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

FORM 10-K

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

For the fiscal year ended December 31, 2019

Commission File Number 001-00395

NCR CORPORATION
(Exact name of registrant as specified in its charter)

Maryland	**31-0387920**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

864 Spring Street NW
Atlanta, GA 30308
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (937) 445-5000

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	NCR	New York Stock Exchange

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 o

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 o 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 o

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 o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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 ☑	Accelerated filer o
Non-accelerated filer o	Smaller reporting company ☐
	Emerging growth company ☐

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. o

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

The aggregate market value of voting stock held by non-affiliates of the registrant as of June 30, 2019, was approximately $3.7 billion. As of February 14, 2020, there were approximately 128.7 million shares of common stock issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Part III: Portions of the Registrant's Definitive Proxy Statement for its Annual Meeting of Stockholders to be filed pursuant to Regulation 14A within 120 days after the Registrant's fiscal year end of December 31, 2019 are incorporated by reference into Part III of this Report.

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This Report contains trademarks, service marks and registered marks of NCR Corporation and its subsidiaries, and of other companies, as indicated. Unless otherwise indicated, the terms "NCR," the "Company," "we," "us," and "our" refer to NCR Corporation and its subsidiaries.

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements use words such as “expect,” “anticipate,” “outlook,” “intend,” “plan,” “believe,” “will,” “should,” “would,” “could,” “provisional” and words of similar meaning. Statements that describe or relate to our plans, goals, intentions, strategies or financial outlook, and statements that do not relate to historical or current fact, are examples of forward-looking statements. The forward-looking statements in this Annual Report include statements regarding NCR’s revenue growth expectations; NCR’s expected shift to grow software and services revenues, as well as recurring revenue streams; NCR’s capital allocations for 2020 including internal investments in transformation to an as-a-Service company and strategic growth platforms; NCR’s expectations regarding acquisition activity; and NCR’s expected areas of focus to drive growth and create long-term stockholder value. Forward-looking statements are based on our current beliefs, expectations and assumptions, which may not prove to be accurate, and involve a number of known and unknown risks and uncertainties, many of which are out of our control. Forward-looking statements are not guarantees of future performance, and there are a number of important factors that could cause actual outcomes and results to differ materially from the results contemplated by such forward-looking statements, including those factors listed in Item 1A “Risk Factors” and Item 7 “Management's Discussion and Analysis of Financial Condition and Results of Operations," of this Annual Report on Form 10-K, including factors relating to: domestic and global economic and credit conditions including, in particular, those resulting from the imposition or threat of protectionist trade policies or import or export tariffs, global and regional market conditions and spending trends in the financial services and retail industries, new tax legislation across multiple jurisdictions, modified or new global or regional trade agreements, execution of the United Kingdom's exit from the European Union, uncertainty over further potential changes in Eurozone participation and fluctuations in oil and commodity prices; the transformation of our business and shift to increased software and services revenue, as well as recurring revenue; our ability to improve execution in our sales and services organizations; our ability to successfully introduce new solutions and compete in the technology industry; cybersecurity risks and compliance with data privacy and protection requirements; the possibility of disruptions in or problems with our data center hosting facilities; defects or errors in our products; the impact of our indebtedness and its terms on our financial and operating activities; the historical seasonality of our sales; tax rates and tax legislation; foreign currency fluctuations; the success of our restructuring plans and cost reduction savings initiatives; manufacturing disruptions, including those caused by or related to outsourced manufacturing or disruptions in our supply chain due to the Wuhan coronavirus; the availability and success of acquisitions, divestitures and alliances; our pension strategy and underfunded pension obligations; reliance on third party suppliers; the impact of the terms of our Series A Convertible Preferred Stock; our multinational operations, including in new and emerging markets; collectability difficulties in subcontracting relationships in certain geographical markets; development and protection of intellectual property; workforce turnover and the ability to attract and retain skilled employees; uncertainties or delays associated with the transition of key business leaders; environmental exposures from our historical and ongoing manufacturing activities; and uncertainties with regard to regulations, lawsuits, claims, and other matters across various jurisdictions. Any forward-looking statement speaks only as of the date on which it is made. We do not undertake any obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

PART I

Item 1. BUSINESS

General

Business and Industries Served

NCR is a leading software- and services-led enterprise provider in the financial, retail, hospitality and telecommunications and technology industries. NCR is a global company that is headquartered in Atlanta, Georgia. NCR offers a range of solutions that help businesses of all sizes run the store, run the restaurant and run self-service banking channels. Our portfolio includes digital first offerings for banking, restaurants and retailers, as well as payments processing, multi-vendor connected device services, automated teller machines (ATMs), point of sale (POS) terminals and self-service technologies. We also resell third-party networking products and provide related service offerings in the telecommunications and technology sectors. Our solutions are also designed to support our transition to an as-a-Service company and enable us to be the technology-based service provider of choice to our customers.

Company History

NCR was originally incorporated in 1884 and was a publicly traded company on the New York Stock Exchange prior to its merger with a wholly-owned subsidiary of AT&T Corp. (AT&T) on September 19, 1991. On December 31, 1996, AT&T distributed all of its interest in NCR to its stockholders. NCR common stock is listed on the New York Stock Exchange and trades under the symbol “NCR”.

Operating Segments

As of January 1, 2019, NCR began management on an industry basis, changing from the previous model of management on a solution basis. As a result, we categorize our operations into the following segments: Banking, Retail, Hospitality and Other.

This change to our segment reporting for fiscal year 2019 and future periods is further described in Note 1, “Basis of Presentation and Significant Accounting Policies” of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report. The information required by Item 1 with respect to our reportable segments and financial information regarding our geographic areas and those reportable segments can be found in Item 7 of Part II of this Report under “Revenue and Operating Income by Segment” as well as in Item 8 of Part II of this Report as part of Note 4, “Segment Information and Concentrations” of the Notes to Consolidated Financial Statements and in Item 1A of this Report under "Multinational Operations," and is incorporated herein by reference.

Products and Services

We are an enterprise provider selling a portfolio of digital first software, services, hardware and payments. Our offerings fall into the following categories:

Banking

We offer solutions to customers in the financial services industry that help position our customers to win the digital transformation, including API-first platforms to enable customers to increase engagement, reduce costs, generate new revenue streams and enhance loyalty. These solutions include customer-facing digital banking, branch transformation and digital connected services, and use software solutions and platforms such as a multi-vendor ATM management systems software application suite, payment processing software, fraud and loss prevention applications, cash management and video banking software, as well as related hardware including multi-function ATMs, interactive teller machines (ITMs), thin-client ATMs, cash dispensers, cash recycling ATMs and hardware for check and image processing.

Retail

We offer software-defined solutions to customers in the retail industry, leading with digital to connect retail operations end to end to integrate all aspects of a customer’s operations in indoor and outdoor settings from POS, to payments, inventory management, fraud and loss prevention applications, loyalty and consumer engagement. These solutions are designed to improve operational efficiency, selling productivity, customer satisfaction and purchasing decisions; provide secure checkout processes and payment systems; and increase service levels. These solutions include retail-oriented technologies such as comprehensive API-point of sale retail software platforms and applications, hardware terminals, self-service kiosks including self-checkout (SCO), payment processing solutions, and bar-code scanners.

Hospitality

We offer technology solutions to customers in the hospitality industry, serving businesses that range from a single store or restaurant to global chains and sports and entertainment venues, that are designed to improve operational efficiency, increase customer satisfaction, streamline order and transaction processing and reduce operating costs. Our solutions include software applications including payment

processing solutions for quick-service restaurants, table-service restaurants, convenience and fuel retailers and other businesses, and back-office inventory and store and restaurant management applications, including cloud-based loss prevention video technology and services for the hospitality industries. We also provide hospitality-oriented hardware products such as POS terminals, SCO kiosks, order and payment kiosks, bar code scanners, printers and peripherals.

Other

We offer maintenance, managed and professional services using solutions such as remote management and monitoring services, which are designed to improve operational efficiency, network availability and end-user experience, to customers in the telecommunications and technology industry. We also provide such services to end users on behalf of select manufacturers leveraging our global service capability, and resell third party networking products to customers in a variety of industries.

Target Markets and Distribution Channels

NCR provides solutions to customers of varying sizes in the financial, retail, hospitality and other industries, including the telecommunications and technology industry.

Our Banking segment solutions primarily serve the financial industry with particular focus on retail banking, which includes traditional providers of consumer banking and financial services. These solutions also serve the retail markets through convenience banking products for retailers designed to complement their core businesses. Our financial solutions customers are located throughout the world in both developed and emerging markets. We have historically sold most of our Banking segment solutions through a direct sales channel, although a portion of revenue is derived through distributors and value-added resellers.

We provide POS and self-service kiosk solutions to the retail and hospitality industries. Our Retail segment customers include department stores, specialty retailers, mass merchandisers, catalog stores, supermarkets, hypermarkets, grocery stores, drug stores, wholesalers, convenience stores, petroleum outlets and small businesses. Our Hospitality segment customers include retailers, restaurants, food service providers and sports and entertainment venues (including stadiums, arenas and cinemas) and small businesses. We also provide our self-service solutions to customers in the travel industry, including airlines and airports. POS and self-service kiosk solutions are sold through a direct sales force and through relationships with value-added resellers, distributors, dealers and other indirect sales channels.

We provide service and support for our products and solutions through services contracts with our customers. We have also established managed services contracts with key customers and continue to pursue additional managed services relationships. Longer term managed services arrangements can help improve the efficiency and performance of a customer’s business, and also increase the strategic and financial importance of its relationship with NCR. We also service competing technologies—for example, ToshibaTec retail technologies and Diebold Nixdorf ATMs. The primary sales channel for our services is our direct sales teams, which exist across all geographies where we operate around the world. Our services professionals provide these services directly to end customers.

Competition

We face a diverse group of competitors in the financial, retail and hospitality industries in which we sell our digital first portfolio of software, services and hardware. The primary competitive factors can vary by geographic area where we operate around the world, but typically include: value and quality of the solutions or products; total cost of ownership; industry knowledge of the vendor; the vendor’s ability to provide and support a total end-to-end solution; the vendor’s ability to integrate new and existing systems; fit of the vendor’s strategic vision with the customer’s strategic direction; and quality of the vendor’s consulting, deployment and support services.

In the financial industry, our Banking segment faces a variety of competitors offering financial services and software including, among others, Fidelity National Information Services Inc., Fiserv, Inc., Q2 Holdings, Inc., Temenos AG, Alkami Technology, Inc. and ACI Worldwide, Inc. In addition, we face competition from ATM manufacturers including Diebold Nixdorf, Inc., and Hyosung TNS Inc., and ATM network operators including Cardtronics plc and Euronet Worldwide, Inc., as well as regional firms across all geographies where we operate around the world.

In the retail and hospitality industries, our Retail and Hospitality segments face a variety of competitors across all geographies where we operate around the world. Our competitors vary by market segment, product, service offering and geographic area, and include Toshiba Tec Corporation, Flooid, Oracle Corporation, GK Software SE, PAR Technology Corporation, Aptos, Inc., Diebold Nixdorf, Inc., Fujitsu Limited and HP Inc., among others. In addition, we face new competitors including Toast, Inc., Revel Systems, Inc., Square, Inc., and Upserve, Inc., among others.

The primary services competitors are the companies identified above, as well as other regional and local independent services firms across all geographies where we operate around the world. We also face services competition from global enterprise technology companies including IBM Corporation, among others, as these firms continue to focus on services as a core business strategy.

Research and Development

We remain focused on designing and developing solutions that anticipate our customers' changing technological needs as well as consumer preferences. Our expenses for research and development were $259 million in 2019, $252 million in 2018, and $241 million in 2017. We anticipate that we will continue to have significant research and development expenditures in the future in order to provide a continuing flow of innovative, high-quality products and services and to help maintain and enhance our competitive position. Information regarding the accounting and costs included in research and development activities is included in Note 1, "Basis of Presentation and Significant Accounting Policies" of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report under "Research and Development Costs," and is incorporated herein by reference.

Patents and Trademarks

NCR seeks patent protection for its innovations, including improvements, associated with its software, services, hardware, solutions and developments, where such protection is likely to provide value to NCR. NCR owns approximately 1,250 patents in the U.S. and numerous other patents in foreign countries. The foreign patents are generally counterparts of NCR's U.S. patents. Many of the patents owned by NCR are licensed to others, and NCR is licensed under certain patents owned by others. As appropriate, NCR looks to monetize its patents to drive additional value from its patent portfolio. NCR also has numerous patent applications pending in the U.S. and in foreign countries. NCR's portfolio of patents and patent applications is of significant value to NCR.

NCR has registered certain trademarks and service marks in the U.S. and in a number of foreign countries. NCR considers the "NCR" and NCR logo marks, as well as its other trademarks and service marks, to have significant value to NCR.

Seasonality

Our sales are historically seasonal, with lower revenue in the first quarter and higher revenue in the fourth quarter of each year. Such seasonality also causes our working capital cash flow requirements to vary from quarter to quarter depending on variability in the volume, timing and mix of sales. In addition, revenue in the third month of each quarter is typically higher than in the first and second months. Information regarding seasonality and its potential impact on our business is included in Item 1A of this Report under the caption, "Operating Results Fluctuations," and is incorporated herein by reference.

Manufacturing and Raw Materials

In most cases, there are a number of vendors providing the services and producing the parts and components that we utilize. However, there are some services and components that are purchased from single sources due to price, quality, technology or other reasons. For example, we depend on computer chips and microprocessors from Intel and operating systems from Microsoft. Certain parts and components used in the manufacturing of our ATMs and the delivery of many of our retail solutions are also supplied by single sources. In addition, there are a number of key suppliers for our businesses who provide us with critical products for our solutions.

As of December 31, 2019, NCR leverages a network of internal and third party partner facilities across the globe to manufacture its products:

- ATMs are manufactured in NCR facilities located in Manaus, Brazil; Budapest, Hungary; and Chennai, India and partner facilities located in Chihuahua, Mexico.
- SCO solutions are manufactured in NCR facilities located in Budapest, Hungary and partner facilities located in Chihuahua, Mexico and Xiamen, China.
- Kiosk solutions are manufactured in NCR facilities located in Budapest, Hungary; Manaus, Brazil; and Chennai, India and partner facilities in Buford, Georgia, USA.
- POS/Display terminals are manufactured in NCR facilities located in Budapest, Hungary and partner facilities located in Guadalajara, Mexico and Xiamen, China.

Additionally, NCR outsources the manufacturing of certain printers, bar code scanners and various other retail peripherals such as keyboards and cash drawers.

Further information regarding the potential impact of these relationships on our business operations, and regarding sources and availability of raw materials, is also included in Item 1A of this Report under the caption “Reliance on Third Parties,” and is incorporated herein by reference.

Product Backlog

Backlog includes orders confirmed for products scheduled to be shipped as well as certain professional and transaction services to be provided. Although we believe that the orders included in the backlog are firm, some orders may be canceled by the customer without penalty. Even when penalties for cancellation are provided for in a customer contract, we may elect to permit cancellation of orders without penalty where management believes it is in our best interests to do so. Further, we have a significant portion of revenue derived from service-based business, which backlog information has not historically been measured. Therefore, we do not believe that our backlog, as of any particular date, is necessarily indicative of revenue for any future period. However, backlog is included as a component of our remaining performance obligation to the extent we determine that the orders are non-cancelable.

Employees

On December 31, 2019, NCR had approximately 36,000 employees and contractors worldwide.

Environmental Matters

Compliance with federal, state, and local environmental regulations relating to the protection of the environment could have a material adverse impact on our capital expenditures, cash flow, financial condition, earnings or competitive position. While NCR does not currently expect to incur material capital expenditures related to compliance with such laws and regulations, and while we believe the amounts provided in our Consolidated Financial Statements are adequate in light of the probable and estimable liabilities in this area, there can be no assurances that environmental matters will not lead to a material adverse impact on our capital expenditures, earnings or competitive position. A detailed discussion of the current estimated impacts of compliance issues relating to environmental regulations, particularly the Fox River and Kalamazoo River matters, is reported in Item 8 of Part II of this Report as part of Note 11, "Commitments and Contingencies" of the Notes to Consolidated Financial Statements and is incorporated herein by reference. Further information regarding the potential impact of compliance with federal, state and local environmental regulations is also included in Item 1A of this Report under the caption “Environmental,” and is incorporated herein by reference.

Information about our Executive Officers

The Executive Officers of NCR (as of February 28, 2020) are as follows:

Name	Age	Position and Offices Held
Frank R. Martire	72	Executive Chairman
Michael D. Hayford	60	President and Chief Executive Officer
Owen J. Sullivan	62	Chief Operating Officer
Andre J. Fernandez	51	Executive Vice President and Chief Financial Officer
James M. Bedore	60	Executive Vice President, General Counsel and Secretary
Debra Bronder	62	Senior Vice President and Chief Human Resources Officer
Adrian Button	47	Senior Vice President, Hardware Product Operations
Daniel W. Campbell	59	Executive Vice President, NCR Global Sales
J. Robert Ciminera	62	Executive Vice President, Global Customer Services
Frank D'Angelo	74	Executive Vice President and President, NCR Banking
Paul Langenbahn	51	Executive Vice President and President, NCR Commerce
Beth A. Potter	60	Chief Accounting Officer

Set forth below is a description of the background of each of the Executive Officers.

Frank R. Martire is Executive Chairman of NCR, a position he has held since May 2018. Prior to that, Mr. Martire served as non-executive Chairman of Fidelity National Information Services Inc. (FIS). From 2015 to 2017, he served as Executive Chairman of FIS, and from 2009 to 2015 was President and Chief Executive Officer of FIS after its acquisition of Metavante Technologies, Inc. (Metavante), a bank technology processing company. Mr. Martire previously served as Chief Executive Officer of Metavante from 2003 to 2009 and President from 2003 to 2008. Prior to that, he was President and Chief Operating Officer of Call Solutions Inc. from 2001 to 2003, and President and Chief Operating Officer, Financial Institution Systems and Services Group, of Fiserv, Inc., from 1991 to 2001. Mr. Martire serves as Chairman of the Board of Directors of J. Alexander’s Holdings, Inc. and is a member of the Board of Directors of Cannae Holdings, Inc. Mr. Martire became a director of NCR on May 31, 2018.

Michael D. Hayford is President and Chief Executive Officer of NCR, a position he has held since April 2018. Mr. Hayford was most recently Founding Partner of Motive Partners, an investment firm focused on technology-enabled companies that power the financial services industry. From 2009 until his retirement in 2013, Mr. Hayford served as the Executive Vice President and Chief Financial Officer at Fidelity National Information Services Inc. (FIS), a financial services technology company. Prior to joining FIS, Mr. Hayford was with Metavante Technologies, Inc. (Metavante), a bank technology processing company, from 1992 to 2009. He served as the Chief Operating Officer at Metavante from 2006 to 2009 and as the President from 2008 to 2009. From 2007 to 2009, Mr. Hayford also served on the Board of Directors of Metavante. Mr. Hayford was a member of the Board of Directors and the Audit Committee of Endurance International Group Holdings, Inc. from 2013 to 2019, and was a member of the Board of Directors and Chairman of the Audit Committee of West Bend Mutual Insurance Company from 2007 to 2018. Mr. Hayford became a director of NCR on April 30, 2018.

Owen J. Sullivan is Chief Operating Officer of NCR, a position he has held since July 2018. Mr. Sullivan was most recently an independent consultant, providing strategic planning, consulting and executive mentoring, and working with and investing alongside private equity firms and other investor groups. Prior to that, Mr. Sullivan was with ManpowerGroup Inc. (ManpowerGroup), a workforce and talent management solutions company, from 2003 to 2013. At ManpowerGroup, he served as President of the Specialty Brands and Experis units from 2010 to 2013, and he served as the Chief Executive Officer of the Right Management and Jefferson Wells, International, Inc. subsidiaries from 2004 to 2013 and from 2003 to 2010, respectively. Before joining ManpowerGroup, Mr. Sullivan was with Sullivan Advisors, LLC, a provider of strategic planning, consulting and executive mentoring for small to medium-sized businesses, from 2001 to 2003. Prior to that, Mr. Sullivan was with Metavante Technologies, Inc., a bank technology processing company, from 1993 to 2001 where he served in various management roles including as the President of Metavante’s Financial Services Group and Enterprise Solutions Group. Mr. Sullivan served as a member of the Board of Directors of Johnson Financial Group, a bank holding company, where he was a member of its Wealth Management, Risk and Succession Committees, through 2018. Mr. Sullivan is a member of the Board of Directors of Computer Task Group, Incorporated and serves as a member of its Compensation and Audit Committees.

Andre J. Fernandez is Executive Vice President and Chief Financial Officer of NCR, a position he has held since August 2018. Mr. Fernandez was most recently with CBS Radio Inc. (CBS Radio), a company which, prior to its merger with Entercom Communications Corp., specialized in radio broadcasting along with an integrated suite of digital properties. At CBS Radio, Mr. Fernandez served as President and CEO from 2016 to 2017, and as President from 2015 to 2016. Prior to that, Mr. Fernandez was with Journal Communications Inc. (Journal Communications), a publicly-traded diversified media company with operations including television, radio, digital and publishing, from 2008 to 2015. Mr. Fernandez served as President and Chief Operating Officer at Journal Communications from 2014 to 2015, as President and Chief Financial Officer from 2012 to 2014 and as Executive Vice President, Finance & Strategy and Chief Financial Officer from 2008 to 2012. Mr. Fernandez was also a previous member of the Board of Directors of Buffalo Wild Wings Inc. and served as Chairman of its Governance Committee and as a member of its Audit Committee.

James M. Bedore is Executive Vice President, General Counsel and Secretary of NCR, a position he has held since November 2018. In 2019, Mr. Bedore also became Head of Corporate Development at NCR. Prior to that, Mr. Bedore worked since 1985 as an attorney in private practice with Reinhart Boerner Van Deuren s.c. advising clients on a variety of corporate matters including mergers and acquisitions, public securities offerings on behalf of issuers and underwriters, private placements, venture capital, bank and other financing arrangements, securities compliance, reporting and disclosure obligations, corporate governance, shareholder rights and executive compensation.

Debra Bronder is Senior Vice President and Chief Human Resources Officer of NCR Corporation, a position she has held since July 2018. Most recently, she led Human Resources for Cardtronics, Inc., a global leader in ATM placement and transaction processing, from 2010 to 2017. Prior to that, Ms. Bronder was the Executive Vice President of Human Resources for Metavante Technologies, Inc. (Metavante), a bank technology processing company, from 1997 to 2009, and with Fidelity National Information Services, Inc. (FIS) from 2009 to 2010, leading the human resources activities for Metavante's merger with FIS in 2009.

Adrian Button is NCR's Senior Vice President, Hardware Products Operations, a position he has held since February 2018. From July 2017 to February 2018, Mr. Button served as NCR's Senior Vice President Global Operations. Before he joined NCR, Mr. Button spent 19 years in various management roles with different divisions of General Electric Company (GE). Most recently, Mr. Button served from January 2016 to July 2017 as Corporate Officer for GE Industrial Solutions, with oversight of the division's supply chain and service operations across 41 global factories. Prior to that, Mr. Button served as Vice President, Turbomachinery, for GE's Oil & Gas division from January 2014 to December 2016, as General Manager, Global Operations, for GE's Oil & Gas division from March 2011 to December 2013, and in other operations and supply chain roles with GE Aviation.

Daniel W. Campbell is NCR's Executive Vice President, NCR Global Sales, a position he has held since February 2018. Previously, from July 2015 to February 2018, Mr. Campbell served as a Senior Vice President and General Manager at Virtustream, Inc. (Virtustream), which he joined after it was acquired by EMC Corporation (EMC) in July 2015. With Virtustream, Mr. Campbell led the global sales integration with EMC's sales organization, built a global strategic alliances and channels organization, and co-launched Virtustream Storage Cloud, an enterprise-class cloud storage platform. Before joining Virtustream, from April 1998 to July 2015, Mr. Campbell served in a series of sales and management roles of increasing responsibility at EMC, including as Chief Operating Officer, Senior Vice President, Worldwide Sales, Backup and Recovery Systems Divisions, and most recently as Senior Vice President, Global Specialty Sales. Before joining EMC, Mr. Campbell served in various sales and management roles with Sperry, Unisys, Motorola and Wang.

J. Robert Ciminera is NCR's Executive Vice President, Global Customer Services, a position he has held since January 2018. Previously, Mr. Ciminera served as NCR's Executive Vice President, Hardware Product Operations, from January 2017 to January 2018, where he was responsible for NCR's hardware product portfolio. Before that, Mr. Ciminera served as NCR's Senior Vice President, Hardware Solutions and Global Operations from October 2015 to December 2017, as NCR's Senior Vice President, Integrated Supply Chain Operations from May 2014 to October 2015, and as NCR's Vice President, Strategic Sourcing and Chief Procurement Officer from February 2009, when he joined NCR, through May 2014. Before joining NCR, Mr. Ciminera served in various sourcing, supply chain and product management roles with Avaya, Motorola, Symbol Technologies, Lucent and AT&T.

Frank D'Angelo is Executive Vice President and President, NCR Banking, a position he has held since October 2018. Mr. D'Angelo's career spans 35 years in the financial services, digital banking and payments industries. He currently serves as Chairman of the Board of Evertec Inc., a transaction and payments processing company in Latin America and the Caribbean and is also an operating partner in Hillpath Capital, a capital investment firm. He is a past Chairman of the Electronic Funds Transfer Association and served on the Payments Advisor Counsel of the Federal Reserve Bank in Philadelphia. Previously, he was President of Monitise Americas, Inc., a provider of mobile banking, payments and commerce networks. Prior to that post, Mr. D'Angelo was Executive Vice President of the Payments Solutions Group at Fidelity National Information Services Inc. and head of Payments and Digital Banking at Metavante Technologies, Inc. He also held several executive positions of a 20-year span at Diebold, including CEO of Diebold Mexico, Vice President of the Diebold Service organization, as well as Vice President of software engineering and production management. He is a United States Air Force Veteran.

Paul Langenbahn is Executive Vice President and President, NCR Commerce, a position he has held since July 2018. Prior to that, he served as Executive Vice President and Chief Operating Officer of NCR from March 2018 through July 2018. Prior to that, he served as Executive Vice President, NCR Software from January 2017 to March 2018. From April 2014 to December 2016, Mr. Langenbahn served as Senior Vice President and President, Hospitality, and before that, he served as Vice President, Global Field Operations from 2012 to 2014. Prior to joining NCR, he served in various leadership roles at Radiant Systems Inc., including as President, Radiant Hospitality Business Unit, from 2007 until the company was acquired by NCR in 2011.

Beth A. Potter is NCR's Chief Accounting Officer, a position she has held since November 2019. Ms. Potter has served as the NCR Corporate Controller since 2011. From March 2007 to 2011, she served as Assistant Controller, and prior to that she served in various other leadership roles supporting NCR's finance organization.

Available Information

NCR makes available through its website at http://investor.ncr.com, free of charge, its Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, definitive proxy statements on Schedule 14A and Current Reports on Form 8-K, and all amendments to such reports and schedules, as soon as reasonably practicable after these reports are electronically filed or furnished to the U.S. Securities and Exchange Commission (SEC) pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (the Exchange Act). The SEC website (www.sec.gov) contains the reports, proxy statements and information statements, and other information regarding issuers that file or furnish electronically with the SEC. NCR will furnish, without charge to a security holder upon written request, the Notice of Meeting and Proxy Statement for the 2020 Annual Meeting of Stockholders (the 2020 Proxy Statement), portions of which are incorporated herein by reference. NCR also will furnish its Code of Conduct at no cost and any other exhibit at cost. Document requests are available by calling or writing to:

NCR—Investor Relations
864 Spring Street NW
Atlanta, GA 30308
Phone: 800-255-5627
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NCR's website, www.ncr.com, contains a significant amount of information about NCR, including financial and other information for investors. NCR encourages investors to visit its website regularly, as information may be updated and new information may be posted at any time. The contents of NCR's website are not incorporated by reference into this Form 10-K and shall not be deemed "filed" under the Exchange Act.

Item 1A. RISK FACTORS

The risks and uncertainties described below could materially and adversely affect our business, financial condition, results of operations, could cause actual results to differ materially from our expectations and projections, and could cause the market value of our stock to decline. You should consider these risk factors when reading the rest of this Annual Report on Form 10-K, including "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this document. These risk factors may not include all of the important factors that could affect our business or our industry or that could cause our future financial results to differ materially from historic or expected results or cause the market price of our common stock to fluctuate or decline.

Economic Pressures. *Our business may be negatively affected by domestic and global economic and credit conditions.* Our business is sensitive to the strength of domestic and global economic and credit conditions, particularly as they affect, either directly or indirectly, the financial, retail and hospitality sectors of the economy. Economic and credit conditions are influenced by a number of factors, including political conditions, consumer confidence, unemployment levels, interest rates, tax rates, commodity prices and government actions to stimulate economic growth. The imposition or threat of protectionist trade policies or import or export tariffs, global and regional market conditions and spending trends in the financial, retail and hospitality industries, new tax legislation across multiple jurisdictions, modified or new global or regional trade agreements, the execution of the United Kingdom's exit from the European Union (EU), uncertainty over further potential changes in Eurozone participation and fluctuations in oil and commodity prices, among other things, have created a challenging and unpredictable environment in which to market the products and services of our various businesses across our different geographies and industries. A negative or unpredictable economic climate could create uncertainty or financial pressures that impact the ability or willingness of our customers to make capital expenditures, thereby affecting their decision to purchase or roll out our products or services or, especially with respect to smaller customers, to pay accounts receivable owed to NCR. Additionally, if customers respond to a negative or unpredictable economic climate by consolidation, it could reduce our base of potential customers. Negative or unpredictable global economic conditions also may have an adverse effect on our customers' ability to obtain financing for the purchase of our products and services from third party financing companies or on the number of payment processing transactions which could negatively impact our operating results.

Business Model. *If we are unsuccessful in transforming our business model, our operating results could be negatively impacted.* In recent years, we have shifted our business model to become a software- and services-led enterprise provider, focusing on increased software and services revenue, as well as recurring revenue, to enable NCR to become an as-a-Service company. Activating our strategy to create NCR-as-a-Service could negatively impact our revenue and margin as we shift toward increasing recurring revenue. Additionally, this strategy includes the shift away from perpetual license-based products that yield revenue recognized at an earlier point in time to a term license model to include a termination for convenience which could also have a negative impact on our revenue and margin. We expect to increase our capital expenditures to support our shift to NCR-as-a-Service with the focus on our strategic growth platforms, which are the offerings with the highest growth potential to accelerate the shift. Our success depends on the return on investment generated from the capital expenditures and our ability to continue to execute these strategies, while improving the Company's cost structure. Our ability to grow these businesses depends on a number of different factors including, among others, developing, deploying and supporting the next generation of digital first software and cloud solutions for the industries we serve; market acceptance of our new and existing software and cloud solutions; successful entry into the payment processing market; enabling our sales force to use a consultative selling model that better incorporates our comprehensive and new solutions; transforming our services performance, capabilities and coverage to improve efficiency, incorporate remote diagnostic and other technologies and align with and support our new solutions; managing professional services and other costs associated with large solution roll-outs; and integrating, developing and supporting software gained through acquisitions. In addition, development of these businesses may require increased capital and research and development expenses and resource allocation, and while we will seek to have the right level of investment and the right level of resources focused on these opportunities, these costs may reduce our gross margins and the return on these investments may be lower, or may develop more slowly, than we expect. In addition, we continue to pursue initiatives to expand our customer base by increasing our use of indirect sales channels, and by developing, marketing and selling solutions aimed at the small- to medium-business market. It is not yet certain whether these initiatives will yield the anticipated benefits, or whether our solutions will be compelling and attractive to small- and medium-sized businesses. If we are not successful in growing software and services and expanding our customer base at the rate that we anticipate, we may not meet our growth and gross margin projections or expectations, and operating results could be negatively impacted.

Introduction of New Solutions. *If we do not swiftly and successfully develop and introduce new solutions in the competitive, rapidly changing environment in which we do business, our business results will be impacted.* The development process for our solutions requires high levels of innovation from our product development teams and suppliers of the components embedded or incorporated in our solutions. We expect to increase our capital expenditures and allocate these expenditures primarily to our strategic growth platforms. In addition, certain of our solutions, including our cloud solutions, may require us to build, lease or expand, and maintain, infrastructure (such as hosting centers) to support them. The development process can be lengthy and costly, and requires us to commit a significant

amount of resources to bring our business solutions to market. In addition, our success may be impacted by safety and security technology and industry standards, such as EMV chip technology. We may not be able to anticipate our customers' needs and technological and industry trends accurately, or to complete development of new solutions efficiently. In addition, contract terms, market conditions or customer preferences may affect our ability to limit, sunset or end-of-life our older products in a timely or cost-effective fashion. If any of these risks materialize, we may be unable to introduce new solutions into the market on a timely basis, if at all, and our business and operating results could be impacted. Likewise, we sometimes make assurances to customers regarding the operability and specifications of new technologies, and our results could be impacted if we are unable to deliver such technologies, or if such technologies do not perform as planned. Once we have developed new solutions, if we cannot successfully market and sell those solutions, our business and operating results could be negatively impacted.

Data Privacy and Cybersecurity. *Cybersecurity and data privacy issues could negatively impact our business.* Our products and services, including our cloud and hosted solutions as well as our end-to-end payment processing business, facilitate financial and other transactions for the customers in the industries we serve. As a result, we collect, use, transmit and store certain of the transaction and personal information of our customers and the end-users of our solutions. We also may have access to transaction and personal information of our customers and their customers through or in the course of servicing our products or third party products. Additionally, we collect, use and store personal information of our employees and the personnel of our business partners, such as resellers, suppliers and contractors, in the ordinary course of business. While we have programs and measures in place designed to safeguard this data, and while we have implemented access controls designed to limit the risk of unauthorized use or disclosure by employees and contractors, the techniques used to obtain unauthorized access to this data are complex and changing, as are the underlying objectives of the attacker, like targeted business disruption or sophisticated nation-state sponsored and organized cyber-criminal activity, and may be difficult to detect for long periods of time. An attack, disruption, intrusion, denial of service, theft or other breach, or an inadvertent act by an employee or contractor, could result in unauthorized access to, or disclosure of, this data, resulting in claims, costs and reputational harm that could negatively affect our operating results. We may also detect, or may receive notice from third parties (including governmental agencies) regarding potential vulnerabilities in our information technology systems, our products, or third party products used in conjunction with our products. Even if these potential vulnerabilities do not result in a data breach, their existence can adversely affect customer confidence and our reputation in the marketplace. To the extent such vulnerabilities require remediation, such remedial measures could require significant resources and may not be implemented before such vulnerabilities are exploited. As the cybersecurity landscape evolves, we may also find it necessary to make significant further investments to protect data and infrastructure.

Like most companies, NCR is regularly the subject of attempted cyberattacks. The Company is not aware of any that have caused adverse consequences material to the Company. Most such attacks are detected and prevented by the Company's various information technology protections, including but not limited to firewalls, intrusion prevention systems, denial of service detection, anomaly based detection, anti-virus/anti-malware, endpoint encryption and detection and response software, Security Information and Event Management (SIEM) system, identity management technology, security analytics, multi-factor authentication and encryption, although there can be no assurance that our protections will always be successful.

The Company has an established relationship with a cybersecurity firm, which it engages in connection with certain suspected incidents. The costs arising from those engagements, which depending on the incident may include both investigatory and remedial efforts, have not to date been material to the Company. The Company also regularly undergoes evaluation of its protections against cybersecurity incidents, including both self-assessments and expert third-party assessments, and it regularly enhances those protections, both in response to specific threats and as part of the Company's efforts to stay current with advances in cybersecurity defense. When the Company experiences a confirmed cybersecurity incident it generally performs root cause analyses and in appropriate instances will implement additional security controls based on those analyses. In 2019, the Company used approximately 10% of its overall IT budget on cybersecurity efforts. There can be no assurance that the Company or its cybersecurity consultant will be able to prevent or remediate all future cybersecurity incidents or that the cost associated with responding to any such incident will not be significant.

The personal information and other data that we process and store also is increasingly subject to data security and data privacy obligations and laws of many jurisdictions, which are increasing in complexity and sophistication as data becomes more enriched and technology and the global data protection landscape evolves. These laws may conflict with one another, and many of them are subject to frequent modification and differing interpretations. The laws impose a significant compliance burden and include, for example, the EU's General Data Protection Regulation (GDPR), the California Consumer Privacy Act and the Brazilian General Data Protection Law that goes into effect in 2020. Complying with these evolving and varying standards could require significant expense and effort, and could require us to change our business practices or the functionality of our products and services in a manner adverse to our customers and our business. In addition, violations of these laws can result in significant fines, penalties, claims by regulators or other third parties, and damage to our brand and business. The GDPR, for example, includes fines of up to €20 million or up to 4% of the annual global revenues of the infringer for failure to comply, and grants corrective powers to supervisory authorities including the ability to impose a limit on processing of personal data. The laws also cover the transfer of personal, financial and business information, including transfers of employee information between us and our subsidiaries, across international borders.

Defects, Errors and Disruptions. *Defects, errors, installation difficulties or development delays could expose us to potential liability, harm our reputation and negatively impact our business.* Many of our products are sophisticated and complex, and may incorporate third-party hardware and software. Despite testing and quality control, we cannot be certain that defects or errors will not be found in our products. If our products contain undetected defects or errors, or otherwise fail to meet our customers' expectations, we could face the loss of customers, liability exposure and additional development costs. If defects or errors delay product installation or make it more difficult, we could experience delays in customer acceptance, or if our products require significant amounts of customer support, it could result in incremental costs to us. In addition, our customers who license and deploy our software may do so in both standard and non-standard configurations in different environments with different computer platforms, system management software and equipment and networking configurations, which may increase the likelihood of technical difficulties. Our products may be integrated with other components or software, and, in the event that there are defects or errors, it may be difficult to determine the origin of such defects or errors. Additionally, damage to, or failure or unavailability of, any significant aspect of our cloud hosting facilities could interrupt the availability of our cloud offerings, which could cause disruption for our customers, and, in turn, their customers, and expose us to liability. If any of these risks materialize, they could result in additional costs and expenses, exposure to liability claims, diversion of technical and other resources to engage in remediation efforts, loss of customers or negative publicity, each of which could negatively impact our business and operating results.

Disruptions in our data center hosting facilities could adversely affect our business. Our software products are increasingly being offered and provided on a cloud or other hosted basis through data centers operated by the Company or third parties in the United States and other countries. In addition, certain of the applications and data that we use in our services offerings and our operations may be hosted or stored at such facilities. These facilities may be vulnerable to natural disasters, telecommunications failures and similar events, or to intentional acts of misconduct, such as security breaches or attacks. The occurrence of any of these events or acts, or any other unanticipated problems, at these facilities could result in damage to or the unavailability of these cloud hosting facilities. Such damage or unavailability could, despite existing disaster recovery and business continuity arrangements, interrupt the availability of our cloud offerings for our customers. We have from time to time experienced such interruptions and they may occur in the future. In addition, any such damage or unavailability could interrupt the availability of applications or data necessary to provide services or conduct critical operations. Interruptions in the availability of our cloud offerings or our ability to service our customers could result in the failure to meet contracted up-time or service levels, which could cause us to issue credits or pay penalties, or cause customers to terminate or not renew subscriptions. Interruptions could also expose us to liability claims, negative publicity and the need to engage in costly remediation efforts, any of which could impact our business and reduce our revenue.

Competition. *If we do not compete effectively within the technology industry, we will not be successful.* We operate in the intensely competitive technology industry. This industry is characterized by rapidly changing technology, disruptive technological innovation, evolving industry standards, frequent new product introductions, price and cost reductions, and increasingly greater commoditization of products making differentiation difficult. Our competitors include other large companies in the information technology industry, such as Fidelity National Information Services Inc., Fiserv, Inc., Temenos AG, Alkami Technology, Inc., HP Inc., Diebold Nixdorf, Inc., Nautilus Hyosung, Toshiba Tec Corporation, Oracle Corporation, Fujitsu Limited, Q2 Holdings, Inc. and ACI Worldwide, Inc., most of which have more financial and technical resources, or more widespread distribution and market penetration for their platforms and service offerings, than we do. We also compete with companies in specific industry segments, such as entry-level ATMs, POS solutions and imaging solutions. In addition, as consumers and customers in the financial, retail and hospitality industry adopt new alternative technologies such as cashless and other streamlined payment services and automated shopping solutions, we may face competition from other technology companies.

Our future competitive performance and market position depend on a number of factors, including our ability to:

- execute our NCR as-a-Service strategy to grow our software and services revenue, as well as our recurring revenue;
- improve margin expansion while successfully reacting to competitive product and pricing pressures;
- penetrate and meet the changing competitive requirements and deliverables in developing and emerging markets;
- exploit opportunities in emerging vertical markets, such as telecommunications and technology;
- cross-sell additional products and services to our existing customer base;
- rapidly and continually design, develop and market, or otherwise maintain and introduce innovative solutions and related products and services for our customers that are competitive in the marketplace;

- react on a timely basis to shifts in market demands and technological innovations, including shifts toward the desire of banks and retailers to provide digital first experience to their customers and the use of mobile devices in transactions and payments;
- compete in reverse auctions for new and continuing business;
- reduce costs without creating operating inefficiencies or impairing product or service quality;
- maintain competitive operating margins;
- improve product and service delivery quality; and
- effectively market and sell all of our diverse solutions.

Our business and operating performance also could be impacted by external competitive pressures, such as consolidation, increasing price erosion and the entry of new competitors and technologies into our existing product and geographic markets. In addition, our customers sometimes finance our product sales through third party financing companies, and in the case of customer default, these financing companies may be forced to resell this equipment at discounted prices, competing with us and impacting our ability to sell incremental units. The impact of these product and pricing pressures could include lower customer satisfaction, decreased demand for our solutions, loss of market share and reduction of operating profits.

Indebtedness and Repurchase Obligations. *Our level of indebtedness could limit our financial and operating activities and adversely affect our ability to incur additional debt to fund future needs.* At December 31, 2019, we had approximately $3.59 billion of total indebtedness outstanding. Additionally, at December 31, 2019, we had approximately $807 million of secured debt available for borrowing under our senior secured credit facility. This level of indebtedness could:

- require us to dedicate a substantial portion of our cash flow to the payment of principal and interest, thereby reducing the funds available for operations and future business opportunities;
- make it more difficult for us to satisfy our obligations with respect to our outstanding senior unsecured notes, including our change in control repurchase obligations;
- limit our ability to borrow additional money if needed for other purposes, including working capital, capital expenditures, debt service requirements, acquisitions and general corporate or other purposes, on satisfactory terms or at all;
- limit our ability to adjust to changing economic, business and competitive conditions;
- place us at a competitive disadvantage with competitors who may have less indebtedness or greater access to financing;
- make us more vulnerable to an increase in interest rates, a downturn in our operating performance or a decline in general economic conditions; and
- make us more susceptible to adverse changes in credit ratings, which could impact our ability to obtain financing in the future and increase the cost of such financing.

If compliance with our debt obligations materially limits our financial or operating activities, or hinders our ability to adapt to changing industry conditions, we may lose market share, our revenue may decline and our operating results may be negatively affected.

The terms of the documents governing our indebtedness include financial and other covenants that could restrict or limit our financial and business operations. Our senior secured credit facility and the indentures for our senior unsecured notes include restrictive covenants that, subject to certain exceptions and qualifications, restrict or limit our ability and the ability of our subsidiaries to, among other things:

- incur additional indebtedness;
- create liens on, sell or otherwise dispose of, our assets;
- engage in certain fundamental corporate changes or changes to our business activities;
- make certain investments or material acquisitions;
- engage in sale-leaseback or hedging transactions;

- repurchase our common stock, pay dividends or make similar distributions on our capital stock;
- repay certain indebtedness;
- engage in certain affiliate transactions; and
- enter into agreements that restrict our ability to create liens, pay dividends or make loan repayments.

The senior secured credit facility and the indentures also contain certain affirmative covenants, and the senior secured credit facility requires us to comply with a financial coverage ratio regarding our debt relative to our Consolidated EBITDA (as defined in the senior secured credit facility).

These covenants and restrictions could affect our ability to operate our business and may limit our ability to react to market conditions or take advantage of potential business opportunities as they arise. Additionally, our ability to comply with these covenants may be affected by events beyond our control, including general economic and credit conditions and industry downturns.

In addition, under our trade receivables securitization facility, we are required, among other things, to maintain certain financial tests relating to the three month rolling average ratio of defaults, delinquencies, dilution and days sales outstanding of the receivables pool (as such ratios and tests are described in the agreement governing our trade receivables securitization facility).

If we fail to comply with these covenants and are unable to obtain a waiver or amendment from the applicable lenders, an event of default would result under these agreements and under other agreements containing related cross-default provisions.

- Upon an event of default under the senior secured credit facility, the lenders could, among other things, declare outstanding amounts due and payable, refuse to lend additional amounts to us, or require us to deposit cash collateral in respect of outstanding letters of credit. If we were unable to repay or pay the amounts due, the lenders could, among other things, proceed against the collateral granted to them to secure such indebtedness, which includes certain of our domestic assets and the equity interests of certain of our domestic and foreign subsidiaries.
- Upon an event of default under the indentures, the trustee or holders of our senior unsecured notes could declare all outstanding amounts immediately due and payable.
- Upon an event of default under our trade receivables securitization facility, the lenders could, among other things, terminate the facility, declare all capital and other obligations to be immediately due and payable, replace us as servicer, take over receivables lock-box accounts and redirect the collections of domestic accounts receivable from those accounts, and exercise available rights against the domestic accounts receivable pledged by NCR Receivables, LLC.

Despite our current levels of debt, we may still incur substantially more debt, including secured debt, and similar liabilities, which would increase the risks described in these risk factors relating to indebtedness and repurchase obligations. The agreements relating to our debt limit, but do not prohibit, our ability to incur additional debt, and the amount of debt that we could incur could be substantial. In addition, certain types of liabilities are not considered “Indebtedness” under our senior secured credit facility or the indentures governing our senior unsecured notes, and the senior secured credit facility and indentures do not impose any limitation on the amount of liabilities incurred by the subsidiaries, if any, that might be designated as “unrestricted subsidiaries” (as defined in the indentures). Accordingly, we could incur significant additional debt or similar liabilities in the future, including additional debt under our senior secured credit facility, some of which could constitute secured debt. In addition, if we form or acquire any subsidiaries in the future, those subsidiaries also could incur debt or similar liabilities. If new debt or similar liabilities are added to our current debt levels, the related risks that we now face could increase.

We may, from time to time, seek to opportunistically refinance, amend and/or reprice any of our debt, obtain additional debt financing, reduce or extend our debt, lower our interest payments, or otherwise seek to improve our financial position or the terms of our debt agreements. These actions may include open market debt repurchases, negotiated repurchases, or other repayments, redemptions or retirements of our debt. The amount of debt that may be borrowed or issued, refinanced, and/or repurchased, repaid, redeemed or otherwise retired, if any, will depend on market conditions, trading levels of our debt, our cash position, compliance with our debt covenants and other considerations. Any such actions could impact our financial condition or results of operations.

Our cash flows may not be sufficient to service our indebtedness, and if we are unable to satisfy our obligations under our indebtedness, we may be required to seek other financing alternatives, which may not be successful. Our ability to make timely payments of principal and interest on our debt obligations depends on our ability to generate positive cash flows from operations, which is subject to general economic conditions, competitive pressures and certain financial, business and other factors beyond our control. If our cash flows and capital resources are insufficient to make these payments, we may be required to seek additional financing sources, reduce or delay

capital expenditures, sell assets or operations or refinance our indebtedness. These actions could have an adverse effect on our business, financial condition and results of operations. In addition, we may not be able to take any of these actions, and, even if successful, these actions may not permit us to meet our scheduled debt service obligations. Our ability to restructure or refinance our outstanding indebtedness will depend on, among other things, the condition of the capital markets and our financial condition at such time. There can be no assurance that we will be able to restructure or refinance any of our indebtedness on commercially reasonable terms or at all. If we cannot make scheduled payments on our debt, we will be in default and the outstanding principal and interest on our debt could be declared to be due and payable, in which case we could be forced into bankruptcy or liquidation or required to substantially restructure or alter our business operations or debt obligations.

Borrowings under our senior secured credit facility and trade receivables securitization facility bear interest at a variable rate, which subjects us to interest rate risk, which could cause our debt service obligations to increase significantly. All of our borrowings under our senior secured credit facility and trade receivables securitization facility are at variable rates of interest and expose us to interest rate risk. If interest rates increase, our debt service obligations on this variable rate indebtedness would increase even though the amount borrowed remained the same. Although we may enter into interest rate swaps or similar instruments to reduce interest rate volatility in connection with our variable rate borrowings, we cannot provide assurances that we will be able to do so or that such swaps or instruments will be effective.

W*e may not be able to raise the funds necessary to finance a required repurchase of our senior unsecured notes or our Series A Convertible Preferred Stock.* Upon the occurrence of a change in control under the applicable indenture governing the applicable senior unsecured notes, holders of those notes may require us to repurchase their notes. On any date during the three months commencing on and immediately following March 16, 2024 and the three months commencing on and immediately following every third anniversary of such date, holders of our Series A Convertible Preferred Stock will have the right to require us to repurchase any or all of our outstanding Series A Convertible Preferred Stock. In addition, upon certain change of control events involving the Company, holders of Series A Convertible Preferred Stock can require us, subject to certain exceptions, to repurchase any or all of their Series A Convertible Preferred Stock.

It is possible that we would not have sufficient funds at the time that we are required to make any such purchase of notes or Series A Convertible Preferred Stock (or both). We cannot assure the holders of the senior unsecured notes and Series A Convertible Preferred Stock that we will have sufficient financial resources, or will be able to arrange financing, to pay the repurchase price in cash with respect to any such notes or Series A Convertible Preferred Stock that holders have requested to be repurchased upon a change in control or scheduled redemption. Our failure to repurchase the senior unsecured notes of a series when required would result in an event of default with respect to such notes which could, in turn, constitute a default under the terms of our other indebtedness, if any. If we are unable to repurchase all shares of Series A Convertible Preferred Stock that holders have requested to be purchased, then we are required to pay dividends on the shares not repurchased at a rate equal to 8.0% per annum, accruing daily from such date until the full purchase price, plus all accrued dividends, are paid in full in respect of such shares of Series A Convertible Preferred Stock.

In addition, a change in control may constitute an event of default under our senior secured credit facility and our trade receivables securitization facility that would permit the lenders to accelerate the maturity of the borrowings thereunder and would require us to make a similar change in control offer to holders of our existing senior unsecured notes.

Certain important corporate events, such as leveraged recapitalizations that would increase the level of our indebtedness, may not constitute a change in control under the indentures governing our secured notes or the terms of our Series A Convertible Preferred Stock.

A lowering or withdrawal of the ratings assigned to our debt securities by rating agencies may increase our future borrowing costs and reduce our access to capital. Any rating assigned to our debt could be lowered or withdrawn entirely by a rating agency if, in that rating agency's judgment, future circumstances relating to the basis of the rating, such as adverse changes, so warrant. Any future lowering of our ratings likely would make it more difficult or more expensive for us to obtain additional debt financing.

