established as necessary.

We assess the fair value of the assets we own, including equipment under operating leases, assets held for sale or re-lease, and collateral underlying receivables, to determine if their fair values are less

than the related assets' carrying values. Differences between carrying values and fair values of sales-type/finance leases and notes and other receivables, as determined by collateral value, are considered in determining the allowance for losses on receivables.

We use a median calculated from published collateral values from multiple third-party aircraft value publications based on the type and age of the aircraft to determine the fair value of aircraft. Under certain circumstances, we apply judgment based on the attributes of the specific aircraft or equipment, usually when the features or use of the aircraft vary significantly from the more generic aircraft attributes covered by outside publications.

Impairment review for assets under operating leases and held for sale or re-lease We evaluate for impairment assets under operating lease or assets held for sale or re-lease when events or changes in circumstances indicate that the expected undiscounted cash flow from the asset may be less than the carrying value. We use various assumptions when determining the expected undiscounted cash flow, including our intentions for how long we will hold an asset subject to operating lease before it is sold, the expected future lease rates, lease terms, residual value of the asset, periods in which the asset may be held in preparation for a follow-on lease, maintenance costs, remarketing costs and the remaining economic life of the asset. We record assets held for sale at the lower of carrying value or fair value less costs to sell.

When we determine that impairment is indicated for an asset, the amount of impairment expense recorded is the excess of the carrying value over the fair value of the asset.

Allowance for losses on customer financing receivables We record the potential impairment of customer financing receivables in a valuation account, the balance of which is an accounting estimate of expected but unconfirmed losses. The allowance for losses on receivables relates to two components of receivables: (a) receivables that are evaluated individually for impairment and (b) all other receivables.

We determine a receivable is impaired when, based on current information and events, it is expected that we will be unable to collect amounts due according to the original contractual terms of the receivable agreement, without regard to any subsequent restructurings. Factors considered in assessing collectability include, but are not limited to, a customer's extended delinquency, requests for restructuring and filings for bankruptcy. We determine a specific impairment allowance based on the difference between the carrying value of the receivable and the estimated fair value of the related collateral we would expect to realize.

We review the adequacy of the allowance attributable to the remaining receivables (after excluding receivables subject to a specific impairment allowance) by assessing both the collateral exposure and the applicable cumulative default rate. Collateral exposure for a particular receivable is the excess of the carrying value of the receivable over the fair value of the related collateral. A receivable with an estimated fair value in excess of the carrying value is considered to have no collateral exposure. The applicable cumulative default rate is determined using two components: customer credit ratings and weighted average remaining contract term. Internally assigned credit ratings, our credit quality indicator, are determined for each customer in the portfolio. Those ratings are updated based upon public information and information obtained directly from our customers.

We have entered into agreements with certain customers that would entitle us to look beyond the specific collateral underlying the receivable for purposes of determining the collateral exposure as described above. Should the proceeds from the sale of the underlying collateral asset resulting from a default condition be insufficient to cover the carrying value of our receivable (creating a shortfall condition), these agreements would, for example, permit us to take the actions necessary to sell or retain certain other assets in which the customer has an equity interest and use the proceeds to cover the shortfall.

Each quarter we review customer credit ratings, published historical credit default rates for different rating categories, and multiple third-party aircraft value publications as a basis to validate the reasonableness of the allowance for losses on receivables. There can be no assurance that actual results will not differ from estimates or that the consideration of these factors in the future will not result in an increase or decrease to the allowance for losses on receivables.

Warranties

In conjunction with certain product sales, we provide warranties that cover factors such as non-conformance to specifications and defects in material and design. The majority of our warranties are issued by our Commercial Airplanes segment. Generally, aircraft sales are accompanied by a 3 to 4-year standard warranty for systems, accessories, equipment, parts, and software manufactured by us or manufactured to certain standards under our authorization. These warranties are included in the programs' estimate at completion. On occasion we have made commitments beyond the standard warranty obligation to correct fleet-wide major issues of a particular model, resulting in additional accrued warranty expense. Warranties issued by our BDS segment principally relate to sales of military aircraft and weapons systems. These sales are generally accompanied by a six month to two-year warranty period and cover systems, accessories, equipment, parts, and software manufactured by us to certain contractual specifications. Estimated costs related to standard warranties are recorded in the period in which the related product delivery occurs. The warranty liability recorded at each balance sheet date reflects the estimated number of months of warranty coverage outstanding for products delivered times the average of historical monthly warranty payments, as well as additional amounts for certain major warranty issues that exceed a normal claims level. Estimated costs of these additional warranty issues are considered changes to the initial liability estimate.

We provide guarantees to certain commercial airplane customers which include compensation provisions for failure to meet specified aircraft performance targets. We account for these performance guarantees as warranties. The estimated liability for these warranties is based on known and anticipated operational characteristics and forecasted customer operation of the aircraft relative to contractually specified performance targets, and anticipated settlements when contractual remedies are not specified. Estimated payments are recorded as a reduction of revenue at delivery of the related aircraft. We have agreements that require certain suppliers to compensate us for amounts paid to customers for failure of supplied equipment to meet specified performance targets. Claims against suppliers under these agreements are included in Inventories and recorded as a reduction in Cost of products at delivery of the related aircraft. These performance warranties and claims against suppliers are included in the programs' estimate at completion.

Supplier Penalties

We record an accrual for supplier penalties when an event occurs that makes it probable that a supplier penalty will be incurred and the amount is reasonably estimable. Until an event occurs, we fully anticipate accepting all products procured under production-related contracts.

Guarantees

We record a liability in Accrued liabilities for the fair value of guarantees. For credit guarantees, the liability is equal to the present value of the expected loss. We determine the expected loss by multiplying the creditor's default rate by the guarantee amount reduced by the expected recovery, if applicable. At inception of a guarantee, and adjusted each quarter, we also recognize a liability for the expected contingent loss.

Note 2 – Goodwill and Acquired Intangibles

Effective at the beginning of 2020, certain programs were realigned between our BDS segment and Unallocated items, eliminations and other. Changes in the carrying amount of goodwill for the years ended December 31, 2020 and 2019 were as follows:

	Commercial Airplanes	Defense, Space & Security	Global Services	Other	Total
Balance at January 1, 2019	\$1,241	\$3,229	\$3,345	\$25	\$7,840
KLX acquisition adjustments			(51)		(51)
Acquisitions	72		188	62	322
Dispositions			(49)		(49)
Goodwill adjustments		(10)	8		(2)
Balance at December 31, 2019	\$1,313	\$3,219	\$3,441	\$87	\$8,060
Goodwill adjustments	3	5	13		21
Balance at December 31, 2020	\$1,316	\$3,224	\$3,454	\$87	\$8,081

As of December 31, 2020 and 2019, we had indefinite-lived intangible assets with carrying amounts of \$197 relating to trade names. During 2019, we recorded an impairment of \$293 within Cost of Sales, as a result of our decision to retire the Aviall brand and trade name. As of December 31, 2020 and 2019, we had an indefinite-lived intangible asset with a carrying amount of \$202 related to in process research and development for a next-generation air vehicle.

The gross carrying amounts and accumulated amortization of our acquired finite-lived intangible assets were as follows at December 31:

	2020		2019	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Distribution rights	\$2,812	\$1,427	\$2,989	\$1,262
Product know-how	553	384	553	354
Customer base	1,373	672	1,364	599
Developed technology	626	502	653	485
Other	303	238	280	200
Total	\$5,667	\$3,223	\$5,839	\$2,900

During 2020, we recorded impairments of \$178 within Cost of Sales related to our distribution rights, primarily driven by airlines' decisions to retire certain aircraft. Amortization expense for acquired finite-lived intangible assets for the years ended December 31, 2020 and 2019 was \$317 and \$331. Estimated amortization expense for the five succeeding years is as follows:

	2021	2022	2023	2024	2025
Estimated amortization expense	\$284	\$245	\$234	\$220	\$196

During 2019, we acquired \$563 of finite-lived intangible assets, of which \$30 related to non-cash investing and financing transactions.

Note 3 – Earnings Per Share

Basic and diluted earnings per share are computed using the two-class method, which is an earnings allocation method that determines earnings per share for common shares and participating securities. The undistributed earnings are allocated between common shares and participating securities as if all earnings had been distributed during the period. Participating securities and common shares have equal rights to undistributed earnings.

Basic earnings per share is calculated by taking net earnings, less earnings available to participating securities, divided by the basic weighted average common shares outstanding.

Diluted earnings per share is calculated by taking net earnings, less earnings available to participating securities, divided by the diluted weighted average common shares outstanding.

The elements used in the computation of basic and diluted earnings per share were as follows:

(In millions - except per share amounts)

Years ended December 31,	2020	2019	2018
Net (loss)/earnings attributable to Boeing Shareholders	(\$11,873)	(\$636)	\$10,460
Less: earnings available to participating securities			7
Net (loss)/earnings available to common shareholders	(\$11,873)	(\$636)	\$10,453
Basic			
Basic weighted average shares outstanding	569.0	566.0	579.9
Less: participating securities	0.4	0.6	0.7
Basic weighted average common shares outstanding	568.6	565.4	579.2
Diluted			
Basic weighted average shares outstanding	569.0	566.0	579.9
Dilutive potential common shares ⁽¹⁾			6.3
Diluted weighted average shares outstanding	569.0	566.0	586.2
Less: participating securities	0.4	0.6	0.7
Diluted weighted average common shares outstanding	568.6	565.4	585.5
Net (loss)/earnings per share:			
Basic	(\$20.88)	(\$1.12)	\$18.05
Diluted	(20.88)	(1.12)	17.85

⁽¹⁾ Diluted (loss)/earnings per share includes any dilutive impact of stock options, restricted stock units, performance-based restricted stock units and performance awards.

As a result of incurring a net loss for the years ended December 31, 2020 and 2019, potential common shares of 1.6 million and 4.1 million were excluded from diluted loss per share because the effect would have been antidilutive. In addition, the following table includes the number of shares that may be dilutive potential common shares in the future. These shares were not included in the computation of

diluted (loss)/earnings per share because the effect was either antidilutive or the performance condition was not met.

(Shares in millions)

Years ended December 31,	2020	2019	2018
Performance awards	5.7	2.8	2.5
Performance-based restricted stock units	1.3	0.6	0.3
Restricted stock units	1.0		

Note 4 – Income Taxes

The components of (Loss)/earnings before income taxes were:

Years ended December 31,	2020	2019	2018
U.S.	(\$14,882)	(\$2,792)	\$11,166
Non-U.S.	406	533	438
Total	(\$14,476)	(\$2,259)	\$11,604

Income tax (benefit)/expense consisted of the following:

Years ended December 31,	2020	2019	2018
Current tax (benefit)/expense			
U.S. federal	(\$3,968)	(\$308)	\$1,873
Non-U.S.	148	169	169
U.S. state	21	(161)	97
Total current	(3,799)	(300)	2,139
Deferred tax (benefit)/expense			
U.S. federal	652	(953)	(996)
Non-U.S.		(3)	(4)
U.S. state	612	(367)	5
Total deferred	1,264	(1,323)	(995)
Total income tax (benefit)/expense	(\$2,535)	(\$1,623)	\$1,144

Net income tax payments were \$37, \$837 and \$1,326 in 2020, 2019 and 2018, respectively.

The following is a reconciliation of the U.S. federal statutory tax to actual income tax expense:

Years ended December 31,	2020		2019		2018	
	Amount	Rate	Amount	Rate	Amount	Rate
U.S. federal statutory tax	(\$3,039)	21.0 %	(\$474)	21.0 %	\$2,437	21.0 %
Valuation allowance	2,603	(18.0)	25	(1.1)	22	0.2
Impact of CARES Act ⁽¹⁾	(1,175)	8.1				
Audit settlements ⁽²⁾	(587)	4.1	(371)	16.4	(412)	(3.6)
Research and development credits	(284)	2.0	(382)	16.9	(207)	(1.8)
Other provision adjustments	234	(1.7)	66	(3.0)	91	1.0
State income tax provision, net of effects on U.S. federal tax	(168)	1.2	(45)	2.0	75	0.6
Excess tax benefits ⁽³⁾	(82)	0.6	(180)	8.0	(181)	(1.6)
Foreign derived intangible income ⁽⁴⁾	(31)	0.2	(229)	10.1	(549)	(4.7)
Tax deductible dividends	(13)	0.1	(53)	2.4	(48)	(0.4)
Tax on non-US activities	7	(0.1)	20	(0.9)	27	0.2
Impact of Tax Cuts and Jobs Act ⁽⁵⁾					(111)	(1.0)
Income tax (benefit)/expense	(\$2,535)	17.5 %	(\$1,623)	71.8 %	\$1,144	9.9 %

(1) On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security (CARES) Act was enacted, which includes a five year net operating loss (NOL) carryback provision which enabled us to benefit from certain losses and re-measure certain deferred tax assets and liabilities at the former federal tax rate of 35%. In 2020, we recorded tax benefits of \$1,175 related to the NOL carryback provision.

(2) In the fourth quarter of 2020, we recorded a tax benefit of \$587 related to the settlement of the 2015-2017 federal tax audit. In the fourth quarter of 2019, we recorded a tax benefit of \$371 related to the settlement of state tax audits spanning 15 tax years. In the third quarter of 2018, we recorded a tax benefit of \$412 related to the settlement of the 2013-2014 federal tax audit.

(3) In 2020, 2019 and 2018, we recorded excess tax benefits related to employee share-based payments of \$82, \$180 and \$181, respectively.

(4) In 2020, 2019 and 2018, we recorded tax benefits related to foreign derived intangible income of \$31, \$229 and \$549, respectively which effectively apply a lower U.S. tax rate to intangible income derived from serving non-U.S. markets.

(5) During the fourth quarter of 2018 and in accordance with U.S. Securities and Exchange Commission Staff Accounting Bulletin No. 118, the Company completed its accounting for the provisional amounts recognized at December 31, 2017 and recorded an incremental benefit related to refinements to these provisional amounts which was not significant.

Significant components of our deferred tax assets/(liabilities) at December 31 were as follows:

	2020	2019
Inventory and long-term contract methods of income recognition	(\$4,313)	(\$6,048)
Pension benefits	3,029	3,495
Fixed assets, intangibles and goodwill	(1,645)	(1,544)
737 MAX customer concessions and other considerations	1,253	1,626
Net operating loss, credit and capital loss carryovers ⁽¹⁾	1,182	696
Other postretirement benefit obligations	1,023	1,120
Other employee benefits	957	849
Accrued expenses and reserves	808	628
Customer and commercial financing	(180)	(268)
Other	56	(166)
Gross deferred tax assets/(liabilities) before valuation allowance	\$2,170	\$388
Valuation allowance	(3,094)	(118)
Net deferred tax assets/(liabilities) after valuation allowance	(\$924)	\$270

⁽¹⁾ Of the deferred tax asset for net operating loss and credit carryovers, \$793 expires on or before December 31, 2040 and \$389 may be carried over indefinitely.

Net deferred tax assets/(liabilities) at December 31 were as follows:

	2020	2019
Deferred tax assets	\$11,600	\$10,722
Deferred tax liabilities	(9,430)	(10,334)
Valuation allowance	(3,094)	(118)
Net deferred tax assets/(liabilities)	(\$924)	\$270

The Company's deferred income tax assets of \$11,600 can be used in future years to offset taxable income and reduce income taxes payable. The Company's deferred income tax liabilities of \$9,430 will partially offset deferred income tax assets and result in higher taxable income in future years and increase income taxes payable. Tax law determines whether future reversals of temporary differences will result in taxable and deductible amounts that offset each other in future years. The particular years in which temporary differences result in taxable or deductible amounts generally are determined by the timing of the recovery of the related asset or settlement of the related liability. The deferred income tax assets and liabilities relate primarily to U.S. federal and state tax jurisdictions. From a U.S. federal tax perspective the Company does not have any significant net operating loss carryforwards nor does it have any significant federal tax credits that are at risk of expiring. The Company generated taxable income in 2018 and 2019 and expects to have a tax net operating loss in 2020 that will be carried back to prior years when the tax rate was 35% due to the CARES Act benefit as described above.

During 2019 and 2020 the Company generated significant pre-tax losses and in the fourth quarter of 2020 the Company reached a three-year cumulative pre-tax loss position. We also normalized earnings and other comprehensive income for certain non-recurring items including certain 737 MAX expenses, an agreement with the Department of Justice, severance costs and remeasurement gains and losses from the annual remeasurement of pension and other postretirement benefit obligations. On a normalized basis the Company expects to reach a three-year cumulative loss position in 2021 as record earnings in 2018 are replaced by 2021 results. For purposes of assessing the recoverability of deferred

tax assets, the Company determined that it could not include future projected earnings in the analysis due to recent history of losses.

As of December 31, 2020 the Company has recorded valuation allowances of \$3,094 primarily for certain federal deferred tax assets, state net operating loss carryforwards, and state tax credits. To measure the valuation allowance, the Company estimated in what year each of its deferred tax assets and liabilities would reverse using systematic and logical methods to determine the reversal patterns. Based on these methods, deferred tax liabilities are assumed to reverse and generate taxable income over the next 5 to 10 years while deferred tax assets related to pension and other postretirement benefit obligations are assumed to reverse and generate tax deductions over the next 15 to 20 years. The valuation allowance primarily results from not having sufficient income from deferred tax liability reversals in the appropriate future periods to support the realization of deferred tax assets. Because the pension and other postretirement benefit obligations are recorded to both continuing operations and other comprehensive income (OCI), the Company recorded a portion of the fourth quarter increase in the valuation allowance to income tax expense in continuing operations (\$2,513) and a portion to OCI (\$196). If the Company continues to generate losses and negative normalized earnings in future periods, additional valuation allowances may have to be recorded with corresponding adverse impacts on earnings and/or OCI. When income generation returns to more normal levels we can expect to see the allowance reverse and increase reported earnings and/or OCI.

The TCJA one-time repatriation tax and Global Intangible Low Tax Income liabilities effectively taxed the undistributed earnings previously deferred from U.S. income taxes. We have not provided for foreign withholding tax on the undistributed earnings from our non-U.S. subsidiaries because such earnings are considered to be indefinitely reinvested. If such earnings were to be distributed, any foreign withholding tax would not be significant.

As of December 31, 2020 and 2019, the amounts accrued for the payment of income tax-related interest and penalties included in the Consolidated Statements of Financial Position were not significant. The amounts of interest included in the Consolidated Statements of Operations were not significant for the years ended December 31, 2020, 2019 and 2018.

