DEERE & COMPANY
2019 ANNUAL REPORT

JOHN DEERE

NEW 8-SERIES TRACTOR LINEUP REPRESENTS LEAP FORWARD

The all-new 8RX (shown here) is the industry's first fixed-frame four-track tractor. It's part of the 8-series tractor lineup that includes the 8R wheel tractors and 8RT two-track tractors. The 8-series features numerous precision ag technology updates that simplify remote monitoring, tractor and field operations, and data transfer.

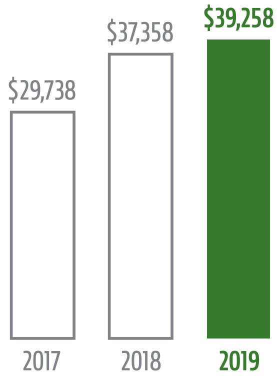
The 8-series' eAutoPower transmission earned the sole Gold Medal for innovation in 2019 from DLG (German Agricultural Society) at Agritechnica, the world's leading trade show for agricultural technology.

Despite unsettled conditions in the agricultural sector, John Deere had a year of solid performance. Net sales and revenues were the highest in company history while net income was second-highest. Construction & Forestry operations had a record year for sales and operating profit. Further, customers responded positively to the company's many new products and adopted precision technologies at a high rate.

NET SALES & REVENUES

$39.26 BILLION

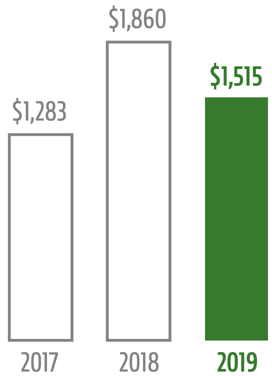
UP 5%



SHAREHOLDER VALUE ADDED*

$1.52 BILLION

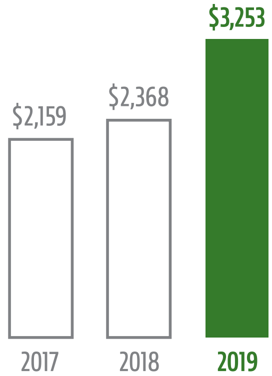
DOWN 19%



NET INCOME**
(attributable to Deere & Company)

$3.25 BILLION

UP 37%



The amounts shown in the charts above represent millions of dollars.

*SVA, referred to throughout this report, is a non-GAAP financial measure. See page 21 for details.

**Net income in 2019 was positively affected by $68 million and in 2018 was negatively affected by $704 million due to discrete income tax adjustments related to U.S. tax reform. Adjusted net income was $3,185 million in 2019 and $3,072 million in 2018. Adjusted EPS was $9.94 and $9.39 for the respective periods. Adjusted net income and adjusted EPS are non-GAAP measures.

New L-series wheel loaders offer an intuitive solution for projects requiring agility and versatility. The loaders feature improvements in productivity, comfort, and visibility.

DEERE DELIVERS SOUND PERFORMANCE IN YEAR OF UNCERTAINTY

Despite unsettled conditions that weighed on demand for popular models of equipment, John Deere had a year of sound performance in 2019. Among our achievements, we launched important new products with the latest technology and advanced features, improved our competitive position throughout much of the world, and took further actions to ensure the success of the strategic plan that will guide our efforts in coming years. Plus, we provided solid returns to our shareholders.

The overall economic picture continued to be positive, leading to improved demand for smaller equipment and record sales and profits for Deere's construction and forestry business. Key agricultural markets, however, remained under pressure. Persistent trade tensions and difficult growing and harvesting conditions caused many farmers to become cautious about making major purchases.

Net income for fiscal 2019 was $3.25 billion, a 37 percent increase over 2018 and the second-highest total in company history. Net sales and revenues rose 5 percent, to $39.26 billion, a new high. Adjusted for changes in the U.S. tax code – which reduced 2018 reported earnings by a significant amount – net income was up 4 percent.

The company again generated healthy cash flow in addition to $1.52 billion in economic profit, or Shareholder Value Added* (SVA). SVA equals operating profit minus an implied cost of capital. It is a primary measure for managing the company and making investment decisions.

Deere maintained its strong financial condition, ending the year with a healthy cash balance of about $3.9 billion. Our equipment operations carried relatively modest debt, while the financial-services business remained conservatively capitalized.

The company's financial performance allowed it to make further investments in advanced products, technologies, and other growth-oriented projects. For the year, Deere devoted $2.9 billion to research and development and capital expenditures.

Also, nearly $2.2 billion was returned to investors in the form of dividends and share repurchases. The quarterly dividend rate was increased during the year by 10 percent, marking the eighth increase in the last decade. Deere shareholders realized a total return of 35 percent for the year versus 14 percent for the broader market.

BROAD LINEUP BOLSTERING PERFORMANCE

Deere's largest business, Agriculture & Turf (A&T), reported a small increase in sales but lower profit. Owing in part to higher production costs, operating profit declined 11 percent to $2.5 billion. The division benefited from sales of small tractors and turf equipment, while sales of larger models were generally lower. Of significance, customers responded positively to products featuring the latest in precision technologies.

With help from a stronger economy and our Wirtgen roadbuilding unit, results for Construction & Forestry (C&F) moved higher. Sales increased by 10 percent and operating profit rose 40 percent, exceeding $1 billion for the first time. Growth was further boosted by construction activity in North America. C&F drove record volumes across key equipment categories.

Deere's financial-services unit made a substantial contribution to company earnings while providing competitive financing to our global customers. Its loan and lease portfolio grew by 7 percent, to $46.2 billion, as credit quality continued to be strong. Net income was lower mainly due to prior-year tax benefits and impairments and higher losses on operating leases in 2019.

GLOBAL TRENDS SUPPORTIVE OF GROWTH

Deere's record of performance has provided a sturdy foundation for the company to capitalize on trends of power and promise. These trends, as we've noted in the past, center on a growing global population and an emerging middle class in many parts of the world.

Although commodity prices may show wide variation over short periods, demand tends to follow a steadier course. In the last half century, global consumption of

New VÖGELE Super 3000-3i tracked paver can pave widths up to 18 meters (59 feet). The largest paver in VÖGELE's lineup, the Super 3000-3i, is designed for a broad range of applications.

DEERE STRATEGY FOCUSES ON TECHNOLOGY, GLOBAL GROWTH, AND STANDOUT FINANCIAL PERFORMANCE

New R4140i and R4150i self-propelled sprayers, designed for the European market, include the ExactApply intelligent nozzle control system for precision spraying.

grain and oilseeds has declined only three times and risen without interruption for more than two decades. We have every reason to believe this trend of steady growth in demand will continue, requiring increased levels of agricultural production.

At the same time, people are racing to live in cities, leading to a greater need for roads, bridges, buildings, and the equipment needed to construct them. Urbanization also spurs development of an economic middle class, especially in fast-growing emerging markets.

PURSUING A FAR-REACHING STRATEGY

These factors point to continuing demand for productive equipment and underscore our company's ambitious operating strategy. The plan stresses the importance of technology, global growth, and standout financial performance. It aims to establish a more flexible cost structure and a more versatile business and product lineup that can generate solid financial results on a consistent basis.

At the heart of the strategy is a commitment to innovation and quality. Throughout our history, both have proved crucial to expanding our global presence and providing customers with exceptional productivity and reliable performance.

In support of our strategic plan, we are placing particular emphasis on these areas:

- **Precision Technologies.** Intensify our efforts in precision technologies, a field certain to define the future of our industries and one in which Deere is committed to being the undisputed leader. Areas of focus include making further advances in vehicle automation and autonomy and increasing the number of customers who choose to manage their farms through our digital operations center.
- **Aftermarket.** Expand Deere's aftermarket business by increasing our share of parts purchased and service work performed on our products over their life cycle.
- **Capital Allocation.** Ensure a disciplined approach to capital allocation by focusing research and investment dollars on the most promising and profitable opportunities. We will, at the same time, conduct a careful assessment of those operations that cannot meet our performance standards.
- **Structure**. Create a leaner organizational structure that can respond to changing market conditions with greater speed and agility. The company has taken a number of streamlining actions in recent months and is evaluating further moves along these lines.
- **Talent.** Step up efforts to become a magnet for talented employees, especially those with the technical skills needed to ensure our success as a smart industrial company.

PRECISION AG MAKES FURTHER GAINS AS CUSTOMERS EMBRACE ITS BENEFITS

DB Planter with ExactEmerge is a large row-crop planter capable of faster planting speeds and precise seed placement at speeds up to 10 miles per hour.

SETTING THE PACE IN INNOVATION

Long a Deere hallmark, product innovation earned further global recognition last year, including a gold medal and three silver medals from Europe's leading agricultural trade fair and a pair of silver medals from a well-regarded agribusiness exhibition in France. In addition, a noted group of U.S. agricultural and biological engineers recognized six of our new products for innovation. Among the honored innovations was an advanced tractor transmission that helps drive electrically-powered implements as well as a popular feature that enables dealers to remotely monitor the condition of customer equipment in the field.

During the year, extensive updates were made to the company's flagship row-crop tractors, including introduction of the industry's first fixed-frame four-track tractor. Enhancements to other large and mid-sized tractors boost comfort and performance and offer increased levels of innovation. A newly launched self-propelled sprayer, equipped with a 1,600-gallon tank and 132-foot carbon-fiber boom, has raised the bar for applicator productivity. In another case, an advanced row-crop planter for customers in South America delivers up to twice the planting accuracy as previous models.

New construction equipment included mid-sized and production-class wheel loaders that provide improved comfort and performance as well as an upgraded crawler dozer with more power and durability. Our Wirtgen roadbuilding unit introduced a new generation of large milling machines and pavers.

Precision agriculture made further gains in 2019 as customers increasingly embraced its productivity-enhancing benefits. Sales continued to grow for our popular systems that automatically guide equipment in the field with great accuracy. Another product that has enjoyed wide acceptance is a harvesting-management tool that automates combine settings and improves machine performance.

What's more, the John Deere Operations Center – which we regard as a proxy for growth in precision technologies – continued to gain users. The center ended the year with customer accounts holding more than 160 million acres of production data.

PROMOTING SUSTAINABILITY IN OPERATIONS & PRODUCTS

John Deere is committed to operating in a safe, environmentally sustainable manner and developing products that disturb the environment to a minimal extent.

During the year, a new filtration system was installed at our Greeneville, Tennessee, factory, which reduced water usage in the paint system by over 20 percent. Also, Deere headquarters and several factories in Mexico undertook major composting projects to reduce waste that otherwise would go to landfills. In another example, a new monitoring system helped manage

energy consumption at our factory in Bruchsal, Germany.

Meanwhile, customers have responded favorably to advanced products designed and built with sustainability in mind. These products apply inputs with great precision, efficiently guide equipment through the field, and offer improved fuel economy as well as greater reliance on electric drives. Our Blue River Technology unit continued with the development of sprayers that aim to dramatically reduce herbicide usage.

Versatile 6M-series tractor lineup has been significantly updated for 2020 with improvements in visibility, comfort, maneuverability, and technology. Their compact size, wide horsepower range, and versatility make 6M tractors a popular power choice for a variety of farm applications – as well as roadside mowing and property maintenance.

SHOWING THE WAY IN RESPONSIBLE CITIZENSHIP

Wherever we operate, Deere is committed to sharing with others and being a responsible corporate citizen. During the year, the company and its foundation made charitable contributions of approximately $38 million, helping improve lives throughout the world. These contributions focused on empowering smallholder farmers, helping local communities grow, and providing quality educational opportunities.

As in past years, Deere employees supported their communities through extensive volunteer efforts. By logging some 215,000 volunteer hours in 2019, a record, employees moved closer to the goal of 1 million volunteer hours for the period 2017 through 2022.

Deere continued its work in support of smallholder farmers in southeast Asia and sub-Saharan Africa. During the year, the program was expanded to Nigeria, where it is helping farmers in 11 villages adopt more modern agricultural practices and achieve higher living standards.

Well-known for its record of responsible citizenship, Deere earned further accolades in 2019. The company again appeared in prominent listings of best employers and was recognized for having one of the world's top-100 brands. For a second year, Deere was honored as a leading U.S. company for social innovation by the American Innovation Index Awards. Sponsored by Fordham University, the awards recognize the ways in which a company's activities and products benefit society.

GAINING STRENGTH & STABILITY

Through its performance in 2019 and other recent years, Deere has shown an improving ability to produce solid financial results under a wide range of market conditions. This record of success reflects a steady investment in new products and markets as well as leadership in emerging fields such as precision technologies. Our business model has gained strength and stability as a result, making Deere a more formidable competitor and a better investment.

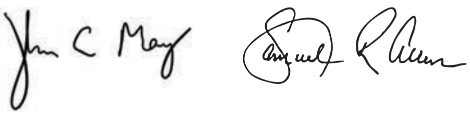
This is a great time to be associated with John Deere. We are, after all, in an unprecedented position to help respond to the world's growing need for food, shelter, and infrastructure – and do so in a manner that is both sustainable and profitable.

By working together and capitalizing on the collective strengths and unique attributes of employees, dealers, and suppliers worldwide, we firmly believe Deere can seize the great opportunities ahead and extend its record of success well into the future.

On behalf of the John Deere team,

John C. May
Chief Executive Officer

Samuel R. Allen
Chairman



December 19, 2019

COMPANY MAKES MAJOR GAINS IN EVENTFUL DECADE

The year 2019 capped an eventful decade in which John Deere achieved great success and took major steps to create a more dynamic business model. Over the period, the company expanded its customer base, added to its global footprint, and made strides in innovation and precision technologies. Net income totaled nearly $26 billion for the decade, which included nine of the ten best years for earnings in company history. Deere also completed its largest-ever acquisition with the purchase of Wirtgen Group, the world's premier roadbuilding company. The move brought global size and scale to our construction equipment division, whose sales tripled during the decade.

Deere also created a more tightly focused business lineup by shedding non-core operations and acquiring or strengthening those that build on the company's leadership in farm equipment and technology. Perhaps the biggest story was the emergence of precision technologies, which have brought unparalleled capabilities to our customers and are helping establish Deere as a smart industrial company.

As proof of our success building a more resilient enterprise, even in the face of a three-year (2014-16) sales decline of over 30 percent, annual earnings never dipped below $1.5 billion. Investors profited, too: Deere stockholders realized a total return of nearly 17 percent a year for the 10-year period versus about 14 percent for the overall market.

BUILDING A BETTER WORLD

John Deere is uniquely positioned to deliver sustainable outcomes.

At John Deere, sustainability starts with our higher purpose of serving people all around the world. That's why, after more than 182 years, we continue to demonstrate our dedication to feeding a growing population, empowering global prosperity, protecting natural resources, and more.

These activities are so important to our success that we have integrated them explicitly into the John Deere Strategy. In 2019, we built upon our unique position to deliver sustainable outcomes in three ways:

– Developed cutting-edge technologies that will make farmers more productive and profitable and help them feed a growing population with fewer inputs.

– Pursued innovations that protect our world's resources and affirm the role of our customers as vital stewards of the environment.

– Invested in economic development and growth.

"For us, sustainability goes even further and ultimately creates the framework upon which our long-term success depends," said Deere Chairman Sam Allen. "It encompasses how we govern our business, foster safe work environments, develop distinctive products, inspire our global talent, and give back to the communities we call home."

John Deere and our stakeholders are uniquely positioned to address the world's biggest challenges. Together, we are building momentum for a better, more sustainable world.

Read the Deere & Company Sustainability Report at www.JohnDeere.com/sustainabilityreport to find out more about how executing the John Deere strategy is delivering sustainable outcomes for all stakeholders.

Sustainability creates the framework upon which our long-term success depends.

WENTWORTH CLUB AND JOHN DEERE ANNOUNCE PARTNERSHIP

Legendary golf club seeks equipment that enhances sustainability.

Nestled in the picturesque English town of Virginia Water, the Wentworth Club and its three world-class golf courses are steeped in history.

Home to a top European Tour event, the BMW Championship, Wentworth is known for its commitment to nature and conservation. The club's courses are painstakingly maintained and celebrated for their pristine condition.

Wentworth management trusts only the finest equipment to care for its courses in a sustainable manner — a key factor behind the club's decision in 2019 to form an exclusive partnership with Deere to supply golf course maintenance equipment. Today the fleet consists of more than 140 machines — ranging from fairway mowers to GPS precision sprayers.

"We knew the environmental and sustainability aspects were really important to Wentworth," said Brian D'Arcy, division sales manager.

An agricultural industry leader in GPS technology, Deere also is developing systems for golf course maintenance. One example is Deere's ProGator GPS precision sprayer. It delivers significant environmental benefits by applying inputs with great accuracy and only to predetermined target areas. Using the sprayer, Wentworth both reduced chemical use 20 percent and cut costs.

The sprayer uses Deere's automatic-guidance system to steer itself with single-inch accuracy.

"We are delighted to welcome Deere to Wentworth as our exclusive partner in the supply of greenskeeping and grounds machinery through our dealer Farol," said Kenny Mackay, Wentworth director of golf. "This agreement represents a significant investment to ensure our fleet is always at the forefront of technology and innovation."

The Golf Environmental Organization awarded Wentworth certification for its commitment to the environment and the community. The certification is the international standard for golf course sustainability.

ENTERPRISE & EQUIPMENT OPERATIONS

BROAD LINEUP, TECHNOLOGIES DRIVE PERFORMANCE

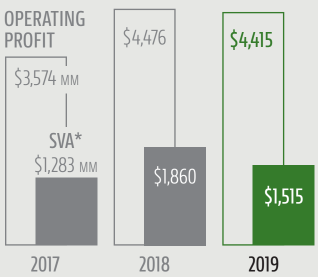
The John Deere Foundation supports the Joint Initiative for Village Advancement (JIVA) to combat poverty in rural India. Indian farmers receive training to improve productivity, income security, and rural development. Deere is also involved in similar efforts in Ghana and Nigeria.

Deere delivered on opportunities to serve its global customers with innovative products and services in 2019, resulting in a solid financial performance. Improved conditions in construction and forestry markets plus success of new products and increasing adoption of precision technologies contributed to results.

DEERE ENTERPRISE

- Net sales and revenues increase 5% to $39.26 billion, a new high, compared with $37.36 billion in 2018.
- Net income totals $3.25 billion, second-highest in company history, up 37%. Adjusted earnings, mainly reflecting U.S. tax-code changes, are up 4%.**
- Earnings per share total $10.15, compared with $7.24 per share in 2018. (Adjusted EPS is $9.94 vs. $9.39.**)
- Enterprise SVA totals $1.52 billion, versus $1.86 billion in 2018.
- Quarterly dividend rate increased by 10% to 76 cents per share; total dividends paid to shareholders reach record $943 million for year. Share repurchases are $1.25 billion.

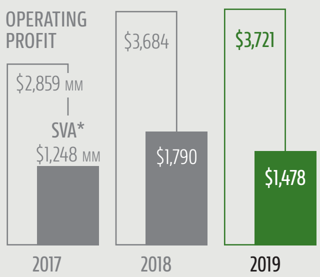
Deere & Company Enterprise



EQUIPMENT OPERATIONS

- Equipment net sales reach $34.89 billion, an increase of 5% for the year; operating profit increases slightly to $3.72 billion.
- Cash flow from equipment operations totals $3.20 billion.
- R&D spending equals $1.78 billion and capital expenditures are $1.08 billion, reflecting commitment to advanced products and profitable growth.
- Agritechnica, world's leading trade show for agricultural technology, awards Deere the only gold medal as well as three silver medals for latest innovations, including John Deere eAutoPower transmission.
- John Deere Power Systems debuts new electric drivetrain components, giving customers flexibility to implement hybrid power.
- Deere earns Electrification Application of the Year from *Diesel Progress* magazine for 644K and 944K construction loaders.

Equipment Operations



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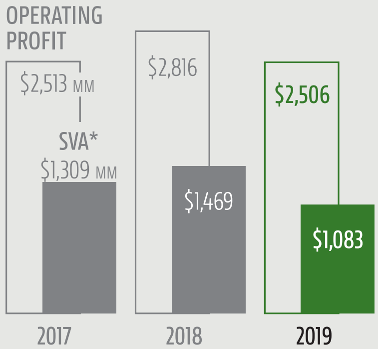
AGRICULTURE & TURF

ADVANCED PRODUCT LINEUP HELPS A&T GAIN CUSTOMERS

Despite uncertainties in the farm economy, the Agricultural & Turf (A&T) division achieved further growth, benefiting from its advanced product lineup and growing customer adoption of precision technologies.

- A&T sales gain 2%, to $23.7 billion, versus 2018; operating profit moves lower – $2.51 billion compared with $2.82 billion.
- Division benefits from higher sales of smaller models and turf equipment, while demand for large equipment is impacted by market uncertainty.
- SVA decreases to $1.08 billion compared with $1.47 billion in 2018 mainly due to lower operating profit.
- Deere launches new 8-series tractors – its most technologically advanced tractor lineup to date – with precision technology updates and productivity-enhancing features.
- American Society of Agricultural and Biological Engineers (ASABE) presents six awards to Deere for products ranging from a new tillage tool to applications that boost machine performance.
- New R4140i and R4150i sprayers bring latest technologies to European market, including ExactApply, an intelligent nozzle control system, and advanced cab featuring next generation operator interface.
- Strong adoption of precision ag tools and technology drives sales in major markets. John Deere Operations Center – a digital system to help customers manage data and improve the way they farm – sees significant growth in global-acre coverage, or "engaged acres."

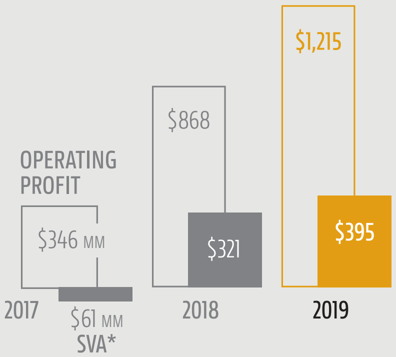


Smart, integrated tools such as Combine Advisor make it easier on S-700 series combine owners, allowing the combine to make needed adjustments automatically. The S700 combines continue to set the standard for advanced grain harvesting technology.

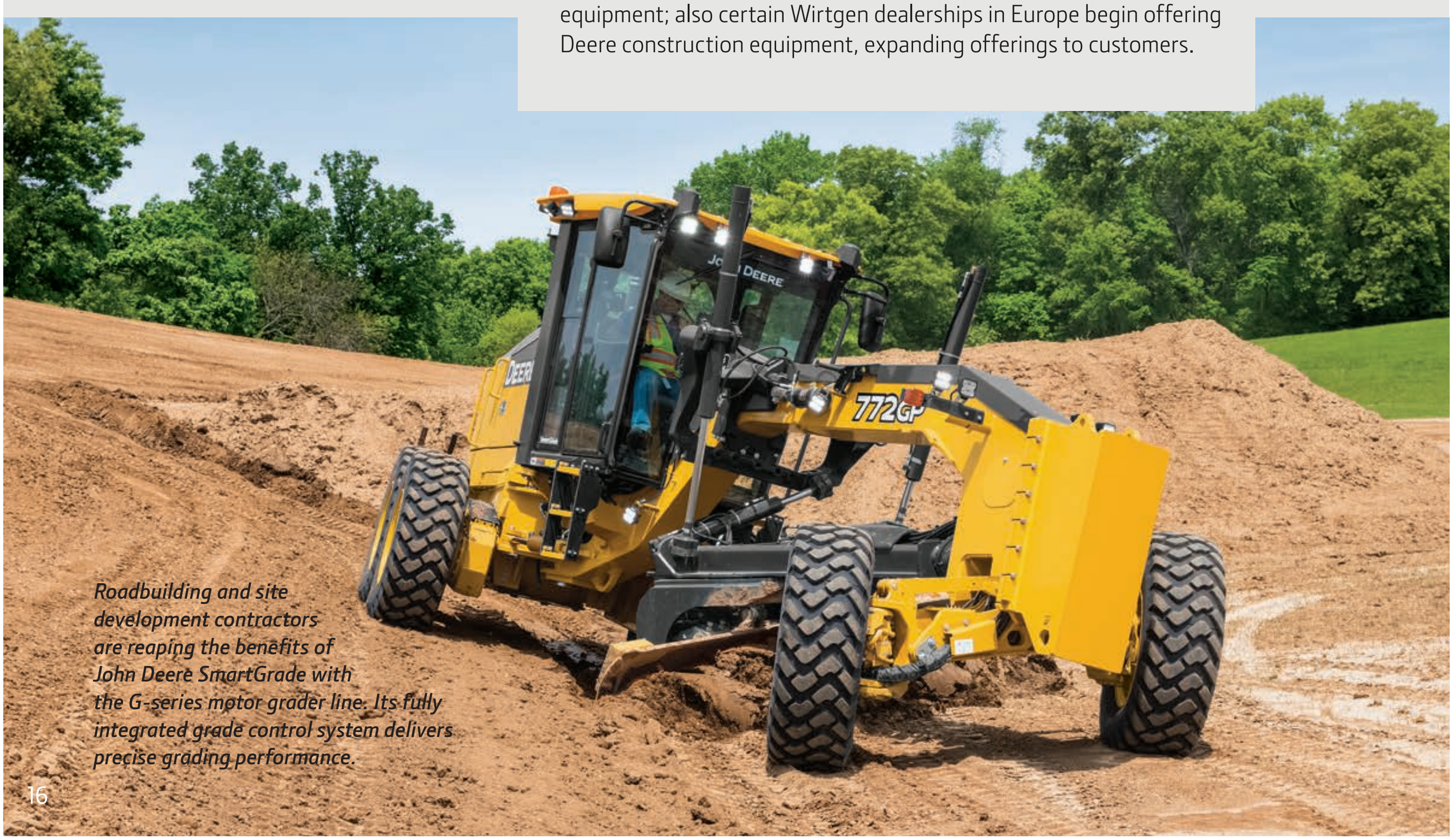
CONSTRUCTION & FORESTRY

INNOVATIVE PRODUCTS, MARKET GROWTH LEAD TO STRONG PERFORMANCE

The Construction & Forestry (C&F) division had a record year, achieving the highest sales and operating profit in its history. Favorable economic conditions boosted demand. Wirtgen roadbuilding unit made a substantial contribution to the division's results.



- C&F sales rise 10% to $11.2 billion; operating profit increases 40% to $1.2 billion.
- Wirtgen Group generates operating profit of $343 million.
- SVA climbs to $395 million mainly due to higher operating profit.
- Division launches innovative new products to meet market needs. Included are six L-series wheel loaders with new features that boost productivity, comfort, and visibility. Also debuting are larger 850L dozer featuring industry-leading horsepower and innovative PL100 pipelayer-ready crawler.
- Deere demonstrates strong integration between C&F and Wirtgen products at world's largest construction-machinery trade show held in Germany.
- Select C&F dealerships begin offering Wirtgen roadbuilding equipment; also certain Wirtgen dealerships in Europe begin offering Deere construction equipment, expanding offerings to customers.



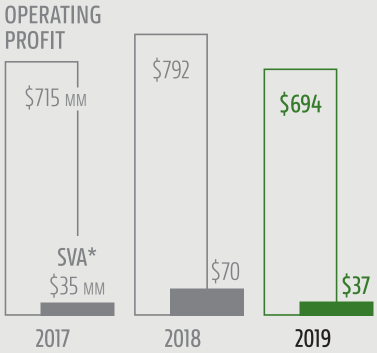
Roadbuilding and site development contractors are reaping the benefits of John Deere SmartGrade with the G-series motor grader line. Its fully integrated grade control system delivers precise grading performance.

FINANCIAL SERVICES

GROWING PORTFOLIO, SOLID CREDIT QUALITY SUPPORT RESULTS

John Deere Financial Services (JDF) had another profitable year in 2019 while supporting the sale of company products worldwide. Although income was lower, the division saw continued portfolio growth and experienced strong credit quality.

- JDF net income falls to $539 million, with decline due to prior-year tax reform as well as impairments and higher losses on operating leases.
- Lower operating profit – $694 million versus $792 million in 2018 – leads to reduction in SVA.
- Loan and lease portfolio grows by more than $3 billion, or 7%, to $46.2 billion; biggest increases are in retail and wholesale receivables financed.
- Credit quality remains strong – provision for credit losses equals .07% of average portfolio.
- Division makes investment in technology to improve and streamline customer experience. Instant decision tools enable rapid, on-the-spot financing determinations.
- Equipment Leasing and Financing Association awards Excellence in Innovation prize to division for automated equipment-inventory system that tracks location of dealer-financed machines.
- Collaboration with Wirtgen Group supports equipment sales through retail and wholesale financing in key markets such as North America and Europe.



LEADERSHIP TEAM

John C. May (22)
Chief Executive Officer

Ryan D. Campbell (12)
Senior Vice President and Chief Financial Officer

James M. Field (25)
President, Worldwide Construction & Forestry and Power Systems

Marc A. Howze (18)
Senior Vice President and Chief Administrative Officer

Mary K.W. Jones (22)
Senior Vice President, General Counsel and Public Affairs

Rajesh Kalathur (23)
President, John Deere Financial, and Chief Information Officer

Cory J. Reed (21)
President, Worldwide Agriculture & Turf Division: Americas and Australia; Global Harvesting and Turf Platforms; and Ag Solutions

Markwart von Pentz (29)
President, Worldwide Agriculture & Turf Division: Europe, CIS, Asia, and Africa; Global Tractor and Hay & Forage Platforms; and Advanced Engineering

Titles and years of service (in parentheses) as of January 1, 2020.

Deere leadership team shown at Deere & Company World Headquarters in Moline, Illinois.

From left: Cory J. Reed, Marc A. Howze, John C. May, Mary K.W. Jones, James M. Field, Ryan D. Campbell, Rajesh Kalathur, and Markwart von Pentz

BOARD OF DIRECTORS

Samuel R. Allen (10)
Chairman, Deere & Company

John C. May (Effective August 28, 2019)
Chief Executive Officer, Deere & Company

Vance D. Coffman (15)
Retired Chairman and Chief Executive Officer,
Lockheed Martin Corporation
Aerospace, defense, and information technology

Alan C. Heuberger (3)
Senior Manager, BMGI
Private investment management

Charles O. Holliday, Jr. (10)
Chairman, Royal Dutch Shell plc
Oil and natural gas exploration, refining, and product sales

Dipak C. Jain (17)
President (European), China Europe International
Business School
International graduate business school

Michael O. Johanns (4)
Retired U.S. Senator from Nebraska and former
U.S. Secretary of Agriculture

Clayton M. Jones (12)
Retired Chairman and Chief Executive Officer,
Rockwell Collins, Inc.
Aviation electronics and communications

Gregory R. Page (6)
Chairman, Corteva, Inc.
Agricultural seeds, crop protection products, and digital solutions

Sherry M. Smith (8)
Former Executive Vice President and Chief Financial Officer,
Supervalu Inc.
Retail and wholesale grocery and retail general merchandise products

Dmitri L. Stockton (4)
Retired Special Advisor to Chairman and Retired
Senior Vice President, General Electric Company
Power and water, aviation, oil and gas, healthcare, appliances and lighting, energy management, transportation, and financial services

Former Chairman, President, and Chief Executive Officer,
GE Asset Management Inc.
Global investments

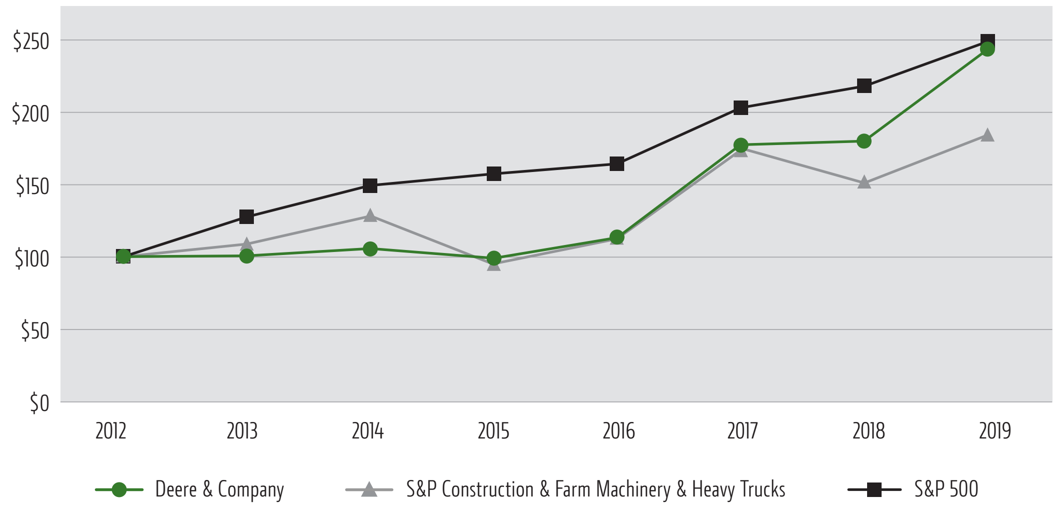
Sheila G. Talton (4)
President and Chief Executive Officer, Gray Matter Analytics
Data analytics consulting services for financial services and healthcare industries

From left:
Alan C. Heuberger,
Sheila G. Talton,
Michael O. Johanns,
Sherry M. Smith,
Charles O. Holliday,
Dmitri L. Stockton,
Dipak C. Jain,
Vance D. Coffman,
John C. May,
Gregory R. Page,
Samuel R. Allen,
Clayton M. Jones

Figures in parentheses represent complete years of board service through January 1, 2020.