Operating Results Fluctuations. *Our revenue, operating results, and margins could fluctuate for a number of reasons, including those described below:*

Seasonality. Our sales are historically seasonal, with lower revenue in the first quarter and higher revenue in the fourth quarter of each year. Such seasonality also causes our working capital cash flow requirements to vary from quarter to quarter depending on the variability in the volume, timing and mix of sales. In addition, revenue in the third month of each quarter is typically higher than in the first and second months, particularly as our business model shifts to include more software and cloud solutions. These factors, among other things, may adversely affect our ability to manage working capital, make our forecasting process more difficult and impact our ability to predict financial results accurately.

Income Taxes. We are a United States based multinational company subject to income taxes in the United States and a number of foreign jurisdictions. Our domestic and international tax liabilities are dependent on the distribution of our earnings among these different jurisdictions, and our provision for income taxes and cash tax liability could be adversely affected if the distribution of earnings is higher than expected in jurisdictions with higher statutory tax rates.

We recognize deferred tax assets and liabilities based on the differences between the financial statement carrying amounts and the tax basis of assets and liabilities. Our deferred tax assets, net of valuation allowances, totaled approximately $996 million and $663 million at December 31, 2019 and 2018, respectively. We regularly review our deferred tax assets for recoverability and establish a valuation allowance if it is more likely than not that some portion or all of a deferred tax asset will not be realized. If we are unable to generate sufficient future taxable income, if there is a material change in the actual effective tax rates or if there is a change to the time period within which the underlying temporary differences become taxable or deductible, then we could be required to increase our valuation allowance against our deferred tax assets, which could result in a material increase in our effective tax rate.

In addition, changes in foreign tax laws, which have become more rapid in recent years, or tax rulings could affect our financial position and results of operations. For example, in light of continuing global fiscal challenges, various levels of government and international organizations such as the Organization for Economic Co-operation and Development (OECD) and EU are increasingly focused on tax reform and other legislative or regulatory action to increase tax revenue. These tax reform efforts, such as the OECD-led Base Erosion and Profit Shifting project (BEPS), are designed to ensure that corporate entities are taxed on a larger percentage of their earnings. Although some countries have passed tax laws based on findings from the BEPS project, the final nature, timing and extent of any such tax reforms or other legislative or regulatory actions is unpredictable, and it is difficult to assess their overall effect. But, these changes could increase our effective tax rate and adversely impact our financial results.

We are also subject to ongoing audits of our income tax returns in various jurisdictions both in the U.S. and internationally and could be subject to additional audits focusing on transfer pricing. While we believe that our tax positions will be sustained, the outcomes of such audits could result in the assessment of additional taxes, which could adversely impact our cash flows and financial results.

Foreign Currency. Our revenue and operating income are subject to variability due to the effects of foreign currency fluctuations against the U.S. Dollar. Overall, we have exposure to approximately 50 functional currencies. We pay the majority of expenses attributable to our foreign operations in the functional currency of the country in which such operations are conducted, and in 2019 a significant portion of our revenue was generated in currencies other than the U.S. Dollar. As a result, significant currency fluctuations could adversely affect our results of operations, including sales and gross margins. For example, an increase in the value of the U.S. Dollar relative to foreign currencies could result in lower revenue and increased losses from currency exchange rates. We endeavor to mitigate some of the effects of currency fluctuations with our hedging strategies; however, the volatility of foreign currency exchange rates is dependent on many factors that cannot be forecasted with reliable accuracy and our derivative instruments may not prove effective in reducing our exposures.

Cost/Expense Reductions. Our success in achieving targeted cost and expense reductions through formal restructuring or spend optimization programs, including the spend optimization program we announced in the fourth quarter of 2018 and executed throughout 2019 to drive cost savings through operational efficiencies, our continuous improvement programs, our performance improvement programs and other similar programs. The effectiveness of these programs depend on a number of factors, including our ability to achieve infrastructure rationalizations, drive lower component and product development costs, improve supply chain efficiencies, utilize next-generation technologies, simplify and rationalize product portfolios, and optimize the efficiency of our customer services and professional services consulting resources. If we do not successfully execute on these initiatives or if we experience delays in completing the implementation of these initiatives, our results of operations or financial condition could be adversely affected.

Manufacturing. At December 31, 2019, NCR leveraged a network of internal and third party partner facilities across the globe to manufacture its products:

- ATMs are manufactured in NCR facilities located in Manaus, Brazil; Budapest, Hungary; and Chennai, India and partner facilities located in Chihuahua, Mexico.
- SCO solutions are manufactured in NCR facilities located in Budapest, Hungary and partner facilities located in Chihuahua, Mexico and Xiamen, China.
- Kiosk solutions are manufactured in NCR facilities located in Budapest, Hungary; Manaus, Brazil; and Chennai, India and partner facilities in Buford, Georgia, USA.
- POS/Display terminals are manufactured in NCR facilities located in Budapest, Hungary and partner facilities located in Guadalajara, Mexico and Xiamen, China.

Additionally, at December 31, 2019, NCR outsourced the manufacturing of certain printers, bar code scanners and various other retail peripherals such as keyboards and cash drawers.

In 2018, we experienced supply constraints and product quality challenges, which impacted the timely delivery of hardware products to our customers. While we have largely returned to market-competitive lead times and product quality, if these challenges were to continue or we develop or experience other problems relating to product quality or on-time delivery to customers that we are unable to quickly manage and resolve, whether due to the geographical diversity of our manufacturing base, the use of contract or outsourced manufacturing, or otherwise, we could experience business interruption that could negatively impact our business and operating results.

Contractual Obligations for Professional Services. Our contracts for professional services consulting work may contemplate that services will be performed over multiple periods, especially in connection with large solution roll-outs. Our profitability under those contracts is largely a function of performing our contractual obligations within the estimated costs and time periods specified. If we exceed these estimated costs or cannot otherwise complete the contracted services within the specified periods, our profitability related to these contracts could be negatively impacted. In addition, if we are unable to maintain appropriate utilization rates for our consultants, we may not be able to sustain profitability on these contracts.

Acquisitions, Divestitures and Alliances. As we selectively acquire and divest technologies, products and businesses and we begin to include or exclude, as the case may be, the financial results related to these transactions, our operating results could fluctuate materially, depending on the size, nature, structure and timing of the transactions.

Underfunded Pension Obligation. At December 31, 2019, our obligation for benefits under our pension plans was $3,128 million and our pension plan assets totaled $2,435 million, which resulted in an underfunded pension obligation of $693 million. While we rebalanced our U.S. and international plan assets in order to reduce volatility, made several discretionary contributions to our pension plans and have, from time to time, completed de-risking actions, including plan settlements, our remaining underfunded pension obligation continues to require ongoing cash contributions. Our underfunded pension obligation also may be affected by future transfers and settlements relating to our pension plans.

In addition, certain of the plan assets remain subject to financial market risk, and our actuarial and other assumptions underlying our expected future benefit payments, long-term expected rate of return and future funding expectations for our plans depend on, among other things, interest rate levels and trends and capital market expectations. Further volatility in the performance of financial markets, changes in any of these actuarial assumptions (including those described in our “Critical Accounting Policies and Estimates” section of the “Management's Discussion and Analysis of Financial Condition and Results of Operations” included in Item 7 of Part II of this Report) or changes in regulations regarding funding requirements could require material increases to our expected cash contributions to our pension plans in future years.

See the “Effects of Pension, Postemployment and Postretirement Benefit Plans” and “Financial Condition, Liquidity And Capital Resources” sections of the “Management's Discussion and Analysis of Financial Condition and Results of Operations” included in Item 7 of Part II of this Report and Note 10, “Employee Benefit Plans” in the Notes to the Consolidated Financial Statements included in Item 8 of Part II of this Report for further information regarding the funded status of our pension plans and potential future cash contributions.

Stock-based Compensation. Similar to other companies, we use stock awards as a form of compensation for certain employees and non-employee directors. All stock-based awards are required to be recognized in our financial statements based on their fair values. The amount recognized for stock compensation expense could vary depending on a number of assumptions or changes that may occur. For example, assumptions such as the risk-free rate, expected holding period and expected volatility that drive our valuation model could change. Other examples that could have an impact include changes in the mix and type of awards, changes in our compensation plans, changes in our tax rate, changes in our forfeiture rate, differences in actual results compared to management’s estimates for performance-based awards or an unusually high amount of expirations of stock awards.

Changes in Accounting Principles. We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the United States. These principles are subject to interpretation by the SEC and various bodies formed to create and interpret appropriate accounting principles and guidance. Changes in accounting principles may have an adverse effect on our financial results, as well as our processes and related controls, and may retroactively affect previously reported results. For additional information regarding updated accounting principles and standards, see Item 7 of Part II of this Report and Note 1, “Basis of Presentation and Significant Accounting Policies” in the Notes to the Consolidated Financial Statements included in Item 8 of Part II of this Report.

Activist Stockholders. While we seek to actively engage with stockholders and consider their views on business and strategy, we could be subject to actions or proposals from stockholders or others that do not align with our business strategies or the interests of our other

stockholders. Responding to these stockholders could be costly and time-consuming, disrupt our business and operations, and divert the attention of our Board of Directors and senior management. Uncertainties associated with such activities could interfere with our ability to effectively execute our strategic plan, impact customer retention and long-term growth, and limit our ability to hire and retain personnel. In addition, actions of these stockholders may cause periods of fluctuation in our stock price based on temporary or speculative market perceptions or other factors that do not necessarily reflect the underlying fundamentals and prospects of our business.

Reliance on Third Parties. *If third party suppliers upon which we rely are not able to fulfill our needs, our ability to bring our products to market in a timely fashion could be affected.* There are a number of vendors providing the services and producing the parts and components that we utilize in or in connection with our products. However, there are some services and components that are licensed or purchased from single sources due to price, quality, technology, functionality or other reasons. For example, we depend on transaction processing services from Accenture, computer chips and microprocessors from Intel and operating systems from Microsoft. Certain parts and components used in the manufacturing of our ATMs and the delivery of many of our retail solutions are also supplied by single sources. In addition, there are a number of key suppliers for our businesses that provide us with critical products for our solutions. If we were unable to secure the necessary services or maintain current demand, including contract manufacturing, parts, software, components or products from a particular vendor, and we had to find an alternative supplier, our new and existing product shipments and solution deliveries, or the provision of contracted services, could be delayed, impacting our business and operating results.

An outbreak of the Wuhan coronavirus began in December 2019 and efforts to contain it are ongoing as of the time of the Report. Certain of our suppliers have been impacted and we have mitigated critical supplier shortages by securing supplies from alternate sources, but it is possible the ongoing efforts to contain the virus could lead to additional disruptions in our supply chain. Although at this time there is no impact to current orders or production lead times, the extent to which the Wuhan coronavirus may impact our results is uncertain as of the date of this Report.

We have, from time to time, formed alliances with third parties that have complementary products, software, services and skills. These alliances represent many different types of relationships, such as outsourcing arrangements to manufacture hardware and subcontract agreements with third parties to perform services and provide products and software to our customers in connection with our solutions. For example, we rely on Jabil Inc. to provide contract manufacturing services for our ATMs and self-service checkout solutions, primarily for our customers in the Americas. We also rely on third parties for cash replenishment services for our ATM products. These alliances introduce risks that we cannot control, such as nonperformance by third parties and difficulties with or delays in integrating elements provided by third parties into our solutions. Lack of information technology infrastructure, shortages in business capitalization, and manual processes and data integrity issues, particularly with smaller suppliers can also create product time delays, inventory and invoicing problems, and staging delays, as well as other operating issues. The failure of third parties to provide high-quality products or services that conform to required specifications or contractual arrangements could impair the delivery of our solutions on a timely basis, create exposure for non-compliance with our contractual commitments to our customers and impact our business and operating results. Also, some of these third parties have access to confidential NCR and customer data, personal data, and sensitive data, the integrity and security of which are of significant importance to the Company.

Work Environment. *Continuous improvement, customer experience, restructuring and cost reduction initiatives could negatively impact productivity and business results.* In the past, we have undertaken restructuring plans, and, in addition, as part of our ongoing efforts to optimize our cost structure, from time to time, we shift and realign our internal organizational structure and resources. For example, in 2018, we announced our intentions to streamline our manufacturing operations by closing two manufacturing plants in the Columbus, Georgia area and another in Beijing, China, and to move the manufacturing operations at those plants to other existing NCR facilities and to current third party suppliers. These activities could temporarily result in reduced productivity levels. Also in 2018, we experienced manufacturing supply constraints and product quality challenges, which impacted the timely delivery of hardware products to our customers. While we have largely returned to market-competitive lead times and product quality, if these challenges were to continue or we develop or experience other problems relating to product quality or on-time delivery, we could experience business interruption that could negatively impact our business and operating results. We also have ongoing initiatives to improve the experience of our customers, invest in growing identified strategic growth platforms, and shift the mix of revenue in our business to software and services revenue as well as recurring revenue. We typically have many such initiatives underway. If we are not successful in implementing and managing these various initiatives and minimizing any resulting loss in productivity, or if the costs to complete these initiatives is higher than anticipated, we may not be able to achieve targeted cost savings or productivity gains, and our business and operating results could be negatively impacted.

In 2018, we opened our new world headquarters in Atlanta, Georgia, and have relocated our headquarters operations to this facility. From time to time we may undertake similar projects with respect to our office, manufacturing or other facilities. Implementation of relocation plans such as these could result in business disruption due to a lack of business continuity, which, among other things, could have a negative impact on our productivity and business and operating results.

If we do not retain key employees, or attract quality new and replacement employees, we may not be able to meet our business objectives. Our employees are vital to our success, including the successful transformation of the Company into a software- and services-led business. Therefore, our ability to retain our key business leaders and our highly skilled software development, technical, sales, consulting and other key personnel, including key personnel of acquired businesses, is critical. These key employees may decide to leave NCR for other opportunities, or may be unavailable for health or other reasons. In addition, as our business model evolves, we may need to attract employees with different skill sets, experience and attributes to support that evolution. If we are unable to retain our key personnel, or we are unable to attract highly qualified new and replacement employees by offering competitive compensation, secure work environments and leadership opportunities now and in the future, our business and operating results could be negatively impacted. Uncertainties or delays associated with any transition of key business leaders could also cause fluctuation in our stock price.

Our ability to effectively manage our business could be negatively impacted if we do not invest in and maintain reliable technology infrastructure and information systems. It is periodically necessary to add to, replace, upgrade or modify our technology infrastructure and internal information systems. If we are unable to expand, replace, upgrade or modify such systems in a timely and cost-effective manner, especially in light of demands on our information technology resources, our ability to capture and process financial transactions and, therefore, our financial condition, results of operations, or ability to comply with legal and regulatory reporting obligations, may be negatively impacted.

Series A Convertible Preferred Stock. *The issuance of shares of our Series A Convertible Preferred Stock reduces the relative voting power of holders of our common stock, and the conversion and sale of those shares would dilute the ownership of such holders and may adversely affect the market price of our common stock.* As of December 31, 2019, approximately 0.4 million shares of our Series A Convertible Preferred Stock were outstanding, representing approximately 9% of our outstanding common stock, including the Series A Convertible Preferred Stock on an as-converted basis. Holders of Series A Convertible Preferred Stock are entitled to a cumulative dividend at the rate of 5.5% per annum, payable quarterly in arrears payable in-kind for the first sixteen dividend payments, after which, beginning in the first quarter of 2020, dividends will be payable in cash or in-kind at the option of the Company. If we fail to timely declare and pay a dividend, the dividend rate will increase to 8.0% per annum until such time as all accrued but unpaid dividends have been paid in full.

As holders of our Series A Convertible Preferred Stock are entitled to vote, on an as-converted basis, together with holders of our common stock on all matters submitted to a vote of the holders of our common stock, the Series A Convertible Preferred Stock, and the subsequent issuance of additional shares of Series A Convertible Preferred Stock through the payment of in-kind dividends, effectively reduces the relative voting power of the holders of our common stock.

In addition, the conversion of the Series A Convertible Preferred Stock to common stock would dilute the ownership interest of existing holders of our common stock, and any sales in the public market of the common stock issuable upon conversion of the Series A Convertible Preferred Stock would increase the number of shares of our common stock available for public trading, and could adversely affect prevailing market prices of our common stock. Under a customary registration rights agreement, in March 2016 we registered for resale the shares of Series A Convertible Preferred Stock, and the shares of common stock issuable upon conversion of the Series A Convertible Preferred Stock, and in March 2017, entities affiliated with The Blackstone Group L.P. (which we refer to as the Blackstone Purchasers) offered for sale 342,000 shares of Series A Convertible Preferred Stock in an underwritten public offering.

On September 18, 2019, NCR entered into an agreement to repurchase and convert the outstanding 512,221 shares of Series A Convertible Preferred Stock owned by Blackstone. NCR repurchased 237,673 shares of Series A Convertible Preferred Stock for total cash consideration of $302 million. The remaining shares of Blackstone's Series A Convertible Preferred Stock, including accrued dividends, were converted to approximately 9.16 million shares of common stock at a conversion price of $30.00 per share.

The holders of our Series A Convertible Preferred Stock may exercise influence over us. As of December 31, 2019, the outstanding shares of our Series A Convertible Preferred Stock represented approximately 9% of our outstanding common stock, including the Series A Convertible Preferred Stock on an as-converted basis. The terms of the Series A Convertible Preferred Stock require the approval of a majority of our Series A Convertible Preferred Stock by a separate class vote for us to:

- amend our organizational documents in a manner that would have an adverse effect on the Series A Convertible Preferred Stock; or
- issue securities that are senior to, or equal in priority with, the Series A Convertible Preferred Stock.

Our Series A Convertible Preferred Stock has rights, preferences and privileges that are not held by, and are preferential to, the rights of our common stockholders, which could adversely affect our liquidity and financial condition, and may result in the interests of the holders of our Series A Convertible Preferred Stock differing from those of our common stockholders. The holders of our Series A

Convertible Preferred Stock have the right to receive a liquidation preference entitling them to be paid out of our assets available for distribution to stockholders before any payment may be made to holders of any other class or series of capital stock, an amount equal to the greater of (a) 100% of the liquidation preference thereof plus all accrued dividends or (b) the amount that such holder would have been entitled to receive upon our liquidation, dissolution and winding up if all outstanding shares of Series A Convertible Preferred Stock had been converted into common stock immediately prior to such liquidation, dissolution or winding up.

In addition, dividends on the Series A Convertible Preferred Stock accrue and are cumulative at the rate of 5.5% per annum, payable quarterly in arrears. If we fail to timely declare and pay a dividend, the dividend rate will increase to 8.0% per annum until such time as all accrued but unpaid dividends have been paid in full. The dividends are to be paid in-kind for the first sixteen dividend payments, after which, beginning in the first quarter of 2020, dividends will be payable in cash or in-kind at the option of the Company.

The holders of our Series A Convertible Preferred Stock also have certain redemption rights or put rights, including the right to require us to repurchase all or any portion of the Series A Convertible Preferred Stock on any date during the three months commencing on and immediately following March 16, 2024 and the three months commencing on and immediately following every third anniversary of such date, at 100% of the liquidation preference thereof plus all accrued but unpaid dividends, and the right, subject to certain exceptions, to require us to repurchase all or any portion of the Series A Convertible Preferred Stock upon certain change of control events at the greater of (a) 100% of the liquidation preference thereof plus all accrued but unpaid dividends and (b) the consideration the holders would have received if they had converted their shares of Series A Convertible Preferred Stock into common stock immediately prior to the change of control event.

These dividend and share repurchase obligations could impact our liquidity and reduce the amount of cash flows available for working capital, capital expenditures, growth opportunities, acquisitions, and other general corporate purposes. Our obligations to the holders of Series A Convertible Preferred Stock could also limit our ability to obtain additional financing or increase our borrowing costs, which could have an adverse effect on our financial condition. The preferential rights could also result in divergent interests between the holders of our Series A Convertible Preferred Stock and holders of our common stock.

Multinational Operations. *Our multinational operations, including in new and emerging markets, expose us to business and legal risks.* For the years ended December 31, 2019 and 2018, the percentage of our revenue from outside of the United States was 50% and 52%, respectively, and we expect our percentage of revenue generated outside the United States to continue to be significant. In addition, we continue to seek to further penetrate existing international markets, and to identify opportunities to enter into or expand our presence in developing and emerging markets. While we believe that our geographic diversity may help to mitigate some risks associated with geographic concentrations of operations, our ability to manufacture and sell our solutions internationally, including in new and emerging markets, is subject to risks, which include, among others:

- the impact of ongoing and future economic and credit conditions on the stability of national and regional economies and industries within those economies;
- political conditions and local regulations that could adversely affect demand for our solutions, our ability to access funds and resources, or our ability to sell products in these markets;
- the impact of a downturn in the global economy, or in regional economies, on demand for our products;
- currency exchange rate fluctuations that could result in lower demand for our products as well as generate currency translation losses;
- limited availability of local currencies to pay vendors, employees and third parties and to distribute funds outside of the country;
- changes to global or regional trade agreements that could limit our ability to sell products in these markets;
- the imposition of import or export tariffs, taxes, trade policies or import and export controls that could increase the expense of, or limit demand for our products;
- changes to and compliance with a variety of laws and regulations that may increase our cost of doing business or otherwise prevent us from effectively competing internationally;
- government uncertainty or limitations on the ability to enforce legal rights and remedies, including as a result of new, or changes to, laws and regulations;
- reduced protection for intellectual property rights in certain countries;
- implementing and managing systems, procedures and controls to monitor our operations in foreign markets;
- changing competitive requirements and deliverables in developing and emerging markets;
- longer collection cycles and the financial viability and reliability of contracting partners and customers;
- managing a geographically dispersed workforce, work stoppages and other labor conditions or issues;

- disruptions in transportation and shipping infrastructure; and
- the impact of civil unrest relating to war and terrorist activity on the economy or markets in general, or on our ability, or that of our suppliers, to meet commitments.

In addition, as a result of our revenue generated outside of the United States, the amount of cash and cash equivalents that is held by our foreign subsidiaries continues to be significant. After the U.S. Tax Reform, in general we will not be subject to additional U.S. taxes if cash and cash equivalents and short-term investments held outside the U.S. are distributed to the U.S. in the form of dividends or otherwise. However, we may be subject to foreign withholding taxes, which could be significant.

Acquisitions, Divestitures and Alliances. *If we do not successfully integrate acquisitions or effectively manage alliance activities, we may not drive future growth.* As part of our overall solutions strategy, we have made, and intend to continue to make, investments in companies, products, services and technologies, either through acquisitions, investments, joint ventures or strategic alliances. Acquisitions and alliance activities inherently involve risks. The risks we may encounter include those associated with:

- assimilating and integrating different business operations, corporate cultures, personnel, infrastructures (such as data centers) and technologies or products acquired or licensed;
- the potential for unknown liabilities within the acquired or combined business; and
- the possibility of conflict with joint venture or alliance partners regarding strategic direction, prioritization of objectives and goals, governance matters or operations.

Further, we may make acquisitions and investments in order to acquire or obtain access to new technology or products that expand our offerings. There is risk that the new technology or products, including but not limited to entry into the payment processing market, may not perform as anticipated and may not meet estimated growth projections or expectations, or investment recipients may not successfully execute their business plans. There is also risk that key employees of an acquired business may not remain with us as long as expected. In the event that these risks materialize, we may not be able to fully realize the benefit of our investments, and our operating results could be adversely affected. An acquisition or alliance, and the integration of an acquired business, may also disrupt our ongoing business or we may not be able to successfully incorporate acquired products, services or technologies into our solutions and maintain quality. Further, we may not achieve the projected synergies once we have integrated the business into our operations, which may lead to additional costs not anticipated at the time of acquisition.

Circumstances associated with divestitures could adversely affect our results of operations and financial condition. We continue to evaluate the strategic fit of our other businesses and products and may decide to sell a business or product based on such an evaluation. Despite a decision to divest a business or product, we may encounter difficulty in finding buyers or executing alternative exit strategies at acceptable prices and terms and in a timely manner. In addition, prospective buyers may have difficulty obtaining financing. Divestitures could involve additional risks, including:

- difficulties in the separation of operations, services, products and personnel;
- the need to provide significant ongoing post-closing transition support to a buyer;
- the diversion of management’s attention from other business concerns;
- the retention of certain current or future liabilities in order to induce a buyer to complete a divestiture;
- the obligation to indemnify or reimburse a buyer for certain past liabilities of a divested business;
- the disruption of our business; and
- the potential loss of key employees.

We may not be successful in managing these or any other significant risks that we may encounter in divesting a business or product, which could have an adverse effect on our business.

Environmental. *Our historical and ongoing manufacturing activities subject us to environmental exposures.* Our facilities and operations are subject to a wide range of environmental protection laws, and we have investigatory and remedial activities underway at a number of facilities that we currently own or operate, or formerly owned or operated, to comply, or to determine compliance, with such laws. In addition, our products are subject to environmental laws in a number of jurisdictions. Given the uncertainties inherent in such activities, there can be no assurances that the costs required to comply with applicable environmental laws will not impact future operating results. We have also been identified as a potentially responsible party in connection with certain environmental matters,

including the Fox River and Kalamazoo River matters, as further described in Note 11, "Commitments and Contingencies" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report; in “Environmental Matters” within Item 1 of Part I of this Report; and in “Environmental and Legal Contingencies” within the “Critical Accounting Policies and Estimates” section of “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in Item 7 of Part II of this Report, and we incorporate such disclosures by reference and make them a part of this discussion of risk factors.

Intellectual Property. *Our continuing ability to be a leading software- and services-led enterprise provider could be negatively affected if we do not protect our intellectual property.* It is critical to our strategy, and the benefits provided by our innovations and technologies, that we are able to protect and rely on the protection of our intellectual property through patents, copyrights, trademarks, trade secrets and other intellectual property rights. We protect our innovations and technologies, including through intellectual property rights. To the extent we are not successful in protecting our intellectual property, including through intellectual property rights, our business could be adversely impacted.

Many of our offerings rely on technologies developed by others, and if we are unable to continue to obtain licenses for such technologies, our business could be adversely impacted.

From time to time, we receive notices from third parties regarding patent and other intellectual property rights. We also, from time to time, receive claims from third parties regarding infringement of patent and other intellectual property rights. Whether such claims have merit, they may require significant resources to defend. If an infringement claim is successful and we are required to pay damages, or we are unable to license the infringed technology or to substitute similar non-infringing technology, our business could be adversely affected.

Internal Controls. *If we do not maintain effective internal controls, accounting policies, practices, and information systems necessary to ensure reliable reporting of our results, our ability to comply with our legal obligations could be negatively affected.* Our internal controls, accounting policies and practices, and internal information systems enable us to capture and process transactions in a timely and accurate manner in compliance with applicable accounting standards, laws and regulations, taxation requirements and federal securities laws and regulations. Our internal controls and policies are being closely monitored by management as we continue to implement a worldwide Enterprise Resource Planning (ERP) system. While we believe these controls, policies, practices and systems are adequate to ensure data integrity, unanticipated and unauthorized actions of employees or contractors (both domestic and international), temporary lapses in internal controls due to shortfalls in transition planning and oversight, or resource constraints, could lead to improprieties and undetected errors that could impact our financial condition, results of operations, or compliance with legal obligations. Moreover, while management has concluded that the Company’s internal control over financial reporting was effective as of December 31, 2019 (as set forth in “Management’s Report on Internal Control over Financial Reporting” included in Item 9A of Part II of this Report), due to their inherent limitations, such controls may not prevent or detect misstatements in our reported financial statements. Such limitations include, among other things, the potential for human error or circumvention of controls. Further, the Company’s internal control over financial reporting is subject to the risk that controls may become inadequate because of a failure to remediate control deficiencies, changes in conditions or a deterioration of the degree of compliance with established policies and procedures.

Contingencies. *We face uncertainties with regard to regulations, lawsuits and other related matters.* In the normal course of business, we are subject to proceedings, lawsuits, claims and other matters, including, for example, those that relate to the environment, health and safety, labor and employment, employee benefits, import/export compliance, intellectual property, data privacy and security, product liability, commercial disputes and regulatory compliance, among others. Because such matters are subject to many uncertainties, their outcomes are not predictable and we must make certain estimates and assumptions in our financial statements. While we believe that amounts provided in our Consolidated Financial Statements with respect to such matters are currently adequate in light of the probable and estimable liabilities, there can be no assurances that the amounts required to satisfy alleged liabilities from such matters will not impact future operating results. Additionally, we are subject to diverse and complex laws and regulations, including those relating to corporate governance, public disclosure and reporting, environmental safety and the discharge of materials into the environment, product safety, import and export compliance, data privacy and security, antitrust and competition, government contracting, anti-corruption, and labor and human resources, which are rapidly changing and subject to many possible changes in the future. Compliance with these laws and regulations, including changes in accounting standards, taxation requirements, and federal securities laws among others, may create a substantial burden on us, and substantially increase costs to our organization or could have an impact on our future operating results.

Additionally, doing business on a worldwide basis requires us and our subsidiaries to comply with the laws and regulations of the U.S. government and various international jurisdictions. For example, our international operations are subject to U.S. and foreign anti-corruption laws and regulations, such as the Foreign Corrupt Practices Act (FCPA), which generally prohibits U.S. companies or agents acting on behalf of such companies from making improper payments to foreign officials for the purpose of obtaining or keeping business.

Our international operations are also subject to economic sanction programs administered by the U.S. Treasury Department’s Office of Foreign Assets Control (OFAC). If we are not in compliance with such laws and regulations, we may be subject to criminal and civil penalties, which may cause harm to our reputation and to our brand and could have an adverse effect on our business, financial condition and results of operations.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

As of December 31, 2019, NCR operated 201 facilities consisting of approximately 5.0 million square feet in 59 countries throughout the world, which are generally used by all of NCR's operating segments. On a square footage basis, 9% of these facilities are owned and 91% are leased. Within the total facility portfolio, NCR operates 10 research and development and manufacturing facilities totaling 0.8 million square feet, 64% of which is leased. The remaining 4.2 million square feet of space includes office, repair, and warehousing space and other miscellaneous sites, and is 88% leased. NCR also owns 3 land parcels totaling 2.4 million square feet in 1 country.

NCR is headquartered in Atlanta, Georgia, USA. Our address at our corporate headquarters is 864 Spring Street Northwest, Atlanta Georgia, 30308, USA.

Item 3. LEGAL PROCEEDINGS

Information regarding legal proceedings is included in Item 8 of Part II of this Report as part of Note 11, "Commitments and Contingencies" of the Notes to Consolidated Financial Statements and is incorporated herein by reference.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

Item 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

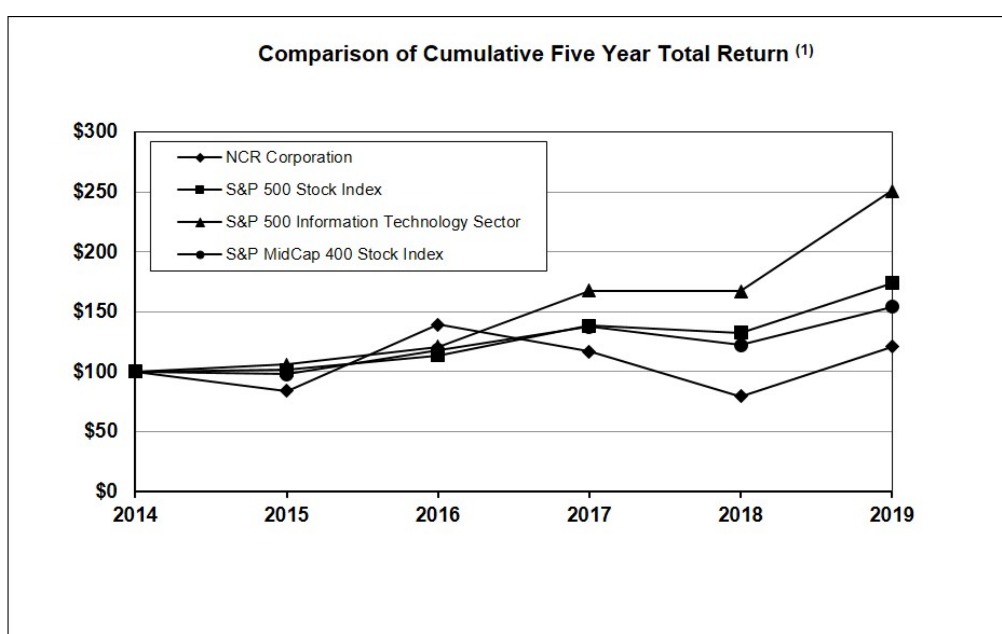
NCR common stock is listed on the New York Stock Exchange (NYSE) and trades under the symbol “NCR”. There were approximately 81,422 holders of NCR common stock as of February 14, 2020.

Dividends

Historically NCR has not paid cash dividends and does not anticipate the payment of cash dividends on NCR common stock in the immediate future. The declaration of dividends is restricted under our senior secured credit facility and the terms of the indentures for our senior unsecured notes, and would be further subject to the discretion of NCR’s Board of Directors.

Stock Performance Graph

The following graph compares the relative investment performance of NCR stock, the Standard & Poor’s MidCap 400 Stock Index, Standard & Poor’s 500 Information Technology Sector and the Standard & Poor’s 500 Stock Index. This graph covers the five-year period from December 31, 2014 through December 31, 2019.



Company / Index	2015	2016	2017	2018	2019
NCR Corporation	$ 84	$ 139	$ 117	$ 79	$ 121
S&P 500 Stock Index	$ 101	$ 114	$ 138	$ 132	$ 174
S&P 500 Information Technology Sector	$ 106	$ 121	$ 167	$ 167	$ 251
S&P MidCap 400 Stock Index	$ 98	$ 118	$ 137	$ 122	$ 154

(1) In each case, assumes a $100 investment on December 31, 2014, and reinvestment of all dividends, if any.

Purchase of Company Common Stock

On October 19, 2016, the Board approved a share repurchase program, with no expiration from the date of authorization, for the systematic repurchase of the Company's common stock to offset the dilutive effects of the Company's employee stock purchase plan, equity awards and in-kind dividends on the Company's Series A Convertible Preferred Stock. Availability under this program accrues quarterly based on the average value of dilutive issuances during the quarter.

On March 12, 2017, the Board approved a second share repurchase program that provides for the repurchase of up to $300 million of the Company's common stock. On July 25, 2018, the Board authorized an incremental $200 million of share repurchases under this program.

No shares were repurchased under these programs during the three months ended December 31, 2019.

As of December 31, 2019, $194 million was available for repurchases under the March 2017 program, and approximately $446 million was available for repurchases under the October 2016 dilution offset program. The timing and amount of repurchases under these programs depend upon market conditions and may be made from time to time in open market purchases, privately negotiated transactions, accelerated stock repurchase programs, issuer self-tender offers or otherwise. The repurchases will be made in compliance with applicable securities laws and may be discontinued at any time.

The Company occasionally purchases vested restricted stock or exercised stock options at the current market price to cover withholding taxes. For the three months ended December 31, 2019, 31,233 shares of vested restricted stock were purchased at an average price of $31.53 per share.

The Company's ability to repurchase its common stock is restricted under the Company's senior secured credit facility and terms of the indentures for the Company's senior unsecured notes, which prohibit certain share repurchases, including during the occurrence of an event of default, and establish limits on the amount that the Company is permitted to allocate to share repurchases and other restricted payments. The limitations are calculated using formulas based generally on 50% of the Company's consolidated net income for the period beginning in the third quarter of 2012 through the end of the most recently ended fiscal quarter, subject to certain other adjustments and deductions, with certain prescribed minimums. These formulas are described in greater detail in the Company's senior secured credit facility and the indentures for the Company's senior unsecured notes, each of which is filed with the SEC.

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Item 6. SELECTED FINANCIAL DATA

In millions, except per share and employee and contractor amounts

For the years ended December 31	**2019**	**2018**	**2017**	**2016**	**2015**
Continuing Operations [a,d]					
Revenue	**$ 6,915**	$ 6,405	$ 6,516	$ 6,543	$ 6,373
Income from operations	**$ 611**	$ 191	$ 691	$ 674	$ 571
Interest expense	**$ (197)**	$ (168)	$ (163)	$ (170)	$ (173)
Income tax expense (benefit)	**$ (273)**	$ 73	$ 242	$ 92	$ 55
Income (loss) from continuing operations attributable to NCR common stockholders	**$ 614**	$ (36)	$ 237	$ 283	$ (154)
(Loss) income from discontinued operations, net of tax	**$ (50)**	$ (52)	$ (5)	$ (13)	$ (24)
Basic earnings (loss) per common share attributable to NCR common stockholders:					
From continuing operations [a,d]	**$ 4.13**	$ (0.72)	$ 1.05	$ 1.86	$ (0.94)
From discontinued operations	**(0.41)**	(0.44)	(0.04)	(0.10)	(0.15)
Total basic earnings (loss) per common share	**$ 3.72**	$ (1.16)	$ 1.01	$ 1.76	$ (1.09)
Diluted earnings (loss) per common share attributable to NCR common stockholders: [b]					
From continuing operations [a,d]	**$ 3.71**	$ (0.72)	$ 1.01	$ 1.80	$ (0.94)
From discontinued operations	**(0.35)**	(0.44)	(0.04)	(0.09)	(0.15)
Total diluted earnings (loss) per common share	**$ 3.36**	$ (1.16)	$ 0.97	$ 1.71	$ (1.09)
Cash dividends per share	**$ —**	$ —	$ —	$ —	$ —
As of December 31					
Total assets [c]	**$ 8,987**	$ 7,761	$ 7,654	$ 7,673	$ 7,635
Total debt	**$ 3,559**	$ 3,165	$ 2,991	$ 3,051	$ 3,252
Series A convertible preferred stock	**$ 395**	$ 859	$ 810	$ 847	$ 798
Total NCR stockholders' equity	**$ 1,104**	$ 395	$ 719	$ 695	$ 720
Number of employees and contractors	**36,000**	34,000	34,000	33,500	32,600

(a) Continuing operations excludes the costs and insurance recoveries relating to certain environmental obligations associated with discontinued operations, including those relating to the Fox River and Kalamazoo River matters.

(b) See Note 1, “Basis of Presentation and Significant Accounting Policies” in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for further discussion of the diluted earnings (loss) per common share attributable to NCR common stockholders from continuing operations, discontinued operations and total.

(c) Total assets increased in 2019 for the adoption of the new lease standard. See Note 1, “Basis of Presentation and Significant Accounting Policies” in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for further discussion.

(d) The following income (expense) amounts, net of tax are included in income from continuing operations attributable to NCR for the years ended December 31:

In millions	2019	2018	2017	2016	2015
Pension mark-to-market adjustments	**$ (66)**	$ 44	$ (25)	$ (78)	$ (445)
Transformation and restructuring costs	**(44)**	(182)	(20)	(21)	(50)
Acquisition-related amortization of intangibles	**(68)**	(68)	(79)	(83)	(85)
Acquisition-related costs	**(5)**	(5)	(3)	(5)	(8)
Debt refinancing costs	**(5)**	—	—	—	—
Valuation allowances and other tax adjustments	**78**	—	—	—	—
Internal reorganization and intellectual property transfer	**301**	—	—	—	—
U.S Tax reform and other valuation allowances	**—**	(45)	(130)	—	—
Goodwill and long-lived asset impairment charges	**—**	(174)	—	—	—
Divestiture and liquidation losses	**—**	—	—	(5)	(29)
Reserve related to subcontract in MEA	**—**	—	—	—	(13)
Total	**$ 191**	$ (430)	$ (257)	$ (192)	$ (630)

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Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS (MD&A)

BUSINESS OVERVIEW

NCR is a leading software- and services-led enterprise provider in the financial, retail, hospitality, and telecommunications and technology industries. NCR is a global company that is headquartered in Atlanta, Georgia. NCR offers a range of solutions that help businesses of all sizes run the store, run the restaurant and run self-service banking channels. Our portfolio includes digital first offerings for banking, restaurants and retailers, as well as payments processing, multi-vendor connected device services, automated teller machines (ATMs), point of sale (POS) terminals and self-service technologies. We also resell third-party networking products and provide related service offerings in the telecommunications and technology sectors. Our solutions are also designed to support our transition to an as-a-Service company and enable us to be the technology-based service provider of choice to our customers.

As of January 1, 2019, NCR began management of its business on an industry basis, changing from the previous model of management on a solution basis. As a result, we categorize our operations into the following segments: Banking, Retail, Hospitality, and Other. Each of our segments derives its revenue in each of the sales theaters in which NCR operates. This change to our segment reporting for fiscal year 2019 and future periods is further described in Note 1, "Description of Business and Significant Accounting Policies" of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report.

NCR’s reputation is founded upon over 135 years of providing quality products, services and solutions to our customers. At the heart of our customer and other business relationships is a commitment to acting responsibly, ethically and with the highest level of integrity. This commitment is reflected in NCR’s Code of Conduct, which is available on the Corporate Governance page of our website.

2019 OVERVIEW

As more fully discussed in later sections of this MD&A, the following were significant themes and events for 2019:

- Revenue increased 8% from the prior year, driven by growth in all segments;
- Revenue growth included an increase in ATM revenue of 29%;
- Recurring revenue, which includes products and services under contract where revenue is recognized over time, increased 6% from the prior year and comprised 45% of total revenue;
- Completed the amendment and extension of our senior secured credit facility as well as refinanced the unsecured notes due 2021 which extended the weighted average debt maturity and provided improved covenants;
- Completed the redemption and conversion of the remaining Series A Convertible Preferred Stock held by Blackstone;
- Completed the acquisition of D3 Technology, Inc., an online and mobile banking platform for large financial institutions; and
- Completed the acquisition of Zynstra, Ltd., an edge virtualization technology provider, to further enhance our next generation store architecture.

OVERVIEW OF STRATEGIC INITIATIVES AND TRENDS

Today's consumers expect businesses to provide a rich, integrated and personalized experience across all commerce channels, including online, mobile and in-store. NCR is at the forefront of this shift, assisting businesses of every size in their digital transformation journeys. Our mission is to be the leading software- and services-led enterprise provider in the financial, retail, and hospitality industries. To fulfill this mission, we have developed a long-term growth strategy built on taking care of our customers, improving execution of new product introductions, accelerating software and services revenue growth and executing spend optimization programs. We believe that our mission and long-term strategy position NCR to continue to drive growth, sustainable revenue, profit and cash flow, and to improve value for all of our stakeholders.

To deliver on our mission and strategy, we are focused on the following main initiatives in 2020:

- *Customer Care* - Improve the customer experience and execution of new product introductions;

- *Stockholder Value* - Accelerate profitable top-line revenue growth by investing in and shifting our revenue mix to recurring software and services revenue streams we identify as strategic growth platforms, while improving the Company’s cost structure;

- *Strategic Growth Platforms and Targeted Acquisitions* - Increase capital expenditures in strategic growth platforms and target acquisitions to gain solutions that drive the highest growth and return on investment and will accelerate our NCR-as-a-Service vision;

- *Talent and Employee Care* - Develop, reward and retain talent with competitive recruiting, training and effective incentive-based compensation programs; and

- *Sales Enablement* - Provide our sales force with top-performing and secure products packaged to target our desired revenue mix and drive customer delight and stockholder value, as well as invest in appropriate training programs to enable success.

Potentially significant risks to the execution of our initiatives and achievement of our strategy include the strength of demand for the products we offer or will offer in the future consistent with our strategy and its effect on our businesses; the impact of disruptions in our supply chain and the addition of new suppliers due to the Wuhan coronavirus; domestic and global economic and credit conditions including, in particular, those resulting from the imposition or threat of protectionist trade policies or import or export tariffs, global and regional market conditions and spending trends in the financial, retail and hospitality industries, modified or new global or regional trade agreements, the execution of United Kingdom's exit from the European Union; uncertainty over further potential changes in Eurozone participation and fluctuations in oil and commodity prices; our ability to transform our business model and to sell higher-margin software and services with recurring revenue, including our ability to successfully streamline our hardware operations; the success of our restructuring plans and spend optimization program; our ability to improve execution of new product offerings or integration of acquired product offerings; market acceptance of new solutions; competition in the information technology industry; cybersecurity risks and compliance with data privacy and protection requirements; disruptions in or problems with our data center hosting facilities; defects or errors in our products; the historical seasonality of our sales; tax rates and new tax legislation; and foreign currency fluctuations.

Cybersecurity Risk Management

Similar to most companies, NCR and its customers are subject to more frequent and increasingly sophisticated cybersecurity attacks. The Company maintains cybersecurity risk management policies and procedures including disclosure controls, which it regularly evaluates for updates, for handling and responding to cybersecurity events. These policies and procedures include internal notifications and engagements and, as necessary, cooperation with law enforcement. Personnel involved in handling and responding to cybersecurity events periodically undertake tabletop exercises to simulate an event. Our internal notification procedures include notifying the applicable Company attorneys, which, depending on the level of severity assigned to the event, may include direct notice to, among others, the Company’s General Counsel, Ethics & Compliance Officer, and Chief Privacy Officer. Company attorneys support efforts to evaluate the materiality of any incidents, determine whether notice to third parties such as customers or vendors is required, determine whether any prohibition on insider trading is appropriate, and assess whether disclosure to stockholders or governmental filings, including with the SEC, are required. Our internal notification procedures also include notifying various NCR Information Technology Services managers, subject matter experts in the Company’s software department and Company leadership, depending on the level of severity assigned to the event.

For further information on potential risks and uncertainties see Item 1A "Risk Factors."

RESULTS OF OPERATIONS

The following table shows our results for the years ended December 31:

In millions	2019	2018	2017
Revenue	**$6,915**	$6,405	$6,516
Gross margin	**1,921**	1,675	1,855
Gross margin as a percentage of revenue	**27.8%**	26.2%	28.5%
Operating expenses			
Selling, general and administrative expenses	**$1,051**	$1,005	$923
Research and development expenses	**259**	252	241
Asset impairment charges	**—**	227	—
Income from operations	**$611**	$191	$691

The following tables show our revenue by geographic theater for the years ended December 31:

In millions		2019	% of Total		2018	% of Total	% Increase (Decrease)	% Increase (Decrease) Constant Currency [1]
Americas	**$**	**4,174**	**60%**	$	3,707	58%	13%	14%
Europe, Middle East Africa (EMEA)		**1,843**	**27%**		1,751	27%	5%	9%
Asia Pacific (APJ)		**898**	**13%**		947	15%	(5)%	(3)%
Consolidated revenue	**$**	**6,915**	**100%**	$	6,405	100%	8%	10%

In millions		2018	% of Total		2017	% of Total	% Increase (Decrease)	% Increase (Decrease) Constant Currency [1]
Americas	$	3,707	58%	$	3,809	59%	(3)%	(2)%
Europe, Middle East Africa (EMEA)		1,751	27%		1,786	27%	(2)%	(4)%
Asia Pacific (APJ)		947	15%		921	14%	3%	4%
Consolidated revenue	$	6,405	100%	$	6,516	100%	(2)%	(2)%

The following table shows our revenue by segment for the years ended December 31:

In millions		2019	% of Total		2018	% of Total	% Increase (Decrease)	% Increase (Decrease) Constant Currency [1]
Banking	**$**	**3,512**	**51%**	$	3,183	50%	10%	13%
Retail		**2,217**	**32%**		2,097	32%	6%	7%
Hospitality		**843**	**12%**		817	13%	3%	4%
Other		**343**	**5%**		308	5%	11%	13%
Consolidated revenue	**$**	**6,915**	**100%**	$	6,405	100%	8%	10%

In millions		2018	% of Total		2017	% of Total	% Increase (Decrease)	% Increase (Decrease) Constant Currency [(1)]
Banking	$	3,183	50%	$	3,175	49%	—%	1%
Retail		2,097	32%		2,169	33%	(3)%	(4)%
Hospitality		817	13%		878	13%	(7)%	(7)%
Other		308	5%		294	5%	5%	4%
Consolidated revenue	$	6,405	100%	$	6,516	100%	(2)%	(2)%

(1) The tables above include presentations of period-over-period revenue growth or decline on a constant currency basis. Revenue growth on a constant currency basis is a non-GAAP measure that excludes the effects of foreign currency fluctuations. We calculate this information by translating prior period revenue growth at current period monthly average exchange rates. We believe that examining period-over-period revenue growth or decline excluding foreign currency fluctuations is useful for assessing the underlying performance of our business and provides additional insight into historical and/or future performance, and our management uses revenue growth adjusted for constant currency to evaluate period-over-period operating performance on a more consistent and comparable basis. These non-GAAP measures should not be considered substitutes for, or superior to, period-over-period revenue growth under GAAP.

The following table provides a reconciliation of region revenue % growth (GAAP) to revenue % growth constant currency (non-GAAP) for the years ended December 31:

	2019			2018		
	Revenue % Growth (GAAP)	Favorable (unfavorable) FX impact	Revenue % Growth Constant Currency (non-GAAP)	Revenue % Growth (GAAP)	Favorable (unfavorable) FX impact	Revenue % Growth Constant Currency (non-GAAP)
Americas	13%	(1)%	14%	(3)%	(1)%	(2)%
EMEA	5%	(4)%	9%	(2)%	2%	(4)%
APJ	(5)%	(2)%	(3)%	3%	(1)%	4%
Consolidated revenue	8%	(2)%	10%	(2)%	—%	(2)%

The following table provides a reconciliation of segment revenue % growth (GAAP) to revenue % growth constant currency (non-GAAP) for the years ended December 31:

	2019			2018		
	Revenue % Growth (GAAP)	Favorable (unfavorable) FX impact	Revenue % Growth Constant Currency (non-GAAP)	Revenue % Growth (GAAP)	Favorable (unfavorable) FX impact	Revenue % Growth Constant Currency (non-GAAP)
Banking	10%	(3)%	13%	—%	(1)%	1%
Retail	6%	(1)%	7%	(3)%	1%	(4)%
Hospitality	3%	(1)%	4%	(7)%	—%	(7)%
Other	11%	(2)%	13%	5%	1%	4%
Consolidated revenue	8%	(2)%	10%	(2)%	—%	(2)%

2019 compared to 2018 results discussion

Revenue

Revenue increased 8% in 2019 from 2018 due to increases in all segments. Foreign currency fluctuations had an unfavorable impact of 2% on the revenue comparison.

Banking revenue increased 10% due to a 29% increase in Automated Teller Machine (ATM) revenue driven by higher backlog conversion and higher ATM-related software as well as growth in services revenue. Foreign currency fluctuations had an unfavorable impact of 3% on the revenue comparison.

Retail revenue increased 6% driven by an increase in payments, strength in self-checkout (SCO) and services revenue. Foreign currency fluctuations had an unfavorable impact of 1% on the revenue comparison.

Hospitality revenue increased 3% driven by higher cloud, payments, and point-of-sale (POS) revenue. Foreign currency fluctuations had an unfavorable impact of 1% on the revenue comparison.

Gross Margin

Gross margin as a percentage of revenue was 27.8% in 2019 compared to 26.2% in 2018. Gross margin for the year ended December 31, 2019 included $21 million related to transformation and restructuring costs and $24 million related to amortization of acquisition-related intangible assets. Gross margin for the year ended December 31, 2018 included $102 million related to transformation and restructuring costs and $23 million related to amortization of acquisition-related intangible assets. Excluding these items, gross margin as a percentage of revenue increased from 28.1% to 28.4% due to growth in the Banking and Retail segments primarily driven by improved hardware profitability partially offset by declines in the Hospitality segment.