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

	2020	2019	2018
Unrecognized tax benefits – January 1	\$1,476	\$2,412	\$1,736
Gross increases – tax positions in prior periods	44	100	87
Gross decreases – tax positions in prior periods	(581)	(1,418)	(410)
Gross increases – current period tax positions	136	344	1,208
Gross decreases – current period tax positions		(1)	
Settlements	(109)	39	(206)
Statute Lapse			(3)
Unrecognized tax benefits – December 31	\$966	\$1,476	\$2,412

As of December 31, 2020, 2019 and 2018, the total amount of unrecognized tax benefits was \$966, \$1,476 and \$2,412, respectively, of which \$734, \$1,287 and \$1,405 would affect the effective tax rate, if recognized. As of December 31, 2020, these amounts are primarily associated with the amount of research tax credits claimed and uncertainties in the TCJA.

Federal income tax audits have been settled for all years prior to 2018. The Internal Revenue Service (IRS) is expected to begin the 2018-2019 federal tax audit in the first quarter of 2021. We are also subject to examination in major state and international jurisdictions for the 2007-2019 tax years. We

believe appropriate provisions for all outstanding tax issues have been made for all jurisdictions and all open years.

Note 5 – Accounts Receivable, net

Accounts receivable at December 31 consisted of the following:

	2020	2019
U.S. government contracts ⁽¹⁾	\$811	\$1,121
Commercial Airplanes	17	29
Global Services ⁽²⁾	1,437	1,967
Defense, Space, & Security ⁽²⁾	120	220
Other	14	2
Less valuation allowance	(444)	(73)
Total	\$1,955	\$3,266

(1) Includes foreign military sales through the U.S. government

(2) Excludes U.S. government contracts

Our valuation allowance was increased from \$73 to \$138 on January 1, 2020 upon adoption of ASU 2016-13. See note 6. Accounts receivable expected to be collected after one year are not material.

Note 6 – Allowances for Losses on Financial Assets

Upon adoption of ASU 2016-13, we recorded a \$162 cumulative-effect adjustment to retained earnings to increase our allowances for credit losses, resulting in a balance of \$337 as of January 1, 2020. The change in allowances for expected credit losses for the year ended December 31, 2020 consisted of the following:

	Accounts receivable, net	Unbilled receivables, net	Other Current Assets, net	Customer Other Assets, financing, net	Assets, net	Total
Balance at January 1, 2020	(\$138)	(\$81)	(\$38)	(\$5)	(\$75)	(\$337)
Changes in estimates	(314)	(48)	(34)	(12)	(66)	(474)
Write-offs	8					8
Recoveries					1	1
Balance at December 31, 2020	(\$444)	(\$129)	(\$72)	(\$17)	(\$140)	(\$802)

Note 7 – Inventories

Inventories at December 31 consisted of the following:

	2020	2019
Long-term contracts in progress	\$823	\$1,187
Commercial aircraft programs	70,153	66,016
Commercial spare parts, used aircraft, general stock materials and other	10,739	9,419
Total	\$81,715	\$76,622

Long-term contracts in progress includes Delta launch program inventory that is being sold at cost to United Launch Alliance (ULA) under an inventory supply agreement that terminates on March 31, 2021. The inventory balance was \$17 and \$176 at December 31, 2020 and 2019. See indemnifications to ULA in Note 14.

Commercial spare parts, used aircraft, general stock materials and other includes capitalized precontract costs of \$733 at December 31, 2020 and \$711 at December 31, 2019 primarily related to KC-46A Tanker and Commercial Crew. See Note 13.

Commercial Aircraft Programs

The increase in commercial aircraft programs inventory during 2020 reflects the large number of undelivered aircraft due to the 737 MAX grounding, lower wide-body deliveries driven by the impacts of the COVID-19 pandemic and 787 production issues and associated rework, partially offset by a reach-forward loss of \$6,493 on the 777X program. At December 31, 2020, commercial aircraft programs inventory includes approximately 425 undelivered 737 MAX aircraft and 80 undelivered 787 aircraft.

We are currently remarketing certain aircraft and may have to remarket additional aircraft in future periods. If we are unable to successfully remarket the aircraft, determine further production rates reductions are necessary, and/or contract the program accounting quantities, future earnings may be reduced and/or additional reach-forward losses may have to be recorded.

At December 31, 2020 and 2019, commercial aircraft programs inventory included the following amounts related to the 737 program: deferred production costs of \$2,159 and \$1,313 and unamortized tooling and other non-recurring costs of \$480 and \$521. At December 31, 2020, \$2,560 of 737 deferred production costs, unamortized tooling and other non-recurring costs are expected to be recovered from units included in the program accounting quantity that have firm orders and \$79 is expected to be recovered from units included in the program accounting quantity that represent expected future orders.

At December 31, 2020 and 2019, commercial aircraft programs inventory included the following amounts related to the 777X program: unamortized tooling and other non-recurring costs of \$3,295 and \$2,914. During the fourth quarter of 2020 we determined that estimated costs to complete the 777X program plus costs already included in 777X inventory exceed estimated revenues from the program. The resulting reach-forward loss of \$6,493 was recorded as a reduction to deferred production costs. As a result, 777X deferred production costs were immaterial at December 31, 2020. The level of profitability on the 777X program will be subject to a number of factors. These factors include continued market uncertainty, the impacts of COVID-19 on our production system as well as impacts on our supply chain and customers, further production rate adjustments for the 777X or other commercial aircraft programs, contraction of the accounting quantity and potential risks associated with the testing program and the timing of aircraft certification. One or more of these factors could result in additional reach-forward losses on the 777X program in future periods.

At December 31, 2020 and 2019, commercial aircraft programs inventory included the following amounts related to the 787 program: deferred production costs of \$14,976 and \$18,716, \$1,865 and \$2,202 of supplier advances, and \$1,863 and \$2,092 of unamortized tooling and other non-recurring costs. At December 31, 2020, \$12,165 of 787 deferred production costs, unamortized tooling and other non-recurring costs are expected to be recovered from units included in the program accounting quantity that have firm orders and \$4,674 is expected to be recovered from units included in the program accounting quantity that represent expected future orders.

Commercial aircraft programs inventory included amounts credited in cash or other consideration (early issue sales consideration) to airline customers totaling \$2,992 and \$2,863 at December 31, 2020 and 2019.

Note 8 – Contracts with Customers

Unbilled receivables decreased from \$9,043 at December 31, 2019 to \$7,995 at December 31, 2020, primarily driven by an increase in billings at BDS and BGS, as well as an increase in allowances for expected credit losses at BGS.

Advances and progress billings decreased from \$51,551 at December 31, 2019 to \$50,488 at December 31, 2020, primarily driven by revenue recognized in excess of advances on orders received and return of BCA customer advances, partially offset by advances on orders received at BCA, BDS, and BGS.

Revenues recognized for the years ended December 31, 2020 and 2019 from amounts recorded as Advances and progress billings at the beginning of each year were \$10,360 and \$16,778.

Certain commercial airplane customers are experiencing liquidity issues and seeking additional capital. Should these customers fail to address their liquidity issues, accounts receivable, unbilled receivables and certain inventory could become impaired. In addition we would have to remove contracts related to these customers from backlog and remarket any undelivered aircraft.

The following table summarizes our contract assets under long-term contracts that were unbillable or related to outstanding claims as of December 31:

	Unbilled		Claims	
	2020	2019	2020	2019
Current	\$5,628	\$6,931		\$9
Expected to be collected after one year	2,496	2,112	18	14
Less valuation allowance ⁽¹⁾	(129)			
Total	\$7,995	\$9,043	\$18	\$23

⁽¹⁾ In the first quarter of 2020, we adopted ASU 2016-13, refer to Note 6.

Unbilled receivables related to commercial customer incentives expected to be collected after one year were \$178 and \$211 at December 31, 2020 and 2019. Unbilled receivables related to claims are items that we believe are earned, but are subject to uncertainty concerning their determination or ultimate realization.

Note 9 – Customer Financing

Customer financing primarily relates to our BCC segment. Customer financing consisted of the following at December 31:

	2020	2019
Financing receivables:		
Investment in sales-type/finance leases	\$919	\$1,029
Notes	420	443
Total financing receivables	1,339	1,472
Operating lease equipment, at cost, less accumulated depreciation of \$209 and \$235	715	834
Gross customer financing	2,054	2,306
Less allowance for losses on receivables	(17)	(8)
Total	\$2,037	\$2,298

We acquire aircraft to be leased to customers through trades, lease returns, purchases in the secondary market, and new aircraft transferred from our BCA segment. Leasing arrangements typically range in terms from 1 to 12 years and may include options to extend or terminate the lease. Certain leases include provisions to allow the lessee to purchase the underlying aircraft at a specified price. A minority of leases contain variable lease payments based on actual aircraft usage and are paid in arrears.

The components of investment in sales-type/finance leases at December 31 were as follows:

	2020	2019
Minimum lease payments receivable	\$756	\$799
Estimated residual value of leased assets	299	393
Unearned income	(136)	(163)
Total	\$919	\$1,029

Operating lease equipment primarily includes large commercial jet aircraft.

Financing receivable balances evaluated for impairment at December 31 were as follows:

	2020	2019
Individually evaluated for impairment	\$391	\$400
Collectively evaluated for impairment	948	1,072
Total financing receivables	\$1,339	\$1,472

We determine a receivable is impaired when, based on current information and events, it is probable that we will be unable to collect amounts due according to the original contractual terms. At December 31, 2020 and 2019, we individually evaluated for impairment customer financing receivables of \$391 and \$400, of which \$380 and \$388 were determined to be impaired. We recorded no allowance for losses on these impaired receivables as the collateral values exceeded the carrying values of the receivables.

We determine a receivable is past due when cash has not been received upon the due date specified in the contract. There were no past due customer financing receivables as of December 31, 2020.

We evaluate the collectability of customer financing receivables at commencement and on a recurring basis. If a customer financing receivable is deemed uncollectible, the customer is categorized as non-accrual status. When a customer is in non-accrual status at commencement, sales-type lease revenue is deferred until substantially all cash has been received or the customer is removed from non-accrual status. If a customer status changes to non-accrual after commencement or is a direct finance lease and sufficient collateral is available, we recognize contractual interest income as payments are received to the extent payments exceed past due principal payments. If there is not sufficient collateral, then revenue is not recognized until payments exceed the principal balance. Receivables in non-accrual status as of December 31, 2020 and December 31, 2019 were \$380 and \$388. Interest income received for the twelve and three months ended December 31, 2020 was \$34 and \$8.

The adequacy of the allowance for losses is assessed quarterly. Four primary factors influencing the level of our allowance for losses on customer financing receivables are customer credit ratings, default rates, expected loss rate and collateral values, which may be adversely affected by impacts that COVID-19 has on our customers. We assign internal credit ratings for all customers and determine the creditworthiness of each customer based upon publicly available information and information obtained directly from our customers. Our rating categories are comparable to those used by the major credit rating agencies.

Our allowance for losses on receivables decreased from \$8 to \$5 on January 1, 2020 upon adoption of ASU 2016-13. See Note 6 – Allowances for Losses on Financial Assets.

Our financing receivable balances at December 31 by internal credit rating category and year of origination consisted of the following:

Rating categories	Current	2019	2018	2017	2016	Prior	Total
BBB						\$307	\$307
BB	\$135	\$49	\$15			143	342
B				\$52		167	219
CCC	7	33		242	\$177	12	471
Total carrying value of financing receivables	\$142	\$82	\$15	\$294	\$177	\$629	\$1,339

At December 31, 2020, our allowance related to receivables with ratings of CCC, B, BB and BBB. We applied default rates that averaged 26.0%, 7.4%, 3.0% and 0.2%, respectively, to the exposure associated with those receivables.

Customer Financing Exposure

Customer financing is collateralized by security in the related asset. The value of the collateral is closely tied to commercial airline performance and overall market conditions and may be subject to reduced valuation with market decline. Certain collateral values are being adversely impacted by the changes in market conditions driven by the COVID-19 pandemic. Declines in collateral values could result in asset impairments, reduced finance lease income, and an increase in the allowance for losses. Our customer financing collateral is concentrated in out-of-production aircraft and 747-8 aircraft. Generally, out-of-production aircraft have experienced greater collateral value declines than in-production aircraft.

The majority of customer financing carrying values are concentrated in the following aircraft models at December 31:

	2020	2019
717 Aircraft (\$98 and \$124 accounted for as operating leases)	\$637	\$736
747-8 Aircraft (\$121 and \$130 accounted for as operating leases)	480	475
737 Aircraft (\$214 and \$240 Accounted for as operating leases)	235	263
777 Aircraft (\$216 and \$236 accounted for as operating leases)	225	240
MD-80 Aircraft (Accounted for as sales-type finance leases)	167	186
757 Aircraft (\$4 and \$22 accounted for as operating leases)	147	182
747-400 Aircraft (\$19 and \$31 Accounted for as operating leases)	71	90

Charges related to customer financing asset impairment for the years ended December 31 were as follows:

	2020	2019	2018
Boeing Capital	\$32	\$53	\$1
Other Boeing	(8)	217	38
Total	\$24	\$270	\$39

Lease income recorded in Revenue on the Consolidated Statements of Operations for the years ended December 31, 2020 and 2019 included \$57 and \$62 from sales-type/finance leases, and \$118 and \$139 from operating leases, of which \$9 and \$8 related to variable operating lease payments.

As of December 31, 2020, undiscounted cash flows for notes receivable, sales-type/finance and operating leases over the next five years and thereafter are as follows:

	Notes receivable	Sales-type/finance leases	Operating leases
Year 1	\$149	\$164	\$85
Year 2	53	150	75
Year 3	34	141	72
Year 4	18	121	56
Year 5	19	83	34
Thereafter	147	97	66
Total lease receipts	420	756	388
Less imputed interest		(136)	
Estimated unguaranteed residual values		299	
Total	\$420	\$919	\$388

At December 31, 2020 and December 31, 2019 unguaranteed residual values were \$299 and \$393. Guaranteed residual values at December 31, 2020 were not significant.

Note 10 – Property, Plant and Equipment

Property, plant and equipment at December 31 consisted of the following:

	2020	2019
Land	\$512	\$527
Buildings and land improvements	14,415	14,288
Machinery and equipment	16,060	15,723
Construction in progress	1,340	1,306
Gross property, plant and equipment	32,327	31,844
Less accumulated depreciation	(20,507)	(19,342)
Total	\$11,820	\$12,502

Depreciation expense was \$1,533, \$1,567 and \$1,556 for the years ended December 31, 2020, 2019 and 2018, respectively. Interest capitalized during the years ended December 31, 2020, 2019 and 2018 totaled \$81, \$83 and \$81, respectively.

During 2020 and 2019, we acquired \$47 and \$128 of property, plant and equipment through non-cash investing and financing transactions. Accounts payable related to purchases of property, plant and equipment were \$182 and \$256 for the years ended December 31, 2020 and 2019.

Note 11 – Investments

Our investments, which are recorded in Short-term and other investments or Investments, consisted of the following at December 31:

	2020	2019
Equity method investments ⁽¹⁾	\$936	\$1,031
Time deposits	17,154	50
Available for sale debt instruments	596	405
Equity and other investments	85	65
Restricted cash & cash equivalents ⁽²⁾	83	86
Total	\$18,854	\$1,637

⁽¹⁾ Dividends received were \$149 and \$164 during 2020 and 2019. Retained earnings at December 31, 2020 include undistributed earnings from our equity method investments of \$148.

⁽²⁾ Reflects amounts restricted in support of our workers' compensation programs, employee benefit programs, and insurance premiums.

Allowance for losses on available for sale debt instruments are assessed quarterly. All instruments are considered investment grade and, as such, we have not recognized an allowance for credit losses as of December 31, 2020.

Equity Method Investments

Our equity method investments consisted of the following as of December 31:

	Segment	Ownership Percentages	Investment Balance	
			2020	2019
United Launch Alliance	BDS	50%	\$735	\$771
Other	BCA, BDS, BGS and Other		201	260
Total equity method investments			\$936	\$1,031

Note 12 – Leases

Our operating lease assets primarily represent manufacturing and research and development facilities, warehouses, and offices. Total operating lease expense was \$360 and \$326 for the years ended December 31, 2020 and 2019, of which \$71 and \$55 was attributable to variable lease expenses.

For the years ended December 31, 2020 and 2019, cash payments against operating lease liabilities totaled \$299 and \$277 and non-cash transactions totaled \$371 and \$371 to recognize operating assets and liabilities for new leases.

Supplemental Consolidated Statement of Financial Position information related to leases consisted of the following at December 31:

	2020	2019
Operating leases:		
Operating lease right-of-use assets	\$1,252	\$1,182
Current portion of lease liabilities	268	252
Non-current portion of lease liabilities	1,084	978
Total operating lease liabilities	\$1,352	\$1,230
Weighted average remaining lease term (years)	9	9
Weighted average discount rate	3.43%	3.35%

Maturities of operating lease liabilities for the next five years are as follows:

	Operating leases
2021	\$307
2022	241
2023	191
2024	135
2025	105
Thereafter	802
Total lease payments	1,781
Less imputed interest	(429)
Total	\$1,352

As of December 31, 2020, we have entered into a lease that has not yet commenced of \$226, for a maintenance, repair and overhaul hangar that will support military aircraft programs. This lease will commence in 2023 with a lease term of 25 years.

Note 13 – Liabilities, Commitments and Contingencies

Accrued Liabilities

Accrued liabilities at December 31 consisted of the following:

	2020	2019
Accrued compensation and employee benefit costs	\$7,121	\$5,582
737 MAX customer concessions and other considerations	5,537	7,389
Department of Justice agreement liability	744	
Environmental	565	570
Product warranties	1,527	1,267
Forward loss recognition	1,913	1,681
Dividends payable		1,159
Income taxes payable	43	670
Current portion of lease liabilities	268	252
Other	4,453	4,298
Total	\$22,171	\$22,868

737 MAX Grounding and COVID-19 Impacts

In 2019, following two fatal 737 MAX accidents, the Federal Aviation Administration (FAA) and non-U.S. civil aviation authorities issued orders suspending commercial operations of 737 MAX aircraft. Deliveries of the 737 MAX were suspended following these orders. Deliveries in the U.S. resumed in late 2020 following rescission by the FAA of its grounding order.

Multiple legal actions have been filed against us as a result of the accidents. In addition, we are fully cooperating with U.S. government investigations related to the accidents and the 737 MAX program, including an investigation by the Securities and Exchange Commission, the outcome of which may be material. Other than as described below with respect to the U.S. Department of Justice, we cannot

reasonably estimate a range of loss, if any, not covered by available insurance that may result given the current status of the lawsuits, investigations and inquiries related to the 737 MAX.