7-YEAR CUMULATIVE TOTAL RETURN

Deere compared to S&P 500 Index and S&P 500 Construction & Farm Machinery & Heavy Trucks Index



The graph compares the cumulative total returns of Deere & Company, the S&P 500 Construction & Farm Machinery Index, and the S&P 500 Stock Index over a seven-year period. It assumes $100 was invested on October 26, 2012, and that dividends were reinvested. Deere & Company stock price at November 3, 2019, was $176.11. The Standard & Poor's 500 Construction & Farm Machinery Index is made up of Caterpillar (CAT), Cummins (CMI), Paccar (PCAR), and Wabtec (WAB). The stock performance shown in the graph is not intended to forecast and does not necessarily indicate future price performance.

	2012	2013	2014	2015	2016	2017	2018	2019
Deere & Company	$100.00	$100.08	$105.08	$98.51	$113.40	$177.03	$179.77	$242.64
S&P Con & Farm Mach & Hvy Trks	$100.00	$108.33	$127.82	$94.48	$112.25	$173.43	$151.10	$184.25
S&P 500	$100.00	$127.18	$149.14	$156.89	$163.97	$202.72	$217.61	$248.78

SHAREHOLDER INFORMATION

ANNUAL MEETING

The annual meeting of company shareholders will be held at 10 a.m. CT on February 26, 2020, at Deere & Company World Headquarters, One John Deere Place, Moline, Illinois 61265.

TRANSFER AGENT & REGISTRAR

Send all correspondence, including address changes and certificates for transfer, as well as inquiries concerning lost, stolen, or destroyed stock certificates or dividend checks, to:

Deere & Company
c/o Broadridge Corporate Issuer Solutions, Inc.
P.O. Box 1342
Brentwood, NY 11717

Phone toll-free: 800-268-7369 (inside U.S., U.S. territories, and Canada).
From outside the U.S., U.S. territories, and Canada, call: 720-399-2074
Hearing impaired: 855-627-5080

Email: shareholder@broadridge.com

www.shareholder.broadridge.com/DE

DIVIDEND REINVESTMENT & DIRECT PURCHASE PLAN

Investors may purchase initial Deere & Company shares and automatically reinvest dividends through the Broadridge Direct Stock Purchase Plan. Optional monthly cash investments may be made automatically through electronic debits.

For inquiries about existing reinvestment accounts, call 800-268-7369 or write to:

Deere & Company
Broadridge Corporate Issuer Solutions, Inc.
P.O. Box 1342
Brentwood, NY 11717

SHAREHOLDER RELATIONS

Deere & Company welcomes your comments:

Deere & Company
Shareholder Relations Department
One John Deere Place
Moline, IL 61265-8098
Phone: (309) 765-4491 Fax: (309) 765-4663
www.JohnDeere.com/Investors

INVESTOR RELATIONS

Securities analysts, portfolio managers, and representatives of financial institutions may contact:

Deere Investor Relations
Deere & Company
One John Deere Place
Moline, IL 61265-8098
Phone: 309-765-4491
Email: DeereIR@JohnDeere.com
www.JohnDeere.com/Investors

STOCK EXCHANGES

Deere & Company common stock is listed on the New York Stock Exchange under the ticker symbol DE.

FORM 10-K

The annual report on Form 10-K filed with the Securities and Exchange Commission is available online or upon written request to Deere & Company Shareholder Relations.

AUDITORS

Deloitte & Touche LLP
Chicago, Illinois

SVA: FOCUSING ON GROWTH AND SUSTAINABLE PERFORMANCE

Shareholder Value Added (SVA) — essentially, the difference between operating profit and the pretax cost of capital — is a metric used by John Deere to evaluate business results and measure sustainable performance. To arrive at SVA, each equipment segment is assessed a pretax cost of assets — generally 12% of average identifiable operating assets with inventory at standard cost (believed to more closely approximate the current cost of inventory and the company's related investment). The financial services segment is assessed a cost of average equity — approximately 13% pretax (15% in 2017 and 2018). The amount of SVA is determined by deducting the asset or equity charge from operating profit.

Additional information on these metrics and their relationship to amounts presented in accordance with U.S. GAAP can be found at our website, www.JohnDeere.com/Investors. **Note:** Some totals may vary due to rounding.

To create and grow SVA, Deere equipment operations are targeting an operating return on average operating assets (OROA) of 20% at mid-cycle sales volumes and equally ambitious returns at other points in the cycle. (For purposes of this calculation, operating assets are average identifiable assets during the year with inventories valued at standard cost.)

DEERE EQUIPMENT OPERATIONS*

$MM unless indicated otherwise	2017	2018	2019
Net sales		33,351	34,886
Net sales – excluding Wirtgen	25,885	30,324	31,693
Operating profit		3,684	3,721
Operating profit – excluding Wirtgen	2,859	3,568	3,378
Average Assets			
With inventories at standard cost		20,959	22,139
With inventories at standard cost – excluding Wirtgen	13,421	14,825	15,838
With inventories at LIFO		19,701	20,761
With inventories at LIFO – excluding Wirtgen	12,150	13,566	14,460
Operating Return on Assets (OROA)			
OROA % @ LIFO	23.5%	26.3%	23.4%
Asset turns (std cost – excluding Wirtgen)	1.93	2.05	2.00
Operating margin % – excluding Wirtgen	11.05%	11.77%	10.67%
OROA % @ standard cost – excluding Wirtgen	21.3%	24.1%	21.3%
Average assets @ std cost – excluding Wirtgen	13,421	14,825	15,838
Operating profit – excluding Wirtgen	2,859	3,568	3,378
Cost of assets	-1,611	-1,778	-1,900
SVA	1,248	1,790	1,478

CONSTRUCTION & FORESTRY*

$MM unless indicated otherwise	2017	2018	2019
Net sales		10,160	11,220
Net sales – excluding Wirtgen	5,718	7,133	8,027
Operating profit		868	1,215
Operating profit – excluding Wirtgen	346	752	872
Average Assets			
With inventories at standard cost		9,726	10,279
With inventories at standard cost – excluding Wirtgen	3,390	3,592	3,978
With inventories at LIFO		9,482	10,013
With inventories at LIFO – excluding Wirtgen	3,154	3,347	3,712
Operating Return on Assets (OROA)			
OROA % @ LIFO	11.0%	22.5%	23.5%
Asset turns (std cost – excluding Wirtgen)	1.69	1.99	2.02
Operating margin % – excluding Wirtgen	6.05%	10.54%	10.86%
OROA % @ standard cost – excluding Wirtgen	10.2%	20.9%	21.9%
Average assets @ std cost – excluding Wirtgen	3,390	3,592	3,978
Operating profit – excluding Wirtgen	346	752	872
Cost of assets	-407	-431	-477
SVA	-61	321	395

AG & TURF

$MM unless indicated otherwise	2017	2018	2019
Net sales	20,167	23,191	23,666
Operating profit	2,513	2,816	2,506
Average Assets			
With inventories at standard cost	10,031	11,233	11,860
With inventories at LIFO	8,996	10,219	10,748
Operating Return on Assets (OROA)			
OROA % @ LIFO	27.9%	27.6%	23.3%
Asset turns (standard cost)	2.01	2.06	2.00
Operating margin %	12.46%	12.14%	10.59%
OROA % @ standard cost	25.1%	25.1%	21.1%
Average assets @ standard cost	10,031	11,233	11,860
Operating profit	2,513	2,816	2,506
Cost of assets	-1,204	-1,347	-1,423
SVA	1,309	1,469	1,083

FINANCIAL SERVICES**

$MM unless indicated otherwise	2017	2018	2019
Net income attributable to Deere & Company	477	942	539
Net income attributable to Deere & Company – tax adjusted		530	
Average equity	4,497	4,832	5,040
Average equity – tax adjusted		4,793	
Return on equity %	10.6%		10.7%
Return on equity % – tax adjusted		11.1%	
Operating profit**	715	792	694
Average equity	4,497	4,793	5,040
Cost of equity	-680	-722	-657
SVA	35	70	37

Financial Services SVA is calculated on a pretax basis.

* On December 1, 2017, the Company acquired the stock and certain assets of substantially all of Wirtgen Group Holding GmbH's operations (Wirtgen), the leading manufacturer worldwide of roadbuilding equipment. Wirtgen is included in the construction and forestry segment. Wirtgen is excluded from the metrics above.

** The 2018 SVA was adjusted for certain effects of U.S. Tax Reform legislation enacted on December 22, 2017, due to the significant discrete income tax benefit in 2018. 2019 SVA is calculated with unadjusted U.S. GAAP information.

AWARDS & RECOGNITION

Top 10 Innovative Companies in the U.S. – American Innovation Index – #3 for Social Innovation

Tech for a Better World – Consumer Electronics Show (CES) Innovation Awards

AE50 Awards for Agricultural Innovations (Six Awards) – American Society of Agricultural and Biological Engineers (ASABE)

Agritechnica Innovation Awards (Four medals, including society's only gold medal) – German Agricultural Society

SIMA Innovation Awards (Two Awards) – Paris International Agribusiness Show

Top 100 Global Brands – Interbrand

2019 Best Places to Work (Employees' Choice) – Glassdoor

***Forbes* Magazine:**

– JUST 100 – *Forbes* and JUST Capital

– America's Best Employers 2019

– World's Most Valuable Brands 2019

Top 5 Global Capability Centers for Excellence in Diversity & Inclusion (Technology Center India) – NASSCOM

Best Practices in Diversity and Inclusion, Brazil – *EXAME* magazine

Socially Responsible Company – Mexico (Mexican Center for Philanthropy)

Vendor Partner of the Year – Lowe's

*The 2019 John Deere Classic raised a record $13.8 million for more than 500 charities. It was supported by over 2,000 volunteers and delivered a world-class experience for the community, spectators, and golfers alike. In recognition of these efforts, the PGA TOUR honored the John Deere Classic for **Best Sponsor Integration** and **Most Engaged Community**.*

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RESULTS OF OPERATIONS FOR THE YEARS ENDED NOVEMBER 3, 2019, OCTOBER 28, 2018, AND OCTOBER 29, 2017

OVERVIEW

Organization

The company's equipment operations generate revenues and cash primarily from the sale of equipment to John Deere dealers and distributors. The equipment operations manufacture and distribute a full line of agricultural equipment; a variety of commercial and consumer equipment; and a broad range of equipment for construction, road building, and forestry. The company's financial services primarily provide credit services, which mainly finance sales and leases of equipment by John Deere dealers and trade receivables purchased from the equipment operations. In addition, financial services offers extended equipment warranties. The information in the following discussion is presented in a format that includes information grouped as consolidated, equipment operations, and financial services. The company also views its operations as consisting of two geographic areas, the U.S. and Canada, and outside the U.S. and Canada. The company's operating segments consist of agriculture and turf, construction and forestry, and financial services.

Trends and Economic Conditions

The company's agriculture and turf equipment sales increased 2 percent in 2019 and are forecast to decrease 5 to 10 percent for 2020. Industry agricultural machinery sales in the U.S. and Canada for 2020 are forecast to decline about 5 percent, compared to 2019. Industry sales in the European Union (EU)28 member nations and South American industry sales of tractors and combines are forecast to be about the same in 2020. Asian sales are also forecast to be about the same in 2020. Industry sales of turf and utility equipment in the U.S. and Canada are expected to be about the same. The company's construction and forestry sales increased 10 percent in 2019. The segment's sales are forecast to decrease 10 to 15 percent in 2020. Global forestry industry sales are expected to be about the same as 2019 sales. Net income of the company's financial services operations attributable to Deere & Company in 2020 is expected to be approximately $600 million.

Items of concern include trade agreements, the uncertainty of the effectiveness of governmental actions in respect to monetary and fiscal policies, the impact of sovereign debt, Eurozone and Argentine issues, capital market disruptions, changes in demand and pricing for used equipment, and geopolitical events. Significant fluctuations in foreign currency exchange rates and volatility in the price of many commodities could also impact the company's results.

The company's results reflected continued uncertainties in the agricultural sector. Trade tensions and difficult growing and harvesting conditions have caused farmers to become cautious about major equipment purchases. Financial services' results were also pressured by operating lease losses. The favorable general economic conditions supported demand for smaller equipment and led to strong sales and operating profit for the construction and forestry operations. Despite the present challenges, the longer-term outlook for the company's businesses remains positive. The company believes it is well positioned to be a leader in the delivery of smarter, more efficient, and sustainable solutions. In addition, a series of measures to create a leaner organization structure have been initiated that will allow the company to operate with more speed and agility.

2019 COMPARED WITH 2018

CONSOLIDATED RESULTS

The following table provides the net income attributable to Deere & Company in millions of dollars as well as diluted and basic earnings per share in dollars:

	2019	2018
Net income attributable to Deere & Company	$ 3,253	$ 2,368
Diluted earnings per share	10.15	7.24
Basic earnings per share	10.28	7.34

Net income in 2019 and 2018 was affected by discrete adjustments to the provision for income taxes, including those related to the U.S. tax reform legislation enacted on December 22, 2017 (tax reform) (see Note 9). The adjustments in 2019 related to tax reform reduced the provision for income taxes by $68 million and in 2018 increased the provision by $704 million.

The worldwide net sales and revenues, price realization, and the effect of currency translation for worldwide, U.S. and Canada, and outside U.S. and Canada in millions of dollars follows:

	2019	2018	% Change
Worldwide net sales and revenues	$ 39,258	$ 37,358	+5
Worldwide equipment operations net sales	34,886	33,351	+5
Price realization			+3
Currency translation (unfavorable)			-3
Wirtgen - two additional months			+1
U.S. and Canada equipment operations net sales	20,264	18,847	+8
Price realization			+4
Outside U.S. and Canada equipment operations net sales	14,622	14,504	+1
Price realization			+3
Currency translation (unfavorable)			-5
Wirtgen - two additional months			+3

The company's equipment operations operating profit and net income and financial services operations net income follow in millions of dollars:

	2019	2018	% Change
Equipment operations operating profit	$ 3,721	$ 3,684	+1
Equipment operations net income	2,698	1,404	+92
Financial services net income	539	942	-43

The discussion on net sales and operating profit are included in the Business Segment and Geographic Area Results below. The equipment operations' 2019 and 2018 net income included a discrete income tax benefit related to tax reform of $65 million and expense of $1,045 million, respectively (see Note 9). Financial services' net income was affected by favorable income tax benefits related to tax reform of $3 million and $341 million for 2019 and 2018, respectively.

Excluding the tax reform adjustments, the financial services segment net income decreased compared to 2018 due to impairments and higher losses on operating lease residual values and unfavorable financing spreads, partially offset by income earned on a higher average portfolio. Additional information is presented in the following discussion of the "Worldwide Financial Services Operations."

The cost of sales to net sales ratio and other significant statement of consolidated income changes not previously discussed in millions of dollars follow:

	2019	2018	% Change
Cost of sales to net sales	76.8%	76.7%	
Finance and interest income	$ 3,493	$ 3,107	+12
Research and development expenses	1,783	1,658	+8
Selling, administrative and general expenses	3,551	3,455	+3
Interest expense	1,466	1,204	+22
Other operating expenses	1,578	1,399	+13

The cost of sales to net sales ratio increased compared to 2018 mainly due to higher production costs, the unfavorable effects of foreign currency exchange, and a less favorable product mix, partially offset by price realization. Finance and interest income increased in 2019 due to a larger average credit portfolio and higher average interest rates. Research and development expenses increased as a result of spending to support new, advanced products. Selling, administrative and general expenses increased primarily due to employee separation costs and acquisition related amortization, partially offset by the favorable effects of currency translation and lower incentive compensation. Interest expense increased in 2019 due to higher average borrowing rates and higher average borrowings. Other operating expenses increased in 2019 primarily due to impairments and higher losses on operating lease residual values and increased depreciation of equipment on operating leases, partially offset by lower pension and postretirement benefit costs excluding the service cost component.

The company has several funded and unfunded defined benefit pension plans and other postretirement benefit (OPEB) plans, primarily health care and life insurance plans. The company's costs for these plans in 2019 were $235 million, compared with $353 million in 2018. The long-term expected return on plan assets, which is reflected in these costs, was an expected gain of 6.5 percent in 2019 and 6.8 percent in 2018, or $838 million and $797 million, respectively. The actual return was a gain of $2,163 million in 2019 and $322 million in 2018. In 2020, the expected return will be approximately 6.4 percent. The company's costs under these plans in 2020 are expected to increase approximately $75 million. The company makes any required contributions to the plan assets under applicable regulations and voluntary contributions after evaluating the company's liquidity position and ability to make tax-deductible contributions. Total company contributions to the plans were $518 million in 2019 and $1,426 million in 2018, which included voluntary contributions and direct benefit payments. The voluntary contributions to plan assets were $306 million in 2019, which included $300 million to a U.S. OPEB plan, and $1,305 million in 2018, which included $1,300 million to the U.S. pension and OPEB plans. Total company contributions in 2020 are expected to be approximately $525 million. The anticipated contributions include a voluntary U.S. OPEB plan contribution of $300 million. The remaining contributions primarily include direct benefit payments from company funds. The company has no significant required contributions to U.S. pension plan assets in 2020 under applicable funding regulations. See the discussion in "Critical Accounting Policies" for more information about pension and OPEB benefit obligations.

BUSINESS SEGMENT AND GEOGRAPHIC AREA RESULTS

The following discussion relates to operating results by reportable segment and geographic area. Operating profit is income before certain external interest expense, certain foreign exchange gains or losses, income taxes, and corporate expenses. However, operating profit of the financial services segment includes the effect of interest expense and foreign currency exchange gains or losses.

Worldwide Agriculture and Turf Operations

The agriculture and turf segment results in millions of dollars follow:

	2019	2018	% Change
Net sales	$ 23,666	$ 23,191	+2
Operating profit	2,506	2,816	-11
Operating margin	10.6%	12.1%	

Segment sales increased due to price realization and higher shipment volumes, partially offset by the unfavorable effects of currency translation. Operating profit decreased largely due to higher production costs, the unfavorable effects of currency exchange, increased research and development costs, higher selling, administrative, and general expenses, and a less favorable sales mix, partially offset by price realization and higher shipment volumes.

Worldwide Construction and Forestry Operations

The construction and forestry segment results in millions of dollars follow:

	2019	2018	% Change
Net sales	$ 11,220	$ 10,160	+10
Operating profit	1,215	868	+40
Operating margin	10.8%	8.5%	

Segment sales increased in 2019 primarily due to higher shipment volumes and price realization, partially offset by the unfavorable effects of currency translation. The inclusion of Wirtgen's sales for two additional months in 2019 accounted for about 4 percent of the sales increase. Wirtgen's operating profit was $343 million in 2019, compared with $116 million in the prior year. Excluding Wirtgen, the operating profit improvement in 2019 was primarily driven by price realization and higher shipment volumes, partially offset by higher production costs and a less favorable sales mix.

Worldwide Financial Services Operations

The financial services segment revenue, interest expense, and operating profit in millions of dollars, along with the ratio of earnings to fixed charges follow:

	2019	2018	% Change
Revenue (including intercompany revenue)	$ 3,969	$ 3,560	+11
Interest expense	1,234	936	+32
Operating profit	694	792	-12
Consolidated ratio of earnings to fixed charges	1.57	1.87	

Operating profit in 2019 declined mainly due to impairments and higher losses on operating lease residual values and unfavorable financing spreads, partially offset by income earned on a higher average portfolio. The average balance of receivables and leases financed was 8 percent higher in 2019, compared with 2018. Interest expense increased in 2019 as a result of higher average borrowing rates and higher average borrowings.

Equipment Operations in U.S. and Canada

The equipment operations in the U.S. and Canada results in millions of dollars follow:

	2019	2018	% Change
Net sales	$ 20,264	$ 18,847	+8
Operating profit	2,335	2,356	-1
Operating margin	11.5%	12.5%	

The operating profit decrease was due primarily to higher production costs, a less favorable sales mix, increased research and development expenses, and higher selling, administrative, and general expenses. The decline was largely offset by price realization and higher shipment volumes. Net sales increased in 2019 due primarily to price realization and higher shipment volumes. The physical volume of sales, excluding the effect of acquisitions, increased 4 percent, compared with 2018.

Equipment Operations outside U.S. and Canada

The equipment operations outside the U.S. and Canada results in millions of dollars follow:

	2019	2018	% Change
Net sales	$ 14,622	$ 14,504	+1
Operating profit	1,386	1,328	+4
Operating margin	9.5%	9.2%	

Operating profit increased primarily due to price realization and higher shipment volumes, partially offset by higher production costs, the unfavorable effects of currency exchange, increased research and development expenses, and higher selling, administrative, and general expenses. Net sales increased 1 percent in 2019, with Wirtgen adding 3 percent, compared to 2018. The increase was primarily the result of the Wirtgen acquisition and price realization, partially offset by the unfavorable effects of currency translation. The physical volume of sales, excluding the effect of acquisitions, was the same as 2018.

MARKET CONDITIONS AND OUTLOOK

Net income attributable to Deere & Company for fiscal 2020 is forecast to be in a range of $2,700 million to $3,100 million.

During the first quarter of 2020, the company announced a broad voluntary employee-separation program. The program's total pretax expenses are estimated to be about $140 million with annual savings of about $115 million (see Note 31).

Agriculture and Turf. The company's worldwide sales of agriculture and turf equipment are forecast to decline about 5 to 10 percent for fiscal year 2020, including price realization of 2 percent and a negative currency translation effect of 1 percent. Industry sales of agricultural equipment in the U.S. and Canada are forecast to decrease about 5 percent, driven by lower demand for large equipment. Full year industry sales in the EU28 member nations are forecast to be about the same as 2019 as are South American industry sales of tractors and combines. Asian sales are forecast to be about the same as 2019. Industry sales of turf and utility equipment in the U.S. and Canada are expected to be about the same for 2020.

Construction and Forestry. The company's worldwide sales of construction and forestry equipment are anticipated to decrease about 10 to 15 percent for 2020, with price realization having a favorable effect of 1 percent and foreign currency translation having an unfavorable effect of 1 percent. The outlook reflects slowing construction activity as well as the company's efforts to assist dealers to manage their inventory levels. In forestry, global industry sales are expected to be about the same as 2019.

Financial Services. Fiscal year 2020 net income attributable to Deere & Company for the financial services operations is expected to be approximately $600 million. Net income is expected to benefit from lower losses on lease residual values as well as income earned on a higher average portfolio. These items are forecast to be partially offset by a higher provision for credit losses, less favorable financing spreads, and higher selling and administrative expenses.

SAFE HARBOR STATEMENT

Safe Harbor Statement under the Private Securities Litigation Reform Act of 1995: Statements under "Overview," "Market Conditions and Outlook," and other forward-looking statements herein that relate to future events, expectations, and trends involve factors that are subject to change, and risks and uncertainties that could cause actual results to differ materially. Some of these risks and uncertainties could affect particular lines of business, while others could affect all of the company's businesses.

The company's agricultural equipment business is subject to a number of uncertainties including the factors that affect farmers' confidence and financial condition. These factors include demand for agricultural products, world grain stocks, weather conditions, soil conditions, harvest yields, prices for commodities and livestock, crop and livestock production expenses, availability of transport for crops, trade restrictions and tariffs (e.g., China), global trade agreements (e.g., the United States-Mexico-Canada Agreement), the level of farm product exports (including concerns about genetically modified organisms), the growth and sustainability of non-food uses for some crops (including ethanol and biodiesel production), real estate values, available acreage for farming, the land ownership policies of governments, changes in government farm programs and policies, international reaction to such programs, changes in and effects of crop insurance programs, changes in environmental regulations and their impact on farming practices, animal diseases (e.g., African swine fever) and their effects on poultry, beef and pork consumption and prices and on livestock feed demand, and crop pests and diseases.

Factors affecting the outlook for the company's turf and utility equipment include consumer confidence, weather conditions, customer profitability, labor supply, consumer borrowing patterns, consumer purchasing preferences, housing starts and supply, infrastructure investment, spending by municipalities and golf courses, and consumable input costs.

Consumer spending patterns, real estate and housing prices, the number of housing starts, interest rates and the levels of public and non-residential construction are important to sales and results of the company's construction and forestry equipment. Prices for pulp, paper, lumber and structural panels are important to sales of forestry equipment.

All of the company's businesses and its results are affected by general economic conditions in the global markets and industries in which the company operates; customer confidence in general economic conditions; government spending and taxing; foreign currency exchange rates and their volatility, especially fluctuations in the value of the U.S. dollar; interest rates (including the availability of IBOR reference rates); inflation and deflation rates; changes in weather patterns; the political and social stability of the global markets in which the company operates; the effects of, or response to, terrorism and security threats; wars and other conflicts; natural disasters; and the spread of major epidemics.

Significant changes in market liquidity conditions, changes in the company's credit ratings and any failure to comply with financial covenants in credit agreements could impact access to funding and funding costs, which could reduce the company's earnings and cash flows. Financial market conditions could also negatively impact customer access to capital for purchases of the company's products and customer confidence and purchase decisions, borrowing and repayment practices, and the number and size of customer loan delinquencies and defaults. A debt crisis, in Europe or elsewhere, could negatively impact currencies, global financial markets, social and political stability, funding sources and costs, asset and obligation values, customers, suppliers, demand for equipment, and company operations and results. The company's investment management activities could be impaired by changes in the equity, bond and other financial markets, which would negatively affect earnings.

The anticipated withdrawal of the United Kingdom from the European Union and the perceptions as to the impact of the withdrawal may adversely affect business activity, political stability and economic conditions in the United Kingdom, the European Union and elsewhere. The economic conditions and outlook could be further adversely affected by (i) the uncertainty concerning the timing and terms of the exit, (ii) new or modified trading arrangements between the United Kingdom and other countries, (iii) the risk that one or more other European Union countries could come under increasing pressure to leave the European Union, or (iv) the risk that the euro as the single currency of the Eurozone could cease to exist. Any of these developments, or the perception that any of these developments are likely to occur, could affect economic growth or business activity in the United Kingdom or the European Union, and could result in the relocation of businesses, cause business interruptions, lead to economic recession or depression, and impact the stability of the financial markets, availability of credit, currency exchange rates, interest rates, financial institutions, and political, financial and monetary systems. Any of these developments could affect our businesses, liquidity, results of operations and financial position.

Additional factors that could materially affect the company's operations, access to capital, expenses and results include changes in, uncertainty surrounding and the impact of governmental trade, banking, monetary and fiscal policies, including financial regulatory reform and its effects on the consumer finance industry, derivatives, funding costs and other areas, and governmental programs, policies, tariffs and sanctions in particular jurisdictions or for the benefit of certain industries or sectors; retaliatory actions to such changes in trade, banking, monetary and fiscal policies; actions by central banks; actions by financial and securities regulators; actions by environmental, health and safety regulatory agencies, including those related to engine emissions, carbon and other greenhouse gas emissions, noise and the effects of climate change; changes to GPS radio frequency bands or their permitted uses; changes in labor and immigration regulations; changes to accounting standards; changes in tax rates, estimates, laws and regulations and company actions related thereto; changes to and compliance with privacy regulations; compliance with U.S. and foreign laws when expanding to new markets and otherwise; and actions by other regulatory bodies.

Other factors that could materially affect results include production, design and technological innovations and difficulties, including capacity and supply constraints and prices; the loss of or challenges to intellectual property rights whether through theft, infringement, counterfeiting or otherwise; the availability and prices of strategically sourced materials, components and whole goods; delays or disruptions in the company's supply chain or the loss of liquidity by suppliers; disruptions of infrastructures that support communications, operations or distribution; the failure of suppliers or the company to comply with laws, regulations and company policy pertaining to employment, human rights, health, safety, the environment, anti-corruption, privacy and data protection and other ethical business practices; events that damage the company's reputation or brand; significant investigations, claims, lawsuits or other legal proceedings; start-up of new plants and products; the success of new product initiatives; changes in customer product preferences and sales mix; gaps or limitations in rural broadband coverage, capacity and speed needed to support technology solutions; oil and energy prices, supplies and volatility; the availability and cost of freight; actions of competitors in the various industries in which the company competes, particularly price discounting; dealer practices especially as to levels of new and used field inventories; changes in demand and pricing for used equipment and resulting impacts on lease residual values; labor relations and contracts; changes in the ability to attract, train and retain qualified personnel; acquisitions and divestitures of businesses; greater than anticipated transaction costs; the integration of new businesses; the failure or delay in closing or realizing anticipated benefits of acquisitions, joint ventures or divestitures; the implementation of organizational changes; the failure to realize anticipated savings or benefits of cost reduction, productivity, or efficiency efforts; difficulties related to the conversion and implementation of enterprise resource planning systems; security breaches, cybersecurity attacks, technology failures and other disruptions to the company's and suppliers' information technology infrastructure; changes in company declared dividends and common stock issuances and repurchases; changes in the level and funding of employee retirement benefits; changes in market values of investment assets, compensation, retirement, discount and mortality rates which impact retirement benefit costs; and significant changes in health care costs.

The liquidity and ongoing profitability of John Deere Capital Corporation and other credit subsidiaries depend largely on timely access to capital in order to meet future cash flow requirements, and to fund operations, costs, and purchases of the company's products. If general economic conditions deteriorate or capital markets become more volatile, funding could be unavailable or insufficient. Additionally, customer confidence levels may result in declines in credit applications and increases in delinquencies and default rates, which could materially impact write-offs and provisions for credit losses.

The company's outlook is based upon assumptions relating to the factors described above, which are sometimes based upon estimates and data prepared by government agencies. Such estimates and data are often revised. The company, except as required by law, undertakes no obligation to update or revise its outlook, whether as a result of new developments or otherwise. Further information concerning the company and its businesses, including factors that could materially affect the company's financial results, is included in the company's other filings with the SEC.

2018 COMPARED WITH 2017

The comparison of the 2018 results with 2017 is in the company's 2018 Form 10-K.

CAPITAL RESOURCES AND LIQUIDITY

The discussion of capital resources and liquidity has been organized to review separately, where appropriate, the company's consolidated totals, equipment operations, and financial services operations.

CONSOLIDATED

Positive cash flows from consolidated operating activities in 2019 were $3,412 million. This resulted primarily from net income adjusted for non-cash provisions and a change in accrued income taxes payable/receivable, which were partially offset by an increase in receivables related to sales, an increase in inventories after adjusting for equipment transferred to operating leases (see Note 7) and the disposition of the construction and forestry retail locations in Canada (see Note 4), and a change in net retirement benefits (see Note 8). Cash outflows from investing activities were $3,924 million in 2019, due primarily to the cost of receivables (excluding receivables related to sales) and cost of equipment on operating leases acquired exceeding the collections of receivables and the proceeds from sales of equipment on operating leases by $2,848 million, purchases of property and equipment of $1,120 million, and purchases of marketable securities exceeding proceeds from maturities and sales by $51 million, partially offset by proceeds from sales of businesses and unconsolidated affiliates, net of cash sold, of $93 million (see Note 4). Cash inflows from financing activities were $509 million in 2019, due primarily to an increase in borrowings of $2,643 million and proceeds from issuance of common stock (resulting from the exercise of stock options) of $178 million, partially offset by repurchases of common stock of $1,253 million and dividends paid of $943 million. Cash, cash equivalents, and restricted cash decreased $59 million during 2019.