2018 compared to 2017 results discussion

Revenue

Revenue decreased 2% in 2018 from 2017 due to declines in Retail and Hospitality partially offset by a slight increase in Banking. Foreign currency fluctuations did not have an impact on the revenue comparison.

Banking revenue increased slightly due to increases in software and services revenue offset by a decrease in ATM revenue. Foreign currency fluctuations had an unfavorable impact of 1% on the revenue comparison.

Retail revenue decreased 3% from 2017 driven by declines in SCO and software license revenue partially offset by growth in services revenue. Foreign currency fluctuations had a favorable impact of 1% on the revenue comparison.

Hospitality revenue decreased 7% primarily due to declines in hardware revenue. Foreign currency fluctuations did not have an impact on the revenue comparison.

Gross Margin

Gross margin as a percentage of revenue was 26.2% in 2018 compared to 28.5% in 2017. Gross margin for the year ended December 31, 2018 included $102 million related to transformation and restructuring costs and $23 million related to amortization of acquisition-related intangible assets. Gross margin for the year ended December 31, 2017 included $11 million related to transformation and restructuring costs and $50 million related to amortization of acquisition related intangible assets. Excluding these items, gross margin as a percentage of revenue decreased from 29.4% to 28.1%. Excluding these items, gross margin as a percentage of revenue declined mainly due to increased costs associated with alleviating supply chain constraints which were largely resolved by the end of 2018 as we executed our manufacturing network redesign strategy.

Effects of Pension, Postemployment, and Postretirement Benefit Plans

NCR's income from continuing operations for the years ended December 31 was impacted by certain employee benefit plans as reflected in the table below:

In millions	2019	2018	2017
Pension (benefit) expense	**$94**	$(31)	$36
Postemployment expense	**29**	40	24
Postretirement (benefit)	**(4)**	(4)	(3)
Total expense	**$119**	$5	$57

In 2019, pension expense was $94 million compared to pension benefit of $31 million in 2018 and pension expense of $36 million in 2017. In 2019, pension expense included actuarial losses of $75 million compared to actuarial gains of $45 million in 2018 and actuarial losses of $28 million in 2017. Actuarial losses in 2019 were primarily due to a decrease in the discount rates. Actuarial gains in 2018 were due to an increase in discount rates as well as a favorable impact from a mortality update in the United Kingdom. Discount rates in 2017 remained consistent with 2016 and actuarial losses in 2017 were primarily due to a mortality update in the United States.

The components of pension, postemployment and postretirement, other than service cost, are included in other income (expense), net for all periods presented. Service cost is included within the income statement line items within income from operations as other employee compensation costs arising from service rendered during the periods presented.

Selling, General and Administrative Expenses

Selling, general and administrative expenses were $1,051 million in 2019, up from $1,005 million in 2018. As a percentage of revenue, these expenses were 15.2% in 2019 and 15.7% in 2018. In 2019, selling, general and administrative expenses included $31 million of transformation and restructuring costs, $62 million of acquisition-related amortization of intangibles and $3 million of acquisition-related costs. In 2018, selling, general and administrative expenses included $67 million of transformation and restructuring costs, $62 million of acquisition-related amortization of intangibles and $6 million of acquisition-related costs. Excluding these items, selling, general and administrative expenses increased as a percentage of revenue from 13.6% in 2018 to 13.8% in 2019 due to increases in employee-related and real estate expenses.

Selling, general, and administrative expenses were $1,005 million in 2018, up from $923 million in 2017. As a percentage of revenue, these expenses were 15.7% in 2018 and 14.2% in 2017. In 2018, selling, general, and administrative expenses included $67 million of transformation and restructuring costs, $62 million of acquisition-related amortization of intangibles and $6 million of acquisition-related costs. In 2017, selling, general, and administrative expenses included $14 million of transformation and restructuring costs, $65 million of amortization of acquisition-related intangible assets and $5 million of acquisition-related costs. Excluding these items, selling, general and administrative expenses increased as a percentage of revenue from 12.9% in 2017 to 13.6% in 2018 due to continued investment in our business.

Research and Development Expenses

Research and development expenses were $259 million in 2019, up from $252 million in 2018. As a percentage of revenue, these costs were 3.7% in 2019 and 3.9% in 2018. In 2019, research and development expenses included $6 million of costs related to our transformation and restructuring costs. In 2018, research and development expenses included $10 million of transformation and restructuring costs. After considering this item, research and development expenses decreased slightly as a percentage of revenue from 3.8% in 2018 to 3.7% in 2019 due to increased discipline for investments in our strategic growth platforms.

Research and development expenses were $252 million in 2018, up from $241 million in 2017. As a percentage of revenue, these costs were 3.9% in 2018 and 3.7% in 2017. In 2018, research and development expenses included $10 million of transformation and restructuring costs. In 2017, research and development expenses included $4 million of transformation costs. After considering this item, research and development expenses increased slightly as a percentage of revenue from 3.6% in 2017 to 3.8% in 2018.

Asset Impairment Charges

In 2019, there were no significant asset impairment charges recorded. In 2018, asset impairment charges were $227 million which included a $146 million impairment of goodwill under our previous segment structure, which was assigned to the Hardware reporting unit and a $37 million impairment charge related to long-lived assets held and used in our Hardware operations. Refer to Note 5, "Goodwill and Purchased Intangible Assets" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report for additional discussion. Additionally, in 2018, we recorded $44 million for the write-off of certain internal and external use software capitalization projects that were no longer considered strategic based on review by the new management team and as a result, the projects have been abandoned. In 2017, there were no significant asset impairment charges recorded.

Interest Expense

Interest expense was $197 million in 2019 compared to $168 million in 2018 and $163 million in 2017. Interest expense in all years was primarily related to the Company's senior unsecured notes and borrowings under the Company's senior secured credit facility. The increase from 2018 to 2019 is due to higher average outstanding principal balances during 2019 as well as the write-off of $7 million of deferred financing fees as a result of the debt refinancing completed during 2019. Refer to Note 7, "Debt Obligations" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report for additional discussion.

Other Income (Expense), net

Other income (expense), net was expense of $73 million in 2019, income of $16 million in 2018 and expense of $46 million in 2017, with the components reflected in the following table:

In millions	2019	2018	2017
Interest income	**$5**	$5	$3
Foreign currency fluctuations and foreign exchange contracts	**(23)**	(26)	(26)
Bank-related fees	**(7)**	(8)	(8)
Employee benefit plans	**(82)**	45	(15)
Gain on entity liquidations	**37**	—	—
Other, net	**(3)**	—	—
Other income (expense), net	**$(73)**	$16	$(46)

Income Taxes

Our effective tax rate was (80)% in 2019, 187% in 2018, and 50% in 2017. During 2019, our tax rate was impacted by the transfer of certain intangible assets among our wholly-owned subsidiaries, resulting in a variety of tax effects including the establishment of deferred tax assets, recognition of tax gains and losses and other deferred tax adjustments. In total, these tax impacts created a net tax benefit associated with the intangible asset transfer of $264 million. Our tax rate was also impacted by foreign valuation allowance releases of $74 million. During 2018, our tax rate was impacted by lower income before tax as well as our final assessment of the impact as a result of the Tax Cuts and Jobs Act of 2017 enacted on December 22, 2017 ("U.S. Tax Reform"). We filed tax method changes that resulted in lower deferred tax assets subject to the downward rate remeasurement, and we recorded a valuation allowance on deferred tax assets related to foreign tax credits not able to be utilized as a result of U.S. Tax Reform. The net impact of these adjustments was an income tax expense of $37 million. During 2017, our tax rate was impacted by a $130 million provisional expense primarily related to the application of the newly enacted 21% corporate income tax rate to our net U.S. deferred income tax assets and the repatriation tax instituted with the U.S. Tax Reform.

While we are subject to numerous federal, state and foreign tax audits, we believe that appropriate reserves exist for issues that might arise from these audits. Should these audits be settled, the resulting tax effect could impact the tax provision and cash flows in future periods. During 2020, the Company expects to resolve certain tax matters related to U.S. and foreign jurisdictions. These resolutions could have a material impact on the effective tax rate in 2020.

We regularly review our deferred tax assets for recoverability and establish a valuation allowance if it is more likely than not that some portion or all of a deferred tax asset will not be realized. The determination as to whether a deferred tax asset will be realized is made on a jurisdictional basis and is based on the evaluation of positive and negative evidence. This evidence includes historical taxable income/loss, projected future taxable income, the expected timing of the reversal of existing temporary differences and the implementation of tax planning strategies.

Loss from Discontinued Operations

In 2019, the loss from discontinued operations was $50 million, net of tax, primarily related to updates in estimates and assumptions for the Fox River reserve, a settlement agreement entered into related to the Kalamazoo environmental matter as well as anticipated future disposal costs related to an environmental matter in Japan.

In 2018, the loss from discontinued operations was $52 million, net of tax, primarily related to updates in estimates and assumptions for the Fox River reserve, a ruling on the Kalamazoo environmental matter as well as audit settlements partially related to Teradata.

In 2017, the loss from discontinued operations was $5 million, net of tax, primarily related to updates in estimates and assumptions for the Fox River reserve partially offset by insurance recoveries received during the year.

Revenue and Operating Income by Segment

As described in Note 4, “Segment Information and Concentrations” of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report, the Company manages and reports its businesses in the following segments:

- **Banking** - We offer solutions to enable customers in the financial services industry to reduce costs, generate new revenue streams and enhance customer loyalty. These solutions include a comprehensive line of ATM and payment processing hardware and software; cash management and video banking software and customer-facing digital banking services; and related installation, maintenance, and managed and professional services.
- **Retail** - We offer solutions to customers in the retail industry designed to improve selling productivity and checkout processes as well as increase service levels. These solutions primarily include retail-oriented technologies, such as POS terminals and POS software; a retail software platform with a comprehensive suite of retail software applications; innovative self-service kiosks, such as SCO; as well as bar-code scanners. We also offer installation, maintenance, managed and professional services as well as payment processing solutions.
- **Hospitality** - We offer technology solutions to customers in the hospitality industry, serving businesses that range from a single store or restaurant to global chains and sports and entertainment venues. Our solutions include POS hardware and software solutions, installation, maintenance, managed and professional services as well as payment processing solutions.
- **Other** - This category includes telecommunications and technology solutions where we offer maintenance as well as managed and professional services for third-party hardware provided to select manufacturers who value and leverage our global service capability.

Each of these segments derives its revenue by selling in the sales theaters in which NCR operates. Segments are measured for profitability by the Company’s chief operating decision maker based on revenue and segment operating income. For purposes of discussing our operating results by segment, we exclude the impact of certain non-operational items from segment operating income, consistent with the manner by which management reviews each segment, evaluates performance, and reports our segment results under GAAP. This format is useful to investors because it allows analysis and comparability of operating trends. It also includes the same information that is used by NCR management to make decisions regarding the segments and to assess our financial performance. Our segment results are reconciled to total Company results reported under GAAP in Note 4, “Segment Information and Concentrations” of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report.

In the segment discussions below, we have disclosed the impact of foreign currency fluctuations as it relates to our segment revenue due to its significance.

Banking Segment

The following table presents the Banking revenue and segment operating income for the years ended December 31:

In millions	2019	2018	2017
Revenue	**$3,512**	$3,183	$3,175
Operating income	**$514**	$412	$421
Operating income as a percentage of revenue	**14.6%**	12.9%	13.3%

Banking revenue increased 10% in 2019 compared to 2018 due to a 29% increase in ATM revenue driven by higher backlog conversion and higher ATM-related software as well as growth in services revenue. Foreign currency fluctuations had an unfavorable impact of 3% on the revenue comparison.

Banking revenue increased slightly in 2018 compared to 2017 driven by an increase in hardware maintenance and cloud revenue offset by a 3% decline in ATM revenue. While there were supply chain constraints throughout the year, by the end of the year, the constraints were largely resolved and our overall plan to improve ATM manufacturing operations were progressing with strong production levels exiting the year. Foreign currency fluctuations had an unfavorable impact of 1% on the revenue comparison.

Operating income increased in 2019 compared to 2018 primarily driven by higher volume and a favorable mix of revenue with improved hardware profitability. Operating income decreased in 2018 compared to 2017 primarily driven by a decrease in ATM volume and the

impact of increased costs associated with alleviating supply chain constraints partially offset by a favorable impact from services productivity initiatives and higher cloud revenue.

Retail Segment

The following table presents the Retail revenue and segment operating income for the years ended December 31:

In millions	2019	2018	2017
Revenue	**$2,217**	$2,097	$2,169
Operating income	**$144**	$142	$231
Operating income as a percentage of revenue	**6.5%**	6.8%	10.7%

Retail revenue increased 6% in 2019 compared to 2018 primarily driven by an increase in payments, SCO and services revenue. Foreign currency fluctuations had an unfavorable impact of 1% on the revenue comparison.

Retail revenue decreased 3% in 2018 compared to 2017 primarily driven by a decline in SCO revenues of 15% and software license revenue partially offset by growth in services revenue. SCO revenue decreased due to the timing of customer roll-outs in the current year. Foreign currency fluctuations had a favorable impact of 1% in the year-over-year comparison.

Operating income slightly increased in 2019 compared to 2018 primarily due to higher software and services revenue and improved hardware profitability. Operating income decreased in 2018 compared to 2017 primarily due to lower revenue as well as the impact of increased costs associated with alleviating supply chain constraints.

Hospitality Segment

The following table presents the Hospitality revenue and segment operating income for the years ended December 31:

In millions	2019	2018	2017
Revenue	**$843**	$817	$878
Operating income	**$56**	$85	$140
Operating income as a percentage of revenue	**6.6%**	10.4%	15.9%

Hospitality revenue increased 3% in 2019 compared to 2018 driven by an increase in cloud, payments and POS revenue. Foreign currency fluctuations had an unfavorable impact of 1% on the revenue comparison.

Hospitality revenue decreased 7% in 2018 compared to 2017 driven by a decrease in hardware revenue due to several large customer roll-outs in the prior year and lower software license revenue offset by an increase in cloud and services revenue. Foreign currency fluctuations had no impact on the revenue comparison.

Operating income decreased in 2019 compared to 2018 driven by several large installations in the prior year, an unfavorable mix of revenue as well as increased investment in product support and payments. Operating income decreased in 2018 compared to 2017 driven by lower revenue and the impact of increased cost associated with improving the supply chain constraints.

Other Segment

The following table presents the Other revenue and operating income for the years ended December 31:

In millions	2019	2018	2017
Revenue	**$343**	$308	$294
Operating income	**$44**	$49	$48
Operating income as a percentage of revenue	**12.8%**	15.9%	16.3%

Other revenue increased 11% in 2019 compared to 2018 driven by an increase in services revenue. Foreign currency fluctuations had an unfavorable impact of 2% on the revenue comparison.

Other revenue increased 5% in 2018 compared to 2017 driven by an increase in hardware revenue as well as growth in services revenue. Foreign currency fluctuations had a favorable impact of 1% on the revenue comparison.

Operating income decreased in 2019 compared to 2018 driven by an unfavorable mix of revenue partially offset by the increase in revenue. Operating income slightly increased in 2018 compared to 2017 driven by an increase in revenue partially offset by an unfavorable product mix.

FINANCIAL CONDITION, LIQUIDITY AND CAPITAL RESOURCES

In the year ended December 31, 2019, cash provided by operating activities was $628 million and in the year ended December 31, 2018 cash provided by operating activities was $572 million. The increase was due to higher earnings partially offset by the timing of working capital requirements.

NCR's management uses a non-GAAP measure called "free cash flow" to assess the financial performance of the Company. We define free cash flow as net cash provided by (used in) operating activities and cash provided by (used in) discontinued operations, less capital expenditures for property, plant and equipment, less additions to capitalized software plus discretionary pension contributions and settlements (if any). Free cash flow does not have a uniform definition under GAAP, and therefore NCR's definition of this measure may differ from that of other companies. We believe free cash flow information is useful for investors because it relates the operating cash flows from the Company's continuing and discontinued operations to the capital that is spent and to improve business operations. In particular, free cash flow indicates the amount of cash available after capital expenditures for, among other things, investments in the Company's existing businesses, strategic acquisitions and investments, repurchase of NCR stock and repayment of debt obligations. Free cash flow does not represent the residual cash flow available for discretionary expenditures, since there may be other non-discretionary expenditures that are not deducted from the measure. This non-GAAP measure should not be considered a substitute for, or superior to, cash flows from operating activities under GAAP. The table below reconciles net cash provided by (used in) operating activities, the most directly comparable GAAP measure, to NCR's non-GAAP measure of free cash flow for the years ended December 31:

In millions	2019	2018	2017
Net cash provided by operating activities	**$628**	$572	$752
Capital expenditures for property, plant and equipment	**(91)**	(143)	(128)
Additions to capitalized software	**(238)**	(170)	(166)
Net cash used in discontinued operations	**(24)**	(36)	(8)
Free cash flow (non-GAAP)	**$275**	$223	$450

In 2019, net cash provided by operating activities increased $56 million, and net cash used in discontinued operations decreased $12 million, which contributed to a net increase in free cash flow of $52 million in comparison to 2018. Additionally, capital expenditures for property, plant and equipment decreased $52 million primarily due to expenditures for our new global headquarters completed in the previous period. Additions to capitalized software increased $68 million due to continued investment in our strategic growth platforms. The net cash used in discontinued operations in 2019 decreased $12 million in comparison to 2018 primarily due to decreased remediation spend associated with the Fox River environmental matters in 2019.

In 2018, net cash provided by operating activities decreased $180 million, and net cash used in discontinued operations increased $28 million, which contributed to a net decrease in free cash flow of $227 million in comparison to 2017. Additionally, capital expenditures for property, plant and equipment increased $15 million primarily due to expenditures related to the new global headquarters in Atlanta, Georgia. Additions to capitalized software increased $4 million due to continued investment in software solution enhancements. The

net cash used in discontinued operations in 2018 increased $28 million in comparison to 2017 primarily due to increased remediation spend associated with the Fox River environmental matter in 2018.

Financing activities and certain other investing activities are not included in our calculation of free cash flow. Our other investing activities primarily include business acquisitions, and investments as well as proceeds from the sales of property, plant and equipment. During the year ended December 31, 2019, we completed six acquisitions for $203 million, which included the acquisition of D3 Technology, Inc., Zynstra, Ltd. as well as several local Hospitality resellers.

Our financing activities include borrowings and repayments of credit facilities and notes. During the year ended December 31, 2019, we amended and restated our senior secured credit facility which resulted in the repayment of the term loan under the prior facility of $759 million and proceeds from the term loan under the new facility of $750 million. Additionally, during the year ended December 31, 2019, we issued new senior unsecured notes for an aggregate principal amount of $1 billion and redeemed in full the $500 million aggregate principal amount of 4.625% senior unsecured notes and the $400 million aggregate principal amount of 5.875% senior unsecured notes. In the year ended December 31, 2019, we paid $32 million of debt issuance fees related to these transactions.

Financing activities during the year ended December 31, 2019 also included the redemption of the outstanding Series A Convertible Preferred Stock owned by Blackstone for $302 million, the repurchase of our common stock for a total of $96 million, proceeds from stock employee plans of $16 million and tax withholding payments on behalf of employees for stock based awards that vested of $29 million. Financing activities during the year ended December 31, 2018 included the repurchase of our common stock for a total of $210 million, proceeds from employee stock plans of $20 million and tax withholding payments on behalf of employees for stock based awards that vested of $36 million. Financing activities during the year ended December 31, 2017 included the repurchase of our common stock for a total of $350 million, proceeds from employee stock plans of $15 million and tax withholding payments on behalf of employees for stock based awards that vested of $31 million.

Long Term Borrowings On August 28, 2019, the Company entered into an amended and restated senior secured credit facility and refinanced the long term facility and revolving credit facility thereunder. The senior secured credit facility consisted of a term loan facility with an aggregate principal commitment of $750 million, of which $748 million was outstanding as of December 31, 2019. Additionally, the senior secured credit facility provides for a five-year revolving credit facility with an aggregate principal amount of $1.1 billion, of which $265 million was outstanding as of December 31, 2019. Loans under the revolving credit facility are available in U.S. Dollars, Euros and Pound Sterling. The revolving credit facility also allows a portion of the availability to be used for letters of credit, and as of December 31, 2019, outstanding letters of credit were $28 million. As of December 31, 2018, the outstanding principal balance of the term loan facility was $759 million and the outstanding balance on the revolving facility was $120 million.

On August 21, 2019, the Company issued $500 million aggregate principal amount of 5.750% senior unsecured notes due in 2027 and $500 million aggregate principal amount 6.125% senior unsecured notes due in 2029. On September 7, 2019, the Company redeemed in full the $500 million aggregate principal amount of 4.625% senior unsecured notes that were due in 2021. On December 15, 2019, the Company redeemed in full the $400 million aggregate principal amount of 5.875% senior unsecured notes that were due in 2021.

As of December 31, 2019, we had outstanding $700 million in aggregate principal balance of 6.375% senior unsecured notes due in 2023, $600 million in aggregate principal balance of 5.00% senior unsecured notes due in 2022, $500 million in aggregate principal balance of 5.750% senior unsecured notes due in 2027 and $500 million in aggregate principal balance of 6.125% senior unsecured notes due in 2029.

In November 2019, the Company amended its trade receivables securitization facility (the A/R Facility) to increase the maximum commitment made available under the Facility and extended the maturity date to November 2021. The amendment also included other modifications including the scope of receivables subject to the facility and related eligibility requirements, the adoption of a new benchmark for determining overnight funding rates and the fees and interest payable to the agent and lenders party thereto. The A/R Facility now provides for up to $300 million in funding based on the availability of eligible receivables and other customary factors and conditions. As of December 31, 2019 and 2018, the Company had $270 million and $100 million, respectively, outstanding under the facility.

See Note 7, "Debt Obligations" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report for further information on the senior secured credit facility, the senior unsecured notes and the trade receivables securitization facility.

Employee Benefit Plans We expect to make pension, postemployment and postretirement plan contributions of approximately $78 million in 2020. See Note 10, “Employee Benefit Plans” of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report for additional discussion on our pension, postemployment and postretirement plans.

Transformation and Restructuring Initiatives In 2019, we successfully executed our spend optimization program to drive cost savings through operational efficiencies to generate at least $100 million of savings. This initiative created efficiencies in our corporate functions, reduced spending in non-strategic areas and limited discretionary spending. We incurred a pre-tax charge of $58 million in 2019 with a cash impact of $44 million. Additionally, during 2020, as we execute our transition to NCR as-a-Service, our efforts will be centered around improving our organizational design and driving improved efficiencies. The primary areas of focus include our offerings, go to market strategy and support and delivery model. We expect to achieve $90 million annualized run-rate savings by year-end 2020 with $40 million of realized savings in 2020.

Series A Convertible Preferred Stock On December 4, 2015, NCR issued 820,000 shares of Series A Convertible Preferred Stock to certain entities affiliated with the Blackstone Group L.P. (collectively, Blackstone) for an aggregate purchase price of $820 million, or $1,000 per share, pursuant to an Investment Agreement between the Company and Blackstone, dated November 11, 2015. In connection with the issuance of the Series A Convertible Preferred Stock, the Company incurred direct and incremental expenses of $26 million. These direct and incremental expenses reduced the Series A Convertible Preferred Stock, and will be accreted through retained earnings as a deemed dividend from the date of issuance through the first possible known redemption date, March 16, 2024. Holders of Series A Convertible Preferred Stock are entitled to a cumulative dividend at the rate of 5.5% per annum, payable quarterly in arrears and payable in-kind for the first sixteen dividend payments, after which, beginning in the first quarter of 2020, dividends will be payable in cash or in-kind at the option of the Company.

Under the Investment Agreement, Blackstone agreed not to sell or otherwise transfer its shares of Series A Convertible Preferred Stock (or any shares of common stock issued upon conversion thereof) without the Company’s consent until June 4, 2017. In March 2017, we provided Blackstone with an early release from this lock-up, allowing Blackstone to sell approximately 49% of its shares of Series A Convertible Preferred Stock, and in return, Blackstone agreed to amend the Investment Agreement to extend the lock-up on the remaining 51% of its shares of Series A Convertible Preferred Stock for six months until December 1, 2017.

In connection with the early release of the lock-up, Blackstone offered for sale 342,000 shares of Series A Convertible Preferred Stock in an underwritten public offering. In addition, Blackstone converted 90,000 shares of Series A Convertible Preferred Stock into shares of our common stock and we repurchased those shares of common stock for $48.47 per share. The underwritten offering and the stock repurchase were consummated on March 17, 2017.

On September 18, 2019, NCR entered into an agreement to repurchase and convert the outstanding 512,221 shares of Series A Convertible Preferred Stock owned by Blackstone. NCR repurchased 237,673 shares of Series A Convertible Preferred Stock for total cash consideration of $302 million. The remaining shares of Blackstone's Series A Convertible Preferred Stock, including accrued dividends, were converted to approximately 9.16 million shares of common stock at a conversion price of $30.00 per share. This transaction retires all of the Series A Convertible Preferred Stock owned by Blackstone.

During the year ended December 31, 2019 and 2018, the Company paid dividends-in-kind of $43 million and $46 million respectively, associated with the Series A Convertible Preferred Stock. As of December 31, 2019 and 2018, the Company had accrued dividends of $1 million and $3 million, respectively. There were no cash dividends declared in the years ended December 31, 2019 and 2018.

The remaining Series A Convertible Preferred Stock is convertible at the option of the holders at any time into shares of common stock at a conversion price of $30.00 per share, or a conversion rate of 33.333 shares of common stock per share of Series A Convertible Preferred Stock.

As of December 31, 2019 and 2018, the maximum number of common shares that could be required to be issued upon conversion of the outstanding shares of the Series A Convertible Preferred Stock was 13.3 million and 29.0 million shares, respectively, which would represent approximately 9% and 20% of our outstanding common stock as of December 31, 2019 and 2018 including the preferred shares on an as-converted basis.

Cash and Cash Equivalents Held by Foreign Subsidiaries Cash and cash equivalents held by the Company's foreign subsidiaries were $475 million and $443 million at December 31, 2019 and 2018, respectively. As a result of U.S. Tax Reform, including the repatriation tax, in general we will not be subject to additional U.S. taxes if cash and cash equivalents and short-term investments held outside the U.S. are distributed to the U.S. in the form of dividends or otherwise. However, we may be subject to foreign withholding taxes, which could be significant.

Summary As of December 31, 2019, our cash and cash equivalents totaled $509 million and our total debt was $3.59 billion. Our borrowing capacity under our senior secured credit facility was $807 million at December 31, 2019. Our ability to generate positive cash flows from operations is dependent on general economic conditions, and the competitive environment in our industry, and is

subject to the business and other risk factors described in Item 1A of Part I of this Report. If we are unable to generate sufficient cash flows from operations, or otherwise comply with the terms of our credit facilities, we may be required to seek additional financing alternatives.

We believe that we have sufficient liquidity based on our current cash position, cash flows from operations and existing financing to meet our expected pension, postemployment and postretirement plan contributions, remediation payments related to environmental matters, debt servicing obligations, payments related to transformation initiatives, and our operating requirements for the next twelve months.

Contractual Obligations In the normal course of business, we enter into various contractual obligations that impact, or could impact, the liquidity of our operations. The following table and discussion outlines our material obligations as of December 31, 2019 on an undiscounted basis, with projected cash payments in the years shown:

In millions	Total Amounts	2020	2021-2022	2023-2024	2025 & Thereafter	All Other
Debt obligations	$ 3,591	$ 15	$ 885	$ 980	$ 1,711	$ —
Interest on debt obligations	1,063	186	358	242	277	—
Estimated environmental liability payments	117	42	31	24	20	—
Lease obligations	733	129	182	102	320	—
Purchase obligations	1,128	1,076	44	8	—	—
Uncertain tax positions	92	—	—	—	—	92
Total obligations	$ 6,724	$ 1,448	$ 1,500	$ 1,356	$ 2,328	$ 92

For purposes of this table, we used interest rates as of December 31, 2019 to estimate the future interest on debt obligations outstanding as of December 31, 2019 and have assumed no voluntary prepayments of existing debt. See Note 7, "Debt Obligations" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report for additional disclosure related to our debt obligations and the related interest rate terms.

The estimated environmental liability payments included in the table of contractual obligations shown above are related to the Fox River, Kalamazoo and Ebina environmental matters. The amounts shown are our expected payments, net of the payment obligations of co-obligors and an estimate for payments to be received from indemnification parties. For additional information, refer to Note 11, "Commitments and Contingencies" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report.

Our lease obligations are primarily for future rental amounts for our world headquarters in Atlanta, Georgia, as well as for certain sales and manufacturing facilities in various domestic and international locations and leases related to equipment and vehicles.

Purchase obligations represent committed purchase orders and other contractual commitments for goods or services. The purchase obligation amounts were determined through information in our procurement systems and payment schedules for significant contracts. Included in the amounts are committed payments in relation to the long-term service agreement with Accenture under which NCR’s transaction processing activities and functions are performed.

We have a $92 million liability related to our uncertain tax positions. Due to the nature of the underlying liabilities and the extended time often needed to resolve income tax uncertainties, we cannot make reliable estimates of the amount or timing of cash payments that may be required to settle these liabilities. For additional information, refer to Note 8, "Income Taxes" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report.

Our U.S. and international employee benefit plans, which are described in Note 10, “Employee Benefit Plans” of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report, could require significant future cash payments. We expect mandatory contributions to our U.S. pension plan could be required beginning in 2021 based on current funding requirements and assuming the Company does not complete any actions, including, but not limited to, a pre-fund or de-risking action. The funded status of NCR’s U.S. pension plan is an underfunded position of $577 million as of December 31, 2019 compared to an underfunded position of $494 million as of December 31, 2018. Our international retirement plans were in an underfunded position of $116 million as of December 31, 2019, as compared to an underfunded position of $139 million as of December 31, 2018. The increase in our underfunded position is primarily attributable to a decrease in discount rates. Contributions to international pension plans are expected to be approximately $26 million in 2020.

We also have product warranties that may affect future cash flows. These items are not included in the table of obligations shown above, but are described in detail in Note 11, "Commitments and Contingencies" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report.

Our senior secured credit facility and the indentures for our senior unsecured notes include affirmative and negative covenants that restrict or limit our ability to, among other things, incur indebtedness; create liens on assets; engage in certain fundamental corporate changes or changes to our business activities; make investments; sell or otherwise dispose of assets; engage in sale-leaseback or hedging transactions; pay dividends or make similar distributions; repay other indebtedness; engage in certain affiliate transactions; or enter into agreements that restrict our ability to create liens, pay dividends or make loan repayments. Our senior secured credit facility also includes financial covenants that require us to maintain:

- a consolidated leverage ratio on the last day of any fiscal quarter, not to exceed (i) in the case of any fiscal quarter ending on or prior to March 31, 2021, (a) the sum of 4.50 and an amount (not to exceed 0.50) to reflect debt used to reduce NCR’s unfunded pension liabilities to (b) 1.00, and (ii) in the case of any fiscal quarter ending after March 31, 2021 and on or prior to March 31, 2023, (a) the sum of 4.25 and an amount (not to exceed 0.50) to reflect debt used to reduce NCR’s unfunded pension liabilities to (b) 1.00; and (iii) in the case of any fiscal quarter ending after March 31, 2023, (a) the sum of 4.00 and an amount (not to exceed 0.50) to reflect debt used to reduce our unfunded pension liabilities to (b) 1.00.

The Company has the option to elect to increase the maximum permitted leverage ratio by 0.25 in connection with the consummation of any material acquisition (as defined in the senior secured credit facility) for four fiscal quarters, but in no event will the maximum permitted leverage ratio, inclusive of all increases, exceed 4.75 to 1.00. At December 31, 2019, the maximum consolidated leverage ratio under the Senior Secured Credit Facility was 4.75 to 1.00.

Off-Balance Sheet Arrangements We have no significant contractual obligations not fully recorded on our Consolidated Balance Sheets or fully disclosed in the notes to our consolidated financial statements. We have no material off-balance sheet arrangements as defined by SEC Regulation S-K Item 303(a)(4)(ii).

See Note 11, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for additional information on guarantees associated with our business activities.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our consolidated financial statements are prepared in accordance with GAAP. In connection with the preparation of these financial statements, we are required to make assumptions, estimates and judgments that affect the reported amounts of assets, liabilities, revenue, expenses and the related disclosure of contingent liabilities. These assumptions, estimates and judgments are based on historical experience and are believed to be reasonable at the time. However, because future events and their effects cannot be determined with certainty, the determination of estimates requires the exercise of judgment. Our critical accounting policies are those that require assumptions to be made about matters that are highly uncertain. Different estimates could have a material impact on our financial results. Judgments and uncertainties affecting the application of these policies and estimates may result in materially different amounts being reported under different conditions or circumstances. Our management continually reviews these assumptions, estimates and judgments to ensure that our financial statements are presented fairly and are materially correct.

In many cases, the accounting treatment of a particular transaction is specifically dictated by GAAP and does not require significant management judgment in its application. There are also areas in which management’s judgment in selecting among available alternatives would not produce a materially different result. The significant accounting policies and estimates that we believe are the most critical to aid in fully understanding and evaluating our reported financial results are discussed in the paragraphs below. Our senior management has reviewed these critical accounting policies and related disclosures with our independent registered public accounting firm and the Audit Committee of our Board of Directors. See Note 1, “Basis of Presentation and Significant Accounting Policies” of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report, which contains additional information regarding our accounting policies and other disclosures required by GAAP.

Revenue Recognition The Company records revenue when, or as, performance obligations are satisfied by transferring control of a promised good or service to the customer in an amount that reflects the consideration we expect to be entitled to in exchange for products and services. The Company evaluates the transfer of control primarily from the customer’s perspective where the customer has the ability to direct the use of and obtain substantially all of the remaining benefits from that good or service. The Company does not adjust the transaction price for taxes collected from customers, as those amounts are netted against amounts remitted to government authorities.

NCR frequently enters contracts that include multiple distinct performance obligations, including hardware, software, professional consulting services, installation services and maintenance support services. A promise to a customer is considered distinct when the product or service is both capable of being distinct, and distinct in the context of the contract. For these arrangements, the Company allocates the transaction price, at contract inception, to each distinct performance obligation on a relative standalone selling price basis. The primary method used to estimate standalone selling price is the price that the Company charges for that good or service when the Company sells it separately in similar circumstances to similar customers.

For hardware products, control is generally transferred when the customer has the ability to direct the use of and obtain substantially all of the remaining benefits of the products, which generally coincides with when the customer has assumed title and risk of loss of the goods sold. In certain instances, customer acceptance is required prior to the passage of title and risk of loss of the delivered products. In such cases, revenue is not recognized until the customer acceptance is obtained. Delivery, acceptance, and transfer of title and risk of loss generally occur in the same reporting period. NCR's customers may request that delivery and passage of title and risk of loss occur on a bill and hold basis. Hardware products may also be provided as a service when included in a package sold with software and services. In these instances, revenue is recognized in accordance with the lease accounting standard and depending on the terms and conditions included in the contract may be either sales-type leases or operating leases. Revenue from hardware sales-type leases is recognized at the beginning of the lease term and revenue from operating leases is recognized on a straight-line basis over the term of the contract.

Software products may be sold as perpetual licenses, term-based licenses and cloud-enabled, software as a service (SaaS). Both perpetual and term-based license revenue are recognized at a point in time when control transfers to the customer and reported within product revenue. Control is typically transferred when the customer takes possession of, or has complete access to, the software. Revenue from term license software is recognized for the committed term of the contract (which is typically one month to one year due to customer termination rights). If the amount of consideration the Company expects to be paid in exchange for the licenses depends on customer usage, revenue is recognized when the usage occurs.

Cloud-enabled SaaS primarily consists of fees to provide our customers access to our platform and cloud-based applications. Revenue from SaaS contracts is recognized as variable consideration directly allocated based on customer usage or on a ratable basis over the contract term beginning on the date that our service is made available to the customer. SaaS is reported as part of our services revenue.

The Company sells some product solutions that include a combination of cloud-enabled SaaS and on-premise term-based software licenses. Significant judgment is required to determine if the products and services represent distinct promises to the customer or if they should be combined into one performance obligation. When they are combined into one performance obligation, revenue is recognized ratably over the subscription period for which the SaaS is provided.

In addition to SaaS, our services revenue includes professional consulting, installation and maintenance support. Professional consulting primarily consists of software implementation, integration, customization and optimization services. Revenue from professional consulting contracts is recognized when the services are completed or customer acceptance of the service is received, if required. For installation and maintenance, control is transferred as the services are provided or ratably over the service period, or, if applicable, after customer acceptance of the service. We apply the ‘as invoiced’ practical expedient, for performance obligations satisfied over time, if the amount we may invoice corresponds directly with the value to the customer of the Company’s performance to date. This expedient permits us to recognize revenue in the amount we invoice the customer.

The nature of our arrangements gives rise to several types of variable consideration including service level agreement credits, stock rotation rights, trade-in credits and volume-based rebates. At contract inception, we include this variable consideration in our transaction price when there is a basis to reasonably estimate the amount of the fee and it is probable there will not be a significant reversal. These estimates are generally made using the expected value method and a portfolio approach, based on historical experience, anticipated performance and our best judgment at the time. These estimates are reassessed at each reporting date. Because of our confidence in estimating these amounts, they are included in the transaction price of our contracts and the associated remaining performance obligations.

We account for shipping and handling activities related to contracts with customers as costs to fulfill our promise to transfer the associated products, rather than as a separate performance obligation. Accordingly, we record amounts billed for shipping and handling costs as a component of net product sales, and classify such costs as a component of cost of products.

Allowance for Doubtful Accounts We evaluate the collectability of our accounts receivable based on a number of factors. We establish provisions for doubtful accounts using percentages of our accounts receivable balance as an overall proxy to reflect historical average credit losses and also use management judgment that may include elements that are uncertain, including specific provisions for known issues. The percentages are applied to aged accounts receivable balances. Aged accounts are determined based on the number of days the receivable is outstanding, measured from the date of the invoice, or from the date of revenue recognition. As the age of the receivable increases, the provision percentage also increases. This policy is applied consistently among all of our operating segments.

Based on the factors below, we periodically review customer account activity in order to assess the adequacy of the allowances provided for potential losses. Factors include economic conditions and judgments regarding collectability of account balances, each customer's payment history and creditworthiness.

The allowance for doubtful accounts was $44 million as of December 31, 2019, $31 million as of December 31, 2018, and $37 million as of December 31, 2017. These allowances represent, as a percentage of gross receivables, 2.9% in 2019, 2.2% in 2018, and 2.8% in 2017.

Given our experience, the reserves for potential losses are considered adequate, but if one or more of our larger customers were to default on its obligations, we could be exposed to potentially significant losses in excess of the provisions established. We continually evaluate our reserves for doubtful accounts and economic deterioration could lead to the need to increase our allowances.

Inventory Valuation Inventories are stated at the lower of cost or net realizable value, using the average cost method. Each quarter, we reassess raw materials, work-in-process, parts and finished equipment inventory costs to identify purchase or usage variances from standards, and valuation adjustments are made. Additionally, to properly provide for potential exposure due to slow-moving, excess, obsolete or unusable inventory, inventory values are reduced based on forecasted usage, orders, technological obsolescence and inventory aging. These factors are impacted by market conditions, technology changes and changes in strategic direction, and require estimates and management judgment that may include elements that are uncertain. On a quarterly basis, we review the current net realizable value of inventory and adjust for any inventory exposure due to age or excess of cost over net realizable value.

We have inventory in more than 40 countries around the world. We purchase inventory from third party suppliers and manufacture inventory at our plants. This inventory is transferred to our distribution and sales organizations at cost plus a mark-up. This mark-up is referred to as inter-company profit. Each quarter, we review our inventory levels and analyze our inter-company profit to determine the correct amount of inter-company profit to eliminate. Key assumptions are made to estimate product gross margins, the product mix of existing inventory balances and current period shipments. Over time, we refine these estimates as facts and circumstances change. If our estimates require refinement, our results could be impacted. The policies described are applied consistently across all of our operating segments.

Warranty Reserves One of our key objectives is to provide superior quality products and services. To that end, we provide a standard manufacturer's warranty typically extending up to 12 months, allowing our customers to seek repair of products under warranty at no additional cost. A corresponding estimated liability for potential warranty costs is recorded at the time of the sale. We sometimes offer extended warranties in the form of product maintenance services to our customers for purchase. For maintenance contracts that have been combined with product contracts under the revenue guidance, the Company defers revenue at an amount based on the relative standalone selling price allocation and recognizes the deferred revenue over the service term. For non-combined maintenance contracts, the Company defers the stated amount of the separately priced service and recognizes the deferred revenue over the service term. Refer to Note 11, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for further information regarding our accounting for extended warranties.

Future warranty obligation costs are based upon historical factors such as labor rates, average repair time, travel time, number of service calls per machine and cost of replacement parts. When a sale is consummated, the total customer revenue is recognized and the associated warranty liability is recorded based upon the estimated cost to provide the service over the warranty period.

Total warranty costs were $37 million in 2019, $42 million in 2018, and $43 million in 2017. Warranty costs as a percentage of total product revenue was 1.4% in 2019, 1.8% in 2018, and 1.7% in 2017. Historically, the principal factor used to estimate our warranty costs has been service calls per machine. Significant changes in this factor could result in actual warranty costs differing from accrued estimates. Although no near-term changes in our estimated warranty reserves are currently anticipated, in the unlikely event of a significant increase in warranty claims by one or more of our larger customers, costs to fulfill warranty obligations would be higher than provisioned, thereby impacting results.

Goodwill Goodwill is tested at the reporting unit level for impairment on an annual basis during the fourth quarter or more frequently if certain events occur indicating that the carrying value of goodwill may be impaired. A significant amount of judgment is involved in determining if an indicator of impairment has occurred. Such indicators may include a decline in expected cash flows, a significant adverse change in legal factors or in the business climate, a decision to sell a business, unanticipated competition, or slower growth rates, among others.

In the evaluation of goodwill for impairment, we have the option to perform a qualitative assessment to determine whether further impairment testing is necessary or to perform a quantitative assessment by comparing the fair value of a reporting unit to its carrying

amount, including goodwill. Under the qualitative assessment, an entity is not required to calculate the fair value of a reporting unit unless the entity determines that it is more likely than not that its fair value is less than its carrying amount. If under the quantitative assessment the fair value of a reporting unit is less than its carrying amount, then the amount of the impairment loss, if any, is determined based on the amount by which the carrying amount exceeds the fair value up to the total value of goodwill assigned to the reporting unit. Fair values of the reporting units are estimated using a weighted methodology considering the output from both the income and market approaches. The income approach incorporates the use of a discounted cash flow (DCF) analysis. A number of significant assumptions and estimates are involved in the application of the DCF model to forecast operating cash flows, including revenue growth, operating income margin and discount rate. Several of these assumptions vary among reporting units. The cash flow forecasts are generally based on approved strategic operating plans. The market approach is performed using the Guideline Public Companies (GPC) method which is based on earnings multiple data. We perform a reconciliation between our market capitalization and our estimate of the aggregate fair value of the reporting units, including consideration of a control premium.

Valuation of Long-lived Assets and Amortizable Other Intangible Assets We perform impairment tests for our long-lived assets if an event or circumstance indicates that the carrying amount of our long-lived assets may not be recoverable. In response to changes in industry and market conditions, we may also strategically realign our resources and consider restructuring, disposing of, or otherwise exiting businesses. Such activities could result in impairment of our long-lived assets or other intangible assets. We also are subject to the possibility of impairment of long-lived assets arising in the ordinary course of business. We consider the likelihood of impairment if certain events occur indicating that the carrying value of the long-lived assets may be impaired and we may recognize impairment if the carrying amount of a long-lived asset or intangible asset is not recoverable from its undiscounted cash flows. Impairment is measured as the difference between the carrying amount and the fair value of the asset. We use both the income approach and market approach to estimate fair value. Our estimates of fair value are subject to a high degree of judgment since they include a long-term forecast of future operations. Accordingly, any value ultimately derived from our long-lived assets may differ from our estimate of fair value.

Pension, Postretirement and Postemployment Benefits We sponsor domestic and foreign defined benefit pension and postemployment plans as well as domestic postretirement plans. As a result, we have significant pension, postretirement and postemployment benefit costs, which are developed from actuarial valuations. Actuarial assumptions attempt to anticipate future events and are used in calculating the expense and liability relating to these plans. These factors include assumptions we make about interest rates, expected investment return on plan assets, rate of increase in healthcare costs, involuntary turnover rates, and rates of future compensation increases. In addition, our actuarial consultants advise us about subjective factors such as withdrawal rates and mortality rates to use in our valuations. We generally review and update these assumptions on an annual basis at the beginning of each fiscal year. We are required to consider current market conditions, including changes in interest rates, in making these assumptions. The actuarial assumptions that we use may differ materially from actual results due to changing market and economic conditions, higher or lower withdrawal rates, or longer or shorter life spans of participants. These differences may result in a significant impact to the amount of pension, postretirement or postemployment benefits expense we have recorded or may record. Ongoing pension, postemployment and postretirement expense impacts all of our segments. Pension mark-to-market adjustments, settlements, curtailments and special termination benefits are excluded from our segment results as those items are not included in the evaluation of segment performance. See Note 4, "Segment Information and Concentrations," in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for a reconciliation of our segment results to income from operations.

The key assumptions used in developing our 2019 expense were discount rates of 3.8% for our U.S. pension plan and 3.7% for our postretirement plan, and an expected return on assets assumption of 3.6% for our U.S. pension plan in 2019. The U.S. plan represented 62% of the pension obligation and 100% of the postretirement plan obligation as of December 31, 2019. Holding all other assumptions constant, a 0.25% change in the discount rate used for the U.S. plan would have increased or decreased 2019 ongoing pension expense by approximately $2 million and would have had an immaterial impact on 2019 postretirement income. A 0.25% change in the expected rate of return on plan assets assumption for the U.S. pension plan would have increased or decreased 2019 ongoing pension expense by approximately $3 million. Our expected return on plan assets has historically been and will likely continue to be material to net income. For 2020, we intend to use discount rates of 2.7% and 2.5% in determining the U.S. pension and postretirement expense, respectively. We intend to use an expected rate of return on assets assumption of 2.8% for the U.S. pension plan.

We recognize additional changes in the fair value of plan assets and net actuarial gains or losses of our pension plans upon remeasurement, which occurs at least annually in the fourth quarter of each year. The remaining components of pension expense, primarily net service cost, interest cost, and the expected return on plan assets, are recorded on a quarterly basis as ongoing pension expense. While it is required that we review our actuarial assumptions each year at the measurement date, we generally do not change them between measurement dates. We use a measurement date of December 31 for all of our plans. Changes in assumptions or asset values may have a significant effect on the annual measurement of expense or income in the fourth quarter.

The most significant assumption used in developing our 2019 postemployment plan expense is the assumed rate of involuntary turnover of 4.3%. The involuntary turnover rate is based on historical trends and projections of involuntary turnover in the future. A 0.25% change in the rate of involuntary turnover would have increased or decreased 2019 expense by approximately $2 million. The sensitivity of the assumptions described above is specific to each individual plan and not to our pension, postretirement and postemployment plans in the aggregate. We intend to use an involuntary turnover assumption of 3.8% in determining the 2020 postemployment expense.

Environmental and Legal Contingencies Each quarter, we review the status of each claim and legal proceeding and assess our potential financial exposure. If the potential loss from any claim or legal proceeding would be material and is considered probable and the amount can be reasonably estimated, we accrue a liability for the estimated loss. To the extent that the amount of such a probable loss is estimable only by reference to a range of equally likely outcomes, and no amount within the range appears to be a better estimate than any other amount, we accrue the amount at the low end of the range. Because of uncertainties related to these matters, the use of estimates, assumptions and judgments, and external factors beyond our control, accruals are based on the best information available at the time. At environmental sites, or portions of environmental sites, where liability is determined to be probable but a remedy has not yet been determined, we accrue for the costs of investigations and studies for the affected areas but not for the costs of remediation. As additional information becomes available, we reassess the potential liability related to our pending claims and litigation and may revise our estimates. Such revisions in the estimates of the potential liabilities could have a material impact on our results of operations and financial position. When insurance carriers or third parties have agreed to pay any amounts related to costs, and we believe that it is probable that we can collect such amounts, those amounts are reflected as receivables in our Consolidated Balance Sheet.

The most significant legal contingencies impacting our Company are the Fox River, Kalamazoo River, and Ebina matters, which are further described in detail in Note 11, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report. NCR has been identified as a potentially responsible party (PRP) at both the Fox River and Kalamazoo sites.

As described below and in Note 11, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report, while litigation activities have largely concluded with respect to the Fox River and Kalamazoo matters and while the Company has engaged in cooperative regulatory compliance activities with the government of Japan with respect to the Ebina matter, the extent of our potential liabilities continues to be subject to significant uncertainties. The uncertainties related to the Fox River and Kalamazoo matters include the total cost of clean-up as well as the solvency and willingness of the co-obligors or indemnitors to pay. The uncertainties related to the Ebina matter include total cost of clean-up subject to approval by local agencies in Japan.

Our net reserves for the Fox River matter, the Kalamazoo matter and the Ebina matter, as of December 31, 2019 were approximately $16 million, $81 million, and $19 million, respectively, as further discussed in Note 11, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report. The Company regularly re-evaluates the assumptions used in determining the appropriate reserve for these matters as additional information becomes available and, when warranted, makes appropriate adjustments.

Income Taxes We recognize deferred tax assets and liabilities based on the differences between the financial statement carrying amounts and the tax basis of assets and liabilities. The deferred tax assets and liabilities are determined based on the enacted tax rates expected to apply in the periods in which the deferred tax assets or liabilities are anticipated to be settled or realized.

We regularly review our deferred tax assets for recoverability and establish a valuation allowance if it is more likely than not that some portion or all of a deferred tax asset will not be realized. The determination as to whether a deferred tax asset will be realized is made on a jurisdictional basis and is based on the evaluation of positive and negative evidence. This evidence includes historical taxable income, projected future taxable income, the expected timing of the reversal of existing temporary differences and the implementation of tax planning strategies. Projected future taxable income is based on our expected results and assumptions as to the jurisdiction in which the income will be earned. The expected timing of the reversals of existing temporary differences is based on current tax law and our tax methods of accounting. As a result of this determination, we had valuation allowances of $352 million as of December 31, 2019 and $485 million as of December 31, 2018, related to certain deferred income tax assets, primarily tax loss carryforwards, in jurisdictions where there is uncertainty as to the ultimate realization of a benefit from those tax assets.

If we are unable to generate sufficient future taxable income, or if there is a material change in the actual effective tax rates or the time period within which the underlying temporary differences become taxable or deductible, or if the tax laws change unfavorably, then we could be required to increase our valuation allowance against our deferred tax assets, resulting in an increase in our effective tax rate.

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the consolidated financial statements from such a position are measured based on the largest benefit that has a greater than fifty percent likelihood of being realized upon settlement. Interest and penalties related to uncertain tax positions are recognized as part of the

provision for income taxes and are accrued beginning in the period that such interest and penalties would be applicable under relevant tax law until such time that the related tax benefits are recognized.