On January 6, 2021, we entered into a Deferred Prosecution Agreement with the U.S. Department of Justice that resolves the Department of Justice's previously disclosed investigation into us regarding the evaluation of the 737 MAX airplane by the FAA. Under the terms of the Deferred Prosecution Agreement, we agreed to the filing of a criminal information charging the Company with one count of conspiracy to defraud the United States, based on the conduct of two former 737 MAX program technical pilots; the criminal information will be dismissed after three years, provided that we comply with our obligations under the agreement. The Deferred Prosecution Agreement requires that we make payments totaling \$2.51 billion, which consist of (a) a \$243.6 million criminal monetary penalty; (b) \$500 million in additional compensation to the heirs and/or beneficiaries of those who died in the Lion Air Flight 610 and Ethiopian Airlines Flight 302 accidents; and (c) \$1.77 billion to the Company's airline customers for harm incurred as a result of the grounding of the 737 MAX, offset in part by payments already made and the remainder satisfied through payments to be made prior to the termination of the Deferred Prosecution Agreement. The agreement also requires that we review our compliance program and undertake continuous improvement efforts with respect to it, and implement enhanced compliance reporting and internal controls mechanisms. Of the payments described above, \$1.77 billion has been included in amounts reserved in prior quarters for 737 MAX customer considerations. We expensed \$743.6 million in the fourth quarter of 2020 related to this agreement.

During the fourth quarter of 2020, the FAA rescinded the order that grounded 737 MAX aircraft and issued an Airworthiness Directive specifying requirements that must be met before U.S. carriers can resume service, including installing software enhancements, completing wire separation modification, conducting pilot training and performing maintenance steps to prepare parked aircraft to fly again. The FAA also issued a Continued Airworthiness Notification to the International Community, and published the 737 MAX training requirements. The FAA must approve 737 MAX pilot training program revisions for each U.S. airline operating the aircraft and has indicated its intent to retain its authority to issue airworthiness certificates and export certificates of airworthiness for all new 737 MAX aircraft manufactured subsequent to the grounding order. The Brazilian National Civil Aviation Agency approved return of operations in the fourth quarter of 2020, and Transport Canada and the European Union Aviation Safety Agency (EASA) approved return of operations in the first quarter of 2021.

In December 2020, we delivered 27 aircraft, in compliance with the FAA regulatory requirements described above. We have assumed that the remaining non-U.S. regulatory approvals will occur and enable deliveries during the first half of 2021. We have approximately 425 airplanes in inventory as of December 31, 2020. A number of customers have requested to defer deliveries or to cancel orders for 737 MAX aircraft, and we are remarketing and/or delaying deliveries of certain aircraft included within inventory. We now expect to deliver about half of the 737 MAX aircraft in inventory by the end of 2021. In the event that we are unable to resume aircraft deliveries in non-U.S. jurisdictions consistent with our assumptions of regulatory approval timing, our expectation of delivery timing could be impacted.

Due to the grounding and associated suspension of 737 MAX deliveries, we temporarily suspended 737 MAX production beginning in January 2020. We resumed early stages of 737 MAX production in May 2020 and continued to produce at low rates through the end of 2020.

In addition, we reduced the number of aircraft included in the accounting quantity by 400 units in the first quarter of 2020 as a result of reductions to planned production rates due to COVID-19 driven market uncertainties. As we are producing at abnormally low production rates in 2020 and 2021, we expect to incur approximately \$5 billion of abnormal production costs that are being expensed as incurred. The slowdown in the planned production rate ramp-up increased expected abnormal costs, however this increase was offset by adjustments to the determination of the normal production level due to COVID-19 impacts on customer demand, as well as cost reduction activities, including significant

reductions in employment levels. We expensed \$2,567 of abnormal production costs during the year ended December 31, 2020.

In addition to impacts related to the 737 MAX accidents and subsequent grounding, the 737 program continues to be significantly impacted by the COVID-19 pandemic and its effect on aircraft demand. These impacts have resulted in lower production and delivery rate assumptions. We currently expect to gradually increase the production rate to 31 per month by early 2022. We currently assume that we will implement further gradual production rate increases in subsequent periods based on market demand. The ongoing impacts of COVID-19 on market demand have also created significant uncertainty around the timing of deliveries of 737 MAX aircraft in inventory. We may need to recognize additional costs associated with remarketing and/or reconfiguring aircraft in inventory, which may reduce revenue and/or earnings in future periods.

We have also recorded additional expenses of \$416 and \$328 due to the 737 MAX grounding during 2020 and 2019, which include costs related to storage, inventory impairment, pilot training, and software updates.

The following table summarizes changes in the 737 MAX customer concessions and other considerations liability during 2020.

	2020	2019
Beginning balance – January 1	\$7,389	
Initial liability recorded in the second quarter of 2019		\$6,110
Reductions for payments made	(2,188)	(1,237)
Reductions for concessions and other in-kind considerations	(162)	(133)
Changes in estimates	498	2,649
Ending balance – December 31	\$5,537	\$7,389

We are working with our customers to minimize the impact to their operations from grounded and undelivered aircraft. We continue to reassess the liability for estimated potential concessions and other considerations to customers on a quarterly basis. This reassessment includes updating estimates to reflect revisions to return to service, delivery and production rate assumptions driven by timing of regulatory approvals, as well as latest information based on engagements with 737 MAX customers. The liability represents our current best estimate of future concessions and other considerations to customers, and is necessarily based on a series of assumptions. It is subject to change in future quarters as negotiations with customers mature and timing and conditions of return to service are better understood. The liability balance of \$5.5 billion at December 31, 2020 includes \$2.3 billion expected to be liquidated by lower customer delivery payments, \$0.6 billion expected to be paid in cash and \$0.1 billion in other concessions. Of the cash payments to customers, we expect to pay \$0.3 billion in 2021 and \$0.3 billion in 2022. The type of consideration to be provided for the remaining \$2.5 billion will depend on the outcomes of negotiations with customers.

The 737 MAX remains grounded in certain non-U.S. jurisdictions. The civil aviation authorities in those jurisdictions will determine the timing and conditions of return to service. Our assumptions reflect our current best estimate, but actual timing and conditions of return to service and resumption of deliveries could differ from this estimate, the effect of which could be material. We are unable at this time to reasonably estimate potential future additional financial impacts or a range of loss, if any, due to continued uncertainties related to the timing and conditions of return to service, uncertainties related to the impacts of COVID-19 on our operations, supply chain and customers, future changes to the production rate, supply chain impacts, and/or the results of negotiations with particular customers. Any such impacts, including any changes in our estimates, could have a material adverse effect on our financial position, results of operations, and/or cash flows. For example, we expect that, in the event

that we are unable to resume aircraft deliveries in non-U.S. jurisdictions consistent with our assumptions, the continued absence of revenue, earnings, and cash flows associated with 737 MAX deliveries would continue to have a material impact on our operating results. In the event that future production rate increases occur at a slower rate or take longer than we are currently assuming, we expect that the growth in inventory and other cash flow impacts associated with production would decrease. However, while any prolonged production suspension or delays in planned production rate increases could mitigate the impact on our liquidity, it could significantly increase the overall expected costs to produce aircraft included in the accounting quantity, which would reduce 737 program margins and/or increase abnormal production costs in the future.

Commercial air traffic has fallen dramatically due to the COVID-19 pandemic. While this trend has impacted passenger traffic most severely, near-term cargo traffic has also fallen significantly due to the global economic downturn and the reduction in cargo capacity on passenger airplanes. Airlines have significantly reduced their capacity, and many could implement further reductions in the near future. Many airlines are also implementing significant reductions in staffing. These capacity changes are causing, and are expected to continue to cause, negative impacts to our customers' revenue, earnings, and cash flow, and in some cases may threaten the future viability of some of our customers, potentially causing defaults within our customer financing portfolio and/or requiring us to remarket aircraft that have already been produced and/or are currently in backlog. If 737 MAX aircraft remain grounded for an extended period of time in non-U.S. jurisdictions, we may experience additional reductions to backlog and/or significant order cancellations. Additionally, we may experience fewer new orders and increased cancellations across all of our commercial airplane programs as a result of the COVID-19 pandemic and associated impacts on demand. Our customers may also lack sufficient liquidity to purchase new aircraft due to impacts from the pandemic. We are also observing a significant increase in the number of requests for payment deferrals, contract modifications, lease restructurings and similar actions, and these trends may lead to additional earnings charges, impairments and other adverse financial impacts in our business over time. In addition, to the extent that customers have valid rights to cancel undelivered aircraft, we may be required to refund pre-delivery payments, putting additional constraints on our liquidity. There is risk that the industry implements longer-term strategies involving reduced capacity, shifting route patterns, and mitigation strategies related to impacts from COVID-19 and the risk of future public health crises. In addition, airlines may experience reduced demand due to reluctance by the flying public to travel.

As a result, there is significant uncertainty with respect to when commercial air traffic levels will begin to recover, and whether and at what point capacity will return to and/or exceed pre-COVID-19 levels. The COVID-19 pandemic also has increased, and its aftermath is also expected to continue to increase, uncertainty with respect to global trade volumes, putting significant negative pressure on cargo traffic. Any of these factors would have a significant impact on the demand for both single-aisle and wide-body commercial aircraft, as well as for the services we provide to commercial airlines. In addition, a lengthy period of reduced industry-wide demand for commercial aircraft would put additional pressure on our suppliers, resulting in increased procurement costs and/or additional supply chain disruption. To the extent that the COVID-19 pandemic or its aftermath further impacts demand for our products and services or impairs the viability of some of our customers and/or suppliers, our financial condition, results of operations, and cash flows could be adversely affected, and those impacts could be material.

Environmental

The following table summarizes environmental remediation activity during the years ended December 31, 2020 and 2019.

	2020	2019
Beginning balance – January 1	\$570	\$555
Reductions for payments made	(42)	(47)
Changes in estimates	37	62
Ending balance – December 31	\$565	\$570

The liabilities recorded represent our best estimate or the low end of a range of reasonably possible costs expected to be incurred to remediate sites, including operation and maintenance over periods of up to 30 years. It is reasonably possible that we may incur charges that exceed these recorded amounts because of regulatory agency orders and directives, changes in laws and/or regulations, higher than expected costs and/or the discovery of new or additional contamination. As part of our estimating process, we develop a range of reasonably possible alternate scenarios that includes the high end of a range of reasonably possible cost estimates for all remediation sites for which we have sufficient information based on our experience and existing laws and regulations. There are some potential remediation obligations where the costs of remediation cannot be reasonably estimated. At December 31, 2020 and 2019, the high end of the estimated range of reasonably possible remediation costs exceeded our recorded liabilities by \$1,095 and \$1,077.

Product Warranties

The following table summarizes product warranty activity recorded during the years ended December 31, 2020 and 2019.

	2020	2019
Beginning balance – January 1	\$1,267	\$1,127
Additions for current year deliveries	65	188
Reductions for payments made	(260)	(249)
Changes in estimates	455	201
Ending balance – December 31	\$1,527	\$1,267

The increase in the product warranty reserve during the years ended December 31, 2020 and 2019 is primarily driven by charges related to “pickle forks” on 737NG aircraft. During 2019, we detected cracks in the “pickle forks”, a frame fitting component of the structure connecting the wings to the fuselages of 737NG aircraft. We notified the FAA, which issued a directive requiring that certain 737NG airplanes be inspected. We have estimated the number of aircraft that will have to be repaired in the future and provisioned for the estimated costs of completing the repairs. We recognized charges of \$135 in 2019 for current and projected future aircraft repairs. During the first quarter of 2020, we recognized additional charges of \$336 based on revised engineering and fleet utilization estimates as well as updated repair cost estimates. We cannot estimate a range of reasonably possible losses, if any, in excess of amounts recognized due to the ongoing nature of the inspections and repairs and pending the completion of investigations into the cause of the condition.

Commercial Aircraft Commitments

In conjunction with signing definitive agreements for the sale of new aircraft (Sale Aircraft), we have entered into trade-in commitments with certain customers that give them the right to trade in used

aircraft at a specified price upon the purchase of Sale Aircraft. The probability that trade-in commitments will be exercised is determined by using both quantitative information from valuation sources and qualitative information from other sources. The probability of exercise is assessed quarterly, or as events trigger a change, and takes into consideration the current economic and airline industry environments. Trade-in commitments, which can be terminated by mutual consent with the customer, may be exercised only during the period specified in the agreement, and require advance notice by the customer.

Trade-in commitment agreements at December 31, 2020 have expiration dates from 2021 through 2028. At December 31, 2020 and 2019, total contractual trade-in commitments were \$950 and \$1,407. As of December 31, 2020 and 2019, we estimated that it was probable we would be obligated to perform on certain of these commitments with net amounts payable to customers totaling \$599 and \$711 and the fair value of the related trade-in aircraft was \$580 and \$678.

Financing Commitments

Financing commitments related to aircraft on order, including options and those proposed in sales campaigns, and refinancing of delivered aircraft, totaled \$11,512 and \$13,377 as of December 31, 2020 and 2019. The estimated earliest potential funding dates for these commitments as of December 31, 2020 are as follows:

	Total
2021	\$2,329
2022	2,384
2023	1,677
2024	1,677
2025	1,827
Thereafter	1,618
	<u>\$11,512</u>

As of December 31, 2020, all of these financing commitments relate to customers we believe have less than investment-grade credit. We have concluded that no reserve for future potential losses is required for these financing commitments based upon the terms, such as collateralization and interest rates, under which funding would be provided.

Funding Commitments

We have commitments to make additional capital contributions of \$243 to joint ventures over the next seven years.

Standby Letters of Credit and Surety Bonds

We have entered into standby letters of credit and surety bonds with financial institutions primarily relating to the guarantee of our future performance on certain contracts. Contingent liabilities on outstanding letters of credit agreements and surety bonds aggregated approximately \$4,238 and \$3,769 as of December 31, 2020 and 2019.

Company Owned Life Insurance

McDonnell Douglas Corporation insured its executives with Company Owned Life Insurance (COLI), which are life insurance policies with a cash surrender value. Although we do not use COLI currently, these obligations from the merger with McDonnell Douglas are still a commitment at this time. We have loans in place to cover costs paid or incurred to carry the underlying life insurance policies. As of

December 31, 2020 and 2019, the cash surrender value was \$395 and \$448 and the total loans were \$382 and \$431. As we have the right to offset the loans against the cash surrender value of the policies, we present the net asset in Other assets on the Consolidated Statements of Financial Position as of December 31, 2020 and 2019.

United States Government Defense Environment Overview

The Omnibus appropriations acts for FY21, enacted in December 2020, provided FY21 appropriations for government departments and agencies, including the United States Department of Defense (U.S. DoD), the National Aeronautics and Space Administration (NASA) and the Federal Aviation Administration.

The enacted FY21 appropriations included funding for Boeing's major programs, such as the F/A-18 Super Hornet, F-15EX, CH-47 Chinook, AH-64 Apache, V-22 Osprey, KC-46A Tanker, P-8 Poseidon and Space Launch System. However, there continues to be uncertainty with respect to future program-level appropriations for the U.S. DoD and other government agencies, including NASA. Future budget cuts or investment priority changes, including changes associated with the authorizations and appropriations process, could result in reductions, cancellations and/or delays of existing contracts or programs. Any of these impacts could have a material effect on our results of operations, financial position and/or cash flows.

BDS Fixed-Price Development Contracts

Fixed-price development work is inherently uncertain and subject to significant variability in estimates of the cost and time required to complete the work. BDS fixed-price contracts with significant development work include Commercial Crew, KC-46A Tanker, MQ-25, T-7A Red Hawk, VC-25B, and commercial and military satellites. The operational and technical complexities of these contracts create financial risk, which could trigger termination provisions, order cancellations or other financially significant exposure. Changes to cost and revenue estimates could result in lower margins or material charges for reach-forward losses. For example, we have recorded an increase in the reach-forward loss of \$1,320 on KC-46A Tanker in 2020. The KC-46A Tanker reach-forward loss reflects \$551 of costs associated with the agreement signed in April 2020 with the U.S. Air Force (USAF) to develop and integrate a new Remote Vision System, and the remaining costs reflect production inefficiencies including impacts of COVID-19 disruption. Moreover, our fixed-price development programs remain subject to additional reach-forward losses if we experience further production, technical or quality issues, schedule delays, or increased costs.

KC-46A Tanker

In 2011, we were awarded a contract from the U.S. Air Force (USAF) to design, develop, manufacture and deliver four next generation aerial refueling tankers. This Engineering, Manufacturing and Development (EMD) contract is a fixed-price incentive fee contract and involves highly complex designs and systems integration. Since 2016, the USAF has authorized five low rate initial production (LRIP) lots for a total of 67 aircraft. The EMD contract and authorized LRIP lots are valued at approximately \$15 billion as of December 31, 2020.

At December 31, 2020, we had approximately \$463 of capitalized precontract costs and \$1,281 of potential termination liabilities to suppliers. These values were primarily related to 12 aircraft in lot 6 and 15 aircraft in lot 7 for which we received contract awards in January 2021.

Recoverable Costs on Government Contracts

Our final incurred costs for each year are subject to audit and review for allowability by the U.S. government, which can result in payment demands related to costs they believe should be disallowed. We work with the U.S. government to assess the merits of claims and where appropriate reserve for

amounts disputed. If we are unable to satisfactorily resolve disputed costs, we could be required to record an earnings charge and/or provide refunds to the U.S. government.

Severance

The following table summarizes changes in the severance liability during 2020:

	2020
Initial liability recorded in the second quarter of 2020	\$652
Reductions for payments made	(658)
Changes in estimates	289
Ending balance – December 31	\$283

During 2020, the Company recorded severance costs for approximately 26,000 employees expected to leave the Company through a combination of voluntary and involuntary terminations. The severance packages are consistent with the Company's ongoing compensation and benefits plans. As of December 31, 2020, approximately 18,000 of the 26,000 employees have left the Company, and the remainder are expected to leave in 2021.

Note 14 – Arrangements with Off-Balance Sheet Risk

We enter into arrangements with off-balance sheet risk in the normal course of business, primarily in the form of guarantees.

The following table provides quantitative data regarding our third party guarantees. The maximum potential payments represent a "worst-case scenario," and do not necessarily reflect amounts that we expect to pay. Estimated proceeds from collateral and recourse represent the anticipated values of assets we could liquidate or receive from other parties to offset our payments under guarantees. The carrying amount of liabilities represents the amount included in Accrued liabilities.

	Maximum Potential Payments		Estimated Proceeds from Collateral/ Recourse		Carrying Amount of Liabilities	
	2020	2019	2020	2019	2020	2019
December 31,						
Contingent repurchase commitments	\$1,452	\$1,570	\$1,452	\$1,570		
Indemnifications to ULA:						
Contributed Delta inventory	15	30				
Inventory supply agreement	17	34				
Questioned costs		317				\$48
Credit guarantees	90	92	28	36	\$24	16

Contingent Repurchase Commitments The repurchase price specified in contingent repurchase commitments is generally lower than the expected fair value at the specified repurchase date. Estimated proceeds from collateral/recourse in the table above represent the lower of the contracted repurchase price or the expected fair value of each aircraft at the specified repurchase date.

Indemnifications to ULA During the first quarter of 2020, the USAF and ULA reached a settlement regarding previously questioned deferred support and deferred production costs. As part of the settlement the USAF agreed to reimburse ULA for \$307 of those costs, which was received by ULA in the second quarter. Our indemnification to ULA associated with the recoverability of contributed assets

expired on December 31, 2020, resulting in a \$33 payment to the partnership. This settlement retires our indemnification risks to ULA.