Over the last three years, operating activities have provided an aggregate of $7,430 million in cash. In addition, increases in borrowings were $9,774 million, proceeds from issuance of common stock (resulting from the exercise of stock options) were $924 million, proceeds from sales of businesses and unconsolidated affiliates were $363 million, and proceeds from maturities and sales exceeded purchases of marketable securities by $178 million. The aggregate amount of these cash flows was used mainly to acquire receivables (excluding receivables related to sales) and equipment on operating leases that exceeded collections of receivables and the proceeds from sales of equipment on operating leases by $5,950 million, acquire businesses of $5,529 million, purchase property and equipment of $2,611 million, pay dividends of $2,513 million, and repurchase common stock of $2,217 million. Cash, cash equivalents, and restricted cash decreased $534 million over the three-year period.

The company has access to most global capital markets at reasonable costs and expects to have sufficient sources of global funding and liquidity to meet its funding needs. Sources of liquidity for the company include cash and cash equivalents, marketable securities, funds from operations, the issuance of commercial paper and term debt, the securitization of retail notes (both public and private markets), and committed and uncommitted bank lines of credit. The company's commercial paper outstanding at November 3, 2019 and October 28, 2018 was $2,698 million and $3,857 million, respectively, while the total cash and cash equivalents and marketable securities position was $4,438 million and $4,394 million, respectively. The amount of the total cash and cash equivalents and marketable securities held by foreign subsidiaries was $2,731 million and $2,433 million at November 3, 2019 and October 28, 2018, respectively.

Lines of Credit. The company also has access to bank lines of credit with various banks throughout the world. Worldwide lines of credit totaled $8,499 million at November 3, 2019, $5,143 million of which were unused. For the purpose of computing the unused credit lines, commercial paper, and short-term bank borrowings, excluding secured borrowings and the current portion of long-term borrowings, were primarily considered to constitute utilization. Included in the total credit lines at November 3, 2019 was a 364-day credit facility agreement of $2,800 million, expiring in fiscal April 2020. In addition, total credit lines included long-term credit facility agreements of $2,500 million, expiring in April 2023, and $2,500 million, expiring in April 2024. The agreements are mutually extendable and the annual facility fees are not significant. These credit agreements require John Deere Capital Corporation (Capital Corporation) to maintain its consolidated ratio of earnings to fixed charges at not less than 1.05 to 1 for each fiscal quarter and the ratio of senior debt, excluding securitization indebtedness, to capital base (total subordinated debt and stockholder's equity excluding accumulated other comprehensive income (loss)) at not more than 11 to 1 at the end of any fiscal quarter. The credit agreements also require the equipment operations to maintain a ratio of total debt to total capital (total debt and stockholders' equity excluding accumulated other comprehensive income (loss)) of 65 percent or less at the end of each fiscal quarter. Under this provision, the company's excess equity capacity and retained earnings balance free of restriction at November 3, 2019 was $13,554 million. Alternatively under this provision, the equipment operations had the capacity to incur additional debt of $25,171 million at November 3, 2019. All of these credit agreement requirements have been met during the periods included in the consolidated financial statements.

Debt Ratings. To access public debt capital markets, the company relies on credit rating agencies to assign short-term and long-term credit ratings to the company's securities as an indicator of credit quality for fixed income investors. A security rating is not a recommendation by the rating agency to buy, sell, or hold company securities. A credit rating agency may change or withdraw company ratings based on its assessment of the company's current and future ability to meet interest and principal repayment obligations. Each agency's rating should be evaluated independently of any other rating. Lower credit ratings generally result in higher borrowing costs, including costs of derivative transactions, and reduced access to debt capital markets.

The senior long-term and short-term debt ratings and outlook currently assigned to unsecured company securities by the rating agencies engaged by the company are as follows:

	Senior Long-Term	Short-Term	Outlook
Fitch Ratings	A	F1	Stable
Moody's Investors Service, Inc.	A2	Prime-1	Stable
Standard & Poor's	A	A-1	Stable

Trade accounts and notes receivable primarily arise from sales of goods to independent dealers. Trade receivables increased by $226 million in 2019 due primarily to higher shipment volumes, partially offset by foreign currency translation. The ratio of trade accounts and notes receivable at November 3, 2019 and October 28, 2018 to fiscal year net sales was 15 percent in both 2019 and 2018. Total worldwide agriculture and turf receivables increased $14 million and construction and forestry receivables increased $212 million. The collection period for trade receivables averages less than 12 months. The percentage of trade receivables outstanding for a period exceeding 12 months was 3 percent at November 3, 2019 and 2 percent at October 28, 2018.

Deere & Company's stockholders' equity was $11,413 million at November 3, 2019, compared with $11,288 million at October 28, 2018. The increase of $125 million resulted from net income attributable to Deere & Company of $3,253 million and an increase in common stock of $168 million, which were partially offset by an increase in treasury stock of $1,162 million, dividends declared of $963 million, a change in the retirement benefits adjustment of $678 million, a change in the cumulative translation adjustment of $448 million, and an unrealized loss on derivatives of $75 million.

EQUIPMENT OPERATIONS

The company's equipment businesses are capital intensive and are subject to seasonal variations in financing requirements for inventories and certain receivables from dealers. The equipment operations sell a significant portion of their trade receivables to financial services. To the extent necessary, funds provided from operations are supplemented by external financing sources.

Cash provided by operating activities of the equipment operations during 2019, including intercompany cash flows, was $3,200 million due primarily to net income adjusted for non-cash provisions, partially offset by a change in accrued income taxes payable/receivable, a change in net retirement benefits (see Note 8), an increase in trade receivables and Equipment Operations' financing receivables, and an increase in inventories after adjusting for the Canada retail locations disposition (see Note 4) and foreign currency translation.

Over the last three years, these operating activities, including intercompany cash flows, have provided an aggregate of $8,915 million in cash.

Trade receivables held by the equipment operations increased by $108 million during 2019. The equipment operations sell a significant portion of their trade receivables to financial services (see previous consolidated discussion).

Inventories decreased by $174 million in 2019 due primarily to the Canada retail locations disposition (see Note 4) and the effect of foreign currency translation. Most of these inventories are valued on the last-in, first-out (LIFO) method. The ratios of inventories on a first-in, first-out (FIFO) basis (see Note 16), which approximates current cost, to fiscal year cost of sales were 29 percent and 30 percent at November 3, 2019 and October 28, 2018, respectively.

Total interest-bearing debt of the equipment operations was $6,446 million at the end of 2019, compared with $6,223 million at the end of 2018 and $5,866 million at the end of 2017. The ratio of total debt to total capital (total interest-bearing debt and stockholders' equity) at the end of 2019, 2018, and 2017 was 36 percent, 36 percent, and 38 percent, respectively.

The company may from time to time seek to retire portions of its outstanding debt securities through cash repurchases or exchanges for other securities, in open-market purchases, privately negotiated transactions, or otherwise. Such repurchases or exchanges, if any, will be subject to and depend on prevailing market conditions, the company's liquidity requirements, contractual restrictions, and other factors. The amounts involved in any such transactions, individually or in the aggregate, may be material.

Property and equipment cash expenditures for the equipment operations in 2019 were $1,118 million, compared with $893 million in 2018. Capital expenditures in 2020 are estimated to be approximately $1,100 million.

In October 2019, the company entered into a definitive agreement to acquire Unimil, a privately held Brazilian company in the aftermarket service parts business for sugarcane harvesters. The expected cash purchase price is R$375 million (or approximately US$95 million based on the exchange rate at the end of the fiscal year). The company expects to fund the acquisition and the transaction expenses with current cash. The transaction requires customary regulatory approval and is expected to close in six to ten months.

FINANCIAL SERVICES

The financial services operations rely on their ability to raise substantial amounts of funds to finance their receivable and lease portfolios. Their primary sources of funds for this purpose are a combination of commercial paper, term debt, securitization of retail notes, equity capital, and borrowings from Deere & Company.

The cash provided by operating and financing activities was used for investing activities. Cash flows from the financial services' operating activities, including intercompany cash flows, were $2,418 million in 2019. Cash used by investing activities totaled $4,721 million in 2019 due primarily to the cost of receivables (excluding trade and wholesale) and cost of equipment on operating leases acquired exceeding collections of these receivables and the proceeds from sales of equipment on operating leases by $3,729 million, an increase in trade receivables and wholesale notes of $935 million, and purchases of marketable securities exceeding proceeds from maturities and sales by $60 million. Cash provided by financing activities totaled $2,264 million in 2019, representing primarily an increase in external borrowings of $2,416 million and an increase in borrowings from Deere & Company of $305 million, partially offset by dividends paid to Deere & Company of $427 million. Cash, cash equivalents, and restricted cash decreased $53 million.

Over the last three years, the operating activities, including intercompany cash flows, have provided $5,937 million in cash. In addition, an increase in total borrowings of $7,351 million provided cash inflows. These amounts have been used mainly to fund receivables (excluding trade and wholesale) and equipment on operating lease acquisitions, which exceeded collections and the proceeds from sales of equipment on operating leases, by $9,677 million, fund an increase in trade and wholesale receivables of $2,537 million, pay dividends to Deere & Company of $1,256 million, and purchase $140 million of marketable securities in excess of maturities and sales. Cash, cash equivalents, and restricted cash decreased $579 million over the three-year period.

Receivables and equipment on operating leases increased by $3,211 million in 2019, compared with 2018. Total acquisition volumes of receivables (excluding trade and wholesale) and cost of equipment on operating leases increased 7 percent in 2019, compared with 2018. The volumes of retail notes, revolving charge accounts, financing leases, and operating leases increased approximately 10 percent, 6 percent, 5 percent, and 1 percent, respectively. During 2019, the amount of wholesale notes and trade receivables increased 17 percent and 3 percent, respectively. At November 3, 2019 and October 28, 2018, net receivables and leases administered, which include receivables administered but not owned, were $46,194 million and $42,985 million, respectively.

Total external interest-bearing debt of the financial services operations was $38,888 million at the end of 2019, compared with $36,033 million at the end of 2018 and $34,179 million at the end of 2017. Total external borrowings have changed generally corresponding with the level of the receivable and lease portfolio, the level of cash and cash equivalents, the change in payables owed to Deere & Company, and the change in investment from Deere & Company. The financial services operations' ratio of total interest-bearing debt to total stockholder's equity was 8.0 to 1 at the end of 2019, 7.5 to 1 at the end of 2018, and 7.6 to 1 at the end of 2017.

The Capital Corporation has a revolving credit agreement to utilize bank conduit facilities to securitize retail notes (see Note 14). At November 3, 2019, the facility had a total capacity, or "financing limit," of up to $3,500 million of secured financings at any time. The facility was renewed in November 2019 with a capacity of $3,500 million. After a two-year revolving period, unless the banks and Capital Corporation agree to renew, Capital Corporation would liquidate the secured borrowings over time as payments on the retail notes are collected. At November 3, 2019, $1,434 million of short-term securitization borrowings was outstanding under the agreement.

During 2019, the financial services operations issued $3,310 million and retired $2,914 million of retail note securitization borrowings. During 2019, the financial services operations also issued $8,638 million and retired $5,454 million of long-term borrowings, which were primarily medium-term notes.

OFF-BALANCE-SHEET ARRANGEMENTS

At November 3, 2019, the company had approximately $343 million of guarantees issued primarily to banks outside the U.S. and Canada related to third-party receivables for the retail financing of John Deere and Wirtgen equipment. The company may recover a portion of any required payments incurred under these agreements from repossession of the equipment collateralizing the receivables. The maximum remaining term of the receivables guaranteed at November 3, 2019 was approximately seven years.

AGGREGATE CONTRACTUAL OBLIGATIONS

The payment schedule for the company's contractual obligations at November 3, 2019 in millions of dollars is as follows:

	Total	Less than 1 year	2&3 years	4&5 years	More than 5 years
On-balance-sheet					
Debt*					
Equipment operations**	$ 6,483	$ 1,013	$ 1,179	$ 563	$ 3,728
Financial services**	38,706	11,961	15,130	7,014	4,601
Total	45,189	12,974	16,309	7,577	8,329
Interest relating to debt***	5,424	1,114	1,422	728	2,160
Accounts payable	2,851	2,751	73	25	2
Capital leases	32	12	16	3	1
Off-balance-sheet					
Purchase obligations	2,623	2,582	26	12	3
Operating leases	337	111	133	67	26
Total	$56,456	$ 19,544	$ 17,979	$ 8,412	$10,521

* Principal payments.

** Payments related to securitization borrowings of $4,327 million classified as short-term on the balance sheet related to the securitization of retail notes are included in this table based on the expected payment schedule (see Note 19).

*** Includes projected payments related to interest rate swaps.

The previous table does not include unrecognized tax benefit liabilities of approximately $553 million at November 3, 2019, since the timing of future payments is not reasonably estimable at this time (see Note 9). For additional information regarding pension and OPEB obligations, short-term borrowings, long-term borrowings, and lease obligations, see Notes 8, 19, 21, and 22, respectively.

CRITICAL ACCOUNTING POLICIES

The preparation of the company's consolidated financial statements in conformity with accounting principles generally accepted in the U.S. requires management to make estimates and assumptions that affect reported amounts of assets, liabilities, revenues, and expenses. Changes in these estimates and assumptions could have a significant effect on the financial statements. The accounting policies below are those management believes are the most critical to the preparation of the company's financial statements and require the most difficult, subjective, or complex judgments. The company's other accounting policies are described in the Notes to the Consolidated Financial Statements.

Sales Incentives

At the time a sale to a dealer is recognized, the company records an estimate of the future sales incentive costs as a reduction to the sales price. These incentives may be based on a dealer's purchase volume, or on retail sales incentive programs for allowances and financing programs that will be due when the dealer sells the equipment to a retail customer. The estimated cost of these programs is based on historical data, announced and expected incentive programs, field inventory levels, and forecasted sales volumes. The final cost of these programs is determined at the end of the measurement period for volume-based incentives or when the dealer sells the equipment to the retail customer. This is due to numerous programs available at any particular time and new programs that may be announced after the company records the equipment sale. Changes in the mix and types of programs affect these estimates, which are reviewed quarterly.

The sales incentive accruals at November 3, 2019, October 28, 2018, and October 29, 2017 were $2,033 million, $1,850 million, and $1,581 million, respectively. The total accrual is recorded $1,443 million, $1,297 million, and $1,089 million in trade accounts and notes receivable – net, and $590 million, $553 million, and $492 million in accounts payable and accrued expenses at November 3, 2019, October 28, 2018, and October 29, 2017, respectively. The increases in 2019 and 2018 were related primarily to higher sales volume.

The estimation of the retail sales incentive accrual is impacted by many assumptions. One of the key assumptions is the predictive value of the historical percent of retail sales incentive costs to retail sales from dealers. Over the last five fiscal years, this percent has varied by an average of approximately plus or minus 1.1 percent, compared to the average retail sales incentive costs to retail sales percent during that period. Holding other assumptions constant, if this estimated retail incentive cost experience percent were to increase or decrease 1.1 percent, the sales incentive accrual at November 3, 2019 would increase or decrease by approximately $94 million.

Product Warranties

At the time a sale is recognized, the company records the estimated future warranty costs. The company generally determines its total warranty liability by applying historical claims rate experience to the estimated amount of equipment that has been sold and is still under warranty based on dealer inventories and retail sales. The historical claims rate is primarily determined by a review of five-year claims costs and consideration of current quality developments. Variances in claims experience and the type of warranty programs affect these estimates, which are reviewed quarterly.

The product warranty accruals, excluding extended warranty unamortized premiums, at November 3, 2019, October 28, 2018, and October 29, 2017 were $1,218 million, $1,146 million, and $1,007 million, respectively. The increases in 2019 and 2018 were related primarily to higher sales volume.

Estimates used to determine the product warranty accruals are significantly affected by the historical percent of warranty claims costs to sales. Over the last five fiscal years, this percent has varied by an average of approximately plus or minus .09 percent, compared to the average warranty costs to sales percent during that period. Holding other assumptions constant, if this estimated cost experience percent were to increase or decrease .09 percent, the warranty accrual at November 3, 2019 would increase or decrease by approximately $40 million.

Postretirement Benefit Obligations

Pension and other postretirement benefit, primarily health care and life insurance plans, obligations are based on various assumptions used by the company's actuaries in calculating these amounts. These assumptions include discount rates, health care cost trend rates, expected return on plan assets, compensation increases, retirement rates, mortality rates, and other factors. Actual results that differ from the assumptions and changes in assumptions affect future expenses and obligations.

The pension liabilities, net of pension assets, recognized on the balance sheet at November 3, 2019 were $226 million. The pension assets, net of pension liabilities, recognized on the balance sheet at October 28, 2018 were $494 million. The pension liabilities, net of pension assets, recognized on the balance sheet at October 29, 2017 were $1,073 million. The increase in pension net liabilities in 2019 was due primarily to decreases in discount rates and interest on the liabilities, largely offset by the return on plan assets. The increase in pension net assets in 2018 was due primarily to increases in discount rates and contributions to a U.S. pension plan (see Note 8), partially offset by interest on the liabilities. The OPEB liabilities, net of OPEB assets, at November 3, 2019, October 28, 2018, and October 29, 2017 were $4,686 million, $4,753 million, and $5,623 million, respectively. The decrease in OPEB net liabilities in 2019 was due primarily to contributions to a U.S. OPEB plan, a decrease in health care trend rates, and company contributions for benefit payments, mostly offset by decreases in discount rates. The decrease in OPEB net liabilities in 2018 was due primarily to increases in discount rates and contributions to the U.S. OPEB plans (see Note 8).

The effect of hypothetical changes to selected assumptions on the company's major U.S. retirement benefit plans would be as follows in millions of dollars:

Assumptions	Percentage Change	November 3, 2019 Increase (Decrease) PBO/APBO*	2020 Increase (Decrease) Expense
Pension			
Discount rate**	+/-.5	$ (793)/917	$ (42)/50
Expected return on assets	+/-.5		(57)/57
OPEB			
Discount rate**	+/-.5	(316)/350	1/14
Expected return on assets	+/-.5		(4)/4
Health care cost trend rate**	+/-1.0	638/(514)	80/(40)

* Projected benefit obligation (PBO) for pension plans and accumulated postretirement benefit obligation (APBO) for OPEB plans.

** Pretax impact on service cost, interest cost, and amortization of gains or losses.

Goodwill

Goodwill is not amortized and is tested for impairment annually and when events or circumstances change such that it is more likely than not that the fair value of a reporting unit is reduced below its carrying amount. The end of the fiscal third quarter is the annual measurement date. To test for goodwill impairment, the carrying value of each reporting unit is compared with its fair value. If the carrying value of the goodwill is considered impaired, a loss is measured as the excess of the reporting unit's carrying value over the fair value, with a limit of the goodwill allocated to that reporting unit.

An estimate of the fair value of the reporting unit is determined through a combination of comparable market values for similar businesses and discounted cash flows. These estimates can change significantly based on such factors as the reporting unit's financial performance, economic conditions, interest rates, growth rates, pricing, changes in business strategies, and competition.

Based on this testing, the company has not identified a reporting unit for which the goodwill was impaired in 2019, 2018, or 2017. For all reporting units, a 10 percent decrease in the estimated fair value would have had no effect on the carrying value of goodwill at the annual measurement date in 2019.

Allowance for Credit Losses

The allowance for credit losses represents an estimate of the losses inherent in the company's receivable portfolio. The level of the allowance is based on many quantitative and qualitative factors, including historical net loss experience by finance product category, portfolio duration, delinquency trends, economic conditions in the company's major markets and geographies, commodity price trends, and credit risk quality. The company has an established process to calculate a range of possible outcomes and determine the adequacy of the allowance. The adequacy of the allowance is assessed quarterly by finance product category. Different assumptions or changes in economic conditions would result in changes to the allowance for credit losses and the provision for credit losses.

The total allowance for credit losses at November 3, 2019, October 28, 2018, and October 29, 2017 was $222 million, $248 million, and $243 million, respectively. The allowance decrease in 2019 was mainly due to continued improvement in credit loss experience in certain foreign markets. The allowance increase in 2018 was due primarily to growth in the receivable portfolio.

The assumptions used in evaluating the company's exposure to credit losses involve estimates and significant judgment. The historical loss experience on the receivable portfolio represents one factor used in determining the allowance for credit losses. Compared to the average loss experience over the last five fiscal years, this percent has varied by an average of approximately plus or minus .04 percent, compared to the average loss experience percent during that period. Holding other factors constant, if this estimated loss experience on the receivable portfolio were to increase or decrease .04 percent, the allowance for credit losses at November 3, 2019 would increase or decrease by approximately $14 million.

Operating Lease Residual Values

The carrying value of equipment on operating leases is affected by the estimated fair values of the equipment at the end of the lease (residual values). Upon termination of the lease, the equipment is either purchased by the lessee or sold to a third party, in which case the company may record a gain or a loss for the difference between the estimated residual value and the sale price. The residual values are dependent on current economic conditions and are reviewed when events or circumstances necessitate an evaluation. Changes in residual value assumptions would affect the amount of depreciation expense and the amount of investment in equipment on operating leases.

The total operating lease residual values at November 3, 2019, October 28, 2018, and October 29, 2017 were $5,259 million, $5,089 million, and $4,679 million, respectively. The changes in 2019 and 2018 were due primarily to the increasing levels of operating leases.

Estimates used in determining end of lease market values for equipment on operating leases significantly impact the amount and timing of depreciation expense. Hypothetically, if future market values for this equipment were to decrease 10 percent from the company's present estimates, the total effect would be to increase the company's annual depreciation for equipment on operating leases by approximately $175 million.

Income Taxes

The company's income tax provision, deferred income tax assets and liabilities, and liabilities for uncertain tax benefits represent the company's best estimate of current and future income taxes to be paid. The annual tax rate is based on income tax laws, statutory tax rates, taxable income levels, and tax planning opportunities available in various jurisdictions where the company operates. These tax laws are complex, and require significant judgment to determine the consolidated provision for income taxes. Changes in tax laws, regulations, statutory tax rates, and estimates of the company's future taxable income levels could result in actual realization of deferred taxes being materially different from amounts provided for in the consolidated financial statements.

Deferred income taxes represent temporary differences between the tax and the financial reporting basis of assets and liabilities, which will result in taxable or deductible amounts in the future. Deferred tax assets also include loss carryforwards and tax credits. These assets are regularly assessed for the likelihood of recoverability from estimated future taxable income, reversal of deferred tax liabilities, and tax planning strategies. To the extent the company determines that it is more likely than not a deferred income tax asset will not be realized, a valuation allowance is established. The recoverability analysis of the deferred income tax assets and the related valuation allowances requires significant judgment and relies on estimates.

Uncertain tax positions are determined based on whether it is more likely than not the tax positions will be sustained based on the technical merits of the position. For those positions that meet the more likely than not criteria, an estimate of the largest amount of tax benefit that is greater than 50 percent likely to be realized upon ultimate settlement with the related tax authority is recognized. The ultimate resolution of the tax position could take many years and result in a payment that is significantly different from the original estimate.

Tax reform included additional requirements effective for the company in 2019. Those provisions include a tax on global intangible low-taxed income (GILTI), a tax determined by base erosion and anti-abuse tax benefits (BEAT) from certain payments between a U.S. corporation and foreign subsidiaries, a limitation of certain executive compensation, a deduction for foreign derived intangible income (FDII), and interest expense limitations. These provisions require interpretation and the use of estimates to determine the liability and benefits. The company's accounting policy election is to treat the taxes due on future U.S. inclusions in taxable income under GILTI as a period cost when incurred.

A provision for foreign withholding taxes has not been recorded on undistributed profits of the company's non-U.S. subsidiaries that are determined to be indefinitely reinvested outside the U.S. If management intentions change in the future, there may be a significant impact on the provision for income taxes in the period the change occurs. For further information on income taxes, see Note 9 to the consolidated financial statements.

FINANCIAL INSTRUMENT MARKET RISK INFORMATION

The company is naturally exposed to various interest rate and foreign currency risks. As a result, the company enters into derivative transactions to manage certain of these exposures that arise in the normal course of business and not for the purpose of creating speculative positions or trading. The company's financial services operations manage the relationship of the types and amounts of their funding sources to their receivable and lease portfolio in an effort to diminish risk due to interest rate and foreign currency fluctuations while responding to favorable financing opportunities. In addition, the company has interest rate exposure at certain equipment operations units for below market retail financing programs that are used as sales incentives and are offered for extended periods. Accordingly, from time to time, these operations enter into interest rate swap agreements to manage their interest rate exposure. The company also has foreign currency exposures at some of its foreign and domestic operations related to buying, selling, and financing in currencies other than the functional currencies. The company has entered into agreements related to the management of these foreign currency transaction risks.

Interest Rate Risk

Quarterly, the company uses a combination of cash flow models to assess the sensitivity of its financial instruments with interest rate exposure to changes in market interest rates. The models calculate the effect of adjusting interest rates as follows: cash flows for financing receivables are discounted at the current prevailing rate for each receivable portfolio, cash flows for marketable securities are primarily discounted at the applicable benchmark yield curve plus market credit spreads, cash flows for unsecured borrowings are discounted at the applicable benchmark yield curve plus market credit spreads for similarly rated borrowers, cash flows for securitized borrowings are discounted at the swap yield curve plus a market credit spread for similarly rated borrowers, and cash flows for interest rate swaps are projected and discounted using forward rates from the swap yield curve at the repricing dates. The net loss in these financial instruments' fair values which would be caused by increasing the interest rates by 10 percent from the market rates at November 3, 2019 would have been approximately $22 million. The net loss from decreasing the interest rates by 10 percent at October 28, 2018 would have been approximately $21 million.

Foreign Currency Risk

In the equipment operations, the company's practice is to hedge significant currency exposures. Worldwide foreign currency exposures are reviewed quarterly. Based on the equipment operations' anticipated and committed foreign currency cash inflows, outflows, and hedging policy for the next twelve months, the company estimates that a hypothetical 10 percent weakening of the U.S. dollar relative to other currencies through 2020 would decrease the 2020 expected net cash inflows by approximately $11 million. At October 28, 2018, a hypothetical 10 percent strengthening of the U.S. dollar under similar assumptions and calculations indicated a potential $55 million adverse effect on the 2019 net cash inflows.

In the financial services operations, the company's policy is to hedge the foreign currency risk if the currency of the borrowings does not match the currency of the receivable portfolio. As a result, a hypothetical 10 percent adverse change in the value of the U.S. dollar relative to all other foreign currencies would not have a material effect on the financial services cash flows.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Deere & Company:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Deere & Company and subsidiaries (the "Company") as of November 3, 2019 and October 28, 2018, the related statements of consolidated income, consolidated comprehensive income, changes in consolidated stockholders' equity, and consolidated cash flows for each of the three years in the period ended November 3, 2019, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of November 3, 2019, and October 28, 2018, and the results of its operations and its cash flows for each of the three years in the period ended November 3, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of November 3, 2019, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated December 19, 2019, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

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

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

Critical Audit Matters

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

Sales Incentives — Refer to Note 2 to the financial statements

Critical Audit Matter Description

The sales incentive accrual at November 3, 2019 was $2,033 million, of which $1,443 million is recorded within trade accounts and notes receivable – net and $590 million is recorded within accounts payable and accrued expenses. At the time a sale to a dealer is recognized, the Company records an estimate of the future sales incentive costs as a reduction to the sales price. These incentives may be based on a dealer's purchase volume, or on retail sales incentive programs for allowances and financing programs that will be due when the dealer sells the equipment to a retail customer. The estimated cost of these programs is based on historical data, announced and expected incentive programs, field inventory levels and forecasted sales volumes. The final cost of these programs is determined at the end of the measurement period for volume-based incentives or when the dealer sells the equipment to the retail customer. This is due to numerous programs available at any particular time and new programs that may be announced after the company records the equipment sale. Changes in the mix and types of programs affect these estimates, which are reviewed quarterly. The estimation of the sales incentive accrual is impacted by many assumptions. One of the key assumptions is the predictive value of the historical percentage of sales incentive costs to retail sales from dealers.

We identified the sales incentive accrual as a critical audit matter because estimating sales incentive costs requires significant judgment by management and changes in historical percentage of sales incentive costs to retails sales from dealers could have a material impact on the sales incentive accrual. Auditing management's assumptions about the predictive nature of historical sales incentive costs involves a high degree of auditor judgment and an increased extent of effort to evaluate the reasonableness of management's estimates.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to testing management's assumption that historical sales incentive costs are predictive of future incentive costs included the following, among others:

- We tested the effectiveness of management's controls over the assumptions used to estimate the sales incentive accrual.
- We evaluated management's ability to accurately forecast future incentive costs performing a retrospective review that

involved comparing actual incentive costs to management's historical forecasts.

- We evaluated the reasonableness of management's assumption that historical sales incentive costs are predictive of future incentive costs by:
    - Considering the impact of changes in the current economic conditions and competitive environment.
    - Testing the completeness of the population used in the calculation by inspecting a sample of incentive program communications to dealers to ensure all sales incentive programs offered were included in the calculation and by confirming sales incentive payments with a sample of dealers.
    - Comparing historical and current sales incentive costs in the following manner:
        - Type and number of programs
        - Geography
        - Program size and duration
        - Eligible products

Allowance for Credit Losses – Refer to Notes 2 and 13 to the financial statements

Critical Audit Matter Description

The allowance for credit losses as of November 3, 2019 was $222 million. The allowance for credit losses represents an estimate of the losses inherent in the Company's receivable portfolio. The level of the allowance is based on many quantitative and qualitative factors, including historical net loss experience by product category, portfolio duration, delinquency trends, economic conditions in the Company's major markets and geographies, commodity price trends, and credit risk quality. The Company has an established process to calculate a range of possible outcomes and determine the adequacy of the allowance. Historical receivable write-offs and recoveries are considered as part of the loss experience by product category. The adequacy of the allowance is assessed quarterly.

The allowance for credit losses specific to the revolving charge accounts portfolio of $3,943 million as of November 3, 2019 was $40 million. The assumptions used in evaluating the Company's exposure to revolving credit losses involve estimates and require significant judgments, as no single statistic, measurement or assumption determines the adequacy of the allowance for credit losses for the revolving charge accounts portfolio. Additionally, the revolving charge accounts portfolio is more susceptible to losses as the loans within this portfolio are unsecured. Losses in this portfolio are expected to follow poor economic conditions prior to losses in the other portfolios. Losses in the revolving charge accounts portfolio could grow to material levels before the full extent of losses is observable in the historical loss data. Therefore, historical loss experience is not the sole predicting factor of anticipated losses. Consequently, qualitative factors (which consider overall economic conditions, the agricultural market, commodity price trends, and delinquency trends) are considered when adjusting historical loss experience for the purpose of determining the level of the allowance for credit losses for the revolving charge accounts portfolio.

We identified the allowance for credit losses specific to the revolving charge accounts portfolio as a critical audit matter because of the significant judgment required by management in determining these qualitative adjustments. Given the subjective nature and judgment applied by management to determine the allowance for credit losses related to the revolving charge accounts portfolio, auditing the allowance for credit losses required a high degree of auditor judgment and an increased extent of effort.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to testing the allowance for credit losses for the revolving charge accounts portfolio included the following:

- We tested the effectiveness of controls over the determination of the allowance for credit losses for the revolving charge accounts portfolio, including the qualitative factors considered.
- We evaluated the accuracy and relevance of the underlying historical data used in the Company's model which included:
    - Historical write-off experience
    - Other historical loss metrics
    - Portfolio duration
    - Delinquency trends
    - Trends in non-performing loans
    - Trends in portfolio quality
- We tested the computational accuracy of the Company's model.
- We evaluated the various qualitative adjustment factors considered in the Company's determination of the allowance for credit losses. Our evaluation included:
    - Comparison of the qualitative factors used by the Company to source data provided by the Company and/or to externally available data
    - Consideration and evaluation of contradictory evidence
    - Consideration of specific revolving charge accounts portfolio delinquency trends within particular geographic locations
- We evaluated management's ability to accurately estimate the losses inherent in the revolving charge accounts portfolio by comparing management's historical estimates to actual losses incurred.

DELOITTE & TOUCHE LLP
Chicago, Illinois

December 19, 2019

We have served as the Company's auditor since 1910.

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Deere & Company (the "company") is responsible for establishing and maintaining adequate internal control over financial reporting. The company's internal control system was designed to provide reasonable assurance regarding the preparation and fair presentation of published financial statements in accordance with generally accepted accounting principles.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation in accordance with generally accepted accounting principles.

Management assessed the effectiveness of the company's internal control over financial reporting as of November 3, 2019, using the criteria set forth in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on that assessment, management believes that, as of November 3, 2019, the company's internal control over financial reporting was effective.

The company's independent registered public accounting firm has issued an audit report on the effectiveness of the company's internal control over financial reporting. This report appears below.