During 2019, we transferred certain intangible assets among our wholly-owned subsidiaries, which resulted in the establishment of deferred tax assets of $274 million. The establishment of deferred tax assets from intra-entity transfers of intangible assets required us to make significant estimates and assumptions to determine the fair value of such intangible assets. Critical estimates in valuing the intangible assets include, but are not limited to, internal revenue and expense forecasts, and discount rates. The sustainability of our future tax benefits is dependent upon the acceptance of these valuation estimates and assumptions by the taxing authorities.

The provision for income taxes may change period-to-period based on non-recurring events, such as the settlement of income tax audits and changes in tax laws, as well as recurring factors including the geographic mix of income before taxes, state and local taxes and the effects of various global income tax strategies. We maintain certain strategic management and operational activities in overseas subsidiaries and our foreign earnings are taxed at rates that are generally lower than in the United States. As of December 31, 2019, we did not provide for U.S. federal income taxes or foreign withholding taxes on approximately $3.1 billion of undistributed earnings of our foreign subsidiaries as such earnings are expected to be reinvested indefinitely.

Refer to Note 8, "Income Taxes" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for disclosures related to foreign and domestic pretax income, foreign and domestic income tax (benefit) expense and the effect foreign taxes have on our overall effective tax rate.

Stock-based Compensation We measure compensation cost for stock awards at fair value and recognize compensation expense over the service period for which awards are expected to vest. We utilize the Black-Scholes option pricing model to estimate the fair value of options at the date of grant, which requires the input of highly subjective assumptions, including expected volatility and expected holding period. We estimate forfeitures for awards granted which are not expected to vest. The estimation of stock awards that will ultimately vest requires judgment, and to the extent that actual results or updated estimates differ from our current estimates, such amounts will be recorded as a cumulative adjustment in the period in which estimates are revised. We consider many factors when estimating expected forfeitures, including types of awards and historical experience. Actual results and future changes in estimates may differ from our current estimates.

We have performance-based awards that vest only if specific performance conditions are satisfied, typically at the end of a single- or multi-year performance period, and the service requirement is fulfilled. The number of shares that will be earned can vary based on actual performance. No shares will vest if the objectives are not met, and in the event the objectives are exceeded, additional shares will vest up to a maximum amount. The cost of these awards is expensed over the service period based upon management's estimates of achievement against the performance criteria. Because the actual number of shares to be awarded is not known until the end of the performance period, the actual compensation expense related to these awards could differ from our current expectations.

RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS

A discussion of recently issued accounting pronouncements is described in Note 1, "Basis of Presentation and Significant Accounting Policies" of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report, and we incorporate by reference such discussion in this MD&A.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risk

We are exposed to market risks primarily from changes in foreign currency exchange rates and interest rates. It is our policy to manage our foreign exchange exposure and debt structure in order to manage capital costs, control financial risks and maintain financial flexibility over the long term. In managing market risks, we employ derivatives according to documented policies and procedures, including foreign currency contracts and interest rate swaps. We do not use derivatives for trading or speculative purposes.

Foreign Exchange Risk

Since a substantial portion of our operations and revenue occur outside the U.S., and in currencies other than the U.S. Dollar, our results can be significantly impacted by changes in foreign currency exchange rates. We have exposure to approximately 50 functional currencies and are exposed to foreign currency exchange risk with respect to our sales, profits and assets and liabilities denominated in currencies

other than the U.S. Dollar. Although we use financial instruments to hedge certain foreign currency risks, we are not fully protected against foreign currency fluctuations and our reported results of operations could be affected by changes in foreign currency exchange rates. To manage our exposures and mitigate the impact of currency fluctuations on the operations of our foreign subsidiaries, we hedge our main transactional exposures through the use of foreign exchange forward and option contracts. These foreign exchange contracts are designated as highly effective cash flow hedges. This is primarily done through the hedging of foreign currency denominated inter-company inventory purchases by the marketing units. All of these transactions are forecasted. We also use derivatives not designated as hedging instruments consisting primarily of forward contracts to hedge foreign currency denominated balance sheet exposures. For these derivatives we recognize gains and losses in the same period as the remeasurement losses and gains of the related foreign currency-denominated exposures.

We utilize non-exchange traded financial instruments, such as foreign exchange forward and option contracts, that we purchase exclusively from highly rated financial institutions. We record these contracts on our balance sheet at fair market value based upon market price quotations from the financial institutions. We do not enter into non-exchange traded contracts that require the use of fair value estimation techniques, but if we did, they could have a material impact on our financial results.

For purposes of analyzing potential risk, we use sensitivity analysis to quantify potential impacts that market rate changes may have on the fair values of our hedge portfolio related to firmly committed or forecasted transactions. The sensitivity analysis represents the hypothetical changes in value of the hedge position and does not reflect the related gain or loss on the forecasted underlying transaction. A 10% appreciation or depreciation in the value of the U.S. Dollar against foreign currencies from the prevailing market rates would have resulted in a corresponding increase or decrease of $11 million as of December 31, 2019 in the fair value of the hedge portfolio. The Company expects that any increase or decrease in the fair value of the portfolio would be substantially offset by increases or decreases in the underlying exposures being hedged.

The U.S. Dollar was slightly stronger in 2019 compared to 2018 based on comparable weighted averages for our functional currencies. This had an unfavorable impact of 2% on 2019 revenue versus 2018 revenue. This excludes the effects of our hedging activities and, therefore, does not reflect the actual impact of fluctuations in exchange rates on our operating income.

Interest Rate Risk

We are subject to interest rate risk principally in relation to variable-rate debt. Approximately 64% of our borrowings were on a fixed rate basis as of December 31, 2019. The increase in pre-tax interest expense for the year ended December 31, 2019 from a hypothetical 100 basis point increase in variable interest rates would be approximately $11 million.

Concentrations of Credit Risk

We are potentially subject to concentrations of credit risk on accounts receivable and financial instruments, such as hedging instruments and cash and cash equivalents. Credit risk includes the risk of nonperformance by counterparties. The maximum potential loss may exceed the amount recognized on the balance sheet. Exposure to credit risk is managed through credit approvals, credit limits, selecting major international financial institutions as counterparties to hedging transactions and monitoring procedures. Our business often involves large transactions with customers for which we do not require collateral. If one or more of those customers were to default in its obligations under applicable contractual arrangements, we could be exposed to potentially significant losses. Moreover, a prolonged downturn in the global economy could have an adverse impact on the ability of our customers to pay their obligations on a timely basis. We believe that the reserves for potential losses are adequate. As of December 31, 2019, we did not have any significant concentration of credit risk related to financial instruments.

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Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTAL DATA

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of NCR Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of NCR Corporation and its subsidiaries (the “Company”) as of December 31, 2019 and 2018, and the related consolidated statements of operations, of comprehensive income (loss), of changes in stockholders’ equity and of cash flows for each of the three years in the period ended December 31, 2019, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2019, 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 consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019 and the manner in which it accounts for revenues from contracts with customers in 2018.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management’s Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated 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.

Uncertain Tax Positions

As described in Notes 1 and 8 to the consolidated financial statements, the Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. As of December 31, 2019, the Company had $121 million in gross unrecognized tax benefits, which include the uncertain tax positions recorded. In the U.S., the Company files consolidated federal and state income tax returns where statutes of limitations generally range from three to five years. U.S. federal tax years remain open from 2015 forward. Years beginning on or after 2001 are still open to examination by certain foreign taxing authorities, including India, Egypt, and other major taxing jurisdictions.

The principal considerations for our determination that performing procedures relating to uncertain tax positions is a critical audit matter are there was significant judgment by management in determining the uncertain tax positions, including a high degree of estimation uncertainty relative to the numerous and complex tax laws, frequency of tax audits, and potential for significant adjustments as a result of such audits. This in turn led to significant auditor judgment, subjectivity, and effort in performing procedures to evaluate the timely identification and accurate measurement of uncertain tax positions. Also, the evaluation of audit evidence available to support the tax liabilities for uncertain tax positions is complex and required significant auditor judgment as the nature of evidence is highly subjective, and the audit effort involved the use of professionals with specialized skill and knowledge to assist in evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the identification, recognition, and measurement of the liability for uncertain tax positions, and controls addressing completeness of the uncertain tax positions. These procedures also included, among others, (i) testing management's process for identification of new potential uncertain tax positions and their evaluation based on the more-likely-than-not recognition criteria, (ii) testing the information used in the calculation of the liability for uncertain tax positions, including intercompany agreements, international filing positions and the related final tax returns, (iii) testing management's estimate of the liability for uncertain tax positions by jurisdiction, including management's assessment of the technical merits of tax positions, and (iv) evaluating the status and results of income tax audits with the relevant tax authorities. Professionals with specialized skill and knowledge were used to assist in the evaluation of the completeness and measurement of the Company's uncertain tax positions, including evaluating the reasonableness of management's assessment of whether tax positions are more-likely-than-not to be sustained and the amount of potential benefit to be realized, the application of relevant tax laws, and estimated interest and penalties.

Income Taxes - Valuation of Deferred Tax Assets Related to Intra-Entity Transfers of Intangible Assets

As described in Note 8 to the consolidated financial statements, the Company transferred certain intangible assets among its wholly-owned subsidiaries, which resulted in the establishment of deferred tax assets of $274 million. As disclosed by management, the establishment of deferred tax assets from intra-entity transfers of intangible assets required management to make significant estimates and assumptions to determine the fair value of such intangible assets. Critical estimates in valuing the intangible assets include, but are not limited to, internal revenue and expense forecasts and discount rates.

The principal considerations for our determination that performing procedures relating to income taxes - valuation of deferred tax assets related to intra-entity transfers of intangible assets is a critical audit matter are there was significant judgment by management in

developing the estimate to determine the fair value of the intangible assets transferred, which is used as the basis for the recording of the deferred tax assets. This led to significant auditor judgment, subjectivity, and effort in performing procedures to evaluate the assumptions used in the estimate, including internal revenue and expense forecasts and discount rates. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of intangible assets transferred. These procedures also included, among others, (i) testing management's process for developing the estimate of the fair value of the intangible assets transferred; (ii) evaluating the appropriateness of the method used to estimate the fair value; (iii) testing the completeness, accuracy, and relevance of underlying data used in the method; and (iv) evaluating the significant assumptions used by management, including internal revenue and expense forecasts and discount rates. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's method and certain significant assumptions, including discount rates.

/s/ PricewaterhouseCoopers LLP

Atlanta, Georgia

February 28, 2020

We have served as the Company's auditor since 1993.

NCR Corporation

Consolidated Statements of Operations

For the years ended December 31, (in millions, except per share amounts)	2019	2018	2017
Product revenue	**$ 2,681**	$ 2,341	$ 2,579
Service revenue	**4,234**	4,064	3,937
Total revenue	**6,915**	6,405	6,516
Cost of products	**2,146**	1,988	2,021
Cost of services	**2,848**	2,742	2,640
Selling, general and administrative expenses	**1,051**	1,005	923
Research and development expenses	**259**	252	241
Asset impairment charges	**—**	227	—
Total operating expenses	**6,304**	6,214	5,825
Income from operations	**611**	191	691
Interest expense	**(197)**	(168)	(163)
Other income (expense), net	**(73)**	16	(46)
Income (loss) from continuing operations before income taxes	**341**	39	482
Income tax expense (benefit)	**(273)**	73	242
Income (loss) from continuing operations	**614**	(34)	240
Loss from discontinued operations, net of tax	**(50)**	(52)	(5)
Net income (loss)	**564**	(86)	235
Net income attributable to noncontrolling interests	**—**	2	3
Net income (loss) attributable to NCR	**$ 564**	$ (88)	$ 232
Amounts attributable to NCR common stockholders:			
Income (loss) from continuing operations	**$ 614**	$ (36)	$ 237
Series A convertible preferred stock dividends	**(110)**	(49)	(109)
Income (loss) from continuing operations attributable to NCR	**504**	(85)	128
Loss from discontinued operations, net of tax	**(50)**	(52)	(5)
Net income (loss) attributable to NCR common stockholders	**$ 454**	$ (137)	$ 123
Income (loss) per share attributable to NCR common stockholders:			
Income (loss) per common share from continuing operations			
Basic	**$ 4.13**	$ (0.72)	$ 1.05
Diluted	**$ 3.71**	$ (0.72)	$ 1.01
Net income (loss) per common share			
Basic	**$ 3.72**	$ (1.16)	$ 1.01
Diluted	**$ 3.36**	$ (1.16)	$ 0.97
Weighted average common shares outstanding			
Basic	**122.1**	118.4	121.9
Diluted	**145.2**	118.4	127.0

The accompanying notes are an integral part of the Consolidated Financial Statements.

NCR Corporation

Consolidated Statements of Comprehensive Income (Loss)

For the years ended December 31 (in millions)	2019	2018	2017
Net income (loss)	**$ 564**	$ (86)	$ 235
Other comprehensive income (loss):			
Currency translation adjustments			
Currency translation adjustments	**(29)**	(53)	39
Derivatives			
Unrealized gain (loss) on derivatives	**6**	11	(16)
Gains on derivatives arising during the period	**(8)**	(7)	(1)
Less income tax benefit (expense)	**1**	(1)	3
Employee benefit plans			
Prior service benefit	**—**	(4)	—
Amortization of prior service cost	**(6)**	(9)	(11)
Net (loss) gain arising during the period	**12**	12	(13)
Amortization of actuarial (loss) gain	**(3)**	—	(2)
Less income tax benefit (expense)	**1**	1	5
Other comprehensive income (loss)	**(26)**	(50)	4
Total comprehensive income (loss)	**538**	(136)	239
Less comprehensive income attributable to noncontrolling interests:			
Net income	**—**	2	3
Currency translation adjustments	**(3)**	(2)	(2)
Amounts attributable to noncontrolling interests	**(3)**	—	1
Comprehensive income (loss) attributable to NCR common stockholders	**$ 541**	$ (136)	$ 238

The accompanying notes are an integral part of the Consolidated Financial Statements.

NCR Corporation

Consolidated Balance Sheets

As of December 31 (in millions except per share amounts)	2019	2018
Assets		
Current assets		
Cash and cash equivalents	**$ 509**	$ 464
Accounts receivable, net	**1,490**	1,356
Inventories	**784**	806
Other current assets	**361**	397
Total current assets	**3,144**	3,023
Property, plant and equipment, net	**413**	359
Goodwill	**2,832**	2,692
Intangibles, net	**607**	595
Operating lease assets	**391**	—
Prepaid pension cost	**178**	140
Deferred income taxes	**821**	448
Other assets	**601**	504
Total assets	**$ 8,987**	$ 7,761
Liabilities and stockholders' equity		
Current liabilities		
Short-term borrowings	**$ 282**	$ 185
Accounts payable	**840**	897
Payroll and benefits liabilities	**308**	238
Deferred service revenue and customer deposits	**502**	461
Other current liabilities	**606**	501
Total current liabilities	**2,538**	2,282
Long-term debt	**3,277**	2,980
Pension and indemnity plan liabilities	**858**	759
Postretirement and postemployment benefits liabilities	**111**	118
Income tax accruals	**92**	91
Operating lease liabilities	**369**	—
Other liabilities	**240**	259
Total liabilities	**7,485**	6,489
Commitments and Contingencies (Note 11)		
Redeemable noncontrolling interest	**—**	14
Series A convertible preferred stock: par value $0.01 per share, 3.0 shares authorized, 0.4 and 0.9 shares issued and outstanding as of December 31, 2019 and 2018, respectively; redemption amount and liquidation preference of $399 and $871 as of December 31, 2019 and 2018, respectively	**395**	859
Stockholders' equity		
NCR stockholders' equity		
Preferred stock: par value $0.01 per share, 100.0 shares authorized, no shares issued and outstanding as of December 31, 2019 and 2018, respectively	**—**	—
Common stock: par value $0.01 per share, 500.0 shares authorized, 127.7 and 118.7 shares issued and outstanding as of December 31, 2019 and 2018, respectively	**1**	1
Paid-in capital	**312**	34
Retained earnings	**1,060**	606
Accumulated other comprehensive loss	**(269)**	(246)
Total NCR stockholders' equity	**1,104**	395
Noncontrolling interests in subsidiaries	**3**	4
Total stockholders' equity	**1,107**	399
Total liabilities and stockholders' equity	**$ 8,987**	$ 7,761

The accompanying notes are an integral part of the Consolidated Financial Statements.

NCR Corporation
Consolidated Statements of Cash Flows

For the years ended December 31 (in millions)	2019	2018	2017
Operating activities			
Net income (loss)	**$ 564**	$ (86)	$ 235
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Loss from discontinued operations	**50**	52	5
Depreciation and amortization	**333**	330	354
Stock-based compensation expense	**107**	72	77
Deferred income taxes	**(355)**	14	173
Gain on sale of property, plant and equipment and other assets	**(6)**	(2)	(3)
Impairment of long-lived and other assets	**2**	239	1
Changes in assets and liabilities:			
Receivables	**(144)**	(155)	29
Inventories	**5**	(70)	(68)
Current payables and accrued expenses	**(20)**	198	(78)
Deferred service revenue and customer deposits	**31**	(13)	10
Employee benefit plans	**59**	(60)	(4)
Other assets and liabilities	**2**	53	21
Net cash provided by operating activities	**628**	572	752
Investing activities			
Expenditures for property, plant and equipment	**(91)**	(143)	(128)
Proceeds from sales of property, plant and equipment	**11**	3	6
Additions to capitalized software	**(238)**	(170)	(166)
Business acquisitions, net	**(203)**	(206)	(8)
Net increase (decrease) in client funds obligations	**(15)**	—	—
Other investing activities, net	**9**	(4)	6
Net cash used in investing activities	**(527)**	(520)	(290)
Financing activities			
Short term borrowings, net	**—**	(1)	(4)
Payments on term credit facilities	**(761)**	(51)	(61)
Borrowings on term credit facility	**750**	—	—
Payments on revolving credit facilities	**(3,216)**	(2,233)	(1,940)
Borrowings on revolving credit facilities	**3,535**	2,453	1,940
Payments of senior unsecured notes	**(900)**	—	—
Proceeds from issuance of senior unsecured notes	**1,000**	—	—
Debt issuance costs	**(32)**	—	—
Repurchase of Series A Convertible Preferred Stock	**(302)**	—	—
Repurchases of Company common stock	**(96)**	(210)	(350)
Tax withholding payments on behalf of employees	**(29)**	(36)	(31)
Proceeds from employee stock plans	**16**	20	15
Net change in funds held for clients	**15**	—	—
Purchase of noncontrolling interest	**(3)**	—	—
Other financing activities	**(8)**	—	(3)
Net cash used in financing activities	**(31)**	(58)	(434)
Cash flows from discontinued operations			
Net cash used in discontinued operations operating activities	**(24)**	(36)	(8)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	**(6)**	(25)	16
Increase (decrease) in cash, cash equivalents and restricted cash	**40**	(67)	36
Cash, cash equivalents and restricted cash at beginning of period	**476**	543	507
Cash, cash equivalents and restricted cash at end of period	**$ 516**	$ 476	$ 543

Reconciliation of cash, cash equivalents and restricted cash as shown in the Consolidated Statement of Cash Flows	2019	2018	2017
Cash and cash equivalents	**$ 509**	$ 464	$ 537
Restricted cash included in Other assets	**7**	12	6
Total cash, cash equivalents and restricted cash	**$ 516**	$ 476	$ 543
Supplemental data			
Cash paid during the year for:			
Income taxes	**$ 61**	$ 106	$ 98

Interest	**$**	**168**	$	160	$	159

The accompanying notes are an integral part of the Consolidated Financial Statements.

NCR Corporation
Consolidated Statements of Changes in Stockholders' Equity

	NCR Stockholders						
	Common Stock						
in millions	Shares	Amount	Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive (Loss) Income	Non-Redeemable Noncontrolling Interests in Subsidiaries	Total
December 31, 2016	**125**	**$ 1**	**$ 32**	**$ 867**	**$ (205)**	**$ 4**	**$ 699**
Comprehensive income (loss):							
Net income (loss)	—	—	—	232	—	3	235
Other comprehensive income (loss)	—	—	—	—	6	(2)	4
Total comprehensive income (loss)	—	—	—	232	6	1	239
Cumulative effect of a change in accounting principle related to employee share-based payments	—	—	—	39	—	—	39
Employee stock purchase and stock compensation plans	1	—	61	—	—	—	61
Dividend distribution to minority shareholder	—	—	—	—	—	(2)	(2)
Repurchase of Company common stock	(7)	—	(178)	(172)	—	—	(350)
Series A convertible preferred stock dividends	—	—	—	(47)	—	—	(47)
Deemed dividend on modification of Series A Convertible Preferred Stock	—	—	—	(4)	—	—	(4)
Deemed dividend on redemption of Series A Convertible Preferred Stock	—	—	58	(58)	—	—	—
Redemption of Series A Convertible Preferred Stock	3	—	87	—	—	—	87
December 31, 2017	**122**	**1**	**60**	**857**	**(199)**	**3**	**722**
Comprehensive income (loss):							
Net income (loss)	—	—	—	(88)	—	1	(87)
Other comprehensive income (loss)	—	—	—	—	(48)	—	(48)
Total comprehensive income (loss)	—	—	—	(88)	(48)	1	(135)
Cumulative effect of a change in accounting principle related to employee share-based payments	—	—	—	14	1	—	15
Employee stock purchase and stock compensation plans	2	—	56	—	—	—	56
Repurchase of Company common stock	(6)	—	(82)	(128)	—	—	(210)
Series A convertible preferred stock dividends	—	—	—	(49)	—	—	(49)
December 31, 2018	**118**	**1**	**34**	**606**	**(246)**	**4**	**399**
Comprehensive income (loss):							
Net income (loss)	—	—	—	564	—	2	566
Other comprehensive income (loss)	—	—	—	—	(23)	(2)	(25)
Total comprehensive income (loss)	—	—	—	564	(23)	—	541
Employee stock purchase and stock compensation plans	3	—	94	—	—	—	94
Redemption of Series A preferred stock dividends	9	—	272	(67)	—	—	205
Repurchase of Company common stock	(3)	—	(96)	—	—	—	(96)
Series A convertible preferred stock dividends	—	—	—	(43)	—	—	(43)
Dividends paid to minority shareholder	—	—	—	—	—	(1)	(1)
Purchase of redeemable non-controlling interest	—	—	8	—	—	—	8
December 31, 2019	**127**	**$ 1**	**$ 312**	**$ 1,060**	**$ (269)**	**$ 3**	**$ 1,107**

The accompanying notes are an integral part of the Consolidated Financial Statements.

NCR Corporation

Notes to Consolidated Financial Statements

1. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES

Description of Business NCR is a leading software- and services-led enterprise provider in the financial, retail, hospitality, and telecommunications and technology industries. NCR is a global company that is headquartered in Atlanta, Georgia. NCR offers a range of solutions that help businesses of all sizes run the store, run the restaurant and run self-service banking channels. Our portfolio includes digital first offerings for banking, restaurants and retailers, as well as payments processing, multi-vendor connected device services, automated teller machines (ATMs), point of sale (POS) terminals and self-service technologies. We also resell third-party networking products and provide related service offerings in the telecommunications and technology sectors. Our solutions are also designed to support our transition to an as-a-Service company and enable us to be the technology-based service provider of choice to our customers.

Effective January 1, 2019, NCR changed the management of its business to an industry basis from the previous model of management on a solution basis, which resulted in a corresponding change to NCR's reportable segments. See Note 4, “Segment Information and Concentrations” for additional information.

Use of Estimates The preparation of financial statements in accordance with generally accepted accounting principles in the United States (U.S. GAAP) requires management to make estimates and judgments that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and revenue and expenses during the periods reported. Actual results could differ from those estimates.

Subsequent Events The Company evaluated subsequent events through the date that our Consolidated Financial Statements were issued. No matters were identified that required adjustment of the Consolidated Financial Statements or additional disclosure.

Basis of Consolidation The consolidated financial statements include the accounts of NCR and its majority-owned subsidiaries. Long-term investments in affiliated companies in which NCR owns between 20% and 50%, and therefore, exercises significant influence, but which it does not control, are accounted for using the equity method. Investments in which NCR does not exercise significant influence (generally, when NCR has an investment of less than 20% and no significant influence, such as representation on the investee’s board of directors) are accounted for using the cost method. All significant inter-company transactions and accounts have been eliminated. In addition, the Company is required to determine whether it is the primary beneficiary of economic income or losses that may be generated by variable interest entities in which the Company has such an interest. In circumstances where the Company determined it is the primary beneficiary, consolidation of that entity would be required. For the periods presented, no variable interest entities have been consolidated.

Reclassifications Certain prior-period amounts have been reclassified in the accompanying Consolidated Financial Statements and Notes thereto in order to conform to the current period presentation.

Revenue Recognition In May 2014, the FASB issued a new revenue recognition standard that superseded existing revenue recognition guidance. Effective January 1, 2018, we adopted the standard using the modified retrospective method applied to contracts that were not complete as of the date of adoption and recorded a cumulative adjustment to increase retained earnings by $2 million.

The Company records revenue, net of sales tax, when the following five steps have been completed:

- Identification of the contract(s) with a customer
- Identification of the performance obligation(s) in the contract
- Determination of the transaction price
- Allocation of the transaction price to the performance obligations in the contract
- Recognition of revenue when, or as, we satisfy performance obligations

The Company records revenue when, or as, performance obligations are satisfied by transferring control of a promised good or service to the customer, in an amount that reflects the consideration we expect to be entitled to in exchange for products and services. The Company evaluates the transfer of control primarily from the customer’s perspective where the customer has the ability to direct the use of and obtain substantially all of the remaining benefits from that good or service.

NCR enters contracts that include multiple distinct performance obligations, including hardware, software, professional consulting

services, installation services and maintenance support services. A promise to a customer is considered distinct when the product or service is both capable of being distinct, and distinct in the context of the contract. For these arrangements, the Company allocates the transaction price, at contract inception, to each distinct performance obligation on a relative standalone selling price basis. The primary method used to estimate standalone selling price is the price that the Company charges for that good or service when the Company sells it separately in similar circumstances to similar customers.

For hardware products, control is generally transferred when the customer has the ability to direct the use of and obtain substantially all of the remaining benefits of the products, which generally coincides with when the customer has assumed title and risk of loss of the goods sold. In certain instances, customer acceptance is required prior to the passage of title and risk of loss of the delivered products. In such cases, revenue is not recognized until customer acceptance is obtained. Delivery, acceptance, and transfer of title and risk of loss generally occur in the same reporting period. NCR's customers may request that delivery and passage of title and risk of loss occur on a bill and hold basis. For the period ending December 31, 2019 and 2018, the revenue recognized from bill and hold transactions approximated 1% of total revenue. Hardware products may also be provided as a service when included in a package sold with software and services. In these instances, revenue is recognized in accordance with the lease accounting standard and depending on the terms and conditions included in the contract may be either sales-type leases or operating leases. Revenue from hardware sales-type leases is recognized at the beginning of the lease term and revenue from operating leases is recognized on a straight-line basis over the term of the contract.

Software products may be sold as perpetual licenses, term-based licenses and cloud-enabled, software as a service (SaaS). Both perpetual and term-based license revenue are recognized at a point in time when control transfers to the customer. Control is typically transferred when the customer takes possession of, or has complete access to, the software. Revenue from term license software is recognized for the committed term of the contract (which is typically one month to one year due to customer termination rights). If the amount of consideration the Company expects to be paid in exchange for the licenses depends on customer usage, revenue is recognized when the usage occurs.

Cloud-enable SaaS primarily consists of fees to provide our customers access to our platform and cloud-based applications. Revenue from SaaS contracts is recognized as variable consideration directly allocated based on customer usage or on a ratable basis over the contract term beginning on the date that our service is made available to the customer. SaaS is reported as part of our services revenue.

The Company sells some product solutions that include a combination of cloud-enabled SaaS and on-premise term-based software licenses. Significant judgment is required to determine if the services and products represent distinct promises to the customer or if they should be combined into one performance obligation. When they are combined into one performance obligation, revenue is recognized ratably over the subscription period for which the SaaS is provided.

In addition to SaaS, our services revenue includes professional consulting, installation and maintenance support. Professional consulting primarily consists of software implementation, integration, customization and optimization services. Revenue from professional consulting contracts is recognized when the services are completed or customer acceptance of the service is received, if required. For installation and maintenance, control is transferred as the services are provided or ratably over the service period, or, if applicable, after customer acceptance of the service. We apply the ‘as invoiced’ practical expedient, for performance obligations satisfied over time, if the amount we may invoice corresponds directly with the value to the customer of the Company’s performance to date. This expedient permits us to recognize revenue in the amount we invoice the customer.

The nature of our arrangements gives rise to several types of variable consideration including service level agreement credits, stock rotation rights, trade-in credits and volume-based rebates. At contract inception, we include this variable consideration in our transaction price when there is a basis to reasonably estimate the amount of the fee and it is probable there will not be a significant reversal. These estimates are generally made using the expected value method and a portfolio approach, based on historical experience, anticipated performance and our best judgment at the time. These estimates are reassessed at each reporting date. Because of our confidence in estimating these amounts, they are included in the transaction price of our contracts and the associated remaining performance obligations.

Payment terms with our customers are established based on industry and regional practices and generally do not exceed 30 days. We do not typically include extended payment terms in our contracts with customers. As a practical expedient, we do not adjust the promised amount of consideration for the effects of a significant financing component when we expect, at contract inception, that the period between our transfer of a promised product or service to a customer and when the customer pays for that product or service will be one year or less. If the period between transfer of the promised product or service and payment is more than one year, the Company adjusts the total consideration to reflect the significant financing component.

The Company also does not adjust the transaction price for taxes collected from customers, as those amounts are netted against amounts remitted to government authorities.

We account for shipping and handling activities related to contracts with customers as costs to fulfill our promise to transfer the associated products, rather than as a separate performance obligation. Accordingly, we record amounts billed for shipping and handling costs as a component of net product sales, and classify such costs as a component of cost of products.

In addition to the standard product warranty, the Company periodically offers extended warranties to its customers in the form of product maintenance services. For maintenance contracts that have been combined with product contracts under the revenue guidance, the Company defers revenue at an amount based on the relative standalone selling price allocation, and recognizes the deferred revenue over the service term. For non-combined maintenance contracts, NCR defers the stated amount of the separately priced service and recognizes the deferred revenue over the service term.

Remaining Performance Obligations Remaining performance obligations represent the transaction price of orders for which products have not been delivered or services have not been performed. As of December 31, 2019, the aggregate amount of the transaction price allocated to remaining performance obligations was approximately $4.0 billion. The Company expects to recognize revenue on approximately three-quarters of the remaining performance obligations over the next 12 months, with the remainder recognized thereafter. The majority of our professional services are expected to be recognized over the next 12 months but this is contingent upon a number of factors, including customers' needs and schedules.

The Company has made two elections which affect the value of remaining performance obligations described above. We do not disclose remaining performance obligations for SaaS contracts where variable consideration is directly allocated based on usage or when the original expected length is one year or less.

Warranty and Sales Returns Provisions for product warranties and sales returns and allowances are recorded in the period in which NCR becomes obligated to honor the related right, which generally is the period in which the related product revenue is recognized. The Company accrues warranty reserves based upon historical factors such as labor rates, average repair time, travel time, number of service calls per machine and cost of replacement parts. When a sale is consummated, a warranty reserve is recorded based upon the estimated cost to provide the service over the warranty period. The Company accrues sales returns and allowances using percentages of revenue to reflect the Company's historical average of sales return claims.

Research and Development Costs Research and development costs primarily include payroll and benefit-related costs, contractor fees, facilities costs, infrastructure costs, and administrative expenses directly related to research and development support and are expensed as incurred, except certain software development costs are capitalized after technological feasibility of the software is established.

Advertising Advertising costs are recognized in selling, general and administrative expenses when incurred.

Stock-based Compensation Stock-based compensation represents the costs related to share-based awards granted to employees and non-employee directors. The Company's outstanding stock-based compensation awards are classified as equity. The Company measures stock-based compensation cost at the grant date, based on the estimated fair value of the award and recognizes the cost over the requisite service period. See Note 9, "Stock Compensation Plans" for further information on NCR's stock-based compensation plans.

Income Taxes Income tax expense is provided based on income before income taxes. Deferred income taxes reflect the impact of temporary differences between assets and liabilities recognized for financial reporting purposes and such amounts recognized for tax purposes. These deferred taxes are determined based on the enacted tax rates expected to apply in the periods in which the deferred assets or liabilities are expected to be settled or realized. NCR records valuation allowances related to its deferred income tax assets when it is more likely than not that some portion or all of the deferred income tax assets will not be realized.

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the consolidated financial statements from such a position are measured based on the largest benefit that has a greater than fifty percent likelihood of being sustained upon examination by authorities. Interest and penalties related to uncertain tax positions are recognized as part of the provision for income taxes and are accrued beginning in the period that such interest and penalties would be applicable under relevant tax law and until such time that the related tax benefits are recognized.

Earnings Per Share Basic earnings per share (EPS) is calculated by dividing net income, less any dividends, accretion or decretion, redemption or induced conversion on our Series A Convertible Preferred Stock, by the weighted average number of shares outstanding during the reported period.

In computing diluted EPS, we evaluate and reflect the maximum potential dilution, for each issue or series of issues of potential common shares in sequence from the most dilutive to the least dilutive. We adjust the numerator used in the basic EPS computation, subject to anti-dilution requirements, to add back the dividends (declared or cumulative undeclared) applicable to the Series A Convertible Preferred Stock. Such add-back would also include any adjustments to equity in the period to accrete the Series A Convertible Preferred Stock to its redemption price, or recorded upon a redemption or induced conversion. We adjust the denominator used in the basic EPS computation, subject to anti-dilution requirements, to include the dilution from potential shares resulting from the issuance of the Series A Convertible Preferred Stock, restricted stock units, and stock options.

The holders of Series A Convertible Preferred Stock and unvested restricted stock units do not have nonforfeitable rights to common stock dividends or common stock dividend equivalents. Accordingly, the Series A Convertible Preferred Stock and unvested restricted stock units do not qualify as participating securities. See Note 9, "Stock Compensation Plans" for share information on NCR's stock compensation plans.

The components of basic earnings (loss) per share are as follows:

	Year ended December 31		
In millions, except per share amounts	**2019**	**2018**	**2017**
Numerator:			
Income (loss) from continuing operations	**$ 614**	$ (36)	$ 237
Series A convertible preferred stock dividends	**(110)**	(49)	(109)
Net income (loss) from continuing operations attributable to NCR common stockholders	**504**	(85)	128
Loss from discontinued operations, net of tax	**(50)**	(52)	(5)
Net income (loss) attributable to NCR common stockholders	**$ 454**	$ (137)	$ 123
Denominator:			
Basic weighted average number of shares outstanding	**122.1**	118.4	121.9
Basic earnings (loss) per share:			
From continuing operations	**$ 4.13**	$ (0.72)	$ 1.05
From discontinued operations	**(0.41)**	(0.44)	(0.04)
Total basic earnings (loss) per share	**$ 3.72**	$ (1.16)	$ 1.01

The components of diluted earnings (loss) per share are as follows:

	Year ended December 31		
In millions, except per share amounts	**2019**	**2018**	**2017**
Numerator:			
Income (loss) from continuing operations	**$ 614**	$ (36)	$ 237
Series A convertible preferred stock dividends	**(76)**	(49)	(109)
Net income (loss) from continuing operations attributable to NCR common stockholders	**538**	(85)	128
Loss from discontinued operations, net of tax	**(50)**	(52)	(5)
Net income (loss) attributable to NCR common stockholders	**$ 488**	$ (137)	$ 123
Denominator:			
Basic weighted average number of shares outstanding	**122.1**	118.4	121.9
Dilutive effect of as-if Series A Convertible Preferred Stock	**19.5**	—	—
Dilutive effect of employee stock options and restricted stock units	**3.6**	—	5.1
Weighted average diluted shares	**145.2**	118.4	127.0
Diluted earnings (loss) per share:			
From continuing operations	**$ 3.71**	$ (0.72)	$ 1.01
From discontinued operations	**(0.35)**	(0.44)	(0.04)
Total diluted earnings (loss) per share	**$ 3.36**	$ (1.16)	$ 0.97

For 2019, it was more dilutive to assume the portion of the Series A Convertible Preferred Stock that was redeemed was not converted to common stock. Therefore, the weighted average outstanding shares of common stock were not adjusted by 5.7 million for the as-if converted portion of the Series A Convertible Preferred Stock that was redeemed because the effect would be anti-dilutive. Refer to Note 6, "Series A Convertible Preferred Stock" for additional discussion related to the transaction impacting the Series A Convertible Preferred Stock. Additionally, for 2019, weighted average restricted stock units and stock options of 4.3 million were excluded from the diluted share count because their effect would have been anti-dilutive.

For 2018, it is more dilutive to assume the Series A Convertible Preferred Stock was not converted to common stock. Therefore, weighted average outstanding shares of common stock were not adjusted by 28.3 million for the as-if converted Series A Convertible Preferred Stock because the effect would be anti-dilutive. Additionally, for 2018, weighted average restricted stock units and stock option of 5.6 million were excluded from the diluted share count because their effect would have been anti-dilutive.

For 2017, it is more dilutive to assume the Series A Convertible Preferred Stock was not converted to common stock. Therefore, weighted average outstanding shares of common stock were not adjusted by 27.4 million for the as-if converted Series A Convertible Preferred Stock shown above because the effect would be anti-dilutive. Additionally, for 2017, weighted average restricted stock units of 0.8 million were excluded from the diluted share count because their effect would have been anti-dilutive.

Cash and Cash Equivalents All short-term, highly liquid investments having original maturities of three months or less, including time deposits, are considered to be cash equivalents.

Accounts Receivable, net Accounts receivable, net includes amounts billed and currently due from customers as well as amounts unbilled which typically result from sales under contracts where revenue recognized exceeds the amount billed to the customer and where the Company has an unconditional right to consideration. The amounts due are stated at their net estimated realizable value.

Allowance for Doubtful Accounts NCR establishes provisions for doubtful accounts using percentages of accounts receivable balances to reflect historical average credit losses and specific provisions for known issues.

Inventories Inventories are stated at the lower of cost or net realizable value, using the average cost method. Cost includes materials, labor and manufacturing overhead related to the purchase and production of inventories. Service parts are included in inventories and include reworkable and non-reworkable service parts. The Company regularly reviews inventory quantities on hand, future purchase commitments with suppliers and the estimated utility of inventory. If the review indicates a reduction in utility below carrying value, inventory is reduced to a new cost basis. Excess and obsolete write-offs are established based on forecasted usage, orders, technological obsolescence and inventory aging.

Contract Assets and Liabilities Contract assets include unbilled amounts where right to payment is not solely subject to the passage of time. Amounts may not exceed their net realizable value. Contract liabilities consist of advance payments, billings in excess of revenue recognized and deferred revenue.

Our contract assets and liabilities are reported in a net position on a contract-by-contract basis at the end of each reporting period. If the net position is a contract asset, the current portion is included in other current assets and the non-current portion is included in other assets in the Consolidated Balance Sheet. If the net position is a contract liability, the current portion is included in contract liabilities and the non-current portion is included in other liabilities in the Consolidated Balance Sheet.

The following table presents the net contract asset and contract liability balances:

In millions	Location in the Consolidated Balance Sheet	December 31, 2019	December 31, 2018	January 1, 2018
Current portion of contract assets	Other current assets	**$ 9**	$ 22	$ 28
Current portion of contract liabilities	Contract liabilities	**$ 502**	$ 461	$ 458
Non-current portion of contract liabilities	Other liabilities	**$ 81**	$ 85	$ 95

During the twelve months ended December 31, 2019 and 2018, the Company recognized $341 million and $355 million, respectively, in revenue that was included in contract liabilities as of January 1, 2019 and 2018, respectively.

Deferred Commissions Our incremental costs of obtaining a contract, which consist of certain sales commissions, primarily for our SaaS revenue, are deferred and amortized on a straight-line basis over the period of expected benefit. We determined the period of expected benefit by taking into consideration customer contracts, the estimated life of the customer relationship, including renewals when the renewal commission is not commensurate with the initial commission, the expected life of the underlying technology and other factors. We classify deferred commissions as current or non-current based on the timing of when we expect to recognize the expense. The current and non-current portions of deferred commissions are included in other current assets and other assets, respectively, in the Consolidated Balance Sheets. Amortization of deferred commissions is included in selling, general and administrative expenses in the Consolidated Statements of Operations.

Set-up Fees and Costs Fees for the design, configuration, implementation and installation related to the software applications that are provided as a service are recognized over the contract term, which is generally 5 years. The related costs incurred that are determined to be incremental and recoverable contract-specific costs are deferred and amortized over the period of benefit, which is generally 7 years.

Settlement Processing Assets and Obligations Funds settlement refers to the process of transferring funds for sales and credits between card issuers and merchants. Depending on the type of transaction, either the credit card interchange system or the debit network is used to transfer the information and funds between the sponsoring bank and card issuing bank to complete the link between merchants and card issuers. In certain of our processing arrangements, merchant funding primarily occurs after the sponsoring bank receives the funds from the card issuer through the card networks, creating a net settlement obligation on the Company's Consolidated Balance Sheet. In a limited number of other arrangements, the sponsoring bank funds the merchants before it receives the net settlement funds from the card networks, creating a net settlement asset on the Company's Consolidated Balance Sheet. Additionally, certain of the Company's sponsoring banks collect the gross revenue from the merchants, pay the interchange fees and assessments to the credit card associations, collect their fees for processing and pay the Company a net residual payment representing the Company's fees for the services. In these instances, the Company does not reflect the related settlement processing assets and obligations in its Consolidated Balance Sheet.

Settlement processing assets consist primarily of our portion of settlement assets due from customers and receivables from merchants for the portion of the discount fee related to reimbursement of the interchange expense, our receivable from the processing bank for transactions we have funded merchants in advance of receipt of card association funding, merchant reserves held, sponsoring bank reserves and exception items, such as customer chargeback amounts receivable from merchants. Settlement processing

obligations consist primarily of merchant reserves, our liability to the processing bank for transactions for which we have received funding from the members but have not funded merchants and exception items. Settlement processing assets are recorded within other current assets and settlement processing liabilities are recorded within other current liabilities in the Consolidated Balance Sheet. As of December 31, 2019 and 2018, settlement processing assets were $33 million and $30 million, respectively, and settlement processing liabilities were $31 million and $28 million, respectively. Settlement receivables are generally collected within four business days. Settlement obligations are generally paid within three business days, regardless of when the related settlement receivables are collected.

Capitalized Software Certain direct development costs associated with internal-use software are capitalized within other assets and amortized over the estimated useful lives of the resulting software. NCR typically amortizes capitalized internal-use software on a straight-line basis over four to seven years beginning when the asset is substantially ready for use, as this is considered to approximate the usage pattern of the software. When it becomes probable that internal-use software being developed will not be completed or placed into service, the internal-use software is reported at the lower of the carrying amount or fair value.

Costs incurred for the development of software that will be sold, leased or otherwise marketed are capitalized when technological feasibility has been established. These costs are included within other assets and are amortized on a sum-of-the-years' digits or straight-line basis over the estimated useful lives ranging from three to five years, using the method that most closely approximates the sales pattern of the software. Amortization begins when the product is available for general release. Costs capitalized include direct labor and related overhead costs. Costs incurred prior to technological feasibility or after general release are expensed as incurred. NCR performs periodic reviews to ensure that unamortized program costs remain recoverable from future revenue. If future revenue does not support the unamortized program costs, the amount by which the unamortized capitalized cost of a software product exceeds the net realizable value is written off.

The following table identifies the activity relating to total capitalized software:

In millions	2019	2018	2017
Beginning balance as of January 1	**$ 325**	$ 366	$ 345
Capitalization	**238**	170	166
Amortization	**(148)**	(160)	(145)
Impairment	**(2)**	(51)	—
Ending balance as of December 31	**$ 413**	$ 325	$ 366

During the year ended December 31, 2018, we recorded the write-off of certain internal- and external-use software capitalization projects that are no longer considered strategic based on review by the new management team and as a result, the projects have been abandoned.

Goodwill and Other Intangible Assets Goodwill represents the excess of purchase price over the fair value of the net tangible and identifiable intangible assets of businesses acquired. Goodwill is tested at the reporting unit level for impairment on an annual basis during the fourth quarter or more frequently if certain events occur indicating that the carrying value of goodwill may be impaired. A significant amount of judgment is involved in determining if an indicator of impairment has occurred. Such indicators may include a decline in expected cash flows, a significant adverse change in legal factors or in the business climate, a decision to sell a business, unanticipated competition, or slower growth rates, among others.

In the evaluation of goodwill for impairment, we have the option to perform a qualitative assessment to determine whether further impairment testing is necessary or to perform a quantitative assessment by comparing the fair value of a reporting unit to its carrying amount, including goodwill. Under the qualitative assessment, an entity is not required to calculate the fair value of a reporting unit unless the entity determines that it is more likely than not that its fair value is less than its carrying amount. If under the quantitative assessment the fair value of a reporting unit is less than its carrying amount, then the amount of the impairment loss, if any, is determined based on the amount by which the carrying amount exceeds the fair value up to the total value of goodwill assigned to the reporting unit. Fair values of the reporting units are estimated using a weighted methodology considering the output from both the income and market approaches. The income approach incorporates the use of discounted cash flow (DCF) analysis. A number of significant assumptions and estimates are involved in the application of the DCF model to forecast operating cash flows, including revenue growth, operating income margin and discount rate. Several of these assumptions vary among reporting units. The cash flow forecasts are generally based on approved strategic operating plans. The market approach is performed using the Guideline Public Companies (GPC) method which is based on earnings multiple data. We perform a reconciliation between

our market capitalization and our estimate of the aggregate fair value of the reporting units, including consideration of a control premium. Refer to Note 5, "Goodwill and Purchased Intangible Assets" for further discussion.

Acquired intangible assets other than goodwill are amortized over their weighted average amortization period unless they are determined to be indefinite. Acquired intangible assets are carried at cost, less accumulated amortization. For intangible assets purchased in a business combination, the estimated fair values of the assets received are used to establish the carrying value. The fair value of acquired intangible assets is determined using common techniques, and the Company employs assumptions developed using the perspective of a market participant.

Property, Plant and Equipment Property, plant and equipment and leasehold improvements are stated at cost less accumulated depreciation. Depreciation is computed over the estimated useful lives of the related assets primarily on a straight-line basis. Machinery and other equipment are depreciated over 3 to 20 years and buildings over 25 to 45 years. Leasehold improvements are depreciated over the life of the lease or the asset, whichever is shorter. Assets classified as held for sale are not depreciated. Upon retirement or disposition of property, plant and equipment, the related cost and accumulated depreciation or amortization are removed from the Company’s accounts, and a gain or loss is recorded. Depreciation expense related to property, plant and equipment was $79 million, $81 million, and $86 million for the years ended December 31, 2019, 2018, and 2017, respectively.

Valuation of Long-Lived Assets Long-lived assets such as property, plant and equipment and finite-lived intangible assets are reviewed for impairment when events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable or in the period in which the held for sale criteria are met. For assets held and used, this analysis consists of comparing the asset’s carrying value to the expected future cash flows to be generated from the asset on an undiscounted basis. If the carrying amount of the asset is determined not to be recoverable, a write-down to fair value is recorded. Fair values are determined based on quoted market values, discounted cash flows, or external appraisals, as applicable. Long-lived assets are reviewed for impairment at the individual asset or the asset group level for which the lowest level of independent cash flows can be identified. Refer to Note 5, "Goodwill and Purchased Intangible Assets" for further discussion.

Pension, Postretirement and Postemployment Benefits NCR has significant pension, postretirement and postemployment benefit costs, which are developed from actuarial valuations. Actuarial assumptions are established to anticipate future events and are used in calculating the expense and liabilities relating to these plans. These factors include assumptions the Company makes about interest rates, expected investment return on plan assets, rate of increase in healthcare costs, involuntary turnover rates, and rates of future compensation increases. In addition, NCR also uses subjective factors, such as withdrawal rates and mortality rates to develop the Company’s valuations. NCR generally reviews and updates these assumptions on an annual basis. NCR is required to consider current market conditions, including changes in interest rates, in making these assumptions. The actuarial assumptions that NCR uses may differ materially from actual results due to changing market and economic conditions, higher or lower withdrawal rates, or longer or shorter life spans of participants. These differences may result in a significant impact to the amount of pension, postretirement or postemployment benefits expense, and the related assets and liabilities, the Company has recorded or may record.

Environmental and Legal Contingencies In the normal course of business, NCR is subject to various proceedings, lawsuits, claims and other matters, including, for example, those that relate to the environment and health and safety, labor and employment, employee benefits, import/export compliance, intellectual property, data privacy and security, product liability, commercial disputes and regulatory compliance, among others. Additionally, NCR is subject to diverse and complex laws, regulations, and standards including those relating to corporate governance, public disclosure and reporting, environmental safety and the discharge of materials into the environment, product safety, import and export compliance, data privacy and security, antitrust and competition, government contracting, anti-corruption, and labor and human resources, which are rapidly changing and subject to many possible changes in the future. Compliance with these laws and regulations, including changes in accounting standards, taxation requirements, and federal securities laws among others, may create a substantial burden on, and substantially increase the costs to NCR or could have an impact on NCR’s future operating results. NCR believes that the amounts provided in its Consolidated Financial Statements are adequate in light of the probable and estimable liabilities. However, there can be no assurances that the actual amounts required to satisfy alleged liabilities from various lawsuits, claims, legal proceedings and other matters, including the Fox River and Kalamazoo River environmental matters discussed in Note 11, "Commitments and Contingencies" and to comply with applicable laws and regulations, will not exceed the amounts reflected in NCR’s Consolidated Financial Statements or will not have a material adverse effect on the Company’s consolidated results of operations, financial condition or cash flows. Any costs that may be incurred in excess of those amounts provided as of December 31, 2019 cannot currently be reasonably determined or are not currently considered probable.

Legal fees and expenses related to loss contingencies are typically expensed as incurred, except for certain costs associated with NCR’s environmental remediation obligations. Costs and fees associated with litigating the extent and type of required remedial

actions and the allocation of remediation costs among potentially responsible parties are typically included in the measurement of the environmental remediation liabilities.

Foreign Currency For many NCR international operations, the local currency is designated as the functional currency. Accordingly, assets and liabilities are translated into U.S. Dollars at year-end exchange rates, and revenue and expenses are translated at average exchange rates prevailing during the year. Currency translation adjustments from local functional currency countries resulting from fluctuations in exchange rates are recorded in other comprehensive income. Remeasurement adjustments are recorded in other income (expense), net.

Derivative Instruments In the normal course of business, NCR enters into various financial instruments, including derivative financial instruments. The Company accounts for derivatives as either assets or liabilities in the Consolidated Balance Sheets at fair value and recognizes the resulting gains or losses as adjustments to earnings or other comprehensive income. For derivative instruments that are designated and qualify as hedging instruments, the Company formally documents the relationship between hedging instruments and hedged items, as well as the risk management objective and strategy for undertaking various hedge transactions. Hedging activities are transacted only with highly rated institutions, reducing exposure to credit risk in the event of nonperformance. Additionally, the Company completes assessments related to the risk of counterparty nonperformance on a regular basis.