Other Indemnifications In conjunction with our sales of Electron Dynamic Devices, Inc. and Rocketdyne Propulsion and Power businesses and our BCA facilities in Wichita, Kansas and Tulsa and McAlester, Oklahoma, we agreed to indemnify, for an indefinite period, the buyers for costs relating to pre-closing environmental conditions and certain other items. We are unable to assess the potential number of future claims that may be asserted under these indemnifications, nor the amounts thereof (if any). As a result, we cannot estimate the maximum potential amount of future payments under these indemnities and therefore, no liability has been recorded. To the extent that claims have been made under these indemnities and/or are probable and reasonably estimable, liabilities associated with these indemnities are included in the environmental liability disclosure in Note 13.

Credit Guarantees We have issued credit guarantees where we are obligated to make payments to a guaranteed party in the event that the original lessee or debtor does not make payments or perform certain specified services. Generally, these guarantees have been extended on behalf of guaranteed parties with less than investment-grade credit and are collateralized by certain assets. Current outstanding credit guarantees expire through 2036.

Industrial Revenue Bonds

Industrial Revenue Bonds (IRB) issued by St. Louis County were used to finance the purchase and/or construction of real and personal property at our St. Louis site. Tax benefits associated with IRBs include a twelve-year property tax abatement and sales tax exemption from St. Louis County. We record these properties on our Consolidated Statements of Financial Position. We have also purchased the IRBs and therefore are the bondholders as well as the borrower/lessee of the properties purchased with the IRB proceeds. The liabilities and IRB assets are equal and are reported net in the Consolidated Statements of Financial Position.

As of December 31, 2020 and 2019, the assets and liabilities associated with the IRBs were \$271.

Note 15 – Debt

In the first quarter of 2020, we entered into a \$13,825, two-year delayed draw term loan facility, which includes additional commitments made subsequent to the initial closing date. As of December 31, 2020, we have fully drawn on the 13,825 delayed draw term loan facility, with February 6, 2022 as the final maturity date. Borrowings outstanding bear interest at the Eurodollar rate (determined in accordance with the delayed draw term loan facility agreement) plus between 0.75% and 1.25%, depending on our credit rating.

In the second quarter of 2020, we issued \$25,000 of fixed rate senior notes consisting of \$3,000 due May 1, 2023 that bear an annual interest rate of 4.508%, \$3,500 due May 1, 2025 that bear an annual interest rate of 4.875%, \$2,000 due May 1, 2027 that bear an annual interest rate of 5.04%, \$4,500 due May 1, 2030 that bear an annual interest rate of 5.15%, \$3,000 due May 1, 2040 that bear an annual interest rate of 5.705%, \$5,500 due May 1, 2050 that bear an annual interest rate of 5.805%, and \$3,500 due May 1, 2060 that bear an annual interest rate of 5.93%. The notes are unsecured senior obligations and rank equally in right of payment with our existing and future unsecured and unsubordinated indebtedness. The net proceeds of the issuance totaled \$24,802, after deducting underwriting discounts, commissions, and offering expenses.

In the fourth quarter of 2020, we issued \$4,900 of fixed rate senior notes consisting of \$1,000 due February 1, 2024 that bear an annual interest rate of 1.95%, \$1,400 due February 1, 2026 that bear an annual interest rate of 2.75%, \$1,100 due February 1, 2028 that bear an annual interest rate of 3.25%, and \$1,400 due February 1, 2031 that bear an annual interest rate of 3.625%. The notes are unsecured

senior obligations and rank equally in right of payment with our existing and future unsecured and unsubordinated indebtedness. The net proceeds of the issuance totaled \$4,870, after deducting underwriting discounts, commissions, and offering expenses.

Interest incurred, including amounts capitalized, was \$2,280, \$867 and \$624 for the years ended December 31, 2020, 2019 and 2018, respectively. Interest expense recorded by BCC is reflected as Boeing Capital interest expense on our Consolidated Statements of Operations. Total Company interest payments were \$1,925, \$973 and \$616 for the years ended December 31, 2020, 2019 and 2018, respectively.

We have \$9,473 currently available under credit line agreements, of which \$3,073 is a 364-day revolving credit facility expiring in October 2021, \$3,200 expires in October 2022, and \$3,200 expires in October 2024. The 364-day credit facility has a one-year term out option which allows us to extend the maturity of any borrowings one year beyond the aforementioned expiration date. We continue to be in full compliance with all covenants contained in our debt or credit facility agreements.

Short-term debt and current portion of long-term debt at December 31 consisted of the following:

	2020	2019
Unsecured debt	\$1,448	\$1,099
Non-recourse debt and notes	15	21
Finance lease obligations	65	71
Commercial paper		6,109
Other notes	165	40
Total	\$1,693	\$7,340

Debt at December 31 consisted of the following:

	2020	2019
Unsecured debt		
Variable rate: Eurodollar plus 0.75% - 1.25% due 2022	\$13,819	
1.45% - 3.20% due through 2030	10,645	\$8,600
3.25% - 3.90% due through 2059	9,555	7,073
3.95% - 5.15% due through 2059	13,917	1,731
5.71% - 6.63% due through 2060	13,005	1,129
6.88% - 8.75% due through 2043	2,252	2,250
Commercial paper		6,109
Non-recourse debt and notes		
6.98% notes due through 2021	15	37
Finance lease obligations due through 2044	203	229
Other notes	172	144
Total debt	\$63,583	\$27,302

At December 31, 2020, we had no commercial paper borrowings. At December 31, 2019, commercial paper borrowings totaling \$6,109, with a weighted-average interest rate of 2.2%, were supported by unused commitments under the revolving credit agreement.

Total debt at December 31 is attributable to:

	2020	2019
BCC	\$1,640	\$1,960
Other Boeing	61,943	25,342
Total debt	\$63,583	\$27,302

At December 31, 2020, \$15 of debt (non-recourse debt) was collateralized by customer financing assets totaling \$167.

Scheduled principal payments for debt and minimum finance lease obligations for the next five years are as follows:

	2021	2022	2023	2024	2025
Debt	\$1,630	\$14,976	\$3,776	\$2,001	\$4,301
Minimum finance lease obligations	\$68	\$53	\$31	\$14	\$6

Note 16 – Postretirement Plans

Many of our employees have earned benefits under defined benefit pension plans. Nonunion and the majority of union employees that had participated in defined benefit pension plans transitioned to a company-funded defined contribution retirement savings plan in 2016. Additional union employees transitioned to company-funded defined contribution retirement savings plans effective January 1, 2019.

We fund our major pension plans through trusts. Pension assets are placed in trust solely for the benefit of the plans' participants, and are structured to maintain liquidity that is sufficient to pay benefit obligations as well as to keep pace over the long-term with the growth of obligations for future benefit payments.

We also have other postretirement benefits (OPB) other than pensions which consist principally of health care coverage for eligible retirees and qualifying dependents, and to a lesser extent, life insurance to certain groups of retirees. Retiree health care is provided principally until age 65 for approximately two-thirds of those participants who are eligible for health care coverage. Certain employee groups, including employees covered by most United Auto Workers bargaining agreements, are provided lifetime health care coverage. The funded status of the plans is measured as the difference between the plan assets at fair value and the projected benefit obligation (PBO). We have recognized the aggregate of all overfunded plans in Other assets, and the aggregate of all underfunded plans in either Accrued retiree health care or Accrued pension plan liability, net. The portion of the amount by which the actuarial present value of benefits included in the PBO exceeds the fair value of plan assets, payable in the next 12 months, is reflected in Accrued liabilities.

The components of net periodic benefit (income)/cost were as follows:

Years ended December 31,	Pension			Other Postretirement Benefits		
	2020	2019	2018	2020	2019	2018
Service cost	\$3	\$2	\$430	\$89	\$77	\$94
Interest cost	2,455	2,925	2,781	130	196	194
Expected return on plan assets	(3,756)	(3,863)	(4,009)	(9)	(8)	(8)
Amortization of prior service credits	(80)	(79)	(56)	(38)	(35)	(126)
Recognized net actuarial loss/(gain)	1,032	643	1,130	(63)	(46)	(10)
Settlement/curtailment loss/(gain)	9		44	(4)		
Net periodic benefit (income)/cost	(\$337)	(\$372)	\$320	\$105	\$184	\$144
Net periodic benefit cost included in (Loss)/earnings from operations	\$3	\$313	\$313	\$91	\$88	\$84
Net periodic benefit (income)/cost included in Other income, net	(340)	(374)	(143)	16	107	101
Net periodic benefit (income)/cost included in (Loss)/earnings before income taxes	(\$337)	(\$61)	\$170	\$107	\$195	\$185

The following tables show changes in the benefit obligation, plan assets and funded status of both pensions and OPB for the years ended December 31, 2020 and 2019. Benefit obligation balances presented below reflect the PBO for our pension plans, and accumulated postretirement benefit obligations (APBO) for our OPB plans.

	Pension		Other Postretirement Benefits	
	2020	2019	2020	2019
Change in benefit obligation				
Beginning balance	\$77,645	\$71,424	\$5,080	\$5,114
Service cost	3	2	89	77
Interest cost	2,455	2,925	130	196
Amendments			(29)	1
Actuarial loss/(gain)	7,759	8,695	(218)	127
Settlement/curtailment/other	(68)	(756)	55	
Gross benefits paid	(5,386)	(4,658)	(450)	(474)
Subsidies			36	36
Exchange rate adjustment	7	13		3
Ending balance	\$82,415	\$77,645	\$4,693	\$5,080
Change in plan assets				
Beginning balance at fair value	\$61,711	\$56,102	\$149	\$132
Actual return on plan assets	9,275	10,851	21	26
Company contribution	3,013	16		1
Plan participants' contributions			6	6
Settlement payments	(68)	(756)		
Benefits paid	(5,241)	(4,514)	(16)	(16)
Exchange rate adjustment	6	12		
Ending balance at fair value	\$68,696	\$61,711	\$160	\$149
Amounts recognized in statement of financial position at December 31 consist of:				
Other assets	\$837	\$484		
Accrued liabilities	(148)	(142)	(\$396)	(\$391)
Accrued retiree health care			(4,137)	(4,540)
Accrued pension plan liability, net	(14,408)	(16,276)		
Net amount recognized	(\$13,719)	(\$15,934)	(\$4,533)	(\$4,931)

Amounts recognized in Accumulated other comprehensive loss at December 31 were as follows:

	Pension		Other Postretirement Benefits	
	2020	2019	2020	2019
Net actuarial loss/(gain)	\$24,324	\$23,124	(\$735)	(\$625)
Prior service credits	(1,387)	(1,467)	(110)	(122)
Total recognized in Accumulated other comprehensive loss	\$22,937	\$21,657	(\$845)	(\$747)

The accumulated benefit obligation (ABO) for all pension plans was \$80,694 and \$75,787 at December 31, 2020 and 2019. Key information for our plans with ABO and PBO in excess of plan assets as of December 31 was as follows:

	2020	2019
Accumulated benefit obligation	\$74,337	\$70,466
Fair value of plan assets	61,502	55,907

	2020	2019
Projected benefit obligation	\$76,057	\$72,325
Fair value of plan assets	61,502	55,907

Assumptions

The following assumptions, which are the weighted average for all plans, are used to calculate the benefit obligation at December 31 of each year and the net periodic benefit cost for the subsequent year.

December 31,	2020	2019	2018
Discount rate:			
Pension	2.50 %	3.30 %	4.20 %
Other postretirement benefits	2.00 %	3.00 %	4.00 %
Expected return on plan assets	6.50 %	6.80 %	6.80 %
Rate of compensation increase	4.30 %	4.30 %	5.30 %
Interest crediting rates for cash balance plans	5.00 %	5.15 %	5.15 %

The discount rate for each plan is determined based on the plans' expected future benefit payments using a yield curve developed from high quality bonds that are rated as Aa or better by at least half of the four rating agencies utilized as of the measurement date. The yield curve is fitted to yields developed from bonds at various maturity points. Bonds with the ten percent highest and the ten percent lowest yields are omitted. The present value of each plan's benefits is calculated by applying the discount rates to projected benefit cash flows.

The pension fund's expected return on plan assets assumption is derived from a review of actual historical returns achieved by the pension trust and anticipated future long-term performance of individual asset classes. While consideration is given to historical returns, the assumption represents a long-term, prospective return. The expected return on plan assets component of the net periodic benefit cost for the upcoming plan year is determined based on the expected return on plan assets assumption and the market-related value of plan assets (MRVA). Since our adoption of the accounting standard for pensions in 1987, we have determined the MRVA based on a five-year moving average of plan assets. As of December 31, 2020, the MRVA was approximately \$6,805 less than the fair market value of assets.

Assumed health care cost trend rates were as follows:

December 31,	2020	2019	2018
Health care cost trend rate assumed next year	4.50 %	5.00 %	5.50 %
Ultimate trend rate	4.50 %	4.50 %	4.50 %
Year that trend reached ultimate rate	2021	2021	2021

Plan Assets

Investment Strategy The overall objective of our pension assets is to earn a rate of return over time to satisfy the benefit obligations of the pension plans and to maintain sufficient liquidity to pay benefits and address other cash requirements of the pension fund. Specific investment objectives for our long-term investment strategy include reducing the volatility of pension assets relative to pension liabilities, achieving a competitive total investment return, achieving diversification between and within asset classes and managing other risks. Investment objectives for each asset class are determined based on specific risks and investment opportunities identified.

We periodically update our long-term, strategic asset allocations. We use various analytics to determine the optimal asset mix and consider plan liability characteristics, liquidity characteristics, funding requirements, expected rates of return and the distribution of returns. We identify investment benchmarks to evaluate performance for the asset classes in the strategic asset allocation that are market-based and investable where possible. Actual allocations to each asset class vary from target allocations due to periodic investment strategy changes, market value fluctuations, the length of time it takes to fully implement investment allocation positions, and the timing of benefit payments and contributions. Short-term investments and exchange-traded derivatives are used to rebalance the actual asset allocation to the target asset allocation. The asset allocation is monitored and rebalanced frequently. The actual and target allocations by asset class for the pension assets at December 31 were as follows:

Asset Class	Actual Allocations		Target Allocations	
	2020	2019	2020	2019
Fixed income	49 %	49 %	49 %	47 %
Global equity	30	29	29	29
Private equity	6	5	5	5
Real estate and real assets	7	8	9	9
Hedge funds	8	9	8	10
Total	100 %	100 %	100 %	100 %

Fixed income securities are invested primarily in a diversified portfolio of long duration instruments as well as Emerging Market, Structured, High Yield and Private Debt. Global equity securities are invested in a diversified portfolio of U.S. and non-U.S. companies, across various industries and market capitalizations.

Private equity investment vehicles are primarily limited partnerships (LPs) that mainly invest in U.S. and non-U.S. leveraged buyout, venture capital and special situation strategies. Real estate and real assets include global private investments that may be held through investments in a limited partnership (LP) or other fund structures and publicly traded investments (such as Real Estate Investment Trusts (REITs) in the case of real estate). Real estate includes, but is not limited to, investments in office, retail, apartment and industrial properties. Real assets include, but are not limited to, investments in natural resources (such as energy, farmland and timber), commodities and infrastructure.

Hedge fund investments seek to capitalize on inefficiencies identified across and within different asset classes or markets. Hedge fund strategy types include, but are not limited to directional, event driven, relative value, long-short and multi-strategy.

Investment managers are retained for explicit investment roles specified by contractual investment guidelines. Certain investment managers are authorized to use derivatives, such as equity or bond futures, swaps, options and currency futures or forwards. Derivatives are used to achieve the desired market exposure of a security or an index, transfer value-added performance between asset classes,

achieve the desired currency exposure, adjust portfolio duration or rebalance the total portfolio to the target asset allocation.

As a percentage of total pension assets, derivative net notional amounts were 8.3% and 4.3% for fixed income, including to-be-announced mortgage-backed securities and treasury forwards, and 0.4% and 3.6% for global equity and commodities at December 31, 2020 and 2019.

In November 2020, the Company contributed \$3,000 of our common stock to the pension fund. An independent fiduciary was retained to manage and liquidate the stock over time at its discretion. Plan assets included \$3,298 and \$0 of our common stock as of December 31, 2020 and 2019.

Risk Management In managing the pension assets, we review and manage risk associated with funded status risk, interest rate risk, market risk, counterparty risk, liquidity risk and operational risk. Liability matching and asset class diversification are central to our risk management approach and are integral to the overall investment strategy. Further, asset classes are constructed to achieve diversification by investment strategy, by investment manager, by industry or sector and by holding. Investment manager guidelines for publicly traded assets are specified and are monitored regularly through the custodian. Credit parameters for counterparties have been established for managers permitted to trade over-the-counter derivatives. Valuation is governed through several types of procedures, including reviews of manager valuation policies, custodian valuation processes, pricing vendor practices, pricing reconciliation, and periodic, security-specific valuation testing.

Fair Value Measurements The following table presents our plan assets using the fair value hierarchy as of December 31, 2020 and 2019. The fair value hierarchy has three levels based on the reliability of the inputs used to determine fair value. Level 1 refers to fair values determined based on quoted prices in active markets for identical assets. Level 2 refers to fair values estimated using significant other observable inputs, and Level 3 includes fair values estimated using significant unobservable inputs.

	December 31, 2020				December 31, 2019			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Fixed income securities:								
Corporate	\$20,841		\$20,801	\$40	\$19,341		\$19,336	\$5
U.S. government and agencies	5,170		5,168	2	5,759		5,759	
Mortgage backed and asset backed	786		666	120	1,181		720	461
Municipal	1,176		1,104	72	1,317		1,317	
Sovereign	1,040		1,038	2	1,076		1,076	
Other	19	\$18	1		55	\$7	48	
Derivatives:								
Assets	6		6					
Liabilities	(17)		(17)		(143)		(143)	
Cash equivalents and other short-term investments	1,081		1,081		769		769	
Equity securities:								
U.S. common and preferred stock	5,013	5,013			4,866	4,866		
Non-U.S. common and preferred stock	5,577	5,575		2	5,529	5,527		2
Boeing company stock	3,298	3,298						
Derivatives:								
Assets	10		10		6		6	
Liabilities	(9)		(9)		(5)		(5)	
Private equity								
Real estate and real assets:								
Real estate	351	351			454	454		
Real assets	786	723	61	2	810	649	157	4
Derivatives:								
Assets	6		6		5	1	4	
Liabilities	(2)		(2)		(2)		(2)	
Total	\$45,132	\$14,978	\$29,914	\$240	\$41,018	\$11,504	\$29,042	\$472
Fixed income common/collective/pooled funds	\$2,345				\$959			
Fixed income other	604				512			
Equity common/collective pooled funds	6,947				6,301			
Private equity	4,013				3,184			
Real estate and real assets	3,359				3,605			
Hedge funds	5,745				5,688			
Total investments measured at NAV as a practical expedient	\$23,013				\$20,249			
Cash	\$267				\$207			
Receivables	992				383			
Payables	(708)				(146)			
Total	\$68,696				\$61,711			

Fixed income securities are primarily valued upon a market approach, using matrix pricing and considering a security's relationship to other securities for which quoted prices in an active market may be available, or an income approach, converting future cash flows to a single present value amount. Inputs used in developing fair value estimates include reported trades, broker quotes, benchmark yields, and base spreads.