December 19, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Deere & Company:

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Deere & Company and subsidiaries (the "Company") as of November 3, 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 Company maintained, in all material respects, effective internal control over financial reporting as of November 3, 2019, based on criteria established in Internal Control — Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended November 3, 2019 of the Company and our report dated December 19, 2019, expressed an unqualified opinion on those financial statements.

Basis for Opinion

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

DELOITTE & TOUCHE LLP
Chicago, Illinois

December 19, 2019

DEERE & COMPANY
STATEMENT OF CONSOLIDATED INCOME
For the Years Ended November 3, 2019, October 28, 2018, and October 29, 2017
(In millions of dollars and shares except per share amounts)

	2019	2018	2017
Net Sales and Revenues			
Net sales	$ 34,886	$ 33,351	$ 25,885
Finance and interest income	3,493	3,107	2,732
Other income	879	900	1,121
Total	39,258	37,358	29,738
Costs and Expenses			
Cost of sales	26,792	25,571	19,866
Research and development expenses	1,783	1,658	1,373
Selling, administrative and general expenses	3,551	3,455	3,098
Interest expense	1,466	1,204	899
Other operating expenses	1,578	1,399	1,348
Total	35,170	33,287	26,584
Income of Consolidated Group before Income Taxes	4,088	4,071	3,154
Provision for income taxes	852	1,727	971
Income of Consolidated Group	3,236	2,344	2,183
Equity in income (loss) of unconsolidated affiliates	21	27	(24)
Net Income	3,257	2,371	2,159
Less: Net income attributable to noncontrolling interests	4	3	
Net Income Attributable to Deere & Company	$ 3,253	$ 2,368	$ 2,159
Per Share Data			
Basic	$ 10.28	$ 7.34	$ 6.76
Diluted	$ 10.15	$ 7.24	$ 6.68
Dividends declared	$ 3.04	$ 2.58	$ 2.40
Average Shares Outstanding			
Basic	316.5	322.6	319.5
Diluted	320.6	327.3	323.3

The notes to consolidated financial statements are an integral part of this statement.

DEERE & COMPANY

STATEMENT OF CONSOLIDATED COMPREHENSIVE INCOME

For the Years Ended November 3, 2019, October 28, 2018, and October 29, 2017

(In millions of dollars)

	2019	2018	2017
Net Income	$ 3,257	$ 2,371	$ 2,159
Other Comprehensive Income (Loss), Net of Income Taxes			
Retirement benefits adjustment	(678)	1,052	829
Cumulative translation adjustment	(448)	(195)	230
Unrealized gain (loss) on derivatives	(75)	9	4
Unrealized gain (loss) on debt securities	29	(13)	(1)
Other Comprehensive Income (Loss), Net of Income Taxes	(1,172)	853	1,062
Comprehensive Income of Consolidated Group	2,085	3,224	3,221
Less: Comprehensive income attributable to noncontrolling interests	4	2	
Comprehensive Income Attributable to Deere & Company	$ 2,081	$ 3,222	$ 3,221

The notes to consolidated financial statements are an integral part of this statement.

DEERE & COMPANY

CONSOLIDATED BALANCE SHEET

As of November 3, 2019 and October 28, 2018

(In millions of dollars)

	2019	2018
ASSETS		
Cash and cash equivalents	$ 3,857	$ 3,904
Marketable securities	581	490
Receivables from unconsolidated affiliates	46	22
Trade accounts and notes receivable - net	5,230	5,004
Financing receivables - net	29,195	27,054
Financing receivables securitized - net	4,383	4,022
Other receivables	1,487	1,736
Equipment on operating leases - net	7,567	7,165
Inventories	5,975	6,149
Property and equipment - net	5,973	5,868
Investments in unconsolidated affiliates	215	207
Goodwill	2,917	3,101
Other intangible assets - net	1,380	1,562
Retirement benefits	840	1,298
Deferred income taxes	1,466	808
Other assets	1,899	1,718
Total Assets	$ 73,011	$ 70,108
LIABILITIES AND STOCKHOLDERS' EQUITY		
LIABILITIES		
Short-term borrowings	$ 10,784	$ 11,062
Short-term securitization borrowings	4,321	3,957
Payables to unconsolidated affiliates	142	129
Accounts payable and accrued expenses	9,656	10,111
Deferred income taxes	495	556
Long-term borrowings	30,229	27,237
Retirement benefits and other liabilities	5,953	5,751
Total liabilities	61,580	58,803
Commitments and contingencies (Note 23)		
Redeemable noncontrolling interest	14	14
STOCKHOLDERS' EQUITY		
Common stock, $1 par value (authorized – 1,200,000,000 shares; issued – 536,431,204 shares in 2019 and 2018), at paid-in amount	4,642	4,474
Common stock in treasury, 223,290,789 shares in 2019 and 217,975,806 shares in 2018, at cost	(17,474)	(16,312)
Retained earnings	29,852	27,553
Accumulated other comprehensive income (loss)	(5,607)	(4,427)
Total Deere & Company stockholders' equity	11,413	11,288
Noncontrolling interests	4	3
Total stockholders' equity	11,417	11,291
Total Liabilities and Stockholders' Equity	$ 73,011	$ 70,108

The notes to consolidated financial statements are an integral part of this statement.

DEERE & COMPANY

STATEMENT OF CONSOLIDATED CASH FLOWS

For the Years Ended November 3, 2019, October 28, 2018, and October 29, 2017
(In millions of dollars)

	2019	2018	2017
Cash Flows from Operating Activities			
Net income	$ 3,257	$ 2,371	$ 2,159
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for credit losses	43	90	98
Provision for depreciation and amortization	2,019	1,927	1,716
Impairment charges	77		40
Share-based compensation expense	82	84	68
(Gain) loss on sales of businesses and unconsolidated affiliates	5	(25)	(375)
Undistributed earnings of unconsolidated affiliates	9	(26)	(14)
Provision (credit) for deferred income taxes	(465)	1,480	100
Changes in assets and liabilities:			
Trade, notes, and financing receivables related to sales	(869)	(1,531)	(839)
Inventories	(780)	(1,772)	(1,305)
Accounts payable and accrued expenses	46	722	968
Accrued income taxes payable/receivable	173	(466)	(84)
Retirement benefits	(233)	(1,026)	(32)
Other	48	(6)	(304)
Net cash provided by operating activities	3,412	1,822	2,196
Cash Flows from Investing Activities			
Collections of receivables (excluding receivables related to sales)	16,706	15,589	14,671
Proceeds from maturities and sales of marketable securities	89	76	404
Proceeds from sales of equipment on operating leases	1,648	1,483	1,441
Proceeds from sales of businesses and unconsolidated affiliates, net of cash sold	93	156	114
Cost of receivables acquired (excluding receivables related to sales)	(18,873)	(17,013)	(15,222)
Acquisitions of businesses, net of cash acquired		(5,245)	(284)
Purchases of marketable securities	(140)	(133)	(118)
Purchases of property and equipment	(1,120)	(896)	(595)
Cost of equipment on operating leases acquired	(2,329)	(2,054)	(1,997)
Other	2	(139)	(76)
Net cash used for investing activities	(3,924)	(8,176)	(1,662)
Cash Flows from Financing Activities			
Increase (decrease) in total short-term borrowings	(917)	473	1,310
Proceeds from long-term borrowings	9,986	8,288	8,702
Payments of long-term borrowings	(6,426)	(6,245)	(5,397)
Proceeds from issuance of common stock	178	217	529
Repurchases of common stock	(1,253)	(958)	(6)
Dividends paid	(943)	(806)	(764)
Other	(116)	(93)	(88)
Net cash provided by financing activities	509	876	4,286
Effect of Exchange Rate Changes on Cash, Cash Equivalents, and Restricted Cash	(56)	26	157
Net Increase (Decrease) in Cash, Cash Equivalents, and Restricted Cash	(59)	(5,452)	4,977
Cash, Cash Equivalents, and Restricted Cash at Beginning of Year	4,015	9,467	4,490
Cash, Cash Equivalents, and Restricted Cash at End of Year	$ 3,956	$ 4,015	$ 9,467

The notes to consolidated financial statements are an integral part of this statement.

DEERE & COMPANY

STATEMENT OF CHANGES IN CONSOLIDATED STOCKHOLDERS' EQUITY

For the Years Ended October 29, 2017, October 28, 2018, and November 3, 2019

(In millions of dollars)

	Total Stockholders' Equity						
		Deere & Company Stockholders					
	Total Stockholders' Equity	Common Stock	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Noncontrolling Interests	Redeemable Noncontrolling Interest
Balance October 30, 2016	$ 6,531	$ 3,912	$ (15,677)	$ 23,911	$ (5,626)	$ 11	$ 14
Net income	2,159			2,159			
Other comprehensive income	1,062				1,062		
Repurchases of common stock.....	(6)		(6)				
Treasury shares reissued	222		222				
Dividends declared..................	(770)			(769)		(1)	
Stock options and other	362	369				(7)	
Balance October 29, 2017........	9,560	4,281	(15,461)	25,301	(4,564)	3	14
Net income	2,370			2,368		2	1
Other comprehensive income (loss)	853				854	(1)	
Repurchases of common stock.....	(958)		(958)				
Treasury shares reissued	107		107				
Dividends declared..................	(836)			(834)		(2)	(1)
Acquisition (Note 4)	1					1	
Stock options and other	194	193		1			
ASU No. 2018-02 adoption......				717	(717)		
Balance October 28, 2018	11,291	4,474	(16,312)	27,553	(4,427)	3	14
ASU No. 2016-01 adoption*....				8	(8)		
Net income	3,257			3,253		4	
Other comprehensive loss	(1,172)				(1,172)		
Repurchases of common stock.....	(1,253)		(1,253)				
Treasury shares reissued	91		91				
Dividends declared..................	(965)			(963)		(2)	
Stock options and other	168	168		1		(1)	
Balance November 3, 2019	$ 11,417	$ 4,642	$ (17,474)	$ 29,852	$ (5,607)	$ 4	$ 14

* See Note 3.

The notes to consolidated financial statements are an integral part of this statement.

1. ORGANIZATION AND CONSOLIDATION

Structure of Operations

The information in the notes and related commentary are presented in a format that includes data grouped as follows:

Equipment Operations – Includes the company's agriculture and turf operations and construction and forestry operations with financial services reflected on the equity basis.

Financial Services – Includes primarily the company's financing operations.

Consolidated – Represents the consolidation of the equipment operations and financial services. References to "Deere & Company" or "the company" refer to the entire enterprise.

Principles of Consolidation

The consolidated financial statements represent primarily the consolidation of all companies in which Deere & Company has a controlling interest. Certain variable interest entities (VIEs) are consolidated since the company is the primary beneficiary. The primary beneficiary has both the power to direct the activities that most significantly impact the VIEs' economic performance and the obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIEs. Deere & Company records its investment in each unconsolidated affiliated company (generally 20 to 50 percent ownership) at its related equity in the net assets of such affiliate (see Note 11). Other investments (less than 20 percent ownership) are recorded at cost.

Fiscal Year

The company uses a 52/53 week fiscal year ending on the last Sunday in the reporting period. The fiscal year ends for 2019, 2018, and 2017 were November 3, 2019, October 28, 2018, and October 29, 2017, respectively. Fiscal year 2019 contained 53 weeks compared to 52 weeks in fiscal years 2018 and 2017.

Variable Interest Entities

The company consolidates certain VIEs related to retail note securitizations (see Note 14).

The company also has an interest in a joint venture that manufactures construction equipment in Brazil for local and overseas markets. The joint venture is a VIE; however, the company is not the primary beneficiary. Therefore, the entity's financial results are not fully consolidated in the company's consolidated financial statements, but are included on the equity basis. During 2019, the company made an additional contribution to the joint venture in exchange for non-voting preferred stock and terminated a loan guarantee. The maximum exposure to losses at November 3, 2019 and October 28, 2018 in millions of dollars follows:

	2019	2018
Receivables from unconsolidated affiliates	$ 4	$ 2
Investment in unconsolidated affiliates	18	
Loan guarantee		25
Total	$ 22	$ 27

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The following are significant accounting policies in addition to those included in other notes to the consolidated financial statements.

Use of Estimates in Financial Statements

The preparation of financial statements in conformity with accounting principles generally accepted in the U.S. requires management to make estimates and assumptions that affect the reported amounts and related disclosures. Actual results could differ from those estimates.

Revenue Recognition

Sales of equipment and service parts are recognized when each of the following criteria are met: (1) the company and an independent customer approve a contract with commercial substance, (2) the sales price is determinable and collectability of the payments are probable based on the terms outlined in the contract, and (3) control of the goods has transferred to the customer. Transfer of control generally occurs for equipment and service parts when the good is delivered as specified in the contract and the risks and rewards of ownership are transferred. In the U.S. and most international locations, this transfer occurs primarily when goods are shipped. In Canada and some other international locations, certain goods are shipped to dealers on a consignment basis under which the risks and rewards of ownership are not transferred to the dealer at the time the goods are shipped. Accordingly, in these locations, sales are not recorded until a retail customer has purchased the goods. Generally, no right of return exists on sales of equipment.

In limited instances, equipment is transferred to a customer or a financial institution with an obligation to repurchase the equipment for a specified amount, which is exercisable at the customer's option. When the equipment is expected to be repurchased, those arrangements are accounted for as leases. When the operating lease criteria are met, no sale is recorded at the time of the equipment transfer and the difference between sale price and the specified repurchase amount is recognized as revenue on a straight-line basis until the customer's option expires. When this equipment is not expected to be repurchased, a sale is recorded with a return obligation.

Under the terms of sales agreements with dealers, interest-free periods are determined based on the type of equipment sold and the time of year of the sale. These periods range from one to twelve months for most equipment. Interest-free periods may not be extended. Interest is primarily charged to dealers on outstanding balances, from the earlier of the date when goods are sold to a retail customer by the dealer or the expiration of the interest-free period granted at the time of the sale to the dealer, until payment is received by the company. Interest charged may not be forgiven and the past due interest rates exceed market rates. Dealers cannot cancel purchases after the company recognizes a sale and are responsible for payment even if the equipment is not sold to retail customers. If the interest-free or below market interest rate period exceeds one year, the company adjusts the expected sales revenue for the effects of the time value of money using a current market interest rate. The revenue related to the financing component is recognized in "Finance and interest income" using the interest method. The company does not adjust the sales price to account for a financing component if the expected interest-free or below market period is one year or less.

Service parts and certain attachments returns are estimable and accrued at the time a sale is recognized. The estimated parts returns are recorded in "Other assets" for the inventory value of estimated part returns, adjusted for restocking fees. The estimated dealer refund liability, adjusted for restocking fees, is recorded in "Accounts payable and accrued expenses". The estimated returns are based on historical return rates, current dealer inventory levels, and current economic conditions.

The company remanufactures used engines and components (cores) that are sold to dealers and end customers for maintenance and repair parts. Revenue for remanufactured components is recognized using the same criteria as other parts sales. When a remanufactured part is sold, the company collects a deposit that is repaid if the customer returns a core that meets certain specifications within a defined time period. The deposit received from the customer is recognized as a liability in accounts payable and accrued expenses and the used component that is expected to be returned is recognized in other assets in the consolidated balance sheet. When a customer returns a core, the deposit is repaid, the liability reversed, and the returned core is recorded in inventory to be remanufactured and sold to another customer. If a core is not returned within the required time as estimated, the deposit is recognized as revenue in net sales, and the estimated core return is recorded as an expense in cost of sales in the statement of consolidated income.

Certain equipment is sold with precision guidance, telematics, and other information gathering and analyzing capabilities. The solutions require hardware, software, and include an obligation to provide telematic services for a specific period of time. These solutions are generally bundled with the sale of the equipment, but can also be purchased or renewed separately. The revenue related to the hardware and embedded software is generally recognized at the time of the equipment sale and recorded in "Net sales" in the consolidated statement of income. The revenue for the future services is generally deferred and recognized over the service period. The deferred revenue is recorded as a contract liability in "Accounts payable and accrued expenses" in the consolidated balance sheet and is recognized in "Other income" with the associated expenses recognized in other operating expenses in the statement of consolidated income.

Financing revenue is recorded over the lives of the related receivables using the interest method. Deferred costs on the origination of financing receivables are recognized as a reduction in "Finance and interest income" over the expected lives of the receivables using the interest method. Income and deferred costs on the origination of operating leases are recognized on a straight-line basis over the scheduled lease terms in "Finance and interest income."

Sales Incentives

In certain markets, the company provides sales incentives to dealers. These incentives may be based on a dealer's purchase volume or on retail sales incentive programs for allowances and financing programs that will be due when the dealer sells the equipment to a retail customer. At the time of the sale to a dealer, the company records an estimated cost of these programs as a reduction to the sales price. The estimated cost is based on historical data, announced and expected incentive programs, field inventory levels, and forecasted sales volumes. The final cost of these programs is determined at the end of the measurement period for volume-based incentives or when the dealer sells the equipment to a retail customer. Actual cost differences from the original cost estimate are recognized in net sales.

Product Warranties

For most equipment and parts sales, the company provides a standard warranty to provide assurance that the equipment will function as intended for a specified period. At the time a sale is recognized, the estimated future warranty costs are recorded. The company generally determines its total warranty liability by applying historical warranty claims rate experience to the estimated amount of equipment that has been sold and is still under warranty based on dealer inventories and retail sales. The historical claims rate is primarily determined by a review of five-year claims costs with consideration of current quality developments. The company also offers extended warranty arrangements for purchase at the customer's option. The premiums for extended warranties are recognized in other income in the statement of consolidated income primarily in proportion to the costs expected to be incurred over the contract period. The unamortized extended warranty premiums (deferred revenue) are recorded in "Accounts payable and accrued expenses" in the consolidated balance sheet (see Note 23).

Sales and Transaction Taxes

The company collects and remits taxes assessed by different governmental authorities that are both imposed on and concurrent with revenue producing transactions between the company and its customers. These taxes include sales, use, value-added, and some excise taxes. The company elected to exclude these taxes from the determination of the sales price (excluded from revenues).

Shipping and Handling Costs

Shipping and handling costs related to the sales of the company's equipment after a customer obtains control of the equipment are accrued at the time of the sale in cost of sales.

Contract Costs

Incremental costs of obtaining a revenue contract are recognized as an expense when incurred since the amortization period would be one year or less.

Advertising Costs

Advertising costs are charged to expense as incurred. This expense was $215 million in 2019, $188 million in 2018, and $169 million in 2017.

Depreciation and Amortization

Property and equipment, capitalized software, and other intangible assets are generally stated at cost less accumulated depreciation or amortization. These assets are depreciated over their estimated useful lives generally using the straight-line method. Equipment on operating leases is depreciated over the terms of the leases using the straight-line method. Property and equipment expenditures for new and revised products, increased capacity, and the replacement or major renewal of significant items are capitalized. Expenditures for maintenance, repairs, and minor renewals are generally charged to expense as incurred.

Securitization of Receivables

Certain financing receivables are periodically transferred to special purpose entities (SPEs) in securitization transactions (see Note 14). These securitizations qualify as collateral for secured borrowings and no gains or losses are recognized at the time of securitization. The receivables remain on the balance sheet and are classified as "Financing receivables securitized - net." The company recognizes finance income over the lives of these receivables using the interest method.

Receivables and Allowances

All financing and trade receivables are reported on the balance sheet at outstanding principal adjusted for any charge-offs, the allowance for credit losses, and any deferred fees or costs on originated financing receivables. The company also records an allowance and provision for credit losses related to the receivables from sales (trade receivables and certain financing receivables). The allowance is a reduction to the receivable balances and the provision is recorded in selling, administrative and general expenses. The allowance represents an estimate of the losses inherent in the receivable portfolio. The level of the allowance is based on many qualitative and quantitative factors, including historical net loss experience by finance product category, portfolio duration, delinquency trends, economic conditions in the company's major markets and geographies, commodity price trends, and credit risk quality. The adequacy of the allowance is assessed quarterly by finance product category. Receivables are written-off to the allowance when the account is considered uncollectible (see Note 13).

Impairment of Long-Lived Assets, Goodwill, and Other Intangible Assets

The company evaluates the carrying value of long-lived assets (including equipment on operating leases, property and equipment, goodwill, and other intangible assets) when events or circumstances warrant such a review. Goodwill and intangible assets with indefinite lives are tested for impairment annually at the end of the third quarter of each fiscal year, and more often if events or circumstances indicate a reduction in the fair value below the carrying value. Goodwill is allocated and reviewed for impairment by reporting units, which consist primarily of the operating segments and certain other reporting units. Goodwill is allocated to the reporting unit in which the business that created the goodwill resides. To test for goodwill impairment, the carrying value of each reporting unit is compared with its fair value. If the carrying value of the goodwill is considered impaired, the impairment is measured as the excess of the reporting unit's carrying value over the fair value, with a limit of the goodwill allocated to that reporting unit. If the carrying value of the long-lived asset is considered impaired, a loss is recognized based on the amount by which the carrying value exceeds the fair value of the asset (see Notes 5 and 27).

Derivative Financial Instruments

It is the company's policy that derivative transactions are executed only to manage exposures arising in the normal course of business and not for the purpose of creating speculative positions or trading. The company's financial services operations manage the relationship of the types and amounts of their funding sources to their receivable and lease portfolio in an effort to diminish risk due to interest rate and foreign currency fluctuations, while responding to favorable financing opportunities. The company also has foreign currency exposures at some of its foreign and domestic operations related to buying, selling, and financing in currencies other than the functional currencies. In addition, the company has interest rate exposure at certain equipment operations units for below market retail financing programs that are used as sales incentives and are offered for extended periods.

All derivatives are recorded at fair value on the balance sheet. Cash collateral received or paid is not offset against the derivative fair values on the balance sheet. Each derivative is designated as a cash flow hedge, fair value hedge, or remains undesignated. Changes in the fair value of derivatives that are designated and effective as cash flow hedges are recorded in other comprehensive income (OCI) and reclassified to the income statement when the effects of the item being hedged are recognized in the income statement. Changes in the fair value of derivatives that are designated and effective as fair value hedges are recognized currently in net income. These changes are offset in net income by fair value changes related to the risk being hedged on the hedged item. Changes in the fair value of undesignated hedges are recognized currently in the income statement.

All designated hedges are formally documented as to the relationship with the hedged item as well as the risk-management strategy. Both at inception and on an ongoing basis the hedging instrument is assessed as to its effectiveness. If and when a derivative is determined not to be highly effective as a hedge, the underlying hedged transaction is no longer likely to occur, the hedge designation is removed, or the derivative is terminated, hedge accounting is discontinued (see Note 28).

Foreign Currency Translation

The functional currencies for most of the company's foreign operations are their respective local currencies. The assets and liabilities of these operations are translated into U.S. dollars at the end of the period exchange rates. The revenues and expenses are translated at weighted-average rates for the period. The gains or losses from these translations are recorded in OCI. Gains or losses from transactions denominated in a currency other than the functional currency of the subsidiary involved and foreign exchange derivative contracts are included in net income. The pretax net loss for foreign exchange in 2019, 2018, and 2017 was $13 million, $8 million, and $62 million, respectively.

3. NEW ACCOUNTING STANDARDS

New Accounting Standards Adopted

In the first quarter of 2019, the company adopted Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (Topic 606), which supersedes the revenue recognition requirements in Accounting Standards Codification (ASC) 605, Revenue Recognition. The ASU was adopted using a modified-retrospective approach to all incomplete contracts as of the adoption date. The ASU is based on the principle that revenue is recognized to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. A five-step model is used to determine the amount and timing of revenue recognized. The ASU also requires expanded disclosures to include disaggregated revenue by geographic regions and major product lines.

The ASU required that a gross asset and liability rather than a net liability be recorded for the value of estimated service parts returns and the related refund liability. The gross asset is recorded in other assets for the inventory value of estimated parts returns and the gross liability is recorded in accounts payable and accrued expenses for the estimated dealer refund. The table below reflects the change for the estimated parts returns in the affected lines on the consolidated balance sheet in millions of dollars.

	October 28 2018	Cumulative Effect from Adoption	October 29 2018
Assets			
Other assets	$ 1,718	$ 110	$ 1,828
Liabilities			
Accounts payable and accrued expenses.....	$ 10,111	$ 110	$ 10,221

There were no significant changes affecting the timing of revenue recognition from the adoption. The company's updated revenue policies are included in Note 2 and additional disclosures in Note 6.

In the first quarter of 2019, the company adopted ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, which amends ASC 825-10, Financial Instruments – Overall. This ASU changed the treatment for available for sale equity investments by recognizing unrealized fair value changes directly in net income and no longer in OCI. The cumulative effect of adoption resulted in an $8 million after-tax reclassification from OCI to retained earnings.

In the first quarter of 2019, the company adopted ASU No. 2016-18, Restricted Cash, which amends ASC 230, Statement of Cash Flows. The ASU requires that restricted cash be included with cash and cash equivalents in the statement of cash flows. The ASU was adopted using a retrospective transition approach resulting in an update to the 2017 and 2018 consolidated and supplemental consolidating statement of cash flows (see Note 7). The ASU did not have a material effect on the company's consolidated financial statements.

In the first quarter of 2019, the company early adopted ASU No. 2017-12, Targeted Improvements to Accounting for Hedging Activities, which amends ASC 815, Derivatives and Hedging. The purpose of this ASU is to better align a company's risk management activities and financial reporting for hedging relationships, simplify the hedge accounting requirements, and improve the disclosures of hedging arrangements. The adoption did not have a material effect on the company's consolidated financial statements (see Note 28). The company continues to evaluate potential additional hedge accounting relationships provided by the new standard to further improve risk management.

The company also adopted the following standards in the first quarter of 2019, none of which had a material effect on the company's consolidated financial statements:

Accounting Standards Updates
2016-15—Classification of Certain Cash Receipts and Cash Payments, which amends ASC 230, Statement of Cash Flows
2016-16—Intra-Entity Transfers of Assets Other Than Inventory, which amends ASC 740, Income Taxes
2017-01—Clarifying the Definition of a Business, which amends ASC 805, Business Combinations
2017-09—Scope of Modification Accounting, which amends ASC 718, Compensation - Stock Compensation
2018-13—Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement, which amends ASC 820, Fair Value Measurement
2018-14—Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans, which amends ASC 715-20, Compensation - Retirement Benefits - Defined Benefit Plans - General
2018-16—Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes, which amends ASC 815, Derivatives and Hedging

New Accounting Standards to be Adopted

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842), which supersedes ASC 840, Leases. The ASU's primary change is the requirement for lessee entities to recognize a lease liability for payments and a right of use asset during the term of operating lease arrangements. The ASU does not significantly change the lessee's recognition, measurement, and presentation of expenses and cash flows from the previous accounting standard. Lessors' accounting under the ASU is largely unchanged from the previous accounting standard. The ASU also expands the disclosures for leases. The effective date is the first quarter of fiscal year 2020 and the ASU will be adopted using the modified-retrospective approach that will not require earlier periods to be restated. The company will elect the optional practical expedients to not reassess whether existing contracts contain leases, not reassess lease classification, and not reassess initial direct costs for existing leases. The company will not elect the use of the hindsight practical expedient. In addition, the company will elect to combine lease and non-lease components for most asset classes and to not recognize a right of use asset or lease liability for arrangements that qualify as short-term leases. A software application for lessee accounting will be implemented for the adoption, along with new processes and controls. The estimated right of use assets and lease liabilities at adoption will be approximately $375 million. The adoption will not have a material effect on the company's operating results or cash flows.

In June 2016, the FASB issued ASU No. 2016-13, Measurement of Credit Losses on Financial Instruments, which establishes ASC 326, Financial Instruments – Credit Losses. The ASU revises the measurement of credit losses for financial assets measured at amortized cost from an incurred loss methodology to an expected loss methodology. The ASU affects trade receivables, debt securities, net investment in leases, and most other financial assets that represent a right to receive cash. Additional disclosures about significant estimates and credit quality are also required. In November 2018, the FASB issued ASU No. 2018-19, Codification Improvements to Topic 326, Financial Instruments – Credit Losses. This ASU clarifies that receivables from operating leases are accounted for using the lease guidance and not as financial instruments. In May 2019, the FASB issued ASU No. 2019-05, Targeted Transition Relief, which amends ASC 326. This ASU provides an option to irrevocably elect to measure certain individual financial assets at fair value instead of amortized cost. In November 2019, the FASB issued ASU No. 2019-11, Codification Improvements to Topic 326, Financial Instruments – Credit Losses. The ASU clarifies the treatment of expected recoveries for amounts previously written off on purchased receivables, provides transition relief for troubled debt restructurings, and allows for certain disclosure simplifications of accrued interest. The effective date will be the first quarter of fiscal year 2021. The ASUs will be adopted using a modified-retrospective approach. The company is evaluating the potential effects on the consolidated financial statements.

In March 2017, the FASB issued ASU No. 2017-08, Premium Amortization on Purchased Callable Debt Securities, which amends ASC 310-20, Receivables – Nonrefundable Fees and Other Costs. This ASU reduces the amortization period for certain callable debt securities held at a premium to the earliest call date. The treatment of securities held at a discount is unchanged. The effective date is the first quarter of fiscal year 2020. The ASU will be adopted using a modified-retrospective approach. The adoption will not have a material effect on the company's consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, Improvements to Nonemployee Share-Based Payment Accounting, which amends ASC 718, Compensation – Stock Compensation. The ASU requires that most of the guidance related to stock compensation granted to employees be followed for non-employees, including the measurement date, valuation approach, and performance conditions. The expense is recognized in the same period as though cash were paid for the good or service. The effective date is the first quarter of fiscal year 2020. The ASU will be adopted using a modified-retrospective approach. The adoption will not have a material effect on the consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-15, Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract, which amends ASC 350-40, Intangibles – Goodwill and Other – Internal-Use Software. This ASU requires customers in a hosting arrangement that is a service contract to evaluate the implementation costs of the hosting arrangement using the guidance to develop internal-use software. The project development stage determines the implementation costs that are capitalized or expensed. Capitalized implementation costs are amortized over the term of the service arrangement and are presented in the same income statement line item as the service contract costs. The effective date will be the first quarter of fiscal year 2021, with early adoption permitted. The company will adopt the ASU on a prospective basis. The company is evaluating the potential effects on the company's consolidated financial statements.

In April 2019, the FASB issued ASU No. 2019-04, Codification Improvements to Topic 326, Financial Instruments – Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments. The effective dates for the separate portions of the ASU and the expected effect on the consolidated financial statements are as follows: (1) clarifications to ASU No. 2016-13, Measurement of Credit Losses on Financial Instruments, is the first quarter of fiscal year 2021, which is under evaluation, (2) clarifications to ASU No. 2017-12, Targeted Improvements to Accounting for Hedging Activities is the first quarter of fiscal year 2020, with early adoption permitted, which will not have a material effect, and (3) clarifications to ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities is the first quarter of fiscal year 2021, with early adoption permitted, which will not have a material effect on the company's consolidated financial statements.

4. ACQUISITIONS AND DISPOSITIONS

Acquisitions

PLA

On September 26, 2018, the company acquired PLA, a privately-held manufacturer of sprayers, planters, and specialty products for agriculture. PLA is based in Argentina, with manufacturing facilities in Las Rosas, Argentina and Canoas, Brazil. The total cash purchase price before the final adjustment, net of cash acquired of $1 million, was $69 million with $4 million retained by the company as escrow to secure indemnity obligations. In addition to the cash purchase price, the company assumed $30 million of liabilities. The asset and liability fair values at the acquisition date in millions of dollars follow:

		September 2018
Trade accounts and notes receivable	$	3
Other receivables		14
Inventories		15
Property and equipment		6
Goodwill		38
Other intangible assets		22
Other assets		1
Total assets	$	99
Short-term borrowings	$	8
Accounts payable and accrued expenses		17
Deferred income taxes		5
Total liabilities	$	30

The identified intangible assets were primarily related to technology, trademarks, and customer relationships, which have a weighted-average amortization period of five years. The goodwill is not expected to be deductible for tax purposes.

King Agro

In March 2018, the company acquired King Agro, a privately held manufacturer of carbon fiber technology products with headquarters in Valencia, Spain and a production facility in Campana, Argentina. The total cash purchase price, net of cash acquired of $3 million, was $40 million, excluding a loan to King Agro of $4 million that was forgiven on the acquisition date. In addition to the cash purchase price, the company assumed $11 million of liabilities. The asset and liability fair values at the acquisition date in millions of dollars follow:

		March 2018
Trade accounts and notes receivable	$	2
Other receivables		2
Inventories		5
Property and equipment		5
Goodwill		28
Other intangible assets		13
Total assets	$	55
Short-term borrowings	$	2
Accounts payable and accrued expenses		4
Deferred income taxes		4
Long-term borrowings		1
Total liabilities	$	11

The identifiable intangibles were primarily related to trade name and technology, which have a weighted-average amortization period of ten years. The goodwill is not expected to be deductible for tax purposes.