The accounting for changes in fair value of a derivative instrument depends on whether it has been designated and qualifies as part of a hedging relationship, and further, on the type of hedging relationship. For those derivative instruments that are designated and qualify as hedging instruments, the Company has designated the hedging instrument, based on the exposure being hedged, as a fair value hedge, a cash flow hedge or a hedge of a net investment in a foreign operation. For derivative instruments designated as fair value hedges, the effective portion of the hedge is recorded as an offset to the change in the fair value of the hedged item, and the ineffective portion of the hedge, if any, is recorded in the Consolidated Statement of Operations. For derivative instruments designated as cash flow hedges and determined to be highly effective, the gains or losses are deferred in other comprehensive income and recognized in the determination of income as adjustments of carrying amounts when the underlying hedged transaction is realized, canceled or otherwise terminated. When hedging certain foreign currency transactions of a long-term investment nature (net investments in foreign operations) gains and losses are recorded in the currency translation adjustment component of accumulated other comprehensive loss. Gains and losses on foreign exchange contracts that are not used to hedge currency transactions of a long-term investment nature, or that are not designated as cash flow or fair value hedges, are recognized in other (expense), net as exchange rates change.

Fair Value of Assets and Liabilities Fair value is defined as an exit price, representing an amount that would be received to sell an asset or the amount paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the guidance prioritizes the inputs used to measure fair value into the following three-tier fair value hierarchy:

- Level 1: Unadjusted quoted prices in active markets for identical assets or liabilities
- Level 2: Unadjusted quoted prices in active markets for similar assets or liabilities, unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active or inputs, other than quoted prices in active markets, that are observable either directly or indirectly
- Level 3: Unobservable inputs for which there is little or no market data

Assets and liabilities are classified based on the lowest level of input that is significant to the fair value measurements. The Company reviews the fair value hierarchy classification on a quarterly basis. Changes to the observability of valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy.

NCR measures its financial assets and financial liabilities at fair value based on one or more of the following three valuation techniques:

- Market approach: Prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities.
- Cost approach: Amount that would be required to replace the service capacity of an asset (replacement cost).
- Income approach: Techniques to convert future amounts to a single present amount based upon market expectations (including present value techniques, option pricing and excess earnings models).

We regularly review our investments to determine whether a decline in fair value, if any, below the cost basis is other than temporary. If the decline in the fair value is determined to be other than temporary, the cost basis of the security is written down to fair value and the amount of the write-down is included in the Consolidated Statement of Operations. For qualifying investments in debt or equity securities, a temporary impairment charge would be recognized in other comprehensive income (loss).

Redeemable Noncontrolling Interests and Related Party Transactions In 2011, we sold a 49% voting equity interest in NCR Brasil - Indústria de Equipamentos para Automação Ltda., a subsidiary of the Company (NCR Manaus) to Scopus Tecnologia Ltda. (now known as Nova Paiol Participacoes Ltda., and "Nova" as used herein). In 2019, we entered into a definitive agreement with Nova to purchase its 49% minority interest in NCR Manaus for R$11 million or approximately $3 million. The transaction was approved by local regulatory authorities and closed on October 28, 2019.

We recognized $61 million, $59 million and $79 million in revenue related to Banco Bradesco SA (Bradesco), the parent of Nova, for the years ended December 31, 2019, 2018 and 2017, respectively, and we had $3 million and $15 million in receivables outstanding from Bradesco as of December 31, 2019 and 2018, respectively.

Recent Accounting Pronouncements

Issued

In June 2016, the Financial Accounting Standards Board (FASB) issued an accounting standards update with new guidance on accounting for credit losses on financial instruments. The new guidance includes an impairment model for estimating credit losses that is based on expected losses, rather than incurred losses. The standards update is effective prospectively for fiscal years and interim periods beginning after December 15, 2019, with early adoption permitted. The impact of adopting this guidance is not expected to have a material impact on our consolidated financial statements.

In August 2018, the FASB issued an accounting standards update with new guidance on fair value measurement disclosure requirements that requires the disclosure of additions to and transfers into and out of Level 3 of the fair value hierarchy. The update also requires disclosure about the uncertainty in measurement as of the reporting date. The standards update is effective for fiscal years, and interim periods, beginning after December 15, 2019 with early adoption permitted. The impact of adopting this guidance is not expected to have a material impact on our consolidated financial statements.

In August 2018, the FASB issued an accounting standards update related to accounting for implementation costs incurred in a cloud computing arrangement that is also a service contract. If a cloud computing arrangement also includes an internal-use software, an intangible asset is recognized and a liability is recognized for any payments related to the software license. However, if a cloud computing arrangement does not include a software license, the entity should account for the arrangement as a service contract and any fees associated with the service are expensed as incurred. The standards update is effective for fiscal years, and interim periods, beginning after December 15, 2019, with early adoption permitted. The impact of adopting this guidance is not expected to have a material impact on our consolidated financial statements.

In December 2019, the FASB issued an accounting standards update with new guidance which removes certain exceptions for recognizing deferred taxes for investments, performing intraperiod allocation and calculating income taxes in interim periods. The standards update also adds guidance to reduce complexity in certain areas, including recognizing deferred taxes for tax goodwill and allocating taxes to members of a consolidated group. Additionally, it provides other simplifying measures for the accounting for income taxes. The standards update is effective for fiscal years and interim periods beginning after December 15, 2020, with early adoption permitted. The Company is evaluating the impact that adopting this guidance will have on our consolidated financial statements.

Adopted

In February 2016, the FASB issued a new leasing standard that superseded guidance related to accounting for leases. The guidance is intended to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. The standard is effective for the first interim period within annual periods beginning after December 15, 2018, with early adoption permitted. We adopted using the modified retrospective approach and applied the provisions of the new leasing standard at the effective date, January 1, 2019, rather than at the beginning of the earliest period presented under the transition method provided. The standard also includes options to elect a number of practical expedients. We elected the package of practical expedients to not reassess prior conclusions related to contracts containing leases, lease classification and initial direct costs and also completed the evaluation of the remaining practical expedients

available under the guidance. The standard had a material effect to the total assets and total liabilities reported on the Consolidated Balance Sheet, but did not have a material effect to the Consolidated Statement of Operations or the Consolidated Statement of Cash Flows. The impact of adoption was to record operating and financing lease assets and liabilities of $448 million and $521 million, respectively, with a reduction of $73 million for deferred rent liabilities and prepaid rent balances as of January 1, 2019. Refer to Note 2, Leasing for additional disclosure.

In October 2018, the FASB issued an accounting standards update for hedge accounting guidance that we adopted during the first quarter of 2019. This guidance allows for the use of a broad Treasury repurchase agreement financing rate, which is referred to as the Secured Overnight Financing Rate (SOFR) to be used as an additional benchmark rate for hedge accounting purposes. This guidance is effective for entities that have already adopted the amendments of the hedge accounting guidance for fiscal years beginning after December 15, 2018 on a prospective basis for qualifying new or re-designated hedging relationships entered into on or after the date of adoption. The adoption of this accounting standard update did not have a material effect on our consolidated financial statements.

2. LEASING

As discussed in Note 1, Basis of Presentation and Summary of Significant Accounting Policies, we adopted the new leasing standard using the modified retrospective approach with an effective date of January 1, 2019. Prior year financial statements were not recast under the new standard and, therefore, those amounts are not presented below. We elected the package of transition provisions available for expired or existing contracts, which allowed us to carry forward our historical assessments of (1) whether contracts are or contain leases, (2) lease classification and (3) initial direct costs.

Lessee We lease property, vehicles and equipment under operating and financing leases. For leases with terms greater than 12 months, we record the related asset and obligation at the present value of lease payments over the term. We determine the lease term by assuming the exercise of renewal options that are reasonably certain. Leases with a lease term 12 months or less at inception are not recorded on our Consolidated Balance Sheet and are expensed on a straight-line basis over the lease term in our Consolidated Statement of Operations. Our leases may include rental escalation clauses, renewal options and/or termination options that are factored into our determination of lease payments when appropriate. When available, we use the rate implicit in the lease to discount lease payments to present value; however, most of our leases do not provide a readily determinable implicit rate. Therefore, we must estimate our incremental borrowing rate to discount the lease payments based on information available at lease commencement. Our incremental borrowing rate is based on a credit-adjusted risk-free rate at commencement date, which best approximates a secured rate over a similar term of lease. Additionally, we do not separate lease and non-lease components for any asset classes, except for those leases embedded in certain service arrangements. Fixed and in-substance fixed payments are included in the recognition of the operating and financing assets and lease liabilities, however, variable lease payments, other than those based on a rate or index, are recognized in the Consolidated Statements of Operations in the period in which the obligation for those payments is incurred. The Company's variable lease payments generally relate to payments tied to various indices, non-lease components and payments above a contractual minimum fixed payment.

The following table presents our lease balances as of December 31, 2019:

In millions	Location in the Consolidated Balance Sheet	December 31, 2019
Assets		
Operating lease assets	Operating lease assets	$ 391
Finance lease assets	Property, plant and equipment, net	38
Accumulated Amortization of Finance lease assets	Property, plant and equipment, net	(5)
Total leased assets		$ 424
Liabilities		
Current		
Operating lease liabilities	Other current liabilities	$ 91
Finance lease liabilities	Other current liabilities	10
Noncurrent		
Operating lease liabilities	Operating lease liabilities	369
Finance lease liabilities	Other liabilities	25
Total lease liabilities		$ 495

The following table presents our lease costs for operating and finance leases:

In millions	For the year ended December 31, 2019
Operating lease cost	$ 137
Finance lease cost	
Amortization of leased assets	5
Interest on lease liabilities	1
Short-Term lease cost	5
Variable lease cost	30
Total lease cost	$ 178

The following table presents the supplemental cash flow information:

In millions	For the year ended December 31, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 141
Operating cash flows from finance leases	$ 1
Financing cash flows from finance leases	$ 4
Lease Assets Obtained in Exchange for Lease Obligations	
Operating Leases	$ 45
Finance Leases	$ 33

The following table reconciles the undiscounted cash flows for each of the first five years and total of the remaining years to the finance lease liabilities and operating lease liabilities recorded on the Consolidated Balance Sheet as of December 31, 2019:

In millions	Operating Leases	Finance Leases
2020	$ 118	$ 11
2021	88	11
2022	66	10
2023	46	5
2024	37	—
Thereafter	272	—
Total lease payments	627	37
Less: Amount representing interest	(167)	(2)
Present value of lease liabilities	$ 460	$ 35

Prior to the adoption of the new lease accounting standard, future minimum lease payments under non-cancelable operating leases at December 31, 2018 were as follows: $128 million in 2019, $96 million in 2020, $80 million in 2021, $64 million in 2022, and $50 million in 2023.

As of December 31, 2019, we have additional operating leases of $70 million, primarily for a real estate lease in Europe, that have not yet commenced. This operating lease is expected to commence in 2021 with a lease term of 10 years.

The following table presents the weighted average remaining lease term and interest rates:

	December 31, 2019
Weighted average lease term:	
Operating leases	8.9 years
Finance leases	3.4 years
Weighted average interest rates:	
Operating leases	6.42%
Finance leases	3.72%

Lessor We have various arrangements for certain POS equipment under which we are the lessor. These leases meet the criteria for operating lease classification. Lease income associated with these leases is not material.

3. BUSINESS COMBINATIONS AND DIVESTITURES

2019 Acquisitions

Acquisition of D3 Technology, Inc.

On July 1, 2019, NCR completed its acquisition of D3 Technology, Inc. (D3), a leading provider of online and mobile banking for the Large Financial Institution market, for approximately $84 million, of which $83 million was paid in cash. The remaining $1 million is payable within 12 months from the date of acquisition. The D3 acquisition further expands our digital banking strategy as we extend our market share in large domestic banks and international banks. As a result of the acquisition, D3 became a wholly owned subsidiary of NCR.

Recording of Assets Acquired and Liabilities Assumed The fair value of consideration transferred to acquire D3 was allocated to the identifiable assets acquired and liabilities assumed based upon their estimated fair values as of the date of the acquisition as set forth below. This allocation is open as of December 31, 2019.

The allocation of the purchase price for D3 is as follows:

In millions	Fair Value
Cash acquired	$ 9
Tangible assets acquired	6
Acquired intangible assets other than goodwill	20
Acquired goodwill	54
Deferred tax assets	3
Liabilities assumed	(8)
Total purchase consideration	$ 84

Goodwill represents the future economic benefits arising from other assets acquired that could not be individually separately recognized. The goodwill arising from the acquisition consists of revenue synergies expected from combining the operations of NCR and D3. It is expected that none of the goodwill recognized in connection with the acquisition will be deductible for tax purposes. The goodwill arising from the acquisition has been allocated to our Banking segment. Refer to Note 5, "Goodwill and Purchased Intangible Assets" for the carrying amounts of goodwill by segment as of December 31, 2019.

The following table sets forth the components of the intangible assets acquired as of the acquisition date:

	Fair Value	Weighted Average Amortization Period [1]
	(In millions)	(In years)
Direct customer relationships	$ 7	11
Technology - Software	11	5
Tradenames	2	7
Total acquired intangible assets	$ 20	

[1] Determination of the weighted average period of the individual categories of intangible assets was based on the nature of applicable intangible asset and the expected future cash flows to be derived from the intangible asset. Amortization of intangible assets with definite lives is recognized over the period of time the assets are expected to contribute to future cash flows.

In connection with the closing of the acquisition, the Company incurred approximately $1 million of transaction costs, which has been included within selling, general and administrative expenses in the Consolidated Statement of Operations for the year ended December 31, 2019.

The operating results of D3 have been included within NCR's results as of the closing date of the acquisition. Supplemental pro forma information and actual revenue and earnings since the acquisition date have not been provided as this acquisition did not have a material impact on the Company's Consolidated Statements of Operations.

Acquisition of Zynstra Ltd.

On December 21, 2019, NCR completed its acquisition of Zynstra, Ltd. (Zynstra), a leading provider of edge virtualization technology, for approximately $134 million, of which $112 million was paid in cash. The remaining $22 million is expected to be paid in 2020. The Zynstra acquisition further expands our digital retail strategy as we further enhance our next generation store architecture. As a result of the acquisition, Zynstra became a wholly owned subsidiary of NCR.

Recording of Assets Acquired and Liabilities Assumed The fair value of consideration transferred to acquire Zynstra was allocated to the identifiable assets acquired and liabilities assumed based upon their estimated fair values as of the date of the acquisition as set forth below. This allocation is open as of December 31, 2019.

The allocation of the purchase price for Zynstra is as follows:

In millions	Fair Value
Cash acquired	$ 1
Tangible assets acquired	1
Acquired intangible assets other than goodwill	76
Acquired goodwill	67
Deferred tax liability	(10)
Liabilities assumed	(1)
Total purchase consideration	$ 134

Goodwill represents the future economic benefits arising from other assets acquired that could not be individually separately recognized. The goodwill arising from the acquisition consists of revenue and cost synergies expected from combining the operations of NCR and Zynstra. It is expected that none of the goodwill recognized in connection with the acquisition will be deductible for tax purposes. The goodwill arising from the acquisition has been allocated to our Retail segment. Refer to Note 5, "Goodwill and Purchased Intangible Assets" for the carrying amounts of goodwill by segment as of December 31, 2019.

The following table sets forth the components of the intangible assets acquired as of the acquisition date:

	Fair Value	Weighted Average Amortization Period [1]
	(In millions)	(In years)
Technology - Software	75	8
Tradenames	1	1
Total acquired intangible assets	$ 76	

[1] Determination of the weighted average period of the individual categories of intangible assets was based on the nature of applicable intangible asset and the expected future cash flows to be derived from the intangible asset. Amortization of intangible assets with definite lives is recognized over the period of time the assets are expected to contribute to future cash flows.

In connection with the closing of the acquisition, the Company incurred approximately $2 million of transaction costs, which has been included within selling, general and administrative expenses in the Consolidated Statement of Operations for the year ended December 31, 2019.

The operating results of Zynstra have been included within NCR's results as of the closing date of the acquisition. Supplemental pro forma information and actual revenue and earnings since the acquisition date have not been provided as this acquisition did not have a material impact on the Company's Consolidated Statements of Operations.

Other 2019 acquisitions

During the year ended December 31, 2019, the Company completed four acquisitions of local resellers in the hospitality industry for an aggregate purchase consideration of approximately $20 million, plus related acquisition costs. Approximately $2 million was withheld by the Company as a source of recovery for possible claims and payments under the related acquisition agreements and will be paid to the respective sellers pursuant to the terms of such agreements. Goodwill recognized related to these acquisitions was $17 million, all of which is expected to be deductible for tax purposes. The goodwill arising from these acquisitions has been allocated to the Hospitality segment. As a result of these acquisitions, NCR recorded $6 million related to identifiable intangible assets consisting primarily of customer relationships, which have a weighted-average amortization period of 8 years. Supplemental pro forma information and actual revenue and earnings since the acquisition dates have not been provided as these acquisitions did not have a material impact, individually or in the aggregate, on the Company's Consolidated Statements of Operations.

Pending acquisition

During the year ended December 31, 2019, the Company entered into a definitive agreement with Oki Electric Industry Co., Ltd., to purchase OKI Brasil's IT services and software assets, which is subject to customary closing conditions. The transaction is currently expected to close in the first half of 2020; however, it is possible that factors outside of our control could require us to complete the transaction at a later time or not at all.

2018 Acquisitions

Acquisition of JetPay Corporation

On December 6, 2018, NCR completed its acquisition of JetPay Corporation (JetPay), for which it purchased (i) all outstanding shares of common stock at a price of $5.05 per share, (ii) shares of Series A Preferred Stock at $5.05 per share, (iii) shares of Series A-1 Convertible Preferred Stock at a price of $600 per share, (iv) shares of Series A-2 Convertible Preferred Stock of JetPay at a price of $600 per share, and (v) transaction costs paid on behalf of the seller for an aggregate purchase price of $193 million which was paid in cash. As a result of the acquisition, JetPay became a fully owned subsidiary of NCR.

JetPay is a provider of end-to-end payment processing and human capital management solutions. The acquisition is consistent with NCR's continued transformation to a software- and services-driven business. JetPay complements and extends our existing capabilities by allowing us to monetize transactions via payments.

Recording of Assets Acquired and Liabilities Assumed The fair value of consideration transferred to acquire JetPay was allocated to the identifiable assets acquired and liabilities assumed based upon their estimated fair values as of the date of the acquisition as set forth below.

The allocation of the purchase price for JetPay is as follows:

In millions	Fair Value
Cash acquired	$ 4
Tangible assets acquired	76
Acquired intangible assets other than goodwill	104
Acquired goodwill	96
Deferred tax liabilities	(11)
Liabilities assumed	(76)
Total purchase consideration	$ 193

Goodwill represents the future economic benefits arising from other assets acquired that could not be individually separately recognized. The goodwill arising from the acquisition consists of revenue synergies expected from combining the operations of NCR and JetPay. It is expected that none of the goodwill recognized in connection with the acquisition will be deductible for tax purposes. The goodwill arising from the acquisition has been allocated to our Retail and Hospitality segments. Refer to Note 5, "Goodwill and Purchased Intangible Assets" for the carrying amounts of goodwill by segment as of December 31, 2018.

The following table sets forth the components of the intangible assets acquired as of the acquisition date:

	Fair Value	Weighted Average Amortization Period [1]
	(In millions)	(In years)
Direct customer relationships	$ 64	17
Technology - Software	39	9
Tradenames	1	1
Total acquired intangible assets	$ 104	

[1] Determination of the weighted average period of the individual categories of intangible assets was based on the nature of applicable intangible asset and the expected future cash flows to be derived from the intangible asset. Amortization of intangible assets with definite lives is recognized over the period of time the assets are expected to contribute to future cash flows.

In connection with the closing of the acquisition, the Company incurred approximately $4 million of transaction costs, which has been included within selling, general and administrative expenses in the Consolidated Statement of Operations for the year ended December 31, 2018.

Unaudited Pro forma Information The following unaudited pro forma information presents the consolidated results of NCR and JetPay for the years ended December 31, 2018 and 2017. The unaudited pro forma information is presented for illustrative purposes only. It is not necessarily indicative of the results of operations of future periods, or the results of operations that actually would have been realized had the entities been a single company during the periods presented or the results that the combined company will experience after the acquisition. The unaudited pro forma information does not give effect to the potential impact of current financial conditions, regulatory matters or any anticipated synergies, operating efficiencies or cost savings that may be associated with the acquisition. The unaudited pro forma information also does not include any integration costs or remaining future transaction costs that the companies may incur related to the acquisition as part of combining the operations of the companies.

The unaudited pro forma consolidated results of operations, assuming the acquisition had occurred on January 1, 2017, are as follows:

In millions	2018	2017
Revenue	$ 6,468	$ 6,592
Net income attributable to NCR	$ (46)	$ 217

The unaudited pro forma results for the year ended December 31, 2018 include:
- $4 million, net of tax, in additional amortization expense for acquired intangible assets;
- $4 million, net of tax, in eliminated transaction costs as if those costs were incurred in the prior year period; and
- $7 million, net of tax, in additional interest expense from the incremental borrowings under the senior secured credit facility.

The unaudited pro forma results for the year ended December 31, 2017, include:
- $5 million, net of tax, in additional amortization expense for acquired intangible assets;
- $4 million, net of tax, in transaction costs; and
- $7 million, net of tax, in additional interest expense from the incremental borrowings under the senior secured credit facility.

Other 2018 acquisitions

During the third quarter of 2018, we completed the acquisition of Zipscene, LLC which aggregates and enriches data from hospitality customers to provide marketing insights back to our customers and will enable us to increase data monetization. During the fourth quarter of 2018, we completed its acquisition of StopLift Checkout Vision Systems ("StopLift"). StopLift designs artificial intelligence technology which identifies fraudulent behavior at the POS and in SCO systems.

4. SEGMENT INFORMATION AND CONCENTRATIONS

As noted in Note 1, Basis of Presentation and Summary of Significant Accounting Policies, effective January 1, 2019, NCR changed the management of its business to an industry basis from the previous model of management on a solution basis, which resulted

in a corresponding change to NCR's reportable segments. We have reclassified prior period segment disclosures to conform to the current period presentation. As a result of the change, the Company manages and reports its business in the following segments:

- **Banking** - We offer solutions to enable customers in the financial services industry to reduce costs, generate new revenue streams and enhance customer loyalty. These solutions include a comprehensive line of ATM and payment processing hardware and software; cash management and video banking software and customer-facing digital banking services; and related installation, maintenance, and managed and professional services.
- **Retail** - We offer solutions to customers in the retail industry designed to improve selling productivity and checkout processes as well as increase service levels. These solutions primarily include retail-oriented technologies, such as POS terminals and POS software; a retail software platform with a comprehensive suite of retail software applications; innovative self-service kiosks, such as self-checkout; as well as bar-code scanners. We also offer installation, maintenance, managed and professional services as well as payment processing solutions.
- **Hospitality** - We offer technology solutions to customers in the hospitality industry, serving businesses that range from a single store or restaurant to global chains and sports and entertainment venues. Our solutions include POS hardware and software solutions, installation, maintenance, managed and professional services as well as payment processing solutions.
- **Other** - This category includes telecommunications and technology solutions where we offer maintenance as well as managed and professional services for third-party hardware provided to select manufacturers who value and leverage our global service capability.

These segments represent components of the Company for which separate financial information is available that is utilized on a regular basis by the chief operating decision maker in assessing segment performance and in allocating the Company's resources. Management evaluates the performance of the segments based on revenue and segment operating income. Assets are not allocated to segments, and thus are not included in the assessment of segment performance, and consequently, we do not disclose total assets by reportable segment.

The accounting policies used to determine the results of the operating segments are the same as those utilized for the consolidated financial statements as a whole. Intersegment sales and transfers are not material.

To maintain operating focus on business performance, non-operational items are excluded from the segment operating results utilized by our chief operating decision maker in evaluating segment performance and are separately delineated to reconcile back to total reported income from operations.

The following table presents revenue and operating income by segment for the years ended December 31:

In millions	2019	2018	2017
Revenue by segment			
Banking	**$ 3,512**	$ 3,183	$ 3,175
Retail	**2,217**	2,097	2,169
Hospitality	**843**	817	878
Other	**343**	308	294
Consolidated revenue	**$ 6,915**	$ 6,405	$ 6,516
Operating income by segment			
Banking	**$ 514**	$ 412	$ 421
Retail	**144**	142	231
Hospitality	**56**	85	140
Other	**44**	49	48
Subtotal - segment operating income	**758**	688	840
Other adjustments[1]	**147**	497	149
Income from operations	**$ 611**	$ 191	$ 691

[1] The following table presents the other adjustments for NCR for the years ended December 31:

In millions	2019	2018	2017
Transformation and restructuring costs	**$ 58**	$ 223	$ 29
Acquisition-related amortization of intangibles	**86**	85	115
Acquisition-related costs	**3**	6	5
Asset impairment charges	**—**	183	—
Total other adjustments	**$ 147**	$ 497	$ 149

The following table presents revenue from products and services for NCR for the years ended December 31:

In millions	2019	2018	2017
Product revenue	**$ 2,681**	$ 2,341	$ 2,579
Professional services and installation services revenue	**1,089**	1,094	1,055
Recurring revenue, including maintenance and cloud revenue	**3,145**	2,970	2,882
Consolidated revenue	**$ 6,915**	$ 6,405	$ 6,516

Revenue is attributed to the geographic area to which the product is delivered or in which the service is provided. The following table presents revenue by geographic area for NCR for the years ended December 31:

In millions	2019	%	2018	%	2017	%
Revenue by Geographic Area						
United States	**$ 3,481**	**50%**	$ 3,076	48%	$ 3,224	50%
Americas (excluding United States)	**693**	**10%**	631	10%	585	9%
Europe, Middle East and Africa (EMEA)	**1,843**	**27%**	1,751	27%	1,786	27%
Asia Pacific (APJ)	**898**	**13%**	947	15%	921	14%
Consolidated revenue	**$ 6,915**	**100%**	$ 6,405	100%	$ 6,516	100%

The following table presents property, plant and equipment by geographic area as of December 31:

In millions	2019	2018
Property, plant and equipment, net		
United States	**$ 280**	$ 247
Americas (excluding United States)	**14**	13
Europe, Middle East and Africa (EMEA)	**74**	57
Asia Pacific (APJ)	**45**	42
Consolidated property, plant and equipment, net	**$ 413**	$ 359

Concentrations No single customer accounts for more than 10% of NCR’s consolidated revenue. As of December 31, 2019, NCR is not aware of any significant concentration of business transacted with a particular customer that could, if suddenly eliminated, have a material adverse effect on NCR’s operations. NCR also lacks a concentration of available sources of labor, services, licenses or other rights that could, if suddenly eliminated, have a material adverse effect on its operations.

A number of NCR’s products, systems and solutions rely primarily on specific suppliers for microprocessors and other component products, manufactured assemblies, operating systems, commercial software and other central components. NCR also utilizes contract manufacturers in order to complete manufacturing activities. There can be no assurances that any sudden impact to the availability or cost of these technologies or services would not have a material adverse effect on NCR’s operations.

5. GOODWILL AND PURCHASED INTANGIBLE ASSETS

Goodwill

As noted in Note 1, “Basis of Presentation and Significant Accounting Policies”, effective January 1, 2019, the Company began management of its business on an industry basis, changing from the previous model of management on a solution basis, which

resulted in a corresponding change to NCR's reportable segments. In connection with the change in reportable segments, during the first quarter of 2019, the Company determined its reporting units and then assigned goodwill to the new reporting units based on the relative fair value allocation approach. Based on this analysis, it was determined that the fair value of all reporting units were substantially in excess of the carrying value. We have reclassified prior period goodwill disclosures to conform to the current period presentation.

The carrying amounts of goodwill by segment are included in the tables below. Foreign currency fluctuations are included within other adjustments.

	December 31, 2018						December 31, 2019		
In millions	**Goodwill**	**Accumulated Impairment Losses**	**Total**	**Additions**	**Impairment**	**Other**	**Goodwill**	**Accumulated Impairment Losses**	**Total**
Banking	**$ 1,718**	**$ (101)**	**$ 1,617**	**$ 54**	**$ —**	**$ 2**	**$ 1,774**	**$ (101)**	**$ 1,673**
Retail	**571**	**(34)**	**537**	**67**	**—**	**—**	**638**	**(34)**	**604**
Hospitality	**385**	**(23)**	**362**	**17**	**—**	**—**	**402**	**(23)**	**379**
Other	**187**	**(11)**	**176**	**—**	**—**	**—**	**187**	**(11)**	**176**
Total goodwill	**$ 2,861**	**$ (169)**	**$ 2,692**	**$ 138**	**$ —**	**$ 2**	**$ 3,001**	**$ (169)**	**$ 2,832**

	December 31, 2017						December 31, 2018		
In millions	**Goodwill**	**Accumulated Impairment Losses**	**Total**	**Additions**	**Impairment**	**Other**	**Goodwill**	**Accumulated Impairment Losses**	**Total**
Banking	$ 1,721	$ (14)	$ 1,707	$ —	$ (87)	$ (3)	$ 1,718	$ (101)	$ 1,617
Retail	478	(5)	473	94	(29)	(1)	571	(34)	537
Hospitality	377	(3)	374	13	(20)	(5)	385	(23)	362
Other	188	(1)	187	—	(10)	(1)	187	(11)	176
Total goodwill	$ 2,764	$ (23)	$ 2,741	$ 107	$ (146)	$ (10)	$ 2,861	$ (169)	$ 2,692

Under the previous segment reporting structure, late in the quarter ended June 30, 2018, we determined there was an indication that the carrying value of the net assets assigned to the Hardware reporting unit may not be recoverable. This determination was based on the lowering of our full year forecast for 2018, driven by reduced revenue and gross margin rates expected for the third and fourth quarters of 2018, and the resulting impact on the current year and future cash flow projections of the Hardware reporting unit.

Given the undiscounted cash flows of the asset group, which we determined to be at the reporting unit level, were below the carrying value of the net assets, we recorded an impairment charge for the difference between the fair value and the carrying value of the long-lived assets. The fair value of the long-lived assets was determined based on the nature of the asset through either third party appraisals, replacement cost or discounted cash flow analysis.

As a result, in 2018, the Company recorded impairment charges of $21 million related to property, plant and equipment held and used in NCR's hardware reporting unit, $16 million related to purchased intangibles and $146 million for goodwill assigned to the Hardware reporting unit. These charges were recorded in the line item asset impairment charges in our Consolidated Statement of Operations for the year ended December 31, 2018.

Purchased Intangible Assets

NCR’s purchased intangible assets were specifically identified when acquired, and are deemed to have finite lives. These assets are reported in intangibles, net in the Consolidated Balance Sheets. The gross carrying amount and accumulated amortization for NCR’s identifiable intangible assets were as set forth in the table below:

In millions	Amortization Period (in Years)	December 31, 2019		December 31, 2018	
		Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Identifiable intangible assets					
Reseller & customer relationships	1 - 20	**$ 735**	**$ (270)**	$ 726	$ (218)
Intellectual property	2 - 8	**529**	**(397)**	443	(373)
Customer contracts	8	**89**	**(89)**	89	(87)
Tradenames	1 - 10	**78**	**(68)**	75	(60)
Total identifiable intangible assets		**$ 1,431**	**$ (824)**	$ 1,333	$ (738)

The aggregate amortization expense (actual and estimated) for identifiable intangible assets for the following periods is:

In millions	For the year ended December 31, 2019	For the years ended December 31 (estimated)				
		2020	2021	2022	2023	2024
Amortization expense	$ 86	$ 72	$ 63	$ 59	$ 56	$ 49

6. SERIES A PREFERRED STOCK

On December 4, 2015, NCR issued 820,000 shares of Series A Convertible Preferred Stock to certain entities affiliated with the Blackstone Group L.P. (collectively, Blackstone) for an aggregate purchase price of $820 million, or $1,000 per share, pursuant to an Investment Agreement between the Company and Blackstone, dated November 11, 2015. In connection with the issuance of the Series A Convertible Preferred Stock, the Company incurred direct and incremental expenses of $26 million, including financial advisory fees, closing costs, legal expenses and other offering-related expenses. These direct and incremental expenses originally reduced the Series A Convertible Preferred Stock, and will be accreted through retained earnings as a deemed dividend from the date of issuance through the first possible known redemption date, March 16, 2024. During the years ended December 31, 2019, 2018 and 2017, the Company paid dividends-in-kind of $43 million, $46 million, and $45 million, respectively, associated with the Series A Convertible Preferred Stock. As of December 31, 2019 and 2018, the Company had accrued dividends of $1 million and $3 million, respectively, associated with the Series A Convertible Preferred Stock. There were no cash dividends declared during the years ended December 31, 2019 or 2018.

Under the Investment Agreement, Blackstone agreed not to sell or otherwise transfer its shares of Series A Convertible Preferred Stock (or any shares of common stock issued upon conversion thereof) without the Company's consent until June 4, 2017. In March 2017, we provided Blackstone with an early release from this lock-up, allowing Blackstone to sell approximately 49% of its shares of Series A Convertible Preferred Stock, and in return, Blackstone agreed to amend the Investment Agreement to extend the lock-up on the remaining 51% of its shares of Series A Convertible Preferred Stock for six months until December 1, 2017.

In connection with the early release of the lock-up, Blackstone offered for sale 342,000 shares of Series A Convertible Preferred Stock in an underwritten public offering. In addition, Blackstone converted 90,000 shares of Series A Convertible Preferred Stock into shares of our common stock and we repurchased those shares of common stock for $48.47 per share. The underwritten offering and the stock repurchase were consummated on March 17, 2017.

The repurchase of the common shares immediately upon conversion is considered a redemption of the related preferred shares. As a result, the excess of the fair value of consideration transferred over the carrying value, of $58 million, was included as a deemed dividend in adjusting the income from common stockholders in calculating earnings per share for the year ended December 31, 2017. Additionally, we determined that the changes to the lock-up period were considered a modification of the Series A Convertible Preferred Stock. The impact of the modification, calculated as the difference in the fair value immediately before and immediately after the changes, of $4 million , was included as a deemed dividend in adjusting the income from common stockholders in calculating earnings per share for the year ended December 31, 2017. This adjustment was recorded as an increase to the Series A Convertible Preferred Shares and will reduce the accretion of the direct and incremental expenses associated with the original offering as described above.

On September 18, 2019, NCR entered into an agreement to repurchase and convert the outstanding 512,221 shares of Series A Convertible Preferred Stock owned by Blackstone. NCR repurchased 237,673 shares of Series A Convertible Preferred Stock for total cash consideration of $302 million. The remaining shares of Blackstone's Series A Convertible Preferred Stock, including

accrued dividends, were converted to approximately 9.16 million shares of common stock at a conversion price of $30.00 per share.

For the repurchase of Series A Convertible Preferred Stock, the excess of the fair value of consideration transferred over the carrying value was approximately $67 million, and has been included as a deemed dividend in adjusting the income from common stockholders in calculating earnings per share. In this analysis, we determined the fair value of the consideration transferred was not in excess of the fair value of the redeemed Series A Convertible Preferred Stock. As a result, there was no inducement provided to Blackstone for the conversion of the remaining preferred shares into common stock.

Dividend Rights The Series A Convertible Preferred Stock ranks senior to the shares of the Company’s common stock, with respect to dividend rights and rights on the distribution of assets on any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Company. The Series A Convertible Preferred Stock has a liquidation preference of $1,000 per share. Holders of Series A Convertible Preferred Stock are entitled to a cumulative dividend at the rate of 5.5% per annum, payable quarterly in arrears and payable in-kind for the first sixteen dividend payments, after which, beginning in the first quarter of 2020, dividends will be payable in cash or in-kind at the option of the Company. If the Company does not declare and pay a dividend, the dividend rate will increase to 8.0% per annum until all accrued but unpaid dividends have been paid in full.

Conversion Features The Series A Convertible Preferred Stock is convertible at the option of the holders at any time into shares of common stock at a conversion price of $30.00 per share and a conversion rate of 33.333 shares of common stock per share of Series A Convertible Preferred Stock. As of December 31, 2019 and 2018, the maximum number of common shares that could be required to be issued upon conversion of the outstanding shares of Series A Convertible Preferred Stock was 13.3 million and 29.0 million shares, respectively. The conversion rate is subject to the following customary anti-dilution and other adjustments:

- the issuance of common stock as a dividend or the subdivision, combination, or reclassification of common stock into a greater or lesser number of shares of common stock;
- the dividend, distribution or other issuance of rights, options or warrants to holders of Common Stock entitling them to subscribe for or purchase shares of common stock at a price per share that is less than the volume-weighted average price per share of common stock;
- the completion of a tender offer or exchange offer of shares of common stock at a premium to the volume-weighted average price per share of common stock and certain other above-market purchases of common stock;
- the issuance of a dividend or similar distribution in-kind, which can include shares of any class of capital stock, evidences of the Company's indebtedness, assets or other property or securities, to holders of common stock;
- a transaction in which a subsidiary of the Company ceases to be a subsidiary of the Company as a result of the distribution of the equity interests of the subsidiary to the holders of the Company’s common stock; and
- the payment of a cash dividend to the holders of common stock.

At any time after December 4, 2018, all outstanding shares of Series A Convertible Preferred Stock are convertible at the option of the Company if the volume-weighted average price of the common stock exceeds $54.00 for at least 30 trading days in any period of 45 consecutive trading days. The $54.00 may be adjusted pursuant to the anti-dilution provisions above.

The Series A Convertible Preferred Stock, and the associated dividends for the first sixteen payments, did not generate a beneficial conversion feature (BCF) upon issuance as the fair value of the Company's common stock was greater than the conversion price. The Company will determine and, if required, measure a BCF based on the fair value of our stock price on the date dividends are declared subsequent to the sixteenth dividend. If a BCF is recognized, a reduction to retained earnings and the Series A Convertible Preferred Stock will be recorded, and then subsequently accreted through the first redemption date.

Additionally, the Company determined that the nature of the Series A Convertible Preferred Stock was more akin to an equity instrument and that the economic characteristics and risks of the embedded conversion options were clearly and closely related to the Series A Convertible Preferred Stock. As such, the conversion options were not required to be bifurcated from the host under ASC 815, *Derivatives and Hedging.*

Redemption Rights On any date during the three months commencing on and immediately following March 16, 2024 and the three months commencing on and immediately following every third anniversary of March 16, 2024, holders of Series A Convertible Preferred Stock have the right to require the Company to repurchase all or any portion of the Series A Convertible Preferred Stock at 100% of the liquidation preference thereof plus all accrued but unpaid dividends. Upon certain change of control events involving the Company, holders of Series A Convertible Preferred Stock can require the Company to repurchase, subject to certain exceptions, all or any portion of the Series A Convertible Preferred Stock at the greater of (1) an amount in cash equal to 100% of the liquidation

preference thereof plus all accrued but unpaid dividends and (2) the consideration the holders would have received if they had converted their shares of Series A Convertible Preferred Stock into common stock immediately prior to the change of control event.

The Company has the right, upon certain change of control events involving the Company, to redeem the Series A Convertible Preferred Stock at the greater of (1) an amount in cash equal to the sum of the liquidation preference of the Series A Convertible Preferred Stock, all accrued but unpaid dividends and the present value, discounted at a rate of 10%, of any remaining scheduled dividends through the fifth anniversary of the first dividend payment date, assuming the Company chose to pay such dividends in cash (the "make-whole provision") and (2) the consideration the holders would have received if they had converted their shares of Series A Convertible Preferred Stock into common stock immediately prior to the change of control event.

Since the redemption of the Series A Convertible Preferred Stock is contingently or optionally redeemable and therefore not certain to occur, the Series A Convertible Preferred Stock is not required to be classified as a liability under ASC 480, *Distinguishing Liabilities from Equity*. As the Series A Convertible Preferred Stock is redeemable in certain circumstances at the option of the holder and is redeemable in certain circumstances upon the occurrence of an event that is not solely within our control, we have classified the Series A Convertible Preferred Stock in mezzanine equity in the Consolidated Balance Sheets.

As noted above, the Company determined that the nature of the Series A Convertible Preferred Stock was more akin to an equity instrument. However, the Company determined that the economic characteristics and risks of the embedded put options, call option and make-whole provision were not clearly and closely related to the Series A Convertible Preferred Stock. Therefore, the Company assessed the put and call options further, and determined they did not meet the definition of a derivative under ASC 815, *Derivatives and Hedging.* Under the same analysis, the Company determined the make-whole provision did meet the definition of a derivative, but that the value of the derivative was minimal due to the expectations surrounding the scenarios under which the call option and make-whole provision would be exercised.

Voting Rights Holders of Series A Convertible Preferred Stock are entitled to vote with the holders of the common stock on an as-converted basis. Holders of Series A Convertible Preferred Stock are entitled to a separate class vote with respect to, amendments to the Company’s organizational documents that have an adverse effect on the Series A Convertible Preferred Stock and issuances by the Company of securities that are senior to, or equal in priority with, the Series A Convertible Preferred Stock.

7. DEBT OBLIGATIONS

The following table summarizes the Company's short-term borrowings and long-term debt:

In millions, except percentages	December 31, 2019		December 31, 2018	
	Amount	**Weighted-Average Interest Rate**	**Amount**	**Weighted-Average Interest Rate**
Short-Term Borrowings				
Current portion of Senior Secured Credit Facility [1]	**$ 8**	**4.30%**	$ 84	4.51%
Trade Receivables Securitization Facility [1]	**270**	**2.65%**	100	3.37%
Other [1]	**4**	**2.82%**	1	4.92%
Total short-term borrowings	**$ 282**		$ 185	
Long-Term Debt				
Senior Secured Credit Facility:				
Term loan facility [1]	**$ 740**	**4.30%**	$ 675	4.51%
Revolving credit facility [1]	**265**	**3.76%**	120	4.49%
Senior Notes:				
5.00% Senior Notes due 2022	**600**		600	
4.625% Senior Notes due 2021	**—**		500	
5.875% Senior Notes due 2021	**—**		400	
6.375% Senior Notes due 2023	**700**		700	
5.750% Senior Notes due 2027	**500**		—	
6.125% Senior Notes due 2029	**500**		—	
Deferred financing fees	**(32)**		(18)	
Other [1]	**4**	**0.05%**	3	0.59%
Total long-term debt	**$ 3,277**		$ 2,980	

(1) Interest rates are weighted average interest rates as of December 31, 2019 and 2018.

Senior Secured Credit Facility On August 28, 2019, the Company entered into an amended and restated senior secured credit facility with and among certain subsidiaries of NCR (the Foreign Borrowers), the lenders party thereto and JPMorgan Chase Bank, NA (JPMCB) as the administrative agent, refinancing its term loan facility and revolving credit facility thereunder (the Senior Secured Credit Facility). The Senior Secured Credit Facility consisted of a term loan facility with an aggregate principal commitment of $750 million, of which $748 million was outstanding as of December 31, 2019. Additionally, the Senior Secured Credit Facility provides for a five-year revolving credit facility with an aggregate principal amount of $1.1 billion, of which $265 million was outstanding as of December 31, 2019. The revolving credit facility also allows a portion of the availability to be used for letters of credit, and as of December 31, 2019, outstanding letters of credit were $28 million. As a result of amending the Senior Secured Credit Facility, the Company wrote off approximately $5 million of deferred financing fees which were recorded within interest expense during the year ended December 31, 2019 in the Consolidated Statement of Operations. Additionally, the Company incurred debt issuance fees of $18 million that have been deferred and will be recognized in interest expense over the term of the Senior Secured Credit Facility.

Up to $400 million of the revolving credit facility is available to the Foreign Borrowers. Term loans were made to the Company in U.S. Dollars, and loans under the revolving credit facility are available in U.S. Dollars, Euros and Pound Sterling.

The outstanding principal balance of the term loan facility is required to be repaid in equal quarterly installments of approximately 0.25% of the aggregate principal amount beginning with the fiscal quarter ending December 31, 2019, with the balance being due at maturity on August 28, 2026. Borrowings under the revolving portion of the credit facility are due August 28, 2024. Amounts outstanding under the Senior Secured Credit Facility bear interest at LIBOR (or, in the case of amounts denominated in Euros, EURIBOR), or, at NCR’s option, in the case of amounts denominated in U.S. Dollars, at a base rate equal to the highest of (a) the federal funds rate plus 0.50%, (b) the rate of interest last quoted by the Wall Street Journal as the “prime rate” and (c) the one-month LIBOR rate plus 1.00% (the Base Rate), plus, in each case, a margin ranging from 1.25% to 2.25% for LIBOR-based loans or EURIBOR-based revolving loans and ranging from 0.25% to 1.25% for Base Rate-based revolving loans, in each case, depending on the Company’s consolidated leverage ratio. The terms of the Senior Secured Credit Facility also require certain other fees and payments to be made by the Company, including a commitment fee on the undrawn portion of the revolving credit facility. Amounts outstanding under the Senior Secured Credit Facility for the term loan facility bear interest at LIBOR plus 2.5% margin per annum, or at NCR's option, the Base Rate plus a 1.50% margin per annum.

The obligations of the Company and Foreign Borrowers under the Senior Secured Credit Facility are guaranteed by certain of the Company's wholly-owned domestic subsidiaries. The Senior Secured Credit Facility and these guarantees are secured by a first priority lien and security interest in certain equity interests owned by the Company and the guarantor subsidiaries in certain of their respective domestic and foreign subsidiaries, and a perfected first priority lien and security interest in substantially all of the Company's U.S. assets and the assets of the guarantor subsidiaries, subject to certain exclusions. These security interests would be released if the Company achieves an “investment grade” rating, and will remain released so long as the Company maintains that rating.

The Senior Secured Credit Facility includes affirmative and negative covenants that restrict or limit the ability of the Company and its subsidiaries to, among other things, incur indebtedness; create liens on assets; engage in certain fundamental corporate changes or changes to the Company's business activities; make investments; sell or otherwise dispose of assets; engage in sale-leaseback or hedging transactions; repurchase stock, pay dividends or make similar distributions; repay other indebtedness; engage in certain affiliate transactions; or enter into agreements that restrict the Company's ability to create liens, pay dividends or make loan repayments. The Senior Secured Credit Facility also includes a financial covenant that require the Company to maintain:

- a consolidated leverage ratio on the last day of any fiscal quarter, not to exceed (i) in the case of any fiscal quarter ending on or prior to March 31, 2021, (a) the sum of 4.50 and an amount (not to exceed 0.50) to reflect debt used to reduce NCR’s unfunded pension liabilities to (b) 1.00, and (ii) in the case of any fiscal quarter ending after March 31, 2021 and on or prior to March 31, 2023, (a) the sum of 4.25 and an amount (not to exceed 0.50) to reflect debt used to reduce NCR’s unfunded pension liabilities to (b) 1.00; and (iii) in the case of any fiscal quarter ending after March 31, 2023, (a) the sum of 4.00 and an amount (not to exceed 0.50) to reflect debt used to reduce our unfunded pension liabilities to (b) 1.00.

The Company has the option to elect to increase the maximum permitted leverage ratio by 0.25 in connection with the consummation of any material acquisition (as defined in the Senior Secured Credit Facility) for four fiscal quarters, but in no event will the maximum permitted leverage ratio, inclusive of all increases, exceed 4.75 to 1.00. At December 31, 2019, the maximum consolidated leverage ratio under the Senior Secured Credit Facility was 4.75 to 1.00.

The Senior Secured Credit Facility also includes provisions for events of default, which are customary for similar financings. Upon the occurrence of an event of default, the lenders may, among other things, terminate the loan commitments, accelerate all loans and require cash collateral deposits in respect of outstanding letters of credit. If the Company is unable to pay or repay the amounts due, the lenders could, among other things, proceed against the collateral granted to them to secure such indebtedness.

The Company may request, at any time and from time to time, but the lenders are not obligated to fund, the establishment of one or more incremental term loans and/or revolving credit facilities (subject to the agreement of existing lenders or additional financial institutions to provide such term loans and/or revolving credit facilities) with commitments in an aggregate amount not to exceed the greater of (i) $150 million, and (ii) such amount as would not cause the leverage ratio under the Senior Secured Credit Facility, calculated on a pro forma basis including the incremental facility and assuming that it and the revolver are fully drawn, to exceed 3.00 to 1.00, and the proceeds of which can be used for working capital requirements and other general corporate purposes.

Senior Unsecured Notes On September 17, 2012, the Company issued $600 million aggregate principal amount of 5.00% senior unsecured notes due in 2022 (the 5.00% Notes). The 5.00% Notes were sold at 100% of the principal amount and will mature on July 15, 2022. The Company has the option to redeem the 5.00% Notes, in whole or in part, at any time on or after July 15, 2017, at a redemption price of 102.500%, 101.667%, 100.833% and 100.000% during the 12-month periods commencing on July 15, 2017, 2018, 2019 and 2020 and thereafter, respectively, plus accrued and unpaid interest to the redemption date.

On December 18, 2012, the Company issued $500 million aggregate principal amount of 4.625% senior unsecured notes due in 2021 (the 4.625% Notes). The 4.625% Notes were sold at 100% of the principal amount and had a maturity date of February 15, 2021. On August 8, 2019, the Company issued a notice of full redemption to redeem all of the outstanding aggregate principal amount of the 4.625% Notes. On September 7, 2019, the 4.625% Notes were redeemed at a price equal to (i) 100% of the aggregate principal amount of the Notes and (ii) accrued and unpaid interest to, but not including, the redemption date. Upon deposit of the redemption payment, the 4.625% Notes were satisfied and discharged in accordance with its terms.

On December 19, 2013, the Company issued $400 million aggregate principal amount of 5.875% senior unsecured notes due in 2021 (the 5.875% Notes). The 5.875% Notes were sold at 100% of the principal amount and had a maturity date of December 15, 2021. On November 14, 2019, the Company issued a notice of full redemption to redeem all of the outstanding aggregate principal amount of the 5.875% Notes. On December 15, 2019, the 5.875% Notes were redeemed at a price equal to (i) 100% of the aggregate principal amount of the Notes and (ii) accrued and unpaid interest to, but not including, the redemption date. Upon deposit of the redemption payment, the 5.875% Notes were satisfied and discharged in accordance with its terms.

On December 19, 2013, the Company issued $700 million aggregate principal amount of 6.375% senior unsecured notes due in 2023 (the 6.375% Notes).The 6.375% Notes were sold at 100% of the principal amount and will mature on December 15, 2023. The Company has the option to redeem the 6.375% Notes, in whole or in part, at any time on or after December 15, 2018, at a redemption price of 103.188%, 102.125%, 101.063% and 100% during the 12-month periods commencing on December 15, 2018, 2019, 2020 and 2021 and thereafter, respectively, plus accrued and unpaid interest to the redemption date.

On August 21, 2019, the Company issued $500 million aggregate principal amount of 5.750% senior unsecured notes due in 2027 (the 5.750% Notes). The 5.750% Notes were sold at 100% of the principal amount and will mature on September 1, 2027. The 5.750% Notes were issued without registration rights. The Company has the option to redeem the 5.750% Notes, in whole or in part, at any time on or after September 1, 2022, at a redemption price of 102.875%, 101.438%, and 100% during the 12-month periods commencing on September 1, 2022, 2023, and 2024 and thereafter, respectively, plus accrued and unpaid interest to the redemption date. Prior to September 1, 2022, the Company may redeem the 5.750% Notes, in whole or in part, at a redemption price equal to 100% of the principal amount plus a make-whole premium and accrued and unpaid interest to the redemption date.