Common/collective/pooled funds are typically common or collective trusts valued at their net asset values (NAVs) that are calculated by the investment manager or sponsor of the fund and have daily or monthly liquidity. Derivatives included in the table above are over-the-counter and are primarily valued using an income approach with inputs that include benchmark yields, swap curves, cash flow analysis, rating agency data and interdealer broker rates. Exchange-traded derivative positions are reported in accordance with changes in daily variation margin which is settled daily and therefore reflected in the payables and receivables portion of the table.

Cash equivalents and other short-term investments (which are used to pay benefits) are held in a separate account which consists of a commingled fund (with daily liquidity) and separately held short-term securities and cash equivalents. All of the investments in this cash vehicle are valued daily using a market approach with inputs that include quoted market prices for similar instruments. In the event a market price is not available for instruments with an original maturity of one year or less, amortized cost is used as a proxy for fair value. Common and preferred stock equity securities are primarily valued using a market approach based on the quoted market prices of identical instruments.

Private equity and private debt NAV valuations are based on the valuation of the underlying investments, which include inputs such as cost, operating results, discounted future cash flows and market based comparable data. For those investments reported on a one-quarter lagged basis (primarily LPs) we use NAVs, adjusted for subsequent cash flows and significant events.

Real estate and real asset NAV valuations are based on valuation of the underlying investments, which include inputs such as cost, discounted future cash flows, independent appraisals and market based comparable data. For those investments reported on a one-quarter lagged basis (primarily LPs) NAVs are adjusted for subsequent cash flows and significant events. Publicly traded REITs and infrastructure stocks are valued using a market approach based on quoted market prices of identical instruments. Exchange-traded commodities futures positions are reported in accordance with changes in daily variation margin which is settled daily and therefore reflected in the payables and receivables portion of the table.

Hedge fund NAVs are generally based on the valuation of the underlying investments. This is primarily done by applying a market or income valuation methodology depending on the specific type of security or instrument held.

Investments in private equity, private debt, real estate, real assets, and hedge funds are primarily calculated and reported by the General Partner (GP), fund manager or third party administrator. Additionally, some investments in fixed income and equity are made via commingled vehicles and are valued in a similar fashion. Pension assets invested in commingled and limited partnership structures rely on the NAV of these investments as the practical expedient for the valuations.

The following tables present a reconciliation of Level 3 assets held during the years ended December 31, 2020 and 2019. Transfers into and out of Level 3 are reported at the beginning-of-year values.

	January 1 2020 Balance	Net Realized and Unrealized Gains/(Losses)	Net Purchases, Issuances and Settlements	Net Transfers Into/(Out of) Level 3	December 31 2020 Balance
Fixed income securities:					
Corporate	\$5	\$1	\$18	\$16	\$40
U.S. government and agencies				2	2
Mortgage backed and asset backed	461	(1)	(93)	(247)	120
Municipal		3	2	67	72
Sovereign		(1)	2	1	2
Equity securities:					
Non-U.S. common and preferred stock	2				2
Real assets	4			(2)	2
Total	\$472	\$2	(\$71)	(\$163)	\$240

	January 1 2019 Balance	Net Realized and Unrealized Gains	Net Purchases, Issuances and Settlements	Net Transfers Into Level 3	December 31 2019 Balance
Fixed income securities:					
Corporate	\$2		\$3		\$5
Mortgage backed and asset backed	312	\$11	137	\$1	461
Equity securities:					
Non-U.S. common and preferred stock			1	1	2
Real assets	4				4
Total	\$318	\$11	\$141	\$2	\$472

For the year ended December 31, 2020, the changes in unrealized gains/(losses) for Level 3 assets still held at December 31, 2020 were \$2 for corporate, \$1 for mortgage backed and asset backed fixed income securities, \$3 for municipal bonds and (\$1) for sovereign. For the year ended December 31, 2019, the changes in unrealized gains/(losses) for Level 3 assets still held at December 31, 2019 were \$10 for mortgage backed and asset backed fixed income securities and (\$1) for non-U.S. common and preferred stock equity securities.

OPB Plan Assets The majority of OPB plan assets are invested in a balanced index fund which is comprised of approximately 60% equities and 40% debt securities. The index fund is valued using a market approach based on the quoted market price of an identical instrument (Level 1). The expected rate of return on these assets does not have a material effect on the net periodic benefit cost.

Cash Flows

Contributions Required pension contributions under the Employee Retirement Income Security Act (ERISA), as well as rules governing funding of our non-US pension plans, are not expected to be significant in 2021. During the fourth quarter of 2020, we contributed \$3,000 in common stock to the pension fund. We do not expect to make discretionary contributions to our pension plans in 2021.

Estimated Future Benefit Payments The table below reflects the total pension benefits expected to be paid from the plans or from our assets, including both our share of the benefit cost and the participants' share of the cost, which is funded by participant contributions. OPB payments reflect our portion only.

Year(s)	2021	2022	2023	2024	2025	2026-2030
Pensions	\$4,959	\$4,825	\$4,720	\$4,657	\$4,581	\$21,383
Other postretirement benefits:						
Gross benefits paid	462	452	435	415	394	1,606
Subsidies	(32)	(32)	(32)	(31)	(30)	(139)
Net other postretirement benefits	\$430	\$420	\$403	\$384	\$364	\$1,467

Termination Provisions

Certain of the pension plans provide that, in the event there is a change in control of the Company which is not approved by the Board of Directors and the plans are terminated within five years thereafter, the assets in the plan first will be used to provide the level of retirement benefits required by ERISA, and then any surplus will be used to fund a trust to continue present and future payments under the postretirement medical and life insurance benefits in our group insurance benefit programs.

Should we terminate certain pension plans under conditions in which the plan's assets exceed that plan's obligations, the U.S. government will be entitled to a fair allocation of any of the plan's assets based on plan contributions that were reimbursed under U.S. government contracts.

Defined Contribution Plans

We provide certain defined contribution plans to all eligible employees. The principal plans are the Company-sponsored 401(k) plans. The expense for these defined contribution plans was \$1,351, \$1,533 and \$1,480 in 2020, 2019 and 2018, respectively.

Note 17 – Share-Based Compensation and Other Compensation Arrangements

Share-Based Compensation

Our 2003 Incentive Stock Plan, as amended and restated, permits awards of incentive and non-qualified stock options, stock appreciation rights, restricted stock or units, performance shares, performance restricted stock or units, performance units and other stock and cash-based awards to our employees, officers, directors, consultants, and independent contractors. The aggregate number of shares of our stock authorized for issuance under the plan is 87,000,000.

Shares issued as a result of stock option exercises or conversion of stock unit awards will be funded out of treasury shares, except to the extent there are insufficient treasury shares, in which case new shares will be issued. We believe we currently have adequate treasury shares to satisfy these issuances during 2021.

Share-based plans expense is primarily included in Total costs and expenses and General and administrative expense, as well as a portion allocated to production as inventoried costs. The share-based plans expense and related income tax benefit were as follows:

Years ended December 31,	2020	2019	2018
Restricted stock units and other awards	\$243	\$217	\$213
Income tax benefit	\$53	\$47	\$46

Stock Options

We discontinued granting options in 2014, replacing them with performance-based restricted stock units. Options granted through January 2014 had an exercise price equal to the fair market value of our stock on the date of grant and expire 10 years after the date of grant. The stock options vested over a period of three years and were fully vested as of December 31, 2017.

Stock option activity for the year ended December 31, 2020 is as follows:

	Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value
Number of shares under option:				
Outstanding at beginning of year	2,375,583	\$74.79		
Exercised	(515,063)	71.47		
Outstanding at end of year	1,860,520	\$75.71	1.65	\$257
Exercisable at end of year	1,860,520	\$75.71	1.65	\$257

The total intrinsic value of options exercised during the years ended December 31, 2020, 2019 and 2018 was \$90, \$279 and \$320, with a related tax benefit of \$32, \$61 and \$70, respectively. No options vested during the years ended December 31, 2020, 2019 and 2018.

Restricted Stock Units

In February 2020, 2019 and 2018, we granted to our executives 325,108, 233,582 and 260,730 restricted stock units (RSUs) as part of our long-term incentive program with grant date fair values of \$319.04, \$428.22 and \$361.13 per unit, respectively. In December 2020, we granted to our executives 721,734 RSUs as part of our long-term incentive program with a grant date fair value of \$233.00 per unit. The RSUs granted under this program will vest and settle in common stock (on a one-for-one basis) on the third anniversary of the grant date. If an executive terminates employment because of retirement, layoff, disability, or death, the employee (or beneficiary) will receive a proration of stock units based on active employment during the three-year service period, except in the case of the December 2020 grant, which will vest in full for executives that terminate employment due to retirement after attaining certain age and service conditions. In all other cases, the RSUs will not vest and all rights to the stock units will terminate. These RSUs are labeled executive long-term incentive program in the table below.

In December 2020, we granted to our employees (excluding executives and certain union-represented employees), a one-time grant of 5,163,425 RSUs with a grant date fair value of \$233.00 per unit. The RSUs granted under this program will vest and settle in common stock (on a one-for-one basis) on the third anniversary of the grant date. If an employee terminates employment because of retirement, layoff, disability, or death, the employee (or beneficiary) will receive a proration of stock units based on active

employment during the three-year service period. In all other cases, the RSUs will not vest and all rights to the stock units will terminate. These RSUs are labeled employee long-term incentive program in the table below.

In addition to RSUs awarded under our long-term incentive program, we grant RSUs to certain executives and employees to encourage retention or to reward various achievements. These RSUs are labeled other RSUs in the table below. The fair values of all RSUs are estimated using the average of the high and low stock prices on the date of grant.

RSU activity for the year ended December 31, 2020 was as follows:

	Executive Long-Term Incentive Program	Employee Long-Term Incentive Program	Other
Number of units:			
Outstanding at beginning of year	905,025		908,321
Granted	1,103,608	5,163,425	196,818
Dividends	7,091		7,303
Forfeited	(104,374)		(33,896)
Distributed	(487,749)		(329,227)
Outstanding at end of year	1,423,601	5,163,425	749,319
Unrecognized compensation cost	\$237	\$973	\$102
Weighted average remaining contractual life (years)	2.5	3.0	2.0

The number of vested but undistributed RSUs at December 31, 2020 was not significant.

Performance-Based Restricted Stock Units

Performance-Based Restricted Stock Units (PBRsUs) are stock units that pay out based on the Company's total shareholder return as compared to a group of peer companies over a three-year period. The award payout can range from 0% to 200% of the initial PBRsU grant. The PBRsUs granted under this program will vest at the payout amount and settle in common stock (on a one-for-one basis) on the third anniversary of the grant date. If an executive terminates employment because of retirement, layoff, disability, or death, the employee (or beneficiary) remains eligible under the award and, if the award is earned, will receive a proration of stock units based on active employment during the three-year service period. In all other cases, the PBRsUs will not vest and all rights to the stock units will terminate.

In February 2020, 2019 and 2018, we granted to our executives 290,202, 214,651 and 241,284 PBRsUs as part of our long-term incentive program. Compensation expense for the award is recognized over the three-year performance period based upon the grant date fair value. The grant date fair values were estimated using a Monte-Carlo simulation model with the assumptions presented below. The model includes no expected dividend yield as the units earn dividend equivalents.

Grant Year	Grant Date	Performance Period	Expected Volatility	Risk Free Interest Rate	Grant Date Fair Value
2020	2/24/2020	3 years	27.04 %	1.21 %	\$357.38
2019	2/25/2019	3 years	23.88 %	2.46 %	466.04
2018	2/26/2018	3 years	22.11 %	2.36 %	390.27

PBRU activity for the year ended December 31, 2020 was as follows:

	Executive Long-Term Incentive Program
Number of units:	
Outstanding at beginning of year	826,126
Granted	290,202
Performance based adjustment ⁽¹⁾	293,203
Dividends	27,299
Forfeited	(83,055)
Distributed	(732,216)
Outstanding at end of year	621,559
Unrecognized compensation cost	\$93
Weighted average remaining contractual life (years)	1.8

⁽¹⁾ Represents net incremental number of units issued at vesting based on TSR for units granted in 2017.

Performance Awards

During 2020, 2019 and 2018, we granted Performance Awards to our executives, which are cash units that pay out based on the achievement of long-term financial goals at the end of a three-year period. Each unit has an initial value of \$100 dollars. The amount payable at the end of the three-year performance period may be anywhere from \$0 to \$200 dollars per unit for the 2019 and 2018 Performance Awards and \$0 to \$150 dollars for 2020 Performance Awards, depending on the Company's performance against plan for a three-year period. The Compensation Committee has the discretion to pay these awards in cash, stock, or a combination of both after the three-year performance period. Compensation expense, based on the estimated performance payout, is recognized ratably over the performance period.

The minimum payout amount is \$0 and the maximum amount we could be required to pay out for the 2020, 2019 and 2018 Performance Awards is \$274, \$341 and \$331, respectively.

Deferred Compensation

The Company has deferred compensation plans which permit certain employees to defer a portion of their salary, bonus, certain other incentive awards, and retirement contributions. Participants can diversify these amounts among 23 investment funds including a Boeing stock unit account.

Total expense related to deferred compensation was \$93, \$174 and \$19 in 2020, 2019 and 2018, respectively. As of December 31, 2020 and 2019, the deferred compensation liability which is being marked to market was \$1,718 and \$1,779.

Note 18 – Shareholders' Equity

On December 17, 2018, the Board approved a repurchase plan for up to \$20,000 of common stock. In March 2020, the Board of Directors terminated its prior authorization to repurchase shares under this plan.

As of December 31, 2020 and 2019, there were 1,200,000,000 shares of common stock and 20,000,000 shares of preferred stock authorized. No preferred stock has been issued.

Changes in Share Balances

The following table shows changes in each class of shares:

	Common Stock	Treasury Stock
Balance at January 1, 2018	1,012,261,159	421,222,326
Issued		(3,409,330)
Acquired		26,806,974
Balance at December 31, 2018	1,012,261,159	444,619,970
Issued		(2,797,002)
Acquired		7,529,437
Balance at December 31, 2019	1,012,261,159	449,352,405
Issued		(19,986,868)
Acquired		575,484
Balance at December 31, 2020	1,012,261,159	429,941,021

Accumulated Other Comprehensive Loss

Changes in Accumulated other comprehensive loss (AOCI) by component for the years ended December 31, 2020, 2019 and 2018 were as follows:

	Currency Translation Adjustments	Unrealized Gains and Losses on Certain Investments	Unrealized Gains and Losses on Derivative Instruments	Defined Benefit Pension Plans & Other Postretirement Benefits	Total ⁽¹⁾
Balance at January 1, 2018	(\$15)	(\$2)	\$54	(\$16,410)	(\$16,373)
Other comprehensive (loss)/income before reclassifications	(86)	2	(146)	747	517
Amounts reclassified from AOCI			30	743 ⁽²⁾	773
Net current period Other comprehensive (loss)/income	(86)	2	(116)	1,490	1,290
Balance at December 31, 2018	(\$101)	\$—	(\$62)	(\$14,920)	(\$15,083)
Other comprehensive income/(loss) before reclassifications	(27)	1	(48)	(1,397)	(1,471)
Amounts reclassified from AOCI			26	375 ⁽²⁾	401
Net current period Other comprehensive (loss)/income	(27)	1	(22)	(1,022)	(1,070)
Balance at December 31, 2019	(\$128)	\$1	(\$84)	(\$15,942)	(\$16,153)
Other comprehensive (loss)/income before reclassifications	98		14	(1,929)	(1,817)
Amounts reclassified from AOCI			27	810 ⁽²⁾	837
Net current period Other comprehensive (loss)/income	98		41	(1,119)	(980)
Balance at December 31, 2020	(\$30)	\$1	(\$43)	(\$17,061)	(\$17,133)

⁽¹⁾ Net of tax.

⁽²⁾ Primarily relates to amortization of actuarial losses for the years ended December 31, 2020, 2019, and 2018 totaling \$917, \$464, and \$878 (net of tax of (\$52), (\$133), and (\$242)), respectively. These are included in the net periodic pension cost. See Note 16.

Note 19 – Derivative Financial Instruments

Cash Flow Hedges

Our cash flow hedges include foreign currency forward contracts, commodity swaps and commodity purchase contracts. We use foreign currency forward contracts to manage currency risk associated with certain transactions, specifically forecasted sales and purchases made in foreign currencies. Our foreign currency contracts hedge forecasted transactions through 2025. We use commodity derivatives, such as fixed-price purchase commitments and swaps to hedge against potentially unfavorable price changes for items used in production. Our commodity contracts hedge forecasted transactions through 2029.

We continue to monitor the effects of the COVID-19 pandemic on our cash flow hedges, including reductions in our forecasted purchases of certain commodities. As of December 31, 2020, the impact of the COVID-19 pandemic on our cash flow hedges was not significant.

Derivative Instruments Not Receiving Hedge Accounting Treatment

We have entered into agreements to purchase and sell aluminum to address long-term strategic sourcing objectives and non-U.S. business requirements. These agreements are derivative instruments for accounting purposes. The quantities of aluminum in these agreements offset and are priced at prevailing market prices. We also hold certain foreign currency forward contracts and commodity swaps which do not qualify for hedge accounting treatment.

Notional Amounts and Fair Values

The notional amounts and fair values of derivative instruments in the Consolidated Statements of Financial Position as of December 31 were as follows:

	Notional amounts ⁽¹⁾		Other assets		Accrued liabilities	
	2020	2019	2020	2019	2020	2019
Derivatives designated as hedging instruments:						
Foreign exchange contracts	\$2,594	\$2,590	\$81	\$29	(\$24)	(\$60)
Commodity contracts	404	645	4	4	(43)	(72)
Derivatives not receiving hedge accounting treatment:						
Foreign exchange contracts	769	285	22	1	(16)	(6)
Commodity contracts	904	1,644			(17)	
Total derivatives	\$4,671	\$5,164	107	34	(100)	(138)
Netting arrangements			(31)	(20)	31	20
Net recorded balance			\$76	\$14	(\$69)	(\$118)

(1) Notional amounts represent the gross contract/notional amount of the derivatives outstanding.