Wirtgen

In December 2017, the company acquired Wirtgen, which was a privately-held international company and is the leading manufacturer worldwide of road construction equipment. Headquartered in Germany, Wirtgen has six brands across the road building sector spanning processing, mixing, paving, compaction, and rehabilitation. Wirtgen sells products in more than 100 countries and had approximately 8,200 employees at the acquisition date.

The total cash purchase price, net of cash acquired of $191 million, was $5,136 million, a portion of which is held in escrow to secure certain indemnity obligations of Wirtgen. In addition to the cash purchase price, the company assumed $1,641 million in liabilities, which represented substantially all of Wirtgen's liabilities. The company financed the acquisition and associated transaction expenses from a combination of cash and new debt financing, which consisted of medium-term notes, including €850 million issued in September 2017. The asset and liability fair values at the acquisition date in millions of dollars follow:

		December 2017
Receivables from unconsolidated affiliates	$	5
Trade accounts and notes receivable		449
Financing receivables		43
Financing receivables securitized		125
Other receivables		98
Inventories		1,536
Property and equipment		752
Investments in unconsolidated affiliates		19
Goodwill		2,068
Other intangible assets		1,442
Deferred income taxes		26
Other assets		215
Total assets	$	6,778
Short-term borrowings	$	285
Short-term securitization borrowings		127
Accounts payable and accrued expenses		719
Deferred income taxes		430
Long-term borrowings		50
Retirement benefits and other liabilities		30
Total liabilities	$	1,641
Noncontrolling interests	$	1

The identifiable intangible assets' fair values in millions of dollars and weighted-average useful lives in years follows:

	Weighted-Average Useful Lives		Fair Values
Customer lists and relationships	16	$	519
Technology, patents, trademarks, and other	19	$	923

The goodwill is not deductible for tax purposes.

Wirtgen's results are incorporated in the company's consolidated financial statements using a one-month lag period and are included in the construction and forestry segment. The net sales and revenues and operating profit included in the company's statement of consolidated income in 2018 was $3,181 million and $116 million, respectively. During 2018, the company recognized $56 million of acquisition related costs, which were recorded $30 million in selling, administrative and general expenses and $26 million in other operating expenses.

The unaudited pro forma consolidated net sales and revenues and net income were prepared as if the acquisition closed at the beginning of fiscal year 2017 and follow in millions of dollars:

	2018	2017
Net sales and revenues	$ 37,822	$ 32,946
Net income attributable to Deere & Company	$ 2,637	$ 2,272

The pro forma amounts were calculated using policies consistent with the company's accounting policies and included the additional expense from the amortization from the allocated purchase price adjustments. The pro forma results excluded acquisition related costs incurred in both years and assumed the medium-term notes used to fund the acquisition were issued in fiscal year 2016 at the interest rate of the actual notes. In addition, the pro forma results for the year ended October 29, 2017 included nonrecurring pretax expenses of $291 million for the higher cost basis from the inventory fair value adjustment and $84 million for the amortization of identifiable intangible assets. Anticipated synergies or other expected benefits of the acquisition were not included in the pro forma results. As a result, the unaudited pro forma financial information may not have been indicative of the results for future operations or the results if the acquisition closed at the beginning of fiscal year 2017.

Blue River

In September 2017, the company acquired Blue River Technology (Blue River), which is based in Sunnyvale, California for an acquisition cost of approximately $284 million, net of cash acquired of $4 million and $21 million funded to escrow for post-acquisition expenses. Blue River has designed and integrated computer vision and machine learning technology to optimize the use of farm inputs. Machine learning technologies could eventually be applied to a wide range of the company's products. The asset and liability fair values at the acquisition date in millions of dollars follow:

	September 2017
Trade accounts and notes receivable	$ 1
Property and equipment	2
Goodwill	193
Other intangible assets	125
Total assets	$ 321
Accounts payable and accrued expenses	$ 1
Deferred income taxes	36
Total liabilities	$ 37

The identifiable intangibles were primarily related to in-process research and development, which will not be amortized until the research and development efforts are complete or end.

The goodwill is not deductible for tax purposes. Blue River is included in the company's agriculture and turf operating segment.

For the acquisitions, the goodwill was the result of future cash flows and related fair value exceeding the fair value of the identified assets and liabilities. For the acquisitions other than Wirtgen, the results of these operations have been included in the company's consolidated financial statements in the agriculture and turf operating segment and the pro forma results of operations as if these acquisitions had occurred at the beginning of the current or comparative fiscal year would not differ significantly from the reported results.

Dispositions

In October 2019, the company sold its construction and forestry retail locations in Canada. At the time of the sale, total assets were $187 million consisting of inventory of $138 million, property and equipment – net of $24 million, other assets of $3 million, and goodwill of $22 million. The liabilities consisted of $10 million of accounts payable and accrued expenses. In addition, the company accrued $15 million for transaction expenses and related costs. The total proceeds from the sale will be approximately $187 million, with $93 million received in the fourth quarter of 2019. The remaining sales price is due based on standard payment terms of new equipment sales to independent dealers and separately negotiated terms ranging from 12 months to five years. A pretax loss of approximately $5 million was recorded in other operating expenses in the construction and forestry segment.

In May 2018, the company sold construction and forestry retail locations in Michigan, Minnesota, and Wisconsin. At the time of the sale, total assets were $74 million and liabilities were approximately $2 million. The assets consisted of trade accounts and notes receivable – net of $3 million, inventory of $52 million, property and equipment – net of $11 million, and goodwill of $8 million. The liabilities consisted of $2 million of accounts payable and accrued expenses. The total proceeds from the sale were approximately $84 million, with $67 million received in 2018. The remaining sales price was due based on standard payment terms of new equipment sales to independent dealers or refinanced wholesale terms. A pretax gain of $12 million was recorded in other income in the construction and forestry segment.

In November 2017, the company sold its construction and forestry retail locations in Florida. At the time of the sale, total assets were $93 million and liabilities were $1 million. The assets consisted of inventory of $61 million, property and equipment – net of $21 million, goodwill of $10 million, and $1 million of other assets. The liabilities consisted of $1 million of accounts payable and accrued expenses. The total proceeds from the sale were approximately $105 million, with $89 million received in 2018. The remaining sales price was due based on standard payment terms of new equipment sales to independent dealers or refinanced wholesale terms. A pretax gain of $13 million was recorded in other income in the construction and forestry segment.

For the retail location dispositions, the company sells equipment, service parts, and provides other services to the purchasers as independent dealers.

5. SPECIAL ITEMS

Impairments

In the fourth quarter of 2019, the company recorded non-cash charges in other operating expenses of approximately $59 million pretax for the impairment of equipment on operating leases and approximately $18 million pretax on matured operating lease inventory recorded in other assets. The impairment was the result of lower estimated values of used agriculture and construction equipment than originally estimated with the probable effect that the future cash flows would not cover the carrying amount of the net assets. The assets are part of the financial services operations (see Note 27).

In the fourth quarter of 2017, the company recorded a non-cash charge of $40 million pretax in equity in loss of unconsolidated affiliates for an other than temporary decline in value of an investment in an international construction equipment manufacturer with a $14 million income tax benefit recorded in the provision for income taxes (see Note 27).

Employee-Separation Programs

During 2019, the company completed certain employee-separation programs designed for specific functions and geographic areas as part of its on-going efforts to create a more efficient organizational structure. The programs provided for cash payments based on years of service. The expenses were recorded in the period the employees irrevocably accepted the separation offer. The programs' total pretax expenses were $30 million, which were primarily recorded in the fourth quarter of 2019. The total 2019 expenses were allocated approximately 18 percent cost of sales, 2 percent research and development, and 80 percent selling, administrative and general. In addition, the expenses were allocated 62 percent to the agriculture and turf operations, 8 percent to the construction and forestry operations, and 30 percent to the financial services operations. Savings from these programs are estimated to be approximately $30 million in 2020.

During the fourth quarter of 2016, the company announced voluntary employee-separation programs as part of its effort to reduce operating costs. The programs provided for cash payments based on previous years of service. The expense was recorded in the period the employees accepted the separation offer. The programs' total pretax expenses were $113 million, of which $11 million was recorded in the fourth quarter of 2016 and $102 million in 2017. The total 2017 expenses were allocated approximately 30 percent cost of sales, 16 percent research and development, and 54 percent selling, administrative and general. In addition, the expenses were allocated 75 percent to agriculture and turf operations, 17 percent to the construction and forestry operations, and 8 percent to the financial services operations. Savings from these programs were estimated to be approximately $70 million in 2017.

Sale of Investment in Unconsolidated Affiliate

In December 2016, the company sold approximately 38 percent of its interest in SiteOne Landscape Supply, Inc. (SiteOne) resulting in gross proceeds of $114 million and a gain of $105 million pretax or $66 million after-tax. In April 2017, the company sold an additional 68 percent of its then remaining interest in SiteOne resulting in gross proceeds of $184 million and a gain of $176 million pretax or $111 million after-tax. In July 2017, the company sold its remaining interest in SiteOne resulting in gross proceeds of $98 million and a gain of $94 million pretax or $59 million after-tax. The gains were recorded in other income in the agriculture and turf operating segment.

After the December 2016 sale, the company retained approximately a 15 percent ownership interest in SiteOne and approximately a 5 percent ownership interest after the April sale. Prior to April 2017, the company's representation on the SiteOne board of directors allowed the company to exercise significant influence, and therefore, the investment in SiteOne was accounted for using the equity method. In March 2017, the company reduced its representation on the SiteOne board of directors. As a result, beginning April 2017 the investment in SiteOne was recorded as an available-for-sale security and presented in marketable securities.

6. REVENUE RECOGNITION

The company's net sales and revenues by primary geographical market, major product line, and timing of revenue recognition in millions of dollars follow:

	Agriculture and Turf	Construction and Forestry	Financial Services	Total
2019				
Primary geographical markets:				
United States	$ 12,362	$ 6,082	$ 2,482	$ 20,926
Canada	1,096	1,107	617	2,820
Western Europe	3,866	1,586	87	5,539
Central Europe and CIS	1,423	749	37	2,209
Latin America	2,894	719	272	3,885
Asia, Africa, Australia, New Zealand, and Middle East	2,488	1,265	126	3,879
Total	$ 24,129	$ 11,508	$ 3,621	$ 39,258
Major product lines:				
Large Agriculture	$ 11,727			$ 11,727
Small Agriculture	8,696			8,696
Turf	2,650			2,650
Construction		$ 5,188		5,188
Compact Construction		1,279		1,279
Road Building		3,193		3,193
Forestry		1,403		1,403
Financial Products	100	30	$ 3,621	3,751
Other	956	415		1,371
Total	$ 24,129	$ 11,508	$ 3,621	$ 39,258
Timing of revenue recognition:				
Revenue recognized at a point in time	$ 23,915	$ 11,391	$ 111	$ 35,417
Revenue recognized over time	214	117	3,510	3,841
Total	$ 24,129	$ 11,508	$ 3,621	$ 39,258

Following is a description of the company's major product lines:

Large Agriculture – Includes net sales of tractors with more than approximately 200 horsepower and associated attachments, combines, cotton pickers, cotton strippers, self-propelled forage harvesters and related attachments, and sugarcane harvesters, harvesting front-end equipment, sugarcane loaders and pull behind scrapers, tillage, seeding, and application equipment, including sprayers, nutrient management and soil preparation machinery, and related attachments and service parts.

Small Agriculture – Includes net sales of medium and utility tractors with less than approximately 200 horsepower, hay and forage equipment, balers, mowers, and related attachments and service parts.

Turf – Includes net sales of turf and utility equipment, including riding lawn equipment and walk-behind mowers, golf course equipment, utility vehicles, and commercial mowing equipment, along with a broad line of associated implements, other outdoor power products, and related service parts.

Construction – Includes net sales of a broad range of machines used in construction, earthmoving, and material handling, including backhoe loaders, crawler dozers and loaders, four-wheel-drive loaders, excavators, motor graders, articulated dump trucks, and related attachments and service parts.

Compact Construction – Includes net sales of smaller construction equipment, including compact excavators, compact track loaders, compact wheel loaders, skid steer loaders, landscape loaders, and related attachments and service parts.

Road Building – Includes net sales of equipment used in road building and renovation, including milling machines, recyclers, slipform pavers, surface miners, asphalt pavers, compactors, tandem and static rollers; mobile crushers and screens, mobile and stationary asphalt plants, and related attachments and service parts.

Forestry – Includes net sales of equipment used in timber harvesting, including log skidders, feller bunchers, log loaders, log forwarders, log harvesters, and related attachments and service parts.

Financial Products – Includes finance and interest income primarily from retail notes related to sales of John Deere equipment to end customers, wholesale financing to dealers of John Deere equipment, and revolving charge accounts; lease income from retail leases of John Deere equipment; and revenue from extended warranties.

Other – Includes sales of certain components to other equipment manufacturers, revenue earned over time from precision guidance, telematics, and other information enabled solutions, revenue from service performed at company owned dealerships and service centers, gains on disposition of property and businesses, trademark licensing revenue, and other miscellaneous revenue items.

The company invoices in advance of recognizing the sale of certain products and the revenue for certain services. These items are primarily for premiums for extended warranties, advance payments for future equipment sales, and subscription and service revenue related to precision guidance and telematic services. These advanced customer payments are presented as deferred revenue, a contract liability, in accounts payable and accrued expenses in the consolidated balance sheet. The deferred revenue received, but not recognized in revenue, including extended warranty premiums also shown in Note 23, was $1,010 million and $915 million at November 3, 2019 and October 28, 2018, respectively. The contract liability is reduced as the revenue is recognized. Revenue recognized from deferred revenue that was recorded as a contract liability at the beginning of the fiscal year was $444 million in 2019.

The company entered into contracts with customers to deliver equipment and services that have not been recognized at November 3, 2019 because the equipment or services have not been provided. These contracts primarily relate to extended warranty and certain precision guidance and telematic services. The amount of unsatisfied performance obligations for contracts with an original duration greater than one year is $892 million at November 3, 2019. The estimated revenue to be recognized by fiscal year follows in millions of dollars: 2020 - $413, 2021 - $241, 2022 - $142, 2023 - $68, 2024 - $25, and later years - $3. As permitted, the company elected only to disclose remaining performance obligations with an original contract duration greater than one year. The contracts with an expected duration of one year or less are generally for sales to dealers and end customers for equipment, service parts, repair services, and certain telematics services.

7. CASH FLOW INFORMATION

For purposes of the statement of consolidated cash flows, the company considers investments with purchased maturities of three months or less to be cash equivalents. Substantially all of the company's short-term borrowings, excluding the current maturities of long-term borrowings, mature or may require payment within three months or less.

The equipment operations sell a significant portion of their trade receivables to financial services. These intercompany cash flows are eliminated in the consolidated cash flows.

All cash flows from the changes in trade accounts and notes receivable (see Note 13) are classified as operating activities in the statement of consolidated cash flows as these receivables arise from sales to the company's customers. Cash flows from financing receivables that are related to sales to the company's customers (see Note 13) are also included in operating activities. The remaining financing receivables are related to the financing of equipment sold by independent dealers and are included in investing activities.

The company had the following non-cash operating and investing activities that were not included in the statement of consolidated cash flows. The company transferred inventory to equipment on operating leases of $679 million, $855 million, and $801 million in 2019, 2018, and 2017, respectively. The company also had accounts payable related to purchases of property and equipment of $152 million, $183 million, and $108 million at November 3, 2019, October 28, 2018, and October 29, 2017, respectively.

The company's restricted cash held at November 3, 2019, October 28, 2018, October 29, 2017, and October 30, 2016 was as follows in millions of dollars:

	2019	2018	2017	2016
Equipment operations	$ 21	$ 7	$ 6	$ 10
Financial services	78	104	126	144
Total	$ 99	$ 111	$ 132	$ 154

The equipment operations' restricted cash relates to miscellaneous operational activities. The financial services restricted cash primarily relates to securitization of financing receivables (see Note 14). The restricted cash is recorded in other assets in the consolidated balance sheet.

Cash payments for interest and income taxes consisted of the following in millions of dollars:

	2019	2018	2017
Interest:			
Equipment operations	$ 666	$ 581	$ 506
Financial services	1,154	925	665
Intercompany eliminations	(360)	(330)	(268)
Consolidated	$ 1,460	$ 1,176	$ 903
Income taxes:			
Equipment operations	$ 1,018	$ 625	$ 898
Financial services	(57)	387	92
Intercompany eliminations	150	(300)	(9)
Consolidated	$ 1,111	$ 712	$ 981

8. PENSION AND OTHER POSTRETIREMENT BENEFITS

The company has several funded and unfunded defined benefit pension plans and other postretirement benefit (OPEB) plans, primarily health care and life insurance plans, covering its U.S. employees and employees in certain foreign countries. The company uses an October 31 measurement date for these plans.

The components of net periodic pension cost and the assumptions related to the cost consisted of the following in millions of dollars and in percents:

	2019	2018	2017
Pensions			
Service cost	$ 261	$ 293	$ 274
Interest cost	447	390	361
Expected return on plan assets	(802)	(775)	(790)
Amortization of actuarial loss	148	226	247
Amortization of prior service cost	11	12	12
Settlements	5	8	2
Net cost	$ 70	$ 154	$ 106
Weighted-average assumptions			
Discount rates - service cost	4.0%	3.5%	3.5%
Discount rates - interest cost	4.0%	3.2%	3.0%
Rate of compensation increase	3.8%	3.8%	3.8%
Expected long-term rates of return	6.5%	6.9%	7.3%
Interest crediting rate - U.S. cash balance plan	3.3%	2.6%	2.8%

The components of net periodic OPEB cost and the assumptions related to the cost consisted of the following in millions of dollars and in percents:

	2019	2018	2017
OPEB			
Service cost	$ 41	$ 45	$ 42
Interest cost	216	191	194
Expected return on plan assets	(36)	(22)	(17)
Amortization of actuarial loss	16	62	99
Amortization of prior service credit	(72)	(77)	(77)
Net cost	$ 165	$ 199	$ 241
Weighted-average assumptions			
Discount rates - service cost	4.8%	4.3%	4.7%
Discount rates - interest cost	4.2%	3.3%	3.2%
Expected long-term rates of return	5.7%	5.7%	6.3%

The spot yield curve approach is used to estimate the service and interest cost components of the net periodic pension and OPEB costs by applying the specific spot rates along the yield curve used to determine the benefit plan obligations to relevant projected cash outflows. The components of net periodic pension and OPEB cost excluding the service component are included in the line item "Other operating expenses" in the Statement of Consolidated Income.

The previous pension cost in net income and other changes in plan assets and benefit obligations in other comprehensive income in millions of dollars were as follows:

	2019	2018	2017
Pensions			
Net cost	$ 70	$ 154	$ 106
Retirement benefit adjustments included in other comprehensive (income) loss:			
Net actuarial (gain) loss	887	(553)	(702)
Amortization of actuarial loss	(143)	(226)	(247)
Amortization of prior service cost	(11)	(12)	(12)
Settlements	(3)	(8)	(2)
Total (gain) loss recognized in other comprehensive (income) loss	730	(799)	(963)
Total recognized in comprehensive (income) loss	$ 800	$ (645)	$ (857)

The previous OPEB cost in net income and other changes in plan assets and benefit obligations in other comprehensive income in millions of dollars were as follows:

	2019	2018	2017
OPEB			
Net cost	$ 165	$ 199	$ 241
Retirement benefit adjustments included in other comprehensive (income) loss:			
Net actuarial (gain) loss	141	(608)	(309)
Prior service cost		5	
Amortization of actuarial loss	(16)	(62)	(99)
Amortization of prior service credit	72	77	77
Total (gain) loss recognized in other comprehensive (income) loss	197	(588)	(331)
Total recognized in comprehensive (income) loss	$ 362	$ (389)	$ (90)

The benefit plan obligations, funded status, and the assumptions related to the obligations at November 3, 2019 and October 28, 2018, respectively, in millions of dollars follow:

	Pensions		OPEB	
	2019	2018	2019	2018
Change in benefit obligations				
Beginning of year balance	$ (12,108)	$ (13,166)	$ (5,472)	$ (6,162)
Service cost	(261)	(293)	(41)	(45)
Interest cost	(447)	(390)	(216)	(191)
Actuarial gain (loss)	(2,174)	1,012	(187)	624
Amendments				(5)
Benefits paid	705	711	316	317
Health care subsidies			(22)	(12)
Acquisition*		(29)		
Foreign exchange and other	35	47		2
End of year balance	(14,250)	(12,108)	(5,622)	(5,472)
Change in plan assets (fair value)				
Beginning of year balance	12,602	12,093	719	539
Actual return on plan assets	2,081	316	82	6
Employer contribution	70	938	448	488
Benefits paid	(705)	(711)	(316)	(317)
Foreign exchange and other	(24)	(34)	3	3
End of year balance	14,024	12,602	936	719
Funded status	$ (226)	$ 494	$ (4,686)	$ (4,753)
Weighted-average assumptions				
Discount rates	3.0%	4.1%	3.2%	4.5%
Rate of compensation increase	3.8%	3.8%		
Interest crediting rate - U.S. cash balance plan	2.1%	3.3%		

* See Note 4.

In 2019, the company made a voluntary contribution of $300 million to a U.S. OPEB plan. In 2018, the company made voluntary contributions of $870 million to a U.S. pension plan and $430 million to its U.S. OPEB plans.

The actuarial loss for pension for 2019 was primarily due to a decrease in discount rates. The actuarial loss for OPEB for 2019 was primarily due to a decrease in discount rates partially offset by a decrease in health care trend rates. The actuarial gain for pension and OPEB for 2018 was primarily due to an increase in discount rates.

The mortality assumptions for the 2019 and 2018 benefit plan obligations reflect the most recent tables and scales issued by the Society of Actuaries at that time.

The amounts recognized at November 3, 2019 and October 28, 2018, respectively, in millions of dollars consist of the following:

	Pensions		OPEB	
	2019	2018	2019	2018
Amounts recognized in balance sheet				
Noncurrent asset	$ 840	$ 1,298		
Current liability	(56)	(36)	$ (35)	$ (34)
Noncurrent liability	(1,010)	(768)	(4,651)	(4,719)
Total	$ (226)	$ 494	$(4,686)	$ (4,753)
Amounts recognized in accumulated other comprehensive income – pretax				
Net actuarial loss	$ 4,312	$ 3,571	$ 912	$ 787
Prior service cost (credit)	32	43	(28)	(100)
Total	$ 4,344	$ 3,614	$ 884	$ 687

The total accumulated benefit obligations for all pension plans at November 3, 2019 and October 28, 2018, were $13,430 million and $11,485 million, respectively.

The accumulated benefit obligations and fair value of plan assets for pension plans with accumulated benefit obligations in excess of plan assets were $1,836 million and $924 million, respectively, at November 3, 2019 and $1,710 million and $1,015 million, respectively, at October 28, 2018. The projected benefit obligations and fair value of plan assets for pension plans with projected benefit obligations in excess of plan assets were $10,097 million and $9,031 million, respectively, at November 3, 2019 and $1,833 million and $1,029 million, respectively, at October 28, 2018.

Actuarial gains and losses are recorded in accumulated other comprehensive income (loss). To the extent unamortized gains and losses exceed 10% of the higher of the market-related value of assets or the benefit obligation, the excess is amortized as a component of net periodic cost over the remaining service period of the active participants. For plans in which all or almost all of the plan's participants are inactive, the amortization period is the remaining life expectancy of the inactive participants.

The company expects to contribute approximately $80 million to its pension plans and approximately $445 million to its OPEB plans in 2020. The anticipated OPEB contributions include a voluntary $300 million to a U.S. plan, which will increase plan assets. The pension and remaining OPEB contributions primarily include direct benefit payments from company funds.

The benefits expected to be paid from the benefit plans, which reflect expected future years of service, are as follows in millions of dollars:

	Pensions	OPEB*
2020	$ 731	$ 308
2021	719	307
2022	703	309
2023	698	310
2024	699	313
2025 to 2029	3,469	1,566

* Net of prescription drug group benefit subsidy under Medicare Part D.

The annual rates of increase in the per capita cost of covered health care benefits (the health care cost trend rates) used to determine accumulated postretirement benefit obligations were based on the trends for medical and prescription drug claims for pre- and post-65 age groups due to the effects of Medicare. For the 2019 actuarial valuation, the weighted-average composite trend rates for these obligations were assumed to be an 8.6 percent increase from 2019 to 2020, gradually decreasing to 4.7 percent from 2027 to 2028 and all future years. The 2018 obligations and the cost in 2019 assumed an 8.9 percent increase from 2018 to 2019, gradually decreasing to 4.8 percent from 2024 to 2025 and all future years.

The discount rate assumptions used to determine the pension and OPEB obligations for all periods presented were based on hypothetical AA yield curves represented by a series of annualized individual discount rates. These discount rates represent the rates at which the company's benefit obligations could effectively be settled at the October 31 measurement dates.

Fair value measurement levels in the following tables are defined in Note 27.

The fair values of the pension plan assets at November 3, 2019 follow in millions of dollars:

	Total	Level 1	Level 2
Cash and short-term investments	$ 587	$ 353	$ 234
Equity:			
U.S. equity securities	1,192	1,156	36
International equity securities	981	974	7
Fixed Income:			
Government and agency securities	1,257	970	287
Corporate debt securities	2,416	1	2,415
Mortgage-backed securities	90		90
Real estate	69	63	6
Derivative contracts - assets*	208	17	191
Derivative contracts - liabilities**	(47)	(13)	(34)
Receivables, payables, and other	(106)	(107)	1
Securities lending collateral	476		476
Securities lending liability	(476)		(476)
Securities sold short	(279)	(275)	(4)
Total of Level 1 and Level 2 assets	6,368	$ 3,139	$ 3,229
Investments at net asset value:			
Short-term investments	398		
U.S. equity funds	1,250		
International equity funds	764		
Fixed income funds	1,529		
Real estate	648		
Hedge funds	679		
Private equity/venture capital	1,913		
Other investments	475		
Total net assets	$ 14,024		

* Includes contracts for interest rates of $171 million, foreign currency of $20 million, equity of $10 million, and other of $7 million.

** Includes contracts for foreign currency of $26 million, interest rates of $20 million, and other of $1 million.

The fair values of the health care assets at November 3, 2019 follow in millions of dollars:

	Total	Level 1	Level 2
Cash and short-term investments	$ 81	$ 77	$ 4
Equity:			
U.S. equity securities and funds	41	41	
International equity securities	9	9	
Fixed Income:			
Government and agency securities	112	101	11
Corporate debt securities	43		43
Mortgage-backed securities	15		15
Other		(2)	2
Securities lending collateral	20		20
Securities lending liability	(20)		(20)
Securities sold short	(4)	(4)	
Total of Level 1 and Level 2 assets	297	$ 222	$ 75
Investments at net asset value:			
Short-term investments	4		
U.S. equity funds	311		
International equity funds	197		
Fixed income funds	84		
Hedge funds	9		
Private equity/venture capital	22		
Other investments	12		
Total net assets	$ 936		

The fair values of the pension plan assets at October 28, 2018 follow in millions of dollars:

	Total	Level 1	Level 2
Cash and short-term investments	$ 868	$ 377	$ 491
Equity:			
U.S. equity securities	1,495	1,466	29
International equity securities	1,143	1,136	7
Fixed Income:			
Government and agency securities	764	500	264
Corporate debt securities	1,626		1,626
Mortgage-backed securities	53		53
Real estate	76	72	4
Derivative contracts - assets*	102	3	99
Derivative contracts - liabilities**	(115)	(40)	(75)
Receivables, payables, and other	(9)	(10)	1
Securities lending collateral	561		561
Securities lending liability	(561)		(561)
Securities sold short	(333)	(330)	(3)
Total of Level 1 and Level 2 assets	5,670	$ 3,174	$ 2,496
Investments at net asset value:			
Short-term investments	219		
U.S. equity funds	1,526		
International equity funds	802		
Fixed income funds	1,290		
Real estate	654		
Hedge funds	724		
Private equity/venture capital	1,680		
Other investments	37		
Total net assets	$ 12,602		

* Includes contracts for interest rates of $48 million, foreign currency of $47 million, and other of $7 million.

** Includes contracts for interest rates of $49 million, foreign currency of $28 million, equity of $29 million, and other of $9 million.

The fair values of the health care assets at October 28, 2018 follow in millions of dollars:

	Total	Level 1	Level 2
Cash and short-term investments	$ 78	$ 73	$ 5
Equity:			
U.S. equity securities and funds	54	54	
International equity securities	10	10	
Fixed Income:			
Government and agency securities	57	53	4
Corporate debt securities	29		29
Mortgage-backed securities	11		11
Other	1		1
Securities lending collateral	24		24
Securities lending liability	(24)		(24)
Securities sold short	(3)	(3)	
Total of Level 1 and Level 2 assets	237	$ 187	$ 50
Investments at net asset value:			
Short-term investments	2		
U.S. equity funds	220		
International equity funds	146		
Fixed income funds	83		
Hedge funds	7		
Private equity/venture capital	17		
Other Investments	7		
Total net assets	$ 719		

Investments at net asset value in the preceding tables are measured at fair value using the net asset value per share practical expedient, and therefore, are not classified in the fair value hierarchy.

Fair values are determined as follows:

Cash and Short-Term Investments – Include accounts that are valued based on the account value, which approximates fair value, and investment funds that are valued based on a constant fund net asset value (NAV) using the NAV per share practical expedient or on the fund's NAV based on the fair value of the underlying securities. Also included are securities that are valued using a market approach (matrix pricing model) in which all significant inputs are observable or can be derived from or corroborated by observable market data.

Equity Securities and Funds – The values are determined primarily by closing prices in the active market in which the equity investment trades, or the fund's NAV, based on the fair value of the underlying securities.

Fixed Income Securities and Funds – The securities are valued using either a market approach (matrix pricing model) in which all significant inputs are observable or can be derived from or corroborated by observable market data such as interest rates, yield curves, volatilities, credit risk, and prepayment speeds, or they are valued using the closing prices in the active market in which the fixed income investment trades. Fixed income funds are valued using the fund's NAV, based on the fair value of the underlying securities.

Real Estate, Venture Capital, Private Equity, Hedge Funds, and Other – The investments that are structured as limited partnerships are valued at estimated fair value based on their proportionate share of the limited partnership's fair value that is determined by the respective general partner. These investments are valued using a combination of NAV, an income approach (primarily estimated cash flows discounted over the expected holding period), or market approach (primarily the valuation of similar securities and properties). Real estate investment trusts are primarily valued at the closing prices in the active markets in which the investment trades.

Interest Rate, Foreign Currency, Equity, and Other Derivative Instruments – The derivatives are valued using either an income approach (discounted cash flow) using market observable inputs, including swap curves and both forward and spot exchange rates, or a market approach (closing prices in the active market in which the derivative instrument trades).

The primary investment objective for the pension and health care plans assets is to maximize the growth of these assets to support the projected obligations to the beneficiaries over a long period of time, and to do so in a manner that is consistent with the company's risk tolerance. The asset allocation policy is the most important decision in managing the assets and it is reviewed regularly. The asset allocation policy considers the company's long-term asset class risk/return expectations for each plan since the obligations are long-term in nature. The current target allocations for pension assets are approximately 32 percent for equities, 45 percent for debt, 5 percent for real estate, and 18 percent for other investments. The target allocations for health care assets are approximately 58 percent for equities, 34 percent for debt, and 8 percent for other investments. The allocation percentages above include the effects of combining derivatives with other investments to manage asset allocations and exposures to interest rates and foreign currency exchange. The assets are well diversified and are managed by professional investment firms as well as by investment professionals who are company employees. As a result of the company's diversified investment policy, there were no significant concentrations of risk.

The expected long-term rate of return on plan assets reflects management's expectations of long-term average rates of return on funds invested to provide for benefits included in the projected benefit obligations. A market related value of plan assets is used to calculate the expected return on assets. The market related value recognizes changes in the fair value of pension plan assets systematically over a five-year period. The market related value of the health care plan assets equals fair value. The expected return is based on the outlook for inflation and for returns in multiple asset classes, while also considering historical returns, asset allocation, and investment strategy. The company's approach has emphasized the long-term nature of the return estimate such that the return assumption is not changed significantly unless there are fundamental changes in capital markets that affect the company's expectations for returns over an extended period of time (i.e., 10 to 20 years). The average annual return of the company's U.S. pension fund was approximately 9.6 percent during the past ten years and approximately 7.9 percent during the past 20 years. Since return premiums over inflation and total returns for major asset classes vary widely even over ten-year periods, recent history is not necessarily indicative of long-term future expected returns. The company's systematic methodology for determining the long-term rate of return for the company's investment strategies supports its long-term expected return assumptions.