On August 21, 2019, the Company issued $500 million aggregate principal amount of 6.125% senior unsecured notes due in 2029 (the 6.125% Notes). The 6.125% Notes were sold at 100% of the principal amount and will mature of September 1, 2029. The 6.125% Notes were issued without registration rights. The Company has the option to redeem the 6.125% Notes, in whole or in part, at any time on or after September 1, 2024, at a redemption price of 103.063%, 102.042%, 101.021% and 100% during the 12-month periods commencing on September 1, 2024, 2025, 2026 and 2027 and thereafter, respectively, plus accrued and unpaid interest to the redemption date. Prior to September 1, 2024, the Company may redeem the 6.125% Notes, in whole or in part, at a redemption price equal to 100% of the principal amount plus a make-whole premium and accrued and unpaid interest to the redemption date.

As a result of the redemption of the 4.625% and the 5.875% Notes, the Company wrote off approximately $2 million of deferred financing fees which was recorded within interest expense during the year ended December 31, 2019 in the Consolidated Statement of Operations. For the issuance of the 5.750% Notes and the 6.125% Notes, the Company incurred debt issuance fees of $15 million that have been deferred and will be recognized in interest expense over the term of the indentures.

The senior unsecured notes are guaranteed, fully and unconditionally, on an unsecured senior basis, by our 100% owned subsidiary, NCR International, Inc. The terms of the indentures for these notes limit the ability of the Company and certain of its subsidiaries to, among other things, incur additional debt or issue redeemable preferred stock; pay dividends or make certain other restricted payments or investments; incur liens; sell assets; incur restrictions on the ability of the Company's subsidiaries to pay dividends to the Company; enter into affiliate transactions; engage in sale and leaseback transactions; and consolidate, merge, sell or otherwise dispose of all or substantially all of the Company's or such subsidiaries' assets. These covenants are subject to significant exceptions and qualifications. For example, if these notes are assigned an "investment grade" rating by Moody's or S&P and no default has occurred or is continuing, certain covenants will be terminated.

Trade Receivables Securitization Facility In November 2014, the Company established a revolving trade receivables securitization facility (the A/R Facility) with PNC Bank, National Association (PNC) as the administrative agent, and various lenders. In November 2019, the Company amended the A/R Facility to increase the maximum commitment made available under the Facility and extended the maturity date to November 2021. The amendment also included other modifications including the scope of receivables subject to the facility and related eligibility requirements, the adoption of a new benchmark for determining overnight funding rates and the fees and interest payable to the agent and lenders party thereto. The A/R Facility now provides for up to $300 million in funding based on the availability of eligible receivables and other customary factors and conditions, of which $270 million was outstanding as of December 31, 2019.

Under the A/R Facility, NCR sells and/or contributes certain of its U.S. trade receivables to a wholly-owned, bankruptcy-remote subsidiary as they are originated, and advances by the lenders to that subsidiary are secured by those trade receivables. The assets of this financing subsidiary are restricted as collateral for the payment of its obligations under the A/R Facility, and its assets and credit are not available to satisfy the debts and obligations owed to the creditors of the Company. The Company includes the assets, liabilities and results of operations of this financing subsidiary in its consolidated financial statements. The financing subsidiary owned $603 million and $526 million of outstanding accounts receivable as of December 31, 2019 and 2018, respectively, and these amounts are included in accounts receivable, net in the Consolidated Balance Sheets.

The financing subsidiary will pay annual commitments and other customary fees to the lenders, and advances by a lender under the A/R Facility will accrue interest (i) at a reserve-adjusted LIBOR rate or a base rate equal to the highest of (a) the applicable lender’s prime rate or (b) the federal funds rate plus 0.50%, if the lender is funding as a committed lender under the terms of the

A/R Facility, or (ii) based on commercial paper interest rates if the lender is funding as a commercial paper conduit lender. Advances may be prepaid at any time without premium or penalty.

The A/R Facility contains various customary affirmative and negative covenants and default and termination provisions which provide for the acceleration of the advances under the A/R Facility in circumstances including, but not limited to, failure to pay interest or principal when due, breach of representation, warranty or covenant, certain insolvency events or failure to maintain the security interest in the trade receivables, and defaults under other material indebtedness.

Debt Maturities Maturities of debt outstanding, in principal amounts, at December 31, 2019 are summarized below:

		For the years ended December 31					
In millions	**Total**	**2020**	**2021**	**2022**	**2023**	**2024**	**Thereafter**
Debt maturities	**$ 3,591**	$ 15	$ 277	$ 608	$ 708	$ 272	$ 1,711

Fair Value of Debt The Company utilized Level 2 inputs, as defined in the fair value hierarchy, to measure the fair value of the long-term debt, which, as of December 31, 2019 and 2018 was $3.70 billion and $3.11 billion, respectively. Management's fair value estimates were based on quoted prices for recent trades of NCR’s long-term debt, quoted prices for similar instruments, and inquiries with certain investment communities.

8. INCOME TAXES

For the years ended December 31, income (loss) from continuing operations before income taxes consisted of the following:

In millions	**2019**	**2018**	**2017**
Income (loss) before income taxes			
United States	**$ (25)**	$ (262)	$ 149
Foreign	**366**	301	333
Total income (loss) from continuing operations before income taxes	**$ 341**	$ 39	$ 482

For the years ended December 31, income tax expense (benefit) consisted of the following:

In millions	**2019**	**2018**	**2017**
Income tax expense (benefit)			
Current			
Federal	**$ 1**	$ 18	$ 14
State	**2**	—	2
Foreign	**78**	42	54
Deferred			
Federal	**(19)**	(2)	178
State	**—**	1	(3)
Foreign	**(335)**	14	(3)
Total income tax expense (benefit)	**$ (273)**	$ 73	$ 242

The following table presents the principal components of the difference between the effective tax rate and the U.S. federal statutory income tax rate for the years ended December 31:

In millions	2019	2018	2017
Income tax expense at the U.S. federal tax rate of 21% for 2019 and 2018, respectively and 35% for 2017	**$ 72**	$ 8	$ 169
Foreign income tax differential	**10**	20	(38)
State and local income taxes (net of federal effect)	**3**	2	(1)
Other U.S. permanent book/tax differences	**3**	—	1
Meals and entertainment expense	**2**	2	2
Executive compensation	**9**	4	1
Employee share-based payments	**2**	3	(3)
Impact of intangible asset transfer	**(245)**	—	—
Gains/losses on entity liquidations	**(12)**	—	—
Foreign derived intangible income deduction	**(7)**	(1)	—
Change in branch tax status	**(17)**	(9)	—
Goodwill impairment	**—**	30	—
Research and development tax credits	**(5)**	(6)	(4)
U.S. manufacturing deduction	**—**	—	(9)
U.S. valuation allowance [1]	**(16)**	16	—
U.S tax reform	**—**	37	130
Foreign valuation allowance	**(74)**	2	—
Change in liability for unrecognized tax benefits [1]	**4**	(23)	(2)
Prior period adjustments	**(1)**	(11)	—
Other, net	**(1)**	(1)	(4)
Total income tax expense (benefit)	**$ (273)**	$ 73	$ 242

[1] Does not include the impact of items included in the U.S. Tax Reform category

NCR's tax provisions include a provision for income taxes in certain tax jurisdictions where its subsidiaries are profitable, but reflect only a portion of the tax benefits related to certain foreign subsidiaries' tax losses due to the uncertainty of the ultimate realization of future benefits from these losses. During 2019, our tax rate was impacted by the transfer of certain intangible assets among our wholly-owned subsidiaries, resulting in a variety of tax effects including the establishment of deferred tax assets, recognition of tax gains and losses and other deferred tax adjustments. In total, these tax impacts created a net tax benefit associated with the intangible asset transfer of $264 million. Our tax rate was also impacted by foreign valuation allowance releases of $74 million. During 2018, the tax rate was impacted by $37 million relating to U.S. Tax Reform. During 2017, the tax rate was impacted by a provisional charge of $130 million relating to U.S. Tax Reform.

During 2019, we transferred certain intangible assets among our wholly-owned subsidiaries, which resulted in the establishment of deferred tax assets of $274 million. The establishment of deferred tax assets from intra-entity transfers of intangible assets required us to make significant estimates and assumptions to determine the fair value of such intangible assets. Critical estimates in valuing the intangible assets include, but are not limited to, internal revenue and expense forecasts, and discount rates. The sustainability of our future tax benefits is dependent upon the acceptance of these valuation estimates and assumptions by the taxing authorities.

NCR did not provide additional U.S. income tax or foreign withholding taxes, if any, on approximately $3.1 billion of undistributed earnings of its foreign subsidiaries, given the intention continues to be that those earnings are reinvested indefinitely. The amount of unrecognized deferred tax liability associated with these indefinitely reinvested earnings is approximately $222 million. The unrecognized deferred tax liability is made up of a combination of U.S. and state income taxes and foreign withholding taxes.

We regularly review our deferred tax assets for recoverability and establish a valuation allowance if it is more likely than not that some portion or all of the deferred tax asset will not be realized. The determination as to whether a deferred tax asset will be realized is made on a jurisdictional basis and is based on the evaluation of positive and negative evidence. This evidence includes historical taxable income/loss, projected future taxable income, the expected timing of the reversal of existing temporary differences and the implementation of tax planning strategies.

Deferred income tax assets and liabilities included in the Consolidated Balance Sheets as of December 31 were as follows:

In millions	2019	2018
Deferred income tax assets		
Employee pensions and other benefits	**$ 243**	$ 223
Other balance sheet reserves and allowances	**182**	141
Tax loss and credit carryforwards	**625**	682
Capitalized research and development	**47**	53
Lease liabilities	**104**	—
Intangibles	**127**	—
Property, plant and equipment	**11**	11
Other	**9**	38
Total deferred income tax assets	**1,348**	1,148
Valuation allowance	**(352)**	(485)
Net deferred income tax assets	**996**	663
Deferred income tax liabilities		
Intangibles	**—**	151
Right of use assets	**102**	—
Capitalized software	**98**	78
Other	**—**	7
Total deferred income tax liabilities	**200**	236
Total net deferred income tax assets	**$ 796**	$ 427

NCR recorded valuation allowances related to certain deferred income tax assets due to the uncertainty of the ultimate realization of the future benefits from those assets. The valuation allowances cover deferred tax assets, primarily tax loss carryforwards and foreign tax credits, in tax jurisdictions where there is uncertainty as to the ultimate realization of those tax losses and credits. If we are unable to generate sufficient future taxable income of the proper source in the time period within which the temporary differences underlying our deferred tax assets become deductible, or before the expiration of our loss and credit carryforwards, additional valuation allowances could be required.

As of December 31, 2019, NCR had U.S. federal, U.S. state (tax effected), and foreign tax attribute carryforwards of approximately $1.5 billion. The net operating loss carryforwards that are subject to expiration will expire in the years 2020 through 2038. This includes U.S. tax credit carryforwards of $263 million. Approximately $5 million of the credit carryforwards will be refunded by 2022 due to U.S. Tax Reform, and $258 million of the credit carryforwards expire in the years 2020 through 2039. As a result of stock ownership changes our U.S. tax attributes could be subject to limitations under Section 382 of the U.S. Internal Revenue Code of 1986, as amended, if further material stock ownership changes occur.

The aggregate changes in the balance of our gross unrecognized tax benefits were as follows for the years ended December 31:

In millions	2019	2018	2017
Gross unrecognized tax benefits - January 1	**$ 110**	$ 196	$ 183
Increases related to tax positions from prior years	**7**	9	3
Decreases related to tax positions from prior years	**(4)**	(50)	(1)
Increases related to tax provisions taken during the current year	**14**	9	23
Settlements with tax authorities	**(5)**	(45)	(4)
Lapses of statutes of limitation	**(1)**	(9)	(8)
Total gross unrecognized tax benefits - December 31	**$ 121**	$ 110	$ 196

Of the total amount of gross unrecognized tax benefits as of December 31, 2019, $87 million would affect NCR's effective tax rate if realized. The Company's liability arising from uncertain tax positions is recorded in income tax accruals and other current liabilities in the Consolidated Balance Sheets.

We recognized interest and penalties associated with uncertain tax positions as part of the provision for income taxes in our Consolidated Statements of Operations of $2 million of expense, $9 million of benefit, and $2 million of expense for the years ended December 31, 2019, 2018, and 2017, respectively. The gross amount of interest and penalties accrued as of December 31, 2019 and 2018 was $35 million and $33 million, respectively.

In the U.S., NCR files consolidated federal and state income tax returns where statutes of limitations generally range from three to five years. U.S. federal tax years remain open from 2015 forward. Years beginning on or after 2001 are still open to examination by certain foreign taxing authorities, including India, Egypt, and other major taxing jurisdictions.

During 2020, the Company expects to resolve certain tax matters related to U.S. and foreign jurisdictions. As of December 31, 2019, we estimate that it is reasonably possible that unrecognized tax benefits may decrease by $12 million to $19 million in the next 12 months due to the resolution of these tax matters.

9. STOCK COMPENSATION PLANS

The Company recognizes all share-based payments as compensation expense in its financial statements based on their fair value. As of December 31, 2019, the Company's stock-based compensation consisted of restricted stock units, employee stock purchase plan and stock options. The Company recorded stock-based compensation expense for the years ended December 31 as follows:

In millions	2019	2018	2017
Restricted stock units	**$ 94**	$ 65	$ 73
Employee stock purchase plan	**4**	4	4
Stock options	**9**	4	—
Stock-based compensation expense	**107**	73	77
Tax benefit	**(12)**	(10)	(22)
Total stock-based compensation (net of tax)	**$ 95**	$ 63	$ 55

Approximately 20 million shares remain authorized to be issued under the 2017 Stock Incentive Plan (SIP). Details of the Company's stock-based compensation plans are discussed below.

Restricted Stock Units

The SIP provides for the grant of several different forms of stock-based compensation, including restricted stock units. Restricted stock units can have service-based and/or performance-based vesting with performance goals being established by the Compensation and Human Resource Committee of the Company's Board of Directors. Any grant of restricted stock units is generally subject to a vesting period of 12 months to 48 months, to the extent permitted by the SIP. Performance-based grants conditionally vest upon achievement of future performance goals based on performance criteria such as the Company's achievement of specific return on capital and/or other financial metrics (as defined in the SIP) during the performance period. Performance-based grants must be earned, based on performance, before the actual number of shares to be awarded is known. The Compensation and Human Resource Committee considers the likelihood of meeting the performance criteria based upon estimates and other relevant data, and certifies performance based on its analysis of achievement against the performance criteria. A recipient of restricted stock units does not have the rights of a stockholder and is subject to restrictions on transferability and risk of forfeiture. Other terms and conditions applicable to any award of restricted stock units will be determined by the Compensation and Human Resource Committee and set forth in the agreement relating to that award.

The following table reports restricted stock unit activity during the year ended December 31, 2019:

Shares in thousands	Number of Units	Weighted Average Grant-Date Fair Value per Unit
Unvested shares as of January 1	5,966	$ 28.69
Shares granted	1,828	$ 24.31
Shares vested	(2,907)	$ 26.68
Shares forfeited	(431)	$ 28.74
Unvested shares as of December 31	4,456	$ 28.18

Stock-based compensation expense is recognized in the financial statements based upon fair value. The total fair value of units vested and distributed in the form of NCR common stock was $86 million in 2019, $90 million in 2018, and $87 million in 2017. As of December 31, 2019, there was $78 million of unrecognized compensation cost related to unvested restricted stock unit grants. The unrecognized compensation cost is expected to be recognized over a remaining weighted-average period of 0.8 years. The weighted average grant date fair value for restricted stock unit awards granted in 2018 and 2017 was $26.25 and $46.95, respectively.

The following table represents the composition of restricted stock unit grants in 2019:

Shares in thousands	Number of Units	Weighted Average Grant-Date Fair Value
Service-based units	894	$ 27.02
Performance-based units	934	$ 21.72
Total restricted stock units	1,828	$ 24.31

Stock Options

The SIP also provides for the grant of stock options to purchase shares of NCR common stock. The Compensation and Human Resource Committee has discretion to determine the material terms and conditions of option awards under the SIP, provided that (i) the exercise price must be no less than the fair market value of NCR common stock (defined as the closing price) on the date of grant, (ii) the term must be no longer than ten years, and (iii) in no event shall the normal vesting schedule provide for vesting in less than one year. Other terms and conditions of an award of stock options will be determined by the Compensation and Human Resource Committee as set forth in the agreement relating to that award. The Compensation and Human Resource Committee has authority to administer the SIP, except that the Committee on Directors and Governance of the Company’s Board of Directors will administer the SIP with respect to non-employee members of the Board of Directors. New shares of the Company’s common stock are issued as a result of stock option exercises.

Stock compensation expense is recognized in the financial statements based upon grant date fair value and is computed using the Black-Scholes option-pricing model. During the years ended December 31, 2019 and 2018, the Company granted stock options and the weighted average fair value of option grants was estimated based on the below weighted average assumptions, which was $8.07 and $9.80, respectively. The stock options were granted with a 7 year contractual term that will vest over 4 years.

	For the year ended December 31, 2019	For the year ended December 31, 2018
Dividend yield	—	—
Risk-free interest rate	2.50%	2.50%
Expected volatility	34.79%	34.88%
Expected holding period - years	3.9 years	3.8 years

Expected volatility is calculated as the historical volatility of the Company’s stock over a period equal to the expected term of the options, as management believes this is the best representation of prospective trends. The Company uses historical data to estimate option exercise and employee terminations within the valuation model. The expected holding period represents the period of time that options are expected to be outstanding. The risk-free interest rate for periods within the contractual life of the option is based on a blend of the three and five-year U.S. Treasury yield curves in effect at the time of grant.

The following table summarizes the Company’s stock option activity for the year ended December 31, 2019:

Shares in thousands	Shares Under Option	Weighted Average Exercise Price per Share	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding as of January 1	2,606	$ 29.08		
Granted	2,131	$ 26.45		
Exercised	(99)	$ 16.07		
Forfeited or expired	(79)	$ 32.57		
Outstanding as of December 31	4,559	$ 28.08	5.62	$ 32.30
Fully vested and expected to vest as of December 31	3,860	$ 28.09	5.79	$ 27.30
Exercisable as of December 31	699	$ 27.99	4.67	$ 5.01

As of December 31, 2019, the total unrecognized compensation cost of $26 million related to unvested stock option grants is expected to be recognized over a weighted average period of approximately 1.4 years.

The total intrinsic value of all options exercised was $1 million in 2019, $4 million in 2018, and $3 million in 2017. Cash received from option exercises under all share-based payment arrangements was $2 million in 2019, $4 million in 2018, and $2 million in 2017. There was no tax benefit realized from these exercises in 2019. The tax benefit realized from option exercises was $1 million in 2018 and 2017, respectively.

Employee Stock Purchase Plan

The Company's amended Employee Stock Purchase Plan (ESPP) provides employees a 15% discount on stock purchases using a three-month look-back feature where the discount is applied to the stock price that represents the lower of NCR’s closing stock price on either the first day or the last day of each calendar quarter. Participants can contribute between 1% and 10% of their compensation. The amended ESPP was approved by NCR stockholders in 2016 and became effective January 1, 2017.

Employees purchased approximately 0.8 million shares in 2019, 0.7 million shares in 2018, and 0.5 million shares in 2017, for approximately $18 million in 2019, $17 million in 2018 and $15 million in 2017. A total of 4 million shares were originally authorized to be issued under the ESPP before its amendment. Under the amended ESPP, 10 million shares were newly authorized to be issued, plus any shares remaining unissued under the prior ESPP after the last 2016 purchase date. Approximately 8.9 million authorized shares remain unissued under our amended ESPP as of December 31, 2019.

10. EMPLOYEE BENEFIT PLANS

Pension, Postretirement and Postemployment Plans NCR sponsors defined benefit pension plans. NCR’s U.S. pension plan no longer offers additional benefits and is closed to new participants. Internationally, the defined benefit plans are based primarily upon compensation and years of service. Certain international plans also no longer offer additional benefits and are closed to new participants. NCR’s funding policy is to contribute annually no less than the minimum required by applicable laws and regulations. Assets of NCR’s defined benefit plans are primarily invested in corporate and government debt securities, common and commingled trusts, publicly traded common stocks, real estate investments, and cash or cash equivalents.

NCR recognizes the funded status of each applicable plan on the Consolidated Balance Sheets. Each overfunded plan is recognized as an asset and each underfunded plan is recognized as a liability. For pension plans, changes in the fair value of plan assets and net actuarial gains or losses are recognized upon remeasurement, which is at least annually in the fourth quarter of each year. For postretirement and postemployment plans, changes to the funded status are recognized as a component of other comprehensive loss in stockholders' equity.

NCR sponsors a U.S. postretirement benefit plan that no longer offers benefits to U.S. participants who had not reached a certain age and years of service with NCR. The plan provides medical care benefits to retirees and their eligible dependents. Non-U.S. employees are typically covered under government-sponsored programs, and NCR generally does not provide postretirement benefits other than pensions to non-U.S. retirees. NCR generally funds these benefits on a pay-as-you-go basis.

NCR offers various postemployment benefits to involuntarily terminated and certain inactive employees after employment but before retirement. These benefits are paid in accordance with NCR's established postemployment benefit practices and policies. Postemployment benefits include mainly severance as well as continuation of healthcare benefits and life insurance coverage while on disability. NCR provides appropriate accruals for these postemployment benefits. These postemployment benefits are funded on a pay-as-you-go basis.

Pension Plans Reconciliation of the beginning and ending balances of the benefit obligations for NCR's pension plans are as follows:

	U.S. Pension Benefits		International Pension Benefits		Total Pension Benefits	
In millions	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
Change in benefit obligation						
Benefit obligation as of January 1	**$ 1,763**	$ 1,950	**$ 1,092**	$ 1,273	**$ 2,855**	$ 3,223
Net service cost	**—**	—	**7**	7	**7**	7
Interest cost	**66**	61	**19**	20	**85**	81
Amendment	**—**	—	**—**	4	**—**	4
Actuarial (gain) loss	**229**	(149)	**112**	(83)	**341**	(232)
Benefits paid	**(104)**	(99)	**(76)**	(86)	**(180)**	(185)
Plan participant contributions	**—**	—	**1**	1	**1**	1
Currency translation adjustments	**—**	—	**19**	(44)	**19**	(44)
Benefit obligation as of December 31	**$ 1,954**	$ 1,763	**$ 1,174**	$ 1,092	**$ 3,128**	$ 2,855
Accumulated benefit obligation as of December 31	**$ 1,954**	$ 1,763	**$ 1,163**	$ 1,080	**$ 3,117**	$ 2,843

A reconciliation of the beginning and ending balances of the fair value of the plan assets of NCR's pension plans are as follows:

	U.S. Pension Benefits		International Pension Benefits		Total Pension Benefits	
In millions	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
Change in plan assets						
Fair value of plan assets as of January 1	**$ 1,269**	$ 1,444	**$ 953**	$ 1,086	**$ 2,222**	$ 2,530
Actual return on plan assets	**212**	(76)	**128**	(34)	**340**	(110)
Company contributions	**—**	—	**23**	24	**23**	24
Benefits paid	**(104)**	(99)	**(76)**	(86)	**(180)**	(185)
Currency translation adjustments	**—**	—	**29**	(38)	**29**	(38)
Plan participant contributions	**—**	—	**1**	1	**1**	1
Fair value of plan assets as of December 31	**$ 1,377**	$ 1,269	**$ 1,058**	$ 953	**$ 2,435**	$ 2,222

The following table presents the funded status and the reconciliation of the funded status to amounts recognized in the Consolidated Balance Sheets and in accumulated other comprehensive loss as of December 31:

	U.S. Pension Benefits		International Pension Benefits		Total Pension Benefits	
In millions	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
Funded Status	**$ (577)**	$ (494)	**$ (116)**	$ (139)	**$ (693)**	$ (633)
Amounts recognized in the Consolidated Balance Sheets						
Noncurrent assets	**$ —**	$ —	**$ 178**	$ 140	**$ 178**	$ 140
Current liabilities	**—**	—	**(13)**	(14)	**(13)**	(14)
Noncurrent liabilities	**(577)**	(494)	**(281)**	(265)	**(858)**	(759)
Net amounts recognized	**$ (577)**	$ (494)	**$ (116)**	$ (139)	**$ (693)**	$ (633)
Amounts recognized in accumulated other comprehensive loss						
Prior service cost	**—**	—	**20**	21	**20**	21
Total	**$ —**	$ —	**$ 20**	$ 21	**$ 20**	$ 21

For pension plans with accumulated benefit obligations in excess of plan assets, the projected benefit obligation, accumulated benefit obligation and fair value of assets were $2,222 million, $2,217 million, and $1,380 million, respectively, as of December 31, 2019, and $2,016 million, $2,012 million and $1,271 million, respectively, as of December 31, 2018.

The net periodic benefit (income) cost of the pension plans for the years ended December 31 was as follows:

	U.S. Pension Benefits			International Pension Benefits			Total Pension Benefits		
In millions	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**
Net service cost	**$ —**	$ —	$ —	**$ 7**	$ 7	$ 8	**$ 7**	$ 7	$ 8
Interest cost	**66**	61	71	**19**	20	20	**85**	81	91
Expected return on plan assets	**(43)**	(43)	(57)	**(31)**	(32)	(35)	**(74)**	(75)	(92)
Amortization of prior service cost	**—**	—	—	**1**	1	1	**1**	1	1
Actuarial (gain) loss	**60**	(29)	28	**15**	(16)	—	**75**	(45)	28
Net periodic benefit (income) cost	**$ 83**	$ (11)	$ 42	**$ 11**	$ (20)	$ (6)	**$ 94**	$ (31)	$ 36

Actuarial losses in 2019 were primarily due to a decrease in the discount rate. Actuarial gains in 2018 were due to an increase in the discount rate as well as a favorable impact from a mortality update in the United Kingdom. Discount rates in 2017 remained consistent with 2016 and actuarial losses in 2017 were primarily due to a mortality update in the United States.

During 2017, the Company offered a voluntary lump sum payment option to certain former employees who were deferred vested participants of the Company's U.S. pension plan who had not yet started monthly payments of their pension benefit. The voluntary lump sum payment offer, which resulted in approximately $130 million being paid out of plan assets, was completed during the fourth quarter of 2017. Additionally, during 2017, the Company entered into a single premium group annuity contract to secure approximately $190 million of benefits for former employees or their related beneficiaries whose monthly pension benefit amount under the Company’s U.S. pension plan was $500 or less. These actions were completed during the fourth quarter of 2017 which resulted in an actuarial gain of $25 million and is reflected as a component of the actuarial loss as a result of the annual remeasurement completed in the fourth quarter of 2017.

Effective January 1, 2017, we changed the method used to estimate the service and interest components of net periodic benefit cost for our significant pension plans where yield curves are available. Previously, we estimated such cost components utilizing a single weighted-average discount rate derived from the yield curve used to measure the pension benefit obligation. The new methodology utilizes a full yield curve approach by applying the specific spot rates along the yield curve used in the determination of the pension benefit obligation to their underlying projected cash flows and provides a more precise measurement of service and interest costs by improving the correlation between projected cash flows and their corresponding spot rates. This change does not

affect the measurement of our total benefit obligation and was applied prospectively as a change in estimate, beginning January 1, 2017.

The weighted average rates and assumptions used to determine benefit obligations as of December 31 were as follows:

	U.S. Pension Benefits		International Pension Benefits		Total Pension Benefits	
	2019	2018	2019	2018	2019	2018
Discount rate	**3.1%**	4.2%	**1.4%**	2.1%	**2.5%**	3.4%
Rate of compensation increase	**N/A**	N/A	**0.9%**	1.0%	**0.9%**	1.0%

The weighted average rates and assumptions used to determine net periodic benefit (income) cost for the years ended December 31 were as follows:

	U.S. Pension Benefits			International Pension Benefits			Total Pension Benefits		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
Discount rate - Service Cost	**N/A**	N/A	N/A	**1.6%**	1.4%	1.4%	**1.6%**	1.4%	1.4%
Discount rate - Interest Cost	**3.8%**	3.2%	3.4%	**1.8%**	1.6%	1.6%	**3.1%**	2.6%	2.8%
Expected return on plan assets	**3.6%**	3.1%	3.5%	**3.2%**	3.0%	3.5%	**3.4%**	3.1%	3.5%
Rate of compensation increase	**N/A**	N/A	N/A	**1.0%**	0.9%	0.9%	**1.0%**	0.9%	0.9%

The weighted-average cash balance interest crediting rate for the Company's cash balance defined benefit plans was 1.2% and 1.4% for the years ended December 31, 2019 and 2018, respectively.

The discount rate used to determine U.S. benefit obligations as of December 31, 2019 was derived by matching the plans' expected future cash flows to the corresponding yields from the Aon Hewitt AA Bond Universe Curve. This yield curve has been constructed to represent the available yields on high-quality, fixed-income investments across a broad range of future maturities. International discount rates were determined by examining interest rate levels and trends within each country, particularly yields on high-quality, long-term corporate bonds, relative to our future expected cash flows. During 2014, the Society of Actuaries published updated mortality tables and an improvement scale for U.S. plans, which both reflect improved longevity. Based on evaluation of these new tables, we updated our mortality assumptions for our U.S. pension benefits as of December 31, 2017. In 2017, we made a further update to utilize the white collar version of the 2014 tables due to a study of plan specific experience.

NCR employs a building block approach as its primary approach in determining the long-term expected rate of return assumptions for plan assets. Historical market returns are studied and long-term relationships between equities and fixed income are preserved consistent with the widely accepted capital market principle that assets with higher volatilities generate higher returns over the long run. Current market factors, such as inflation and interest rates are evaluated before long-term capital market assumptions are determined. The expected long-term portfolio return is established for each plan via a building block approach with proper rebalancing consideration. The result is then adjusted to reflect additional expected return from active management net of plan expenses. Historical plan returns, the expectations of other capital market participants, and peer data may be used to review and assess the results for reasonableness and appropriateness.

Plan Assets The weighted average asset allocations as of December 31, 2019 and 2018 by asset category are as follows:

	U.S. Pension Fund			International Pension Fund		
	Actual Allocation of Plan Assets as of December 31			Actual Allocation of Plan Assets as of December 31		
	2019	2018	Target Asset Allocation	2019	2018	Target Asset Allocation
Equity securities	**—%**	—%	0 - 0%	**23%**	20%	12 - 27%
Debt securities	**99%**	98%	95 - 100%	**56%**	57%	54 - 72%
Real estate	**—%**	1%	0 - 2%	**12%**	14%	6 - 14%
Other	**1%**	1%	0 - 3%	**9%**	9%	4 - 9%
Total	**100%**	100%		**100%**	100%	

The fair value of plan assets as of December 31, 2019 and 2018 by asset category is as follows:

		U.S.					International				
In millions	Notes	Fair Value as of December 31, 2019	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling	Fair Value as of December 31, 2019	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling
Assets											
Equity securities:											
Common stock	1	$ —	$ —	$ —	$ —	$ —	$ 53	$ 53	$ —	$ —	$ —
Fixed income securities:											
Government securities	2	209	—	209	—	—	—	—	—	—	—
Corporate debt	3	934	—	934	—	—	103	—	103	—	—
Other types of investments:											
Money market funds	4	12	—	—	—	12	10	—	—	—	10
Common and commingled trusts - Equities	4	—	—	—	—	—	184	—	—	—	184
Common and commingled trusts - Bonds	4	157	—	—	—	157	470	—	—	—	470
Common and commingled trusts - Short Term Investments	4	19	—	—	—	19	21	—	—	—	21
Common and commingled trusts - Balanced	4	—	—	—	—	—	85	—	—	—	85
Partnership/joint venture interests - Real estate	5	1	—	—	—	1	—	—	—	—	—
Partnership/joint venture interests - Other	5	2	—	—	—	2	—	—	—	—	—
Mutual funds	4	43	43	—	—	—	—	—	—	—	—
Insurance products	4	—	—	—	—	—	1	—	1	—	—
Real estate and other	5	—	—	—	—	—	131	—	—	131	—
Total		**$ 1,377**	**$ 43**	**$ 1,143**	**$ —**	**$ 191**	**$ 1,058**	**$ 53**	**$ 104**	**$ 131**	**$ 770**

NCR Corporation
Notes to Consolidated Financial Statements-(Continued)

		U.S.					International				
In millions	Notes	Fair Value as of December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling	Fair Value as of December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling
Assets											
Equity securities:											
Common stock	1	$ —	$ —	$ —	$ —	$ —	$ 44	$ 44	$ —	$ —	$ —
Fixed income securities:											
Government securities	2	247	—	247	—	—	—	—	—	—	—
Corporate debt	3	761	—	761	—	—	100	—	100	—	—
Other types of investments:											
Money market funds	4	13	—	2	—	11	8	—	8	—	—
Common and commingled trusts - Equities	4	—	—	—	—	—	150	—	—	—	150
Common and commingled trusts - Bonds	4	174	—	—	—	174	405	—	—	—	405
Common and commingled trusts - Short Term Investments	4	27	—	—	—	27	40	—	—	—	40
Common and commingled trusts - Balanced	4	—	—	—	—	—	76	—	—	—	76
Partnership/joint venture interests - Real estate	5	4	—	—	—	4	—	—	—	—	—
Partnership/joint venture interests - Other	5	4	—	—	—	4	—	—	—	—	—
Mutual funds	4	39	39	—	—	—	—	—	—	—	—
Insurance products	4	—	—	—	—	—	1	—	1	—	—
Real estate and other	5	—	—	—	—	—	129	—	—	129	—
Total		**$ 1,269**	**$ 39**	**$ 1,010**	**$ —**	**$ 220**	**$ 953**	**$ 44**	**$ 109**	**$ 129**	**$ 671**

Notes:

1. Common stocks are valued based on quoted market prices at the closing price as reported on the active market on which the individual securities are traded.
2. Government securities are valued based on yields currently available on comparable securities of issuers with similar credit ratings. When quoted prices are not available for identical or similar securities, the security is valued under a discounted cash flows approach that maximizes observable inputs, such as current yields on similar instruments but includes adjustments for certain risks that may not be observable, such as credit and liquidity risks.
3. Corporate debt is valued primarily based on observable market quotations for similar bonds at the closing price reported on the active market on which the individual securities are traded. When such quoted prices are not available, the bonds are valued using a discounted cash flows approach using current yields on similar instruments of issuers with similar credit ratings.
4. Common/collective trusts and registered investment companies (RICs) such as mutual funds are valued using a Net Asset Value (NAV) provided by the manager of each fund. The NAV is based on the underlying net assets owned by the fund, divided by the number of shares or units outstanding. The fair value of the underlying securities within the fund, which are generally traded on an active market, are valued at the closing price reported on the active market on which those individual securities are traded. For investments not traded on an active market, or for which a quoted price is not publicly available, a variety of unobservable valuation methodologies, including discounted cash flow, market multiple and cost valuation approaches, are employed by the fund manager or independent third party to value investments.
5. Partnership/joint ventures are valued based on the fair value of the underlying securities within the fund, which include investments both traded on an active market and not traded on an active market. For those investments that are traded on an

active market, the values are based on the closing price reported on the active market on which those individual securities are traded. For investments not traded on an active market, or for which a quoted price is not publicly available, a variety of unobservable valuation methodologies, including discounted cash flow, market multiples and cost valuation approaches, are employed by the fund manager to value investments.

The following table presents the reconciliation of the beginning and ending balances of those plan assets classified within Level 3 of the valuation hierarchy. When the determination is made to classify the plan assets within Level 3, the determination is based upon the significance of the unobservable inputs to the overall fair value measurement.

In millions	International Pension Plans
Balance, December 31, 2017	$ 131
Realized and unrealized gains and losses, net	—
Purchases, sales and settlements, net	—
Transfers, net	(2)
Balance, December 31, 2018	$ 129
Realized and unrealized gains and losses, net	2
Purchases, sales and settlements, net	—
Transfers, net	—
Balance, December 31, 2019	**$ 131**

Investment Strategy NCR has historically employed a total return investment approach, whereby a mix of fixed-income, equities and real estate investments are used to maximize the long-term return of plan assets subject to a prudent level of risk. The risk tolerance is established for each plan through a careful consideration of plan liabilities, plan funded status and corporate financial condition. To reduce volatility in the value of assets held by the U.S. pension plan, we have rebalanced the asset allocation to a portfolio of 99% of fixed income assets as of December 31, 2019. Additionally, for the U.S. pension plan, we consult with an independent advisor on asset allocation strategy as well as on investment policy and objectives. Similar investment strategy changes are under consideration or being implemented in a number of NCR's international plans.

The investment portfolios contain primarily fixed-income investments, which are diversified across U.S. and non-U.S. issuers, type of fixed-income security (i.e., government bonds, corporate bonds, mortgage-backed securities) and credit quality. The investment portfolios also contain a blend of equity investments, which are diversified across U.S. and non-U.S. stocks, small and large capitalization stocks, and growth and value stocks, primarily of non-U.S. issuers. Where applicable, real estate investments are made through real estate securities, partnership interests or direct investment and are diversified by property type and location. Other assets, such as cash or private equity are used judiciously to improve portfolio diversification and enhance risk-adjusted portfolio returns. Derivatives may be used to adjust market exposures in an efficient and timely manner. Due to the timing of security purchases and sales, cash held by fund managers is classified in the same asset category as the related investment. Rebalancing algorithms are applied to keep the asset mix of the plans from deviating excessively from their targets. Investment risk is measured and monitored on an ongoing basis through regular performance reporting, investment manager reviews, actuarial liability measurements and periodic investment strategy reviews.

Postretirement Plans Reconciliation of the beginning and ending balances of the benefit obligation for NCR's U.S. postretirement plan is as follows:

In millions	Postretirement Benefits	
	2019	**2018**
Change in benefit obligation		
Benefit obligation as of January 1	**$ 18**	$ 21
Interest cost	**1**	—
Actuarial gain	**—**	(3)
Plan participant contributions	**—**	1
Benefits paid	**(2)**	(1)
Benefit obligation as of December 31	**$ 17**	$ 18

The following table presents the funded status and the reconciliation of the funded status to amounts recognized in the Consolidated Balance Sheets and in accumulated other comprehensive loss as of December 31:

In millions	Postretirement Benefits	
	2019	**2018**
Benefit obligation	**$ (17)**	$ (18)
Amounts recognized in the Consolidated Balance Sheets		
Current liabilities	**$ (2)**	$ (2)
Noncurrent liabilities	**(15)**	(16)
Net amounts recognized	**$ (17)**	$ (18)
Amounts recognized in accumulated other comprehensive loss		
Net actuarial loss	**$ 7**	$ 7
Prior service benefit	**(3)**	(8)
Total	**$ 4**	$ (1)

The net periodic benefit income of the postretirement plan for the years ended December 31 was:

In millions	Postretirement Benefits		
	2019	**2018**	**2017**
Interest cost	**$ 1**	$ —	$ 1
Amortization of:			
Prior service benefit	**(5)**	(5)	(6)
Actuarial loss	**—**	1	2
Net periodic benefit income	**$ (4)**	$ (4)	$ (3)

The assumptions utilized in accounting for postretirement benefit obligations as of December 31 and for postretirement benefit income for the years ended December 31 were:

	Postretirement Benefit Obligations			Postretirement Benefit Costs		
	2019	**2018**	**2017**	**2019**	**2018**	**2017**
Discount rate	**2.5%**	3.7%	3.1%	**3.7%**	3.1%	3.2%

Assumed healthcare cost trend rates as of December 31 were:

	2019		2018	
	Pre-65 Coverage	**Post-65 Coverage**	**Pre-65 Coverage**	**Post-65 Coverage**
Healthcare cost trend rate assumed for next year	**6.7%**	**5.9%**	7.1%	6.1%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	**5.0%**	**5.0%**	5.0%	5.0%
Year that the rate reaches the ultimate rate	**2027**	**2027**	2027	2027

Postemployment Benefits Reconciliation of the beginning and ending balances of the benefit obligation for NCR's postemployment plan was:

	Postemployment Benefits	
In millions	**2019**	**2018**
Change in benefit obligation		
Benefit obligation as of January 1	**$ 139**	$ 142
Service cost	**31**	43
Interest cost	**3**	3
Benefits paid	**(35)**	(40)
Foreign currency exchange	**(1)**	(6)
Actuarial (gain) loss	**(11)**	(3)
Benefit obligation as of December 31	**$ 126**	$ 139

The following table presents the funded status and the reconciliation of the unfunded status to amounts recognized in the Consolidated Balance Sheets and in accumulated other comprehensive loss at December 31:

	Postemployment Benefits	
In millions	**2019**	**2018**
Benefit obligation	**$ (126)**	$ (139)
Amounts recognized in the Consolidated Balance Sheets		
Current liabilities	**$ (30)**	$ (37)
Noncurrent liabilities	**(96)**	(102)
Net amounts recognized	**$ (126)**	$ (139)
Amounts recognized in accumulated other comprehensive loss		
Net actuarial gain	**$ (38)**	$ (28)
Prior service benefit	**(6)**	(6)
Total	**$ (44)**	$ (34)

The net periodic benefit cost of the postemployment plan for the years ended December 31 was:

	Postemployment Benefits		
In millions	2019	2018	2017
Service cost	**$ 31**	$ 43	$ 34
Interest cost	**3**	3	2
Amortization of:			
Prior service benefit	**(2)**	(5)	(6)
Actuarial gain	**(3)**	(1)	(6)
Net benefit cost	**$ 29**	$ 40	$ 24

The weighted average assumptions utilized in accounting for postemployment benefit obligations as of December 31 and for postemployment benefit costs for the years ended December 31 were:

	Postemployment Benefit Obligations		Postemployment Benefit Costs		
	2019	2018	2019	2018	2017
Discount rate	**1.8%**	2.4%	**2.4%**	2.3%	2.0%
Salary increase rate	**1.8%**	1.9%	**1.9%**	1.9%	1.8%
Involuntary turnover rate	**3.8%**	4.3%	**4.3%**	4.8%	4.8%

Cash Flows Related to Employee Benefit Plans

Cash Contributions NCR does not plan to contribute to the U.S. qualified pension plan in 2020, and plans to contribute approximately $26 million to the international pension plans in 2020. The Company also plans to make contributions of approximately $2 million to the U.S. postretirement plan and approximately $50 million to the postemployment plan in 2020.

Estimated Future Benefit Payments NCR expects to make the following benefit payments reflecting past and future service from its pension, postretirement and postemployment plans:

In millions	U.S. Pension Benefits	International Pension Benefits	Total Pension Benefits	Postretirement Benefits	Postemployment Benefits
Year					
2020	$ 108	$ 50	$ 158	$ 2	$ 50
2021	$ 110	$ 49	$ 159	$ 2	$ 17
2022	$ 111	$ 49	$ 160	$ 1	$ 16
2023	$ 114	$ 48	$ 162	$ 1	$ 15
2024	$ 115	$ 49	$ 164	$ 1	$ 14
2025-2029	$ 579	$ 244	$ 823	$ 3	$ 60

Savings Plans U.S. employees and many international employees participate in defined contribution savings plans. These plans generally provide either a specified percent of pay or a matching contribution on participating employees' voluntary elections. NCR's matching contributions typically are subject to a maximum percentage or level of compensation. Employee contributions can be made pre-tax, after-tax or a combination thereof. The expense under the U.S. plan was approximately $27 million in 2019, $27 million in 2018, and $26 million in 2017. The expense under international and subsidiary savings plans was $25 million in 2019, $24 million in 2018, and $24 million in 2017.

Amounts to be Recognized The amounts in accumulated other comprehensive loss that are expected to be recognized as components of net periodic benefit cost (income) during 2020 are as follows:

In millions	U.S. Pension Benefits	International Pension Benefits	Total Pension Benefits	Postretirement Benefits	Postemployment Benefits
Prior service cost (benefit)	$ —	$ 1	$ 1	$ (3)	$ (2)
Actuarial loss (gain)	$ —	$ —	$ —	$ 1	$ (4)

11. COMMITMENTS AND CONTINGENCIES

In the normal course of business, NCR is subject to various proceedings, lawsuits, claims and other matters, including, for example, those that relate to the environment and health and safety, labor and employment, employee benefits, import/export compliance, intellectual property, data privacy and security, product liability, commercial disputes and regulatory compliance, among others. Additionally, NCR is subject to diverse and complex laws and regulations, including those relating to corporate governance, public disclosure and reporting, environmental safety and the discharge of materials into the environment, product safety, import and export compliance, data privacy and security, antitrust and competition, government contracting, anti-corruption, and labor and human resources, which are rapidly changing and subject to many possible changes in the future. Compliance with these laws and regulations, including changes in accounting standards, taxation requirements, and federal securities laws among others, may create a substantial burden on, and substantially increase costs to NCR or could have an impact on NCR's future operating results. The Company has reflected all liabilities when a loss is considered probable and reasonably estimable in the Consolidated Financial Statements. We do not believe there is a reasonable possibility that losses exceeding amounts already recognized have been incurred, but there can be no assurances that the amounts required to satisfy alleged liabilities from such matters will not impact future operating results. Other than as stated below, the Company does not currently expect to incur material capital expenditures related to such matters. However, there can be no assurances that the actual amounts required to satisfy alleged liabilities from various lawsuits, claims, legal proceedings and other matters, including, but not limited to the Fox River and Kalamazoo River environmental matters and other matters discussed below, and to comply with applicable laws and regulations, will not exceed the amounts reflected in NCR’s Consolidated Financial Statements or will not have a material adverse effect on its consolidated results of operations, capital expenditures, competitive position, financial condition or cash flows.

In June 2014, one of the Company’s Brazilian subsidiaries, NCR Manaus, was notified of a Brazilian federal tax assessment of R$168 million, or approximately $43 million as of December 31, 2018, including penalties and interest regarding certain federal indirect taxes for 2010 through 2012. The assessment alleges improper importation of certain components into Brazil's free trade zone that would nullify related indirect tax incentives. At the time of the assessment, we did not record an accrual for the assessment as the Company believed it had a valid position regarding indirect taxes in Brazil and, as such, filed an appeal in 2014. In December 2017, the Company prevailed in this appeal regarding substantially all of the disputed amounts. The Brazilian federal tax authority further appealed this dispute to the next procedural level, in which an intermediate tribunal decided in NCR's favor in August 2018 and issued an opinion to that effect on February 25, 2019. The Brazilian tax authorities appealed one of the matters included within this decision. In May 2019, the Supreme Administrative Court issued an opinion in favor of NCR finally resolving this matter and canceling any future assessments.

On November 6, 2019, Boston Consulting Group, Inc., a former consultant for the Company, commenced a lawsuit against the Company in the United States District Court for the District of New York. The Complaint in the matter alleges the Company breached two consulting agreements and seeks in excess of $80 million and other compensatory damages and equitable relief. While the Company at this time is unable to make any predictions about the outcome of this case or estimate any possible liability, the Company believes the allegations of money owed are grossly overstated, and the Company intends to vigorously defend this lawsuit.

Environmental Matters NCR's facilities and operations are subject to a wide range of environmental protection laws, and NCR has investigatory and remedial activities underway at a number of facilities that it currently owns or operates, or formerly owned or operated, to comply, or to determine compliance, with such laws. Also, NCR has been identified, either by a government agency or by a private party seeking contribution to site clean-up costs, as a potentially responsible party (PRP) at a number of sites pursuant to various state and federal laws, including the Federal Water Pollution Control Act, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and comparable state statutes. Other than the Fox River matter, the Kalamazoo River matter and the Ebina matter discussed below, we currently do not anticipate material expenses and liabilities from these environmental matters.

Fox River NCR is one of eight entities that were formally notified by governmental and other entities, such as local Native American tribes, that they are PRPs for environmental claims (under CERCLA and other statutes) arising out of the presence of polychlorinated biphenyls (PCBs) in sediments in the lower Fox River and in the Bay of Green Bay in Wisconsin. The other Fox River PRPs that

received notices include Appleton Papers Inc. (API; now known as Appvion, Inc.), P.H. Glatfelter Company ("Glatfelter"), Georgia-Pacific Consumer Products LP (GP, successor to Fort James Operating Company), and others. NCR was identified as a PRP because of alleged PCB discharges from two carbonless copy paper manufacturing facilities it previously owned, which were located along the Fox River. NCR sold its facilities in 1978 to API. The parties have also contended that NCR is responsible for PCB discharges from paper mills owned by other companies because NCR carbonless copy paper "broke" was allegedly purchased by those other mills as a raw material.

The United States Environmental Protection Agency (USEPA) and Wisconsin Department of Natural Resources (together, the Governments) developed clean-up plans for the upper and lower parts of the Fox River and for portions of the Bay of Green Bay. On November 13, 2007, the Governments issued a unilateral administrative order (the 2007 Order) under CERCLA to the eight original PRPs, requiring them to perform remedial work under the Governments' clean-up plan for the lower parts of the river (operable units 2 through 5). In April 2009, NCR and API formed a limited liability company (the LLC), which entered into an agreement with an environmental remediation contractor to perform the work at the Fox River site. In-water dredging and remediation under the clean-up plan commenced shortly thereafter.

NCR and API, along with B.A.T Industries p.l.c. (BAT), share among themselves a portion of the cost of the Fox River clean-up and natural resource damages (NRD) based upon a 1998 agreement (the Cost Sharing Agreement), a 2005 arbitration award (subsequently confirmed as a judgment), and a September 30, 2014 Funding Agreement (the Funding Agreement). The Cost Sharing Agreement and the arbitration resolved disputes that arose out of the Company's 1978 sale of its Fox River facilities to API. The Cost Sharing Agreement and arbitration award resulted in a 45% share for NCR of the first $75 million of such costs (a threshold that was reached in 2008), and a 40% share for amounts in excess of $75 million. The Funding Agreement arose out of a 2012 to 2014 arbitration dispute between NCR and API, and provides for regular, ongoing funding of NCR incurred Fox River remediation costs via contributions, made to a new limited liability corporation created by the Funding Agreement, by BAT, API and, for 2014, API's indemnitor, Windward Prospects. The Funding Agreement creates an obligation on BAT and API to fund 50% of NCR's Fox River remediation costs from October 1, 2014 forward (API's Fox River-related obligations under the Funding Agreement were fully satisfied in 2016); the Funding Agreement also provides NCR contractual avenues for payment of, via direct and third-party sources, (1) the difference between BAT's and API's 60% obligation under the Cost Sharing Agreement and arbitration award on the one hand and their ongoing (since September 2014) 50% payments under the Funding Agreement on the other, as well as (2) the difference between the amount NCR received under the Funding Agreement and the amount owed to it under the Cost Sharing Agreement and arbitration award for the period from April 2012 through September 2014. As of December 31, 2019 and 2018, the receivable under the Funding Agreement was approximately $53 million and $45 million, respectively, and was included in other assets in the Consolidated Balance Sheet. The Company anticipates that it will collect sums related to the receivable in 2020 or later, likely after the remediation efforts related to the Fox River matter, described below, are complete. This receivable is not taken into account in calculating the Company's Fox River net reserve.