Gains/(losses) associated with our hedging transactions and forward points recognized in Other comprehensive income are presented in the following table:

Years ended December 31,	2020	2019
Recognized in Other comprehensive income, net of taxes:		
Foreign exchange contracts	\$44	\$15
Commodity contracts	(30)	(63)

Gains/(losses) associated with our hedging transactions and forward points reclassified from AOCI to earnings are presented in the following table:

Years ended December 31,	2020	2019
Foreign exchange contracts		
Revenues	(\$3)	
Costs and expenses	(14)	(\$26)
General and administrative	(6)	(9)
Commodity contracts		
Costs and expenses	(\$10)	\$1
General and administrative expense	(1)	1

Gains/(losses) related to undesignated derivatives on foreign exchange and commodity cash flow hedging transactions recognized in Other income, net were insignificant for the years ended December 31, 2020 and December 31, 2019.

Based on our portfolio of cash flow hedges, we expect to reclassify gains of \$2 (pre-tax) out of Accumulated other comprehensive loss into earnings during the next 12 months.

We have derivative instruments with credit-risk-related contingent features. For foreign exchange contracts with original maturities of at least five years, our derivative counterparties could require settlement if we default on our five-year credit facility. For certain commodity contracts, our counterparties could require collateral posted in an amount determined by our credit ratings. The fair value of foreign exchange and commodity contracts that have credit-risk-related contingent features that are in a net liability position at December 31, 2020 was \$3. At December 31, 2020, there was no collateral posted related to our derivatives.

Note 20 – Fair Value Measurements

The fair value hierarchy has three levels based on the reliability of the inputs used to determine fair value. Level 1 refers to fair values determined based on quoted prices in active markets for identical assets. Level 2 refers to fair values estimated using significant other observable inputs, and Level 3 includes fair values estimated using significant unobservable inputs. The following table presents our assets and liabilities that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy.

	December 31, 2020			December 31, 2019		
	Total	Level 1	Level 2	Total	Level 1	Level 2
Assets						
Money market funds	\$2,230	\$2,230		\$2,562	\$2,562	
Available-for-sale debt investments:						
Commercial paper	149		\$149	108		\$108
Corporate notes	333		333	242		242
U.S. government agencies	114		114	55	55	
Other equity investments	54	54		33	33	
Derivatives	76		76	14		\$14
Total assets	\$2,956	\$2,284	\$672	\$3,014	\$2,650	\$364
Liabilities						
Derivatives	(\$69)		(\$69)	(\$118)		(\$118)
Total liabilities	(\$69)		(\$69)	(\$118)		(\$118)

Money market funds, available-for-sale debt investments and equity securities are valued using a market approach based on the quoted market prices or broker/dealer quotes of identical or comparable instruments.

Derivatives include foreign currency and commodity contracts. Our foreign currency forward contracts are valued using an income approach based on the present value of the forward rate less the contract rate multiplied by the notional amount. Commodity derivatives are valued using an income approach based on the present value of the commodity index prices less the contract rate multiplied by the notional amount.

Certain assets have been measured at fair value on a nonrecurring basis using significant unobservable inputs (Level 3). The following table presents the nonrecurring losses recognized for the years ended December 31 due to long-lived asset impairment, and the fair value and asset classification of the related assets as of the impairment date:

	2020		2019	
	Fair Value	Total Losses	Fair Value	Total Losses
Investments	\$22	(\$81)	\$27	(\$109)
Customer financing assets	105	(24)	\$111	(20)
Other assets and Acquired intangible assets	298	(221)	4	(310)
Property, plant and equipment	79	(84)	41	(4)
Total	\$504	(\$410)	\$183	(\$443)

Investments, Property, plant and equipment, Other assets and Acquired intangible assets were primarily valued using an income approach based on the discounted cash flows associated with the underlying assets. The fair value of the impaired customer financing assets includes operating lease equipment and investments in sales type-leases/finance leases, and is derived by calculating a median collateral value from a consistent group of third party aircraft value publications. The values provided by the third party aircraft publications are derived from their knowledge of market trades and other market factors. Management reviews the publications quarterly to assess the continued appropriateness and consistency with market trends. Under certain circumstances, we adjust values based on the attributes and condition of the specific aircraft or equipment, usually when the features or use of the aircraft vary significantly from the more generic aircraft attributes covered by third party publications, or on the expected net sales price for the aircraft.

For Level 3 assets that were measured at fair value on a nonrecurring basis during the year ended December 31, 2020, the following table presents the fair value of those assets as of the measurement date, valuation techniques and related unobservable inputs of those assets.

	Fair Value	Valuation Technique(s)	Unobservable Input	Range Median or Average
Customer financing assets	\$105	Market approach	Aircraft value publications Aircraft condition adjustments	\$85 - \$169 ⁽¹⁾ Median \$116 (\$14) - \$3 ⁽²⁾ Net (\$11)

(1) The range represents the sum of the highest and lowest values for all aircraft subject to fair value measurement, according to the third party aircraft valuation publications that we use in our valuation process.

(2) The negative amount represents the sum, for all aircraft subject to fair value measurement, of all downward adjustments based on consideration of individual aircraft attributes and condition. The positive amount represents the sum of all such upward adjustments.

Fair Value Disclosures

The fair values and related carrying values of financial instruments that are not required to be remeasured at fair value on the Consolidated Statements of Financial Position at December 31 were as follows:

	December 31, 2020				
	Carrying Amount	Total Fair Value	Level 1	Level 2	Level 3
Assets					
Notes receivable, net	\$420	\$488		\$488	
Liabilities					
Debt, excluding finance lease obligations	(63,380)	(72,357)		(72,342)	(\$15)

December 31, 2019

	Carrying Amount	Total Fair Value	Level 1	Level 2	Level 3
Assets					
Notes receivable, net	\$443	\$444		\$444	
Liabilities					
Debt, excluding finance lease obligations and commercial paper	(20,964)	(23,119)		(23,081)	(\$38)

The fair values of notes receivable are estimated with discounted cash flow analysis using interest rates currently offered on loans with similar terms to borrowers of similar credit quality. The fair value of our debt that is traded in the secondary market is classified as Level 2 and is based on current market yields. For our debt that is not traded in the secondary market, the fair value is classified as Level 3 and is based on our indicative borrowing cost derived from dealer quotes or discounted cash flows. The fair values of our debt classified as Level 3 are based on discounted cash flow models using the implied yield from similar securities. With regard to other financial instruments with off-balance sheet risk, it is not practicable to estimate the fair value of our indemnifications and financing commitments because the amount and timing of those arrangements are uncertain. Items not included in the above disclosures include cash, restricted cash, time deposits and other deposits, commercial paper, money market funds, Accounts receivable, Unbilled receivables, Other current assets, Accounts payable and long-term payables. The carrying values of those items, as reflected in the Consolidated Statements of Financial Position, approximate their fair value at December 31, 2020 and 2019. The fair value of assets and liabilities whose carrying value approximates fair value is determined using Level 2 inputs, with the exception of cash (Level 1).

Note 21 – Legal Proceedings

Various legal proceedings, claims and investigations related to products, contracts, employment and other matters are pending against us.

In addition, we are subject to various U.S. government inquiries and investigations from which civil, criminal or administrative proceedings could result or have resulted in the past. Such proceedings involve or could involve claims by the government for fines, penalties, compensatory and treble damages, restitution and/or forfeitures. Under government regulations, a company, or one or more of its operating divisions or subdivisions, can also be suspended or debarred from government contracts, or lose its export privileges, based on the results of investigations. Except as described below, we believe, based upon current information, that the outcome of any such legal proceeding, claim, or government dispute and investigation will not have a material effect on our financial position, results of operations, or cash flows. Where it is reasonably possible that we will incur losses in excess of recorded amounts in connection with any of the matters set forth below, we will disclose either the amount or range of reasonably possible losses in excess of such amounts or, where no such amount or range can be reasonably estimated, the reasons why no such estimate can be made.

Multiple legal actions have been filed against us as a result of the October 29, 2018 accident of Lion Air Flight 610 and the March 10, 2019 accident of Ethiopian Airlines Flight 302. Further, we are subject to, and cooperating with ongoing governmental and regulatory investigations and inquiries relating to the accidents and the 737 MAX, including an investigation by the Securities and Exchange Commission, the outcome of which may be material. Other than with respect to the agreement described below with the U.S. Department of Justice, we cannot reasonably estimate a range of loss, if any, not covered by available insurance that may result given the current status of the pending lawsuits, investigations, and inquiries related to the 737 MAX.

On January 6, 2021, we entered into a Deferred Prosecution Agreement with the U.S. Department of Justice that resolves the Department of Justice's previously disclosed investigation into us regarding the evaluation of the 737 MAX airplane by the Federal Aviation Administration. Under the terms of the Deferred Prosecution Agreement, we agreed to the filing of a criminal information charging the Company with one count of conspiracy to defraud the United States, based on the conduct of two former 737 MAX program technical pilots; the criminal information will be dismissed after three years, provided that we comply with our obligations under the agreement. The Deferred Prosecution Agreement requires that we make payments totaling \$2.51 billion, which consist of (a) a \$243.6 million criminal monetary penalty; (b) \$500 million in additional compensation to the heirs and/or beneficiaries of those who died in the Lion Air Flight 610 and Ethiopian Airlines Flight 302 accidents; and (c) \$1.77 billion to the Company's airline customers for harm incurred as a result of the grounding of the 737 MAX, offset in part by payments already made and the remainder satisfied through payments to be made prior to the termination of the Deferred Prosecution Agreement. The agreement also requires that we review our compliance program and undertake continuous improvement efforts with respect to it, and implement enhanced compliance reporting and internal controls mechanisms. Of the payments described above, \$1.77 billion has been included in amounts reserved in prior quarters for 737 MAX customer considerations. We incurred earnings charges equal to the remaining \$743.6 million in the fourth quarter of 2020 related to this agreement.

During 2019, we entered into agreements with Embraer S.A. (Embraer) to establish joint ventures that included the commercial aircraft and services operations of Embraer, of which we were expected to acquire an 80 percent ownership stake for \$4,200, as well as a joint venture to promote and develop new markets for the C-390 Millennium. In 2020, we exercised our contractual right to terminate these agreements based on Embraer's failure to meet certain required closing conditions. Embraer has disputed our right to terminate the agreements, and the dispute is currently in arbitration. We cannot reasonably estimate a range of loss, if any, that may result from the arbitration.

Note 22 – Segment and Revenue Information

Effective at the beginning of 2020, certain programs were realigned between our BDS segment and Unallocated items, eliminations and other. Business segment data for 2019 and 2018 has been adjusted to reflect the realignment.

Our primary profitability measurements to review a segment's operating results are Earnings/(loss) from operations and operating margins. We operate in four reportable segments: BCA, BDS, BGS, and BCC. All other activities fall within Unallocated items, eliminations and other. See page 67 for the Summary of Business Segment Data, which is an integral part of this note.

BCA develops, produces and markets commercial jet aircraft principally to the commercial airline industry worldwide. Revenue on commercial aircraft contracts is recognized at the point in time when an aircraft is completed and accepted by the customer.

BDS engages in the research, development, production and modification of the following products and related services: manned and unmanned military aircraft and weapons systems, surveillance and engagement, strategic defense and intelligence systems, satellite systems and space exploration. BDS revenue is generally recognized over the contract term (over time) as costs are incurred.

BGS provides parts, maintenance, modifications, logistics support, training, data analytics and information-based services to commercial and government customers worldwide. BGS segment revenue and costs include certain products and services provided to other segments. Revenue on commercial spare parts contracts is recognized at the point in time when a spare part is delivered to the customer. Revenue on other contracts is generally recognized over the contract term (over time) as costs are incurred.

BCC facilitates, arranges, structures and provides selective financing solutions for our customers.

While our principal operations are in the United States, Canada and Australia, some key suppliers and subcontractors are located in Europe and Japan. Revenues, including foreign military sales, are reported by customer location and consisted of the following:

Years ended December 31,	2020	2019	2018
Europe	\$7,961	\$10,366	\$12,976
Asia, other than China	4,128	10,662	12,141
Middle East	5,308	9,272	9,745
China	1,803	5,684	13,764
Canada	1,302	2,019	2,583
Oceania	832	2,006	2,298
Africa	114	1,113	1,486
Latin America, Caribbean and other	229	1,015	1,458
Total non-U.S. revenues	21,677	42,137	56,451
United States	36,979	42,681	44,676
Estimated potential concessions and other considerations to 737 MAX customers, net ⁽¹⁾	(498)	(8,259)	
Total revenues	\$58,158	\$76,559	\$101,127

(1) Net of insurance recoveries

Revenues from the U.S. government (including foreign military sales through the U.S. government), primarily recorded at BDS and BGS, represented 51%, 39%, and 31% of consolidated revenues for 2020, 2019, and 2018, respectively. Approximately 4% of operating assets were located outside the United States as of December 31, 2020 and 2019.

The following tables present BCA, BDS and BGS revenues from contracts with customers disaggregated in a number of ways, such as geographic location, contract type and the method of revenue recognition. We believe these best depict how the nature, amount, timing and uncertainty of our revenues and cash flows are affected by economic factors.

BCA revenues by customer location consisted of the following:

Years ended December 31,	2020	2019	2018
Revenue from contracts with customers:			
Europe	\$3,872	\$5,829	\$9,719
Middle East	1,647	5,761	5,876
Asia, other than China	1,408	7,395	8,274
China	1,271	5,051	13,068
Other	513	3,450	5,185
Total non-U.S. revenues	8,711	27,486	42,122
United States	7,899	12,676	15,347
Estimated potential concessions and other considerations to 737 MAX customers, net ⁽¹⁾	(498)	(8,259)	
Total revenues from contracts with customers	16,112	31,903	57,469
Intersegment revenues, eliminated on consolidation	50	352	30
Total segment revenues	\$16,162	\$32,255	\$57,499
Revenue recognized on fixed-price contracts	100 %	100 %	100 %
Revenue recognized at a point in time	100 %	100 %	100 %

⁽¹⁾ Net of insurance recoveries

BDS revenues on contracts with customers, based on the customer's location, consisted of the following:

Years ended December 31,	2020	2019	2018
Revenue from contracts with customers:			
U.S. customers	\$19,662	\$19,465	\$19,488
Non-U.S. customers ⁽¹⁾	6,595	6,630	6,812
Total segment revenue from contracts with customers	\$26,257	\$26,095	\$26,300
Revenue recognized over time	98 %	98 %	98 %
Revenue recognized on fixed-price contracts	69 %	70 %	70 %
Revenue from the U.S. government ⁽¹⁾	89 %	89 %	88 %

⁽¹⁾ Includes revenues earned from foreign military sales through the U.S. government.

BGS revenues consisted of the following:

Years ended December 31,	2020	2019	2018
Revenue from contracts with customers:			
Commercial	\$6,936	\$10,167	\$9,227
Government	8,368	8,107	7,658
Total revenues from contracts with customers	15,304	18,274	16,885
Intersegment revenues eliminated on consolidation	239	194	171
Total segment revenues	\$15,543	\$18,468	\$17,056
<hr/>			
Revenue recognized at a point in time	47 %	55 %	54 %
Revenue recognized on fixed-price contracts	87 %	90 %	90 %
Revenue from the U.S. government ⁽¹⁾	41 %	34 %	36 %

⁽¹⁾ Includes revenues earned from foreign military sales through the U.S. government.

Earnings in Equity Method Investments

We recorded Earnings from operations associated with our equity method investments of \$86, \$90 and \$167, primarily in our BDS segment, for the years ended December 31, 2020, 2019 and 2018, respectively.

Backlog

Our total backlog represents the estimated transaction prices on performance obligations to our customers for which work remains to be performed. Backlog is converted into revenue in future periods as work is performed, primarily based on the cost incurred or at delivery and acceptance of products, depending on the applicable accounting method.

Our backlog at December 31, 2020 was \$363,404. We expect approximately 20% to be converted to revenue through 2021 and approximately 66% through 2024, with the remainder thereafter. There is significant uncertainty regarding the timing of when backlog will convert into revenue due to the 737 MAX grounding in non-U.S. jurisdictions, entry into service of the 777X, 737 MAX 7 and/or 737 MAX 10, and COVID-19 impacts.

Unallocated Items, Eliminations and other

Unallocated items, eliminations and other include common internal services that support Boeing's global business operations, intercompany guarantees provided to BCC and eliminations of certain sales between segments. Such sales include airplanes accounted for as operating leases and considered transferred to the BCC segment. We generally allocate costs to business segments based on the U.S. federal cost accounting standards. Components of Unallocated items, eliminations and other are shown in the following table.

Years ended December 31,	2020	2019	2018
Share-based plans	(\$120)	(\$65)	(\$76)
Deferred compensation	(93)	(174)	(19)
Amortization of previously capitalized interest	(95)	(89)	(92)
Research and development expense, net	(240)	(401)	(144)
Customer financing impairment		(250)	
Litigation		(109)	(148)
Eliminations and other unallocated items	(1,807)	(985)	(998)
Unallocated items, eliminations and other	(\$2,355)	(\$2,073)	(\$1,477)
Pension FAS/CAS service cost adjustment	\$1,024	\$1,071	\$1,005
Postretirement FAS/CAS service cost adjustment	359	344	322
FAS/CAS service cost adjustment	\$1,383	\$1,415	\$1,327

Pension and Other Postretirement Benefit Expense

Pension costs, comprising GAAP service and prior service costs, are allocated to BCA and the commercial operations at BGS. Pension costs are allocated to BDS and BGS businesses supporting government customers using U.S. Government Cost Accounting Standards (CAS), which employ different actuarial assumptions and accounting conventions than GAAP. These costs are allocable to government contracts. Other postretirement benefit costs are allocated to business segments based on CAS, which is generally based on benefits paid. FAS/CAS service cost adjustment represents the difference between the Financial Accounting Standards (FAS) pension and postretirement service costs calculated under GAAP and costs allocated to the business segments. Non-operating pension and postretirement expenses represent the components of net periodic benefit costs other than service cost. These expenses are included in Other income, net.

Assets

Segment assets are summarized in the table below.

December 31,	2020	2019
Commercial Airplanes	\$77,973	\$73,995
Defense, Space & Security	14,256	15,757
Global Services	17,399	18,605
Boeing Capital	1,978	2,269
Unallocated items, eliminations and other	40,530	22,999
Total	\$152,136	\$133,625

Assets included in Unallocated items, eliminations and other primarily consist of Cash and cash equivalents, Short-term and other investments, tax assets, capitalized interest, assets managed centrally on behalf of the four principal business segments and intercompany eliminations. From December 31, 2019 to December 31, 2020, assets in BCA increased primarily due to higher inventory balances and assets in Unallocated items, eliminations, and other increased due to higher cash and short-term investment balances from debt issued throughout 2020.

Capital Expenditures

Years ended December 31,	2020	2019	2018
Commercial Airplanes	\$322	\$433	\$604
Defense, Space & Security	172	189	201
Global Services	127	218	231
Unallocated items, eliminations and other	682	994	686
Total	\$1,303	\$1,834	\$1,722

Capital expenditures for Unallocated items, eliminations and other relate primarily to assets managed centrally on behalf of the four principal business segments.