The company has created certain Voluntary Employees' Beneficiary Association trusts (VEBAs) for the funding of postretirement health care benefits. The future expected asset returns for these VEBAs are lower than the expected return on the other pension and health care plan assets due to investment in a higher proportion of liquid securities. These assets are in addition to the other postretirement health care plan assets that have been funded under Section 401(h) of the U.S. Internal Revenue Code and maintained in a separate account in the company's pension plan trust.

The company has defined contribution plans related to employee investment and savings plans primarily in the U.S. The company's contributions and costs under these plans were $192 million in 2019, $206 million in 2018, and $188 million in 2017. The contribution rate varies primarily based on the company's performance in the prior year and employee participation in the plans.

9. INCOME TAXES

On December 22, 2017, the U.S. government enacted tax reform. The primary provisions of tax reform affecting the company in 2018 were a reduction to the corporate income tax rate from 35 percent to 21 percent and a transition from a worldwide corporate tax system to a primarily territorial tax system. The reduction in the corporate income tax rate required the company to remeasure its U.S. net deferred tax assets to the new corporate tax rate and the transition to a territorial tax system required payment of a one-time tax on the deemed repatriation of undistributed and previously untaxed non-U.S. earnings (repatriation tax). The repatriation tax was paid in 2019.

In 2019, the company was subject to additional provisions of the U.S. tax reform legislation. The company's U.S. statutory corporate income tax rate was 21 percent and approximately 23.3 percent for 2019 and 2018, respectively. The main provisions of tax reform affecting the company in 2019 include a tax on global intangible low-taxed income (GILTI), a tax determined by base erosion and anti-abuse tax benefits (BEAT) for certain payments between a U.S. corporation and foreign subsidiaries, a limitation on the deductibility of certain executive compensation, a deduction for foreign derived intangible income (FDII), and interest expense limitations. The combined effects of these provisions did not have a significant effect on the 2019 provision for income taxes.

In 2019 and 2018, the company recorded discrete tax adjustments related to the remeasurement of the company's net deferred tax assets to the new corporate income tax rate and for the repatriation tax.

The income tax expense (benefit) for the net deferred tax asset remeasurement and the repatriation tax adjustments in millions of dollars follow:

	Equipment Operations	Financial Services	Total
2019			
Net deferred tax asset remeasurement ...	$ 1	$ 5	$ 6
Deemed earnings repatriation tax	(66)	(8)	(74)
Total discrete tax expense (benefit)	$ (65)	$ (3)	$ (68)
2018			
Net deferred tax asset remeasurement ...	$ 768	$ (354)	$ 414
Deemed earnings repatriation tax	277	13	290
Total discrete tax expense (benefit).....	$ 1,045	$ (341)	$ 704

Included in the equipment operations' repatriation tax amount was an accrual of approximately $63 million for 2018, which was reduced to $31 million for 2019 for foreign withholding taxes on earnings of subsidiaries outside the U.S.

The repatriation tax expense is based on interpretations of existing laws, regulations, and certain assumptions. The company continues to analyze the repatriation tax provisions, and monitor legislative and regulatory developments.

The provision for income taxes by taxing jurisdiction and by significant component consisted of the following in millions of dollars:

	2019	2018	2017
Current:			
U.S.:			
Federal	$ 545	$ (268)	$ 360
State..	72	123	48
Foreign...	700	392	463
Total current	1,317	247	871
Deferred:			
U.S.:			
Federal	(345)	1,233	59
State	(26)	(40)	7
Foreign	(94)	287	34
Total deferred	(465)	1,480	100
Provision for income taxes	$ 852	$ 1,727	$ 971

Based upon the location of the company's operations, the consolidated income before income taxes in the U.S. in 2019, 2018, and 2017 was $2,166 million, $2,275 million, and $1,607 million, respectively, and in foreign countries was $1,922 million, $1,796 million, and $1,547 million, respectively. Certain foreign operations are branches or partnerships of Deere & Company and are subject to U.S. as well as foreign income tax regulations. The pretax income by location and the preceding analysis of the income tax provision by taxing jurisdiction are not directly related.

A comparison of the statutory and effective income tax provision and reasons for related differences in millions of dollars follow:

	2019	2018	2017
U.S. federal income tax provision at the U.S. statutory rate (2019 - 21 percent, 2018 - 23.3 percent, 2017 - 35 percent).................	$ 859	$ 950	$ 1,104
Increase (decrease) resulting from:			
Net deferred tax asset remeasurement.........	6	414	
Deemed earnings repatriation tax.................	(74)	290	
Other effects of tax reform..........................	(33)	42	
Differences in taxability of foreign earnings	(94)	(92)	(83)
Valuation allowance on deferred taxes	28	50	89
Research and business tax credits.................	(85)	(43)	(63)
State and local income taxes, net of federal income tax benefit	47	59	37
Excess tax benefits on equity compensation..........	(40)	(49)	(30)
Tax rates on foreign earnings........................	183	44	(84)
Unrecognized tax benefits	(28)	30	9
Other—net	83	32	(8)
Provision for income taxes............................	$ 852	$ 1,727	$ 971

At November 3, 2019, accumulated earnings in certain subsidiaries outside the U.S. totaled $2,608 million, of which a portion were subject to the repatriation tax in 2018, and are not subject to additional U.S. income tax. No provision for foreign withholding taxes has been made since these earnings are expected to remain indefinitely reinvested outside the U.S. Determination of the amount of a foreign withholding tax liability on these unremitted earnings is not practicable.

Deferred income taxes arise because there are certain items that are treated differently for financial accounting than for income tax reporting purposes. An analysis of the deferred income tax assets and liabilities at November 3, 2019 and October 28, 2018 in millions of dollars follows:

	2019		2018	
	Deferred Tax Assets	Deferred Tax Liabilities	Deferred Tax Assets	Deferred Tax Liabilities
OPEB liabilities	$ 1,015		$ 984	
Lease transactions		$ 599		$ 850
Tax loss and tax credit carryforwards.................	781		713	
Accrual for sales allowances.....	518		464	
Tax over book depreciation......		339		357
Goodwill and other intangible assets		378		458
Pension liability - net	186		45	
Allowance for credit losses	70		115	
Accrual for employee benefits	207		72	
Share-based compensation.....	68		58	
Deferred compensation	39		35	
Undistributed foreign earnings				6
Foreign unrealized losses	8		10	
Other items.........................	367	311	346	261
Less valuation allowances........	(661)		(658)	
Deferred income tax assets and liabilities	$ 2,598	$ 1,627	$ 2,184	$ 1,932

Deere & Company files a consolidated federal income tax return in the U.S., which includes the wholly-owned financial services subsidiaries. These subsidiaries account for income taxes generally as if they filed separate income tax returns, with a modification for realizability of certain tax benefits.

At November 3, 2019, tax loss and tax credit carryforwards of $781 million were available with $319 million expiring from 2020 through 2039 and $462 million with an indefinite carryforward period.

A reconciliation of the total amounts of unrecognized tax benefits at November 3, 2019, October 28, 2018, and October 29, 2017 in millions of dollars follows:

	2019	2018	2017
Beginning of year balance	$ 279	$ 221	$ 198
Increases to tax positions taken during the current year	30	36	35
Increases to tax positions taken during prior years	357	62	13
Decreases to tax positions taken during prior years	(30)	(39)	(17)
Decreases due to lapse of statute of limitations	(6)	(15)	(11)
Acquisitions*		31	
Settlements	(75)	(5)	(1)
Foreign exchange	(2)	(12)	4
End of year balance	$ 553	$ 279	$ 221

* See Note 4.

The amount of unrecognized tax benefits at November 3, 2019 and October 28, 2018 that would affect the effective tax rate if the tax benefits were recognized was $153 million and $128 million, respectively. The increase from 2018 primarily relates to the interpretation of a recently issued repatriation tax regulation for companies that do not have a calendar fiscal year end. The increase was partially offset by the settlement of U.S. income tax positions related to the 2008 through 2014 tax years. The remaining liability was related to tax positions for which there are offsetting tax receivables, or the uncertainty was only related to timing. The company expects that any reasonably possible change in the amounts of unrecognized tax benefits in the next twelve months would not be significant.

The company files its tax returns according to the tax laws of the jurisdictions in which it operates, which includes the U.S. federal jurisdiction and various state and foreign jurisdictions. The U.S. Internal Revenue Service (IRS) has completed the examination of the company's federal income tax returns for periods prior to 2015. The years 2015, 2016, and 2017 federal income tax return are currently under examination. Various state and foreign income tax returns, including major tax jurisdictions in Argentina, Australia, Brazil, Canada, China, Finland, France, Germany, India, Mexico, Russia, Singapore, and Spain also remain subject to examination by taxing authorities.

The company's policy is to recognize interest related to income taxes in interest expense and interest income and recognize penalties in selling, administrative and general expenses. During 2019, 2018, and 2017, the total amount of expense from interest and penalties was $13 million, $23 million, and $6 million and the interest income was $25 million, $12 million, and $6 million, respectively. At November 3, 2019 and October 28, 2018, the liability for accrued interest and penalties totaled $76 million and $90 million, respectively, and the receivable for interest was $4 million and none, respectively.

10. OTHER INCOME AND OTHER OPERATING EXPENSES

The major components of other income and other operating expenses consisted of the following in millions of dollars:

	2019	2018	2017
Other income			
Revenues from services	$ 348	$ 347	$ 288
Insurance premiums and fees earned**	214	217	211
SiteOne investment gains*			375
Investment income	25	14	17
Other	292	322	230
Total	$ 879	$ 900	$ 1,121
Other operating expenses			
Depreciation of equipment on operating leases	$ 981	$ 928	$ 853
Insurance claims and expenses**	210	175	187
Cost of services	228	211	168
Operating lease residual losses and impairments	159	26	50
Pension and OPEB (benefit) cost, excluding service cost component	(67)	15	31
Other	67	44	59
Total	$ 1,578	$ 1,399	$ 1,348

* See Note 5.
** Primarily related to extended warranties (see Note 23).

11. UNCONSOLIDATED AFFILIATED COMPANIES

Unconsolidated affiliated companies are companies in which Deere & Company generally owns 20 percent to 50 percent of the outstanding voting shares. Deere & Company does not control these companies and accounts for its investments in them on the equity basis. The investments in these companies primarily consist of Bell Equipment Limited (31 percent ownership), Deere-Hitachi Construction Machinery Corporation (50 percent ownership), and Deere-Hitachi Maquinas de Construcao do Brasil S.A. (50 percent ownership). In 2017, the company sold its interest in SiteOne (see Note 5). The unconsolidated affiliated companies primarily manufacture or market equipment. Deere & Company's share of the income or loss of these companies is reported in the consolidated income statement under "Equity in income (loss) of unconsolidated affiliates." The investment in these companies is reported in the consolidated balance sheet under "Investments in unconsolidated affiliates."

Combined financial information of the unconsolidated affiliated companies in millions of dollars follows:

Operations	2019	2018	2017
Sales	$ 2,483	$ 2,313	$ 2,638
Net income	50	91	7
Deere & Company's equity in net income (loss)	21	27	(24)

Financial Position	2019	2018
Total assets	$ 1,694	$ 1,648
Total external borrowings	488	453
Total net assets	563	620
Deere & Company's share of the net assets	215	207

Consolidated retained earnings at November 3, 2019 include undistributed earnings of the unconsolidated affiliates of $135 million. Dividends from unconsolidated affiliates were $30 million in 2019, $12 million in 2018, and $4 million in 2017.

In the ordinary course of business, the company purchases and sells components and finished goods to the unconsolidated affiliated companies. Transactions with unconsolidated affiliated companies reported in the statement of consolidated income in millions of dollars follow:

	2019	2018	2017
Net sales	$ 143	$ 161	$ 84
Purchases	1,937	1,682	1,331

12. MARKETABLE SECURITIES

All marketable securities are classified as available-for-sale. Prior to 2019, all unrealized gains and losses on marketable securities were shown as a component of stockholders' equity. Beginning in 2019 with the adoption of ASU No. 2016-01, unrealized gains and losses on equity securities are shown as a component of net income (see Note 3). Realized gains or losses from the sales of marketable securities are based on the specific identification method.

The amortized cost and fair value of marketable securities at November 3, 2019 and October 28, 2018 in millions of dollars follow:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
2019				
Equity fund				$ 59
Total equity securities				59
U.S. government debt securities	$ 128	$ 4	$ 1	131
Municipal debt securities	57	3		60
Corporate debt securities	157	8		165
International debt securities	9		3	6
Mortgage-backed securities*	155	5		160
Total debt securities	506	20	4	522
Marketable securities	$ 506	$ 20	$ 4	$ 581
2018				
Equity fund	$ 36	$ 10		$ 46
U.S. government debt securities	113	1	$ 3	111
Municipal debt securities	49		3	46
Corporate debt securities	143	1	4	140
International debt securities	11		1	10
Mortgage-backed securities*	144		7	137
Marketable securities	$ 496	$ 12	$ 18	$490

* Primarily issued by U.S. government sponsored enterprises.

Equity Securities

Unrealized gains on equity securities held at November 3, 2019 were $17 million in total, with $7 million recognized in 2019. Proceeds and realized gains on equity securities sold during 2019 and 2018 were not material. Proceeds and realized gains on equity securities sold in 2017 were $294 million and $273 million, respectively (see Note 5).

Debt Securities

The contractual maturities of debt securities at November 3, 2019 in millions of dollars follow:

	Amortized Cost	Fair Value
Due in one year or less	$ 29	$ 26
Due after one through five years	95	98
Due after five through 10 years	95	100
Due after 10 years	132	138
Mortgage-backed securities	155	160
Debt securities	$ 506	$ 522

Actual maturities may differ from contractual maturities because some securities may be called or prepaid. Because of the potential for prepayment on mortgage-backed securities, they are not categorized by contractual maturity. Proceeds from the sales of debt securities were $31 million in 2019, $40 million in 2018, and $109 million in 2017. Realized gains, realized losses, the increase (decrease) in net unrealized gains or losses, and unrealized losses that have been continuous for over twelve months were not significant in 2019, 2018, and 2017. Unrealized losses at November 3, 2019 and October 28, 2018 were primarily the result of an increase in interest rates and were not recognized in income due to the ability and intent to hold to maturity. There were no significant impairment write-downs in the periods reported.

13. RECEIVABLES

Trade Accounts and Notes Receivable

Trade accounts and notes receivable at November 3, 2019 and October 28, 2018 in millions of dollars follows:

	2019	2018
Trade accounts and notes:		
Agriculture and turf	$ 3,224	$ 3,210
Construction and forestry	2,006	1,794
Trade accounts and notes receivable – net	$ 5,230	$ 5,004

The allowance for credit losses on trade accounts and notes receivable at November 3, 2019, October 28, 2018, and October 29, 2017, as well as the related activity, in millions of dollars follow:

	2019	2018	2017
Beginning of year balance	$ 70	$ 56	$ 50
Provision	8	36	11
Write-offs	(14)	(16)	(3)
Recoveries	4		
Translation adjustments	4	(6)	(2)
End of year balance	$ 72	$ 70	$ 56

The equipment operations sell a significant portion of their trade receivables to financial services and provide compensation to these operations at approximate market rates of interest.

Trade accounts and notes receivable primarily arise from sales of goods to independent dealers. Under the terms of the sales to dealers, interest is primarily charged to dealers on outstanding balances, from the earlier of the date when goods are sold to retail customers by the dealer or the expiration of certain interest-free periods granted at the time of the sale to the dealer, until payment is received by the company. Dealers cannot cancel purchases after the company recognizes a sale and are responsible for payment even if the equipment is not sold to retail customers. The interest-free periods are determined based on the type of equipment sold and the time of year of the sale. These periods range from one to twelve months for most equipment. Interest-free periods may not be extended. Interest charged may not be forgiven and the past due interest rates exceed market rates. The company evaluates and assesses dealers on an ongoing basis as to their creditworthiness and generally secures the receivables by retaining a security interest in the goods associated with the trade receivables or with other financial instruments. In certain jurisdictions, the company is obligated to repurchase goods sold to a dealer upon cancellation or termination of the dealer's contract for such causes as change in ownership and closeout of the business.

Trade accounts and notes receivable include receivables from sales to certain retail customers with payment terms less than twelve months. The customer cannot cancel purchases or return the equipment after delivery. The company evaluates and assesses retail customers at the time of purchase as to their creditworthiness and generally retains a security interest in the goods associated with the receivables.

Trade accounts and notes receivable have significant concentrations of credit risk in the agriculture and turf sector and construction and forestry sector as shown in the previous table. On a geographic basis, there is not a disproportionate concentration of credit risk in any area.

Financing Receivables

Financing receivables at November 3, 2019 and October 28, 2018 in millions of dollars follow:

	2019		2018	
	Unrestricted	Securitized	Unrestricted	Securitized
Retail notes:				
Agriculture and turf	$ 16,712	$ 3,799	$ 15,885	$ 3,441
Construction and forestry	3,134	697	2,776	675
Total	19,846	4,496	18,661	4,116
Wholesale notes	4,645		4,009	
Revolving charge accounts	4,004		3,907	
Financing leases (direct and sales-type)	2,263		1,948	
Total financing receivables	30,758	4,496	28,525	4,116
Less:				
Unearned finance income:				
Retail notes	1,141	101	1,069	84
Wholesale notes	11		10	
Revolving charge accounts	61		45	
Financing leases	212		179	
Total	1,425	101	1,303	84
Allowance for credit losses	138	12	168	10
Financing receivables – net	$ 29,195	$ 4,383	$ 27,054	$ 4,022

The residual values for investments in financing leases at November 3, 2019 and October 28, 2018 totaled $333 million and $294 million, respectively.

Financing receivables have significant concentrations of credit risk in the agriculture and turf sector and construction and forestry sector as shown in the previous table. On a geographic basis, there is not a disproportionate concentration of credit risk in any area. The company generally retains as collateral a security interest in the equipment associated with retail notes, wholesale notes, and financing leases.

Financing receivables at November 3, 2019 and October 28, 2018 related to the company's sales of equipment that were included in the table above consisted of the following in millions of dollars:

	2019		2018	
	Unrestricted	Securitized	Unrestricted	Securitized
Retail notes*:				
Agriculture and turf	$ 2,164		$ 2,312	
Construction and forestry	374	$ 45	441	$ 77
Total	2,538	45	2,753	77
Wholesale notes	4,645		4,009	
Sales-type leases	1,064		878	
Total	8,247	45	7,640	77
Less:				
Unearned finance income:				
Retail notes	242		261	1
Wholesale notes	11		10	
Sales-type leases	83		68	
Total	336		339	1
Financing receivables related to the company's sales of equipment	$ 7,911	$ 45	$ 7,301	$ 76

* These retail notes generally arise from sales of equipment by company-owned dealers or through direct sales.

Financing receivable installments, including unearned finance income, at November 3, 2019 and October 28, 2018 are scheduled as follows in millions of dollars:

	2019		2018	
	Unrestricted	Securitized	Unrestricted	Securitized
Due in months:				
0 – 12	$ 16,174	$ 2,067	$ 14,658	$ 1,922
13 – 24	5,639	1,214	5,355	1,160
25 – 36	4,133	777	3,911	652
37 – 48	2,759	369	2,663	315
49 – 60	1,555	67	1,480	65
Thereafter	498	2	458	2
Total	$ 30,758	$ 4,496	$ 28,525	$ 4,116

The maximum terms for retail notes are generally seven years for agriculture and turf equipment and five years for construction and forestry equipment. The maximum term for financing leases is generally six years, while the average term for wholesale notes is less than twelve months.

At November 3, 2019 and October 28, 2018, worldwide net financing receivables administered, which include financing receivables administered but not owned, totaled $33,583 million and $31,082 million, respectively.

Past due balances of financing receivables still accruing finance income represent the total balance held (principal plus accrued interest) with any payment amounts 30 days or more past the contractual payment due date. Non-performing financing receivables represent loans for which the company has ceased accruing finance income. Beginning in 2019, the company ceased accruing finance income when these receivables are generally 90 days delinquent. Previously, finance income ceased accruing when the receivables were generally 120 days delinquent. This change in estimate was made on a prospective basis and did not have a significant effect on the company's consolidated financial statements. Management's methodology to determine the collectability of delinquent accounts was not affected by the change. Generally, when receivables are 120 days delinquent the estimated uncollectible amount, after charging the dealer's withholding account, if any, is written off to the allowance for credit losses. Finance income for non-performing receivables is recognized on a cash basis. Accrual of finance income is generally resumed when the receivable becomes contractually current and collections are reasonably assured.

An age analysis of past due financing receivables that are still accruing interest and non-performing financing receivables at November 3, 2019 and October 28, 2018 follows in millions of dollars:

	30-59 Days Past Due	60-89 Days Past Due	90 Days or Greater Past Due	Total Past Due
2019				
Retail Notes:				
Agriculture and turf	$ 138	$ 73	$ 1	$ 212
Construction and forestry	79	29	4	112
Other:				
Agriculture and turf	39	19	1	59
Construction and forestry	26	7		33
Total	$ 282	$ 128	$ 6	$ 416

	Total Past Due	Total Non-Performing	Current	Total Financing Receivables
Retail Notes:				
Agriculture and turf	$ 212	$ 268	$ 18,931	$ 19,411
Construction and forestry	112	127	3,450	3,689
Other:				
Agriculture and turf	59	28	8,986	9,073
Construction and forestry	33	26	1,496	1,555
Total	$ 416	$ 449	$ 32,863	33,728
Less allowance for credit losses				150
Total financing receivables - net				$ 33,578

(continued)

	30-59 Days Past Due	60-89 Days Past Due	90 Days or Greater Past Due	Total Past Due
2018				
Retail Notes:				
Agriculture and turf	$ 133	$ 74	$ 63	$ 270
Construction and forestry	79	45	52	176
Other:				
Agriculture and turf	36	16	8	60
Construction and forestry	18	5	3	26
Total	$ 266	$ 140	$ 126	$ 532

	Total Past Due	Total Non-Performing	Current	Total Financing Receivables
Retail Notes:				
Agriculture and turf	$ 270	$ 201	$ 17,836	$ 18,307
Construction and forestry	176	40	3,101	3,317
Other:				
Agriculture and turf	60	15	8,274	8,349
Construction and forestry	26	3	1,252	1,281
Total	$ 532	$ 259	$ 30,463	31,254
Less allowance for credit losses				178
Total financing receivables - net				$ 31,076

An analysis of the allowance for credit losses and investment in financing receivables follows in millions of dollars:

	Retail Notes	Revolving Charge Accounts	Other	Total
2019				
Allowance:				
Beginning of year balance	$ 113	$ 43	$ 22	$ 178
Provision (credit)	(2)	29	8	35
Write-offs	(40)	(58)	(7)	(105)
Recoveries	22	26	1	49
Translation adjustments	(4)		(3)	(7)
End of year balance*	$ 89	$ 40	$ 21	$ 150
Financing receivables:				
End of year balance	$ 23,100	$ 3,943	$ 6,685	$ 33,728
Balance individually evaluated	$ 156		$ 13	$ 169
2018				
Allowance:				
Beginning of year balance	$ 121	$ 40	$ 26	$ 187
Provision	14	38	2	54
Write-offs	(33)	(55)	(6)	(94)
Recoveries	17	20	1	38
Translation adjustments	(6)		(1)	(7)
End of year balance*	$ 113	$ 43	$ 22	$ 178
Financing receivables:				
End of year balance	$ 21,624	$ 3,862	$ 5,768	$ 31,254
Balance individually evaluated	$ 122	$ 2	$ 12	$ 136

(continued)

	Retail Notes	Revolving Charge Accounts	Other	Total
2017				
Allowance:				
Beginning of year balance	$ 113	$ 40	$ 23	$ 176
Provision	46	33	9	88
Write-offs	(56)	(53)	(7)	(116)
Recoveries	20	20	1	41
Translation adjustments	(2)			(2)
End of year balance*	$ 121	$ 40	$ 26	$ 187
Financing receivables:				
End of year balance	$ 20,697	$ 3,629	$ 5,124	$ 29,450
Balance individually evaluated	$ 86	$ 3	$ 20	$ 109

* Individual allowances were not significant.

Past-due amounts over 30 days represented 1.23 percent and 1.70 percent of the receivables financed at November 3, 2019 and October 28, 2018, respectively. The allowance for credit losses represented .44 percent and .57 percent of financing receivables outstanding at November 3, 2019 and October 28, 2018, respectively. In addition, at November 3, 2019 and October 28, 2018, the company's financial services operations had $152 million and $156 million, respectively, of deposits primarily withheld from dealers and merchants available for potential credit losses.

Financing receivables are considered impaired when it is probable the company will be unable to collect all amounts due according to the contractual terms. Receivables reviewed for impairment generally include those that are past due, have provided bankruptcy notification, or require significant collection efforts. Receivables that are impaired are generally classified as non-performing.

An analysis of the impaired financing receivables at November 3, 2019 and October 28, 2018 follows in millions of dollars:

	Recorded Investment	Unpaid Principal Balance	Specific Allowance	Average Recorded Investment
2019*				
Receivables with specific allowance**	$ 40	$ 39	$ 13	$ 40
Receivables without a specific allowance**	32	31		37
Total	$ 72	$ 70	$ 13	$ 77
Agriculture and turf	$ 49	$ 48	$ 8	$ 52
Construction and forestry	$ 23	$ 22	$ 5	$ 25
2018*				
Receivables with specific allowance**	$ 28	$ 27	$ 10	$ 30
Receivables without a specific allowance**	37	35		41
Total	$ 65	$ 62	$ 10	$ 71
Agriculture and turf	$ 50	$ 48	$ 9	$ 54
Construction and forestry	$ 15	$ 14	$ 1	$ 17

* Finance income recognized was not material.
** Primarily retail notes.

A troubled debt restructuring is generally the modification of debt in which a creditor grants a concession it would not otherwise consider to a debtor that is experiencing financial difficulties. These modifications may include a reduction of the stated interest rate, an extension of the maturity dates, a reduction of the face amount or maturity amount of the debt, or a reduction of accrued interest. During 2019, 2018, and 2017, the company identified 522, 587, and 474 receivable contracts, primarily trade receivables and retail notes, as troubled debt restructurings with aggregate balances of $36 million, $34 million, and $16 million pre-modification and $35 million, $34 million, and $15 million post-modification, respectively. In 2017, there were $3 million of troubled debt restructurings that subsequently defaulted and were written off. In 2019 and 2018, there were no significant troubled debt restructurings that subsequently defaulted and were written off. At November 3, 2019, the company had commitments to lend approximately $18 million to borrowers whose accounts were modified in troubled debt restructurings.

Other Receivables

Other receivables at November 3, 2019 and October 28, 2018 consisted of the following in millions of dollars:

	2019	2018
Taxes receivable	$ 1,231	$ 1,370
Other	256	366
Other receivables	$ 1,487	$ 1,736

14. SECURITIZATION OF FINANCING RECEIVABLES

The company, as a part of its overall funding strategy, periodically transfers certain financing receivables (retail notes) into VIEs that are SPEs, or non-VIE banking operations, as part of its asset-backed securities programs (securitizations). The structure of these transactions is such that the transfer of the retail notes did not meet the accounting criteria for sales of receivables, and is, therefore, accounted for as a secured borrowing. SPEs utilized in securitizations of retail notes differ from other entities included in the company's consolidated statements because the assets they hold are legally isolated. Use of the assets held by the SPEs or the non-VIEs is restricted by terms of the documents governing the securitization transactions.

In these securitizations, the retail notes are transferred to certain SPEs or to non-VIE banking operations, which in turn issue debt to investors. The debt securities issued to the third party investors result in secured borrowings, which are recorded as "Short-term securitization borrowings" on the consolidated balance sheet. The securitized retail notes are recorded as "Financing receivables securitized - net" on the balance sheet. The total restricted assets on the balance sheet related to these securitizations include the financing receivables securitized less an allowance for credit losses, and other assets primarily representing restricted cash. Restricted cash results from contractual requirements in securitized borrowing arrangements and serves as a credit enhancement. The restricted cash is used to satisfy payment deficiencies, if any, in the required payments on secured borrowings. The balance of restricted cash is contractually stipulated and is either a fixed amount as determined by the initial balance of the financing receivables securitized or a fixed percentage of the outstanding balance of the securitized financing receivables. The restriction is removed either after all secured borrowing payments are made or proportionally as these receivables are collected and borrowing obligations reduced. For those securitizations in which retail notes are transferred into SPEs, the SPEs supporting the secured borrowings are consolidated unless the company does not have both the power to direct the activities that most significantly impact the SPEs' economic performance and the obligation to absorb losses or the right to receive benefits that could potentially be significant to the SPEs. No additional support to these SPEs beyond what was previously contractually required has been provided during the reporting periods.

In certain securitizations, the company consolidates the SPEs since it has both the power to direct the activities that most significantly impact the SPEs' economic performance through its role as servicer of all the receivables held by the SPEs, and the obligation through variable interests in the SPEs to absorb losses or receive benefits that could potentially be significant to the SPEs. The restricted assets (retail notes securitized, allowance for credit losses, and other assets) of the consolidated SPEs totaled $2,895 million and $2,593 million at November 3, 2019 and October 28, 2018, respectively. The liabilities (short-term securitization borrowings and accrued interest) of these SPEs totaled $2,847 million and $2,520 million at November 3, 2019 and October 28, 2018, respectively. The credit holders of these SPEs do not have legal recourse to the company's general credit.

In certain securitizations, the company transfers retail notes to non-VIE banking operations, which are not consolidated since the company does not have a controlling interest in the entities. The company's carrying values and interests related to the securitizations with the unconsolidated non-VIEs were restricted assets (retail notes securitized, allowance for credit losses and other assets) of $491 million and $504 million at November 3, 2019 and October 28, 2018, respectively. The liabilities (short-term securitization borrowings and accrued interest) were $465 million and $475 million at November 3, 2019 and October 28, 2018, respectively.

In certain securitizations, the company transfers retail notes into bank-sponsored, multi-seller, commercial paper conduits, which are SPEs that are not consolidated. The company does not service a significant portion of the conduits' receivables, and therefore, does not have the power to direct the activities that most significantly impact the conduits' economic performance. These conduits provide a funding source to the company (as well as other transferors into the conduit) as they fund the retail notes through the issuance of commercial paper. The company's carrying values and variable interest related to these conduits were restricted assets (retail notes securitized, allowance for credit losses, and other assets) of $1,079 million and $1,033 million at November 3, 2019 and October 28, 2018, respectively. The liabilities (short-term securitization borrowings and accrued interest) related to these conduits were $1,015 million and $965 million at November 3, 2019 and October 28, 2018, respectively.

The company's carrying amount of the liabilities to the unconsolidated conduits, compared to the maximum exposure to loss related to these conduits, which would only be incurred in the event of a complete loss on the restricted assets, was as follows at November 3 in millions of dollars:

	2019
Carrying value of liabilities	$ 1,015
Maximum exposure to loss	1,079

The total assets of unconsolidated VIEs related to securitizations were approximately $37 billion at November 3, 2019.

The components of consolidated restricted assets related to secured borrowings in securitization transactions at November 3, 2019 and October 28, 2018 were as follows in millions of dollars:

	2019	2018
Financing receivables securitized (retail notes)	$ 4,395	$ 4,032
Allowance for credit losses	(12)	(10)
Other assets	82	108
Total restricted securitized assets	$ 4,465	$ 4,130

The components of consolidated secured borrowings and other liabilities related to securitizations at November 3, 2019 and October 28, 2018 were as follows in millions of dollars:

	2019	2018
Short-term securitization borrowings	$ 4,321	$ 3,957
Accrued interest on borrowings	6	3
Total liabilities related to restricted securitized assets	$ 4,327	$3,960

The secured borrowings related to these restricted securitized retail notes are obligations that are payable as the retail notes are liquidated. Repayment of the secured borrowings depends primarily on cash flows generated by the restricted assets. Due to the company's short-term credit rating, cash collections from these restricted assets are not required to be placed into a segregated collection account until immediately prior to the time payment is required to the secured creditors. At November 3, 2019, the maximum remaining term of all securitized retail notes was approximately six years.