The Company's litigations relating to contribution and enforcement claims concerning the Fox River have been concluded. A proposed consent decree settlement (the CD settlement) with respect to the contribution action (a case originally filed by NCR and API) and the government enforcement action (a case originally filed by the federal and state governments against several PRPs, including the Company) was successfully negotiated by NCR and the federal and state governments and was approved on August 22, 2017 by the federal district court in Wisconsin that had been presiding over those cases. A final order of dismissal as to the Company in the contribution and government enforcement actions was subsequently entered; one party, Glatfelter, had appealed the approval of the CD settlement. On January 3, 2019, the United States lodged a proposed consent decree with the Wisconsin court, reflecting a settlement reached by the United States, Wisconsin and Glatfelter with respect to Glatfelter's Fox River liability under the government enforcement action; a component of that settlement was withdrawal of Glatfelter's appeal opposing the Company's CD settlement. On March 14, 2019, the Wisconsin court approved the Glatfelter consent decree, and on April 3, 2019, Glatfelter's appeal was dismissed.

The CD settlement has now resolved the remaining Fox River-related contribution and enforcement claims against the Company. The key components of the approved CD settlement include (1) the Company's commitment to complete the remediation of the Fox River, which is now expected to be completed in 2020; (2) the Company's conditional agreement to waive its contribution claims against the two remaining defendants in the case, GP and Glatfelter; (3) the Company's agreement not to appeal the trial court's decision on divisibility of harm; (4) the Governments' agreement to include in the settlement so-called "contribution protection" in the Company's favor as to GP's and Glatfelter's contribution claims against the Company, the effect of which will be to extinguish those claims; (5) the Governments' agreement not to pursue the Company for the Governments' past oversight costs; and (6) the Governments' agreement to exercise prosecutorial discretion in pursuing other parties for future oversight costs and long-term monitoring and maintenance, with the Company retaining so-called "backstop" liability in the event that the other parties fail to pay future oversight costs or to perform long-term monitoring and maintenance. Additionally, although certain state law claims by GP and Glatfelter against the Company may not be affected directly by the CD settlement, the CD settlement provides

that the Company’s contribution claims against those two parties will revive if those parties attempt to assert any claims against the Company relating to the Fox River, including any state law claims.

In the quarter ending September 30, 2017, the remediation general contractor commenced an arbitration against the LLC, in a dispute over contract interpretation. The hearing on this matter was completed in June 2019, and the parties submitted post-trial briefs in August 2019. The amounts claimed by the contractor range from approximately $46 million to approximately $53 million; the Company disputed the claims and contested them vigorously during the hearing. In November 2019, having rejected substantial portions of the claims, the arbitration panel awarded the contractor $10 million. The Company’s indemnitors and co-obligors, described below, are expected to bear responsibility for the majority of any award, with the Company’s share of approximately one-fourth of such award.

With respect to the Company’s prior dispute with API, which was generally superseded by the Funding Agreement, the Company received timely payments as they came due under the Funding Agreement. Although API filed for bankruptcy protection in October 2017, it had made all of the payments to the Company in connection with the Fox River that are required of it by the Funding Agreement.

NCR's eventual remediation liability, followed by long-term monitoring expected to be performed by others, will depend on a number of factors. In establishing the reserve, NCR attempts to estimate a range of reasonably possible outcomes for each of these factors, although each range is itself uncertain. NCR uses its best estimate within the range, if that is possible. Where there is a range of equally possible outcomes, and there is no amount within that range that is considered to be a better estimate than any other amount, NCR uses the low end of the range. The significant factors include: (1) the total remaining clean-up costs, including the costs associated with decommissioning the site, the expected cost impact of which is expected to be neutral or non-material to the Company, including long-term monitoring following completion of the clean-up, and what parties are assigned to discharge the post-clean-up tasks (as noted, the Company no longer expects to bear long-term monitoring costs); (2) total NRD for the site and the share that NCR will bear (which is now resolved as to the Company); (3) the share of clean-up costs that NCR will bear (which is resolved under the CD settlement); (4) NCR's transaction and litigation costs to defend itself to the extent additional litigation is required with respect to claims brought by the general contractor; and (5) the share of NCR's payments that BAT will bear (which is governed by the Cost Sharing Agreement and the Funding Agreement, BAT has made all of the payments requested of it, and as discussed above; API is in bankruptcy and is not presumed likely to bear further shares of NCR's payments). With respect to NRD, in connection with a certain settlement entered into by other PRPs in 2015, the Government withdrew the NRD claims it had prosecuted on behalf of NRD trustees, including those NRD claims asserted against the Company.

Calculation of the Company's Fox River reserve is subject to several complexities, and it is possible there could be additional changes to some elements of the reserve over upcoming periods, although the Company is unable to predict or estimate such changes at this time. There can be no assurance that the clean-up and related expenditures and liabilities will not have a material effect on NCR's capital expenditures, earnings, financial condition, cash flows, or competitive position. As of December 31, 2019 and 2018, the gross reserve for the Fox River matter was approximately $5 million and $21 million, respectively. As of December 31, 2019 and 2018, the net reserve for the Fox River matter was approximately $16 million and $17 million, respectively. NCR contributes to the LLC to fund remediation activities and generally, by contract, has funded certain amounts of remediation expenses in advance. As of December 31, 2019 and 2018, approximately zero remained from this funding. NCR's reserve for the Fox River matter is reduced as the LLC makes payments to the remediation contractor and other vendors with respect to remediation activities.

Under a 1996 agreement, AT&T Corp. (AT&T) and Nokia (as the successor to Lucent Technologies and Alcatel-Lucent USA) are responsible severally (not jointly) for indemnifying NCR for certain portions of the amounts paid by NCR for the Fox River matter over a defined threshold and subject to certain offsets. (The agreement governs certain aspects of AT&T's divestiture of NCR and of what was then known as Lucent Technologies.) Those companies have made the payments requested of them by the Company on an ongoing basis.

Kalamazoo River In November 2010, USEPA issued a "general notice letter" to NCR with respect to the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site (Kalamazoo River site) in Michigan. Three other companies - International Paper, Mead Corporation, and Consumers Energy - also received general notice letters at or about the same time. USEPA asserts that the site is contaminated by various substances, primarily PCBs, as a result of discharges by various paper mills located along the river. USEPA does not claim that the Company made direct discharges into the Kalamazoo River, and NCR never had facilities at or near the Kalamazoo River site, but USEPA indicated that "NCR may be liable under Section 107 of CERCLA ... as an arranger, who by contract or agreement, arranged for the disposal, treatment and/or transportation of hazardous substances at the Site." USEPA stated that it "may issue special notice letters to [NCR] and other PRPs for future RI/FS [remedial investigation / feasibility studies] and RD/RA [remedial design / remedial action] negotiations."

In connection with the Kalamazoo River site, in December 2010 the Company, along with two other defendants, was sued in federal court by three Georgia-Pacific (GP) affiliate corporations in a private-party contribution and cost recovery action for alleged pollution. The suit, pending in Michigan, asks that the Company and other defendants pay a "fair portion" of these companies' costs. Various removal and remedial actions remain to be decided upon and performed at the Kalamazoo River site, the total costs for which generally remain undetermined; in 2017, Records of Decisions were issued for two parts of the river, and in 2018 such a decision was issued for another part of the river, but such decisions for the majority of the work are expected to be made only over the next several years. The suit alleges that the Company is liable to the GP entities as an "arranger" under CERCLA. The initial phase of the case was tried in a Michigan federal court in February 2013; on September 26, 2013 the court issued a decision that held NCR was liable as an "arranger" as of at least March 1969. (PCB-containing carbonless copy paper was produced from approximately 1954 to April 1971, and the majority of contamination at the Kalamazoo River site had occurred prior to 1969). NCR preserved its right to appeal the September 2013 decision.

In the 2013 decision the Court did not determine NCR's share of the overall liability. Relative shares of liability for the four companies were tried to the court in a subsequent phase of the case in December 2015. In a ruling issued on March 29, 2018, the court addressed responsibility for the costs that GP had incurred in the past, totaling to approximately $50 million (GP had sought approximately $105 million, but $55 million of those claims were removed by the court upon motions filed by the Company and other parties); NCR and GP were each assigned a 40% share of those costs, and the other two companies were assigned 15% and 5% as their allocations. The court entered a judgment in the case on June 19, 2018, in which it indicated that it would not allocate future costs, but would enter a declaratory judgment that the four companies together had responsibility for future costs, in amounts and shares to be determined. Cross-proceedings have been commenced to obtain recoveries from the other parties pursuant to the judgment; those proceedings are stayed pending the appeal referenced below.

In July 2018, the Company appealed to the United States Court of Appeals for the Sixth Circuit both the 2013 court decision, which it believes is in conflict with a decision from the Fox River trial court as to Operable Unit 1 of that site and an affirmance of that decision from the Court of Appeals for the Seventh Circuit, and the 2018 court decision, on various legal grounds. The Company filed a bond to stay any execution of the judgment pending the appeal, and its application for a stay was approved by the court and remains stayed as of December 2019.

During the pendency of the Sixth Circuit stay, the Company negotiated a settlement of the Kalamazoo River matter with the USEPA and other government agencies having oversight over the river. On December 5, 2019, the Company entered into a Consent Decree, filed with the District Court on December 11, 2019, which will resolve all litigation associated with the river clean-up, including the Sixth Circuit appeal when approved. Upon approval, the Consent Decree will require the Company to pay GP its 40% share of past costs, to pay the USEPA and state agencies their past and future administrative costs, to dismiss its Sixth Circuit appeal, and to take responsibility for the remediation of a portion, but not all, of the Kalamazoo River. The Consent Decree further provides the Company protection from other PRPs, including GP, seeking contribution for their costs associated with the clean-up anywhere on the river, thereby resolving the allocation of future costs left unresolved by the June 19, 2019 judgment.

The Consent Decree was subject to a public comment period which ended February 18, 2020, and the Company is currently seeking approval of the Consent Decree.

NCR expects to have claims against BAT and API under the Funding Agreement discussed above for the Kalamazoo River remediation expenses. API filed for bankruptcy protection in October 2017, and thus payment of its potential share under the Funding Agreement for so-called "future sites," which would include the Kalamazoo River site, may be at risk, but as liability under the Cost Sharing Agreement and the Funding Agreement is joint and several, the bankruptcy is not anticipated to affect the Company's ability to seek that amount from BAT. The Company will also have indemnity or reimbursement claims against AT&T and Nokia under the arrangement discussed above in connection with the Fox River matter after expenses have met a contractual threshold set out in the 1996 agreement referenced above in the Fox River discussion.

As of December 31, 2019, the reserve for Kalamazoo was $81 million as compared to $47 million as of December 31, 2018; that figure is reported on a basis that is net of expected contributions from the Company's co-obligors and indemnitors, subject to when the applicable threshold is reached. As many aspects of the costs of remediation will not be determined for several years (and thus the high end of a range of possible costs for many areas of the site cannot be quantified at this time), the Company has made what it considers to be reasonable estimates of the low end of a range for such costs where remedies are identified, and/or of the costs of investigations and studies for areas of the river where remedies have not yet been determined, and the reserve is informed by those estimates. The extent of NCR's potential liability remains subject to many uncertainties, notwithstanding the settlement of this matter and related Consent Decree noted above, particularly inasmuch as remedy decisions and cost estimates will not be generated until times in the future and as most of the work to be performed will not take place until the 2020s and 2030s. Under other assumptions or estimates for possible costs of remediation, which the Company does not at this point consider to be reasonably

estimable or verifiable, it is possible that the reserve the Company has taken to discontinued operations reflected in this paragraph could more than approximately double the reflected reserve.

Ebina The Company is engaged in cooperative regulatory compliance activities with the government of Japan in connection with certain environmental contaminants generated in its past operations in that country. The Company has quantities of PCB and other wastes primarily from its former plant at Oiso, Japan, including capsulated undiluted solutions manufactured in the past, capacitors, light ballasts and PCB-affected soil from the Oiso plant that was excavated and placed in steel drums. These wastes are stored in a facility at Ebina, Japan in accordance with Japanese regulations governing such materials. Over the past several years Japan has enacted and amended legislation governing such wastes, and has set a current deadline for treating and disposing of (at government-constructed disposal facilities) the highest-concentration wastes by 2027. Lower-concentration wastes can be and have been disposed of via private contractors, and as of December 31, 2019, NCR had disposed of more than a third of its lower-concentration wastes.

The Company and its consultants have met and communicated regularly with the Japanese agency charged with administration of the law, and are working with that agency on a program to manage disposal of the high-concentration wastes, including tests of technologies to make the disposal more efficient. Based on communications with the agency, the earliest that high-concentration wastes can be disposed of will be in the second half of 2020, with final deadlines for various of the government-constructed disposal sites currently set for 2022, 2023 and later. Low-concentration wastes are required to be contracted for disposal by 2027, a timetable that the Company expects to meet. In September 2019, the Company’s environmental consultants, following a series of communications and meetings with the Japanese agency, at the Company’s request prepared an estimate of remaining disposal costs over the coming several years. While the estimate is subject to a range of assumptions and uncertainties, including prospects of cost reduction in coordination with the agency as certain field testing to separate high-concentration and low-concentration waste progresses over the coming years, the Company has adjusted its existing reserve for the matter to take into account this cost estimate, and that reserve as of December 31, 2019 and 2018 is $19 million and $2 million, respectively. The Japan environmental waste issue is treated as a compliance matter and not as litigation or enforcement, and the Company has received no threats of litigation or enforcement.

Environmental-Related Insurance Recoveries In connection with the Fox River and other environmental sites, through December 31, 2019, NCR has received a combined gross total of approximately $202 million in settlements reached with various of its insurance carriers. Portions of many of these settlements agreed in the 2010 through 2013 timeframe are payable to a law firm that litigated the claims on the Company's behalf. Some of the settlements cover not only the Fox River but also other environmental sites; some are limited to either the Fox River or the Kalamazoo River site. Some of the settlements are directed to defense costs and some are directed to indemnity; some settlements cover both defense costs and indemnity. The Company does not anticipate that further material insurance recoveries specific to Kalamazoo River remediation costs will be available to it, owing to considerations under applicable Michigan law. Claims with respect to Kalamazoo River defense costs have now been settled, with the amounts of those settlements included in the sum reported above.

Environmental Remediation Estimates It is difficult to estimate the future financial impact of environmental laws, including potential liabilities. NCR records environmental provisions when it is probable that a liability has been incurred and the amount or range of the liability is reasonably estimable; in accordance with accounting guidance, where liabilities are not expected to be quantifiable or estimable for a period of years, the estimated costs of investigating those liabilities are recorded as a component of the reserve for that particular site. Provisions for estimated losses from environmental restoration and remediation are, depending on the site, based generally on internal and third-party environmental studies, estimates as to the number and participation level of other PRPs, the extent of contamination, estimated amounts for attorney and other fees, and the nature of required clean-up and restoration actions. Reserves are adjusted as further information develops or circumstances change. Management expects that the amounts reserved from time to time will be paid out over the period of investigation, negotiation, remediation and restoration for the applicable sites. The amounts provided for environmental matters in NCR's Consolidated Financial Statements are the estimated gross undiscounted amounts of such liabilities, without deductions for indemnity insurance, third-party indemnity claims or recoveries from other PRPs, except as qualified in the following sentences. In those cases where insurance carriers or third-party indemnitors have agreed to pay any amounts and management believes that collectability of such amounts is probable, the amounts are recorded in the Consolidated Financial Statements. For the Fox River and Kalamazoo River sites, as described above, assets relating to the AT&T and Nokia indemnities and to the BAT obligations are recorded as payment is supported by contractual agreements, public filings and/or payment history.

Guarantees and Product Warranties In the ordinary course of business, NCR may issue performance guarantees on behalf of its subsidiaries to certain of its customers and other parties. Some of those guarantees may be backed by standby letters of credit, surety bonds, or similar instruments. In general, under the guarantees, NCR would be obligated to perform, or cause performance, over the term of the underlying contract in the event of an unexcused, uncured breach by its subsidiary, or some other specified

triggering event, in each case as defined by the applicable guarantee. NCR believes the likelihood of having to perform under any such guarantee is remote. As of December 31, 2019 and 2018, NCR had no material obligations related to such guarantees, and therefore its Consolidated Financial Statements do not have any associated liability balance.

NCR provides its customers a standard manufacturer's warranty and records, at the time of the sale, a corresponding estimated liability for potential warranty costs. Estimated future obligations due to warranty claims are based upon historical factors, such as labor rates, average repair time, travel time, number of service calls per machine and cost of replacement parts. When a sale is consummated, the total customer revenue is recognized, provided that all revenue recognition criteria are otherwise satisfied, and the associated warranty liability is recorded using pre-established warranty percentages for the respective product classes.

From time to time, product design or quality corrections are accomplished through modification programs. When identified, associated costs of labor and parts for such programs are estimated and accrued as part of the warranty reserve.

The Company recorded the activity related to the warranty reserve for the years ended December 31 as follows:

In millions	2019	2018	2017
Warranty reserve liability			
Beginning balance as of January 1	**$ 26**	$ 26	$ 27
Accruals for warranties issued	**37**	42	43
Settlements (in cash or in kind)	**(42)**	(42)	(44)
Ending balance as of December 31	**$ 21**	$ 26	$ 26

In addition, NCR provides its customers with certain indemnification rights. In general, NCR agrees to indemnify the customer if a third party asserts patent or other infringement on the part of its customers for its use of the Company's products subject to certain conditions that are generally standard within the Company's industries. On limited occasions the Company will undertake additional indemnification obligations for business reasons. From time to time, NCR also enters into agreements in connection with its acquisition and divestiture activities that include indemnification obligations by the Company. The fair value of these indemnification obligations is not readily determinable due to the conditional nature of the Company's potential obligations and the specific facts and circumstances involved with each particular agreement. The Company has not recorded a liability in connection with these indemnifications, and no current indemnification instance is material to the Company's financial position. Historically, payments made by the Company under these types of agreements have not had a material effect on the Company's consolidated financial condition, results of operations or cash flows.

Purchase Commitments The Company has purchase commitments for materials, supplies, services, and property, plant and equipment as part of the normal course of business. This includes a long-term service agreement with Accenture, under which many of NCR's key transaction processing activities and functions are performed.

12. DERIVATIVES AND HEDGING INSTRUMENTS

NCR is exposed to risks associated with changes in foreign currency exchange rates and interest rates. NCR utilizes a variety of measures to monitor and manage these risks, including the use of derivative financial instruments. NCR has exposure to approximately 50 functional currencies. Since a substantial portion of our operations and revenue occur outside the U.S., and in currencies other than the U.S. Dollar, our results can be significantly impacted, both positively and negatively, by changes in foreign currency exchange rates.

Foreign Currency Exchange Risk The accounting guidance for derivatives and hedging requires companies to recognize all derivative instruments as either assets or liabilities at fair value in the Consolidated Balance Sheets. The Company designates foreign exchange contracts as cash flow hedges of forecasted transactions when they are determined to be highly effective at inception.

Our risk management strategy includes hedging, on behalf of certain subsidiaries, a portion of our forecasted, non-functional currency denominated cash flows for a period of up to 15 months. As a result, some of the impact of currency fluctuations on non-functional currency denominated transactions (and hence on subsidiary operating income, as stated in the functional currency), is mitigated in the near term. The amount we hedge and the duration of hedge contracts may vary significantly. In the longer term (greater than 15 months), the subsidiaries are still subject to the effect of translating the functional currency results to U.S. Dollars. To manage our exposures and mitigate the impact of currency fluctuations on the operations of our foreign subsidiaries, we hedge our main transactional exposures through the use of foreign exchange forward and option contracts. This is primarily done through

the hedging of foreign currency denominated inter-company inventory purchases by NCR's marketing units and the foreign currency denominated inputs to our manufacturing units. The related foreign exchange contracts are designated as highly effective cash flow hedges. The gains or losses on these hedges are deferred in accumulated other comprehensive income (AOCI) and reclassified to income when the underlying hedged transaction is recorded in earnings. As of December 31, 2019, the balance in AOCI related to foreign exchange derivative transactions was a gain of $1 million. The gains or losses from derivative contracts related to inventory purchases are recorded in cost of products when the inventory is sold to an unrelated third party.

We also utilize foreign exchange contracts to hedge our exposure of assets and liabilities denominated in non-functional currencies. We recognize the gains and losses on these types of hedges in earnings as exchange rates change. We do not enter into hedges for speculative purposes.

The following tables provide information on the location and amounts of derivative fair values in the Consolidated Balance Sheets:

	Fair Values of Derivative Instruments					
	December 31, 2019					
In millions	Balance Sheet Location	Notional Amount	Fair Value	Balance Sheet Location	Notional Amount	Fair Value
Derivatives designated as hedging instruments						
Foreign exchange contracts	Other current assets	$ 55	$ 1	Other current liabilities	$ —	$ —
Total derivatives designated as hedging instruments			$ 1			$ —
Derivatives not designated as hedging instruments						
Foreign exchange contracts	Other current assets	$ 71	$ 1	Other current liabilities	$ 264	$ 1
Total derivatives not designated as hedging instruments			$ 1			$ 1
Total derivatives			$ 2			$ 1

	Fair Values of Derivative Instruments					
	December 31, 2018					
In millions	Balance Sheet Location	Notional Amount	Fair Value	Balance Sheet Location	Notional Amount	Fair Value
Derivatives designated as hedging instruments						
Foreign exchange contracts	Other current assets	$ 169	$ 4	Other current liabilities	$ —	$ —
Total derivatives designated as hedging instruments			$ 4			$ —
Derivatives not designated as hedging instruments						
Foreign exchange contracts	Other current assets	$ 219	$ 1	Other current liabilities	$157	$ 1
Total derivatives not designated as hedging instruments			$ 1			$ 1
Total derivatives			$ 5			$ 1

The effects of derivative instruments on the Consolidated Statement of Operations for the years ended December 31 were as follows:

In millions	Amount of Gain (Loss) Recognized in Other Comprehensive Income (OCI) on Derivative (Effective Portion)				Amount of (Gain) Loss Reclassified from AOCI into the Consolidated Statement of Operations (Effective Portion)		
Derivatives in Cash Flow Hedging Relationships	For the year ended December 31, 2019	For the year ended December 31, 2018	For the year ended December 31, 2017	Location of (Gain) Loss Reclassified from AOCI into the Consolidated Statement of Operations (Effective Portion)	For the year ended December 31, 2019	For the year ended December 31, 2018	For the year ended December 31, 2017
Foreign exchange contracts	**$6**	$11	$(16)	Cost of products	**$(8)**	$(7)	$(1)

In millions		Amount of Gain (Loss) Recognized in the Consolidated Statement of Operations		
Derivatives not Designated as Hedging Instruments	Location of Gain (Loss) Recognized in the Consolidated Statement of Operations	For the year ended December 31, 2019	For the year ended December 31, 2018	For the year ended December 31, 2017
Foreign exchange contracts	Other income (expense), net	**$(8)**	$(9)	$(4)

Refer to Note 13, “Fair Value of Assets and Liabilities” for further information on derivative assets and liabilities recorded at fair value on a recurring basis.

Concentration of Credit Risk

NCR is potentially subject to concentrations of credit risk on accounts receivable and financial instruments such as hedging instruments and cash and cash equivalents. Credit risk includes the risk of nonperformance by counterparties. The maximum potential loss may exceed the amount recognized on the Consolidated Balance Sheets. Exposure to credit risk is managed through credit approvals, credit limits, selecting major international financial institutions as counterparties to hedging transactions and monitoring procedures. NCR’s business often involves large transactions with customers, and if one or more of those customers were to default on its obligations under applicable contractual arrangements, the Company could be exposed to potentially significant losses. However, management believes that the reserves for potential losses are adequate. As of December 31, 2019 and 2018, NCR did not have any major concentration of credit risk related to financial instruments.

13. FAIR VALUE OF ASSETS AND LIABILITIES

Assets and Liabilities Measured at Fair Value on a Recurring Basis

Assets and liabilities recorded at fair value on a recurring basis as of December 31, 2019 and 2018 are set forth as follows:

		December 31, 2019				December 31, 2018		
		Fair Value Measurements Using				Fair Value Measurements Using		
In millions	December 31, 2019	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:								
Deposits held in money market mutual funds [(1)]	**$15**	**$15**	**$—**	**$—**	$8	$8	$—	$—
Foreign exchange contracts [(2)]	**2**	**—**	**2**	**—**	5	—	5	—
Total	**$17**	**$15**	**$2**	**$—**	$13	$8	$5	$—
Liabilities:								
Foreign exchange contracts [(3)]	**1**	**—**	**1**	**—**	1	—	1	—
Total	**$1**	**$—**	**$1**	**$—**	$1	$—	$1	$—

(1) Included in Cash and cash equivalents in the Consolidated Balance Sheet.
(2) Included in Other current assets in the Consolidated Balance Sheet.
(3) Included in Other current liabilities in the Consolidated Balance Sheet.

Deposits Held in Money Market Mutual Funds A portion of the Company's excess cash is held in money market mutual funds which generate interest income based on prevailing market rates. Money market mutual fund holdings are measured at fair value using quoted market prices and are classified within Level 1 of the valuation hierarchy.

Foreign Exchange Contracts As a result of our global operating activities, we are exposed to risks from changes in foreign currency exchange rates, which may adversely affect our financial condition. To manage our exposures and mitigate the impact of currency fluctuations on our financial results, we hedge our primary transactional exposures through the use of foreign exchange forward and option contracts. The foreign exchange contracts are valued using the market approach based on observable market transactions of forward rates and are classified within Level 2 of the valuation hierarchy.

Assets Measured at Fair Value on a Non-recurring Basis

Certain assets have been measured at fair value on a nonrecurring basis using significant unobservable inputs (Level 3). NCR measures certain assets, including intangible assets and cost and equity method investments, at fair value on a non-recurring basis. These assets are recognized at fair value when initially valued and when deemed to be impaired. Additionally, NCR reviews the carrying values of investments when events and circumstances warrant and considers all available evidence in evaluating when declines in fair value are other-than-temporary declines. NCR carries equity investments in privately-held companies at cost or at fair value when NCR recognizes an other-than-temporary impairment charge. No material impairment charges or non-recurring fair value adjustments were recorded during the year ended December 31, 2019 and 2017. In the year ended December 31, 2018, we recorded $227 million, which included $146 million impairment of goodwill under our previous segment structure, which was assigned to the Hardware reporting unit and $37 million impairment charge related to long-lived assets held and used in our Hardware operations.

14. ACCUMULATED OTHER COMPREHENSIVE INCOME

Changes in Accumulated Other Comprehensive Income (AOCI) by Component

The changes in AOCI for the years ended December 31 are as follows:

In millions	Currency Translation Adjustments	Changes in Employee Benefit Plans	Changes in Fair Value of Effective Cash Flow Hedges	Total
Balance at December 31, 2016	**$ (224)**	**$ 6**	**$ 13**	**$ (205)**
Other comprehensive (loss) income before reclassifications	41	(13)	(13)	15
Amounts reclassified from AOCI	—	(8)	(1)	(9)
Net current period other comprehensive (loss) income	41	(21)	(14)	6
Balance at December 31, 2017	**$ (183)**	**$ (15)**	**$ (1)**	**$ (199)**
Impact of adoption of new accounting standard	—	1	—	1
Other comprehensive (loss) income before reclassifications	(51)	6	11	(34)
Amounts reclassified from AOCI	—	(6)	(8)	(14)
Net current period other comprehensive (loss) income	(51)	—	3	(48)
Balance at December 31, 2018	**$ (234)**	**$ (14)**	**$ 2**	**$ (246)**
Other comprehensive (loss) income before reclassifications	(26)	10	5	(11)
Amounts reclassified from AOCI	—	(6)	(6)	(12)
Net current period other comprehensive (loss) income	(26)	4	(1)	(23)
Balance at December 31, 2019	**$ (260)**	**$ (10)**	**$ 1**	**$ (269)**

Reclassifications Out of AOCI

The reclassifications out of AOCI for the years ended December 31 are as follows:

	For the year ended December 31, 2019			
	Employee Benefit Plans			
In millions	Actuarial Losses Recognized	Amortization of Prior Service Benefit	Effective Cash Flow Hedges	Total
Affected line in Consolidated Statement of Operations:				
Cost of products	$ —	$ —	$ (8)	**$ (8)**
Cost of services	(2)	(3)	—	**(5)**
Selling, general and administrative expenses	(1)	(3)	—	**(4)**
Research and development expenses	—	—	—	**—**
Total before tax	$ (3)	$ (6)	$ (8)	**$ (17)**
Tax expense				**5**
Total reclassifications, net of tax				**$ (12)**

	For the year ended December 31, 2018			
	Employee Benefit Plans			
In millions	Actuarial Losses Recognized	Amortization of Prior Service Benefit	Effective Cash Flow Hedges	Total
Affected line in Consolidated Statement of Operations:				
Cost of products	$ —	$ —	$ (7)	$ (7)
Cost of services	—	(5)	—	(5)
Selling, general and administrative expenses	—	(3)	—	(3)
Research and development expenses	—	(1)	—	(1)
Total before tax	$ —	$ (9)	$ (7)	$ (16)
Tax expense				2
Total reclassifications, net of tax				$ (14)

	For the year ended December 31, 2017			
	Employee Benefit Plans			
In millions	Actuarial Losses Recognized	Amortization of Prior Service Benefit	Effective Cash Flow Hedges	Total
Affected line in Consolidated Statement of Operations:				
Cost of products	$ —	$ —	$ (1)	$ (1)
Cost of services	(1)	(6)	—	(7)
Selling, general and administrative expenses	—	(4)	—	(4)
Research and development expenses	(1)	(1)	—	(2)
Total before tax	$ (2)	$ (11)	$ (1)	$ (14)
Tax expense				5
Total reclassifications, net of tax				$ (9)

15. RESTRUCTURING PLAN

In the second quarter of 2018, we announced a hardware transformation initiative to streamline our manufacturing operations that helped us reduce our exposure to variable hardware demand as well as increase global utilization rates and optimize our supply chain network. As a part of this initiative, we reduced the number of manufacturing plants and moved the manufacturing operations at those plants to other existing NCR facilities and current third party suppliers.

As a result of the restructuring plan, the Company recorded a total charge of $4 million and $50 million for the years ended December 31, 2019 and December 31, 2018, respectively. The restructuring program was substantially complete as of June 30, 2019.

The following table summarizes the total charges related to the restructuring plan for the year ended December 31, 2019:

In millions	For the year ended December 31, 2019
Severance and other employee related costs	**$ 1**
Inventory related charges	**7**
Gain on sale of property, plant and equipment	**(6)**
Other exit costs	**2**
Total charge	**$ 4**

Severance and other employee related costs During the year ended December 31, 2019, the Company recorded $1 million of employee related costs in accordance with ASC 420, *Exit or Disposal Cost Obligations*. There were no discrete charges in accordance with ASC 712, *Employers' Accounting for Postemployment Benefits* recorded during the year ended December 31, 2019.

Inventory related charges The Company recorded $7 million of inventory related charges for rationalizing its product portfolio and writing down inventory to be sold to third party suppliers to the lower of cost or net realizable value during the year ended December 31, 2019. These costs were included within cost of products in the Consolidated Statement of Operations.

Gain on sale of property, plant and equipment The Company recorded a $6 million gain on the sale of two plant locations during the year ended December 31, 2019.

Other exit costs The Company recorded $2 million for costs primarily related to moving inventory as well as clean-up costs from the plant locations that were closed during the year ended December 31, 2019. These costs were included within cost of products and selling, general, and administrative expenses in the Consolidated Statement of Operations.

The following table summarizes the total charges related to the restructuring plan for the year ended December 31, 2018:

In millions	For the year ended December 31, 2018
Severance and other employee related costs	$ 7
Inventory related charges	37
Other exit costs	6
Total charge	$ 50

Severance and other employee related costs During the year ended December 31, 2018, the Company recorded $2 million of employee related costs in accordance with ASC 712, *Employers' Accounting for Postemployment Benefits*, when the severance liability was determined to be probable and reasonably estimable. The Company also recorded $5 million of employee related costs in accordance with ASC 420, *Exit or Disposal Cost Obligations*. Of the severance and other employee related costs, $5 million was included in cost of products and $2 million was included in selling, general and administrative expenses in the Consolidated Statement of Operations. The Company made $2 million of severance-related payments under ASC 712 in the year ended December 31, 2018. The Company made $3 million in severance-related payments under ASC 420 in the year ended December 31, 2018.

Inventory related charges The Company recorded $37 million in the year ended December 31, 2018 of inventory related charges for rationalizing its product portfolio and writing down inventory to be sold to third party suppliers to the lower cost or net realizable value. Inventory related charges are recorded within cost of products in the Consolidated Statement of Operations.

Other exit costs The Company recorded $6 million in the year ended December 31, 2018 for costs primarily related to moving inventory and fixed assets from the plant locations that will be closed. Of these costs, $3 million were included in cost of products and selling, general and administrative expenses, respectively, in the year ended December 31, 2018 in the Consolidated Statement of Operations.

The results by segment, as disclosed in Note 4, "Segment Information and Concentrations", exclude the impact of these costs, which is consistent with the manner by which management assesses the performance and evaluates the results of each segment. The following table summarizes the costs recorded in accordance with ASC 420, *Exit or Disposal Cost Obligations*, and ASC 712, *Employers' Accounting for Postemployment Benefits*, and the remaining liabilities as of December 31, 2019 and December 31, 2018, which are included in the Consolidated Balance Sheet in other current liabilities.

In millions	2019	2018
Employee Severance and Other Exit Costs		
Beginning balance as of January 1	$ 2	$ —
Cost recognized during the period	3	13
Utilization	(5)	(11)
Ending balance as of December 31	$ —	$ 2

16. SUPPLEMENTAL FINANCIAL INFORMATION

The components of other income (expense), net are summarized as follows for the years ended December 31:

In millions	2019	2018	2017
Other income (expense), net			
Interest income	**$ 5**	$ 5	$ 3
Foreign currency fluctuations and foreign exchange contracts	**(23)**	(26)	(26)
Employee benefit plans	**(82)**	45	(15)
Bank-related fees	**(7)**	(8)	(8)
Gain on equity liquidations	**37**	—	—
Other, net	**(3)**	—	—
Total other income (expense), net	**$ (73)**	$ 16	$ (46)

The components of accounts receivable are summarized as follows:

In millions	December 31, 2019	December 31, 2018
Accounts receivable		
Trade	**$ 1,482**	$ 1,364
Other	**52**	23
Accounts receivable, gross	**1,534**	1,387
Less: allowance for doubtful accounts	**(44)**	(31)
Total accounts receivable, net	**$ 1,490**	$ 1,356

The components of inventory are summarized as follows:

In millions	December 31, 2019	December 31, 2018
Inventories		
Work in process and raw materials	**$ 204**	$ 237
Finished goods	**184**	214
Service parts	**396**	355
Total inventories	**$ 784**	$ 806

The components of property, plant and equipment are summarized as follows:

In millions	December 31, 2019	December 31, 2018
Property, plant and equipment		
Land and improvements	**$ 5**	$ 6
Buildings and improvements	**274**	273
Machinery and other equipment	**715**	650
Finance lease assets	**38**	—
Property, plant and equipment, gross	**1,032**	929
Less: accumulated depreciation	**(619)**	(570)
Total property, plant and equipment, net	**$ 413**	$ 359

17. GUARANTOR FINANCIAL INFORMATION

The Company's 5.00% Notes and 6.375% Notes are guaranteed by the Company's subsidiary, NCR International, Inc. (Guarantor Subsidiary), which is 100% owned by the Company and has guaranteed fully and unconditionally the obligations to pay principal and interest for these senior unsecured notes. The guarantees are subject to release under certain circumstances as described below:

- the designation of the Guarantor Subsidiary as an unrestricted subsidiary under the indenture governing the notes;
- the release of the Guarantor Subsidiary from its guarantee under the Senior Secured Credit Facility;
- the release or discharge of the indebtedness that required the guarantee of the notes by the Guarantor Subsidiary;
- the permitted sale or other disposition of the Guarantor Subsidiary to a third party; and
- the Company's exercise of its legal defeasance option of its covenant defeasance option under the indenture governing the notes.

Refer to Note 7, "Debt Obligations" for additional information.

In connection with the previously completed exchange offers for the 5.00% Notes and 6.375% Notes, the Company is required to comply with Rule 3-10 of SEC Regulation S-X (Rule 3-10), and has therefore included the accompanying Consolidating Financial Statements in accordance with Rule 3-10(f) of SEC Regulation S-X.

The following supplemental information sets forth, on a consolidating basis, the statements of operations and comprehensive income (loss), the balance sheets and the statements of cash flows for the parent issuer of these senior unsecured notes, for the Guarantor Subsidiary and for the Company and all of its consolidated subsidiaries. During the fourth quarter of 2019, we completed an internal reorganization and transfer of certain intangible assets among our wholly-owned subsidiaries. Accordingly, all prior period consolidating guarantor financial information were updated to reflect the reorganization.

Consolidating Statements of Operations and Comprehensive Income (Loss)
For the year ended December 31, 2019

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Product revenue	$ 1,348	$ 25	$ 1,628	$ (320)	$ 2,681
Service revenue	2,208	6	2,020	—	4,234
Total revenue	3,556	31	3,648	(320)	6,915
Cost of products	1,170	3	1,293	(320)	2,146
Cost of services	1,444	4	1,400	—	2,848
Selling, general and administrative expenses	648	1	402	—	1,051
Research and development expenses	88	—	171	—	259
Total operating expenses	3,350	8	3,266	(320)	6,304
Income (loss) from operations	206	23	382	—	611
Interest expense	(188)	—	(14)	5	(197)
Other income (expense), net	(79)	3	8	(5)	(73)
Income (loss) from continuing operations before income taxes	(61)	26	376	—	341
Income tax expense (benefit)	(28)	12	(257)	—	(273)
Income (loss) from continuing operations before earnings in subsidiaries	(33)	14	633	—	614
Equity in earnings of consolidated subsidiaries	634	594	—	(1,228)	—
Income (loss) from continuing operations	601	608	633	(1,228)	614
Income (loss) from discontinued operations, net of tax	(37)	—	(13)	—	(50)
Net income (loss)	$ 564	$ 608	$ 620	$ (1,228)	$ 564
Net income (loss) attributable to noncontrolling interests	—	—	—	—	—
Net income (loss) attributable to NCR	**$ 564**	**$ 608**	**$ 620**	**$ (1,228)**	**$ 564**
Total comprehensive income (loss)	541	1,158	595	(1,756)	538
Less comprehensive income (loss) attributable to noncontrolling interests	—	—	(3)	—	(3)
Comprehensive income (loss) attributable to NCR common stockholders	**$ 541**	**$ 1,158**	**$ 598**	**$ (1,756)**	**$ 541**

Consolidating Statements of Operations and Comprehensive Income (Loss)
For the year ended December 31, 2018

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Product revenue	$ 1,104	$ 23	$ 1,440	$ (226)	$ 2,341
Service revenue	2,143	7	1,914	—	4,064
Total revenue	3,247	30	3,354	(226)	6,405
Cost of products	1,027	5	1,182	(226)	1,988
Cost of services	1,451	5	1,286	—	2,742
Selling, general and administrative expenses	578	1	426	—	1,005
Research and development expenses	102	—	150	—	252
Asset impairment charges	210	—	17	—	227
Total operating expenses	3,368	11	3,061	(226)	6,214
Income (loss) from operations	(121)	19	293	—	191
Interest expense	(161)	—	(15)	8	(168)
Other income (expense), net	6	7	11	(8)	16
Income (loss) from continuing operations before income taxes	(276)	26	289	—	39
Income tax expense (benefit)	(55)	71	57	—	73
Income (loss) from continuing operations before earnings in subsidiaries	(221)	(45)	232	—	(34)
Equity in earnings of consolidated subsidiaries	183	225	—	(408)	—
Income (loss) from continuing operations	(38)	180	232	(408)	(34)
Income (loss) from discontinued operations, net of tax	(50)	—	(2)	—	(52)
Net income (loss)	$ (88)	$ 180	$ 230	$ (408)	$ (86)
Net income (loss) attributable to noncontrolling interests	—	—	2	—	2
Net income (loss) attributable to NCR	**$ (88)**	**$ 180**	**$ 228**	**$ (408)**	**$ (88)**
Total comprehensive income (loss)	(136)	127	179	(306)	(136)
Less comprehensive income (loss) attributable to noncontrolling interests	—	—	—	—	—
Comprehensive income (loss) attributable to NCR common stockholders	**$ (136)**	**$ 127**	**$ 179**	**$ (306)**	**$ (136)**

Consolidating Statements of Operations and Comprehensive Income (Loss)
For the year ended December 31, 2017

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Product revenue	$ 1,349	$ 71	$ 1,454	$ (295)	$ 2,579
Service revenue	2,073	7	1,857	—	3,937
Total revenue	3,422	78	3,311	(295)	6,516
Cost of products	1,077	2	1,237	(295)	2,021
Cost of services	1,365	5	1,270	—	2,640
Selling, general and administrative expenses	492	1	430	—	923
Research and development expenses	184	—	57	—	241
Total operating expenses	3,118	8	2,994	(295)	5,825
Income (loss) from operations	304	70	317	—	691
Interest expense	(159)	—	(9)	5	(163)
Other income (expense), net	(76)	3	32	(5)	(46)
Income (loss) from continuing operations before income taxes	69	73	340	—	482
Income tax expense (benefit)	112	108	22	—	242
Income (loss) from continuing operations before earnings in subsidiaries	(43)	(35)	318	—	240
Equity in earnings of consolidated subsidiaries	280	296	—	(576)	—
Income (loss) from continuing operations	237	261	318	(576)	240
Income (loss) from discontinued operations, net of tax	(5)	—	—	—	(5)
Net income (loss)	$ 232	$ 261	$ 318	$ (576)	$ 235
Net income (loss) attributable to noncontrolling interests	—	—	3	—	3
Net income (loss) attributable to NCR	**$ 232**	**$ 261**	**$ 315**	**$ (576)**	**$ 232**
Total comprehensive income (loss)	238	346	317	(662)	239
Less comprehensive income (loss) attributable to noncontrolling interests	—	—	1	—	1
Comprehensive income (loss) attributable to NCR common stockholders	**$ 238**	**$ 346**	**$ 316**	**$ (662)**	**$ 238**

Consolidating Balance Sheet
December 31, 2019

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Assets					
Current assets					
Cash and cash equivalents	$ 15	$ 3	$ 491	$ —	$ 509
Accounts receivable, net	54	1	1,435	—	1,490
Inventories	315	1	468	—	784
Due from affiliates	909	2,217	531	(3,657)	—
Other current assets	122	1	238	—	361
Total current assets	1,415	2,223	3,163	(3,657)	3,144
Property, plant and equipment, net	280	—	133	—	413
Goodwill	2,183	—	649	—	2,832
Intangibles, net	471	—	136	—	607
Operating lease assets	254	—	137	—	391
Prepaid pension cost	—	—	178	—	178
Deferred income taxes	335	2	484	—	821
Investments in subsidiaries	4,118	3,938	—	(8,056)	—
Due from affiliates	16	1	74	(91)	—
Other assets	527	1	73	—	601
Total assets	$ 9,599	$ 6,165	$ 5,027	$ (11,804)	$ 8,987
Liabilities and stockholders' equity					
Current liabilities					
Short-term borrowings	$ 8	$ —	$ 274	$ —	$ 282
Accounts payable	427	—	413	—	840
Payroll and benefits liabilities	188	—	120	—	308
Deferred service revenue and customer deposits	245	1	256	—	502
Due to affiliates	2,730	108	819	(3,657)	—
Other current liabilities	261	1	344	—	606
Total current liabilities	3,859	110	2,226	(3,657)	2,538
Long-term debt	3,199	—	78	—	3,277
Pension and indemnity plan liabilities	586	—	272	—	858
Postretirement and postemployment benefits liabilities	17	3	91	—	111
Income tax accruals	29	—	63	—	92
Due to affiliates	—	74	17	(91)	—
Operating lease liabilities	282	—	87	—	369
Other liabilities	128	—	112	—	240
Total liabilities	8,100	187	2,946	(3,748)	7,485
Redeemable noncontrolling interest	—	—	—	—	—
Series A convertible preferred stock	395	—	—	—	395
Stockholders' equity					
Total NCR stockholders' equity	1,104	5,978	2,078	(8,056)	1,104
Noncontrolling interests in subsidiaries	—	—	3	—	3
Total stockholders' equity	1,104	5,978	2,081	(8,056)	1,107
Total liabilities and stockholders' equity	$ 9,599	$ 6,165	$ 5,027	$ (11,804)	$ 8,987

Consolidating Balance Sheet
December 31, 2018

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Assets					
Current assets					
Cash and cash equivalents	$ 11	$ 3	$ 450	$ —	$ 464
Accounts receivable, net	46	1	1,309	—	1,356
Inventories	291	1	514	—	806
Due from affiliates	706	2,092	457	(3,255)	—
Other current assets	141	43	255	(42)	397
Total current assets	1,195	2,140	2,985	(3,297)	3,023
Property, plant and equipment, net	246	—	113	—	359
Goodwill	2,168	—	524	—	2,692
Intangibles, net	536	—	59	—	595
Prepaid pension cost	—	—	140	—	140
Deferred income taxes	317	—	149	(18)	448
Investments in subsidiaries	3,264	2,900	—	(6,164)	—
Due from affiliates	16	1	35	(52)	—
Other assets	455	2	47	—	504
Total assets	$ 8,197	$ 5,043	$ 4,052	$ (9,531)	$ 7,761
Liabilities and stockholders' equity					
Current liabilities					
Short-term borrowings	$ 85	$ —	$ 100	$ —	$ 185
Accounts payable	398	1	498	—	897
Payroll and benefits liabilities	141	—	97	—	238
Deferred service revenue and customer deposits	225	1	235	—	461
Due to affiliates	2,200	118	937	(3,255)	—
Other current liabilities	205	2	336	(42)	501
Total current liabilities	3,254	122	2,203	(3,297)	2,282
Long-term debt	2,978	—	2	—	2,980
Pension and indemnity plan liabilities	502	—	257	—	759
Postretirement and postemployment benefits liabilities	18	3	97	—	118
Income tax accruals	24	—	67	—	91
Due to affiliates	—	36	16	(52)	—
Other liabilities	167	19	91	(18)	259
Total liabilities	6,943	180	2,733	(3,367)	6,489
Redeemable noncontrolling interest	—	—	14	—	14
Series A Convertible Preferred Stock	859	—	—	—	859
Stockholders' equity					
Total NCR stockholders' equity	395	4,863	1,301	(6,164)	395
Noncontrolling interests in subsidiaries	—	—	4	—	4
Total stockholders' equity	395	4,863	1,305	(6,164)	399
Total liabilities and stockholders' equity	$ 8,197	$ 5,043	$ 4,052	$ (9,531)	$ 7,761

Consolidating Statement of Cash Flows
For the year ended December 31, 2019

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Net cash provided by (used in) operating activities	$ 498	$ (281)	$ 412	$ (1)	$ 628
Investing activities					
Expenditures for property, plant and equipment	(43)	—	(48)	—	(91)
Additions to capitalized software	(195)	—	(43)	—	(238)
Investments in equity affiliates	—	—	98	(98)	—
Proceeds from (payments of) intercompany notes	352	330	169	(851)	—
Acquisitions	(91)	—	(112)	—	(203)
Proceeds from the sale of PPE	3	—	8	—	11
Net change in funds held for clients	—	—	(15)	—	(15)
Other investing activities, net	9	—	—	—	9
Net cash provided by (used in) investing activities	35	330	57	(949)	(527)
Financing activities					
Tax withholding payments on behalf of employees	(29)	—	—	—	(29)
Repurchases of Company common stock	(96)	—	—	—	(96)
Short term borrowings, net	—	—	—	—	—
Borrowings on term facility	1,000	—	—	—	1,000
Payments of term credit facilities	(761)	—	—	—	(761)
Repayment of senior unsecured notes	(900)	—	—	—	(900)
Borrowing on term credit facilities	750	—	—	—	750
Redemption of preferred shares	(302)	—	—	—	(302)
Proceeds from employee stock plans	16	—	—	—	16
Debt issuance costs	(32)	—	—	—	(32)
Other financing activities	(5)	—	(3)	—	(8)
Payments on revolving credit facilities	(2,830)	—	(386)	—	(3,216)
Borrowings on revolving credit facilities	2,900	—	635	—	3,535
Net increase (decrease) in client funds obligations	—	—	15	—	15
Purchase of non-controlling interest	—	—	(3)	—	(3)
Equity contribution	(84)	(14)	—	98	—
Dividends distribution to consolidated subsidiaries	—	—	(1)	1	—
Borrowings (repayments) of intercompany notes	(135)	(35)	(681)	851	—
Net cash provided by (used in) financing activities	(508)	(49)	(424)	950	(31)
Cash flows from discontinued operations					
Net cash used in discontinued operations operating activities	(22)	—	(2)	—	(24)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	—	—	(6)	$ —	(6)

Increase (decrease) in cash, cash equivalents and restricted cash	3	—	37	—	40
Cash, cash equivalents and restricted cash at beginning of period	12	3	461	—	476
Cash, cash equivalents and restricted cash at end of period	$ 15	$ 3	$ 498	$ —	$ 516

In millions	**December 31, 2019**				
Reconciliation of cash, cash equivalents and restricted cash as shown in the Consolidated Statements of Cash Flows	**Parent Issuer**	**Guarantor Subsidiary**	**Non-Guarantor Subsidiaries**	**Eliminations**	**Consolidated**
Cash and cash equivalents	$ 15	$ 3	$ 491	$ —	$ 509
Restricted cash included in Other assets	—	—	7	—	7
Total cash, cash equivalents and restricted cash	**$ 15**	**$ 3**	**$ 498**	**$ —**	**$ 516**

NCR Corporation
Notes to Consolidated Financial Statements-(Continued)

Consolidating Statement of Cash Flows
For the year ended December 31, 2018

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Net cash provided by (used in) operating activities	$ 359	$ (144)	$ 375	$ (18)	$ 572
Investing activities					
Expenditures for property, plant and equipment	(109)	—	(34)	—	(143)
Additions to capitalized software	(144)	—	(26)	—	(170)
Proceeds from (payments of) intercompany notes	228	135	—	(363)	—
Acquisitions	(206)	—	—	—	(206)
Proceeds from the sale of PPE	1	—	2	—	3
Investments in equity affiliates	(14)	10	—	4	—
Other investing activities, net	(4)	—	—	—	(4)
Net cash provided by (used in) investing activities	(248)	145	(58)	(359)	(520)
Financing activities					
Short term borrowings, net	(1)	—	—	—	(1)
Payments on term credit facilities	(51)	—	—	—	(51)
Payments on revolving credit facilities	(1,755)	—	(478)	—	(2,233)
Borrowings on revolving credit facilities	1,875	—	578	—	2,453
Tax withholding payments on behalf of employees	(36)	—	—	—	(36)
Proceeds from employee stock plans	20	—	—	—	20
Other financing activities	—	—	—	—	—
Dividend distribution to consolidated subsidiaries	—	—	(18)	18	—
Repurchases of Company common stock	(210)	—	—	—	(210)
Equity contribution	(10)	—	14	(4)	—
Borrowings (repayments) of intercompany notes	—	—	(363)	363	—
Net cash provided by (used in) financing activities	(168)	—	(267)	377	(58)
Cash flows from discontinued operations					
Net cash used in discontinued operations operating activities	(36)	—	—	—	(36)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(1)	—	(24)	—	(25)
Increase (decrease) in cash, cash equivalents and restricted cash	(94)	1	26	—	(67)
Cash, cash equivalents and restricted cash at beginning of period	106	2	435	—	543
Cash, cash equivalents and restricted cash at end of period	$ 12	$ 3	$ 461	$ —	$ 476

NCR Corporation
Notes to Consolidated Financial Statements-(Continued)

In millions	December 31, 2018									
Reconciliation of cash, cash equivalents and restricted cash as shown in the Consolidated Statements of Cash Flows	Parent Issuer		Guarantor Subsidiary		Non-Guarantor Subsidiaries		Eliminations		Consolidated	
Cash and cash equivalents	$	11	$	3	$	450	$	—	$	464
Restricted cash included in Other assets		1		—		11		—		12
Total cash, cash equivalents and restricted cash	**$**	**12**	**$**	**3**	**$**	**461**	**$**	**—**	**$**	**476**

NCR Corporation
Notes to Consolidated Financial Statements-(Continued)

Consolidating Statement of Cash Flows
For the year ended December 31, 2017

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Net cash provided by (used in) operating activities	$ 447	$ (168)	$ 483	$ (10)	$ 752
Investing activities					
Expenditures for property, plant and equipment	(87)	—	(41)	—	(128)
Additions to capitalized software	(133)	—	(33)	—	(166)
Proceeds from (payments of) intercompany notes	230	180	2	(412)	—
Acquisitions	(8)	—	—	—	(8)
Proceeds from the sale of PPE	—	—	6	—	6
Investments in equity affiliates	13	—	—	(13)	—
Other investing activities, net	2	—	4	—	6
Net cash provided by (used in) investing activities	17	180	(62)	(425)	(290)
Financing activities					
Short term borrowings, net	(5)	—	1	—	(4)
Payments on revolving credit facilities	(56)	—	(5)	—	(61)
Payments on revolving credit facilities	(1,700)	—	(240)	—	(1,940)
Borrowings on revolving credit facilities	1,700	—	240	—	1,940
Tax withholding payments on behalf of employees	(31)	—	—	—	(31)
Proceeds from employee stock plans	15	—	—	—	15
Dividend distribution to consolidated subsidiaries	—	—	(10)	10	—
Other financing activities	(1)	—	(2)	—	(3)
Equity contribution	—	(10)	(3)	13	—
Borrowings (repayments) of intercompany notes	—	(2)	(410)	412	—
Repurchases of Company common stock	(350)	—	—	—	(350)
Net cash provided by (used in) financing activities	(428)	(12)	(429)	435	(434)
Cash flows from discontinued operations					
Net cash used in discontinued operations operating activities	(8)	—	—	—	(8)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	1	—	15	—	16
Increase (decrease) in cash, cash equivalents and restricted cash	29	—	7	—	36
Cash, cash equivalents and restricted cash at beginning of period	77	2	428	—	507
Cash, cash equivalents and restricted cash at end of period	$ 106	$ 2	$ 435	$ —	$ 543

NCR Corporation
Notes to Consolidated Financial Statements-(Continued)

In millions	December 31, 2017				
Reconciliation of cash, cash equivalents and restricted cash as shown in the Consolidated Statements of Cash Flows	**Parent Issuer**	**Guarantor Subsidiary**	**Non-Guarantor Subsidiaries**	**Eliminations**	**Consolidated**
Cash and cash equivalents	$ 106	$ 2	$ 429	$ —	$ 537
Restricted cash included in Other assets	—	—	6	—	6
Total cash, cash equivalents and restricted cash	**$ 106**	$ 2	$ 435	$ —	$ 543

18. QUARTERLY INFORMATION (UNAUDITED)

In millions, except per share amounts	First	Second	Third	Fourth
2019				
Total revenue	**$ 1,536**	**$ 1,710**	**$ 1,783**	**$ 1,886**
Gross margin	**411**	**471**	**507**	**532**
Income from operations	**100**	**157**	**172**	**182**
Income from continuing operations (attributable to NCR)	**37**	**88**	**105**	**384**
Income (loss) from discontinued operations, net of tax	**—**	**—**	**(15)**	**(35)**
Net (loss) income attributable to NCR common stockholders	**24**	**76**	**11**	**343**
Income (loss) per share attributable to NCR common stockholders:				
Income (loss) per common share from continuing operations				
Basic	**$ 0.20**	**$ 0.63**	**$ 0.21**	**$ 2.96**
Diluted	**$ 0.20**	**$ 0.58**	**$ 0.21**	**$ 2.67**
Net (loss) income per common share				
Basic	**$ 0.20**	**$ 0.63**	**$ 0.09**	**$ 2.69**
Diluted	**$ 0.20**	**$ 0.58**	**$ 0.09**	**$ 2.43**
2018				
Total revenue	$ 1,517	$ 1,537	$ 1,550	$ 1,801
Gross margin	420	403	410	442
Income (loss) from operations	109	(106)	125	63
Income (loss) from continuing operations (attributable to NCR)	55	(143)	85	(33)
(Loss) from discontinued operations, net of tax	(35)	(2)	(1)	(14)
Net income (loss) attributable to NCR common stockholders	8	(157)	72	(60)
Income (loss) per share attributable to NCR common stockholders:				
Income (loss) per common share from continuing operations				
Basic	$ 0.36	$ (1.31)	$ 0.62	$ (0.39)
Diluted	$ 0.35	$ (1.31)	$ 0.57	$ (0.39)
Net income (loss) per common share				
Basic	$ 0.07	$ (1.33)	$ 0.61	$ (0.51)
Diluted	$ 0.06	$ (1.33)	$ 0.56	$ (0.51)

Operating income for the quarter ended December 31, 2019 was impacted by actuarial losses related to the remeasurement of our pension plan assets and liabilities. The actuarial losses included in pension expense recognized in the quarter ended December 31, 2019 decreased net income attributable to NCR by $66 million, basic earnings per share from continuing operations by $0.52, and diluted earnings per share from continuing operations by $0.46.