Depreciation and Amortization

Years ended December 31,	2020	2019	2018
Commercial Airplanes	\$559	\$580	\$565
Defense, Space & Security	251	256	270
Global Services	408	424	348
Boeing Capital Corporation	66	64	58
Centrally Managed Assets ⁽¹⁾	962	947	873
Total	\$2,246	\$2,271	\$2,114

⁽¹⁾ Amounts shown in the table represent depreciation and amortization expense recorded by the individual business segments. Depreciation and amortization for centrally managed assets are included in segment operating earnings based on usage and occupancy. In 2020, \$689 was included in the primary business segments, of which \$397, \$236, and \$56 was included in BCA, BDS and BGS, respectively. In 2019, \$717 was included in the primary business segments, of which \$407, \$257, and \$53 was included in BCA, BDS and BGS, respectively. In 2018, \$692 was included in the primary business segments, of which \$417, \$213, and \$62 was included in BCA, BDS and BGS, respectively.

Note 23 – Quarterly Financial Data (Unaudited)

	2020				2019			
	4th	3rd	2nd	1st	4th	3rd	2nd	1st
Total revenues	\$15,304	\$14,139	\$11,807	\$16,908	\$17,911	\$19,980	\$15,751	\$22,917
Total costs and expenses	(20,992)	(13,105)	(12,978)	(16,768)	(18,708)	(16,930)	(17,810)	(18,645)
(Loss)/earnings from operations	(8,049)	(401)	(2,964)	(1,353)	(2,204)	1,259	(3,380)	2,350
Net (loss)/earnings attributable to Boeing Shareholders	(8,420)	(449)	(2,376)	(628)	(1,010)	1,167	(2,942)	2,149
Basic (loss)/earnings per share	(14.65)	(0.79)	(4.20)	(1.11)	(1.79)	2.07	(5.21)	3.79
Diluted (loss)/earnings per share	(14.65)	(0.79)	(4.20)	(1.11)	(1.79)	2.05	(5.21)	3.75

Gross profit is calculated as Total revenues minus Total costs and expenses. Total costs and expenses includes Cost of products, Cost of services and Boeing Capital interest expense.

During the first quarter of 2020, we recorded \$797 of abnormal production costs related to 737 MAX, \$336 related to 737NG frame fitting component repair costs, \$137 of abnormal production costs from the temporary suspension of Puget Sound production in response to COVID-19, and a \$168 reach-forward loss on VC-25B. During the first quarter of 2019, we concluded that lease incentives granted to a customer that experienced liquidity issues were impaired and recorded a charge of \$250.

During the second quarter of 2020, we recorded \$859 of charges at BGS related to asset impairments, \$712 of abnormal production costs related to the 737 MAX, \$652 of severance costs, and \$133 of abnormal production costs from the temporary suspension of Puget Sound production in response to COVID-19. During the second quarter of 2019, we recorded a charge of \$109 related to ongoing litigation associated with recoverable costs on U.S. government contracts.

During the third quarter of 2020, we recorded \$590 of abnormal production costs related to the 737 MAX and \$328 of severance costs.

During the fourth quarter of 2020, we recorded a reach-forward loss on the 777X program of \$6,493, abnormal production costs related to the 737 MAX of \$468 and asset impairments of \$290 at BGS. Additionally, we recorded an increase to our valuation allowances and a tax benefit of \$587 related to the settlement of the 2015-2017 federal tax audit. See Note 4. During the fourth quarter of 2019, we recorded a divestiture gain of \$395 and a tax benefit of \$371 related to the settlement of state tax audits spanning 15 tax years. Additionally, we recorded an impairment of \$293 as a result of our decision to retire the Aviall brand and trade name, and an increase to the reach-forward loss on Commercial Crew of \$410.

We recorded a reduction to revenue in the second and fourth quarters of 2020 of \$551 and \$128 for 737 MAX customer considerations. In the third quarter of 2020, we recorded an increase to revenue of \$151 for 737 MAX customer considerations. During the second and fourth quarters of 2019, we recorded a reduction to revenue of \$5,610 and \$2,619 for 737 MAX customer considerations, net of insurance recoveries.

We recorded an increase to the reach-forward loss on KC-46A Tanker in the first, second, third, and fourth quarters of 2020 of \$827, \$151, \$67 and \$275, respectively. In the fourth quarter of 2019, we recorded an increase to the reach-forward loss on KC-46A Tanker of \$108.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of The Boeing Company

Opinion on the Financial Statements

We have audited the accompanying consolidated statements of financial position of The Boeing Company and subsidiaries (the "Company") as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive income, equity, and cash flows, for each of the three years in the period ended December 31, 2020, and the related notes (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, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020, 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, 2020, 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 February 1, 2021, 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 Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate 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 matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Cost Estimates for Fixed-Price Development Contracts – Refer to Notes 1 and 13 to the financial statements

Critical Audit Matter Description

As more fully described in Notes 1 and 13 to the consolidated financial statements, the Company recognizes revenue over time for long-term contracts as goods are produced or services are rendered. The Company uses costs incurred as the method for determining progress, and revenue is recognized based on costs incurred to date plus an estimate of margin at completion. The process of estimating margin at completion involves estimating the costs to complete production of goods or rendering of services and comparing those costs to the estimated final revenue amount. Fixed-price development contracts are inherently uncertain in that revenue is fixed while the estimates of costs required to complete these contracts are subject to significant variability. Due to the technical performance requirements in many of these contracts, changes to cost estimates could occur, resulting in lower margins or material reach-forward losses.

Given the complexity of certain of the Company's fixed-price development contracts, including the KC-46A Tanker, Commercial Crew, and United States Air Force VC-25B Presidential Aircraft contracts, the limited amount of historical data available in certain instances and significant judgments necessary to estimate future costs at completion, auditing these estimates involved extensive audit effort and a high degree of auditor judgment and required audit professionals with specialized industry experience.

How the Critical Audit Matter Was Addressed in the Audit

Our auditing procedures related to the cost estimates for the KC-46A Tanker, Commercial Crew, and United States Air Force VC-25B Presidential Aircraft fixed-price development contracts included the following, among others:

- We evaluated the appropriateness and consistency of management's methods used in developing its estimates.
- We evaluated the reasonableness of judgments made and significant assumptions used by management relating to key estimates, including the range and probability of possible outcomes.
- We performed inquiries of the Company's project managers and others directly involved with the contracts to evaluate project status and project challenges which may affect total estimated costs to complete. We also observed the project work site when key estimates related to tangible or physical progress of the project.
- We tested the accuracy and completeness of the data used in developing key estimates. We developed independent expectations of likely outcomes using, in part, the program's data and compared our expectations to management's estimates.
- We tested the effectiveness of controls over the review of judgments made and significant assumptions used to develop key estimates, including controls over the data used in developing the estimates and the mathematical extrapolation of such data.
- We performed retrospective reviews, comparing actual performance to estimated performance and the related financial statement impact, when evaluating the thoroughness and precision of management's estimation process and effectiveness of related internal controls.

Program Accounting Estimates for the 777X Program – Refer to Notes 1 and 7 to the financial statements

Critical Audit Matter Description

The introduction of new aircraft programs involves increased risk associated with meeting development, certification and production schedules. The Company uses program accounting in order to compute cost of sales and margin for each commercial airplane sold. The use of program accounting requires estimating and demonstrating customer demand for the number of units included in the program (program accounting quantity) and estimating the sales and costs over the expected life of each program. In particular, estimating the initial program accounting quantity and revenue for unsold units within the program accounting quantity involves measurement uncertainty resulting in a range of possible outcomes. Additionally, the level of effort to meet regulatory requirements and achieve certification may be challenging to predict, resulting in delays in the timing of entry into service and corresponding increases in estimated costs. Changes to the program accounting quantity or revenue and cost estimates could occur, resulting in lower margins or material reach-forward losses. Auditing the estimated revenues and costs for the 777X program involved extensive audit effort and required professionals with specialized industry experience given the high degree of complexity and subjectivity related to management's estimates.

How the Critical Audit Matter Was Addressed in the Audit

Our auditing procedures over the estimated revenues and costs for the 777X program accounting quantity included the following, among others:

- We inquired of the Company's management, including individuals responsible for sales and pricing, to evaluate the status of current sales campaigns, short and long-term market demand, and status of negotiations with individual sold firm customers.
- We compared management's estimate of market demand to external industry sources of expected demand.
- We evaluated the appropriateness and consistency of management's methods and significant assumptions used in developing its estimates related to the initial program accounting quantity and revenue for unsold units.
- We evaluated management's ability to estimate program revenue by comparison to historical estimates and actual results on similar programs.
- We evaluated the appropriateness and consistency of management's methods used in developing its cost estimates.
- Performed inquiries of those directly involved with the certification of the aircraft to evaluate project status and challenges which may affect total estimated costs to certify the aircraft.
- We tested the effectiveness of controls including those over the data used in developing the estimates, the mathematical extrapolation of such data, and management's judgment regarding the range of possible outcomes relating to the specific estimates.

Liabilities related to the 737 MAX Grounding – Refer to Notes 13 and 21 to the financial statements

Critical Audit Matter Description

In 2019, following two fatal 737 MAX accidents, the Federal Aviation Administration (FAA) and non-U.S. civil aviation authorities issued orders suspending commercial operations of 737 MAX aircraft (the “737 MAX Grounding”). Deliveries resumed in the U.S. in late 2020 following rescission by the FAA of its grounding order. The 737 MAX remains grounded in certain non-U.S. jurisdictions. In addition, multiple legal actions have been filed against the Company following the fatal accidents and various governmental and regulatory investigations and inquiries continue relating to the accidents and the 737 MAX aircraft.

During 2019, the Company recorded an initial liability in connection with estimated payments, concessions and other in-kind consideration it intends to provide to customers for disruptions related to the 737 MAX Grounding and associated delivery delays. This liability totaled \$5.5 billion at December 31, 2020 and is reflected in the financial statements in Accrued liabilities. This represents the Company’s best estimate of future concessions and other consideration to its customers, and is necessarily based on individual negotiations with customers and the substance of such negotiations.

Significant judgment is involved in management’s ability to assess and reasonably estimate potential additional financial statement effects or a range of loss, if any, resulting from the outcome of 737 MAX-related litigation and the results of the various ongoing governmental and regulatory investigations and inquiries related to the 737 MAX.

The subjectivity of the liability associated with providing consideration to customers resulting from the 737 MAX Grounding and the complexity of assessing the outcome of the ongoing litigation and investigations related to the 737 MAX required a high degree of auditor judgment and increased audit effort.

How the Critical Audit Matter Was Addressed in the Audit

Our auditing procedures associated with liabilities related to the 737 MAX Grounding included the following, among others:

- We inquired of management to understand developments with the 737 MAX Grounding, including the status of regulatory approval for return to service in various foreign jurisdictions and the status of consideration negotiations with individual customers.
- We obtained written representations from management concerning its intent to provide consideration to customers and the extent of that consideration.
- We tested the effectiveness of controls related to nonrecurring items and loss contingencies associated with litigation, claims and assessments.
- We evaluated the significant assumptions used by management to estimate the liability for customer consideration, including the timing and conditions of 737 MAX return to service in various foreign jurisdictions, and, where possible, we corroborated the significant assumptions with management outside of the accounting and finance organizations.
- We reviewed the terms of customer contracts and correspondence with customers concerning potential consideration as a result of the 737 MAX Grounding.

- We evaluated the terms of settlement agreements with customers for the allocation of value provided between consideration as a result of the 737 MAX Grounding and for consideration related to the impact of current economic conditions resulting from COVID-19.
- We evaluated delivery documents for 737 MAX deliveries for incremental value provided at delivery as potential consideration as a result of the 737 MAX Grounding.
- We inquired of internal and external legal counsel to understand developments related to contractual obligations to customers, litigation and other claims relating to the 737 MAX Grounding and progression in potential settlement discussions.
- We read minutes of meetings of the Board of Directors and its committees for evidence of unrecorded loss contingencies.
- We evaluated the Company's disclosures for consistency with our knowledge of matters related to the 737 MAX Grounding.

Income Taxes – Realizability of Deferred Tax Assets– Refer to Notes 1 and 4 to the financial statements

Critical Audit Matter Description

As more fully described in Notes 1 and 4 to the consolidated financial statements, the Company recognizes deferred income taxes for differences between the financial statement carrying amount and tax basis of assets and liabilities, measured using enacted statutory rates in effect for the years in which the basis differences are expected to reverse. A valuation allowance is provided to offset deferred tax assets if, based upon the available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. Future realization of deferred tax assets depends on the existence of sufficient taxable income of the appropriate character. Sources of taxable income typically include future reversals of deferred tax liabilities, future taxable income exclusive of reversals of deferred tax liabilities, and tax planning strategies. During 2020 the Company determined that it is not more likely than not that sufficient taxable income of the appropriate character will be generated in the future to realize all of its deferred tax assets; therefore, a valuation allowance has been recorded.

We identified the Company's determination that it is not more likely than not that sufficient taxable income will be generated in the future to realize all of its deferred tax assets as a critical audit matter because of the significant judgments and estimates made related to the timing of future reversals of deferred tax assets and liabilities. This required a high degree of auditor judgment and an increased extent of effort, including the need to involve our income tax specialists, when performing audit procedures to evaluate the reasonableness of management's methodologies and estimates.

How the Critical Audit Matter Was Addressed in the Audit

Our auditing procedures related to the timing of future reversals of deferred tax assets and liabilities included the following, among others:

- With the assistance of our income tax specialists, we evaluated the reasonableness of the methods, significant assumptions, and judgments used by management to determine whether it was more likely than not that the Company would be able to realize its deferred tax assets.
- We tested the Company's methodologies for scheduling the reversal of existing taxable and deductible temporary differences.

- We evaluated whether the estimates considered when determining future taxable income were consistent with the evidence obtained in other areas of the audit.
- We tested the effectiveness of controls over deferred tax assets and liabilities, including management's controls over determining the pattern of the reversals of deferred tax assets and liabilities.

/s/ Deloitte & Touche LLP

Chicago, Illinois
February 1, 2021

We have served as the Company's auditor since at least 1934; however, an earlier year could not be reliably determined.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of The Boeing Company

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of The Boeing Company and subsidiaries (the “Company”) as of December 31, 2020, 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, 2020, 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, 2020 of the Company, and our report dated February 1, 2021 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.

/s/ Deloitte & Touche LLP

Chicago, Illinois

February 1, 2021

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures.

Our Chief Executive Officer and Chief Financial Officer have evaluated our disclosure controls and procedures as of December 31, 2020 and have concluded that these disclosure controls and procedures are effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and is accumulated and communicated to our management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

(b) Management's Report on Internal Control Over Financial Reporting.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f). Our management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation under the framework in Internal Control – Integrated Framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2020.

Our internal control over financial reporting as of December 31, 2020, has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report which is included in Item 8 of this report and is incorporated by reference herein.

(c) Changes in Internal Controls Over Financial Reporting.

There were no changes in our internal control over financial reporting that occurred during the fourth quarter of 2020 that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

Item 9B. Other Information

None.

Part III**Item 10. Directors, Executive Officers and Corporate Governance**

Our executive officers and their ages as of February 1, 2021, are as follows:

Name	Age	Principal Occupation or Employment/Other Business Affiliations
Bertrand-Marc Allen	47	Chief Strategy Officer and Senior Vice President, Strategy and Corporate Development since October 2020. Mr. Allen previously served as Senior Vice President and President, Embraer Partnership and Group Operations from April 2019 to October 2020, Senior Vice President and President, Boeing International from February 2015 to April 2019; President of Boeing Capital Corporation from March 2014 to February 2015; Corporate Vice President, Boeing International and Chairman and President of Boeing (China) Co., Ltd. from March 2011 to March 2014; and Vice President, Global Law Affairs from May 2007 to March 2011.
Michael A. Arthur	70	Senior Vice President and President, Boeing International since April 2019. Mr. Arthur previously served as President of Boeing Europe from March 2016 to April 2019 and as Managing Director of Boeing United Kingdom and Ireland from September 2014 to April 2019.
David L. Calhoun	63	President and Chief Executive Officer since January 2020 and a member of the Board of Directors since June 2009. Previously, Mr. Calhoun served as Senior Managing Director & Head of Private Equity Portfolio Operations at The Blackstone Group from January 2014 to January 2020. Prior to that, Mr. Calhoun served as Chairman of the Board of Nielsen Holdings plc from January 2014 to January 2016, as Chief Executive Officer of Nielsen Holdings plc from May 2010 to January 2014, and as Chairman of the Executive Board and Chief Executive Officer of The Nielsen Company B.V. from August 2006 to January 2014. Prior to joining Nielsen, he served as Vice Chairman of General Electric Company and President and Chief Executive Officer of GE Infrastructure. During his 26-year tenure at GE, he ran multiple business units including GE Transportation, GE Aircraft Engines, GE Employers Reinsurance Corporation, GE Lighting and GE Transportation Systems. Mr. Calhoun also serves on the board of Caterpillar Inc.
Leanne G. Caret	54	Executive Vice President, President and Chief Executive Officer, Boeing Defense, Space & Security since March 2016. Ms. Caret joined Boeing in 1988, and her previous positions include President of Global Services & Support from February 2015 to March 2016; Chief Financial Officer and Vice President, Finance, for BDS from March 2014 to February 2015; Vice President and General Manager, Vertical Lift from November 2012 to February 2014; and Vice President and Program Manager, Chinook from November 2009 to October 2012.