15. EQUIPMENT ON OPERATING LEASES

Operating leases arise primarily from the leasing of John Deere equipment to retail customers. Initial lease terms generally range from 12 to 60 months. Net equipment on operating leases at November 3, 2019 and October 28, 2018 consisted of the following in millions of dollars:

	2019	2018
Equipment on operating leases:		
Agriculture and turf	$5,888	$5,682
Construction and forestry	1,679	1,483
Equipment on operating leases – net	$ 7,567	$ 7,165

The equipment is depreciated on a straight-line basis over the term of the lease. The accumulated depreciation on this equipment was $1,855 million and $1,515 million at November 3, 2019 and October 28, 2018, respectively. The corresponding depreciation expense was $981 million in 2019, $928 million in 2018, and $853 million in 2017.

Future payments to be received on operating leases totaled $2,498 million at November 3, 2019 and are scheduled in millions of dollars as follows: 2020 - $1,086, 2021 - $759, 2022 - $419, 2023 - $193, and 2024 - $41. At November 3, 2019 and October 28, 2018, the company's financial services operations had $12 million and $34 million, respectively, of deposits withheld from dealers available for potential losses on residual values.

Equipment returned to the company upon termination of leases and held for subsequent sale or lease is recorded in "Other assets" at the lower of net book value or estimated fair value of the equipment less costs to sell and is not depreciated. The matured operating lease inventory at November 3, 2019 and October 28, 2018 was $163 million and $247 million, respectively.

16. INVENTORIES

A majority of inventory owned by Deere & Company and its U.S. equipment subsidiaries are valued at cost, on the "last-in, first-out" (LIFO) basis. Remaining inventories are generally valued at the lower of cost, on the "first-in, first-out" (FIFO) basis, or net realizable value. The value of gross inventories on the LIFO basis at November 3, 2019 and October 28, 2018 represented 55 percent and 54 percent, respectively, of worldwide gross inventories at FIFO value. The pretax favorable income effect from the liquidation of LIFO inventory during 2019 was $3 million. If all inventories had been valued on a FIFO basis, estimated inventories by major classification at November 3, 2019 and October 28, 2018 in millions of dollars would have been as follows:

	2019	2018
Raw materials and supplies	$2,285	$ 2,233
Work-in-process	747	776
Finished goods and parts	4,613	4,777
Total FIFO value	7,645	7,786
Less adjustment to LIFO value	1,670	1,637
Inventories	$5,975	$ 6,149

17. PROPERTY AND DEPRECIATION

A summary of property and equipment at November 3, 2019 and October 28, 2018 in millions of dollars follows:

	Useful Lives* (Years)	2019	2018
Equipment Operations			
Land		$ 274	$ 283
Buildings and building equipment	22	3,976	3,848
Machinery and equipment	11	5,710	5,570
Dies, patterns, tools, etc.	8	1,531	1,564
All other	4	1,065	1,032
Construction in progress		733	619
Total at cost		13,289	12,916
Less accumulated depreciation		7,360	7,095
Total		5,929	5,821
Financial Services			
Land		4	4
Buildings and building equipment	26	75	74
All other	6	34	34
Total at cost		113	112
Less accumulated depreciation		69	65
Total		44	47
Property and equipment - net		$ 5,973	$ 5,868

* Weighted-averages

Total property and equipment additions in 2019, 2018, and 2017 were $1,107 million, $985 million, and $602 million and depreciation was $779 million, $754 million, and $726 million, respectively. Capitalized interest was $7 million, $4 million, and $3 million in the same periods, respectively. The cost of leased property and equipment under capital leases of $62 million and $52 million and accumulated depreciation of $27 million and $22 million at November 3, 2019 and October 28, 2018, respectively, is included in property and equipment.

Capitalized software has an estimated useful life of three years. The amounts of total capitalized software costs, including purchased and internally developed software, classified as "Other assets" at November 3, 2019 and October 28, 2018 were $1,305 million and $1,207 million, less accumulated amortization of $1,023 million and $910 million, respectively. Capitalized interest on software was $5 million and $3 million at November 3, 2019 and October 28, 2018, respectively. Amortization of these software costs in 2019, 2018, and 2017 was $150 million, $145 million, and $118 million, respectively.

The cost of compliance with foreseeable environmental requirements has been accrued and did not have a material effect on the company's consolidated financial statements.

18. GOODWILL AND OTHER INTANGIBLE ASSETS – NET

The changes in amounts of goodwill by operating segments were as follows in millions of dollars:

	Agriculture and Turf	Construction and Forestry	Total
Goodwill at October 29, 2017	$ 521	$ 512	$ 1,033
Acquisitions*	71	2,068	2,139
Divestitures*		(18)	(18)
Translation adjustments and other	(9)	(44)	(53)
Goodwill at October 28, 2018	583	2,518	3,101
Divestitures*		(22)	(22)
Translation adjustments and other	(9)	(153)	(162)
Goodwill at November 3, 2019	$ 574	$ 2,343	$ 2,917

* See Note 4.

There were no accumulated impairment losses in the reported periods.

The components of other intangible assets are as follows in millions of dollars:

	Useful Lives* (Years)	2019	2018
Amortized intangible assets:			
Customer lists and relationships	16	$ 511	$ 542
Technology, patents, trademarks, and other	18	1,028	1,080
Total at cost		1,539	1,622
Less accumulated amortization**		282	183
Total		1,257	1,439
Unamortized intangible assets:			
In-process research and development***		123	123
Other intangible assets - net		$1,380	$1,562

* Weighted-averages

** Accumulated amortization at 2019 and 2018 for customer lists and relationships was $77 million and $46 million and technology, patents, trademarks, and other was $205 million and $137 million, respectively.

*** See Note 4.

Other intangible assets are stated at cost less accumulated amortization. The amortization of other intangible assets in 2019, 2018, and 2017 was $109 million, $100 million, and $18 million, respectively. The estimated amortization expense for the next five years is as follows in millions of dollars: 2020 - $101, 2021 - $100, 2022 - $100, 2023 - $97, and 2024 - $95.

19. TOTAL SHORT-TERM BORROWINGS

Total short-term borrowings at November 3, 2019 and October 28, 2018 consisted of the following in millions of dollars:

	2019	2018
Equipment Operations		
Notes payable to banks	$ 345	$ 464
Long-term borrowings due within one year	642	970
Total	987	1,434
Financial Services		
Commercial paper	2,698	3,857
Notes payable to banks	313	344
Long-term borrowings due within one year*	6,786	5,427
Total	9,797	9,628
Short-term borrowings	10,784	11,062
Short-term securitization borrowings		
Equipment Operations	44	75
Financial Services	4,277	3,882
Total	4,321	3,957
Total short-term borrowings	$ 15,105	$ 15,019

* Includes unamortized fair value adjustments related to interest rate swaps.

The short-term securitization borrowings are secured by financing receivables (retail notes) on the balance sheet (see Note 14). Although these securitization borrowings are classified as short-term since payment is required if the retail notes are liquidated early, the payment schedule for these borrowings, which are net of debt acquisition costs, at November 3, 2019 based on the expected liquidation of the retail notes in millions of dollars is as follows: 2020 - $2,174, 2021 - $1,278, 2022 - $663, 2023 - $195, 2024 - $15, and 2025 - $1.

The weighted-average interest rates on total short-term borrowings, excluding current maturities of long-term borrowings, at November 3, 2019 and October 28, 2018 were 2.9 percent and 3.0 percent, respectively.

Lines of credit available from U.S. and foreign banks were $8,499 million at November 3, 2019. At November 3, 2019, $5,143 million of these worldwide lines of credit were unused. For the purpose of computing the unused credit lines, commercial paper, and short-term bank borrowings, excluding secured borrowings and the current portion of long-term borrowings, were primarily considered to constitute utilization. Included in the total credit lines at November 3, 2019 was a 364-day credit facility agreement of $2,800 million, expiring in fiscal April 2020. In addition, total credit lines included long-term credit facility agreements of $2,500 million, expiring in April 2023, and $2,500 million, expiring in April 2024. The agreements are mutually extendable and the annual facility fees are not significant. These credit agreements require Capital Corporation to maintain its consolidated ratio of earnings to fixed charges at not less than 1.05 to 1 for each fiscal quarter and the ratio of senior debt, excluding securitization indebtedness, to capital base (total subordinated debt and stockholder's equity excluding accumulated other comprehensive income (loss)) at not more than 11 to 1 at the end of any fiscal quarter. The credit agreements also require the equipment operations to maintain a ratio of total debt to total capital (total debt and stockholders' equity excluding accumulated other comprehensive income (loss)) of 65 percent or less at the end of each fiscal quarter. Under this provision, the company's excess equity capacity and retained earnings balance free of restriction at November 3, 2019 was $13,554 million. Alternatively under this provision, the equipment operations had the capacity to incur additional debt of $25,171 million at November 3, 2019. All of these credit agreement requirements have been met during the periods included in the consolidated financial statements.

Deere & Company has an agreement with Capital Corporation pursuant to which it has agreed to continue to own, directly or through one or more wholly-owned subsidiaries, at least 51 percent of the voting shares of capital stock of Capital Corporation and to maintain Capital Corporation's consolidated tangible net worth at not less than $50 million. This agreement also obligates Deere & Company to make payments to Capital Corporation such that its consolidated ratio of earnings to fixed charges is not less than 1.05 to 1 for each fiscal quarter. Deere & Company's obligations to make payments to Capital Corporation under the agreement are independent of whether Capital Corporation is in default on its indebtedness, obligations or other liabilities. Further, Deere & Company's obligations under the agreement are not measured by the amount of Capital Corporation's indebtedness, obligations or other liabilities. Deere & Company's obligations to make payments under this agreement are expressly stated not to be a guaranty of any specific indebtedness, obligation or liability of Capital Corporation and are enforceable only by or in the name of Capital Corporation. No payments were required under this agreement during the periods included in the consolidated financial statements.

20. ACCOUNTS PAYABLE AND ACCRUED EXPENSES

Accounts payable and accrued expenses at November 3, 2019 and October 28, 2018 consisted of the following in millions of dollars:

	2019	2018
Equipment Operations		
Accounts payable:		
Trade payables	$ 1,996	$ 2,466
Dividends payable	244	223
Other	284	243
Accrued expenses:		
Dealer sales discounts	1,990	1,801
Product warranties	1,218	1,146
Employee benefits	1,001	1,038
Accrued taxes	734	836
Unearned revenue	657	665
Other	1,108	965
Total	9,232	9,383
Financial Services		
Accounts payable:		
Deposits withheld from dealers and merchants	164	190
Other	163	239
Accrued expenses:		
Unearned revenue	978	885
Accrued interest	211	163
Employee benefits	61	63
Other	259	516
Total	1,836	2,056
Eliminations*	1,412	1,328
Accounts payable and accrued expenses	$ 9,656	$ 10,111

* Primarily trade receivable valuation accounts related to sales incentive accruals of $1,400 million, which are reclassified as accrued expenses by the equipment operations as a result of their trade receivables being sold to financial services.

21. LONG-TERM BORROWINGS

Long-term borrowings at November 3, 2019 and October 28, 2018 consisted of the following in millions of dollars:

	2019	2018
Equipment Operations		
U.S. dollar notes and debentures:		
8-1/2% debentures due 2022	$ 105	$ 105
2.60% notes due 2022	1,000	1,000
6.55% debentures due 2028	200	200
5.375% notes due 2029	500	500
8.10% debentures due 2030	250	250
7.125% notes due 2031	300	300
3.90% notes due 2042	1,250	1,250
2.875% notes due 2049	500	
Euro notes:		
Medium-term note due 2020: (€350 principal) Average interest rate of .0% - 2018		398
.5% notes due 2023 (€500 principal)	558	569
1.65% notes due 2039 (€650 principal)	725	
Other notes	51	159
Less debt issuance costs	24	17
Total	5,415	4,714
Financial Services		
Notes and debentures:		
Medium-term notes due 2020 - 2029: (principal $23,265 - 2019, $21,721 - 2018) Average interest rates of 2.7% - 2019, 2.8% - 2018	23,528 *	21,354 *
Other notes	1,335	1,215
Less debt issuance costs	49	46
Total	24,814	22,523
Long-term borrowings**	$ 30,229	$ 27,237

* Includes unamortized fair value adjustments related to interest rate swaps.
** All interest rates are as of year end.

The approximate principal amounts of the equipment operations' long-term borrowings maturing in each of the next five years in millions of dollars are as follows: 2020 - $643, 2021 - $39, 2022 - $1,121, 2023 - $562, and 2024 - $1. The approximate principal amounts of the financial services' long-term borrowings maturing in each of the next five years in millions of dollars are as follows: 2020 - $6,795, 2021 - $6,885, 2022 - $6,323, 2023 - $3,791, and 2024 - $3,013.

22. LEASES

At November 3, 2019, future minimum lease payments under capital leases amounted to $32 million as follows: 2020 - $12, 2021 - $10, 2022 - $6, 2023 - $2, 2024 - $1, and later years $1. Total rental expense for operating leases was $194 million in 2019, $167 million in 2018, and $167 million in 2017. At November 3, 2019, future minimum lease payments under operating leases amounted to $337 million as follows: 2020 - $111, 2021 - $77, 2022 - $56, 2023 - $39, 2024 - $28, and later years $26.

23. COMMITMENTS AND CONTINGENCIES

The company generally determines its total warranty liability by applying historical claims rate experience to the estimated amount of equipment that has been sold and is still under warranty based on dealer inventories and retail sales. The historical claims rate is primarily determined by a review of five-year claims costs and current quality developments.

The premiums for extended warranties are primarily recognized in income in proportion to the costs expected to be incurred over the contract period. The unamortized extended warranty premiums (deferred revenue) included in the following table totaled $582 million and $506 million at November 3, 2019 and October 28, 2018, respectively.

A reconciliation of the changes in the warranty liability and unearned premiums in millions of dollars follows:

	Warranty Liability/ Unearned Premiums	
	2019	2018
Beginning of year balance	$ 1,652	$ 1,468
Payments	(985)	(907)
Amortization of premiums received	(214)	(217)
Accruals for warranties	1,066	978
Premiums received	292	270
Acquisition*		80
Foreign exchange	(11)	(20)
End of year balance	$ 1,800	$ 1,652

* See Note 4.

At November 3, 2019, the company had approximately $343 million of guarantees issued primarily to banks outside the U.S. and Canada related to third-party receivables for the retail financing of John Deere and Wirtgen equipment. The company may recover a portion of any required payments incurred under these agreements from repossession of the equipment collateralizing the receivables. At November 3, 2019, the company had accrued losses of approximately $14 million under these agreements. The maximum remaining term of the receivables guaranteed at November 3, 2019 was approximately seven years.

At November 3, 2019, the company had commitments of approximately $281 million for the construction and acquisition of property and equipment. Also at November 3, 2019, the company had restricted assets of $88 million, classified as "Other assets". See Note 14 for additional restricted assets associated with borrowings related to securitizations.

The company also had other miscellaneous contingent liabilities totaling approximately $65 million at November 3, 2019. The accrued liability for these contingencies was not material at November 3, 2019.

The company is subject to various unresolved legal actions which arise in the normal course of its business, the most prevalent of which relate to product liability (including asbestos related liability), retail credit, employment, patent, and trademark matters. The company believes the reasonably possible range of losses for these unresolved legal actions would not have a material effect on its financial statements.

24. CAPITAL STOCK

Changes in the common stock account in millions were as follows:

	Number of Shares Issued	Amount
Balance at October 30, 2016	536.4	$ 3,912
Stock options and other		369
Balance at October 29, 2017	536.4	4,281
Stock options and other		193
Balance at October 28, 2018	536.4	4,474
Stock options and other		168
Balance at November 3, 2019	536.4	$ 4,642

The number of common shares the company is authorized to issue is 1,200 million. The number of authorized preferred shares, none of which has been issued, is nine million.

The Board of Directors at its meeting in December 2013 authorized the repurchase of up to $8,000 million of common stock (45.4 million shares based on the fiscal year end closing common stock price of $176.11 per share). At the end of the fiscal year, this repurchase program had $1,075 million (6.1 million shares at the same price) remaining to be repurchased. Repurchases of the company's common stock under this plan will be made from time to time, at the company's discretion, in the open market.

A reconciliation of basic and diluted net income per share attributable to Deere & Company follows in millions, except per share amounts:

	2019	2018	2017
Net income attributable to Deere & Company	$ 3,253	$ 2,368	$ 2,159
Average shares outstanding	316.5	322.6	319.5
Basic per share	$ 10.28	$ 7.34	$ 6.76
Average shares outstanding	316.5	322.6	319.5
Effect of dilutive stock options	4.1	4.7	3.8
Total potential shares outstanding	320.6	327.3	323.3
Diluted per share	$ 10.15	$ 7.24	$ 6.68

All stock options outstanding were included in the computation except .7 million in 2019, .4 million in 2018, and .2 million in 2017 that had an antidilutive effect under the treasury stock method.

25. STOCK OPTION AND RESTRICTED STOCK AWARDS

The company issues stock options and restricted stock awards to key employees under plans approved by stockholders. Restricted stock is also issued to nonemployee directors for their services as directors under a plan approved by stockholders. Options are awarded with the exercise price equal to the market price and become exercisable in one to three years after grant. Options expire ten years after the date of grant. Restricted stock awards generally vest after three years. The compensation cost for stock options, service based restricted stock units, and market/service based restricted stock units, which is based on the fair value at the grant date, is recognized on a straight-line basis over the requisite period the employee is required to render service. The compensation cost for performance/service based units, which is based on the fair value at the grant date, is recognized over the employees' requisite service period and periodically adjusted for the probable number of shares to be awarded. According to these plans at November 3, 2019, the company is authorized to grant an additional 8.3 million shares related to stock options or restricted stock.

The fair value of each option award was estimated on the date of grant using a binomial lattice option valuation model. Expected volatilities are based on implied volatilities from traded call options on the company's stock. The expected volatilities are constructed from the following three components: the starting implied volatility of short-term call options traded within a few days of the valuation date; the predicted implied volatility of long-term call options; and the trend in implied volatilities over the span of the call options' time to maturity. The company uses historical data to estimate option exercise behavior and employee termination within the valuation model. The expected term of options granted is derived from the output of the option valuation model and represents the period of time that options granted are expected to be outstanding. The risk-free rates utilized for periods throughout the contractual life of the options are based on U.S. Treasury security yields at the time of grant.

The assumptions used for the binomial lattice model to determine the fair value of options follow:

	2019	2018	2017
Risk-free interest rate	2.68% - 3.1%	1.69% - 2.7%	.88% - 2.5%
Expected dividends	2.0%	1.6%	2.4%
Expected volatility	28.8% - 31.8%	22.3% - 23.0%	24.0% - 24.8%
Weighted-average volatility	30.0%	22.8%	24.5%
Expected term (in years)	8.0 - 8.5	7.9 - 8.6	7.8 - 8.6

Stock option activity at November 3, 2019 and changes during 2019 in millions of dollars and shares follow:

	Shares	Exercise Price*	Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding at beginning of year	8.8	$ 87.08		
Granted	.4	148.14		
Exercised	(2.2)	79.64		
Outstanding at end of year	7.0	92.85	6.28	$ 579.1
Exercisable at end of year	6.1	86.65	5.93	548.3

* Weighted-averages

The weighted-average grant-date fair values of options granted during 2019, 2018, and 2017 were $46.96, $39.11, and $24.46, respectively. The total intrinsic values of options exercised during 2019, 2018, and 2017 were $186 million, $229 million, and $225 million, respectively. During 2019, 2018, and 2017, cash received from stock option exercises was $178 million, $217 million, and $529 million with tax benefits of $44 million, $54 million, and $83 million, respectively.

The company granted 447 thousand, 415 thousand, and 579 thousand restricted stock units to employees and nonemployee directors in 2019, 2018, and 2017, of which 355 thousand, 330 thousand, and 465 thousand are subject to service based only conditions, 92 thousand, 85 thousand, and 57 thousand are subject to performance/service based conditions, and none, none, and 57 thousand are subject to market/service based conditions, respectively. The service based only units award one share of common stock for each unit at the end of the vesting period and include dividend equivalent payments.

The performance/service based units are subject to a performance metric based on the company's compound annual revenue growth rate, compared to a benchmark group of companies over the vesting period. The market/service based units are subject to a market related metric based on total shareholder return, compared to the same benchmark group of companies over the vesting period. The performance/service based units and the market/service based units both award common stock in a range of zero to 200 percent for each unit granted based on the level of the metric achieved and do not include dividend equivalent payments over the vesting period. The weighted-average fair values of the service based only units at the grant dates during 2019, 2018, and 2017 were $149.54, $151.67, and $101.03 per unit, respectively, based on the market price of a share of underlying common stock. The fair value of the performance/service based units at the grant date during 2019, 2018, and 2017 were $140.49, $145.33, and $93.86 per unit, respectively, based on the market price of a share of underlying common stock excluding dividends. The fair value of the market/service based units at the grant date during 2017 was $129.70 per unit based on a lattice valuation model excluding dividends.

The company's restricted shares at November 3, 2019 and changes during 2019 in millions of shares follow:

	Shares	Grant-Date Fair Value*
Service based only		
Nonvested at beginning of year	.9	$ 117.47
Granted	.4	149.54
Vested	(.2)	88.76
Nonvested at end of year	1.1	130.72
Performance/service and market/service based		
Nonvested at beginning of year	.3	$ 110.56
Granted	.1	140.49
Vested	(.3)	88.30
Performance change	.2	88.30
Nonvested at end of year	.3	130.78

* Weighted-averages

During 2019, 2018, and 2017, the total share-based compensation expense was $82 million, $84 million, and $68 million, respectively, with recognized income tax benefits of $20 million, $20 million, and $25 million, respectively. At November 3, 2019, there was $51 million of total unrecognized compensation cost from share-based compensation arrangements granted under the plans, which is related to restricted shares and options. This compensation is expected to be recognized over a weighted-average period of approximately two years. The total grant-date fair values of stock options and restricted shares vested during 2019, 2018, and 2017 were $66 million, $63 million, and $72 million, respectively.

The company currently uses shares that have been repurchased through its stock repurchase programs to satisfy share option exercises. At fiscal year end, the company had 223 million shares in treasury stock and 6 million shares remaining to be repurchased under its publicly announced repurchase program (see Notes 24 and 31).

26. OTHER COMPREHENSIVE INCOME ITEMS

The after-tax changes in accumulated other comprehensive income at October 30, 2016, October 29, 2017, October 28, 2018, and November 3, 2019 in millions of dollars follow:

	Retirement Benefits Adjustment	Cumulative Translation Adjustment	Unrealized Gain (Loss) on Derivatives	Unrealized Gain (Loss) on Debt Securities	Total Accumulated Other Comprehensive Income (Loss)
2016	$ (4,409)	$ (1,229)	$ 1	$ 11	$ (5,626)
Period Change	829	230	4	(1)	1,062
2017	(3,580)	(999)	5	10	(4,564)
Period Change	1,052	(194)	9	(13)	854
ASU No. 2018-02	(709)	(10)	1	1	(717)
2018	(3,237)	(1,203)	15	(2)	(4,427)
ASU No. 2016-01*				(8)	(8)
Period Change	(678)	(448)	(75)	29	(1,172)
2019	$ (3,915)	$ (1,651)	$ (60)	$ 19	$ (5,607)

* See Note 3.

Following are amounts recorded in and reclassifications out of other comprehensive income (loss), and the income tax effects, in millions of dollars:

	Before Tax Amount	Tax (Expense) Credit	After Tax Amount
2019			
Cumulative translation adjustment	$ (447)	$ (1)	$ (448)
Unrealized gain (loss) on derivatives:			
Unrealized hedging gain (loss)	(92)	21	(71)
Reclassification of realized (gain) loss to:			
Interest rate contracts – Interest expense	(5)	1	(4)
Net unrealized gain (loss) on derivatives	(97)	22	(75)
Unrealized gain (loss) on debt securities:			
Unrealized holding gain (loss)	36	(7)	29
Net unrealized gain (loss) on debt securities	36	(7)	29
Retirement benefits adjustment:			
Pensions			
Net actuarial gain (loss)	(887)	236	(651)
Reclassification to other operating expenses through amortization of: *			
Actuarial (gain) loss	143	(35)	108
Prior service (credit) cost	11	(2)	9
Settlements	3	(1)	2
OPEB			
Net actuarial gain (loss)	(141)	38	(103)
Reclassification to other operating expenses through amortization of: *			
Actuarial (gain) loss	16	(4)	12
Prior service (credit) cost	(72)	17	(55)
Net unrealized gain (loss) on retirement benefits adjustment	(927)	249	(678)
Total other comprehensive income (loss)	$ (1,435)	$ 263	$ (1,172)

* These accumulated other comprehensive income amounts are included in net periodic pension and OPEB costs. See Note 8 for additional detail.

	Before Tax Amount	Tax (Expense) Credit	After Tax Amount
2018			
Cumulative translation adjustment	$ (188)	$ (6)	$ (194)
Unrealized gain (loss) on derivatives:			
Unrealized hedging gain (loss)	18	(4)	14
Reclassification of realized (gain) loss to:			
Interest rate contracts – Interest expense	(5)	1	(4)
Foreign exchange contracts – Other operating expenses	(1)		(1)
Net unrealized gain (loss) on derivatives	12	(3)	9
Unrealized gain (loss) on investments:			
Unrealized holding gain (loss)	(17)	5	(12)
Reclassification of realized (gain) loss – Other income	(1)		(1)
Net unrealized gain (loss) on investments	(18)	5	(13)
Retirement benefits adjustment:			
Pensions			
Net actuarial gain (loss)	553	(128)	425
Reclassification to other operating expenses through amortization of: *			
Actuarial (gain) loss	226	(63)	163
Prior service (credit) cost	12	(4)	8
Settlements	8	(2)	6
OPEB			
Net actuarial gain (loss) and prior service credit (cost)	603	(142)	461
Reclassification to other operating expenses through amortization of: *			
Actuarial (gain) loss	62	(17)	45
Prior service (credit) cost	(77)	21	(56)
Net unrealized gain (loss) on retirement benefits adjustment	1,387	(335)	1,052
Total other comprehensive income (loss)	$ 1,193	$ (339)	$ 854

* These accumulated other comprehensive income amounts are included in net periodic pension and OPEB costs. See Note 8 for additional detail.

	Before Tax Amount	Tax (Expense) Credit	After Tax Amount
2017			
Cumulative translation adjustment	$ 232	$ (2)	$ 230
Unrealized gain (loss) on derivatives:			
Unrealized hedging gain (loss)	3	(1)	2
Reclassification of realized (gain) loss to:			
Interest rate contracts – Interest expense	2	(1)	1
Foreign exchange contracts – Other operating expenses	1		1
Net unrealized gain (loss) on derivatives	6	(2)	4
Unrealized gain (loss) on investments:			
Unrealized holding gain (loss)	274	(101)	173
Reclassification of realized (gain) loss – Other income	(275)	101	(174)
Net unrealized gain (loss) on investments	(1)		(1)
Retirement benefits adjustment:			
Pensions			
Net actuarial gain (loss)	702	(248)	454
Reclassification to other operating expenses through amortization of: *			
Actuarial (gain) loss	247	(89)	158
Prior service (credit) cost	12	(4)	8
Settlements	2	(1)	1
OPEB			
Net actuarial gain (loss)	309	(115)	194
Reclassification to other operating expenses through amortization of: *			
Actuarial (gain) loss	99	(36)	63
Prior service (credit) cost	(77)	28	(49)
Net unrealized gain (loss) on retirement benefits adjustment	1,294	(465)	829
Total other comprehensive income (loss)	$ 1,531	$ (469)	$ 1,062

* These accumulated other comprehensive income amounts are included in net periodic pension and OPEB costs. See Note 8 for additional detail.

The noncontrolling interests' comprehensive income was $4 million in 2019, $2 million in 2018, and none in 2017, which consisted of net income of $4 million in 2019, $3 million in 2018, and none in 2017 and cumulative translation adjustments of none in 2019, $(1) million in 2018, and none in 2017.

27. FAIR VALUE MEASUREMENTS

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. To determine fair value, the company uses various methods including market and income approaches. The company utilizes valuation models and techniques that maximize the use of observable inputs. The models are industry-standard models that consider various assumptions including time values and yield curves as well as other economic measures. These valuation techniques are consistently applied.

Level 1 measurements consist of quoted prices in active markets for identical assets or liabilities. Level 2 measurements include significant other observable inputs such as quoted prices for similar assets or liabilities in active markets; identical assets or liabilities in inactive markets; observable inputs such as interest rates and yield curves; and other market-corroborated inputs. Level 3 measurements include significant unobservable inputs.

The fair values of financial instruments that do not approximate the carrying values at November 3, 2019 and October 28, 2018 in millions of dollars follow:

	2019		2018	
	Carrying Value	Fair Value*	Carrying Value	Fair Value*
Financing receivables – net:				
Equipment operations	$ 65	$ 61	$ 93	$ 91
Financial services	29,130	29,106	26,961	26,722
Total	$ 29,195	$ 29,167	$ 27,054	$ 26,813
Financing receivables securitized – net:				
Equipment operations	$ 44	$ 43	$ 76	$ 73
Financial services	4,339	4,362	3,946	3,895
Total	$ 4,383	$ 4,405	$ 4,022	$ 3,968
Short-term securitization borrowings:				
Equipment operations	$ 44	$ 45	$ 75	$ 75
Financial services	4,277	4,302	3,882	3,870
Total	$ 4,321	$ 4,347	$ 3,957	$ 3,945
Long-term borrowings due within one year:				
Equipment operations	$ 642	$ 645	$ 970	$ 979
Financial services	6,786	6,788	5,427	5,411
Total	$ 7,428	$ 7,433	$ 6,397	$ 6,390
Long-term borrowings:				
Equipment operations	$ 5,415	$ 6,138	$ 4,714	$ 4,948
Financial services	24,814	25,122	22,523	22,590
Total	$ 30,229	$ 31,260	$ 27,237	$ 27,538

* Fair value measurements above were Level 3 for all financing receivables, Level 3 for equipment operations short-term securitization borrowings, and Level 2 for all other borrowings.

Fair values of the financing receivables that were issued long-term were based on the discounted values of their related cash flows at interest rates currently being offered by the company for similar financing receivables. The fair values of the remaining financing receivables approximated the carrying amounts.

Fair values of long-term borrowings and short-term securitization borrowings were based on current market quotes for identical or similar borrowings and credit risk, or on the discounted values of their related cash flows at current market interest rates. Certain long-term borrowings have been swapped to current variable interest rates. The carrying values of these long-term borrowings included adjustments related to fair value hedges.

Assets and liabilities measured at November 3, 2019 and October 28, 2018 at fair value on a recurring basis in millions of dollars follow*:

	2019	2018
Level 1:		
Marketable securities		
Equity fund	$ 59	$ 46
U.S. government debt securities	50	44
Total Level 1 marketable securities	109	90
Level 2:		
Marketable securities		
U.S. government debt securities	81	67
Municipal debt securities	60	46
Corporate debt securities	165	140
International debt securities	5	2
Mortgage-backed securities**	160	137
Total Level 2 marketable securities	471	392
Other assets		
Derivatives:		
Interest rate contracts	363	80
Foreign exchange contracts	20	83
Cross-currency interest rate contracts	1	5
Total Level 2 other assets	384	168
Accounts payable and accrued expenses		
Derivatives:		
Interest rate contracts	65	350
Foreign exchange contracts	71	49
Cross-currency interest rate contracts	3	
Total Level 2 accounts payable and accrued expenses	139	399
Level 3:		
Marketable securities		
International debt securities	1	8

* Excluded from this table were the company's cash equivalents, which were carried at cost that approximates fair value. The cash equivalents consist primarily of money market funds and time deposits.
** Primarily issued by U.S. government sponsored enterprises.

Fair value, recurring Level 3 measurements from available-for-sale marketable securities at November 3, 2019, October 28, 2018, and October 29, 2017 in millions of dollars follow:

	2019	2018	2017
Beginning of year balance	$ 8	$ 17	$ 28
Principal payments	(8)	(9)	(13)
Change in unrealized gain		1	2
Other	1	(1)	
End of year balance	$ 1	$ 8	$ 17

Fair value, nonrecurring measurements from impairments at November 3, 2019 and October 28, 2018 in millions of dollars follow:

	Fair Value*		Losses*		
	2019	2018	2019	2018	2017
Equipment on operating leases – net	$ 855		$ 59		
Investments in unconsolidated affiliates					$ 40
Other assets	$ 142		$ 18		

* Fair value losses at October 29, 2017 were a Level 1 measurement. See financing receivables with specific allowances in Note 13 that were not significant. See Note 5 for impairments.