Operating income for the quarter ended December 31, 2018 was impacted by actuarial gains related to the remeasurement of our pension plan assets and liabilities. The actuarial gains included in pension expense recognized in the quarter ended December 31, 2018 increased net income attributable to NCR by $44 million, basic earnings per share from continuing operations by $0.37, and diluted earnings per share from continuing operations by $0.37.

Net income per share in each quarter is computed using the weighted-average number of shares outstanding during that quarter while net income per share for the full year is computed using the weighted-average number of shares outstanding during the year. Thus, the sum of the four quarters' net income per share will not necessarily equal the full-year net income per share.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Item 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

NCR has established disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934 (the Exchange Act)) to ensure that information required to be disclosed by NCR in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by NCR in the reports that it files or submits under the Exchange Act is accumulated and communicated to NCR's management, including its Chief Executive and Chief Financial Officers, as appropriate to allow timely decisions regarding required disclosure. Based on their evaluation as of the end of the period covered by this Report, conducted under their supervision and with the participation of management, the Company's Chief Executive and Chief Financial Officers have concluded that NCR's disclosure controls and procedures are effective to meet such objectives and that NCR's disclosure controls and procedures adequately alert them on a timely basis to material information relating to the Company (including its consolidated subsidiaries) required to be included in NCR's Exchange Act filings.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting that occurred during the last fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining effective internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. The 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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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 due to, for example, the potential for human error or circumvention of controls, 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.

The Company's management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in the 2013 Internal Control-Integrated Framework. Based on our assessment, we determined that, as of December 31, 2019, the Company's internal control over financial reporting was effective based on those criteria.

PricewaterhouseCoopers LLP, our independent registered public accounting firm, has audited the effectiveness of the Company's internal control over financial reporting as of December 31, 2019 as stated in their report which appears in Item 8 of this Report.

Item 9B. OTHER INFORMATION

None.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Except as set forth in the following paragraphs of this Item 10, the information required by this Item 10 will be set forth under the headings "Election of Directors," "Section 16(a) Beneficial Ownership Reporting Compliance," and "Committees of the Board" in the Definitive Proxy Statement for our 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of our fiscal 2019 year, and is incorporated herein by reference. The information required by this Item 10 regarding our executive officers is set forth under the heading "Executive Officers of the Registrant" in Part I of this Form 10-K and is incorporated herein by reference.

We have not materially changed the procedures by which stockholders may recommend nominees to the Company's Board of Directors.

We have a Code of Conduct that sets the standard for ethics and compliance for all of our directors and employees, including our chief executive officer, our chief financial officer and our chief accounting officer. Our Code of Conduct is available on the Corporate Governance page at our website at http://www.ncr.com/company/corporate-governance/code-of-conduct under the heading "Code of Conduct." We intend to disclose any amendments to or waivers of the Code of Conduct with respect to any director as well as our principal executive officer, principal financial officer, and principal accounting officer, on the Corporate Governance page of our website promptly following the date of such amendment or waiver.

Item 11. EXECUTIVE COMPENSATION

The information required by this Item 11 will be set forth under the headings "Executive Compensation - Compensation Discussion & Analysis," "Compensation and Human Resource Committee," and "Board Compensation and Human Resource Committee Report on Executive Compensation" in the Definitive Proxy Statement for our 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of our fiscal 2019 year, and is incorporated herein by reference.

Item 12. SECURITY OWNERSHIPS OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item 12 will be set forth under the headings "NCR Stock Ownership" and "Equity Compensation Plan Information" in the Definitive Proxy Statement for our 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of our fiscal 2019 year, and is incorporated herein by reference.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by this Item 13 will be set forth under the headings "Related Person Transactions" and "Corporate Governance" in the Definitive Proxy Statement for our 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of our fiscal 2019 year, and is incorporated herein by reference.

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item 14 will be set forth under the heading "Fees Paid to Independent Registered Public Accounting Firm" in the Definitive Proxy Statement for our 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of our fiscal 2019 year, and is incorporated herein by reference.

PART IV

Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULE

(a)(1) *Financial Statements*: The following is an index of the consolidated financial statements of the Company and the Report of Independent Registered Public Accounting Firm filed as part of this Form 10-K:

	Page of Form 10-K
Report of Independent Registered Public Accounting Firm	48
Consolidated Statements of Operations for the years ended December 31, 2019, 2018, and 2017	51
Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2019, 2018, and 2017	52
Consolidated Balance Sheets at December 31, 2019 and 2018	53
Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018, and 2017	54
Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2019, 2018, and 2017	55
Notes to Consolidated Financial Statements	56

(2) *Financial Statement Schedule*: Financial Statement Schedule II—Valuation and Qualifying Accounts for the years ended December 31, 2019, 2018, and 2017 is included in this Form 10-K on page 131. All other schedules are not required under the related instructions or are not applicable.

(3) *Exhibits*: See Index of Exhibits below for a listing of all exhibits to this Form 10-K. The management contracts and compensatory plans or arrangements required to be filed as an exhibit to this Form 10-K are identified in the Index of Exhibits by an asterisk (*).

(b) The following is an index of all exhibits to this Form 10-K. Exhibits identified in parentheses in the index below, on file with the SEC, are incorporated herein by reference as exhibits hereto.

2.1	Agreement and Plan of Merger, dated as of October 19, 2018, among JetPay Corporation, NCR Corporation and Orwell Acquisition Corporation (Exhibit 2.1 to the Current Report on Form 8-K of NCR Corporation dated October 22, 2018).
3.1	Articles of Amendment and Restatement of NCR Corporation (Exhibit 3.1 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended June 30, 2019 (the "Second Quarter 2019 Quarterly Report")).
3.2	Bylaws of NCR Corporation, as amended and restated on February 20, 2018 (Exhibit 3.2 to the Current Report on Form 8-K of NCR Corporation dated February 23, 2018).
4.1	Common Stock Certificate of NCR Corporation (Exhibit 4.1 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 1999).
4.2	Indenture, dated September 17, 2012, among NCR Corporation, as issuer, NCR International Inc. and Radiant Systems Inc. as subsidiary guarantors and U.S. Bank National Association, as trustee (Exhibit 4.01 to the Current Report on Form 8-K of NCR Corporation dated September 17, 2012).
4.3	Indenture, dated December 19, 2013, between NCR Escrow Corp. and U.S. Bank National Association relating to the $700 million aggregate principal amount of 6.375% senior notes due 2023 (the "6.375% Notes") (Exhibit 4.2 to the Current Report on Form 8-K of NCR Corporation dated December 19, 2013).
4.3.1	First Supplemental Indenture relating to the 6.375% Notes, dated January 10, 2014, among NCR Corporation, NCR International, Inc. and U.S. Bank National Association, as trustee (Exhibit 4.2 to the Current Report on Form 8-K of NCR Corporation dated January 10, 2014).

4.4	Indenture, dated as of August 21, 2019, among NCR Corporation, NCR International, Inc. and Wells Fargo Bank, National Association (Exhibit 4.1 to the Current Report on Form 8-K of NCR Corporation dated August 21, 2019 (the "August 21, 2019 Form 8-K")).
4.5	Indenture, dated as of August 21, 2019, among NCR Corporation, NCR International, Inc. and Wells Fargo Bank, National Association (Exhibit 4.3 to the August 21, 2019 Form 8-K).
4.6	Description of NCR Corporation Securities Registered Under Section 12 of the Exchange Act.
10.1	NCR Corporation 2011 Amended and Restated Stock Incentive Plan (formerly the NCR 2006 Stock Incentive Plan, as amended and restated effective as of December 31, 2008) (the “2011 Stock Incentive Plan”) (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated April 27, 2011). *
10.1.1	Form of 2010 Stock Option Agreement under the 2011 Stock Incentive Plan (Exhibit 10.2 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended March 31, 2010). *
10.1.2	Form of 2011 Stock Option Agreement under the 2011 Stock Incentive Plan (Exhibit 10.1 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended March 31, 2011). *
10.2	NCR Director Compensation Program effective April 21, 2009 (the “2009 NCR Director Compensation Program”) (Exhibit 10.7 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended March 31, 2009 (the “First Quarter 2009 Form 10-Q”)). *
10.2.1	2009 Director Restricted Stock Unit Grant Statement under the 2009 NCR Director Compensation Program (Exhibit 10.9 to the First Quarter 2009 Form 10-Q). *
10.3	Amended and Restated NCR Change in Control Severance Plan effective December 31, 2008 (Exhibit 10.24.2 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 2008 (the "2008 Annual Report")). *
10.3.1	First Amendment to the Amended and Restated NCR Change in Control Severance Plan (Exhibit 10.6 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended September 30, 2011). *
10.3.2	Second Amendment to the Amended and Restated NCR Change in Control Severance Plan (Exhibit 10.11.2 to the 2017 Annual Report). *
10.4	Employment Agreement with William Nuti, dated July 29, 2005 (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated July 27, 2005). *
10.4.1	Letter Agreement, dated July 26, 2006, with William Nuti (Exhibit 10.4 to the Current Report on Form 8-K of NCR Corporation dated July 25, 2006). *
10.4.2	Second Amendment, effective as of December 12, 2008, to Letter Agreement with William Nuti dated July 29, 2005, as amended July 26, 2006 (Exhibit 10.30.2 to the 2008 Annual Report). *
10.4.3	Letter Agreement, dated March 11, 2015, between NCR Corporation and William Nuti (Exhibit 10.5 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended March 31, 2015 (the “First Quarter 2015 Quarterly Report”)). *
10.5	NCR Director Compensation Program Effective April 27, 2010 (Exhibit 10.1 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended June 30, 2010 (the “Second Quarter 2010 Quarterly Report”)). *
10.5.1	Form of 2010 Director Option Grant Statement (Exhibit 10.2 to the Second Quarter 2010 Quarterly Report). *
10.5.2	Form of 2010 Director Restricted Stock Unit Grant Statement (Exhibit 10.3 to the Second Quarter 2010 Quarterly Report). *

10.6	NCR Corporation 2011 Economic Profit Plan (Exhibit 10.3 to the Current Report on Form 8-K of NCR Corporation dated April 27, 2011). *
10.6.1	First Amendment to NCR Corporation 2011 Economic Profit Plan (Exhibit 10.29.1 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 2011). *
10.6.2	Second Amendment to NCR Corporation 2011 Economic Profit Plan, dated January 25, 2012 (Exhibit 10.1 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended March 31, 2012). *
10.6.3	Third Amendment to NCR Corporation 2011 Economic Profit Plan (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated October 1, 2013). *
10.6.4	Fourth Amendment to NCR Corporation 2011 Economic Profit Plan (Exhibit 10.18.4 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 2014 (the “2014 Annual Report”)). *
10.6.5	Amended and Restated NCR Corporation Economic Profit Plan (Exhibit 10.2 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (the “Second Quarter 2015 Quarterly Report")). *
10.7	NCR Corporation 2013 Stock Incentive Plan (the “2013 Stock Incentive Plan”) (Appendix A to the NCR Corporation Proxy Statement on Schedule 14A for the NCR Corporation 2013 Annual Meeting of Stockholders). *
10.7.1	Form of Vision 2020 Award (for Awardees Other than the Chief Executive Officer): 2016 Price-Contingent Restricted Stock Unit Agreement - $40 Price Target - under the 2013 Stock Incentive Plan (Exhibit 10.6 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2016). *
10.8	Agreement between NCR and the Trustees of the NCR Pension Plan (UK), dated November 14, 2013 (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated November 14, 2013).
10.9	Receivables Financing Agreement, dated as of November 21, 2014, by and among NCR Receivables LLC, as borrower, NCR Corporation, as servicer, PNC Bank, National Association, as administrative agent, and PNC Bank, National Association, The Bank of Tokyo-Mitsubishi UFJ, Ltd., New York Branch, Victory Receivables Corporation and the other lender parties from time to time party thereto (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated November 21, 2014 (the “November 21, 2014 Form 8-K”)).
10.9.1	First Amendment to Receivables Financing Agreement, dated as of November 21, 2016, by and among NCR Receivables LLC, as borrower, NCR Corporation, as servicer, PNC Bank, National Association, as administrative agent, and PNC Bank, National Association, The Bank of Tokyo-Mitsubishi UFJ, Ltd., New York Branch, Victory Receivables Corporation and the other lender parties from time to time party thereto (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated November 23, 2016).
10.9.2	Second Amendment to the Receivables Financing Agreement, dated as of September 29, 2017, by and among NCR Receivables LLC, as borrower, NCR Corporation, as servicer, PNC Bank, National Association, as administrative agent, and PNC Bank, National Association, The Bank of Tokyo-Mitsubishi UFJ, Ltd., New York Branch, and Victory Receivables Corporation, as lenders (Exhibit 10.19.2 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 2018).
10.9.3	Third Amendment to Receivables Financing Agreement, dated as of November 15, 2018, by and among NCR Receivables LLC, as borrower, NCR Corporation, as servicer, PNC Bank, National Association, as administrative agent, and PNC Bank, National Association, MUFG Bank, Ltd. (f/k/a The Bank of Tokyo Mitsubishi UFJ, Ltd., New York Branch) and Victory Receivables Corporation, as lenders (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated November 20, 2018).
10.9.4	Fourth Amendment to Receivables Financing Agreement, dated as of November 15, 2018, by and among NCR Receivables LLC, as borrower, NCR Corporation, as servicer, PNC Bank, National Association, as administrative agent, and PNC Bank, National Association, MUFG Bank, Ltd. (f/k/a The Bank of Tokyo Mitsubishi UFJ, Ltd., New York Branch) and Victory Receivables Corporation, as lenders (Exhibit 10.2 to the Second Quarter 2019 Quarterly Report).

10.9.5	Fifth Amendment to Receivables Financing Agreement, dated as of November 21, 2019, by and among NCR Receivables LLC, as borrower, NCR Corporation, as servicer, PNC Bank, National Association, as administrative agent, and PNC Bank, National Association, MUFG Bank, Ltd. (f/k/a The Bank of Tokyo Mitsubishi UFJ, Ltd., New York Branch) and Victory Receivables Corporation, as lenders (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated November 21, 2019).
10.10	Purchase and Sale Agreement, dated as of November 21, 2014, among NCR Receivables LLC, as buyer, and NCR Corporation and the other originator parties from time to time party thereto (Exhibit 10.2 to the November 21, 2014 Form 8-K).
10.11	Amended and Restated NCR Executive Severance Plan (Exhibit 10.1 to the Second Quarter 2015 Quarterly Report). *
10.11.1	First Amendment to the Amended and Restated NCR Executive Severance Plan (Exhibit 10.21.1 to the 2017 Annual Report). *
10.12	NCR Director Compensation Program effective April 23, 2013, as amended effective February 24, 2014 (the “2013 NCR Director Compensation Program”) (Exhibit 10.42 to the 2014 Annual Report). *
10.12.1	2014 Director Restricted Stock Unit Grant Statement under the 2013 NCR Director Compensation Program (Exhibit 10.42.1 to the 2014 Annual Report). *
10.12.2	2015 Director Restricted Stock Unit Grant Statement under the 2013 NCR Director Compensation Program (Exhibit 10.3 to the Second Quarter 2015 Quarterly Report). *
10.12.3	2016 Director Restricted Stock Unit Grant Statement under the 2013 NCR Director Compensation Program (Exhibit 10.2 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended June 30, 2016 (the “Second Quarter 2016 Quarterly Report”)). *
10.13	NCR Employee Stock Purchase Plan, as amended and restated effective January 1, 2017 (Appendix A to the NCR Corporation Proxy Statement on Schedule 14A for the NCR Corporation 2016 Annual Meeting of Stockholders). *
10.14	Credit Agreement, dated as of August 22, 2011, as amended and restated as of July 25, 2013, as further amended and restated as of March 31, 2016, as further amended and restated as of August 28, 2019, among NCR Corporation, the lenders party thereto, the foreign borrowers party thereto and JPMorgan Chase Bank, N.A., as administrative agent (Exhibit 4.1 to the Current Report on Form 8-K of NCR Corporation dated August 29, 2019 (the “August 29, 2019 Form 8-K”)).
10.14.1	Amended and Restated Guarantee and Collateral Agreement, dated as of August 22, 2011, as amended and restated as of January 6, 2014, as further amended and restated as of March 31, 2016, by and among NCR Corporation, the Foreign Borrowers party thereto, the subsidiaries of NCR Corporation identified therein and JPMorgan Chase Bank, N.A., as Administrative Agent (Exhibit 10.2 to the April 4, 2016 Form 8-K).
10.14.2	Annex A to Credit Agreement dated as of August 22, 2011, as amended and restated as of July 25, 2013, as further amended and restated as of March 31, 2016, among NCR Corporation, the Foreign Borrowers party thereto, the Lenders party thereto and JPMorgan Chase Bank, N.A. (Exhibit 10.1 to the Second Quarter 2016 Quarterly Report).
10.14.3	Reaffirmation Agreement, dated as of August 28, 2019, among NCR Corporation, NCR International, Inc., the foreign subsidiaries of NCR Corporation party thereto and JPMorgan Chase Bank, N.A., as administrative agent (Exhibit 4.2 to the August 29, 2019 Form 8-K).
10.15	Second Amended and Restated NCR Management Incentive Plan (Appendix A to the NCR Corporation Proxy Statement on Schedule 14A for the NCR Corporation 2017 Annual Meeting of Stockholders (the “2017 Proxy Statement”). *
10.16	NCR Corporation 2017 Stock Incentive Plan (the “2017 Stock Incentive Plan”) (Appendix B to the 2017 Proxy Statement). *

10.16.1	Form of 2017 Performance-Based Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan and 2017 Stock Incentive Plan (Exhibit 10.3 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2017 (the "First Quarter 2017 Quarterly Report)). *
10.16.2	Form of 2017 Performance-Vesting Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan and 2017 Stock Incentive Plan (Exhibit 10.4 to the First Quarter 2017 Quarterly Report). *
10.16.3	Form of 2017 Director Restricted Stock Unit Grant Statement under the 2013 Stock Incentive Plan and 2017 Stock Incentive Plan (Exhibit 10.1 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended June 30, 2017 (the “Second Quarter 2017 Quarterly Report”)). *
10.16.4	Form of 2018 Director Restricted Stock Unit Grant Statement under the 2017 Stock Incentive Plan (Exhibit 10.3 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended June 30, 2018 (the "Second Quarter 2018 Quarterly Report")). *
10.16.5	Form of 2018 Stock Option Award Agreement under the NCR Corporation 2017 Stock Incentive Plan (the "2017 Stock Incentive Plan") (Exhibit 10.1 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2018). *
10.16.6	Form of 2018 Time-Based Restricted Stock Unit Award Agreement under the 2017 Stock Incentive Plan (Exhibit 10.2 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2018). *
10.16.7	Form of 2018 Performance-Vesting Restricted Stock Unit Award Agreement under the 2017 Stock Incentive Plan (Exhibit 10.3 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2018). *
10.16.8	Form of 2018 Performance-Based Restricted Stock Unit Award Agreement under the 2017 Stock Incentive Plan (Exhibit 10.4 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2018). *
10.16.9	Form of 2019 Director Restricted Stock Unit Grant Statement under the NCR Corporation 2017 Stock Incentive Plan (Exhibit 10.1 to the Second Quarter 2019 Quarterly Report). *
10.16.10	Form of 2019 Stock Option Award Agreement under the 2017 Stock Incentive Plan (Exhibit 10.1 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2019 (the “First Quarter 2019 Quarterly Report”)). *
10.16.11	Form of 2019 Performance-Based Restricted Stock Unit Award Agreement under the 2017 Stock Incentive Plan (Exhibit 10.3 to the First Quarter 2019 Quarterly Report). *
10.17	NCR Director Compensation Program effective May 1, 2017 (Exhibit 10.1 to the Second Quarter 2017 Quarterly Report). *
10.18	Master Manufacturing Agreement, dated April 23, 2018, by and between Jabil Inc. and NCR Corporation (Exhibit 10.1 to the Second Quarter 2018 Quarterly Report).
10.19	Master Hardware Supply Agreement, dated June 28, 2018, between Universal Global Scientific Industrial Co., Ltd. and NCR Corporation (Exhibit 10.2 to the Second Quarter 2018 Quarterly Report).
10.20	Employment Agreement, dated April 27, 2018, between Michael Hayford and NCR Corporation (Exhibit 10.4 to the Second Quarter 2018 Quarterly Report). *
10.21	Employment Agreement, dated April 27, 2018, between Frank Martire and NCR Corporation (Exhibit 10.5 to the Second Quarter 2018 Quarterly Report). *
10.22	Letter Agreement, dated April 30, 2018 between William R. Nuti and NCR Corporation (Exhibit 10.6 to the Second Quarter 2018 Quarterly Report). *
10.23	Letter Agreement, dated May 2, 2018, between Paul E. Langenbahn and NCR Corporation (Exhibit 10.7 to the Second Quarter 2018 Quarterly Report). *

10.24	Letter Agreement, dated March 19, 2018, between Mark D. Benjamin and NCR Corporation (Exhibit 10.8 to the Second Quarter 2018 Quarterly Report). *
10.25	Employment Agreement, dated July 18, 2018, between Owen Sullivan and NCR Corporation (Exhibit 10.1 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended September 30, 2018 (the "Third Quarter 2018 Quarterly Report")). *
10.26	Amendment, effective as of July 26, 2018, to Employment Agreement, dated May 2, 2018, between Paul Langenbahn and NCR Corporation (Exhibit 10.2 to the Third Quarter 2018 Quarterly Report). *
10.27	Employment Agreement, dated August 27, 2018, between Andre J. Fernandez and NCR Corporation (Exhibit 10.3 to the Third Quarter 2018 Quarterly Report). *
10.28	Retirement Agreement, dated March 11, 2019, between Robert P. Fishman and NCR Corporation (Exhibit 10.4 to the First Quarter 2019 Quarterly Report). *
10.29	Stock Repurchase and Conversion Agreement, dated as of September 18, 2019, by and between NCR Corporation, BCP VI SBS ESC Holdco L.P., Blackstone NCR Holdco L.P., BTO NCR Holdings - ESC L.P., and BTO NCR Holdings L.P. (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated September 19, 2019).
21	Subsidiaries of NCR Corporation.
23.1	Consent of Independent Registered Public Accounting Firm.
31.1	Certification pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934.
31.2	Certification pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934.
32	Certification pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	The following materials from NCR Corporation’s Annual Report on Form 10-K for the year ended December 31, 2019, formatted in iXBRL (Inline Extensible Business Reporting Language): (i) consolidated statements of operations for the fiscal years ended December 31, 2019, 2018 and 2017; (ii) consolidated statements of comprehensive income for the fiscal years ended December 31, 2019, 2018 and 2017; (iii) consolidated balance sheets as of December 31, 2019 and 2018; (iv) consolidated statements of cash flows for the fiscal year ended December 31, 2019, 2018 and 2017; (v) consolidated statements of changes in stockholders’ equity for fiscal years ended December 31, 2019, 2018 and 2017; and (vi) the notes to the consolidated financial statements.
104	Cover Page Interactive Data File, formatted in inline XBRL and contained in Exhibit 101.

* Management contracts or compensatory plans/arrangements.

Item 16. FORM 10-K SUMMARY

None.

NCR Corporation

SCHEDULE II--VALUATION AND QUALIFYING ACCOUNTS
(In millions)

Column A	Column B	Column C		Column D	Column E
		Additions			
Description	Balance at Beginning of Period	Charged to Costs & Expenses	Charged to Other Accounts	Deductions	Balance at End of Period
Year Ended December 31, 2019					
Allowance for doubtful accounts	$31	$24	$—	$11	$44
Deferred tax asset valuation allowance	$485	$23	$—	$156	$352
Year Ended December 31, 2018					
Allowance for doubtful accounts	$37	$14	$—	$20	$31
Deferred tax asset valuation allowance	$415	$100	$—	$30	$485
Year Ended December 31, 2017					
Allowance for doubtful accounts	$41	$10	$—	$14	$37
Deferred tax asset valuation allowance	$445	$—	$—	$30	$415

SIGNATURES

Pursuant to the requirements of Section 13 or 15 (d) 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.

NCR CORPORATION

Date: February 28, 2020	By:	/s/ Andre J. Fernandez
		Andre J. Fernandez **Executive Vice President and Chief Financial Officer**

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the date indicated.

Signature	Title
/s/ Frank R. Martire **Frank R. Martire**	Executive Chairman
/s/ Michael D. Hayford **Michael D. Hayford**	President and Chief Executive Officer, and Director (Principal Executive Officer)
/s/ Andre J. Fernandez **Andre J. Fernandez**	Executive Vice President and Chief Financial Officer (Principal Financial Officer)
/s/ Beth A. Potter **Beth A. Potter**	Chief Accounting Officer (Principal Accounting Officer)
Gregory R. Blank	Director
/s/ Katie L Burke **Katie L. Burke**	Director
/s/ Chinh E. Chu **Chinh E. Chu**	Director
/s/ Richard L. Clemmer **Richard L. Clemmer**	Director
/s/ Robert P. DeRodes **Robert P. DeRodes**	Director
/s/ Deborah A. Farrington **Deborah A. Farrington**	Director
/s/ Georgette D. Kiser **Georgette D. Kiser**	Director
/s/ Kurt P. Kuehn **Kurt P. Kuehn**	Director
/s/ Kirk T. Larsen **Kirk T. Larsen**	Director
/s/ Linda Fayne Levinson **Linda Fayne Levinson**	Director
/s/ Matthew A. Thompson **Matthew A. Thompson**	Director

Date: February 28, 2020

Exhibit 4.6

DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

NCR Corporation has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended: our Common Stock.

General

Our authorized capital stock consists of 500,000,000 shares of Common Stock and 100,000,000 shares of preferred stock, par value $0.01 per share (the "Preferred Stock"), of which 2,397,754 shares are classified and designated as Series A Convertible Preferred Stock, liquidation preference $1,000 per share (the 'Series A Preferred Stock"). The rights of our Preferred Stock may be set by our Board of Directors from time to time. As of February 14, 2020, 128,651,400 shares of Common Stock were issued and outstanding (and no shares of Common Stock subject to forfeiture conditions were issued and outstanding) and 397,272 shares of Preferred Stock, consisting entirely of Series A Preferred Stock, were issued and outstanding.

Our Common Stock is traded on the New York Stock Exchange (the "NYSE") under the trading symbol "NCR". The following description of our capital stock does not purport to be complete and is subject to and qualified by our charter (the "Charter"), our Amended and Restated Bylaws (the "Bylaws") and the provisions of applicable Maryland law. The Charter and Bylaws are filed as exhibits to our Annual Report on Form 10-K, of which this Exhibit is a part, and are incorporated by reference. As used herein, unless otherwise expressly stated or the context otherwise requires, the terms "NCR", "we", "our" and "us" refer to NCR Corporation.

Common Stock

Voting Rights

The holders of the Common Stock are entitled to one vote for each share on all matters voted on by stockholders, including elections of directors, and, except as otherwise required by law or provided in any resolution adopted by the Board of Directors with respect to any series of Preferred Stock, the holders of such shares will possess all voting power. The holders of shares of Series A Preferred Stock are entitled to vote with the holders of the Common Stock as a single class on all matters submitted to a vote of the holders of Common Stock, with holders of Series A Preferred Stock voting on an as-converted basis, and certain matters will be voted on exclusively by the holders of Series A Preferred Stock as a separate class. The holders of the Common Stock do not have any conversion, redemption or preemptive rights to subscribe to any securities of NCR and generally do not have appraisal rights.

Election and Removal of Directors

The Charter and Bylaws provide that the number of our directors may be established only by our Board of Directors but may not be more than 20 or fewer than the minimum number permitted by the Maryland General Corporation Law (the "MGCL"), which is one. There will be no cumulative voting in the election of directors, and a director will be elected by a majority of all the votes cast at a duly called special or annual meeting of stockholders at which a quorum is present.

Except as may be provided by the terms of any class or series of preferred stock, any director may be removed for cause, by the affirmative vote of the holders of not less than 80% of the voting power of all shares of our stock entitled to vote generally in the election of directors.

Extraordinary Actions; Amendment to Charter and Bylaws

As permitted by Maryland law, the Charter provides that we may amend the Charter, consolidate, merge, convert into another form of entity, sell all or substantially all of our assets, engage in a statutory share exchange or dissolve if such action is approved by the affirmative vote of stockholders entitled to cast a majority of all of the votes entitled to be cast on the matter. In addition, our Bylaws may be altered or repealed and new Bylaws may be adopted by the affirmative vote of a majority of the total number of directors that we would have if there were no vacancies on the Board.

The Bylaws may also be amended by the affirmative vote of the holders of a majority of the voting power of all shares of our stock entitled to vote generally in the election of directors, voting together as a single class. Notwithstanding the foregoing, the affirmative vote of 80% of the voting power of all shares of our stock entitled to vote generally in the election of directors, voting together as a single class, is required to amend the provisions of the Charter relating to (i) stockholder actions generally (Article V); (ii) our Board of Directors (Article VII); (iii) the rights of our stockholders to amend the Bylaws (Section 8.2); and (iv) the voting

requirements relating to amendments to the Charter (Article IX). In addition, the affirmative vote of 80% of the voting power of all shares of our stock entitled to vote generally in the election of directors, voting together as a single class, is required to amend the provisions of our Bylaws relating to (i) the calling of special meetings of stockholders (Article I, Section 2); (ii) the advance notice procedures for stockholder proposals (Article I, Section 8); (iii) the opt-out from the Control Share Acquisition Act (Article I, Section 11); (iv) the general powers, tenure and number of directors (Article II, Sections 1, 2 and 3); and (v) the approval of amendments to the Bylaws (Article X).

Proxy Access

The Bylaws include provisions permitting, subject to certain eligibility, procedural and disclosure requirements, qualifying stockholders, or a qualifying group of no more than 20 stockholders, that have maintained continuous ownership of at least three percent of our outstanding shares of Common Stock for at least the three prior years to require us to include in our proxy materials for an annual meeting of stockholders a number of director nominees not to exceed the greater of two nominees or 25 percent of the number of directors up for election.

Business Combination Act and Control Share Acquisition Act

Certain provisions of the MGCL may have the effect of delaying, deferring or preventing a third party from making a proposal to acquire us or of implementing a change in control under circumstances that otherwise could provide our stockholders with the opportunity to realize a premium over the then-prevailing market price of their shares of Common Stock, including:

- "business combination" provisions that, subject to certain exceptions and limitations, prohibit certain business combinations between a Maryland corporation and an "interested stockholder" (defined generally as any person who beneficially owns 10% or more of the voting power of our outstanding voting stock or an affiliate or associate of ours who, at any time within the two-year period immediately prior to the date in question, was the beneficial owner of 10% or more of the voting power of our then outstanding shares of stock) or an affiliate of any interested stockholder for five years after the most recent date on which the stockholder becomes an interested stockholder, and thereafter imposes two super-majority stockholder voting requirements on these combinations, unless, among other conditions, our common stockholders receive a minimum price, as defined in the MGCL, for their shares of stock and the consideration is received in cash or in the same form as previously paid by the interested stockholder for its shares of stock; and
- "control share" provisions providing that, subject to certain exceptions, holders of "control shares" (defined as voting shares that, when aggregated with all other shares controlled by the stockholder, entitle the stockholder to exercise one of three increasing ranges of voting power in electing directors) acquired in a "control share acquisition" (defined as the direct or indirect acquisition of ownership or control of issued and outstanding "control shares") have no voting rights except to the extent approved by our stockholders by the affirmative vote of at least two-thirds of all the votes entitled to be cast on the matter, excluding shares owned by the acquirer, by our officers, or by our employees who are also directors of our company.

We have opted out of the business combination provisions of the MGCL and any business combination between us and any other person is exempt from the business combination provisions of the MGCL. In addition, pursuant to a provision in the Bylaws, we opted out of the control share provisions of the MGCL.

Subtitle 8 of the MGCL

The "unsolicited takeover" provisions of Title 3, Subtitle 8, of the MGCL permit our Board of Directors, without stockholder approval and regardless of what is provided in the Charter or the Bylaws, to implement certain takeover defenses, including adopting a classified board. Such takeover defenses may have the effect of delaying, deferring or preventing a third party from making an acquisition proposal for us or of delaying, deferring, or preventing a change in control of us under the circumstances that otherwise could provide our common stockholders with the opportunity to realize a premium over the then-prevailing market price of their shares of Common Stock.

Special Meetings of Stockholders

Our Board of Directors, the chairman of our Board of Directors, our president or our chief executive officer may call a special meeting of our stockholders. In addition, the Bylaws provide that a special meeting of our stockholders to act on any matter that may properly be considered at a meeting of our stockholders must be called by our secretary upon the written request of stockholders entitled to cast 25 percent of all the votes entitled to be cast on such matter at the meeting and containing the information required by the Bylaws.

Advance Notice of Director Nominations and New Business Proposals

The Bylaws provide that nominations of individuals for election as directors and proposals of business to be considered by stockholders at any annual meeting may be made only (1) pursuant to our notice of the meeting, (2) by or at the direction of our Board of Directors or (3) by any stockholder who was a stockholder of record both at the time of provision of notice and at the time

of the meeting, who is entitled to vote at the meeting in the election of each individual so nominated or on such other proposed business and who has complied with the advance notice procedures of the Bylaws.

The Bylaws provide that only the business specified in the notice of the meeting may be brought before a special meeting of our stockholders. Nominations of individuals for election as directors at a special meeting of stockholders at which directors are to be elected may be made only (1) by or at the direction of our Board of Directors or (2) if the special meeting has been called in accordance with the Bylaws for the purpose of electing directors, by a stockholder who is a stockholder of record both at the time of provision of notice and at the time of the special meeting, who is entitled to vote at the meeting in the election of each individual so nominated and who has complied with the advance notice procedures of the Bylaws.

A stockholder's notice must contain certain information specified by the Bylaws about the stockholder, its affiliates and any proposed business or nominee for election as a director, including information about the economic interest of the stockholder, its affiliates and any proposed nominee in us.

Dividend and Liquidation Rights

Subject to any preferential rights of any outstanding series of Preferred Stock created by the Board of Directors from time to time, including the Series A Preferred Stock, the holders of the Common Stock will be entitled to such dividends as may be authorized from time to time by the Board of Directors and declared by us from assets legally available therefor, and upon liquidation will be entitled to receive pro rata all assets of NCR available for distribution to such holders.

Other Matters

The Board of Directors may, without the consent of holders of the Common Stock, classify additional shares of stock as Series A Preferred Stock or create one or more new series of Preferred Stock. In any such event, the rights of the holders of the Common Stock will be subject to the preferential rights of the holders of Preferred Stock, including the Series A Preferred Stock.

Preferred Stock

Limitations on Rights of Holders of Common Stock

The Charter authorizes the Board of Directors to establish one or more classes or series of Preferred Stock and to determine, with respect to any class or series of Preferred Stock, the preferences, conversion or other rights, voting powers, restrictions, limitations as to dividends or other distributions, qualifications or terms or conditions of redemption of such class or series. We believe that the power of the Board of Directors to issue one or more classes or series of Preferred Stock provides us with flexibility in structuring possible future financings and acquisitions and in meeting other corporate needs that might arise. The authorized shares of Preferred Stock, as well as shares of Common Stock, are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange or automated quotation system on which our securities may be listed or traded. The NYSE currently requires stockholder approval as a prerequisite to listing shares in several instances, including where the present or potential issuance of shares could result in an increase in the number of shares of Common Stock, or in the amount of voting securities, outstanding of at least 20%. If the approval of our stockholders is not required for the issuance of shares of Preferred Stock or Common Stock, the Board of Directors may determine not to seek stockholder approval.

Anti-Takeover Protections

A decision by our Board of Directors to elect to be subject to the provisions of Subtitle 8, the supermajority vote required to remove directors and the advance notice provisions of our Bylaws could delay, defer or prevent a transaction or a change of control of our company. In addition, although the Board of Directors has no intention at the present time of doing so, it could issue an additional class or series of Preferred Stock that could, depending on the terms of such class or series, impede the completion of a merger, tender offer or other takeover attempt. The Board of Directors will make any determination to issue such shares based on its judgment as to the best interests of NCR. The Board of Directors, in so acting, could issue Preferred Stock having terms that could discourage an acquisition attempt through which an acquiror may be able to change the composition of the Board of Directors, including a tender offer or other transaction that some, or a majority, of our stockholders might believe to be in their best interests or in which stockholders might receive a premium for their stock over the then-current market price of such stock.

EXHIBIT 21

SUBSIDIARIES OF NCR CORPORATION
as of December 31, 2019

Name of Subsidiary	Jurisdiction of Incorporation
D3 Technology, Inc.	Delaware
Data Pathing Holdings LLC	Delaware
NCR EasyPoint LLC	Delaware
NCR European and South American Holdings LLC	Delaware
NCR Foreign Investco 1, LLC	Delaware
NCR Government Systems LLC	Delaware
NCR Indonesia LLC	Delaware
NCR International, Inc.	Delaware
NCR Italia Holdings LLC	Delaware
NCR Latin American Holdings LLC	Delaware
NCR Middle East Holdings, LLC	Delaware
NCR Payment Solutions Corporation	Delaware
NCR Payment Solutions, FL, LLC	Delaware
NCR Poland LLC	Delaware
NCR Receivables LLC	Delaware
NCR Solutions (Middle East) LLC	Delaware
North American Research Corporation	Delaware
Quantor Holdings LLC	Delaware
StopLift, Inc.	Delaware
Zynstra Holdings, Inc.	Delaware
Zynstra, Inc.	Delaware
Radiant Payment Services, LLC	Georgia
The National Cash Register Company	Maryland
JetPay HR & Payroll Services, Inc.	Pennsylvania
NCR Payment Solutions, PA, LLC	Pennsylvania
Payroll Tax Filing Services, Inc.	Pennsylvania
NCR Payment Solutions, LLC	Texas
TCR Business Systems, Inc.	Texas
Texas Digital Systems, Inc.	Texas
NCR Argentina S.R.L.	Argentina
NCR Australia Pty Limited	Australia
Quest Retail Technology Pty Ltd	Australia
Radiant Systems Asia-Pacific Pty Ltd.	Australia
RADS Australia Holdings Pty Ltd	Australia
Retalix Australia Pty Ltd	Australia
NCR Oesterreich Ges.m.b.H.	Austria
Orderman GmbH	Austria
Radiant Systems GmbH	Austria
NCR (Bahrain) W.L.L.	Bahrain
NCR Hospitality Bahrain SPC	Bahrain
NCR Belgium & Co. SNC	Belgium
Global Assurance Limited	Bermuda

EXHIBIT 21

SUBSIDIARIES OF NCR CORPORATION
as of December 31, 2019

Name of Subsidiary	Jurisdiction of Incorporation
NCR (Bermuda) Holdings Ltd.	Bermuda
NCR Bermuda (2006) Limited	Bermuda
NCR Services Ltd.	Bermuda
NCR Treasury Finance Limited	Bermuda
NCR Treasury Financing Limited	Bermuda
NCR d.o.o. Banja Luka	Bosnia
NCR Brasil – Industria de Equipamentos para Automacao Ltda.	Brazil
NCR Brasil Ltda	Brazil
Wyse Sistemas de Informatica Ltda	Brazil
NCR Canada Corp.	Canada
NCR Chile Industrial y Comercial Limitada	Chile
NCR Comercial E Inversiones Limitada	Chile
NCR (Bejing) Financial Equipment System Co., Ltd.	China
NCR (Guangzhou) Technology Co., Ltd.	China
NCR (Shanghai) Technology Services Ltd.	China
Retalix Technology (Bejing) Co. Ltd.	China
NCR Colombia Ltda	Colombia
Papeles y Suministros del Cuaca S.A. (Joint Venture)	Colombia
GHS Medtech Ltd.	Cyprus
NCR (Cyprus) Limited	Cyprus
NCR (Middle East) Limited	Cyprus
NCR (North Africa) Limited	Cyprus
NCR Global Financing Limited	Cyprus
NCR Ceska Republika spol. S.r.o.	Czech Republic
NCR Danmark A/S	Denmark
NCR Dominicana SRL	Dominican Republic
NCR Finland OY	Finland
4Front Technologies SA France	France
NCR France, SNC	France
NCR Antilles S.A.R.L.	French W.I.
NCR GmbH	Germany
NCR Ghana Limited	Ghana
NCR (Hellas) S.A.	Greece
NCR (Hong Kong) Limited	Hong Kong
NCR Magyarorszag Informacio-Technologiai Kft.	Hungary
Digital Insight India Products Private Limited	India
NCR Corporation India Private Limited	India
StopLift Infotech Private Limited	India
PT. NCR Indonesia	Indonesia
NCR Global Holdings Limited	Ireland
NCR Global Solutions Limited	Ireland

SUBSIDIARIES OF NCR CORPORATION
as of December 31, 2019

Name of Subsidiary	Jurisdiction of Incorporation
Moon Holdings S.P.V. Ltd.	Israel
NCR Global Ltd.	Israel
NCR Israel Ltd.	Israel
Tamar Industries M.R. Electronics (1985) Ltd.	Israel
NCR Italia S.r.l.	Italy
NCR Japan Ltd.	Japan
NCR (Kenya) Limited	Kenya
NCR Korea Co. Ltd.	Korea
RADS International SARL	Luxembourg
NCR (Macau) Limited	Macau
NCR Payments and Services Malaysia Sdn Bhd	Malaysia
NCR (Malaysia) Sdn Bhd	Malaysia
Radiant Systems Retail Solutions Sdn Bhd	Malaysia
NCR de Mexico S. de R.L. de C.V.	Mexico
NCR Solutions de Mexico S. de R.L. de C.V.	Mexico
Global Acquisition C.V.	Netherlands
NCR Dutch Holdings B.V.	Netherlands
NCR Nederland B.V.	Netherlands
NCR (NZ) Corporation	New Zealand
N.C.R. (Nigeria) PLC	Nigeria
NCR Norge AS	Norway
NCR Corporation de Centroamerica S.A.	Panama
NCR del Peru S.A.	Peru
NCR Cebu Development Center, Inc.	Philippines
NCR Corporation (Philippines)	Philippines
NCR Polska sp.z.o.o.	Poland
NCR Iberia Unipessoal, Lda.	Portugal
NCR Qatar LLC	Qatar
NCR A/O	Russia
NCR d.o.o. Beograd	Serbia
NCR Asia Pacific Pte Ltd	Singapore
NCR Singapore Pte Ltd	Singapore
Radiant Systems Retail Solutions Pte Ltd	Singapore
NCR International (South Africa) (Pty) Ltd.	South Africa
NCR Espana, S.L.	Spain
National Registrierkassen AG	Switzerland
NCR (Switzerland) GmbH	Switzerland
NCR Systems Taiwan Ltd.	Taiwan
NCR (Thailand) Limited	Thailand
Radiant Systems Co. Ltd.	Thailand
NCR Bilisim Sistemleri, L.S.	Turkey
NCR Ukraine Limited	Ukraine

EXHIBIT 21

SUBSIDIARIES OF NCR CORPORATION
as of December 31, 2019

Name of Subsidiary	Jurisdiction of Incorporation
NCR Financial Solutions Group Limited	United Kingdom
NCR Limited	United Kingdom
NCR UK Group Limited	United Kingdom
Radiant Systems UK (II) Limited	United Kingdom
Radiant Systems Limited	United Kingdom
Zynstra Limited	United Kingdom
N. Timms & Co. (Private) Ltd	Zimbabwe
NCR Zimbabwe (Private) Ltd	Zimbabwe

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-231034) and S-8 (Nos. 333-18797, 333-139553, 333-215248 and 333-217574) of NCR Corporation of our report dated February 28, 2020 relating to the financial statements and financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Atlanta, Georgia
February 28, 2020

Exhibit 31.1

CERTIFICATION

I, Michael D. Hayford, certify that:

1. I have reviewed this Annual Report on Form 10-K of NCR Corporation;

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 28, 2020

/s/ Michael D. Hayford

Michael D. Hayford
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, Andre J. Fernandez, certify that:

1. I have reviewed this Annual Report on Form 10-K of NCR Corporation;

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 28, 2020

/s/ Andre J. Fernandez

Andre J. Fernandez

Executive Vice President and Chief Financial Officer

Exhibit 32

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 on Form 10-K of NCR Corporation, a Maryland corporation (the "Company") for the period ending December 31, 2019 as filed with the U.S. Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers of the Company does hereby certify, pursuant to 18 U.S.C. § 1350 (section 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; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

The foregoing certification (i) is given to such officers' knowledge, based upon such officers' investigation as such officers reasonably deem appropriate; and (ii) is being furnished solely pursuant to 18 U.S.C. § 1350 (section 906 of the Sarbanes-Oxley Act of 2002) and is not being filed as part of the Report or as a separate disclosure document.

Dated: February 28, 2020	/s/ Michael D. Hayford
	Michael D. Hayford
	President and Chief Executive Officer
Dated: February 28, 2020	/s/ Andre J. Fernandez
	Andre J. Fernandez
	Executive Vice President and Chief Financial Officer

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signatures that appear in typed form within the electronic version of this written statement required by Section 906, has been provided to NCR Corporation and will be retained by NCR Corporation and furnished to the United States Securities and Exchange Commission or its staff upon request.