Name	Age	Principal Occupation or Employment/Other Business Affiliations
Theodore Colbert III	47	Executive Vice President, President and Chief Executive Officer, Boeing Global Services since October 2019. Mr. Colbert previously served as Chief Information Officer and Senior Vice President, Information Technology & Data Analytics from April 2016 to October 2019; Chief Information Officer and Vice President of Information Technology from November 2013 to April 2016; Vice President of Information Technology Infrastructure from December 2011 to November 2013; and Vice President of IT Business Systems from September 2010 to December 2011.
Michael D'Ambrose	63	Executive Vice President, Human Resources since July 2020. Prior to joining Boeing, Mr. D'Ambrose served as Senior Vice President and Chief Human Resources Officer for Archer-Daniels-Midland Company from October 2006 to June 2020. Previously, he served in a series of executive-level business and human resources positions, including chief human resources officer at Citigroup, First Data Corporation and Toys 'R' Us, Inc.
Edward L. Dandridge	56	Senior Vice President, Communications since September 2020. Mr. Dandridge's prior experience includes serving as Global Chief Marketing and Communications Officer of AIG General Insurance from April 2018 to September 2020; Chief Marketing and Communications Officer of Marsh & McLennan Companies from March 2014 to April 2018; and Chief Marketing Officer of Collective from February 2013 to February 2014.
Stanley A. Deal	56	Executive Vice President, President and Chief Executive Officer, Boeing Commercial Airplanes since October 2019. Mr. Deal joined Boeing in 1986, and his previous positions include Executive Vice President, President and Chief Executive Officer, Boeing Global Services from November 2016 to October 2019; Senior Vice President of Commercial Aviation Services from March 2014 to November 2016; Vice President and General Manager of Supply Chain Management and Operations for Commercial Airplanes from September 2011 to February 2014; Vice President of Supplier Management from February 2010 to August 2011; and Vice President of Asia Pacific Sales from December 2006 to January 2010.
Susan Doniz	51	Chief Information Officer and Senior Vice President, Information Technology & Data Analytics since May 2020. Prior to joining Boeing, Ms. Doniz served as Global Chief Information Officer of Qantas Airways Limited from January 2017 to April 2020; as strategic advisor to the Global CEO of SAP SE on transformation and technology issues in support of customers from September 2015 to December 2017; and Global Product, Digital Strategy and Chief Information Officer of AIMIA Inc. from June 2011 to January 2015.
Brett C. Gerry	49	Chief Legal Officer and Executive Vice President, Global Compliance since May 2020. Mr. Gerry previously served as Senior Vice President and General Counsel from May 2019 to May 2020 President of Boeing Japan from February 2016 to May 2019; Vice President and General Counsel, Boeing Commercial Airplanes from March 2009 to March 2016; and Chief Counsel, Network and Space Systems from September 2008 to March 2009.

Name	Age	Principal Occupation or Employment/Other Business Affiliations
Gregory L. Hyslop	62	Chief Engineer and Executive Vice President, Engineering Test and Technology since December 2020. Dr. Hyslop's previous positions include Chief Engineer and Senior Vice President, Engineering Test and Technology from August 2019 to December 2020; Chief Technology Officer and Senior Vice President, Engineering Test and Technology from March 2016 to August 2019; Vice president and General Manager of Boeing Research and Technology from February 2013 to March 2016 and Vice President and General Manager of Boeing Strategic Missile & Defense Systems from March 2009 to February 2013.
Timothy J. Keating	59	Executive Vice President, Government Operations since February 2018. Mr. Keating joined Boeing in June 2008 as Senior Vice President, Government Operations. From October 2002 to May 2008 he served as Senior Vice President, Global Government Relations at Honeywell International Inc. Prior thereto, Mr. Keating was Chairman of the Board and Managing Partner of Timmons and Company (a Washington, D.C. lobbying firm).
Gregory D. Smith	53	Executive Vice President, Enterprise Operations and Chief Financial Officer since May 2020. He previously served as Chief Financial Officer and Executive Vice President, Enterprise Performance and Strategy from July 2017 to May 2020; Interim President and Chief Executive Officer from December 2019 to January 2020; Chief Financial Officer and Executive Vice President, Corporate Development and Strategy from February 2015 to June 2017; Executive Vice President, Chief Financial Officer from February 2012 to February 2015; Vice President of Finance and Corporate Controller from February 2010 to February 2012; and Vice President of Financial Planning & Analysis from June 2008 to February 2010. From August 2004 until June 2008, he served as Vice President of Global Investor Relations at Raytheon Company. Prior to that, he held a number of positions at Boeing including CFO, Shared Services Group; Controller, Shared Services Group; Senior Director, Internal Audit; and leadership roles in supply chain, factory operations and program management. Mr. Smith serves on the board of Intel Corporation.

Information relating to our directors and nominees will be included under the caption "Election of Directors" in our proxy statement involving the election of directors, which will be filed with the SEC no later than 120 days after December 31, 2020 and is incorporated by reference herein. Information required by Items 405, 407(d)(4) and 407(d)(5) of Regulation S-K will be included under the captions "Stock Ownership Information" and "Board Committees" in the 2021 Proxy Statement, and that information is incorporated by reference herein.

Codes of Ethics. We have adopted (1) The Boeing Company Code of Ethical Business Conduct for the Board of Directors; (2) The Boeing Company Code of Conduct for Finance Employees which is applicable to our Chief Executive Officer (CEO), Chief Financial Officer (CFO), Controller and all finance employees; and (3) The Boeing Code of Conduct that applies to all employees, including our CEO (collectively, the Codes of Conduct). The Codes of Conduct are posted on our website, www.boeing.com/company/general-info/corporate-governance.page, and printed copies may be obtained, without charge, by contacting the Office of Internal Governance, The Boeing Company, 100

N. Riverside Plaza, Chicago, IL 60606. We intend to disclose promptly on our website any amendments to, or waivers of, the Codes of Conduct covering our CEO, CFO and/or Controller.

No family relationships exist among any of the executive officers, directors or director nominees.

Item 11. Executive Compensation

The information required by Item 402 of Regulation S-K will be included under the captions “Compensation Discussion and Analysis,” “Compensation of Executive Officers,” and “Compensation of Directors” in the 2021 Proxy Statement, and that information is incorporated by reference herein. The information required by Item 407(e)(4) and 407(e)(5) of Regulation S-K will be included under the captions “Compensation Committee Interlocks and Insider Participation” and “Compensation Committee Report” in the 2021 Proxy Statement, and that information is incorporated by reference herein.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by Item 403 of Regulation S-K will be included under the caption “Stock Ownership Information” in the 2021 Proxy Statement, and that information is incorporated by reference herein.

Equity Compensation Plan Information

We currently maintain two equity compensation plans that provide for the issuance of common stock to officers and other employees, directors and consultants. Each of these compensation plans was approved by our shareholders. The following table sets forth information regarding outstanding options and shares available for future issuance under these plans as of December 31, 2020:

Plan Category	Number of shares to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding shares reflected in column (a))
	(a)	(b)	(c)
Equity compensation plans approved by shareholders			
Stock options	1,860,520	\$75.71	
Deferred compensation	1,365,292		
Other stock units ⁽¹⁾	8,579,463		
Equity compensation plans not approved by shareholders			
	None	None	None
Total⁽²⁾	11,805,275	\$75.71	8,367,025

⁽¹⁾ Includes 1,243,118 shares issuable in respect of PBRsUs subject to the satisfaction of performance criteria and assumes payout at maximum levels.

⁽²⁾ Excludes the potential performance awards which the Compensation Committee has the discretion to pay in cash, stock or a combination of both after the three-year performance periods which end in 2020, 2021 and 2022.

For further information, see Note 17 to our Consolidated Financial Statements.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by Item 404 of Regulation S-K will be included under the caption “Related Person Transactions” in the 2021 Proxy Statement, and that information is incorporated by reference herein.

The information required by Item 407(a) of Regulation S-K will be included under the caption “Director Independence” in the 2021 Proxy Statement, and that information is incorporated by reference herein.

Item 14. Principal Accounting Fees and Services

The information required by this Item will be included under the caption “Independent Auditor Fees” in the 2021 Proxy Statement, and that information is incorporated by reference herein.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) List of documents filed as part of this report:

1. Financial Statements

Our consolidated financial statements are as set forth under Item 8 of this report on Form 10-K.

2. Financial Statement Schedules

All schedules are omitted because they are not applicable, not required, or the information is included in the consolidated financial statements.

3. Exhibits

- 3.1 [Amended and Restated Certificate of Incorporation of The Boeing Company dated May 5, 2006 \(Exhibit 3.1 to the Company's Current Report on Form 8-K dated May 1, 2006\)](#)
- 3.2 [By-Laws of The Boeing Company, as amended and restated effective March 19, 2020 \(Exhibit 3.2 to the Company's Current Report on Form 8-K dated March 16, 2020\)](#)
- 4.1 [Description of The Boeing Company Securities Registered under Section 12 of the Exchange Act \(Exhibit 4.1 to the Company's Form 10-K for the year ended December 31, 2019\)](#)
- 10.1 [364-Day Credit Agreement, dated as of October 26, 2020, among The Boeing Company, for itself and on behalf of its Subsidiaries, as a Borrower, the Lenders party hereto, Citibank, N.A., as administrative agent, JPMorgan Chase Bank, N.A. as syndication agent and Citibank, N.A. and JPMorgan Chase Bank N.A., as Joint Lead Arrangers and Joint Book Managers \(Exhibit 10.1 to the Company's Current Report on Form 8-K dated October 26, 2020\)](#)
- 10.2 [Five-Year Credit Agreement, dated as of October 30, 2019, among The Boeing Company, for itself and on behalf of its Subsidiaries, as a Borrower, the Lenders party hereto, Citibank, N.A., as administrative agent, JPMorgan Chase Bank, N.A., as syndication agent and Citibank N.A. and JPMorgan Chase Bank, N.A., as Joint Lead Arrangers and Joint Book Managers \(Exhibit 10.2 to the Company's Current Report on Form 8-K dated October 30, 2019\)](#)
- 10.3 [Three-Year Credit Agreement, dated as of October 30, 2019, among The Boeing Company, for itself and on behalf of its Subsidiaries, as a Borrower, the Lenders party hereto, Citibank, N.A., as administrative agent, JPMorgan Chase Bank, N.A., as syndication agent and Citibank N.A. and JPMorgan Chase Bank, N.A., as Joint Lead Arrangers and Joint Book Managers \(Exhibit 10.3 to the Company's Current Report on Form 8-K dated October 30, 2019\)](#)
- 10.4 [Term Loan Credit Agreement, dated as of February 6, 2020 \(Exhibit 10.1 to the Company's Current Report on Form 8-K dated February 6, 2020\)](#)
- 10.5 [Joint Venture Master Agreement, dated as of May 2, 2005, by and among Lockheed Martin Corporation, The Boeing Company and United Launch Alliance, L.L.C. \(Exhibit \(10\)\(i\) to the Company's Form 10-Q for the quarter ended June 30, 2005\)](#)

10.6	Delta Inventory Supply Agreement, dated as of December 1, 2006, by and between United Launch Alliance, L.L.C. and The Boeing Company (Exhibit (10)(vi) to the Company's Form 10-K for the year ended December 31, 2006)
10.7	Deferred Prosecution Agreement dated January 6, 2021 (Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 6, 2021)
10.8	Summary of Non employee Director Compensation (Exhibit 10.6 to the Company's Form 10-K for the year ended December 31, 2019)*
10.9	Deferred Compensation Plan for Directors of The Boeing Company, as amended and restated effective January 1, 2008 (Exhibit 10.2 to the Company's Current Report on Form 8-K dated October 28, 2007)*
10.10	Deferred Compensation Plan for Employees of The Boeing Company, as amended and restated effective January 1, 2019 (Exhibit 10.3 to the Company's Form 10-Q for the quarter ended September 30, 2018)*
10.11	The Boeing Company Annual Incentive Plan, as amended and restated February 24, 2020 (formerly known as the Incentive Compensation Plan for Employees of The Boeing Company and Subsidiaries) (Exhibit 10.2 to the Company's Form 10-Q for the quarter ended March 31, 2020)*
10.12	The Boeing Company 1997 Incentive Stock Plan, as amended effective May 1, 2000 and further amended effective January 1, 2008 (Exhibit 10.5 to the Company's Current Report on Form 8-K dated October 28, 2007)*
10.13	Supplemental Executive Retirement Plan for Employees of The Boeing Company, as amended and restated as of January 1, 2016 (Exhibit (10)(xvi) to the Company's Form 10-K for the year ended December 31, 2015)*
10.14	The Boeing Company Executive Supplemental Savings Plan, as amended and restated effective January 1, 2020 (Exhibit 10.1 to the Company's Form 10-Q for the quarter ended June 30, 2019)*
10.15	The Boeing Company Executive Layoff Benefits Plan, as amended and restated effective January 1, 2017 (Exhibit (10)(xviii) to the Company's Form 10-K for the year ended December 31, 2016)*
10.16	The Boeing Company 2003 Incentive Stock Plan, as amended and restated effective February 24, 2020 (Exhibit 10.1 to the Company's Form 10-Q for the quarter ended March 30, 2020)*
10.17	Form of Non-Qualified Stock Option Grant Notice of Terms (Exhibit (10)(xvii)(b) to the Company's Form 10-K for the year ended December 31, 2010)*
10.18	Form of Notice of Terms of Performance-Based Restricted Stock Units (Exhibit 10.2 of the Company's 10-Q for the quarter ended March 31, 2018)*
10.19	Form of Performance Award Notice (Exhibit 10.3 of the Company's 10-Q for the quarter ended March 31, 2018)*
10.20	Form of Notice of Terms of Restricted Stock Units (Exhibit 10.1 to the Company's 10-Q for the quarter ended March 31, 2018)*
10.21	Form of Notice of Terms of Supplemental Restricted Stock Units (Exhibit 10.4 to the Company's 10-Q for the quarter ended March 31, 2018)*
10.22	Form of Notice of Terms of Supplemental Restricted Stock Units (Exhibit 10.1 to the Company's Current Report on Form 8-K dated June 25, 2017)*

10.23	Form of Notice of Terms of Performance-Based Restricted Stock Units (Exhibit 10.3 to the Company's Form 10-Q for the quarter ended March 31, 2020)*
10.24	Form of Performance Award Notice (Exhibit 10.4 to the Company's Form 10-Q for the quarter ended March 31, 2020)*
10.25	Form of Notice of Terms of Restricted Stock Units (Exhibit 10.5 to the Company's Form 10-Q for the quarter ended March 31, 2020)*
10.26	Form of International Notice of Terms of Performance-Based Restricted Stock Units (Exhibit 10.6 to the Company's Form 10-Q for the quarter ended March 31, 2020)*
10.27	Form of International Performance Award Notice (Exhibit 10.7 to the Company's Form 10-Q for the quarter ended March 31, 2020)*
10.28	Form of International Notice of Terms of Restricted Stock Units (Exhibit 10.8 to the Company's Form 10-Q for the quarter ended March 31, 2020)*
10.29	Notice of Terms of Supplemental Restricted Stock Units, dated February 24, 2020 (Exhibit 10.1 to the Company's Current Report on Form 8-K dated February 23, 2020)*
10.30	Notice of Terms of Supplemental Performance-Based Restricted Stock Units, dated February 24, 2020 (Exhibit 10.2 to the Company's Current Report on Form 8-K dated February 23, 2020)*
10.31	Form of International Notice of Terms of Supplemental Restricted Stock Units (Exhibit 10.2 to the Company's Form 10-Q for the quarter ended June 30, 2020)*
10.32	Employment Agreement between Boeing Canada Operations LTD and Susan Doniz (Exhibit 10.1 to the Company's Form 10-Q for the quarter ended June 30, 2020)*
21	List of Company Subsidiaries
23	Consent of Independent Registered Public Accounting Firm
31.1	Certification of Chief Executive Officer pursuant to Section 302 of Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer pursuant to Section 302 of Sarbanes-Oxley Act of 2002
32.1	Certification of Chief Executive Officer pursuant to Section 906 of Sarbanes-Oxley Act of 2002
32.2	Certification of Chief Financial Officer pursuant to Section 906 of Sarbanes-Oxley Act of 2002
99.1	Commercial Program Method of Accounting (Exhibit (99)(i) to the Company's Form 10-K for the year ended December 31, 1997)
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File - the cover page XBRL tags are embedded within the Inline XBRL document contained in Exhibit 101

* Management contract or compensatory plan

In accordance with Item 601(b)(4)(iii)(A) of Regulation S-K, copies of certain instruments defining the rights of holders of long-term debt of the Company are not filed herewith. Pursuant to this regulation, we hereby agree to furnish a copy of any such instrument to the SEC upon request.

Item 16. Form 10-K Summary

None.

Signatures

Pursuant to the requirements of Section 13 of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on February 1, 2021.

THE BOEING COMPANY

(Registrant)

By:

/s/ Robert E. Verbeck

Robert E. Verbeck – Senior Vice President and Controller

The Boeing Company Subsidiaries

Name	Place of Incorporation
Astro Limited	Bermuda
Astro-II, Inc.	Illinois
Aviall, Inc.	Delaware
BCC Equipment Leasing Corporation	Delaware
Boeing Aircraft Holding Company	Delaware
Boeing Australia Holdings Proprietary Limited	Australia
Boeing Capital Corporation	Delaware
Boeing CAS Holding GmbH	Germany
Boeing Commercial Aviation Services Europe Limited	United Kingdom
Boeing Defence Australia Ltd	Australia
Boeing Deutschland GmbH	Germany
Boeing Digital Solutions, Inc.	Delaware
Boeing Distribution Services, Inc.	Delaware
Boeing Distribution, Inc.	Delaware
Boeing Europe B.V.	Netherlands
Boeing Global Holdings Corporation	Delaware
Boeing Intellectual Property Licensing Company	Delaware
Boeing International Logistics Spares, Inc.	Delaware
Boeing Netherlands B.V.	Netherlands
Insitu, Inc.	Washington
Jeppesen Deutschland GmbH	Germany

In accordance with Item 601(b)(21) of Regulation S-K, the company has omitted from this Exhibit the names of its subsidiaries which, considered in the aggregate or as a single subsidiary, do not constitute a significant subsidiary as defined in Rule 1-02(w) of Regulation S-X.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 33-25332, 33-31434, 33-43854, 33-58798, 33-52773, 333-16363, 333-26867, 333-32461, 333-32491, 333-32499, 333-32567, 333-41920, 333-54234, 333-73252, 333-107677, 333-140837, 333-156403, 333-160752, 333-163637, 333-195777, and 333-228097 on Form S-8 and Registration Statement Nos. 333-240300, 333-249827, and 333-250000 on Form S-3 of our reports dated February 1, 2021, relating to the consolidated financial statements of The Boeing Company and subsidiaries (the "Company") and the effectiveness of the Company's internal control over financial reporting appearing in this Annual Report on Form 10-K for the year ended December 31, 2020.

/s/ Deloitte & Touche LLP

Chicago, Illinois

February 1, 2021

**CERTIFICATION PURSUANT TO
RULE 13a-14 OF THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, David L. Calhoun, certify that:

1. I have reviewed this annual report on Form 10-K of The Boeing Company;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 1, 2021

/s/ David L. Calhoun

David L. Calhoun
President and Chief Executive Officer

**CERTIFICATION PURSUANT TO
RULE 13a-14 OF THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Gregory D. Smith, certify that:

1. I have reviewed this annual report on Form 10-K of The Boeing Company;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 1, 2021

/s/ Gregory D. Smith

Gregory D. Smith
Executive Vice President, Enterprise Operations and Chief Financial Officer

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of The Boeing Company (the "Company") on Form 10-K for the period ending December 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, David L. Calhoun, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ David L. Calhoun

David L. Calhoun
President and Chief Executive Officer

February 1, 2021

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of The Boeing Company (the "Company") on Form 10-K for the period ending December 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Gregory D. Smith, Executive Vice President, Enterprise Operations and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Gregory D. Smith

Gregory D. Smith
Executive Vice President, Enterprise Operations and Chief Financial Officer

February 1, 2021