The following is a description of the valuation methodologies the company uses to measure certain financial instruments on the balance sheet at fair value:

Marketable Securities – The portfolio of investments, except for the Level 3 measurement international debt securities, is primarily valued on a market approach (matrix pricing model) in which all significant inputs are observable or can be derived from or corroborated by observable market data such as interest rates, yield curves, volatilities, credit risk, and prepayment speeds. Funds are primarily valued using the fund's net asset value, based on the fair value of the underlying securities. The Level 3 measurement international debt securities are primarily valued using an income approach based on discounted cash flows using yield curves derived from limited, observable market data.

Derivatives – The company's derivative financial instruments consist of interest rate swaps and caps, foreign currency futures, forwards and swaps, and cross-currency interest rate swaps. The portfolio is valued based on an income approach (discounted cash flow) using market observable inputs, including swap curves and both forward and spot exchange rates for currencies.

Financing Receivables – Specific reserve impairments are based on the fair value of the collateral, which is measured using a market approach (appraisal values or realizable values). Inputs include a selection of realizable values (see Note 13).

Equipment on Operating Leases – Net – The impairments are based on an income approach (discounted cash flow), using the contractual payments, plus an estimate of equipment sale price at lease maturity. Inputs include realized sales values.

Investment in Unconsolidated Affiliates – Other than temporary impairments for investments are measured as the difference between the implied fair value and the carrying value of the investments. The fair value for publicly traded entities is the share price multiplied by the shares owned (see Note 5).

Other Assets – The impairments are measured at the fair value of the matured operating lease inventory. The valuations were based on a market approach. The inputs include sales of comparable assets (see Note 5).

28. DERIVATIVE INSTRUMENTS

Cash Flow Hedges

Certain interest rate and cross-currency interest rate contracts (swaps) were designated as hedges of future cash flows from borrowings. The total notional amounts of the receive-variable/pay-fixed interest rate contracts at November 3, 2019 and October 28, 2018 were $3,150 million and $3,050 million, respectively. During 2019, the company hedged a portion of its exposure to interest rate changes on a forecasted debt issuance using an interest rate contract with a term of 30 years. The hedge was terminated upon issuance of the debt, resulting in a fair value loss of $70 million. Fair value gains or losses on cash flow hedges were recorded in OCI and are subsequently reclassified into interest expense or other operating expenses (foreign exchange) in the same periods during which the hedged transactions impact earnings. These amounts offset the effects of interest rate or foreign currency exchange rate changes on the related borrowings. The cash flows from these contracts were recorded in operating activities in the statement of consolidated cash flows.

The amount of loss recorded in OCI at November 3, 2019 that is expected to be reclassified to interest expense or other operating expenses in the next twelve months if interest rates or exchange rates remain unchanged is approximately $8 million after-tax. There were no gains or losses reclassified from OCI to earnings based on the probability that the original forecasted transaction would not occur.

Fair Value Hedges

Certain interest rate contracts (swaps) were designated as fair value hedges of borrowings. The total notional amounts of the receive-fixed/pay-variable interest rate contracts at November 3, 2019 and October 28, 2018 were $8,717 million and $8,479 million, respectively. The fair value gains or losses on these contracts were generally offset by fair value gains or losses on the hedged items (fixed-rate borrowings) with both items recorded in interest expense.

The amounts recorded, at November 3, 2019, in the consolidated balance sheet related to borrowings designated in fair value hedging relationships in millions of dollars follow:

	Carrying Amount of Hedged Item	Cumulative Increase (Decrease) of Fair Value Hedging Adjustments Included in the Carrying Amount		
		Active Hedging Relationships	Discontinued Relationships	Total
Long-term borrowings due within one year*	$ 412	$ (1)	$ (4)	$ (5)
Long-term borrowings	8,532	295	(32)	263

* Presented in short-term borrowings.

Derivatives Not Designated as Hedging Instruments

The company has certain interest rate contracts (swaps and caps), foreign exchange contracts (futures, forwards and swaps), and cross-currency interest rate contracts (swaps), which were not formally designated as hedges. These derivatives were held as economic hedges for underlying interest rate or foreign currency exposures primarily for certain borrowings, purchases or sales of inventory, and below market retail financing programs. The total notional amounts of the interest rate swaps at November 3, 2019 and October 28, 2018 were $9,166 million and $8,075 million, the foreign exchange contracts were $4,962 million and $6,842 million, and the cross-currency interest rate contracts were $92 million and $81 million, respectively. To facilitate borrowings through securitization of retail notes, interest rate caps were sold with notional amounts of $6 million and $66 million at November 3, 2019 and October 28, 2018, respectively. Interest rate caps were also purchased with notional amounts of $6 million and $66 million, at the same dates. The fair value gains or losses from the interest rate contracts were recognized currently in interest expense and the gains or losses from foreign exchange contracts in cost of sales or other operating expenses, generally offsetting over time the expenses on the exposures being hedged. The cash flows from these non-designated contracts were recorded in operating activities in the statement of consolidated cash flows.

Fair values of derivative instruments in the consolidated balance sheet at November 3, 2019 and October 28, 2018 in millions of dollars follow:

	2019	2018
Other Assets		
Designated as hedging instruments:		
Interest rate contracts	$ 332	$ 29
Total designated	332	29
Not designated as hedging instruments:		
Interest rate contracts	31	51
Foreign exchange contracts	20	83
Cross-currency interest rate contracts	1	5
Total not designated	52	139
Total derivative assets	$ 384	$ 168
Accounts Payable and Accrued Expenses		
Designated as hedging instruments:		
Interest rate contracts	$ 28	$ 321
Total designated	28	321
Not designated as hedging instruments:		
Interest rate contracts	37	29
Foreign exchange contracts	71	49
Cross-currency interest rate contracts	3	
Total not designated	111	78
Total derivative liabilities	$ 139	$ 399

The classification and gains (losses) including accrued interest expense related to derivative instruments on the statement of consolidated income consisted of the following in millions of dollars:

	2019	2018	2017
Fair Value Hedges			
Interest rate contracts – Interest expense	$ 589	$ (283)	$ (205)
Cash Flow Hedges			
Recognized in OCI			
Interest rate contracts – OCI (pretax)*	(92)	17	4
Foreign exchange contracts – OCI (pretax)*		2	(1)
Reclassified from OCI			
Interest rate contracts – Interest expense*	5	5	(2)
Foreign exchange contracts – Other expense*		1	(1)
Not Designated as Hedges			
Interest rate contracts – Net sales	$ (23)	$ 3	
Interest rate contracts – Interest expense*	(32)	(4)	$ 11
Foreign exchange contracts – Cost of sales	(18)	(24)	(12)
Foreign exchange contracts – Other expense*	97	195	(106)
Total not designated	$ 24	$ 170	$ (107)

* Includes interest and foreign exchange gains (losses) from cross-currency interest rate contracts.

Counterparty Risk and Collateral

Derivative instruments are subject to significant concentrations of credit risk to the banking sector. The company manages individual counterparty exposure by setting limits that consider the credit rating of the counterparty, the credit default swap spread of the counterparty, and other financial commitments and exposures between the company and the counterparty banks. All interest rate derivatives are transacted under International Swaps and Derivatives Association (ISDA) documentation. Some of these agreements include credit support provisions. Each master agreement permits the net settlement of amounts owed in the event of default or termination.

Certain of the company's derivative agreements contain credit support provisions that may require the company to post collateral based on the size of the net liability positions and credit ratings. The aggregate fair value of all derivatives with credit-risk-related contingent features that were in a net liability position at November 3, 2019 and October 28, 2018, was $68 million and $350 million, respectively. In accordance with the limits established in these agreements, the company posted none and $59 million in cash collateral at November 3, 2019 and October 28, 2018, respectively.

Derivatives are recorded without offsetting for netting arrangements or collateral. The impact on the derivative assets and liabilities related to netting arrangements and any collateral paid at November 3, 2019 and October 28, 2018 in millions of dollars follows:

	Gross Amounts Recognized	Netting Arrangements	Collateral Paid	Net Amount
2019				
Assets	$ 384	$ (70)		$ 314
Liabilities	139	(70)		69
2018				
Assets	$ 168	$ (65)		$ 103
Liabilities	399	(65)	$ (59)	275

29. SEGMENT AND GEOGRAPHIC AREA DATA

The company's operations are presently organized and reported in three major business segments described as follows:

The agriculture and turf segment primarily manufactures and distributes a full line of agriculture and turf equipment and related service parts, including large, medium, and utility tractors; tractor loaders; combines, cotton pickers, cotton strippers, and sugarcane harvesters; harvesting front-end equipment; sugarcane loaders and pull-behind scrapers; tillage, seeding, and application equipment, including sprayers, nutrient management, and soil preparation machinery; hay and forage equipment, including self-propelled forage harvesters and attachments, balers and mowers; turf and utility equipment, including riding lawn equipment and walk-behind mowers, golf course equipment, utility vehicles, and commercial mowing equipment, along with a broad line of associated implements; integrated agricultural management systems technology and solutions; and other outdoor power products.

The construction and forestry segment primarily manufactures and distributes a broad range of machines and service parts used in construction, earthmoving, road building, material handling, and timber harvesting, including backhoe loaders; crawler dozers and loaders; four-wheel-drive loaders; excavators; motor graders; articulated dump trucks; landscape loaders; skid-steer loaders; milling machines; recyclers; slipform pavers; surface miners; asphalt pavers; compactors; tandem and static rollers; mobile crushers and screens; mobile and stationary asphalt plants; log skidders; feller bunchers; log loaders; log forwarders; log harvesters; and related logging attachments.

The products and services produced by the segments above are marketed primarily through independent retail dealer networks and major retail outlets.

The financial services segment primarily finances sales and leases by John Deere dealers of new and used agriculture and turf equipment and construction and forestry equipment. In addition, the financial services segment provides wholesale financing to dealers of the foregoing equipment, finances retail revolving charge accounts, and offers extended equipment warranties.

Because of integrated manufacturing operations and common administrative and marketing support, a substantial number of allocations must be made to determine operating segment and geographic area data. Intersegment sales and revenues represent sales of components and finance charges, which are generally based on market prices.

Information relating to operations by operating segment in millions of dollars follows for the years ended November 3, 2019, October 28, 2018, and October 29, 2017. In addition to the following unaffiliated sales and revenues by segment, intersegment sales and revenues in 2019, 2018, and 2017 were as follows: agriculture and turf net sales of $34 million, $47 million, and $39 million, construction and forestry net sales of $1 million, none, and $1 million, and financial services revenues of $348 million, $308 million, and $244 million, respectively.

OPERATING SEGMENTS	2019	2018	2017
Net sales and revenues			
Unaffiliated customers:			
Agriculture and turf net sales	$ 23,666	$ 23,191	$ 20,167
Construction and forestry net sales	11,220	10,160	5,718
Total net sales	34,886	33,351	25,885
Financial services revenues	3,621	3,252	2,935
Other revenues*	751	755	918
Total	$ 39,258	$ 37,358	$ 29,738

* Other revenues are primarily the equipment operations' revenues for finance and interest income, and other income as disclosed in Note 32, net of certain intercompany eliminations.

Operating profit			
Agriculture and turf	$ 2,506	$ 2,816	$ 2,513
Construction and forestry	1,215	868	346
Financial services*	694	792	715
Total operating profit*	4,415	4,476	3,574
Interest income	85	80	55
Interest expense	(256)	(298)	(264)
Foreign exchange gains (losses) from equipment operations' financing activities	(22)	36	(12)
Pension and OPEB benefit (cost), excluding service cost component	67	(15)	(31)
Corporate expenses – net	(180)	(181)	(192)
Income taxes	(852)	(1,727)	(971)
Total	(1,158)	(2,105)	(1,415)
Net income	3,257	2,371	2,159
Less: Net income attributable to noncontrolling interests	4	3	
Net income attributable to Deere & Company	$ 3,253	$ 2,368	$ 2,159

* Operating profit of the financial services business segment includes the effect of its interest expense and foreign exchange gains or losses.

(continued)

OPERATING SEGMENTS	2019	2018	2017
Interest income*			
Agriculture and turf	$ 22	$ 14	$ 16
Construction and forestry	11	33	1
Financial services	2,316	1,997	1,771
Corporate	85	80	55
Intercompany	(360)	(330)	(268)
Total	$ 2,074	$ 1,794	$ 1,575

* Does not include finance rental income for equipment on operating leases.

Interest expense			
Agriculture and turf	$ 245	$ 229	$ 182
Construction and forestry	91	71	52
Financial services	1,234	936	669
Corporate	256	298	264
Intercompany	(360)	(330)	(268)
Total	$ 1,466	$ 1,204	$ 899
Depreciation* and amortization expense			
Agriculture and turf	$ 723	$ 723	$ 695
Construction and forestry	292	251	145
Financial services	1,004	953	876
Total	$ 2,019	$ 1,927	$ 1,716

* Includes depreciation for equipment on operating leases.

Equity in income (loss) of unconsolidated affiliates			
Agriculture and turf	$ 6	$ 6	$ 2
Construction and forestry	14	19	(27)
Financial services	1	2	1
Total	$ 21	$ 27	$ (24)
Identifiable operating assets			
Agriculture and turf	$ 10,379	$ 10,161	$ 9,359
Construction and forestry	9,387	9,855	3,212
Financial services	48,483	45,720	42,596
Corporate*	4,762	4,372	10,619
Total	$ 73,011	$ 70,108	$ 65,786

* Corporate assets are primarily the equipment operations' retirement benefits, deferred income tax assets, marketable securities, and cash and cash equivalents as disclosed in Note 32, net of certain intercompany eliminations.

Capital additions			
Agriculture and turf	$ 859	$ 675	$ 485
Construction and forestry	245	308	114
Financial services	3	2	3
Total	$ 1,107	$ 985	$ 602
Investments in unconsolidated affiliates			
Agriculture and turf	$ 28	$ 26	$ 25
Construction and forestry	171	166	143
Financial services	16	15	14
Total	$ 215	$ 207	$ 182

(continued)

The company views and has historically disclosed its operations as consisting of two geographic areas, the U.S. and Canada, and outside the U.S. and Canada, shown below in millions of dollars. No individual foreign country's net sales and revenues were material for disclosure purposes.

GEOGRAPHIC AREAS	2019	2018	2017
Net sales and revenues			
Unaffiliated customers:			
U.S. and Canada:			
Equipment operations net sales and revenues*	$ 20,647	$ 18,847	$ 15,031
Financial services revenues*	3,099	2,785	2,526
Total	23,746	21,632	17,557
Outside U.S. and Canada:			
Equipment operations net sales and revenues	14,990	14,504	10,854
Financial services revenues	522	467	409
Total	15,512	14,971	11,263
Other revenues		755	918
Total	$ 39,258	$ 37,358	$ 29,738

* The 2018 and 2017 equipment operations' amounts are only for net sales and approximate the proportion of each amount that relates to the U.S. only based on a three-year average. The equipment operations' percentages for 2018 and 2017 were 88%. The financial services' U.S. only percentages were 79% for both fiscal years. See Note 6 for additional 2019 geographic net sales and revenues information.

	2019	2018	2017
Operating profit			
U.S. and Canada:			
Equipment operations	$ 2,335	$ 2,356	$ 1,754
Financial services	506	604	515
Total	2,841	2,960	2,269
Outside U.S. and Canada:			
Equipment operations	1,386	1,328	1,105
Financial services	188	188	200
Total	1,574	1,516	1,305
Total	$ 4,415	$ 4,476	$ 3,574
Property and equipment			
U.S.	$ 3,169	$ 3,031	$ 2,976
Germany	1,137	1,164	598
Other countries	1,667	1,673	1,494
Total	$ 5,973	$ 5,868	$ 5,068

30. SUPPLEMENTAL INFORMATION (UNAUDITED)

The $1 par value common stock of Deere & Company is listed on the New York Stock Exchange under the symbol "DE". At November 3, 2019, there were 19,873 holders of record of the company's $1 par value common stock.

Quarterly information with respect to net sales and revenues and earnings is shown in the following schedule. The company uses a 52/53 week fiscal year ending on the last Sunday in the reporting period (see Note 1). Fiscal year 2019 contained 53 weeks and the fourth quarter contained 14 weeks compared to 52 weeks and 13 weeks in the respective periods in 2018. The interim periods (quarters) end in January, April, and July. Such information is shown in millions of dollars except for per share amounts.

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2019*				
Net sales and revenues	$ 7,984	$ 11,342	$10,036	$9,896
Net sales	6,941	10,273	8,969	8,703
Gross profit	1,509	2,518	2,099	1,968
Income before income taxes	677	1,473	1,113	825
Net income attributable to Deere & Company	498	1,135	899	721
Per share data:				
Basic	1.56	3.57	2.84	2.30
Diluted	1.54	3.52	2.81	2.27
Dividends declared	.76	.76	.76	.76
Dividends paid	.69	.76	.76	.76
2018				
Net sales and revenues	$ 6,913	$10,720	$10,309	$ 9,416
Net sales	5,974	9,747	9,287	8,343
Gross profit	1,270	2,414	2,134	1,962
Income before income taxes	518	1,384	1,190	979
Net income (loss) attributable to Deere & Company	(535)	1,208	910	785
Per share data:				
Basic	(1.66)	3.73	2.81	2.45
Diluted	(1.66)	3.67	2.78	2.42
Dividends declared	.60	.60	.69	.69
Dividends paid	.60	.60	.60	.69

Net income per share for each quarter must be computed independently. As a result, their sum may not equal the total net income per share for the year.

* See Note 5 for "Special Items."

31. SUBSEQUENT EVENTS

A quarterly dividend of $.76 per share was declared at the Board of Directors meeting on December 4, 2019, payable on February 10, 2020 to stockholders of record on December 31, 2019.

In December 2019, the Board of Directors also authorized the repurchase of up to $8,000 million of additional common stock. This repurchase program will supplement the existing $8,000 million share repurchase program, which had $1,075 million remaining at November 3, 2019. Repurchases of the company's common stock will be made at the company's discretion in the open market.

In November 2019, the company's financial services operations entered into a retail note securitization using its bank conduit facility that resulted in securitization borrowings of approximately $760 million.

During the first quarter of 2020, the company announced a broad voluntary employee-separation program that continues the efforts to create a more efficient organization structure and reduce operating costs. The program will provide for cash payments based on years of service. The expenses will generally be recorded in the period the employees irrevocably accept the separation offer, which is expected to be primarily in the first quarter of 2020. The program's total pretax expenses are estimated to be about $120 million with annual savings of about $90 million.

32. SUPPLEMENTAL CONSOLIDATING DATA

INCOME STATEMENT
For the Years Ended November 3, 2019, October 28, 2018, and October 29, 2017
(In millions of dollars)

	EQUIPMENT OPERATIONS*			FINANCIAL SERVICES		
	2019	2018	2017	2019	2018	2017
Net Sales and Revenues						
Net sales	$ 34,886	$ 33,351	$ 25,885			
Finance and interest income	118	126	72	$ 3,735	$ 3,311	$ 2,928
Other income	881	875	1,065	234	249	251
Total	35,885	34,352	27,022	3,969	3,560	3,179
Costs and Expenses						
Cost of sales	26,793	25,573	19,868			
Research and development expenses	1,783	1,658	1,373			
Selling, administrative and general expenses	3,031	2,935	2,555	528	528	549
Interest expense	256	298	264	1,234	936	669
Interest compensation to Financial Services	336	300	234			
Other operating expenses	299	315	295	1,506	1,298	1,240
Total	32,498	31,079	24,589	3,268	2,762	2,458
Income of Consolidated Group before Income Taxes	3,387	3,273	2,433	701	798	721
Provision (credit) for income taxes	689	1,869	726	163	(142)	245
Income of Consolidated Group	2,698	1,404	1,707	538	940	476
Equity in Income (Loss) of Unconsolidated Subsidiaries and Affiliates						
Financial Services	539	942	477	1	2	1
Other	20	25	(25)			
Total	559	967	452	1	2	1
Net Income	3,257	2,371	2,159	539	942	477
Less: Net income attributable to noncontrolling interests	4	3				
Net Income Attributable to Deere & Company	$ 3,253	$ 2,368	$ 2,159	$ 539	$ 942	$ 477

* Deere & Company with Financial Services on the equity basis.

The supplemental consolidating data is presented for informational purposes. The "Equipment Operations" reflect the basis of consolidation described in Note 1 to the consolidated financial statements. The consolidated group data in the "Equipment Operations" income statement reflect the results of the agriculture and turf operations and construction and forestry operations. Transactions between the "Equipment Operations" and "Financial Services" have been eliminated to arrive at the consolidated financial statements.

32. SUPPLEMENTAL CONSOLIDATING DATA (continued)

BALANCE SHEET
As of November 3, 2019 and October 28, 2018
(In millions of dollars)

	EQUIPMENT OPERATIONS* 2019	EQUIPMENT OPERATIONS* 2018	FINANCIAL SERVICES 2019	FINANCIAL SERVICES 2018
ASSETS				
Cash and cash equivalents	$ 3,175	$ 3,195	$ 682	$ 709
Marketable securities	1	8	580	482
Receivables from unconsolidated subsidiaries and affiliates	2,017	1,700		
Trade accounts and notes receivable - net	1,482	1,374	5,153	4,906
Financing receivables - net	65	93	29,130	26,961
Financing receivables securitized - net	44	76	4,339	3,946
Other receivables	1,376	1,010	116	776
Equipment on operating leases - net			7,567	7,165
Inventories	5,975	6,149		
Property and equipment - net	5,929	5,821	44	47
Investments in unconsolidated subsidiaries and affiliates	5,326	5,231	16	15
Goodwill	2,917	3,101		
Other intangible assets - net	1,380	1,562		
Retirement benefits	836	1,241	58	57
Deferred income taxes	1,896	1,503	57	69
Other assets	1,158	1,133	741	587
Total Assets	$ 33,577	$ 33,197	$ 48,483	$ 45,720
LIABILITIES AND STOCKHOLDERS' EQUITY				
LIABILITIES				
Short-term borrowings	$ 987	$ 1,434	$ 9,797	$ 9,628
Short-term securitization borrowings	44	75	4,277	3,882
Payables to unconsolidated subsidiaries and affiliates	142	129	1,970	1,678
Accounts payable and accrued expenses	9,232	9,383	1,836	2,056
Deferred income taxes	414	497	568	823
Long-term borrowings	5,415	4,714	24,814	22,523
Retirement benefits and other liabilities	5,912	5,660	94	91
Total liabilities	22,146	21,892	43,356	40,681
Commitments and contingencies (Note 23)				
Redeemable noncontrolling interest	14	14		
STOCKHOLDERS' EQUITY				
Common stock, $1 par value (authorized – 1,200,000,000 shares; issued – 536,431,204 shares in 2019 and 2018), at paid-in amount	4,642	4,474	2,107	2,100
Common stock in treasury, 223,290,789 shares in 2019 and 217,975,806 shares in 2018, at cost	(17,474)	(16,312)		
Retained earnings	29,852	27,553	3,378	3,257
Accumulated other comprehensive income (loss)	(5,607)	(4,427)	(358)	(318)
Total Deere & Company stockholders' equity	11,413	11,288	5,127	5,039
Noncontrolling interests	4	3		
Total stockholders' equity	11,417	11,291	5,127	5,039
Total Liabilities and Stockholders' Equity	$ 33,577	$ 33,197	$ 48,483	$ 45,720

* Deere & Company with Financial Services on the equity basis.

The supplemental consolidating data is presented for informational purposes. The "Equipment Operations" reflect the basis of consolidation described in Note 1 to the consolidated financial statements. Transactions between the "Equipment Operations" and "Financial Services" have been eliminated to arrive at the consolidated financial statements.

32. SUPPLEMENTAL CONSOLIDATING DATA (continued)

STATEMENT OF CASH FLOWS
For the Years Ended November 3, 2019, October 28, 2018, and October 29, 2017
(In millions of dollars)

	EQUIPMENT OPERATIONS*			FINANCIAL SERVICES		
	2019	2018	2017	2019	2018	2017
Cash Flows from Operating Activities						
Net income	$ 3,257	$ 2,371	$ 2,159	$ 539	$ 942	$ 477
Adjustments to reconcile net income to net cash provided by operating activities:						
Provision for credit losses	14	39	10	29	51	88
Provision for depreciation and amortization	1,015	974	839	1,135	1,077	984
Impairment charges			40	77		
(Gain) loss on sale of businesses and unconsolidated affiliates	5	(25)	(375)			
Undistributed earnings of unconsolidated subsidiaries and affiliates	(102)	(503)	(125)	(2)	(2)	(1)
Provision (credit) for deferred income taxes	(222)	1,504	(7)	(243)	(24)	107
Changes in assets and liabilities:						
Trade receivables and Equipment Operations' financing receivables	(142)	(239)	(244)			
Inventories	(102)	(917)	(504)			
Accounts payable and accrued expenses	13	793	946	163	120	94
Accrued income taxes payable/receivable	(355)	103	(123)	528	(569)	39
Retirement benefits	(235)	(985)	(39)	2	(41)	7
Other	54	166	(143)	190	88	82
Net cash provided by operating activities	3,200	3,281	2,434	2,418	1,642	1,877
Cash Flows from Investing Activities						
Collections of receivables (excluding trade and wholesale)				18,190	17,032	15,963
Proceeds from maturities and sales of marketable securities	12	11	298	77	65	106
Proceeds from sales of equipment on operating leases				1,648	1,483	1,441
Proceeds from sales of businesses and unconsolidated affiliates, net of cash sold	93	156	114			
Cost of receivables acquired (excluding trade and wholesale)				(20,321)	(18,778)	(16,800)
Acquisitions of businesses, net of cash acquired		(5,245)	(284)			
Purchases of marketable securities	(3)			(137)	(133)	(118)
Purchases of property and equipment	(1,118)	(893)	(592)	(2)	(3)	(3)
Cost of equipment on operating leases acquired				(3,246)	(3,209)	(3,080)
Increase in investment in Financial Services	(8)		(20)			
Increase in trade and wholesale receivables				(935)	(1,222)	(380)
Other	35	17	(33)	5	(95)	(44)
Net cash used for investing activities	(989)	(5,954)	(517)	(4,721)	(4,860)	(2,915)
Cash Flows from Financing Activities						
Increase (decrease) in total short-term borrowings	(149)	16	64	(768)	457	1,246
Change in intercompany receivables/payables	(305)	(748)	2,142	305	748	(2,142)
Proceeds from long-term borrowings	1,348	149	1,107	8,638	8,139	7,595
Payments of long-term borrowings	(972)	(163)	(66)	(5,454)	(6,082)	(5,331)
Proceeds from issuance of common stock	178	217	529			
Repurchases of common stock	(1,253)	(958)	(6)			
Capital investment from Equipment Operations				8		20
Dividends paid	(943)	(806)	(764)	(427)	(464)	(365)
Other	(79)	(60)	(55)	(38)	(32)	(33)
Net cash provided by (used for) financing activities	(2,175)	(2,353)	2,951	2,264	2,766	990
Effect of Exchange Rate Changes on Cash, Cash Equivalents, and Restricted Cash	(42)	54	155	(14)	(28)	2
Net Increase (Decrease) in Cash, Cash Equivalents, and Restricted Cash	(6)	(4,972)	5,023	(53)	(480)	(46)
Cash, Cash Equivalents, and Restricted Cash at Beginning of Year	3,202	8,174	3,151	813	1,293	1,339
Cash, Cash Equivalents, and Restricted Cash at End of Year	$ 3,196	$ 3,202	$ 8,174	$ 760	$ 813	$ 1,293

* Deere & Company with Financial Services on the equity basis.
The supplemental consolidating data is presented for informational purposes. The "Equipment Operations" reflect the basis of consolidation described in Note 1 to the consolidated financial statements. Transactions between the "Equipment Operations" and "Financial Services" have been eliminated to arrive at the consolidated financial statements.

DEERE & COMPANY

SELECTED FINANCIAL DATA

(Dollars in millions except per share amounts)

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Net sales and revenues	$39,258	$ 37,358	$ 29,738	$ 26,644	$ 28,863	$ 36,067	$ 37,795	$ 36,157	$ 32,013	$26,005
Net sales	34,886	33,351	25,885	23,387	25,775	32,961	34,998	33,501	29,466	23,573
Finance and interest income	3,493	3,107	2,732	2,511	2,381	2,282	2,115	1,981	1,923	1,825
Research and development expenses	1,783	1,658	1,373	1,394	1,410	1,437	1,445	1,409	1,192	1,005
Selling, administrative and general expenses	3,551	3,455	3,098	2,791	2,868	3,266	3,558	3,369	3,143	2,926
Interest expense	1,466	1,204	899	764	680	664	741	783	759	811
Net income*	3,253	2,368	2,159	1,524	1,940	3,162	3,537	3,065	2,800	1,865
Return on net sales	9.3%	7.1%	8.3%	6.5%	7.5%	9.6%	10.1%	9.1%	9.5%	7.9%
Return on beginning Deere & Company stockholders' equity	28.8%	24.8%	33.1%	22.6%	21.4%	30.8%	51.7%	45.1%	44.5%	38.7%
Comprehensive income*	2,081	3,222	3,221	627	994	2,072	5,416	2,171	2,502	2,079
Net income per share – basic*	$ 10.28	$ 7.34	$ 6.76	$ 4.83	$ 5.81	$ 8.71	$ 9.18	$ 7.72	$ 6.71	$ 4.40
– diluted*	10.15	7.24	6.68	4.81	5.77	8.63	9.09	7.63	6.63	4.35
Dividends declared per share	3.04	2.58	2.40	2.40	2.40	2.22	1.99	1.79	1.52	1.16
Dividends paid per share	2.97	2.49	2.40	2.40	2.40	2.13	1.94	1.74	1.41	1.14
Average number of common shares outstanding (in millions) – basic	316.5	322.6	319.5	315.2	333.6	363.0	385.3	397.1	417.4	424.0
– diluted	320.6	327.3	323.3	316.6	336.0	366.1	389.2	401.5	422.4	428.6
Total assets	$ 73,011	$ 70,108	$ 65,786	$ 57,918	$ 57,883	$ 61,267	$ 59,454	$ 56,193	$ 48,146	$ 43,186
Trade accounts and notes receivable – net	5,230	5,004	3,925	3,011	3,051	3,278	3,758	3,799	3,295	3,464
Financing receivables – net	29,195	27,054	25,104	23,702	24,809	27,422	25,633	22,159	19,924	17,682
Financing receivables securitized – net	4,383	4,022	4,159	5,127	4,835	4,602	4,153	3,618	2,905	2,238
Equipment on operating leases – net	7,567	7,165	6,594	5,902	4,970	4,016	3,152	2,528	2,150	1,936
Inventories	5,975	6,149	3,904	3,341	3,817	4,210	4,935	5,170	4,371	3,063
Property and equipment – net	5,973	5,868	5,068	5,171	5,181	5,578	5,467	5,012	4,352	3,791
Short-term borrowings:										
Equipment operations	987	1,434	375	249	464	434	1,080	425	529	85
Financial services	9,797	9,628	9,660	6,662	7,961	7,584	7,707	5,966	6,307	5,239
Total	10,784	11,062	10,035	6,911	8,425	8,018	8,787	6,391	6,836	5,324
Short-term securitization borrowings:										
Equipment operations	44	75								
Financial services	4,277	3,882	4,119	4,998	4,585	4,553	4,103	3,569	2,773	2,204
Total	4,321	3,957	4,119	4,998	4,585	4,553	4,103	3,569	2,773	2,204
Long-term borrowings:										
Equipment operations	5,415	4,714	5,491	4,565	4,439	4,619	4,845	5,418	3,155	3,316
Financial services	24,814	22,523	20,400	19,138	19,336	19,699	16,673	16,970	13,764	13,424
Total	30,229	27,237	25,891	23,703	23,775	24,318	21,518	22,388	16,919	16,740
Total Deere & Company stockholders' equity	11,413	11,288	9,557	6,520	6,743	9,063	10,266	6,842	6,800	6,290
Book value per share*	$ 36.45	$ 35.45	$ 29.70	$ 20.71	$ 21.29	$ 26.23	$ 27.46	$ 17.64	$ 16.75	$ 14.90
Capital expenditures	$ 1,084	$ 969	$ 586	$ 668	$ 655	$ 1,004	$ 1,132	$ 1,360	$ 1,050	$ 795
Number of employees (at year end)	73,489	74,413	60,476	56,767	57,180	59,623	67,044	66,859	61,278	55,650

* Attributable to Deere & Company.

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